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Email: editor@ijaar.co.in **Mob-** 8624946865

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Applications of Artificial Intelligence in various fields

Dr. Bhasker. G. Koshidgewar

Asst. Professor, Head, Dept of Computer Science, Vai.Dhunda Maharaj Deglurkar College, Degloor Dt.Nanded (M.S)-431717

Corresponding Author- Dr. Bhasker. G. Koshidgewar

Email- bhasker149@gmail.com

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Abstract:

Artificial intelligence is categorized based on functionality and technology used. There are three types of AI-based on technology; Artificial Super Intelligence (ASI), artificial narrow intelligence (ANI), and Artificial general intelligence (AGI).

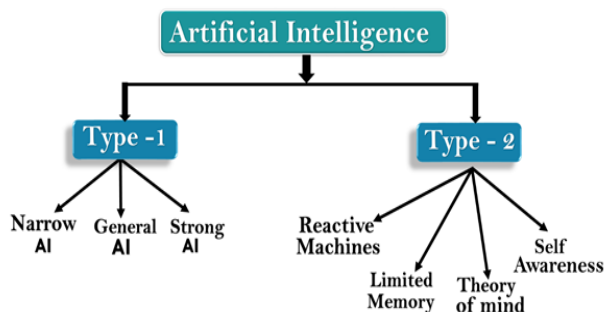
Keywords: Narrow, AI, Super, Strong, General, Reactive Machines, Self-Awareness.

Introduction:

Types of Artificial Intelligence:

Artificial Intelligence can be divided in various types, there are mainly two types of main

categorization which are based on capabilities and based on functionality of AI. Following is flow diagram which explain the types of AI.



AI type-1: Based on Capabilities

1. Weak AI or Narrow AI:

- Narrow AI is a type of AI which is able to perform a dedicated task with intelligence. The most common and currently available AI is Narrow AI in the world of Artificial Intelligence.
- Narrow AI cannot perform beyond its field or limitations, as it is only trained for one specific task. Hence it is also termed as weak AI. Narrow AI can fail in unpredictable ways if it goes beyond its limits.
- Apple Series a good example of Narrow AI, but it operates with a limited pre-defined range of functions.
- IBM's Watson supercomputer also comes under Narrow AI, as it uses an Expert system approach combined with Machine learning and natural language processing.
- Some Examples of Narrow AI are playing chess, purchasing suggestions on e-commerce site, self-driving cars, speech recognition, and image recognition.

2. General AI:

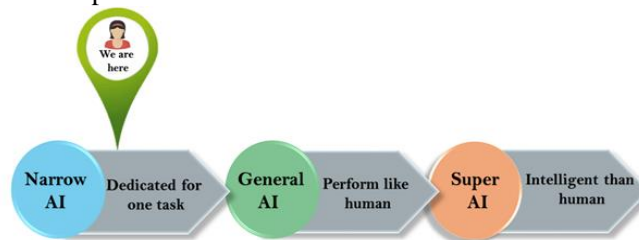
- General AI is a type of intelligence which could perform any intellectual task with efficiency like a human.
- The idea behind the general AI to make such a system which could be smarter and think like a human by its own.
- Currently, there is no such system exist which could come under general AI and can perform any task as perfect as a human.
- The worldwide researchers are now focused on developing machines with General AI.
- As systems with general AI are still under research and it will take lots of efforts and time to develop such systems.

3. Super / Strong AI:

- Super AI is a level of Intelligence of Systems at which machines could surpass human intelligence, and can perform any task better than human with cognitive properties. It is an outcome of general AI.
- Some key characteristics of strong AI include capability include the ability to think, to reason, solve the puzzle, make judgments, plan, learn, and communicate by its own.

- Super AI is still a hypothetical concept of Artificial Intelligence. Development of such

systems in real is still world changing task.



Artificial Intelligence type-2: Based on functionality

1. Reactive Machines

- Purely reactive machines are the most basic types of Artificial Intelligence.
- Such AI systems do not store memories or past experiences for future actions.
- These machines only focus on current scenarios and react on it as per possible best action.
- IBM's Deep Blue system is an example of reactive machines.
- Google's AlphaGo is also an example of reactive machines.

2. Limited Memory

- Limited memory machines can store past experiences or some data for a short period of time.
- These machines can use stored data for a limited time period only.
- Self-driving cars are one of the best examples of Limited Memory systems. These cars can store recent speed of nearby cars, the distance of other cars, speed limit, and other information to navigate the road.

3. Theory of Mind

- Theory of Mind AI should understand the human emotions, people, beliefs, and be able to interact socially like humans.
- This type of AI machines are still not developed, but researchers are making lots of efforts and improvement for developing such AI machines.

4. Self-Awareness

- Self-awareness AI is the future of Artificial Intelligence. These machines will be super intelligent, and will have their own consciousness, sentiments, and self-awareness.
- These machines will be smarter than human mind.
- Self-Awareness AI does not exist in reality still and it is a hypothetical concept.

Application of AI:

Artificial Intelligence has various applications in today's society. It is becoming essential for today's time because it can solve complex problems with an efficient way in multiple industries, such as Healthcare, entertainment, finance, education, etc. AI is making our daily life more comfortable and fast.

Following are some sectors which have the application of Artificial Intelligence:



1. AI in Astronomy:

Artificial Intelligence can be very useful to solve complex universe problems. AI technology can be helpful for understanding the universe such as how it works, origin, etc.

2. AI in Healthcare:

In the last, five to ten years, AI becoming more advantageous for the healthcare industry and going to have a significant impact on this industry.

Healthcare Industries are applying AI to make a better and faster diagnosis than humans. AI can help doctors with diagnoses and can inform when patients are worsening so that medical help can reach to the patient before hospitalization.

3. AI in Gaming:

AI can be used for gaming purpose. The AI machines can play strategic games like chess, where the machine needs to think of a large number of possible places.

4. AI in Finance:

AI and finance industries are the best matches for each other. The finance industry is implementing automation, chatbot, adaptive intelligence, algorithm trading, and machine learning into financial processes.

5. AI in Data Security:

The security of data is crucial for every company and cyber-attacks are growing very rapidly in the digital world. AI can be used to make your data more safe and secure. Some examples such as AEG bot, AI2 Platform, are used to determine software bug and cyber-attacks in a better way.

6. AI in Social Media:

Social Media sites such as Facebook, Twitter, and Snap chat contain billions of user profiles, which need to be stored and managed in a very efficient way. AI can organize and manage massive amounts of data. AI can analyse lots of data to identify the latest trends, hash tag, and requirement of different users.

7. AI in Travel & Transport:

AI is becoming highly demanding for travel industries. AI is capable of doing various travel related works such as from making travel arrangement to suggesting the hotels, flights, and best routes to the customers. Travel industries are using AI-powered catboats which can make human-like interaction with customers for better and fast response.

8. AI in Automotive Industry:

Some Automotive industries are using AI to provide virtual assistant to their user for better performance. Such as Tesla has introduced TeslaBot, an intelligent virtual assistant.

Various Industries are currently working for developing self-driven cars which can make your journey more safe and secure.

9. AI in Robotics:

Artificial Intelligence has a remarkable role in Robotics. Usually, general robots are programmed such that they can perform some repetitive task, but with the help of AI, we can create intelligent robots which can perform tasks with their own experiences without pre-programmed.

Humanoid Robots are best examples for AI in robotics, recently the intelligent Humanoid robot named as Erica and Sophia has been developed which can talk and behave like humans.

10. AI in Entertainment:

We are currently using some AI based applications in our daily life with some entertainment services such as Netflix or Amazon. With the help of ML/AI algorithms, these services show the recommendations for programs or shows.

11. AI in Agriculture:

Agriculture is an area which requires various resources, labour, money, and time for best result. Now a day's agriculture is becoming digital, and AI is emerging in this field. Agriculture is applying AI as agriculture robotics, solid and crop monitoring, predictive analysis. AI in agriculture can be very helpful for farmers.

12. AI in E-commerce:

AI is providing a competitive edge to the e-commerce industry, and it is becoming more demanding in the e-commerce business. AI is helping shoppers to discover associated products with recommended size, color, or even brand.

13. AI in education:

AI can automate grading so that the tutor can have more time to teach. AI Chabot can communicate with students as a teaching assistant.

AI in the future can be work as a personal virtual tutor for students, which will be accessible easily at any time and any place.

Conclusion:

While advancing to limits and limitations, current technology in artificial intelligence research has not yet reached the "AI" level of reality. However, as they are developed today, intelligence agents are still very active in many static and semi-variable systems. Applications from simple Roomba to MIT stand-alone backup clean up all require a certain amount of at least one aspect of artificial intelligence.

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A Green and Safe Synthesis of α -Hydroxyphosphonates Using Copper Nanoparticles Supported on Carbon Microspheres (Cu-NP/C)

N. S. Kaminwar¹, S. L. Nakkalwar¹

¹Dept. of Chemistry, Lal Bahadur Shastri Mahavidyalaya, Dharmabad, Dist. Nanded

Corresponding Author- N. S. Kaminwar

E-mail: nskaminwar@gmail.com

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Abstract:

Carbon microsphere-supported copper nanoparticles (Cu-NP/C) are an economical, efficient, non-toxic, and mild catalyst for synthesizing α -hydroxyphosphonates from 2-chloroquinoline-3-carbaldehyde and triethylphosphite under ultrasound irradiation in a solvent-free environment. This approach offers several significant benefits, including a simple experimental procedure, reduced reaction time, high product yield, and eco-friendly features due to the absence of toxic catalysts and solvents. Some of the synthesized compounds were characterized using IR, ¹H NMR, and mass spectroscopy.

Keywords: α -hydroxyphosphonates, 2-chloroquinoline-3-carbaldehyde, Cu-NP/C, ultrasound irradiation, triethylphosphite.

Introduction:

The quinoline¹ ring system is a vital and prominent class of heterocyclic compounds, serving as a key intermediate in the synthesis of numerous pharmacologically significant substances. Quinoline derivatives exhibit a broad spectrum of physiological and biological activities, including antimalarial², anti-inflammatory³, antitumor⁴, DNA-binding⁵, antibacterial⁶, antimicrobial⁷, anticancer⁸, anti-tuberculosis⁹, antihistamine¹⁰, antifungal¹¹, anti-HIV¹², antihypertensive¹³ and antiparasitic properties¹⁴. Additionally, quinolines are crucial in studying bioorganic and bio-organometallic processes¹⁵. Compounds such as 2-chloroquinoline-3-carbaldehyde are particularly valuable due to their central role in subsequent annelation and functional group transformations¹⁶.

Over the past two decades, several synthetic methods for preparing α -hydroxyphosphonates have been reported¹⁷. These include the use of quinine as a catalyst in toluene¹⁸, DBU or n-BuLi in THF¹⁹, HCl in ether media with DCM²⁰, LiClO₄ in diethyl ether with trimethylsilyl chloride (TMSCl), and toluene with Ti(OiPr)₄²¹. Other methods involve hydroxyphosphorylation of aldehydes using guanidine hydrochloride in water²² as well as the use of BF₃•etherate, AlCl₃²³, TFA or TfOH²⁴.

Advancements in synthetic and catalytic chemistry are currently focusing on developing environmentally friendly processes to minimize or eliminate harmful effects. In the past decade, solvent-free reaction conditions have gained prominence in organic chemistry, demonstrating effectiveness across a range of reactions. These conditions often lead to significantly reduced

reaction times, higher yields, simpler workup procedures, and improved regio- and stereoselectivity, aligning with green chemistry principles.²⁵ Ultrasound irradiation has emerged as a key technique in synthetic organic chemistry, providing an efficient heating source for various reactions. Its main advantage is the substantially shorter reaction times it facilitates. Ultrasound-assisted reactions also offer benefits such as straightforward experimental procedures, very high yields, enhanced selectivity and cleaner transformations, contributing to its increasing popularity and utility in synthetic organic chemistry.

Heterogeneous catalysts are widely used in organic transformations due to their eco-friendly nature, economic viability, and ease of separation²⁶. Among these; various nanoparticles (NPs) have garnered significant attention for their high catalytic activity and selectivity in synthetic organic and bioorganic chemistry²⁷. Copper nanoparticles, in particular, are a notable category of nano-catalysts. Reactions catalyzed by copper nanoparticles offer several advantages over traditional metal-catalyzed reactions, including lower catalyst loading, higher atom economy, better yields, cost-effectiveness, shorter reaction times and catalyst recyclability.²⁸ However, nanoparticles can sometimes aggregate, making them challenging to separate from the reaction medium. To address this issue, nanoparticles can be supported on various materials. Supported metallic nanoparticles that are inexpensive, minimally toxic, highly active, stable, and easy to separate from the reaction mixture are particularly valuable. In our previous work, copper nanoparticles supported on carbon microspheres

(Cu-NP/C) proved effective for organic transformations.²⁹⁻³¹ As part of our ongoing efforts to develop novel methods in organic synthesis, we present a simple, rapid, and high-yielding one-pot three-component reaction protocol for synthesizing α -hydroxyphosphonatederivatives using the environmentally friendly Cu-NP/C catalyst.

Experimental

General details:

2-Chloroquinoline-3-carbaldehydes were synthesized in the laboratory following an established method. Triethylphosphite was purchased from Lancaster, and N,N-dimethylformamide (DMF) was obtained from S.D. Fine-Chem. The reactions were monitored by TLC using 20 x 20 cm aluminum sheets coated with Silica Gel 60 F254 from Merck. Melting points were determined with a DBK-programmable melting point apparatus. The products were characterized using spectral data. ¹H NMR spectra were recorded on a Varian Gemini at 400 MHz in CDCl₃ with TMS as an internal standard; IR spectra were obtained with a Perkin Elmer FTIR using KBr discs and mass spectra were acquired via electrospray ionization on a Micromass Quattro-II, identifying the molecular ion peak as the (m+1) peak.

General procedure for the synthesis of Diethyl (2-chloro-quinolin-3-yl)(hydroxy)methylphosphonate (2a):

A mixture of 2-chloroquinoline-3-carbaldehyde (0.19 gm, 1 mmol), triethylphosphite (0.332 gm, 2 mmol) and 10 mg of Cu-NP/C catalyst were subjected to ultrasound sonication at room temperature. The progress of the reaction was monitored by TLC. Once the reaction was complete, the mixture was poured over crushed ice and reaction mixture was subjected with ethyl acetate (10mL) thrice and filtered off to separate catalyst as the residue. The residue was further washed with ethyl acetate (2-5mL) and reused. The product was obtained by evaporation of solvent. The final yield was 0.30 gm (92%), and the products were confirmed by spectral analysis.

Result and discussion:

The original method for synthesizing α -hydroxyphosphonates, known as the Abramov reaction, involved heating an aldehyde or ketone with trialkylphosphite at 70-100°C for several hours in a sealed tube. Previous methods for synthesizing α -hydroxyphosphonates using 2-chloroquinoline-3-carbaldehyde involved refluxing in toluene with TMSCl added at room temperature in a solvent-free environment. However, this process is not environmentally friendly due to the gas emissions it produces. Azizi et al. reported an alternative method for the same reaction system at room temperature, using expensive, moisture-sensitive reagents like LiClO₄ and diethyl ether.

To optimize the reaction conditions, we tested the reaction using 2-chloroquinoline-3-carbaldehyde, triethylphosphite, and Cu-NP/C as a catalyst under ultrasound irradiation keeping the reactant and catalyst proportions consistent at room temperature. This approach reduced the reaction time to just 10 minutes and resulted in a high yield. These findings highlight the effectiveness of the Cu-NP/C catalyst and ultrasound irradiation for synthesizing α -hydroxyphosphonates (see Scheme-1, Table-1).

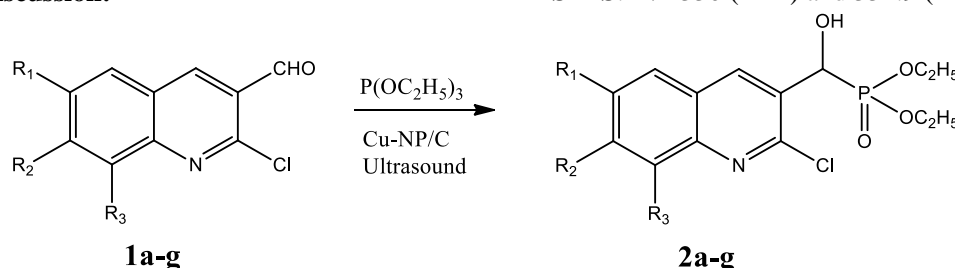
A major advantage of this work is its adherence to green chemistry principles, as it eliminates the need for hazardous solvents used in earlier methods. Using the same procedure, we successfully synthesized eight compounds, each achieving quantitative yields. All compounds were characterized by their physical constants and compared to authentic samples, with some also analyzed spectrally.

Spectral data:

IR (KBr), cm⁻¹: 3252 (-OH); 1220 (-P=O); 1036 (-P-O-C).

¹H NMR (CDCl₃), δ ppm: 1.22 (t, 3H, O-CH₂-CH₃); 1.33 (t, 3H, O-CH₂-CH₃); 2.1 (s, 1H, -CH-OH); 4.1 (m, 4H, O-CH₂-CH₃ and O-CH₂-CH₃); 5.64 (d, 1H, -CH-P=O); 7.53 (t, 1H, Ar-H, C₆); 7.7 (t, 1H, Ar-H, C₇); 7.82 (d, 1H, Ar-H, C₅); 8.1 (d, 1H, Ar-H, C₈); 8.64 (s, 1H, Ar-H, C₄).

ES MS: m/z 330 (m+1) and 331.9 (m+3).



Scheme 1. Cu-NP/C catalyzed synthesis of α -hydroxyphosphonates under ultrasound.

Table 1. Cu-NP/C catalysed synthesis of α -hydroxyphosphonates.

Entry	R ₁	R ₂	R ₃	Time (min)	Yield (%)	MP (°C)
2a	H	H	H	13	92	119-120
2b	CH ₃	H	H	15	90	140-142
2c	H	CH ₃	H	14	88	122-123
2d	H	H	CH ₃	13	90	134-135

2e	OCH ₃	H	H	16	88	160-161
2f	H	OCH ₃	H	13	90	145-146
2g	OC ₂ H ₅	H	H	15	87	154-155
2h	H	H	C ₂ H ₅	17	88	131-133

Conclusion:

In conclusion, we have developed a new method for synthesizing α -hydroxyphosphonates (2a-h) from 2-chloroquinoline-3-carbaldehydes (1a-h) using triethylphosphite and Cu NP/C as a catalyst under ultrasound irradiation at room temperature, achieving quantitative yields. This method provides several advantages, including a simple experimental procedure, reduced reaction time, high yield, and environmental benefits due to the elimination of toxic catalysts and solvents. It is particularly well-suited for combinatorial chemistry applications.

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Review on Creating a Pedagogical Content to Assess Teaching Knowledge Test regarding Chemistry Models and Language

Vishwamber A. Tidke¹, Vithal. K. Jadhav¹, Rajkumar U. Pokalwar²

¹Department of Chemistry, V.D.M.D. College, Degloor, dist. Nanded (M.H.)

²Department of Chemistry, Deglur College, Degloor, dist. Nanded (M.H.)-431717

Corresponding Author- Vishwamber A. Tidke

Email- vishwatidke@gmail.com

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Abstract:

Teachers' professional knowledge is crucial for enhancing student learning and has been explored in various studies. While research suggests a link between teachers' knowledge and student achievement, there is a lack of data connecting teachers' knowledge with their classroom practices and student outcomes. In particular, chemistry teachers' expertise in using technical language is important, as strong professional knowledge is associated with better student learning, especially for those with low prior knowledge.

Introduction:

Teachers' professional competence influences student achievement and includes factors like motivation, beliefs, and knowledge. Professional knowledge is essential for effective classroom teaching. Various studies have measured teachers' professional knowledge, but in India, research on pedagogical content knowledge in chemistry, particularly on using models and chemistry language, is limited. To analyze this effectively, especially in large-scale assessments, a valid, reliable, and objective test instrument is needed.¹

Shulman (1987) identified seven types of teachers' professional knowledge, including content knowledge (CK), pedagogical knowledge (PK), and pedagogical content knowledge (PCK). PCK, according to him, is a unique blend of content and pedagogy that helps teachers effectively teach specific topics to particular students. It involves structuring, linking, and explaining content clearly, using methods like analogies and demonstrations, and understanding students' conceptions and misconceptions.² Describes pedagogical content knowledge (PCK) as a blend of content and pedagogical knowledge, suggesting a correlation between the two. Krauss et al. (2008) found that Gymnasium (GY) math teachers scored higher in both content knowledge (CK) and PCK compared to other secondary school teachers. However, they could not empirically distinguish CK and PCK in high-expertise GY teachers. Similar results were found in chemistry, with GY teachers scoring higher in both CK and PCK, although differences in PCK were smaller when controlling for CK variance (Tepner 2014). This suggests that CK is essential for developing PCK.³

The quality Models and Chemistry Language Using Models in Class

Models play a crucial role in science education by bridging scientific theory and real-world experiences (Gilbert, 2004). Based on Hodson's purposes for science education—learning of, about, and to do science—Justi and Gilbert (2003) emphasize that students should understand key scientific models, their development, and limitations. They should also engage in creating, testing, and reflecting on models. Gilbert (2004) describes this as "Learning to Use Models," "Learning to Revise Models," and "Learning the Reconstruction of a Model." These objectives are echoed in national and international education standards (KMK, 2005).⁴

Teachers can support students in understanding models by clarifying the difference between models and real-world experiences, discussing model limitations, and explaining how models evolve or are replaced (Justi and van Driel, 2005;). It's also important to teach students to use different models for different purposes and to address misconceptions that may arise, such as those related to model color. Teachers should actively involve students in the modeling process by guiding them through creating, developing, testing, and reflecting on their own models.⁵

To effectively teach with models, teachers need to create learning opportunities that include appropriate teaching models, modeling activities, and reflection on models. However, recent studies show that teachers often have limited knowledge about models and modeling in science, and research on this aspect of pedagogical content knowledge is scarce in India.⁶

Operationalisation of Chemistry Language:

Before discussing the role of language and chemistry language in the classroom, it's important to consider the broader concepts of language and communication. Communication is essential for human interaction and involves the exchange of information through various means, such as body language, speaking, writing, and visual aids. It typically involves a sender and a recipient within a specific context.⁷

Language is a key aspect of communication, used to share thoughts, beliefs, and knowledge. Technical languages, which are subject-specific, are developed for effective communication among experts. These languages are characterized by specialized vocabulary, complex syntax, and a focus on precision.⁸ In education, technical language is crucial for teaching and learning, especially in subjects like chemistry. Mastery of technical language in chemistry is linked to students' success in learning the subject, making it important for teachers to use and teach technical language effectively in the classroom.⁹

Measuring Teachers' Professional Knowledge

Various studies use interviews, questionnaires, tests, video analyses, or mixed methods to assess teachers' professional knowledge (e.g., Henze, Van Driel, and Verloop, 2007a; Justi and Gilbert, 2003).^{10, 11} Dollny's (2011) subject-specific professional knowledge test for chemistry teachers measures content knowledge (e.g., the periodic table, acids, and bases) and pedagogical content knowledge (PCK). Content knowledge items are in multiple-choice format, while PCK items use a Likert-scale. The test items were developed using the "Item Development Model for Assessing Professional Knowledge of Science Teachers", which categorizes knowledge into procedural, declarative, and conditional knowledge. Originally, PCK facets included knowledge of experiments, student conceptions, and models, with the later addition of chemistry language handling.¹²

PCK test includes some items on conditional and declarative knowledge of models, but it lacks sufficient coverage of models and chemistry language. To address this, new PCK items focusing on models and chemistry language in class were developed and included in a new test called FEMo (Fachsprache, Experiments, and Models). Items related to experiments were also added by Tepner, Backes, and Sumfleth for the main study but are not covered in this article.¹³

The new PCK items on models and chemistry language were evaluated in a pilot study. Two booklets, each with 15 items in a closed format, were created, allowing teachers to rate them on a 6-point Likert scale.¹⁴

Development of Pedagogical Content Knowledge Model Items

The structure of the pedagogical content knowledge (PCK) items follows the format developed by Dollny (2011). Each item begins with a classroom scenario, such as a student presenting a model. The teacher completing the test is asked to respond as if advising a novice teacher. Each item offers four response options, theoretically grounded in research on using models in class. The items are categorized into modeling processes, criticizing models, knowledge of models, and using models.¹⁵

The structure of the pedagogical content knowledge (PCK) items mirrors those by Dollny (2011). Each item presents a classroom scenario, like a student's model drawing, with the teacher responding as if advising a novice. Four answer options describe possible reactions, based on research and best practices for using models in class. The items are categorized into modeling processes, criticizing models, knowledge of models, and using models.¹⁶

Development of PCK Items for Using Chemistry Language

The subject-specific professional knowledge test by Dollny (2011) implicitly tests teachers' knowledge of chemistry language, which is closely tied to content knowledge (Merzyn, 2008). While chemistry language knowledge itself is not part of pedagogical content knowledge (PCK), knowing how to use and handle chemistry language is (Riese and Reinhold, 2012). Therefore, new test items were developed to assess this aspect.¹⁷

These items follow the structure of Dollny (2011). Each item begins with a brief classroom scenario, followed by a short dialogue between a pre-service teacher and students, inspired by videotaped lessons from a previous study. Teachers rate four possible responses or activities on a Likert scale from 1 ("excellent," "applicable") to 6 ("inadequate," "not applicable"), which aligns with the German grading system. A total of 15 items were created, each with four possible activities.¹⁸

Teacher Knowledge:

The knowledge base for teaching has been widely studied and consists of academic knowledge, pedagogical content knowledge (PCK), and experiential knowledge. Academic knowledge includes science content, understanding the nature of science, and knowing how and why students learn, typically acquired through formal university courses. PCK, initially described by and expanded by Grossman (1990), integrates subject matter knowledge, pedagogical knowledge, and context knowledge. Whether PCK is an amalgam of these domains or a unique domain remains debated.¹⁹ Expert teachers develop PCK through teaching experience, reflection, and practice, rather than through books or short courses. Experiential

knowledge is personal, tacit knowledge gained through teaching, informal conversations, and interactions with parents, making it highly context-dependent. A teacher's knowledge base is continually built and modified through study and experience, making it complex and difficult to assess. This study focused on how teachers' knowledge bases relate to curricular reform, exploring the areas where they seek new knowledge and the types of support they desire.²⁰

Many studies emphasize how teachers' personal beliefs about content influence curriculum implementation. Teachers tend to reject curriculum materials that conflict with their beliefs about content and its teaching, using materials that align with their views and modifying or discarding those that don't. Identified four belief categories affecting curriculum implementation: a teacher's role, how students learn, student group abilities, and the importance of subject content. Teachers often adapt new curricula to fit their own beliefs and context. Even when initially supportive of a reform, teachers may abandon it if their beliefs about teaching and learning clash with the new curriculum's demands, as seen in cases where teachers reverted to old methods when students struggled (Rousseau 2004; Van Veen et al. 2005).²¹

Discussion and Conclusion:

The pilot study's results are promising, indicating that the systematic approach to measuring chemistry teachers' PCK in handling models and chemistry language is effective. However, the small sample size and limited expert group are concerns. The high number of excluded relations in model items also reduces scoring consistency. Validity of the FEMo has yet to be analyzed, but plans include using expert ratings, think-aloud interviews, and contrast groups for validation with hopes for a reliable and valid PCK test instrument (FEMo).

Teachers rated the answers on a Likert scale (1 to 6), which was later dichotomized into "agreement" and "rejection". The expert ratings were used to assess teachers' ratings. Although the teachers' scores followed a normal distribution neither booklet A nor booklet B showed satisfactory reliability, likely due to the small number of items and participants.

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Advances in Raman Spectroscopy for Breast Cancer Diagnosis

Sanjay Awadhane

Department of Physics, Vai. Dhunda Maharaj Degloorkar College, Degloor. Dist. Nanded, Maharashtra, India.

Corresponding Author- Sanjay Awadhane

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Abstract:

Raman Spectroscopy has indeed shown tremendous potential in breast cancer diagnosis, offering real-time, non-invasive, and highly specific detection capabilities. By providing detailed molecular information, it enables clinicians to differentiate between normal and malignant tissues, assess tumor margins, and even detect specific biomolecules on tumor surfaces using SERS. The ability of Raman imaging to reveal the heterogeneous distribution of various compounds within cancerous tissues adds another layer of diagnostic power. It's exciting to see how this technology can aid in early detection, treatment planning, and monitoring of breast cancer.

Keywords: Raman Spectroscopy, breast cancer tissues, and normal tissues.

Introduction:

Cancer remains one of the world's most significant challenges, with a pressing need for the development of new diagnostic techniques ⁽¹⁾. Breast cancer is the most common cancer among women globally, and as of 2012, reducing its incidence and mortality has become a major public health priority. Upon the discovery of a breast mass, accurate diagnosis is critical. If the mass is suspected to be malignant, a core needle biopsy followed by histopathological analysis is typically required ⁽²⁾. Current data suggest that a woman has a one in eight lifetime probability of developing breast cancer ⁽³⁾. Consequently, significant research efforts have focused on improving breast cancer diagnosis and management. Over the past several decades, advances in surgery and treatment have led to substantial improvements in patient outcomes. Moreover, a variety of optical imaging and spectroscopic techniques are being explored to enhance breast cancer diagnosis and treatment ⁽⁴⁾. These techniques, which employ visible or near-infrared light, offer the potential to provide both chemical and morphological information while being less invasive than current diagnostic procedures. Raman spectroscopy is a powerful spectroscopic technique capable of providing detailed quantitative chemical and morphological information about tissues. It operates through an inelastic scattering process, where photons incident on tissue transfer energy to or from molecular vibrational modes ⁽⁵⁾. This energy transfer results in a shift in the frequency, or energy, of the emitted photon, hence the term "inelastic." Since the energy levels are unique to specific molecules, Raman spectra are particularly suited for in vivo measurements. The technique is non-destructive to tissue because the excitation wavelength and laser

fluence used are gentle and allow for a relatively large penetration depth ⁽⁶⁾.

We recorded Raman spectra to diagnose normal and malignant human breast tissue using freshly excised specimens. In this study, Raman spectroscopy was employed to evaluate the spectral differences between malignant and normal breast tissue. The goal was to identify characteristic features that could be used for diagnostic purposes. Notably, the maximum intensity ratio of the malignant to normal breast cancer absorption band at 1700 cm⁻¹ was found to be 8.55.

In the context of breast cancer diagnosis, Raman spectroscopy can be employed to record spectra from freshly excised specimens, enabling the differentiation between normal and malignant human breast tissues.

Material and methods:

Raman spectroscopy. Laser Raman Spectroscopy is based on the inelastic scattering of light from the sample and gives information on the electronic and vibrational states of the material. The Raman spectrum of material provides a unique fingerprint, which can be used as a non-destructive characterization tool with a minimum of sample preparation. Raman spectroscopy performed using a confocal Raman System (HORIBA) Jobin Yvon, France makes model HR800-UV. Raman spectrometer was available at LRS Lab, 1st Floor, CRNTS / SAIF, IIT Bombay. It is a combination of a Raman spectrometer and a standard optical microscope, with an optical microscope at the bottom for image acquisition and a Raman spectrometer at the top. The optical microscope is used to capture images of the area being examined, and the laser beam excited by the instrument is focused through the optical microscope as a tiny spot of light with a diameter of 1.5 μ m. The Raman signal in the area where the spot is located passes

through the microscope back to the Raman spectrometer to obtain the Raman spectral information of the tissue. For the single-point test, a 633 nm helium-neon laser was used in Duoscan mode, and the selected tissue area was scanned point by point. The Raman signal generated during the test was detected by synapse. Thermoelectrically cooled charge-coupled device camera with a spatial resolution of 3λ . The power of the laser reaching the tissue surface was 20 mw. No photodamage was observed in the samples after the mapping data acquisition. Rayleigh scattered light was filtered using a 4-notch filter (Horiba Jobin Yvon). The scanning range was 400-3,000 cm^{-1} ; the integration

time was 20 sec and the number of integration times was 1. The test tissue was kept moist with saline to effectively reduce the spectral background and photodegradation. Before the Raman spectroscopy test, images of the H&E-stained sections of the breast tissue were captured using a light microscope (Olympus Corporation) at x10 and x50 magnification. The optical images were obtained at the same position as the corresponding continuous frozen section. The wave number calibration setting referred to the vibration frequency of the silicon wafer at 520.7 cm^{-1} , and these parameters remained unchanged during all measurement processes.

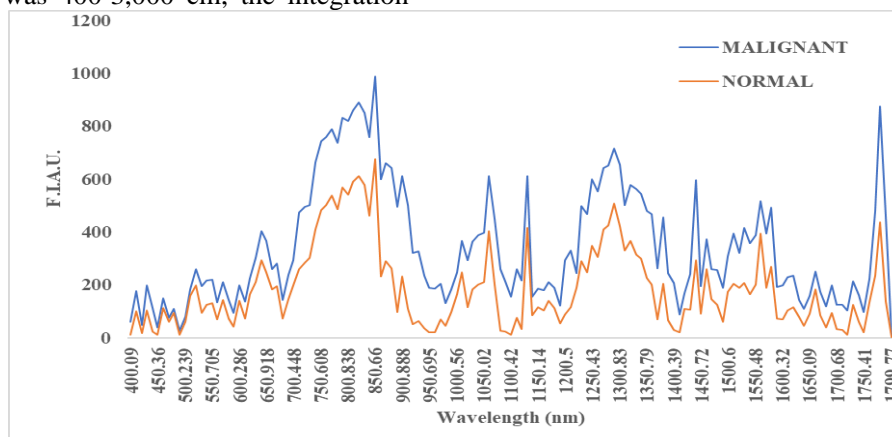


Fig. A. Raman Spectra of Malignant and Normal Tissue of Breast Sample

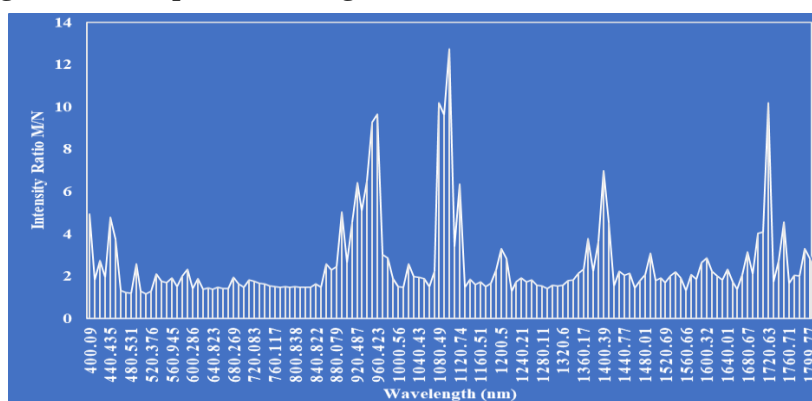


Fig. B. Intensity Ratio M/N of Breast Sample

Result and Discussion:

A Raman spectrum is obtained by plotting the intensity of scattered light as a function of frequency. By convention, the frequency of scattered light is expressed as Raman shifts, which represent the difference between the incident and scattered light frequencies (usually measured in wavenumbers, cm^{-1}). Since energy levels are quantized, Raman scattering occurs at discrete wavelengths corresponding to specific energy level transitions. Each type of sample has a distinctive chemical composition and molecular structure, resulting in a characteristic spectral fingerprint for breast tissue samples.

We record the energies of vibrational levels of normal and malignant sample Raman Spectra of four samples and display the results in figure A to

D. Considering the degree of malignancy directly proportional to the height of the peak, it can be seen the difference between normal and malignant spectra are quite significant. The comparison between Raman spectra of four breast cancers shows that the number of peaks observed is different. Further it is seen that peaks are obtained in different position showing that the four samples either differ in position in the breast or they differ in malignancy. The shift in the peak position shows that the vibrational constant of molecule changes and therefore the neighbouring situation is changed either tissue transform from normal to malignant condition. **Figure A** shows, the Breast sample having maximum intensity ratio at wavelength 1700 cm^{-1} is 8.55. **Figure B** shows Intensity Ratio M/N of Breast Sample. **Table A** of Breast sample, shows

height of the peaks of normal tissue is more than that of malignant tissue and width of the peak of normal tissue is more than malignant issue. **Table B** shows the details about Peaks in the Raman Spectra of Breast Sample.

This study indicates that, Raman spectroscopy can be used for the discrimination of normal and malignant tissues with possible in situ application. This approach can be an alternative to frozen. To

improve the classification, other parameters such as mahalanobis distance and spectral residuals being pursued. In these methods and standard sets for each category were developed and constituent spectra compared with standard sets for match or miss match. Raman spectra are complex and often contain broad peaks due to an ensemble effect with contribution arising from all the molecules present in the sample.

Table A: Details of Heights and Widths of the Peaks obtained in the Raman Spectra of Breast Sample

Sr. No.	Peak Number	Peak Height in cm		Peak Width in nm	
		M	N	M	N
1	1	104	38	10	20
2	2	50	8	20	20
3	3	59	7	10	10
4	4	109	36	30	30
5	5	62	28	30	30
6	6	84	29	20	20
7	7	78	33	20	20
8	8	50	10	10	20
9	9	63	53	40	20
10	10	101	111	20	40
11	11	44	46	20	30
12	12	28	18	20	30
13	13	140	53	30	30
14	14	132	76	20	10
15	15	61	19	20	20
16	16	62	61	10	30
17	17	23	138	30	20
18	18	215	41	20	30
19	19	52	158	30	30
20	20	28	52	20	30
21	21	149	54	20	30
22	22	105	25	20	40
23	23	31	130	10	30
24	24	114	150	20	40
25	25	192	38	50	20
26	26	91	49	20	20
27	27	47	51	20	30
28	28	181	69	30	40
29	29	81	199	50	40
30	30	17		20	
31	31	79		30	
32	32	133		60	
33	33	13		20	
34	34	452		60	

Table B: Details about Peaks in the Raman Spectra of Breast Sample

Sr. No.	Peak No.	Malignant		Normal	
		Energy (cm ⁻¹)	Intensity A.U.	Energy (cm ⁻¹)	Intensity A.U.
1	1	410.076	2.788084167	410.076	2.788084167
2	2	430	3.687916193	460.267	2.784664433
3	3	470.159	3.592897444	470.159	3.592897444
4	4	500.239	3.06323849	500.239	3.06523849
5	5	530.175	2.848661395	520.376	3.040254494
6	6	560.458	2.874075685	580.404	2.419632654
7	7	580.404	2.419632654	610.446	5.544396746
8	8	610.446	5.544396746	640.342	1.78445433

9	9	640.342	1.78445433	710.033	1.951024632
10	10	710.033	1.951024632	790.446	2.173804877
11	11	740.131	2.015856829	820.157	2.180841293
12	12	790.446	2.173804877	840.354	2.208352567
13	13	820.157	2.180841293	890.32	2.150944074
14	14	840.354	2.208352567	950.233	2.615588979
15	15	890.32	2.150944074	970.137	1.591891536
16	16	950.233	2.615588979	1050.02	2.265895901
17	17	970.137	1.591891536	1060.04	2.003747969
18	18	1050.02	2.265895901	1100.42	2.233799842
19	19	1060.04	2.003747969	1130.23	2.941043996
20	20	1100.42	2.233799842	1210.34	2.110201803
21	21	1130.23	2.941043996	1260.19	1.98814576
22	22	1170.42	2.189453656	1290.26	2.174076975
23	23	1230.42	2.980538798	1420.4	1.921786059
24	24	1280.11	2.011999952	1440.34	3.105698537
25	25	1290.26	2.174076975	1510.02	1.887806765
26	26	1340.31	3.109416403	1620.62	1.750758856
27	27	1420.4	1.921786059	1670.22	2.33121441
28	28	1440.34	3.105698537	1780.02	2.332704434
29	29	1510.02	1.887806765		
30	30	1560.24	1.970662479		
31	31	1580.37	2.962846357		
32	32	1610.05	2.118689079		
33	33	1670.22	2.33121441		
34	34	1780.02	2.332704434		

Conclusion:

Raman spectroscopy can assist in uncovering the molecular basis of the disease & provide objective quantifiable molecular information for diagnosis. Various interferences Such as fluorescence a process that usually compete with Raman scattering can hamper the interpretation of Raman spectra of breast sample preprocessing the raw data helps eliminate unwanted signal enhance Raman spectral features and allows more reproducible data for qualitative and quantitative analysis. Based on the chemical makeup of the lesion, we use Raman spectroscopy to diagnose benign and malignant lesions in human tissue. Spectra depict the morphological and chemical characteristics of breast tissue in the event of breast cancer. In the resulting diagnostic algorithm, the most important parameters are the fit coefficients for both fat and collagen. The excellent results show that Raman spectroscopy can be used in vivo to accurately classify breast lesions, which could lead to a decrease in the number of excisional breast biopsies performed. The distinction between cancerous and healthy ovarian tissues can be made using Raman spectroscopy. Raman spectroscopy is a very useful tool for collecting spectra from each class and for periodic monitoring. The Raman spectroscopic technique has >90% specificity and sensitivity for differentiating between normal and malignant tissues. The examination of the experimental data indicates that, with the appropriate filters, intensity mapping of the Raman spectra can be accomplished. Raman spectroscopy becomes more expensive since the laser source has a

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shorter lifespan. The cost is reasonable when considering its accuracy and dependability.

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Exploring the Role of Identity in African and Palestinian Literature: A Comparative Analysis of Racism and Psychological Factors

Qutaiba Mohanad Mhaidi Alhatemi¹, Dr. Rajesh Mehta²

^{1,2} Department of English, Gujarat University

Corresponding Author- Qutaiba Mohanad Mhaidi Alhatemi

Email- q.mohanad1994@gmail.com

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Abstract:

African and Palestinian narratives are chosen to investigate the thesis statement. A comparative commentary is presented on selected texts from African and Palestinian writers who share similar experiences of social injustice, oppression, and exile due to colonisation, racism, and state violence. More importantly, it is argued how both writers attempt to portray the understanding of external and internal forces that prevail against the motivation of such an existence. Finally, the counter-motivational forces that loom large upon the consciousness of the individual and collective disgrace are discussed in how these writers address their own people. A motivation and design of such an exploration is presented. Comparison of two colonised societies grounded upon racism, a spirit of investigation motivated by a similarity of experiences on both peoples and a rendering of character and nation is said to be open for further investigation. Racism operates on both cultures, and African and Palestinian writers, who rise to prominence, appear sympathetic to the misery of the other (Curtis, 2016). All have either written on pre-colonial and colonial power or violence or state power and violence. Introspection of psychological factors stems from a similar experience of social injustice and oppression and a fashion to discuss such an understanding of events is genre writing. Such a genre gift appears to be used to expose the forces behind misery in order to redeem the honour and dignity of both peoples' existence. As many African writers, Edward Said in *Orientalism*, Arab and Muslim scholarship appears to extract and develop in depth knowledge of such understanding.

Keywords: identity, Psychological Factors, Racism, suffering

Research Objectives

This study aims to conduct a comparative analysis of identity in selected African and Palestinian literary works. Eight literary texts have been selected and studied with a focus on the construction of identity in terms of similar theme texts bearing the idea of otherness and similar political scenarios. The selected poems by African poets, Maya Angelou, Okot p'Bitek, and Kofi Awoonor, and the Palestinian novels, "The Secret Life of Saeed the Pessoptimist," "Yalo," and "Wales," and Mutzafi-Haller's comparative analysis of Daoud's "The Last Palestinian," Hamid's "The Reluctant Fundamentalist," and Matar's "In the Country of Men" within the context of the post-colonial explores the portrayal of the other and the construction of identity in terms of racism. The common colonial experiences, race, language, and anthropology inspire the relationship between literature and identity in the selected texts.

The poems "Still I Rise," "Song of Sorrow," and "The Sea Eats the Land" explore black identity and otherness. The first poem focuses on the identity of the colonized black African, the attitude towards racism, and the assertion of self against it. The second epitomizes the construction of gender and

cultural otherness with a focus on Africa's contestation of stereotyping. The third presents the tragedy of the black people in bitter beauty. The novels spotlight the colonial effect on personal and national identity. "The Secret Life of Saeed the Pessoptimist" captures the life of the Palestinian highlander in his response to the controlling fate by employing humor against absurdity and oppression. "Wales" deals with how the perception of boundary, time, and self is affected by colonial history. The language of the colonizer and the colonized give rise to ambivalence in the predicament of the Palestinian, moral dilemma in identity formation, and violence in connection to the other. The other's strange circumstances influence the perception of the self and the identity of the colonized.

Scope and Limitations

The present study will propose a comparative analysis of the thematic concerns of the works of African literature as represented by Chinua Achebe's "Things Fall Apart" and Palestinian literature as reflected in the works of Mahmoud Darwish, Ghassan Kanafani, and Jabr Ibrahim Jabr. The thematic concern with identity, including the investigational focus of racism, exile, statelessness, and their psychological implications are studied.

Such concerns form a significant part of the pre-colonial, colonial, and post-colonial literature of both African and Palestinian writers and poets. The study covers how identity manifests itself in Achebe's "Things Fall Apart" and in the selected works of Darwish, Kanafani, and Jabr. Such a thematic concern with identity is comparative in the sense that it emphasizes both the similarities and differences that exist in the ways in which identity manifests itself in two different cultural contexts. The study encompasses a selection of canonical and major written works of the respective writers and poets. The choice of an African novelist and Palestinian poets and novelists is deliberate as the former pursues the roots of identity particularly in the context of Eurocentric colonial encounter and the latter pursues identity in poetic and narrative representation of Diasporic and stateless political existence.

By narrowing down the thematic concern with identity to a wide spectrum of racism, statelessness, and exile and their psychological implications, the study delves deep into the characterization of the African and Palestinian characters and the respective circumstances to which they have been subjected. It attempts to investigate how such a concern with identity assumes different meanings anchored in particular social and political histories, how it projects cultural specificities manifested in different social and cultural contexts, and how it in turns evokes character traits specific to African villagers and displaced Palestinians. The study is limited to a thematic concern with identity; hence other important areas of comparison ranging from form, style, and narrative technique to characterization are not included within the scope of the present study. Such a focus on identity, however, does not detract from its qualitative depth and richness. The focus on a single thematic concern allows a deeper exploration of the ontological and epistemological understanding of identity and the psychological aspects involved such as the experiences of loss, trauma, uprootedness, and rediscovery.

Literature Review

The inquiry into literature, both as a work and a manifestation of artistic inclination, has incited a multitude of discussions centering on the reasons for literature being sought after, penned, and engaged with by individuals and society. Essentially, literature can be deemed a means of examining various aspects entangled in the continuum of life, resultant practices, and the world. Whether tangibly or intangibly experienced, purposed for self-awareness, social consciousness, political figures, philosophical connotations, scientific inclinations, the supernatural, or any other entities, literature is an instrument of examination. Frequently disregarded investigations and

perplexing complexities symbolizing – yet un verbalized but deeply interpreted – fears, moralities, and meanings frequently find their portrayal and written articulation in literature. Hence, literature can be perceived as a work aiming to signify a unit of inquiry employing imaginative means. Literature enriches inquiry endeavors paving a path for awareness beyond acquired awareness within the temporal settlement.

The ongoing inquiry regarding the role of identity in African and Palestinian literature has a significant place and effect on the literature, identity, and the declared interaction with inquiry via literature cultural assemblage. These investigation accumulations are merging yet remaking their modulations owing to specific assemblages of history, art, and society. The inquiry per here accords with the engagement rules, persuasively impacting the literary inquiry encompassing these assemblages or collections of African and Palestinian literature. The engagement of these inquiries with art amplifies the discretion and mediation of inquiries or interrogations engaging – or provoked by – the contentions and poetics of art assemblages. Questions regarding the essence and effect of identity in African and Palestinian literature have occurred in mutual intellectual environments and/or discorded academic and cultural assemblages, yet cognizant of the assemblies' historicities and preclusions.

The manner in which the essence and effect of identity, and consequently racism, have challenged the reshaping of African and Palestinian literature has become the mediating congregational interaction with literature inquiry. The outcome of these interactions has wide-ranging results, reshaping the premise and queries of inquiry engagement. Owing to their colonial/decolonial and racist condition, literature and the art ascribes an intersectional mutual engagement with the inquiry of identity formation and its affair with the representation of the human and inquiry via literature. Yet, the aftermath condition of this association remains limited, not equal in inquiry engagement or wide-ranging effect, rendering the chatter and inquiry mundanely understood.

Concept of Identity in Literature

The concept of identity is an extremely complex and subjective theme to discuss, especially in literary works. Three working definitions of identity construction theory by various sociologists are examined here, to look at how these theories are played out in three selected novels and how different social and psychological factors influence them. In order to understand the flux and change of identity in the characters, this article will attempt to explain both internal and external factors that contribute to either the re(de)construction or de(con)struction of their identity. In turn, these

novels will show how the construction of identity is an extremely complex and multi-faceted process (Kit Tay et al., 2016).

The construction of identity within a character through the lens of social constructionism will be examined. Social constructionism is a sociological concept that was pioneered by Berger and Luckmann in 1966. This theory argues that people create and shape their own world and everyday lives through language, interactions, and institutional practices. As a society evolves through social processes, certain patterns and routines of behavior become habitual and entrenched in human societies. These patterns are sustained by established social structures and institutions. There are a few definitions of identity. Social identity refers to the ways in which individuals define themselves in relation to groups or categories. Personal identity refers to the subjective and qualitative attributes of an individual, which differentiate them from others across time and different situations. Consequently, individuals become aware of the self as a unique being.

Methodology

This study employs a comparative analysis approach between an African novel and a Palestinian novel, exploring themes of identity, racism, and psychological factors in the context of colonialism and its aftermath.

3.1. Comparative Analysis Approach The comparative analysis approach was selected due to the ability to draw substantive parallels between the two chosen works, despite their differing contexts. Novels from these two literary traditions are similar in their engagement with the theme of identity, particularly relating to the experience of racism. Moreover, both literary traditions grapple with similar global circumstances in their colonial history, drawing significant parallels between the psychological and social aspects of their respective experiences.

3.2. Text Selection Criteria The novels selected for this comparative analysis approach are: "The Scent of the Invisible" by the contemporary Senegalese novelist, poet, and essayist, F. N. D. Mbaye, who writes in French, and "The Inheritance" by the contemporary Palestinian novelist, K. E. Abulhawa, who writes in English. Both novels were published in 2013 and recount the trajectory of the childhood and upbringing of their respective narrators, shedding light on their experiences of racial and political discrimination. The titles chosen for this comparative analysis also engage with a similar metaphorical theme—the denotation of a smell—offering an opportunity to investigate their relationships with a critical focus on identity and racism. This comparative analysis involves close readings of particular passages from each text and unearthing connections between the two novels on

three levels, including (1) character-based connections (the narrators), (2) textual connections (the engagement with the similar metaphor of a smell), and (3) thematic connections (the focus on identity and racial discrimination), followed by a discussion of the implications of these connections.

3.3. Data Collection and Analysis This study employs a comparative textual analysis approach, involving detailed reading and close examination of selected texts, and exploring connections and parallels between them. Textual analysis is the key method used for this comparative thematic analysis, requiring careful attention to language and form in diverse genres and artistic endeavors. Textual analysis sheds light on power relations, facilitating understanding of their implications on a local, national, and global scale.

Result and discussion

Racism, colonial oppression, and related identity crises constitute a primary regard of the African canon of literature, particularly from the late nineteenth century onward. The earliest African texts were written in the shadow of colonial oppression and European racism that necessitated the maintenance of over twenty states and nations under colonial rule. However, the African canon of literature represents an organized response of resistance against colonial oppression championed by various generations and schools of African writers. The writings of the early generation of writers reacted primarily to the colonial condition of the misrepresentation of the African race, existence, and culture with a strong desire to bring humanity to the African race. The thematic development of African literature depicts stages of literary growth. On the other hand, of the Mediterranean, the Palestinians have a similar history of colonization, oppression, and dispossession at the hands of the Anglo-Zionist movement. One of the oldest manifestations of the Palestinian struggle for freedom is Palestinian poetry, which was a vehicle of deep emotion and national aspirations. The Palestinian poetry of resistance persisted throughout decades of bitter struggle and harrowing suffering in a rich corpus of poetic expression. Selected Palestinian poems are concerned with the experiences and struggles of women under colonial hegemony and their portrayal as mothers of martyrs. This aspect is closely examined and utilized for a comparative analysis of the dual or multiple roles controversial, interweaved, complicated, and challenging of the African and Palestinian woman and eye through the racist lenses of colonial oppression, which obstruct her individuality in all regards and senses.

Conclusion

This paper has examined the role of identity in African literature and Palestinian literature, with a focus on the works of Bessie Head and Ghassan

Kanafani. Both authors grapple with similar racial issues rooted in colonialism and the consequent psychological impacts. The analysis has shed light on the ways in which both authors depict the formation and destruction of identity, as well as the coping mechanisms developed in response to these processes.

The theoretical contributions of this study include the comparative analysis of two distinct literary traditions in relation to the theme of identity, specifically the exploration of the role of race therein. The psychological implications arising from strong racial identity, as portrayed in both literary traditions, is also a significant aspect of this study. The practical implications include highlighting these issues to readers of these literary traditions and inspiring further engagement with the works discussed, as well as potentially other works pertaining to the broader themes of identity, its formation and destruction, psychological implications, racism, the inferiorization of humanity, and coping mechanisms.

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Biofertilizers for Sustainable Agriculture: A Review

Anand Arunrao Atnoorkar

Department of Microbiology, Vai. Dhunda Maharaj Degloor College, Degloor.

Corresponding Author- Anand Arunrao Atnoorkar

Email: anand_atnoorkar@rediffmail.com

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Abstract:

Agriculture is the sole element in human livelihood. World human population depends on agriculture for food, feed, fiber, gum and products of medicinal value. To meet the need of increasing population for food requires suitable methods for agricultural practices. Chemical fertilizers and pesticides are used indiscriminately for increasing crop yields. The indiscriminate use of agrochemicals causes environmental pollution leading to public health hazard. Biofertilizers find important role in sustainable agriculture. This review provides the use of microorganisms as biofertilizer, their role in maintaining soil fertility and increasing crop yield for sustainable agriculture.

Keywords: Agrochemical, environmental pollution, biofertilizer, sustainable agriculture

Introduction:

All living beings require nutrients for their growth. For proper crop plant development seventeen nutrients are required. These nutrients are classified into three groups as i) major ii) minor and iii) micro nutrient based on their quantitative requirements. Carbon, hydrogen, oxygen, nitrogen, phosphorus and potassium are major nutrients; calcium magnesium and sulphur are minor nutrients and micronutrients are boron, chlorine, copper, iron, manganese, molybdenum, zinc and nickel (Brahmaprakash and Sahu, 2012).

Chemical fertilizers are the main product for soil nutrient supplementation. These are extensively used in agricultural production (Cleland, 2013, Godfray *et al*, 2010) for quick and efficient increase in food production (Brown, 1981, Velimirovic *et al*, 2021). However, the indiscriminate use of chemical fertilizers cause environmental and health hazards (Zaho *et al*, 2024).

Organic farming:

Organic farming plays important role in sustainable agriculture (Fatimah *et al*, 2021). Sustainable agriculture means the efficient production of safe, high quality agricultural products in a way that protects and improves the natural environment, the social and economic conditions of farmers, their employees and local communities and safe guards the health and welfare of all farmed species. Organic farming ensures food safety and maintains biodiversity of soil. Biofertilizer is one of the components of organic farming.

Biofertilizers:

Biofertilizers are eco friendly alternative to chemical fertilizers and promote sustainable agriculture (Olanrewaju *et al*, 2017). Biofertilizer is

a substance containing living microorganisms which when applied to seed, plant surface or soil, colonizes the rhizosphere or interior of plant and promotes growth by increasing the supply or availability of plant nutrients (Vessey, 2003). These microorganisms are generally called plant growth promoting microbes (PGPM), plant growth promoting bacteria (PGPB) or plant growth promoting rhizobacteria (PGPR).

Types of biofertilizers:

Biofertilizers are classified as Nitrogen fixing, Phosphorus solubilizing, phosphorus mobilizing, silicate and zinc solubilizing biofertilizers. The nitrogen fixing biofertilizers preparation uses nitrogen fixing bacteria such as Azotobacter, Rhizobium, Azospirillum, Clostridium, Anabaena, and Nostoc. Bacillus, Pseudomonas, Penicillium, Aspergillus is used in Phosphorus, silicate and zinc solubilizing biofertilizers. Mycorrhizae such as Glomus sp, Scutellospora sp, Laccaria sp, Pisolithus, Boletus, and Pezizella sp can be used as phosphorus mobilizing biofertilizers (Satish kumar *et al* 2022). Biofertilizers have an ability to mobilize nutritionally important elements from non usable to usable form. These microorganisms require organic matter for their growth and activity in soil and provide valuable nutrients to the plant. The microorganisms in biofertilizers restore the soil natural nutrient cycle and build soil organic matter. The use of biofertilizers helps in maintenance of soil health.

Formulation of biofertilizers

The success of biofertilizers depends on microbial strain and formulation. Formulation determines the potential success of biofertilizer (Fages, 1992). There are different ways to formulate biofertilizers.

Carrier based biofertilizers

Carrier material plays important role in formulating microbial fertilizers. It is a delivery vehicle for transferring microorganisms from laboratory to field. Carrier based biofertilizers production is cheap, easier to produce and require less investment. However, there are certain limitations like low shelf life, temperature sensitive, contamination prone, low cell count and less effective. Researchers developed different materials as carrier for *Rhizobium*, *Azotobacter*, and biocontrol biofertilizers. Coal (Dube *et al*, 1980), Lignite (Kandasamy and Prasad, 1971), clay and inorganic soil (Chao and Alexander, 1984), compost, farm yard manure, soybean meal (Iswaran *et al*, 1972), wheat bran (Jackson *et al*, 1991), Press mud (Philip and Jauhri, 1984), spent agricultural material (Sadasivam *et al*, 1986), spent mushroom compost (Bahl and Jauhri, 1986), vermiculite (Paau *et al*, 1991, Sparrow and Ham, 1983), perlite, ground rock phosphate, calcium sulphate, polyacrylamide gel (Dommergues *et al*, 1979), Alginate and polymer entrapment (Bashan, 1986, Jung *et al*, 1982, Walter and Paau, 1993, Mugnies and Jung, 1985), Peat (Bagyaraj *et al*, 2002).

Liquid biofertilizers

It contains nutrient medium with microorganisms and cell protectant in package. Liquid based biofertilizers production is easier to produce, longer shelf life, temperature tolerant, high cell count, contamination free and more effective. The disadvantage of this technology is high cost and higher investment for production unit. Polymers used in liquid biofertilizers preparation include polyvinyl pyrrolidone (PVP), methyl cellulose, Polyethylene glycol, gum Arabica, trehalose and glycerol (Tittabutr *et al*, 2007, Singleton *et al*, 2002, Mary *et al*, 1983, Al- Rashidi *et al*, 1982, Lippert and Galaniski, 1992, Streeter, 1985, Bushby and Marshall, 1977, Girisha *et al*, 2006, Shridhar *et al*, 2004, Vitthal Navi, 2004, Velineni and Brahmaaprakash, 2011).

Field Application and crop yield

Application of biofertilizers in agriculture can effectively increase crop yield. Pal *et al* (2015) reported 10-40% crop yield. Bomfim *et al* (2021) used biological nitrogen fixation biofertilizers in soybean cultivation and reported increase in crop yield. Raimi *et al* (2021) reported 48% increase in soybean yield. Pandey and Kumar (1989) reported 1-72% increased yields of different crops with *Azotobacter* inoculation. Lakshminarayana *et al* (2000) observed 16.3% increases in wheat grain yield with *Azotobacter chroococcum* strain A103. Sangwan *et al* (2012) showed 32.6% increase in seed yield with *Bacillus* strain SYB101. Cyanobacterial strains applied biofertilizers increases soil fertility and crop yields of chilly, rice, barley, maize and tomato (Rodriguez *et al*, 2006,

Wilson, 2006, Bhuvaneshwari and Singh, 2015, Thajuddin and Subramanian, 2005).

Therefore the use of biofertilizers is right choice for sustainable agriculture. The awareness programs carried out by government and related agencies resulted in the increased proportion of farmers using biofertilizers in modern agricultural practices.

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Green Consumer Behavior towards Green Products

Dr. S.Yuvaraj¹, Mrs. M. Divya², Mrs. K. Priya³

¹Assistant Professor, Department of Commerce, University of Madras, Chepauk, Chennai – 05

^{2,3}Ph.D. Research Scholar (Full Time), Department of Commerce, University of Madras, Chepauk, Chennai- 05

Corresponding Author- Dr. S.Yuvaraj

Email id: drsyuva@gmail.com

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Abstract:

Climate change, operated by environmental pollution and the use of hazardous products, is affecting lives globally. Green products help to minimize environmental pollution and support sustainable lifecycles. This study focuses on consumer behavior toward green products, analyzing awareness, willingness to pay, and perceptions. It is concluded that while consumers are aware of and have a positive attitude towards green products, high costs, and limited availability hinder regular use. Affordable pricing and easier access are the keys to increasing adoption.

Keywords: Green products, Green consumer behavior, consumer perception, Environment impact, Social influence, Climate changes, Organic products.

Introduction:

Green products are designed to minimize the impact on the environment throughout the lifecycle, promoting sustainability through reducing waste and maximizing resource efficiency. The green consumerism concept involves consumers making purchase decisions consciously to protect the environment. The consumers range from highly committed to those who are not aware of green products. This shift towards sustainability is taken by growing environmental concerns and supported by global initiatives and agreements. It also explores green marketing strategies and the importance of understanding green consumer behaviour. The study focuses on green product consumption in Chennai city, noting that adoption is low due to factors like lack of awareness and high prices. Key terms such as consumer, green - labelled products, awareness, and willingness to pay are defined to provide context for the study on green consumerism and its role in addressing environmental challenges.

Statement of the Problem:

Although green products are becoming more popular, many people remain unaware of their availability, benefits, and environmental impact. Industries also lack a clear understanding of why consumers choose green products, as purchases are driven by health concerns rather than environmental considerations. Promoting green product consumption is essential to reducing environmental impact. This study focuses on Chennai, a major Indian metropolitan area that is named a “green city,” for a better understanding of consumer behavior towards green products.

Limitations:

The study is limited to Chennai metropolitan city. The study deals only with consumer awareness, perception, and willingness to pay towards buying green products. The study is only focusing on the buying behavior of consumers towards green products from a consumer point of view.

Review of Literature:

Green marketing shows positive correlations between consumer awareness, perception, environmental concerns, and purchasing decisions for ITC consumers in Bangalore, indicating potential benefits for companies adopting such strategies (Rana.S, 2022). Based on the study described in this article, the key conclusion is that consumers in Tamil Nadu, India are becoming more aware of and interested in green products, but there are still challenges around awareness, availability, and pricing that need to be addressed for green marketing to be more widely successful (George, A. S.et.al. (2022). This study examines consumer perceptions and behaviours towards green products in Chennai, India, finding that attitudes toward the environment, social influence, health consciousness, and perceived consumer effectiveness significantly influence green purchasing intentions (Vijayalakshmi, r.et.al, 2021). The study reveals the systematic review identifies ten key thematic clusters influencing green cosmetics product intention and behaviour, providing valuable insights for marketers to develop effective strategies in promoting eco-friendly beauty products (Danish.M et.al, 2019). Green products companies should focus on clear labelling, strategic positing, accessibility, and competitive pricing to effectively attract and

increase purchase among young consumers (Tan.C.N.L, et.al, 2019)

Objectives:

1. To analyze the consumption behaviour of Green Consumers towards Green Products.
2. To study the Awareness, willingness to pay and Perception of consumer attributes on Green Consumer Behaviour.

Research Methodology:

This study is constructed on primary data collected from green consumers who are willing to buy green products and use green products. Primary

Table 1: Consumer awareness about green products.

Parameters		No.Of Respondents	Percentage
Tv	Yes	139	53.5
	No	121	46.5
Word Of Mouth	Yes	89	34.2
	No	171	65.8
Internets	Yes	154	59.2
	No	106	40.8
Newspapers	Yes	74	28.5
	No	186	71.5
Seminars/ Conferences	Yes	33	12.7
	No	227	87.3
Friend/Relatives	Yes	115	44.2
	No	145	55.8

Sources: Primary data

The tables 1 interpret how respondents get an effective root of awareness about the green products. 53.5% of them got awareness from TV, 34.2% were aware of green products through word of mouth, 59.2% were aware through

data was collected through a structured questionnaire among consumers who use green products and are willing to buy green products. The secondary data are collected from various articles, journals, survey reports, and internet sources. Convenient sampling techniques are used the Sample Size is 260 samples, Statistical Tools used are Percentage Analysis, Regression Analysis, and Software: SPSS 21 is used.

Analysis and Interpretation of Data:

Medium of Usage:

internet sources, and 28.5% of them were aware through newspapers, 12.7% of them get awareness through seminars and conferences, 44.2% of them gets awareness through friends and relative.

Usage of Products:

Table 2: Consumer Consumption of Green Products.

Parameters		No.Of Respondents	Percentage
Organic food products	Yes	191	73.5
	No	69	26.5
Cosmetics and personal care products	Yes	116	44.6
	No	144	55.4
Electrical appliances	Yes	62	23.8
	No	198	76.2
Soft goods	Yes	60	23.9
	No	200	76.9

Sources: Primary data

The table 2 interpret the respondent's usage of green products. 73.5% of them were consumers of organic food products, 44.6% of them were users of cosmetics and personal care products, 23.8 % of them were users of electrical appliances, and 23.9% of them were users of soft goods.

Regression Analysis

H₀1: There is no influence on consumer

willingness to pay for green products and consumer buying behaviour of green products.

H_a1: There is an influence on consumer willingness to pay for green products and consumer buying behaviour of green products.

Table 3: Model Summary

Model	R	R Square	Adjusted R square	Std. Error of the estimate
1	0.682	0.466	0.464	5.98474
Predictors: Level of Perception				
Sources: Primary Data				

Table 3 infers the regression matrix to identify the influence of level of perception on consumer buying behavior. The model summary, in which R has a value of .682 indicates that there is a strong correlation between the independent variable (level of perception) and the dependent variable (consumer buying behaviour). The value of R² is .466 or 46.6 % of the variance is consumer buying behaviour on

their willingness.

Regression Analysis:

H₀2: There is no influence on consumer perception about green products and consumer buying behaviour of green products.

H_a2: There is an influence on consumer perception about green products and consumer buying behaviour of green products.

Table 4: Model Summary

MODEL	R	R Square	Adjusted R square	Std. Error of the estimate
1	0.779	0.607	0.605	5.13541
Predictors: Level of Perception				
Sources: Primary Data				

Table 4 infers the regression matrix to identify the influence of the level of perception on consumer buying behaviour. The model summary, in which R has a value of .779, indicates that there is a strong correlation between the independent variable (level of perception) and the dependent variable (consumer buying behaviour). The value of R² is .607 or 60.7 % of the variance is consumer buying behaviour is cost by level of perception.

Conclusion:

This study analysed green consumer behaviour, awareness, willingness to pay, and perceptions towards green products. The finding shows that consumers feel high costs and limited availability hinder regular use. Consumers are willing to pay for eco-friendly items if competitively priced. While awareness and positive attitudes exist, actual purchasing behaviour is significantly influenced by pricing and accessibility. Government policies promoting affordable, accessible green products could potentially bridge this gap, leading to improved environmental outcomes and quality of life.

For Future Research:

The future research can be done on electrical appliances and in different cities, as this study is done with the green consumer in Chennai city.

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Assessing the Impact of Rainfall Intensity on Well Density in Nashik District: A Geographical Perspective

Mr. Dhanraj Kalu Ahire

Department of Geography, K.A.A.N.M. Sonawane Arts, Commerce And Science College Satana (Nashik)

Corresponding Author- Mr. Dhanraj Kalu Ahire

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Abstract:

The present investigation aims to conduct a geographical analysis of the impact of rainfall intensity on well density in the Nashik district. The study is primarily based on secondary data from the Socio-Economic Abstract of the Nashik District, 2023. This paper comprehensively analyzes rainfall distribution, rainfall intensity, well density, and their correlation within the study region. The research applies the rainfall intensity method, the well density method, and the Pearson correlation coefficient technique. The findings indicate that rainfall distribution in the Nashik district decreases from west to east, while well-density increases from the western to the eastern part of the district. High well density was observed in low-rainfall regions, whereas low well density was found in high-rainfall regions. Correlation analysis reveals a strong negative relationship between rainfall intensity and well density. Therefore, it can be concluded that limited availability of surface water leads to a higher density of wells, as farmers increasingly depend on groundwater for irrigation.

Keywords- Agriculture, Wells, Rainfall, Wells Density, Rainy Days, Intensity of Rainfall)

Study Area –

Nashik district is situated partly in the upper Godavari River basin and partly in the Tapi River basin. It lies between 19° 33' to 20° 53' north latitude and 73° 15' to 75° 16' east longitude. Nashik district covers an area of 15,530 sq. km and has a population of 6,107,187 according to the 2011 census. The district comprises 15 tehsils. The main Sahyadri Mountain range runs north-south through the western portion of the district. Nashik is surrounded by Dhule district to the north, Jalgaon and Aurangabad districts to the east, Ahmednagar district to the south, Thane district to the southwest, and Gujarat state to the northwest. The climate of the district is generally dry except during the monsoon season, with an average annual rainfall of 915.9 mm.

Objectives-

The main objectives of the present paper are as follows-

1. To study the rainfall pattern and intensity of rainfall in the study area.
2. To study the wells irrigation density of the study area.

3. To study the relationship between rainfall intensity and well density in the study region

Data Source and Methodology.

This study is based on both secondary data and fieldwork. The necessary statistical information was obtained from sources such as the Census Handbook, records from the local bodies' statistical department of the Government of Maharashtra, the Meteorological Department, and field surveys. The collected data was processed, edited, and analyzed using various statistical methods, and the findings are presented through tables and maps. The rainfall intensity was calculated using the Monkhouse and Wilkinson formula (1971).

$$I = \frac{A}{N}$$

I= Intensity of rainfall

A= Total rainfall given period

N= Number of rainy days

The wells densities are calculated by using following formula

$$\text{Wells Density} = \frac{\text{Number of wells}}{\text{Toatal area}}$$

Result and Discussion

Rainfall distribution and rainfall intensity in Nashik District

Sr.No	Tehsil	Rainfall (MM)	No.of rainy day	Rainfall intensity
1	Nashik	1186.3	67	17.71
2	Peint	2914.6	97	30.05
3	Dindori	1774.1	83	21.37
4	Surgana	2589.6	92	28.15
5	Kalwan	1304.4	71	18.37
6	Baglan	933.7	55	16.98
7	Malegoan	858.1	56	15.32

8	Chandwad	1196.3	75	15.95
9	Nandgaon	957.6	56	17.10
10	Yeola	735	59	12.46
11	Niphad	890.9	66	13.50
12	Sinnar	1014.4	65	15.61
13	Igatpuri	2486.1	97	25.63
14	Trimbakeshwar	2370.7	94	25.22
15	Deola	879.4	55	15.99
	Nashik district	1466.08	60.1	24.39

Source-Nashik District statistical abstracts 2023-24

The rainfall patterns in the Nashik district are influenced by topography, leading to spatially and seasonally uneven distribution. The southwest monsoon typically begins around the first week of June and continues until early October. In 2023, the district recorded an average rainfall of 1466.08 mm. The district is divided into three rainfall zones. The western zones, including Surgana, Peth, Igatpuri, and Trimbakeshwar tehsils, experience heavy and reliable rainfall, with annual totals exceeding 1800 mm, largely due to the Sahyadri mountain range. The central tehsils, such as Dindori, Kalwan, Nashik, Sinnar, and Chandwad, receive moderate rainfall, ranging from 1000 mm to 1800 mm annually. In contrast, the eastern and northern tehsils, including Baglan, Deola, Nandgaon, Yeola,

Wells Density in Nashik District

Sr.No	Tehsil	No of wells	Area km.	Density
1	Nashik	18365	588.79	31.19
2	Peth	7275	572.98	12.70
3	Dindori	21622	1400.25	15.44
4	Surgana	2569	847.28	3.03
5	Kalwan	9897	874.81	11.31
6	Baglan	18248	1479.28	12.34
7	Malegaon	8316	1832.29	4.54
8	Chandwad	26118	962.23	27.14
9	Nandgaon	24391	1082.04	22.54
10	Yeola	32108	980.6	32.74
11	Niphad	42526	1140.4	37.29
12	Sinnar	19976	1360.89	14.68
13	Igatpuri	9107	825.29	11.03
14	Trimbakeshwar	3183	886.67	3.59
15	Deola	19496	559.5	34.85

Source-Nashik District statistical abstracts

The physical setting of wells is generally influenced by topography and groundwater behavior, leading to significant variation in the tehsil-level distribution of wells per square kilometer of cultivated area. In Niphad tehsil, a high well density of 37.29 wells per square kilometer is observed, while Surgana tehsil records a low density of 3.03 wells per square kilometer. High well density zones are found in the tehsils of Niphad, Chandwad, Nandgaon, Yeola, Deola, Baglan, and Nashik. Moderate well density is observed in Peint, Dindori, Igatpuri, Baglan, Kalwan, and Sinnar tehsils. Low well density is characteristic of Surgana, Malegaon, and Trimbakeshwar tehsils.

Niphad, and Malegaon, are characterized by lower rainfall, with annual totals below 1000 mm. Overall, the rainfall distribution in the Nashik district decreases from west to east.

The term "rainfall intensity" refers to the rate at which rainfall occurs over 24 hours. In the Nashik district, the average rainfall intensity is 24.39 mm. The highest recorded intensity is 30.05 mm in Peint tehsil, while the lowest is 12.46 mm in Yeola tehsil. Generally, rainfall intensities exceeding 20 mm are observed in the tehsils of Igatpuri, Peth, Dindori, Surgana, and Trimbakeshwar. In contrast, the lowest average rainfall intensities are recorded in the tehsils of Nashik, Baglan, Malegaon, Chandwad, Nandgaon, Yeola, Niphad, and Sinnar.

Overall, well-density tends to increase from the western to the eastern part of the Nashik district.

Correlation Between rainfall intensity and wells density

- **Null Hypothesis (H₀):** "There is no significant relationship between high rainfall intensity and the density of wells."
- **Alternative Hypothesis (H₁):** "Changes in rainfall intensity significantly impact the density of wells, indicating a direct relationship between increases or decreases in rainfall intensity and corresponding variations in the density of wells."

The correlation analysis reveals a strong negative relationship ($r = -0.60$) between the rainfall intensity and the density of wells. Therefore, we can express that there is no significant relationship between the high rainfall intensity and the density of wells, and changes in the rainfall intensity do not influence

variations in the density of wells in the study region. According to the correlation analysis, the P-value (0.000018) obtained from the correlation analysis indicates that it is below the 0.01 chance significance at the 1 percent level. (Table-)

Table no.3- Correlation between Rainfall Intensity and Wells Density

Variables	N	Correlation (r)	P-value (0.01 Level)
Rainfall Intensity	15	-0.60	0.000018
Wells Density	15		

Source: Compiled by the Researcher

The research findings strongly accepted the null hypothesis (H0), positing that There is no significant relationship between rainfall intensity and the density of wells in the study region. Conversely, Hypothesis (H3) states that Changes in rainfall intensity significantly impact the density of wells, indicating a direct relationship between increases or decreases in rainfall intensity and corresponding variations in the density of wells has been rejected. Therefore, we can assert with 99 percent confidence that there is no direct correlation between rainfall intensity and the density of wells ratio in the study region.

Conclusion:

Rainfall distribution, the number of rainy days, and rainfall intensity directly influence the density of wells in the Nashik district. In the western parts of the district, including Surgana, Peth, Igatpuri, and Trimbakeshwar tehsils, high rainfall, more rainy days, and high rainfall intensity contribute to a lower density of wells. This is because the abundant availability of surface water sources like streams, rivers, and tanks provides sufficient water for agricultural needs, reducing the reliance on groundwater. Farmers in these areas primarily use surface water for irrigation, minimizing the need for wells. In contrast, the central and eastern parts of the Nashik district experience decreased rainfall, fewer rainy days, and lower rainfall intensity. This limited availability of surface water leads to a higher density of wells, as farmers increasingly rely on groundwater for irrigation. The density of wells is a critical factor in agricultural development in these regions. Generally, as rainfall distribution, the number of rainy days, and rainfall intensity decrease from the western to the eastern parts of the district, the density of wells increases. Thus, rainfall plays a significant role in determining the density of well irrigation in the Nashik district. The correlation analysis reveals a strong negative relationship ($r = -0.60$) between the rainfall intensity and the density of wells. Therefore, we can express that there is no significant relationship between the rainfall intensity and the density of wells, and changes in the rainfall intensity do not influence variations in the density of wells in the study region.

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A Study on Consumer Awareness and Satisfaction towards Online Digital Payment System with Special Reference to Uba Adopted Villages of Vellalar College for Women, Erode

Dr. M. Baby¹, Dr. G. K. Sukanya²

^{1,2} Associate Professor, PG & Research Department of Corporate Secretaryship, Vellalar College for Women, Erode

Corresponding Author- Dr. M. Baby

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Abstract:

The Digital Payment has become the buzz word in the Indian Economy. With the advancement in technology and with the Financial Inclusion every one can experience the banking with a touch of screen. The Digital Parameters go beyond the boundaries that enable to undergo the financial transactions worldwide. Commodities are easily bought without the physical cash and challenges in carrying money are beneath the purpose of the transaction. This paper is an attempt to identify the satisfaction of the customers in enabling the digital payment easier and in enabling the difficulties faced in the cash free transactions that prevail in the modern societal platform of today's Indian Economy

Keywords: Digital Payment, Financial Inclusion, Commodities.

Introduction:

With the advancement in technology Government of India is committed to expand digital transactions in the Indian economy to enhance the quality and strength of the financial sector. Digital India is a mission propelled by the Government of India driven by Prime Minister Narendra Modi to lessen the reliance of Indian economy on money. Payment systems are social infrastructures that support all economic activities. Whenever individuals or organizations go into economic transaction for example purchase and sale of goods and services, thereof the values should be settled down. Before the idea of cash, all the settlements were done through the exchange of commodities or services which is known as the barter system. After the concept of cash came into existence, all the clearance of commodities and services were being influenced or settled down with the payment of cash. A large percentage of payments were carried out.

Statement of the Problem

The growth of digital ecosystem in India has been driven by a number of factors, including the government's push towards digitalization, an increase in internet and Smartphone penetration, and the rise of e-commerce. The Indian government has been actively promoting the use of digital technologies through various initiatives such as Digital India, Make in India, and Startup India. These initiatives aim to increase the use of digital technologies in various sectors such as healthcare, education, and agriculture, and also to create a conducive environment for start-ups to flourish. The

increase in internet and Smartphone penetration in India has also played a major role in the growth of the digital ecosystem. Besides there were many disadvantages for the payment with regard to literacy, payment option, usage of smart phone in the rural area yet there are many questions that were unanswered.

1. What are the factors affected with the digital payment system?
2. Do the users are really satisfied by the services offered?
3. Have the users faced any difficulties in making payment?

Objectives:

1. To identify the socio economic profile of the respondents residing at Erode District.
2. To examine the awareness level of the respondents in the digital payment system.
3. To study the factors that influence adoption of digital payment system.
4. To analyse the level of satisfaction obtained on adoption of digital payment system.
5. To measure the risk and grievances faced by respondents.

Need For the Study:

The Government of India is planning to focus on the cashless economy. This is the need of the hour to know how effectively all payments can be made through smart applications. The emergence of today business is paramount with the technology as all the consumers are availed with smart phones. According to a report by the Internet and Mobile Association of India, the number of internet users in India is expected to reach 800 million by 2023. This

increase in internet users has also led to an increase in the number of mobile wallet users in India, which is expected to reach 900 million by 2025. The economy is shifting even if they have knowledge regarding the services such as QR payment UPI payment. It is necessary to know that they are aware of the various options in digital payment and to know the satisfaction level in the minds of the respondents. The more important is to know that they have faced the risk and recovered from the grievances occurred. The study had attempted to study the customer's awareness and satisfaction in digital payment in the UBA adopted villages of Vellalar College for Women.

Scope of the Study:

In this world any country can be go ahead only without corruption in the country. To remove this corruption one have to choose way to digitalized all transaction related to cash or money because digitalized of transaction can remove the black money. Here black money means unaccounted money if have all transactions related to money digitalized then one have proof of all transactions. For fulfill this purpose online payment system in recent make a great step ahead because all online transactions are digitalized.

This study will help to know about the perception of customers toward digital economy. The study ensures to describe the advantages and draw backs of digital economy and will find out the problems which any customers face practically on the time of adoption of online transaction.

Due to demonetization people become familiar with digital transactions. A large number of people know about online transaction system after demonetization that is need of the hour to study the satisfaction of digital payment.

Hypothesis of the Study:

H0: Individuals' awareness regarding functioning of various modes of digital payment is not associated with their demographic characteristics

H1: Individuals' awareness regarding functioning of various modes of digital payment is associated with their demographic characteristics

Variables Response Variable:

Explanatory Variables:

Gender

1. Age
2. Marital Status
3. Educational Qualification
4. Occupation
5. Monthly Income
6. Area of Locality
7. User of Digital Payments

Methodology for Analysis:

In the present study descriptive research design has been used. A structured questionnaire was used for the study. The instrument contained 2 closed ended questions to know that respondents are aware

the concept of digital payments or not and 1 multiple response question to check the awareness regarding functioning of selected seven modes of digital payment i.e. UPI, AEPS, Banking cards, USSD, E-wallets, RTGS, NEFT. The interviewer filled 250 respondents from Erode District. Primary data collected through schedules was analyzed quantitatively with the help of statistical techniques. Primary data are entered in SPSS version 20 (Statistical Packages for Social Sciences) and analyzed.

Limitations for the Study:

1. The sample respondents are limited to the area residing at UBA villages.
2. The data provided are the opinion; perceptions and belief of the respondents which are subject to change and may vary.
3. The Findings of the study reveal the accuracy of the data provided by the respondents.

Profile of the Uba Adopted Villages of Vellalar College for Women

Unnat Bharat Abhiyan is inspired by the vision of positive transformation in rural development processes by leveraging knowledge institutions to help build the architecture of an inclusive India.

The Mission of Unnat Bharat Abhiyan is to enable higher educational institutions to work with the people of rural India for identifying developmental challenges and evolving appropriate solutions for accelerating sustainable growth. It also aims to create a virtuous cycle between society and an inclusive academic system by providing knowledge and practices for emerging professionals and to upgrade the capabilities of both the public and the private sectors in response to the developmental needs of rural India.

Unnat Bharat Abhiyan aims to build an understanding of the development agenda with institutions of higher education thereby fostering an institutional capacity and training relevant to national needs, especially those of rural India. It establishes extending a nexus between rural India and the professional resources of the institutions of academic excellence in the fields of Science, Engineering and Technology and Management.

The major area of thrust and focus under UBA 2.0 are human development and economic development which need to be developed through continuous progress in Health, Education and Culture, Values and Perception Development, Skills and Entrepreneurship, Organic Culture and Cow-based Economy, Water Management and Conservation, Renewable Energy Sources, Artisans and Rural Industries, Basic Amenities and E-support, Development and Harnessing of Local Natural Resources.

As a participating institution, the college has adopted five villages under Unnat Bharat Abhiyan

2.0 Kaarapparai (Thindal), Saanarpalayam (Villarasampatti), Chinnapuyur, Gunduchettipalayam, Siraimetanpalayam in Erode District. The institution with an intense social responsibility aims to provide various skill sets training to the rural people and boosts them to enhance their economic and social status.

During last five years, various easy and convenient modes of digital payments, including Bharat Interface for Money-Unified Payments Interface (BHIM-UPI), Immediate Payment Service (IMPS), and National Electronic Toll Collection (NETC) have registered substantial growth and have transformed digital payment ecosystem by increasing person-to-person (P2P) as well as person-to-merchant (P2M) payments. BHIM UPI has emerged as the preferred payment mode of the citizens and has recorded 803.6 crore digital payment transactions with the value of 12.98 lakh crore in January 2023.

Review of Literature

Literature review as per the name show it is process of reviewing of research literature which is done by any researchers in past. A literature review is an exploration to identify the related research to make or set relation with current research project with a conceptual and theoretical context:

PreetiGargAndManviPanchal (2016) - According the study on 'Introduction of Digital Economy In India 2016' the research scholars explain the benefits and challenges towards adoption of digital economy in India. After demonetizing the Indian government has implemented major changes in their economic environment of commerce. The government works on many policies to decline the dependency on cash. And start many programmes at various levels to encourage the people to do digital transaction to strengthen the digital economy in the interest of everyone. After all this a large part of Indian population is still outside the scope of online transaction.

Piyush Kumar and Dr. DhaniShankerChaubay (2017): In his research paper 'Demonetization and Its Impact on Adoption of Digital Payment' researchers explain the opportunities issues and challenges in adoption of digital payments after demonetization these digital payments changed the economic condition of Indian government. After demonetization E- payments become a day to day part of Indian peoples. Mobile payments are also adopted after demonetization by Indian peoples. Mobile banking are also adopted which provide by the banks which allows the customers to doing transactions with their mobile devices.

K.SumaVelly and K.HemaDivya-(2018): In their study on "Digital Payment in India with Perspective of Consumer Adoption" they said that due to demonetization it's resulted tremendous growth in

digital payments. These transformations make a great change toward digital payments and make a more transparency in transactions which empowers the economy of the country. The purpose of this study is to get a research the impact of demonetization on adoption of online payments and digitization of payment system to analyses the level of adoption of digital payment system by the customers' E-payment system are important mechanism used by the individual and organization as a convenient way of making payments over the internet and at a same time a gateway to technological advancement.

Research Gap:

From the above studies it was observed that the consumer or any ordinary person was to incorporate the digital payment as the new avenue of online services that has increased the stigma in e-business. Now days the consumer usage of digital technology has made a tremendous impact in knowing the awareness and bridging the gap of satisfaction. Indeed there is a gap to study the consumer satisfaction and the risk associated with the adoption of this digital software in recent phenomena.

Research Methodology:

Research Design should be done through Questionnaire and with the help of responses. Research Methodology basically uses for how can design research paper and how collect the data every detail given below:

Data Sample:

In this research paper, random sampling method was used and data was collected through the Questionnaire in Descriptive form.

Sample Size:

For this research survey the questionnaire was distributed and collected 250 responses that were randomly gathered.

Area Selected for Research:

The survey was conducted in the urban area as well as rural area from the target people of UBA adopted villages of Vellalar College for Women.

Data Collection:

In this research survey data has collected from two: Primary data and Secondary data. In primary data has collected from direct interview, by mail, questionnaire, personal meeting. Basically more responses gather from questionnaire and these responses are essential for research work. Secondary data was collected through the Internet / web sides, research papers, Journal articles, books, and Shodganga and news paper.

Data Analysis:

In this research work, data has collected through the Questionnaire from 250 Responses and the data given in questionnaire were tabulated for the convenience of research Work.

Table 1 – Socio Economic Profile of the Respondents

1.Gender	No.of Respondents	Percentage
A. Male	118	47.2
B. Female	132	52.8
2. Marital status		
A. Married	160	64
B. Unmarried	90	36
3. Income level		
A. Less than 1L	46	18.4
B. 1L to 2L	73	29.2
C. 2L to 3L	58	23.2
D. 3L to 4L	58	23.2
E. Above 5L	15	6
4. Occupation		
A. Employed	30	12
B. Business	70	28
C. Professional	56	22.4
D. Unemployment	29	11.6
E. Home maker	65	26
5. Educational Qualification		
A. Illiterate	27	13.2
B. School	85	34
C. Graduates	90	36
D. Professional Course	15	6
E. Any other	33	13.2

From the Table 1 it was observed that the majority of the respondents use their digital payment through the technology they impart with the smart mobiles. The data revealed that Female showed the major significance and the married use the technology of banking more with 64%. The respondents with the Income level between 1 Lakh to 2 Lakh showed their majority of this payment

option by using the technical environment. The percentage of Business people and the Home Maker showed their interest in enabling the payment through the advanced technologies. The respondents are identified that the majority of them are Graduates where the survey was carried out in the adopted villages.

Table 2 –Awareness of Digital Payment System

Digital Payment System	N	Minimum	Maximum	Mean Std.	Deviation
Credit card	250	1	2	2.23	0.44
Debit card	250	1	3	2.38	0.473
Rupaycard	250	1	3	1.98	0.791
Visa card	250	1	3	1.86	0.822
Master card	250	1	3	2.04	0.882
USSD(unstructured supplementary service data)	250	1	3	1.26	0.629
AEPS (Aadhar enabled payment system)	250	1	3	1.99	0.768
Free charge	250	1	3	1.62	0.741
Bank prepaid cards	250	1	3	1.94	0.709
IMS	250	1	3	2.14	0.814
RTGS	250	1	3	1.63	0.718
NEFT	250	1	3	1.62	0.758

Paytm	250	1	3	1.49	0.707
UPI(unified payment system)	250	1	3	1.26	0.772
App banking	250	1	3	1.9	0.861
Airtel money	250	1	3	1.31	0.536
Samsung pay	250	1	3	2.06	0.817

From Table 2 it was observed that the Standard Deviation was high among the respondents who used Debit cards, Credit Cards, IMS and Mobile payments like Samsung Pay and App Banking. The deviation is highly measured in terms of Master

Card, Visa Card and App Banking. It means to tabulate that most of the respondents are aware of the various available option in availing the digital payment.

Table 3 - Factors That Influenced the Digital Payment

Mode of payment	Rank of Factors
A. Convenience	1
B. Transparency	10
C. Enhanced credit access	8
D. Safe & secure	9
E. Speed	7
F. Timely delivery	6
G. Financial inclusion	5
H. Trust	2
I. Customer information security	3
J. Self-Efficacy	4

Table 3 represents the factors that aimed to make the convenient and safe payment solution. It was observed that the digital payment ensure to have a continuity of payments even for a small traders. The respondents observed that there is an assured convenient and easy access to payment that ranked as 1. Financial Inclusion is the next criteria as it is offered anywhere anytime to receive payments from mobile. There is a lot of security in maintaining the information of the customers maintained. Next

important factors ranked were the safety in making payment. Multiple authentications that a respondent need to come across in making the payment. Speed in delivering the bills and payment is a highly important. Increased transparency is maintained in the digital payment to have the accessibility in the matters of payment that is received by the respondents. Some has also opted for the credit which is less ranked as compared to that of other factors.

Table 4: Association of Response Variable with Explanatory Variables

		Gender	Age	Marital Status	Educational Qualification	Occupation	Monthly Income	Area of Locality	User of Digital Payments
Satisfaction regarding functioning of various modes of digital payment	Chi square	64.939	75.306	29.759	68.887	65.476	95.934	21.628	56.996
	Df	7	21	7	14	28	21	7	7
	Sig.	0	0	0	0	0	0.003	0	0

Table 4 depicts that all values are significant at 5 % level of significance. There is a significant Association of response variable with all the explanatory variables meaning that there is an effect of all Explanatory variables on individual 's satisfaction regarding functioning of various modes of Digital Payment.

Table 5 - Awareness of Risk in Digital Payment

Awareness of risk associated with digital payment	Mean Score	Rank
Hacking	0.6544	6
Tracking of consumer behavior	0.7421	5
Unauthorized access to financial information	0.93486	1
Data breaches		
Phishing scams	0.74589	4
Cyber attacks	0.8546	2
	0.85432	3

Table 5 represents that awareness with regard to the risk orientation in making the digital payment. The respondent has observed a great influence with regard to unauthorised access in financial information and phishing scam. The impact of all

the information obtained in the news telecast, social media, cyber security all gave much information with regard to tracking of customer information. The mean scores represent the last rank to the Hacking of information.

Table - 6 Problems in Digital Payment in India

Problems Identified	Rank
A. Security	8
B. Perceived risk acceptance	9
C. Trust	7
D. Processing speed	6
E. Usability	1
F. Connectivity Issue	2
G. Rural Adoption	10
H. Language Barrier	3
I. Credit risk	10
J. Digital literacy	5
	4

Table 6 represents the Challenges faced in the Digital Payment System. Majority of the respondents believed that not everyone is able to get uninterrupted connectivity. There is also a network problem in remote locations. The high responses were in the language barrier. The majority of respondents identify the digital literacy as one of the barrier. The rural respondents does not have an impact of cyber fraud.

Findings, Suggestions and Conclusion

Findings

1. Majority of the respondents were in the Male category for the digital payment solution.
2. The respondents in the Income group from 1lakh-2lakh show high payment under digital mode.
3. The respondents as home maker and doing

business do a digital payment more.

4. The respondents who completed Graduates show the major interest in online payments.
5. The debit cards and the mastercards are highly influential among other payment in the digital payment. All the respondents are also aware of the app wallet and banking methods available for the digital platform.
6. Convenience and customer information security act as the key source in obtaining the factors influencing the digital payment.
7. There is a close association between the satisfaction and demographic factors of the respondents in the adopted villages.
8. The unauthorised access to cyber security act as the important awareness to risk
9. Majority of the respondents agree with

uninterpreted service act as the major risk factor. Along with this there are also language barrier that the respondents cannot overcome with the risk availed by respondents.

Suggestions:

1. The technology is the revolution of today's digital environment. Hence all the respondents may have to learn to operate the digital payments.
2. Respondents must explore more with adequate information in facilitating the services in the cashless economy.
3. The users must get awareness before the usage of any digital application in order to have the maximum satisfaction of it.

Conclusion:

The government's contribution for digital payment transactions is a significant step towards achieving the goal of a cashless society. This allocation will help to increase the number of people who use digital payment methods, which will in turn help to reduce the dependence on cash transactions. Additionally, the government's initiatives to provide incentives for merchants and to build infrastructure to support digital payments will help to create a more conducive environment for digital payments to thrive. This move will also help to increase the overall financial inclusion in the country and will bring more people under the ambit of formal banking and financial services. With the increasing adoption of smartphones and internet access, digital payments are becoming more accessible to more people. This allocation will help to further increase the use of digital payments and reduce the dependence on cash transactions, which will help to create a more efficient and secure financial system for all Indians.

The digital payments ecosystem in India has also grown significantly in recent years, driven by a combination of government initiatives, an increase in internet and smartphone usage, and the rise of e-commerce. One of the key initiatives is the launch of the Unified Payments Interface (UPI), which allows for real-time inter-bank transactions, and the Bharat Interface for Money (BHIM) app, which simplifies the process of making digital transactions.

In conclusion, the digital payments ecosystem in India has grown significantly in recent years, driven by government initiatives, an increase in internet and smartphone penetration, and the rise of e-commerce. The digital payment ecosystem is supported by private players who offer a range of digital payment services. The future of digital payments in India looks bright with the expected growth in the number of internet users and e-commerce market size. Digital Payment Dashboard has been integrated with Integrated with 118 public sector, private sector, payments, and regional rural

and foreign banks. In FY 2021-22, 8,840 Crores Digital Payment Transactions were achieved with 87.20% Current & Savings Accounts seeded with Aadhaar Number, 81.05% Current & Savings Accounts seeded with Mobile Number.

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Zinc Chloride an efficient catalyst for the Synthesis of α -hydroxyphosphonates

Pokalwar Rajkumar

Dept. of Chemistry, Degloor College, Degloor, Nanded-431717, India.

Corresponding Author- Pokalwar Rajkumar

E-mail: rajkumarpokalwar@gmail.com

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Abstract:

Zinc chloride serves as a cost-effective, efficient, non-toxic, and gentle catalyst for the synthesis of α -hydroxyphosphonates from 2-chloroquinoline-3-carbaldehyde and triethylphosphite, using ultrasound irradiation in a solvent-free environment. This method offers several notable benefits: it involves straightforward experimental procedures, achieves shorter reaction times, provides high product yields, and promotes environmentally friendly practices by eliminating the need for toxic catalysts and solvents. All synthesized compounds were characterized using IR, ^1H NMR, and mass spectroscopy.

Keywords: α -hydroxyphosphonates, 2-chloroquinoline-3-carbaldehyde, zinc chloride, ultrasound irradiation, triethylphosphite.

Introduction:

The quinoline ring system is a crucial and prominent class of heterocyclic compounds, serving as a key intermediate in the synthesis of numerous pharmacologically significant molecules.¹ Quinoline derivatives display a wide range of physiological and biological activities, including antimalarial,² anti-inflammatory,³ antitumor,⁴ DNA binding,⁵ antibacterial,⁶ antimicrobial,⁷ anticancer,⁸ anti-tuberculosis,⁹ antihistamine,¹⁰ antifungal,¹¹ anti-HIV,¹² antihypertensive,¹³ and antiparasitic properties.¹⁴ Quinoline is also employed in the study of bioorganic and bioorganometallic processes. For instance, 2-chloroquinoline-3-carbaldehyde is particularly significant as it serves as a key intermediate for further annelation and various functional group transformations.¹⁵

Reports on the synthesis and bioactivity of C–P bonds are limited, but these compounds have been shown to exhibit insecticidal¹⁶ and antifungal¹⁷ properties. Additionally, α -hydroxyphosphonates and α -aminophosphonates are recognized for their significant biological activity.¹⁸ α -Hydroxyphosphonates can act as precursors for the synthesis of α -aminophosphonates, which are amino acid analogs. They are also useful in the preparation of α -halo substituted alkenes and alkynes, which are important intermediates in organic synthesis.¹⁹ Over the past two decades, several synthetic methods for preparing α -hydroxyphosphonates have been reported.²⁰ In the literature, α -hydroxyphosphonates have been synthesized using various methods, including: a quinine catalyst in toluene,²¹ DBU or *n*-BuLi in THF,²² HCl media in DCM,²³ LiClO₄ in diethyl ether with trimethylsilyl chloride (TMSCl), toluene with Ti(O*i*Pr)₄,²⁴ hydroxyphosphorylation of aldehydes catalyzed by guanidine hydrochloride in

water,²⁵ BF₃·etherate with AlCl₃,²⁶ and TFA or TfOH.²⁷

Currently, advancements in synthetic and catalytic chemistry have led researchers to develop environmentally friendly processes to reduce or eliminate harmful effects. In the past decade, the use of solvent-free reaction conditions in organic chemistry has been extensively explored and proven to be an effective method for a range of organic reactions. It has been shown to be an efficient technique for various organic reactions. Solvent-free conditions frequently result in significantly reduced reaction times, higher yields, simplified workup, and improved regio- and stereoselectivity, all of which align with green chemistry principles.²⁸

Ultrasound irradiation has become a crucial technique in synthetic organic chemistry, serving as an effective heating source for organic reactions. The primary advantage of ultrasound-assisted reactions is their significantly reduced reaction time. Additionally, this method offers simple experimental procedures, very high yields, enhanced selectivities, and cleaner reactions, making it a valuable tool in synthetic organic chemistry.²⁹

Result and discussion:

The initial method for synthesizing α -hydroxyphosphonates, known as the Abramov reaction, involved heating an aldehyde or ketone with trialkylphosphite at 70-100°C for several hours in a sealed tube.³⁰ previously, we reported the synthesis of α -hydroxyphosphonates³¹ from 2-chloroquinoline-3-carbaldehyde by refluxing in toluene, with TMSCl added at reflux temperature, and also at room temperature without solvent. However, adding TMSCl at reflux temperature is not environmentally friendly due to the emission of gases during the process.

In an effort to improve reaction conditions, we conducted the reaction using 2-chloroquinoline-3-carbaldehyde, triethylphosphite, and zinc chloride as a catalyst under ultrasound irradiation. By maintaining the same proportions of reactants and catalyst at room temperature, we observed a significant reduction in reaction time (10 minutes) and achieved a predominant yield. This clearly demonstrates the impact of zinc chloride catalyst and ultrasound irradiation on the synthesis of α -hydroxyphosphonates (Scheme-1 and Table-1).

The reaction workup was straightforward due to the high solubility of the catalyst in aqueous media. The main significance of this work lies in its adherence to green chemistry principles by avoiding hazardous solvents used in previous methods. We synthesized eight compounds using the same procedure, achieving quantitative yields for each. All synthesized compounds were characterized by spectral analysis and physical constants, and their results were compared with authentic samples.

Experimental:

2-Chloroquinoline-3-carbaldehyde was prepared in the laboratory using a reported method. Triethylphosphite was obtained from Lancaster; while zinc chloride and DMF were sourced from S.D.F.C. Melting points were determined using an open capillary method on a Kumar melting point apparatus. The products were characterized by their spectral data. ^1H NMR spectra were recorded on a Varian Gemini at 400 MHz in CDCl_3 , with TMS as an internal standard. IR spectra were obtained using a Perkin Elmer FTIR with KBr discs. Mass spectra were measured on a Micromass Quattro-II with electrospray ionization, identifying the molecular ion peak as the (m+1) peak. Product purity and

Scheme 1. ZnCl_2 catalyzed synthesis of α -hydroxyphosphonates under ultrasound.

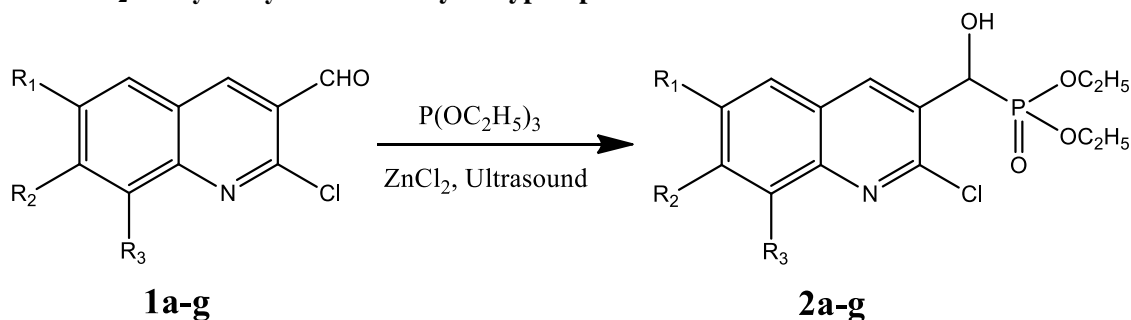


Table 1. ZnCl_2 facilitated synthesis of α -hydroxyphosphonates.

Entry	R_1	R_2	R_3	Time (min)	Yield (%)	MP ($^{\circ}\text{C}$)
2a	H	H	H	12	95	122-124
2b	CH_3	H	H	11	94	142-144
2c	H	CH_3	H	10	94	127-129
2d	H	H	CH_3	12	95	142-144
2e	OCH_3	H	H	12	94	169-171
2f	H	OCH_3	H	10	96	151-153
2g	OC_2H_5	H	H	12	95	166-167
2h	H	H	C_2H_5	12	94	148-150

reaction progress were monitored by TLC on Merck silica gel plates.

General procedure

(2a) Diethyl (2-chloro-quinolin-3-yl) (hydroxy) methylphosphonate:

To a mixture of 2-chloroquinoline-3-carbaldehyde (0.95 gm, 5 mmol), triethylphosphite (1.65 gm, 10 mmol), and a catalytic amount of alum, ultra-wave sonication was applied at room temperature. The reaction progress was monitored using TLC. Upon completion, the reaction mixture was poured over crushed ice. The resulting products were then filtered, dried, and recrystallized from alcohol. All products were confirmed by spectral analysis, yielding 1.56 gm (95 %) with a melting point of 124–126 $^{\circ}\text{C}$.

IR (KBr), cm^{-1} : 3246 (-OH); 1218 (-P=O); 1033 (-P-O-C).

^1H NMR (CDCl_3), δ ppm: 1.2 (t, 3H, $\text{O-CH}_2\text{-CH}_3$); 1.3 (t, 3H, $\text{O-CH}_2\text{-CH}_3$); 2.0 (s, 1H, -CH-OH); 4.0 (m, 4H, $\text{O-CH}_2\text{-CH}_3$ and $\text{O-CH}_2\text{-CH}_3$); 5.6 (d, 1H, -CH-P=O); 7.5 (t, 1H, Ar-H, C_6); 7.7 (t, 1H, Ar-H, C_7); 7.8 (d, 1H, Ar-H, C_5); 8.0 (d, 1H, Ar-H, C_8); 8.6 (s, 1H, Ar-H, C_4).

ES MS: m/z 330 (m+1) and 331.9 (m+3).

Diethyl (2-chloro-8-methylquinolin-3-yl) (hydroxy) methylphosphonate (2c).

IR (KBr) cm^{-1} : 3240 (-OH); 1215 (-P=O); 1037 (-P-O-C).

^1H NMR (CDCl_3), δ ppm: 1.2 (t, 3H, $\text{O-CH}_2\text{-CH}_3$); 1.3 (t, 3H, $\text{O-CH}_2\text{-CH}_3$); 2.4 (s, 1H, -CH-OH); 2.7 (s, 3H, Ar- CH_3); 4.2 (q, 2H, $\text{O-CH}_2\text{-CH}_3$); 4.3 (q, 2H, $\text{O-CH}_2\text{-CH}_3$); 5.6 (d, 1H, CH-P=O); 7.4 (t, 1H, Ar-H, C_6); 7.6 (d, 1H, Ar-H, C_5); 7.7 (d, 1H, Ar-H, C_7); 8.5 (s, 1H, Ar-H, C_4).

ES-MS: m/z 344 (m+1)

Conclusion:

In conclusion, a novel methodology for the preparation of α -hydroxyphosphonates (2a-h) from 2-chloroquinoline-3-carbaldehydes (1a-h) has been produced. This method employs triethylphosphite with zinc chloride as a catalyst under ultrasound irradiation at room temperature, achieving quantitative yields. The method offers significant advantages, including straightforward experimental procedures, reduced reaction times, high product yields, and environmentally friendly aspects by avoiding toxic catalysts and solvents. It holds potential for applications in combinatorial chemistry.

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Geographical Analysis of Human Resources in Parbhani District, Maharashtra State, India

Dr. Anand Walankikar

Assistant Professor, Department Of Geography, V.D.M.D.College,Degloor

Corresponding Author- Dr. Anand Walankikar

Email- a.v.walankikar@gmail.com

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Abstract:

For the purpose of this research study, the second source of data is crucial. Between 1961 and 2011, information from the Indian census was used to produce this statistics. To evaluate human resources, two approaches one analytical and the other qualitative are used. The human resource is an asset that depends on its qualitative elements. Among the main subcategories of qualitative criteria are knowledge, literacy, skill, age group, and other aspects. In other words, the resources of a community have a significant role in the sociocultural and economic development of that area. Resources considered in this research study include population density, literacy rates, sex ratios, and demographic change. Population is seen as a resource if a certain area has a high rate of literacy. If people are in good health, resources are also available. The population that employs technology and other tools is also a resource. If an area has a high level of economic growth, it likely has a wealthy population that makes a significant contribution to that development. The population should be valuable to the nation or to any other element in addition to being enormous and useless.

Keywords: Population Growth Rate, Population Literacy, Sex Ratio, Population Density, Population Size, Birth rate, Migration, Human Resources

Introduction:

Resources, whether natural or human, have a role in the socioeconomic growth of any nation or region. There are two ways to quantify the wealth of human resources: numerically and qualitatively. While quantitative population is mostly focused with people's knowledge, skills, group sex, and population density, qualitative population is primarily concerned with people's population density and population distribution. Population growth and distribution make up the majority of numerical resources, whereas qualitative resources primarily include people's abilities, knowledge, age range, literacy, sex ratio, and general state of health. These include geographical elements like the sex-to-literacy ratio, population size, growth rate, etc. A population is seen as a resource if a certain area has a high rate of literacy. If people are in good health, resources are also available. The population that employs technology and other tools is also a resource. If an area has a high level of economic growth, it likely has a wealthy population that makes a significant contribution to that development. There is a population being supported by the region's resourceful individuals because of the region's high level of transportation and industrial connectivity.

In other words, the population should be valuable to the nation or to any other element in addition to being enormous and useless. We must consider how

well that population will function as a resource. Numerous facilities and amenities must be made available for this. Agriculture development and regional economic growth are both dependent on human resource development.

Study Area:

Parbhani district is situated in the central of Maharashtra and lies between 18 45' North to 20 01' North latitudes and 76 13' East to 77 26' East Longitudes. The boundaries attached to the neighboring districts on north by Buldhana and Akola, on east by Hingoli and Nanded, on south Latur and Beed and on west Jalna district. The river Purna runs on the boundaries of Hingoli and Parbhani district and work as attach these two regions. The other River Godavari which runs on the boundaries of Beed and Parbhani forms a part of study region. It runs through Pathri, Sonpeth, Manwat, Gangakhed, Palam and Purna tahsils. The area of study region is 6511 sq. kms, which is 2.11 percent of the total area of the state. The population of the study region is 1491109 (2001 census) which is 2.76 percent of the total population is 229 persons per sq.km. Among the thirty five districts of the state, the district ranks 26th in terms of population and 18th in terms of density. The region includes 830 inhabited villages and eight urban centers. The study region is administratively subdivided into nine tahsils namely Parbhani, Gangakhed, Palam,

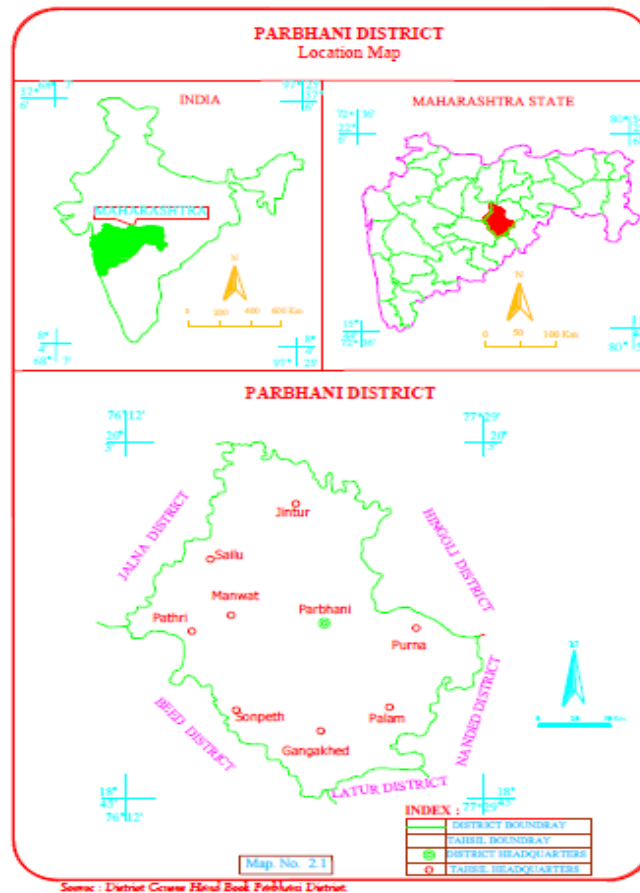


Fig no.1

Aims and Objective:

The secondary sources serve as the foundation for this research project. This scholarly work examines the district of Parbhani's human resources geographically. As a result, the primary objective of this study article is to examine it from the perspective of human resources.

Methodology

The research strategy used in this paper mostly relies on secondary sources that have statistical data. It starts with acquiring information in a range of media from the Internet, scholarly papers, and reference books. Read the section on human resources to finish. The argument presented is that individuals are resources. Numerous books, journals, and internet resources were used to compile the whole collection of theoretical and

conceptual information. It may be referred to as a hypothesis or thought because all of this information has been obtained based on this premise. This study compiles statistical data from the Parbhani district censuses from 1961 to 2011. Population factors include growth, sex ratio, literacy, and density.

The development plan must be built on the type of population distribution. Global human economic growth has not been universal. In other words, a person's quality determines how valuable they are as a resource. There are many factors that have an impact on human resources, but measures like population growth, population density, literacy, and sex ratio are among the most important. All of these factors have an impact on how an area develops economically.

Table No.1. Human Resources Parameters

Human Resources Parameters				
Years	Population Growth Rate in %	Population density Per Sq. Km	Population literacy in %	Sex ratio
1961	18.66	104	26.45	962
1971	24.9	133	36.23	956
1981	22.68	159	43.16	959
1991	28.88	198	61.03	949
2001	-29.57	229	67.04	957
2011	23.12	295	75.22	940

Sources: Analysis by Investigator

Population growth rate:

The growth of population in an area is determined by three basic factors namely births, deaths and migration. The difference between birth and deaths is called natural increased in population and with considering births, deaths, and migration is called total population growth. Human resources are divided into numerical and qualitative and Population growth is measured in quantity. Population growth is a factor on the human resources, which determines the birth rate and mortality rate in the area, as well as the medical facilities in the area. It also indirectly gives your health information. From table number 01, it is clear that every census period's population has seen increasing or decline population growth. In 1961, the population growth rate was 25.88 percentage and in 1971 years, it was 27.7 percentage. But by 1981, it had shrunk to 19.7 percentage of the population. In 1981, for the last twenty years, the population has grown at a slower pace. And the next time you see population growth in 1991, it's 24.54 percentages. But the population growth above the 2001 census appears to have decaling in the previous census year. In 2011, the population increased again to 12.43 percentages. In 1961, the population growth rate in the rest of the negative. It was the most urban areas in the migration rate of the brief was clear this was more than the population growth in large-scale migration from rural areas to urban areas. Birth and death rate affects two important factors above the population growth rate. Third, migration also affects this factor. It is noticed from the table that except during the decade 1991 to 2001, positive growth rate of population is observed in remaining all the decades. It is also noticed that it is highest (28.88 percent) in 1981-1991 and lowest during the decade 1991-2001. Growth rate of rural population is noticed negative (-38.06 percent) during the decade 1991-2001. This is because of separation of Hingoli district from the study region.

Population density

Population density is measured in quantity because human resource is measured in qualitative and quantitative. Population density affects regional inequality. Population density shows the relationship between land and population, as well as how much pressure is exerted on a natural resource. Population density is expressed by how many people live in per square kilometer. The distribution of urban and rural population in the study region is uneven and largely influenced by physiographic and socio-economic conditions prevailing in the area. Whether a region or a district is densely or sparsely population is determined by its density of population. The ratio of the population density, mainly showing the population density according to the 1961 to 2011 census periods. From this group it is clear that the population density is increasing with

each census periods, this means that the population growth rate is constantly increasing. This means that the population density was 104 per sq. km in 1961 census year; it was 198 km in 1991 census year and 295 sq. km in 2011 census year.

Population literacy:

Literacy is considered to be one of the most important factors in determining the quality of a human being. Human resources are divided into numerical and qualitative. Literacy is essential for eradicating poverty and mental isolation for cultivating peaceful and friendly international relations and for permitting the free play of demographic process (Chandna and Singh, 1980. P.98). Literacy is measured in qualitative factors. Because literacy is the development of skill, knowledge, read and write in human beings. The socio-economic status of women depends on literacy. The literacy rate of the population and the male-female literacy rate and also the literacy rate is expressed in percentages. It is clear from this group that the literacy rate in each census is constantly increasing. This means that the educational facilities in this study area are constantly increasing and it benefits the people to increase their quality. The difference in literacy between male and female. It is clear from this that female are less educated than male. But the literacy rate of female above the 2001 census year seems to be lower than the previous census year (1991 census year). However, the most important reason why women are less literate than men is because of the depression among the people. The literacy rate in Rural and Urban areas. This makes it clear that the literacy rate is higher in urban areas than in rural areas. However, the rising literacy rate in rural areas means an increase in educational facilities in rural area. The high literacy rate in urban areas is due to the educational facilities available in the area and the mentality of the people. The trends in literacy are considered an index of the pace at which the socio-economic transformation of a society is taking place.

The Indian census considers a person literate if one can both read and write with understanding in any language. The literacy rate of the state as whole was 76.90 percent in 2001. About 67 percent population of the study region was literate in 2001. It is 9.90 percent less than the state average.

It is noticed from the, that the literacy rate of the study region is 67.04 percent. The literacy rate for male (80.58 percent) is substantially higher compared to female (52.98). The tahsil wise break up shows that Parbhani tahsil with 71.65 percent literacy top the list, while Pathri tahsil with 62.05 percent stands at the bottom. Male literacy rates are above the district average. Female literacy rates are below the district average in all the tahsil. Parbhani tahsil has highest male and female literacy rate

while Palam tahsil has lowest male and female literacy rates of the study region.

Sex ratio:

Sex ratio is factors that affect socio-economic status. Sex ratio is considered to be a component of human resource. As well as Sex ratios are a qualitative factor, it also understands human quality. Human resource is considered to be developed in areas where the proportion of sex ratio is high. Birth rate and mortality rate are two important factors affecting on sex ratio as well as migration. The difference between sex ratio from 1961 to 2011 census periods. It is clear that the amount of sex is decreasing with each census periods. Sex composition shows the proportion of male and female in total population. The figure is given in the form of ratio between the numbers of females every one thousand males. Sex ratio reflects the socio, economic and demographic characteristics of an area or a region.

The sex ratio of Maharashtra state as a whole was 922 in 2001. In comparison to it the sex ratio of the study region is (957) greater than the state (922) by 35 females per 1000 males. This is a well symbol of female position in the population composition of the district.

The sex ratio was 962 in 1961 census year and 240 in 2011 census year, indicating a decrease in the proportion of female. This means that boys are more preferred than girls. Migration, employment, birth rate, death rate and medical facilities affect factors on sex ratio. All these factors effect on this study area.

Conclusion:

The fact that population is a resource depends on its nature, in short if you geographically the population is a resource asset that includes many factors. Such as the literacy, sex ratio, population density, population growth rate, Population engaged in actual occupation Structure etc. In short, there are two types of human resources, one quantitative and the other qualitative. Numerical resource wealth Population distribution, Population growth, Population density, these factors are included. At the same time, the qualitative population includes the literacy, knowledge, skill, Age group etc. Also these human resources are affected by various factors such as natural, cultural, socio-economic and political. These factors have a positive or negative effect on human resources.

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The Major Problems of Waste Management in Latur City, Maharashtra, India

Dr. Darshana S. Kanwate

Dept.of Geography, Mahatma Phule Mahavidya, Kingaon, TQ. Ahmedpur Dist. Latur (MS)

Corresponding Author- Dr. Darshana S. Kanwate

Email- dkanwate91@gmail.com

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Abstract:

India faces significant challenges in managing waste due to rapid urbanization, population growth, and inadequate infrastructure. Here are some key issues related to waste management in the country. The need for effective waste management in India is crucial for several environmental, health, and socio-economic reasons. Here's why its essential. Waste management is a critical issue facing urban areas globally, and Latur City in Maharashtra, India, is no exception. This research paper aims to analyze and address the major problems of waste management in Latur City, offering insights into the current challenges, underlying causes, and potential solutions. Through a comprehensive review of existing literature, field observations, and stakeholder interviews, this study identifies key issues such as inadequate infrastructure, lack of public awareness, inefficient collection and disposal methods, and inadequate policy implementation. The paper proposes a multi-faceted approach involving community engagement, technological interventions, policy reforms, and capacity building to improve waste management practices and promote sustainable development in Latur City.

Keywords: Waste management, Latur City, Maharashtra, India, Solid waste, Urbanization, Sustainable development.

Introduction:

Latur City, located in the state of Maharashtra, India, has witnessed rapid urbanization in recent years, accompanied by growing challenges in waste management. The escalating generation of solid waste coupled with inadequate infrastructure and ineffective management practices has resulted in environmental degradation, public health risks, and social implications. This paper seeks to explore the major problems of waste management in Latur City and propose strategies to address these challenges effectively.

Aims:

1. To identify and analyze the major problems of waste management in Latur City, Maharashtra, India.
2. To explore the underlying causes contributing to the challenges of waste management in the city.
3. To propose effective strategies and solutions to address the identified problems and promote sustainable waste management practices in Latur City.

Objectives:

1. To conduct a comprehensive review of existing literature, reports, and studies related to waste management in urban areas, with a focus on Latur City.
2. To assess the current status of waste management infrastructure, practices, and policies in Latur City through field

observations, stakeholder interviews, and data analysis.

3. To identify and prioritize the major problems and challenges faced by Latur City in managing solid waste, including issues related to infrastructure, public awareness, collection, disposal, and policy implementation.
4. To analyze the underlying causes contributing to the identified problems, including rapid urbanization, resource constraints, socio-cultural factors, and institutional limitations.
5. To propose a set of practical and context-specific solutions and strategies to address the identified problems of waste management in Latur City, considering the local context, available resources, and stakeholder perspectives.
6. To evaluate the feasibility, effectiveness, and potential impact of the proposed solutions in improving waste management practices, enhancing environmental sustainability, and promoting public health and well-being in Latur City.
7. To disseminate the findings and recommendations of the research paper to relevant stakeholders, including policymakers, government agencies, non-governmental organizations, community groups, and the general public, to foster informed decision-making and promote collective action towards sustainable waste management in Latur City.

Hypothesis:

Implementing a multifaceted approach encompassing infrastructure development, public awareness campaigns, technology adoption, policy reforms, and community engagement will lead to significant improvements in waste management practices and environmental sustainability in Latur City, Maharashtra, India.

Overview of Waste Management in Latur City:

This section provides an overview of the current status of waste management in Latur City, including the types and quantities of waste generated, existing infrastructure for waste collection and disposal, institutional framework, and stakeholders involved in the process.

Major Problems of Waste Management:

a. **Inadequate Infrastructure:** The lack of proper waste collection centers, segregation facilities, and disposal sites contributes to the haphazard disposal of waste in Latur City, leading to environmental pollution and health hazards.

b. **Lack of Public Awareness:** Limited awareness among residents regarding the importance of waste segregation, recycling, and proper disposal practices exacerbates the challenges of waste management in the city.

c. **Inefficient Collection and Disposal Methods:** The reliance on outdated collection methods and inefficient disposal practices, such as open dumping and burning of waste, further aggravates the waste management crisis in Latur City.

d. **Inadequate Policy Implementation:** Despite the presence of regulatory frameworks and policies governing waste management, inadequate enforcement and implementation mechanisms hinder effective compliance and accountability.

Analysis of Underlying Causes:

a. **Rapid Urbanization:** The rapid pace of urbanization in Latur City has outpaced the development of infrastructure and institutional capacity, exacerbating the challenges of waste management.

b. **Limited Resources:** Resource constraints, including financial limitations and lack of skilled manpower, impede the implementation of comprehensive waste management solutions in the city.

c. **Social and Cultural Factors:** Socio-cultural factors, such as attitudes towards waste disposal and traditional practices, influence community behaviors and perceptions related to waste management.

Proposed Solutions:

a. **Infrastructure Development:** Invest in the development of robust infrastructure for waste collection, segregation, treatment, and disposal, including the establishment of waste processing facilities and sanitary landfills.

b. **Public Awareness Campaigns:** Launch extensive public awareness campaigns to educate

residents about the importance of waste segregation, recycling, and sustainable waste management practices.

c. **Technology Adoption:** Explore innovative technologies such as waste-to-energy conversion, composting, and biogas generation to manage organic waste effectively and reduce the burden on landfills.

d. **Policy Reforms:** Strengthen regulatory frameworks and enforcement mechanisms to ensure compliance with waste management regulations, including penalties for non-compliance and incentives for adherence to sustainable practices. e.

Community Engagement: Foster community participation and collaboration through community-led initiatives, citizen forums, and partnerships with local organizations to promote grassroots-level action and ownership of waste management initiatives.

Conclusion: In conclusion, addressing the major problems of waste management in Latur City requires a multi-dimensional approach encompassing infrastructure development, public awareness campaigns, technology adoption, policy reforms, and community engagement. By addressing these challenges holistically and fostering collaboration among stakeholders, Latur City can pave the way for sustainable waste management practices and contribute to the broader goal of environmental sustainability and urban resilience.

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9. "Waste Management Practices: Municipal, Hazardous, and Industrial" by John Pichtel



The Intersection of Technofeminism and Environmentalism

Dileep Pastapure

Assistant Professor in English, Vai. Dhunda Maharaj Deglurkr College, Degloor

Corresponding Author- Dileep Pastapure

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Abstract:

This paper explores the intersection of Techno-feminism and Environmentalism, arguing that the integration of feminist principles into technological development can significantly advance environmental justice. The study analyzes key theoretical frameworks such as feminist technoscience, ecofeminism, and intersectionality to demonstrate how gender and technology intersect in environmental contexts. Through detailed case studies on sustainable technology, digital activism, and feminist critiques of biotechnology, the paper highlights the potential for technofeminist approaches to create more inclusive and sustainable technological futures. Challenges such as the digital divide and the risk of reinforcing existing power imbalances are also discussed, alongside suggestions for future research and policy development. The paper concludes that Technofeminism provides valuable insights for both feminist theory and environmental practice, emphasizing the need for a more holistic approach to sustainability.

Keywords: Technofeminism, Environmentalism, Ecofeminism, Feminist Technoscience, Intersectionality, Sustainable Technology, Digital Activism, Biotechnology, Gender Equity, Environmental Justice

Introduction:

Technological advancements are shaping every aspect of modern life, from how we communicate to how we address global challenges like climate change. As these technologies evolve, so too does their impact on social structures, particularly regarding gender dynamics and environmental sustainability. Technofeminism offers a critical lens through which to examine these changes, challenging the traditionally male-dominated fields of technology and science and advocating for the inclusion of feminist principles in technological development. Simultaneously, environmentalism, especially in its ecofeminist form, critiques the exploitation of both women and nature, arguing that these forms of oppression are interconnected and rooted in patriarchal systems. This paper explores the intersection of Technofeminism and Environmentalism, focusing on how technofeminist approaches can contribute to more sustainable and equitable technological futures. It delves into theoretical frameworks, such as feminist technoscience and ecofeminism, to analyze how gender and technology intersect in environmental contexts. The paper also examines case studies on sustainable technology, digital activism, and feminist critiques of biotechnology, highlighting both the opportunities and challenges of integrating technofeminism into environmental practice. By exploring these intersections, the paper aims to demonstrate that Technofeminism offers valuable insights for advancing environmental justice and creating inclusive technological futures.

Literature Review:

Technofeminism emerged as a response to the gender disparities that are prevalent in technology and science. Scholars like Donna Haraway and Judy Wajcman have been instrumental in shaping this field. Haraway's "A Cyborg Manifesto" is a foundational text that challenges the boundaries between human, animal, and machine, proposing a hybrid identity that transcends traditional gender roles (Haraway 25). Haraway argues that technology is not a neutral tool but is shaped by and reinforces gendered power relations. This perspective is echoed by Wajcman in her work "TechnoFeminism," where she critiques the male-dominated development of technology and advocates for a more inclusive approach that considers women's experiences and needs (Wajcman 45). Environmentalism, on the other hand, has long been concerned with the relationship between humans and the natural world. Within this broader movement, ecofeminism stands out as a critical framework that links the exploitation of nature with the oppression of women. Pioneers like Vandana Shiva and Carolyn Merchant have argued that patriarchal structures are responsible for both environmental degradation and gender inequality (Shiva 12; Merchant 18). Shiva's work, "Staying Alive: Women, Ecology, and Development," emphasizes the importance of women's traditional ecological knowledge in sustainable development, arguing that women, particularly in rural and indigenous communities, are often the primary stewards of biodiversity (Shiva 29). While both Technofeminism and Environmentalism have rich

theoretical foundations, there is a notable gap in research that explicitly connects these two fields. This paper seeks to fill this gap by exploring how Technofeminism can inform and enhance Environmentalism, particularly in the context of sustainable technology, digital activism, and feminist ethics.

Theoretical Framework:

The intersection of Technofeminism and Environmentalism can be understood through several key theoretical frameworks, including Feminist Technoscience, Ecofeminism, and Intersectionality. Feminist Technoscience is a critical framework that challenges the traditional understanding of technology and science as objective, value-free fields. Instead, it emphasizes that these fields are deeply gendered and shaped by societal power dynamics (Wajcman 147). Feminist technoscience seeks to uncover the ways in which technological development has historically marginalized women and other minority groups, and it advocates for a more inclusive approach that recognizes the diverse needs and experiences of all people. Ecofeminism provides another critical lens for understanding the intersection of gender and environmentalism. Ecofeminists argue that the exploitation of nature and the oppression of women are interconnected; both stemming from patriarchal structures that value domination and control. This framework emphasizes the importance of integrating feminist ethics into environmentalism, advocating for a more holistic approach to sustainability that considers the well-being of both women and the environment (Shiva 31). Intersectionality is also crucial for understanding how different axes of oppression, such as race, class, and gender, intersect to shape individuals' experiences. Originally coined by Kimberlé Crenshaw in the context of Black feminist thought, intersectionality has since been applied to various fields, including environmental justice (Crenshaw 129). An intersectional approach to Technofeminism and Environmentalism allows for a more nuanced analysis that considers how technological and environmental issues disproportionately affect marginalized groups.

By integrating these theoretical frameworks, this paper seeks to provide a comprehensive understanding of how Technofeminism and Environmentalism intersect and how this intersection can inform more inclusive and sustainable technological futures.

Case Studies and Examples:

1. Sustainable Technology and Gender Equity

Technofeminism has the potential to significantly inform environmentalism by promoting the development of sustainable technologies that are both environmentally friendly and gender-equitable. One of the most prominent examples of this intersection is the 'Solar Sister' program in Africa.

Solar Sister is a social enterprise that empowers women to become entrepreneurs in the clean energy sector. By providing women with the skills and resources to distribute solar lamps and clean cookstoves, the program addresses both gender inequality and environmental sustainability. Women who participate in the program gain financial independence while also contributing to the reduction of carbon emissions and reliance on fossil fuels (Wajcman 45).

Another example of sustainable technology intersecting with gender equity is the 'Barefoot College' in India. This institution trains rural women, many of whom are illiterate, to become solar engineers. Known as "Solar Mamas," these women learn to install and maintain solar panels, bringing electricity to their communities. The program challenges traditional gender roles by empowering women to take on technical work that is typically dominated by men. The environmental impact is significant, as solar energy reduces carbon emissions and provides a sustainable alternative to traditional energy sources. Moreover, the program fosters community resilience by enabling women to become leaders in their communities, contributing to both social and environmental sustainability (Shiva 33).

2. Digital Activism and Environmental Justice

Digital activism represents another significant area where Technofeminism and Environmentalism intersect. The use of digital platforms to advocate for environmental justice has been particularly impactful in recent years, with women often at the forefront of these movements. One notable example is the Standing Rock protests against the Dakota Access Pipeline. Indigenous women played a central role in organizing and leading the protests, which utilized social media to raise awareness and mobilize support. The digital campaign brought international attention to the environmental and human rights violations associated with the pipeline, demonstrating the power of digital activism to amplify marginalized voices and advocate for environmental justice (Phillips 570).

Another example of digital activism intersecting with environmentalism is the 'Fridays for Future' movement, initiated by Swedish climate activist Greta Thunberg. The movement has inspired millions of young people, particularly young women, to demand action on climate change. The use of social media platforms like Twitter, Instagram, and Facebook has been instrumental in spreading the movement's message, organizing global climate strikes, and pressuring governments to take meaningful action. The movement's emphasis on intergenerational justice and the prominent role of young women in leading climate

action highlight the intersection of gender and environmentalism in the digital age (Wajcman 149).

3. Feminist Ethics and Biotechnology:

Biotechnology is another critical area where Technofeminism can contribute to Environmentalism, particularly through feminist critiques of genetic engineering and reproductive technologies. These technologies have significant ecological implications, and feminist ethics can provide a critical perspective on how they are developed and deployed. Vandana Shiva's critique of genetically modified organisms (GMOs) is a prime example of how feminist ethics can inform environmentalism. Shiva argues that the corporatization of agriculture through GMOs often leads to the displacement of traditional farming practices, which are typically maintained by women. This displacement not only threatens biodiversity but also undermines the social and economic roles of women in rural communities. By challenging the dominant narratives around GMOs, Shiva advocates for agricultural practices that are sustainable, equitable, and rooted in the knowledge and experiences of women (Shiva 39).

Another area where feminist ethics intersect with biotechnology is in the critique of assisted reproductive technologies (ARTs), such as in-vitro fertilization (IVF) and surrogacy. These technologies have both environmental and ethical implications, as they often involve the use of hormones and other chemicals that can have harmful ecological effects. Feminist scholars argue that ARTs often exploit women's bodies, particularly those of economically disadvantaged women, while also contributing to environmental degradation. By applying a technofeminist lens, it becomes possible to advocate for reproductive technologies that are both ethically sound and environmentally sustainable (Haraway 35).

Challenges and Critiques:

While the intersection of Technofeminism and Environmentalism offers significant opportunities for advancing gender equity and environmental justice, it also faces several challenges. One of the most pressing issues is the ****digital divide****, which limits access to technology for many women, particularly in the Global South. This divide exacerbates existing inequalities and restricts the ability of marginalized groups to benefit from technological advancements. For example, while digital activism has been a powerful tool for environmental justice, many women in rural areas lack access to the internet or digital devices, limiting their ability to participate in these movements. Addressing the digital divide is crucial for ensuring that technofeminist approaches are truly inclusive and accessible to all (Wajcman 151).

Another significant challenge is the environmental impact of technology itself. While technology has the potential to address environmental challenges, it can also have unintended consequences. For instance, the production and disposal of electronic devices contribute to e-waste, which poses significant environmental hazards. Women, particularly in developing countries, are often involved in the informal recycling of e-waste, exposing them to toxic chemicals. This highlights the need for a more critical approach to technology development, one that considers the full lifecycle of technological products and their impact on both people and the environment (Haraway 33). Furthermore, there is the risk that Technofeminism could be co-opted by corporate interests, leading to outcomes that do not necessarily benefit women or the environment. For example, the commercialization of green technologies, such as electric vehicles, often targets affluent consumers, leaving behind low-income communities that might benefit the most from sustainable transportation options. This underscores the importance of ensuring that technofeminist approaches are inclusive and equitable, addressing the needs of all communities (Phillips 576).

Feminist critiques of technology also raise concerns about the potential for new forms of surveillance and control, particularly in the context of biotechnology. For example, genetic engineering technologies could be used to reinforce existing power imbalances by privileging certain traits or populations over others. This could lead to a new form of eugenics, where only those who can afford to manipulate their genetic makeup are able to benefit. Such scenarios highlight the need for a critical, feminist approach to biotechnology that prioritizes ethical considerations and the well-being of all people and the environment (Haraway 37).

Future Directions:

Looking forward, there are several ways in which Technofeminism can further inform Environmentalism and contribute to the development of more inclusive and sustainable technological futures. Policy and advocacy are key areas where Technofeminism can make a significant impact, particularly in promoting gender-sensitive environmental laws and policies. For example, integrating feminist perspectives into climate policy could help ensure that women's experiences and needs are considered in the development and implementation of climate action plans. This could involve advocating for gender quotas in decision-making bodies, supporting women-led environmental initiatives, and promoting policies that address the specific challenges faced by women in the context of climate change (Wajcman 153).

Education and capacity-building are also critical for advancing the goals of Technofeminism

and Environmentalism. By promoting gender-equitable education in science, technology, engineering, and mathematics (STEM), it is possible to empower the next generation of women to take on leadership roles in these fields. This could involve initiatives to increase the representation of women in STEM, support for women in STEM careers, and the development of educational programs that highlight the intersection of gender, technology, and environmentalism. Additionally, building the capacity of women in rural and indigenous communities to engage with technology and environmental issues is crucial for ensuring that technofeminist approaches are truly inclusive (Shiva 41). Research and innovation are also essential for advancing Technofeminism and Environmentalism. By supporting research that explores the intersection of gender, technology, and environmentalism, it is possible to develop new insights and approaches that address the unique challenges faced by women in the context of technological and environmental change. This could involve interdisciplinary research that draws on feminist theory, environmental science, and technology studies, as well as the development of new technologies that are designed with gender equity and environmental sustainability in mind. Additionally, fostering innovation that prioritizes social and environmental justice, such as the development of technologies that address the needs of marginalized communities, is crucial for ensuring that technofeminist approaches are effective and impactful (Haraway 39).

Finally, global collaboration is key to advancing the goals of Technofeminism and Environmentalism. By fostering international partnerships and networks, it is possible to share knowledge, resources, and best practices across borders, and to build a global movement for gender equity and environmental justice. This could involve supporting international initiatives that promote women's leadership in environmental and technological fields, as well as the development of global frameworks that integrate feminist and environmental principles. Additionally, fostering dialogue and collaboration between different cultural and regional contexts is crucial for ensuring that technofeminist approaches are culturally sensitive and responsive to the diverse needs of women around the world (Crenshaw 131).

Conclusion:

The intersection of Technofeminism and Environmentalism offers a powerful framework for addressing some of the most pressing challenges of our time. By integrating feminist principles into technological development and environmental practice, it is possible to create more inclusive, equitable, and sustainable futures. This paper has explored the key theoretical frameworks, case studies, and challenges at the intersection of

Technofeminism and Environmentalism, highlighting the potential for technofeminist approaches to advance environmental justice and gender equity. However, the journey toward a truly technofeminist and environmentally just future is not without its challenges. Addressing the digital divide, mitigating the environmental impact of technology, and ensuring that technofeminist approaches are inclusive and equitable are all critical tasks that must be addressed. Additionally, the potential for corporate co-optation and new forms of surveillance and control must be carefully considered and mitigated.

Looking forward, there is significant potential for Technofeminism to further inform Environmentalism, particularly in the areas of policy, education, research, and global collaboration. By continuing to explore and develop the intersection of these two fields, it is possible to build a future that is not only technologically advanced but also just, inclusive, and sustainable.

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Isolation, identification and evaluation of the effective phyto-compounds for the management of groundnut beetles infesting stored Groundnut (*Arachis hypogaea* L.)

Lalit Chowdhury¹, Manoj Dash², Sarada Prasad Mohapatra³, Debashis Mohanty⁴, Sushree Chowdhury⁵, Prakash kumar sahu⁶, Niladri Bihari Debata⁷

¹ Asst Prof, Gandhi institute of Engineering and Technology Gunupur India

² Associate Professor, Gandhi institute of Engineering and Technology Gunupur India

³ Asst Prof N.C Auto College, Jajpur

⁴ Asst Professor, Dhenkanal Auto College, Dhenkanal

⁵ Asst Prof, Gwinnett Technical College, Georgia, USA

⁶ Asst Prof Dhenkanal Auto College

⁷ Asst Prof Dhenkanal Auto College

Corresponding Author- Lalit Chowdhury

Email- jalit.chowdhury@giet.edu

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Abstract:

The effectiveness of various botanicals was tested against the Major Pest, groundnut beetle *Caryedon serratus*, Oliver (Bruchidae: Coleoptera) under artificial infestation, in Laboratory conditions for one year. Essential Oils isolated by Clevengers Apparatus, @1% v/w of *Pongamia glabra* (Karanja Oil), *Azadirachta indica* (Neem Oil), *Brassica campestris* (Mustard Oil), *Cymbopogon nardus* (Citronella oil), *Dalbergia sisso* (Sisso Oil), *Oryza sativa* (Rice bran oil), *Helianthus annuus* (Sunflower Oil), *Ricinus communis* (Castor Oil), *Aegle marmelos* (Bael Oil), *Sesamum indicum* (Til Oil), etc and @1% w/w leaf powders of *Calotropis gigantea*, *Azadirachta indica*, *Pongamia pinnata*, *Vitex negundo*, *Mangifera indica*, *Datura stramonium*, *Lantana camara*, and *Artocarpus heterophyllus* were tested for their bioefficacy against the Major Pest, groundnut beetle *Caryedon serratus*, Oliver (Bruchidae: Coleoptera) under artificial infestation, in Laboratory conditions for one year. Out of all these plant products only the Powders and the isolated active components of *Calotropis gigantea* and *Citronella oil* (*Cymbopogon nardus*), gave 100 % pod/Kernel protection for one year. Spectroscopic GC MS analysis of *Citronella oil* (*Cymbopogon nardus*), are identified as D-Limonene, Neral, Citral and 2,6-octadien-1-ol, 3,7-dimethyl acetate (Z). It may be due to the strong aromatic nature of these phytoproduct. Hence these phytoproduct may be used as fumigants or insect repellants against *Caryedon serratus* and can be included in the package of practices to save stored groundnut in storage.

Keywords- Ethanolic Soxhlet, Clevengers Apparatus, Crude Extracts, Isolated Chromatographic Fractions and LD₅₀.

Introduction:

Groundnut, *Arachis hypogaea* (L.) is one of the major oilseed crop of India [25] and popularly known as peanut or earthnut. Groundnut kernel is rich in easily digestible protein (26%) and edible oil (48%) as compared to other oilseed crops and known to be poor man's almond.

The bruchid *Caryedon serratus*, Oliver, (Bruchidae: Coleoptera) is the most important pest of stored unshelled groundnut in India and West Africa. (Matokot et al., 1987) and causes considerable damage every year. The loss due to this insect in groundnut varied from 19% to 60% when the groundnut is kept under storage for five months (Dick 1987). Apart from the physical loss in weight of the kernels, there are qualitative depletions in nutrient contents and calorific values during the storage. The free fatty acid value of the oil increased

with the extent of infestation of *Caryedon serratus* to groundnut (Davey et al., 1959). Similarly the protein content increased due to the larval damage on the kernel and ranging from 0.76% to 3.33% (V.Nandagopal et al., 2007). A survey conducted in Gujarat revealed that about 84% damage in groundnut was recorded in the variety GG-2. (Mittal 1969, 74). The weight loss may go up to 65% in cv. GAUGIO and affected germination by 48 % (KAPPADIA, 1995). Losses due to *Caryedon serratus* (Oliver) occur at all the phonological stages from harvest to consumption of groundnut. INDIA has a rich flora of economic importance especially higher plants having pesticidal properties (Prakash and Rao, 1997; Prakash et al., 1986, 89). To control their natural enemies, some plants have developed the ability to synthesize products that are

derived from their secondary metabolism with some specific properties against insects. (Isman, 2006).

The use of naturally occurring plant materials to protect agricultural products against a variety of insect pests is an age old practice in some parts of the world (Peter1985). Extracts from different plants have been shown to possess insecticidal properties against a wide range of insect pests (Golob.et.al.1982, Delobel and Malonga, 1987). About 2000 species of plants have been reported to possess biopesticidal properties in their bio-active components (Ahmed.et.al.1984).

There is a need to explore these plant products for their biopesticidal properties against the groundnut beetle *Caryedon serratus*, Oliver, (Bruchidae: Coleoptera).

Hence the present study was set up to examine the bioefficacy of certain phyoproducs against the groundnut beetle *Caryedon serratus* for their use in management of the losses caused by this serious pest on unshelled groundnuts.

Materials and Methods:

First the promising plants were screened against *Caryedon serratus* and their bioefficacy was tested. The effectiveness of certain plant products (table) were tested against *Caryedon serratus* (Oliver) under artificial infestation in laboratory conditions for nine months. Hundred grams of groundnut pods/Kernels were taken in glass bottles in three replicated sets for each test plant products.

The efficacious plants and their products were then subjected to ethanolic extraction by soxhlet apparatus. The extract was tested for bioefficacy against *Caryedon serratus*. Then the ethanolic

The % Population reduction = Population in control – population in treatment x 100

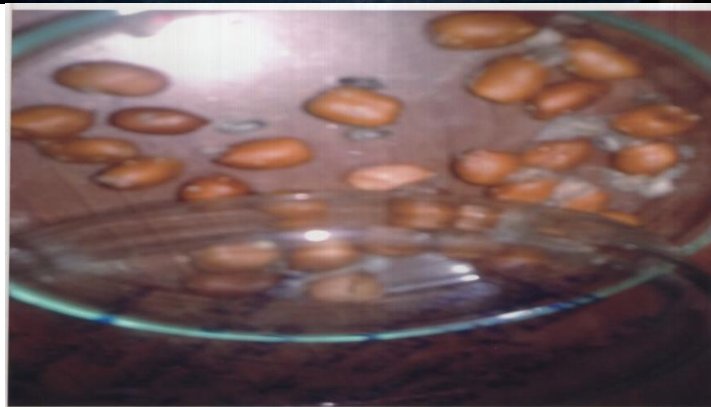
Population in control

The data thus recorded were analyzed statistically and present in the following tables.

extract was fractionated into two fractions using the fractionating funnel. Each fraction was again tested against the test insect and the effective fraction was chosen. Further fractionating was done by column chromatography using various organic solvents ranging from nonpolar to polar ones like n-Hexane, methanol, Acetone, ethanol, Petroleum ether, Benzene Formal dehyde etc. Various fractions were then obtained and each fraction was tested against the test insect with Controls. The most effective fraction was chosen. That effective fraction was further fractionated into two smaller fractions using Thin Layer Chromatography. Both the small fractions were again tested for their bioefficacy against the test insect. Out of the two fractions, the 2nd fraction in crystalline form was proved highly effective against the test insect. It contained the active ingredient against *Caryedon serratus*. Oil formulations extracted by Clevenger's apparatus (Hydrodistillation method) were applied @ 0.1% v/w to the pods/Kernels. That active ingredient can be further subjected to GC-MS to determine its chemical structure.

Ten pairs of freshly emerged live *Caryedon serratus* (Oliver) of equal number of both sexes were released into each bottle 24 hours after treatment. The adult male & female population of the test insect was counted and recorded at intervals of 24h, 48h, 72h, 96h, 30 days, 60 days, 90 days, 120 days, 180 and 210 days of release. The final adult male and female population of test was recorded after 270 days of release. The percent reduction of beetle population over control has been calculated using the formula as follows –



**Tabulation-**

Sr. No	Treatment	Concentration of Treatment	Beetle population after 270 days			Mean Beetle population	% Reduction of beetle population over Control
			R1	R2	R3		
1.	<i>Azadirachta indica</i>	1% w/w	21	30	23	24.66	64.77
2.	<i>Pongamia pinnata</i>	1% w/w	27	17	19	21.0	70.00
3.	<i>Vitex negundo</i>	1% w/w	27	34	21	28	61.00
4.	<i>Mangifera indica</i>	1% w/w	34	42	39	38.34	45.22
5.	<i>Datura stramonium</i>	1% w/w	34	46	38	39.33	43.81
6.	<i>Calotropis gigantean</i>	1% w/w	Nil	Nil	Nil	Nil	100.00
7.	<i>Lantana camara</i>	1% w/w	22	29	24	25	64.28
8.	<i>Artocarpus heterophyllus</i>	1% w/w	26	33	21	26.66	61.91
9.	<i>Ocimum sanctum</i>	1% w/w	15	14	12	13.34	81.37
10.	<i>Millettia pinnata</i>	1% w/w	21	24	19	21.34	69.51
11.	Control		72	68	70	70	

Table-2

Sr. No	Treatment	Concentration of Treatment	Beetle population after 270 days			Mean Beetle population	% Reduction of beetle population over Control
			R1	R2	R3		
1.	<i>Arachis hypogea</i> (Groundnut Oil)	0.1% v/w	21	30	23	24.66	64.77
2.	<i>Mentha spicata</i> (Mint Oil)	0.1% v/w	27	17	19	21.0	70.00
3.	<i>Pongamia glabra</i> (Karanja Oil)	0.1% v/w	21	30	23	22.66	68.57
4.	<i>Brassica campestris</i> (Mustard Oil)	0.1% v/w	41	37	38	36.67	47.61
5.	<i>Azadirachta indica</i> (Neem Oil)	0.1% v/w	11	10	21	19.67	71.9
6.	<i>Aegle marmelos</i> (Bael Oil)	0.1% v/w	27	34	21	28	60.0
7.	<i>Sesamum indicum</i> (Tin)	0.1% v/w	28	17	13	20.34	70.94

	Oil)						
8.	<i>Cymbopogon nardus</i> (Citronella oil)	0.1% v/w	Nil	Nil	Nil	Nil	100.00
11.	<i>Oryza sativa</i> (Rice bran oil)	0.1% v/w	24	22	26	24	65.71
12.	<i>Helianthus annus</i> (Sunflower Oil)	0.1% v/w	45	47	41	40.34	42.37
13.	<i>Ricinus communis</i> (Castor Oil)	0.1% v/w	31	41	45	34.34	50.94
14.	<i>Mentha spicata</i> (Mint Oil)	0.1% v/w	47	33	41	42.34	39.51
15.	<i>Dalbergia sisso</i> (Sisso Oil)	0.1% v/w	36	42	41	32.67	53.32
16.	<i>Linum usitatissimum</i> (Linseed Oil)	0.1% v/w	42	44	38	45.67	34.75
	Control		72	68	70	70	

GC Ms Data: D-Limonene is one of the major products (RT 4.007).

Compound Label	Name	RT	Algorithm
Cpd 7: D-Limonene; C10H16; 4.007	D-Limonene	4.007	Find by Integration

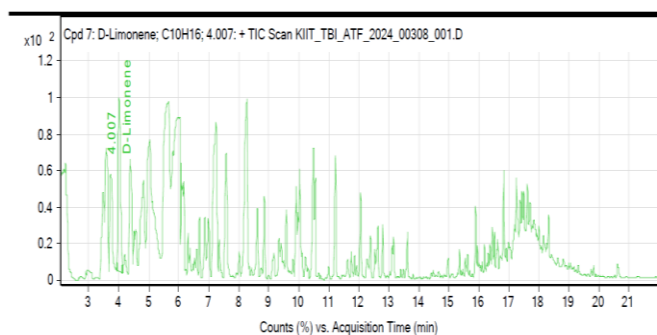
Compound Chromatograms



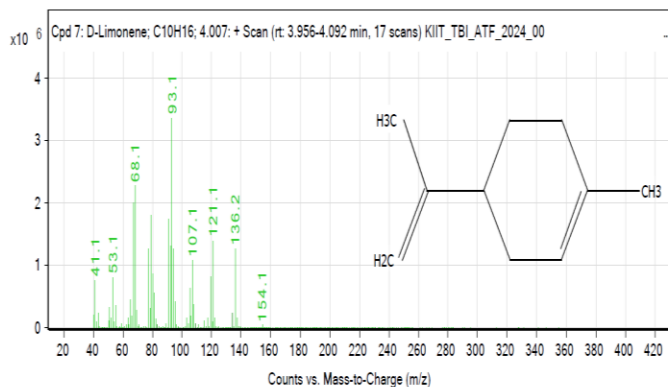
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Qualitative Compound Identification Report



MS Zoomed Spectrum



MS Spectrum Peak List

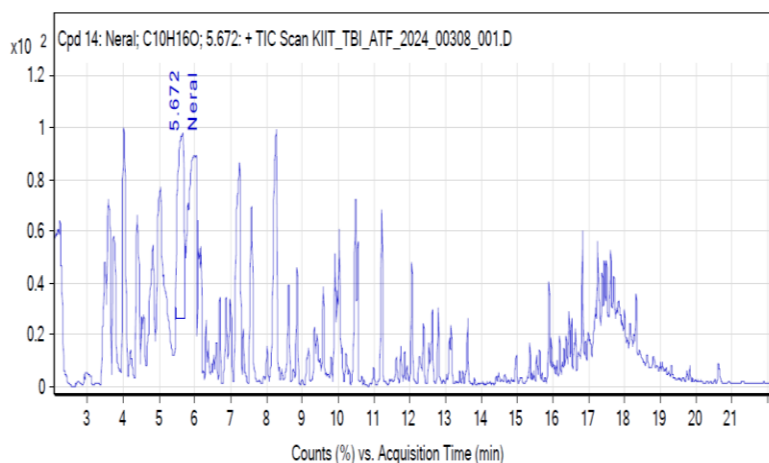
m/z	z	Abund
67.1		1998926.25
68.1		2279747.75
77.1		1262120.13
79.1		1811141.13
91.1		1755272.88
93.1		1326500.88
93.1		3386274.25
94.1		1262487.13
121.1	1	1390161
136.2	1	1270134.5

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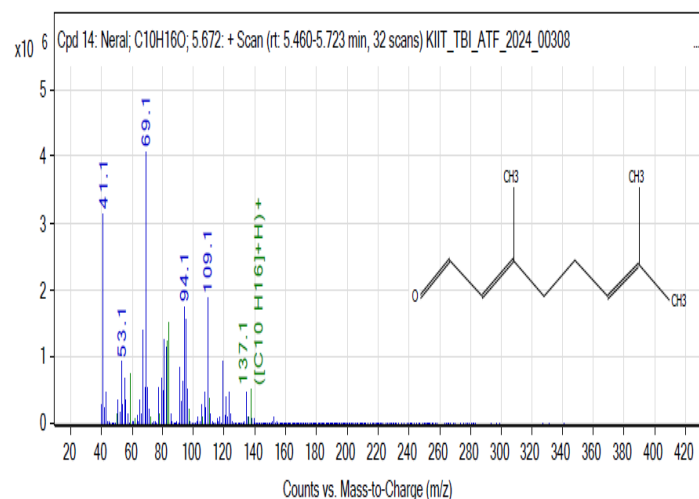
Neral is one of the major products (RT 5.672).

Compound Label	Name	RT	Algorithm
Cpd 14: Neral; C10H16O; 5.672	Neral	5.672	Find by Integration

Compound Chromatograms



MS Zoomed Spectrum



MS Spectrum Peak List

m/z	Calc m/z	Diff(ppm)	z	Abund	Formula	Ion
41.1				3141768.75		
67.1				1386761.25		
69.1				4079398.75		
81.1				1244124		
82.1				1143467.13		

Qualitative Compound Identification Report

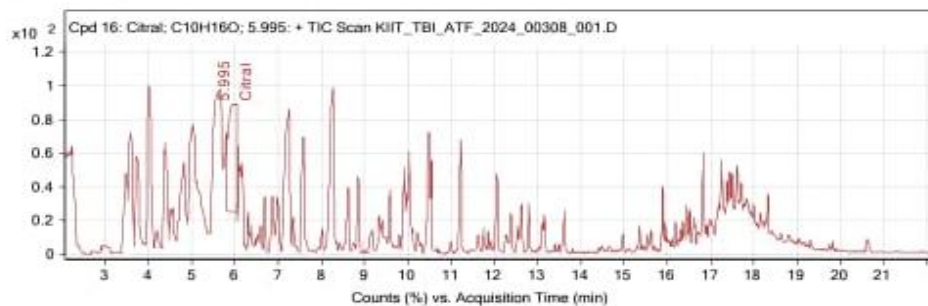
83.1				1215386.63	C5 H10	[M+H] ⁺
84.1	83.1	-11945.22	1	1501390	C5 H11	[M+H] ⁺
94.1				1739727		
95.1				1574633.38		
109.1				1876142.38		

Lalit Chowdhury, Manoja Dash, Sarada Mohapatra, Debashis Mohanty, Prakash Sahoo, Niladri Debata, Sushree Chowdhury.

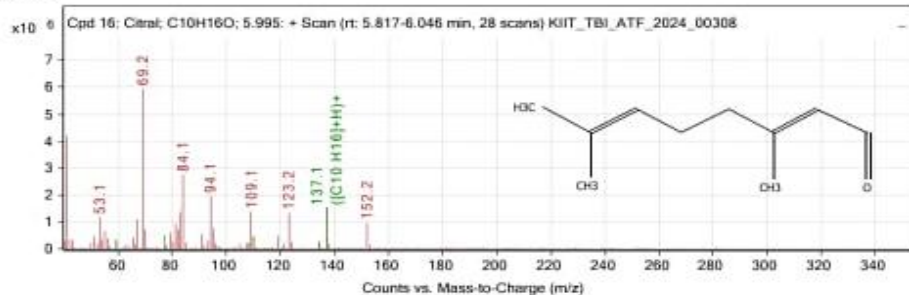
Citral is one of the major products (RT 5.995).

Compound Label	Name	RT	Algorithm
Cpd 16: Citral; C10H16O; 5.995	Citral	5.995	Peak by Integration

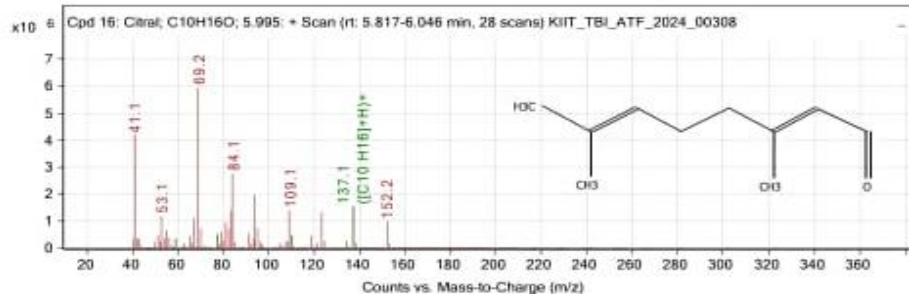
Compound Chromatograms



MS Spectrum



MS Zoomed Spectrum



MS Spectrum Peak List

m/z	Calc m/z	IRI (ppm)	z	Abund	Formula	Ion
41.1				408707.25		
53.1				1126810.38		
69.2				2096767.03		
84.1				2096767.03		
109.1				1372431.75		
137.1						



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Qualitative Compound Identification Report

84.1			1	2754440.25		
109.1				2071463		
123.2				1363563.84		
137.1	136.1	-7.03%	1	1340224.75	C10H16	[M+H] ⁺

Lalit Chowdhury, Manoj Dash, Sarada Mohapatra, Debashis Mohanty, Prakash Sahoo, Niladri Debata, Sushree Chowdhury.

2,6-octadien-1-ol,3,7-dimethyl acetate (Z) is one of the major products (RT 7.244).

Compound Label	Name	RT	Abundance
Cpd 28: 2,6-Octadien-1-ol, 3,7-dimethyl-, acetate, (Z)	2,6-Octadien-1-ol, 3,7-dimethyl-, acetate, (Z)	7.244	100

Printed by Integration

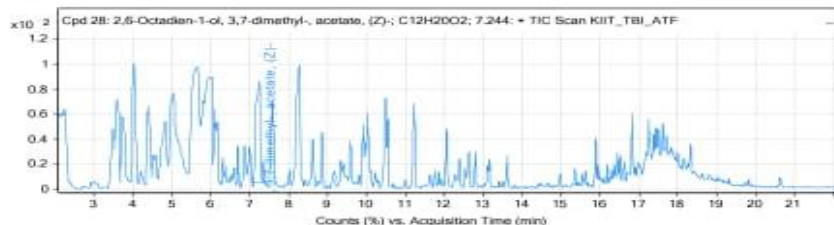
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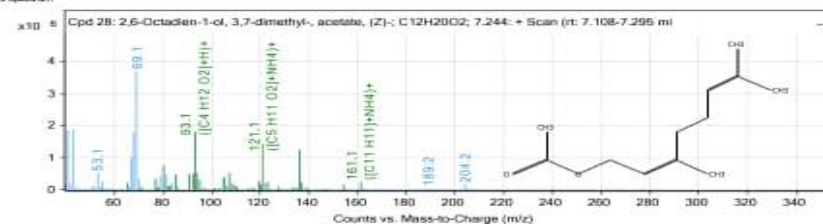
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Qualitative Compound Identification Report

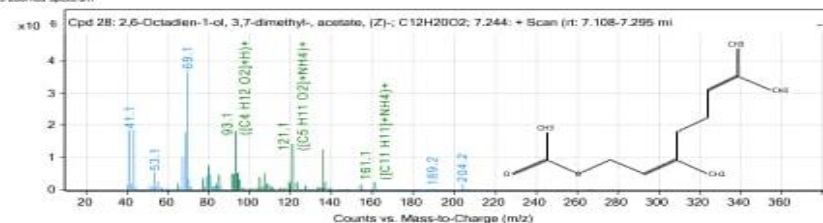
Compound Chromatograms



MS Spectrum



MS Zoomed Spectrum



MS Spectrum Peak List

Peak	Scan	RT (min)	Abundance	Formula	Sum
69.1	100	7.244	100	C ₁₂ H ₂₀ O ₂	100
93.1	100	7.244	100	C ₁₂ H ₂₀ O ₂	100
121.1	100	7.244	100	C ₁₂ H ₂₀ O ₂	100
161.1	100	7.244	100	C ₁₂ H ₂₀ O ₂	100
189.2	100	7.244	100	C ₁₂ H ₂₀ O ₂	100
204.2	100	7.244	100	C ₁₂ H ₂₀ O ₂	100

Results and Conclusion:

Spectroscopic GC MS analysis of active component of **Citronella oil** (*Cymbopogon nardus*), are identified as D-Limonene, Neral, Citral and 2,6-octadien-1-ol,3,7-dimethyl acetate (Z). It may be due to the strong aromatic nature of these phytoproduct. Hence these phytoproducts may be used as fumigants or insect repellants against *Caryedon serratus* and can be included in the package of practices to save stored groundnut in storage.

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 20. *Maculatus*, *C. Chinensis* and *C. Rhodesianus*. Journal of Stored Products
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Development of Value Added Cereal Pulse Based Ready to Eat Premixes

Miss. Sunita Suresh Rao Humbad

Department of home science SGBAU Amravati, Sant Gadge Baba Amaravati University, Amravati.

Corresponding Author- Miss. Sunita Suresh Rao Humbad

Email- sunitahumbad081@gmail.com

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Abstract:

Cereal is the rich source of proteins. Protein is one of the main nutrients required for the growth and functioning of the body. Pulses are a cheaper, low fat source of protein and other nutrients like vitamin B1 and B12, folic acid and fibre. For the vegetarians, pulses form an important source of iron and its have several health benefits. Pulses are deficient in one of the amino acids (methionine) but rich in amino acids lysine content. Purpose of the study was development of value added ready to eat premixes incorporating carrot, sapota, tomato, dried dates powder such as sattu porridge and assess the sensory evaluation and nutritive value, statistical analysis of prepared product. The sensory evaluation of the product were analysed organoleptically by the panel of 10 judges using score card. The nutritional composition of value added ready to eat premixes were calculated using the book Nutritive Value of Indian composition tables IFCT book *T. Longvah ed. Et.al, 2017*. Appropriate statistical methods were used to analyse the data. Among all the treatments, average sensory and nutrient score were significantly high in various treatments.

Keywords: Nutrients, Value Added Products Sensory Evaluation, Nutritive Value, Statistical Analysis, Ready to Eat Premixes.

Introduction:

Cereals and pulses are the rich source of proteins. Protein is one of the main nutrients required for the growth and functioning of the body. It also aids in building a strong immune system, wound healing and maintaining the skin and hair. For a balanced diet, is referred to have about 10-15% proteins as a part of your dietary intake. Pulses are a cheaper, low fat source of protein and other nutrients like vitamin B1 and B12, folic acid and fibre. For the vegetarians, pulses form an important source of iron as well. Available in a wide range of flavours and textures, pulses form a large part of the Indian diet. Like other plant based foods, pulses also have long chain fatty acids which essential for lipid metabolism and vitamin absorption. However, to maximise protein intake, the combination of a pulse with a cereal works best. It is not only improves taste but also ups nutrient intake and overall protein absorption. Pulses are deficient in one of the amino acids (methionine) but rich in amino acids lysine content. Thus the combination of cereal pulse is needed to ensure the body gets the required protein from these sources.

There is several type of ready to eat or instant mixes available in a market, such as instant dhokla mix, instant rava idli mix, instant gulab-jamun mix etc. The Indian traditional foods are standardized and commercialized ready to eat mixes. Sattu is prepared by using cereal and pulse available abundantly and at cheapest cost. Ready to eat premix sattu is a cereal and pulse based premix

and delicious sweet recipe prepared in summer and rainy days. It is rich in energy, protein, crude fibre, minerals and vitamins. Sattu is convenient food, preparation of sattu recipe (porridge) is easy to prepare and less time consuming.

The dictionary meaning of the term ready to eat premix is, “a mixture of nutritional supplements such as nutrients, vitamins and minerals, usually combined with a total ration” (medical dictionary.com). Sattu is used in regional cuisine to varying degrees. In Bihar, Uttar Pradesh, Madhya Pradesh, Punjab and Delhi; use of Sattu is extensive and is used in several dishes. Sattu may also known as *chhatua* (in Oriya language) or archaically as *Sattu Anaaj*, also known as “*chattu*” (in Bengali language).

Review of Literature:

Anita *et.al*, (2016) studied the formulation and evaluation of instant soup powder using millets, oats, maize, and dehydrated vegetable powders. Nutrient analysis of formulated instant soup was shown the total carbohydrate, protein, fat, crude fibre, phosphorous, calcium, and iron was evaluated for both formulated and commercial instant soup powder. Shelf life of instant soup was 3 months at room temperature. Gupta *et.al*, (2014) modified instant khir mix by added cow pea and malted wheat flour, along with the rice, skim milk powder, sugar. The optimum instant khir mix had 12 g cow pea, with four hour soaking of time and 5.01 g malted wheat flour. Its responses were 10.27 g protein 0.07 g crude fibre and (8.052 overall acceptability liked

Highly). *Deshpande et.al, (2004)* developed soy-fortified maize sattu and studied the acceptability and shelf life of developed product. Soybean, maize sattu and studied the acceptability and shelf life of developed product. Product developed was analyzed for proximate composition, shelf-life and sensory evaluation. Chemical analysis of the products revealed that the protein content ranged from 16 to 72% while fat increased from 26 to 39% respectively; as compared to the conventional maize-sattu.

Methodology:

The study entitled Development of cereal and pulse based value added ready to eat premixes were conducted in the department of Home Science, Sant Gadge Baba Amravati University, Amaravati. The details of method followed during the course of study have been discussed in this chapter under the following subheadings;

3.1 Research design: Independent Variables

1. Control Ready to eat premix; Prepared by using wheat and Roasted Bengal Gram, Jaggery.

2. Experimental ready to eat premixes; prepared by using Carrot, Sapota, Tomato, Dried dates

Table 1 Coding of control and experimental premixes

Sr. No	Premixes	Coding
1	Wheat, roasted Bengal gram, jaggery premix	WBG
2	Wheat, roasted Bengal gram, jaggery, and Carrot powder premix.	WBGC
3	Wheat, roasted Bengal gram, jaggery, and Tomato powder premix.	WBGTC
4	Wheat, roasted Bengal gram, jaggery, and Sapota powder premix.	WBGS
5	Wheat, roasted Bengal gram, jaggery, and Dried dates powder premix.	WBGD

Composition of control and experimental premixes

Table 2 Composition of control and experimental premixes

Sr. No	Ingredients	Control	Experiment 1	Experiment 2	Experiment 3	Experiment 4
1	Wheat flour(g)	70	70	70	70	70
2	Roasted Bengal gram(g)	30	30	30	30	30
3	Jaggery(g)	50	50	50	50	50
4	Carrot powder(g)	-	10	-	-	-
5	Sapota powder(g)	-	-	10	-	-
6	Tomato powder(g)	-	-	-	10	-
7	Dried dates powder(g)	-	-	-	-	10

Method of preparation

- Selected for value addition:** Firstly clean and wash the wheat and soak it for 3-4 hr. Then roasted till it pleasant aroma start coming from roasted grains. And grind or milled it and obtained the flour.
- For control premixes:** Take 70g wheat flour, roasted Bengal gram flour and 50g jaggery, 270 ml water and add pinch of salt in a flavours and cinnamon powder as a flavouring agent. For experimental premixes- The above same procedure was followed for the experimental premixes with incorporating following fruit and vegetable powders. Carrot, Tomato, Sapota, Dried dates, powders as given in composition table 2.

powder to control sample. **Dependent Variables:** 1 Sensory Evaluation Appearance, Consistency, Color, Taste, Overall Acceptability 2 Nutritive value 3 Cost

3.2 Recipe for premixes: Sattu is traditional food product specially prepared in summer. Sattu used as Sattu drink and Sattu porridge. In present study Sattu porridge is selected for the sensory evaluation of premixes.

3.3 Ingredients procured: Raw materials are the most important and it collected from local market. Wheat, Roasted Bengal gram, Jaggery, Carrot, Tomato, Sapota, Dried dates.

3.4 Equipments used: Measuring spoons, stainless steel spoons and plates, micro oven, weighing machine, measuring cup etc.

3.5 Formulation and coding: The tomato, carrot, Sapota and dried dates powder incorporated in cereal and pulse based control premix for four experimental variations. The composition and procedure of all the control and experimental mixes were kept constant for all the premixes. The premixes so formulated were coded as given in the table no.1

3.8 Standardization; In the process of standardization, equipments, ingredients for control and experimental variations, methods of preparation, time, and temperature were all kept constant to get desirable product each time.

3.9 Sensory evaluation: Under the quality of control and experimental premixes the sensory attributes taste, appearance, consistency, flavour, and overall acceptability were considered for studying the sensory quality. The products were evaluated by 10 judge's panel. In order to assess the palatability and acceptability of the product, score cards were designed so as to include all the desired characteristics in premixes such as, taste, consistency, flavour, appearance, and overall acceptability etc.

3.10 Nutritive value: The nutrients energy, protein, fat, carbohydrate and fibre content were also calculated as per the standard values given in the book Nutritive Value of Indian Composition tables IFCT book *T.Longvah ed. Et.al, (2017)*

3.11 Cost: The cost of selected premixes was calculated on the basis of recent market prices of the commodities for calculation the cost the premixes, the cost / 100g and cost/serving (25g) were calculated. Also the electricity cost was added in the total cost.

3.12 Statistical analysis: Individual palatability scores of judge for each characteristics of the product for three consecutive trials were arranged so as to obtain a mean value. Mean value was calculated for all product characteristics and the data was subjected accordingly, the individual scores

4.1 Evaluation for palatability of control and experimental premixes



Fig No. 1 and 2 Trials of sensory evaluation of control and experimental premixes

Table No.3 Evaluation for palatability of control and experimental premixes

Sensory characteristics	Appearance	Consistency	Taste	Flavour	Overall acceptability
WBG	9.13	8.59	8.39	8.39	8.59
WBGC	8.59	8.29	8.59	7.93	8.39
WBGS	7.99	8.33	7.59	7.59	8.12
WBGD	8.33	8.39	7.13	7.86	8.53
WBGD	8.53	8.33	8.46	8.59	8.86

Fig No.3 Mean scores of palatability characteristics of control and experimental premixes.

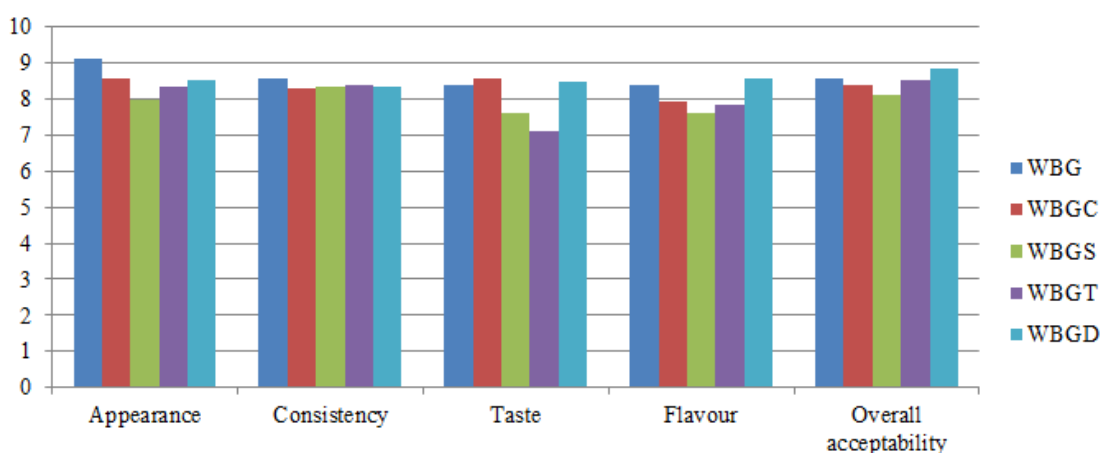


Table No.4 Mean scores and 't' test value of control and experimental premixes

Sr. No	Sensory characteristics	Mean scores				
		WBG	WBGC	WBGS	WBGD	WBGD
1	Appearance	9.13	8.59	7.99	8.33	8.53
2	Consistency	8.59	8.29	8.33	8.39	8.33
3	Taste	8.39	8.59	7.59	7.13	8.46

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4	Flavour	8.39	7.93	7.59	7.86	859
5	Overall acceptability	8.59	8.39	8.12	8.53	8.86
	't' value		2.008	4.576*	2.647	0.395
	T-Table value at (0.05)		2.776	2.776	2.776	2.776
	T-Table value at (0.01)		4.604	4.604	4.604	4.604

Significantly different at 5 % level of significance.

4.2 Nutritive value: Nutritive value of all the control and experimental premixes was calculated

by referring food given in the book nutritive value of Indian tables IFCT book Longavan et.al, (2017)

Table No.5 Nutritive value of control and experimental value added premixes

Sr. No	Premixes	Energy (Kcal)		Protein (g)		Fat (g)		CHO (g)		Crude Fibre (g)		Carotene (mg)		Thiamine (mg)		Riboflavin (mg)		Folate acid (mg)		Vit C (mg)	
		per 100 g	Per serving	per 100 g	per serving	per 100 g	per serving	per 100 g	per serving	per 100 g	per serving	per 100 g	per serving	per 100 g	per serving	per 100 g	per serving	per 100 g	per serving	per 100 g	per serving
1	WBG	595.84	148	18.64	4.64	2.09	0.52	122.45	30.61	14.82	3.70	5.154	1.28	0.427	0.10	0.21	0.05	75.66	18.91	-	-
2	WBGC	599.66	149.91	18.69	4.67	2.09	0.52	123.12	30.78	15.28	3.82	250.454	62.61	0.431	0.10	0.21	0.05	78.06	19.51	0.62	0.15
3	WBGS	603.01	150	16.68	4.17	2.17	0.54	128.84	32.21	15.78	3.94	13.22	3.306	0.428	0.10	0.21	0.05	76.74	19.18	2.096	0.52
4	WBGT	597.75	149.43	18.68	4.67	2.09	0.52	122.72	30.68	14.99	3.74	156.45	39.11	0.421	0.10	0.21	0.05	75.81	18.95	2.527	0.63
5	WBGD	627.86	156.96	18.83	4.70	2.08	0.52	129.94	32.48	15.71	3.92	275.15	68.78	0.43	0.10	0.21	0.05	77.52	19.38	0.442	0.11

Table No. 6 Cost of control and experimental premixes

Sr. No	Premixes	Cost /100g (Rs)	Cost / serving (Rs)
1	WBG	15.37	3.84
2	WBGC	14.55	3.64
3	WBGS	12.68	3.17
4	WBGT	11.43	2.85
5	WBGD	18.95	4.73

Conclusion and Implication:

From the study it is concluded that addition of dried powder of carrot, sapota, tomato, dry date's powder to cereal, pulse based ready to eat premix is well acceptable except sapota. Also increase in nutritive value regarding selected vitamins and minerals was also observed. The variations were cost effective; Study can be done on keeping quality of cereal pulse based value added ready to eat premixes. It is a convenience food and required less time to prepare. It can be useful included variety in diet. Estimation of micro nutrient and macro nutrients, antioxidant properties of value added premixes.

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E- Commerce and Protection of Consumer Rights: Legal Regime in India

Dr. Manisha Sureshchandra Araj

Associate Professor, Shri Nathmal Goenka Law College, Akola.

Corresponding Author- Dr. Manisha Sureshchandra Araj

Email: manishaaraj20@gmail.com

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Abstract:

As technology advances rapidly, commerce is undergoing significant changes, especially in how consumers, the primary drivers of demand, engage with the supply chain. This technology has allowed consumers to enjoy convenient shopping with just a click. In this e-commerce era, protecting consumer interests has become crucial. The rise of e-commerce has brought numerous legal issues, leading to the implementation of the Consumer Protection Act of 2019 to protect consumer interests. The Consumer Protection Act of 2019 safeguards public interest, particularly as people increasingly buy goods and services online without being able to inspect their quality firsthand. If a product does not meet consumer expectations, they can file a complaint and expect a resolution within a few months, which has been especially beneficial recently. India's advancement in consumer protection has laid the groundwork for appropriate e-commerce and consumer rights regulations. The E-commerce Regulations of 2020 aim to ensure clearness in the information provided to customers or consumers on e-commerce platforms. These laws and regulations also seek to end preferential treatment for certain dealers, providing individual and small vendors with fair opportunities on these platforms. They prevent large retailers from engaging in dishonest business practices and regulate both foreign and domestic e-commerce platforms. Overall, as e-commerce activity has increased, these regulations are a step toward resolving consumer complaints or problems about online shopping platforms and recommending best practices for these platforms to pursue in the interests of consumers.

Keywords- Consumer protection, E-Commerce, Consumer rights, Consumer Protection Act, Unfair Trade Practice

Introduction:

Consumer protection is a critical issue in global e-commerce. E-commerce, an arrangement that enables the sale of goods and products and services through electronic means, enhances productivity and expands consumer choices by reducing costs, fostering competition, and streamlining production processes. Consumers or customers, the individuals who buy and utilize these products and services, are fundamental to the corporate system, and the protection of their rights is vital for business growth. E-commerce transactions are characterized by three unique features: virtuality, unboundedness, and multiplicity, which support commercial and business activities in various ways. As technology has advanced, physical trade has increasingly been replaced by e-commerce, or online commerce. To prevent unfair, deceptive, and fraudulent online practices, it is crucial to develop transparent and effective consumer protection systems to strengthen consumer confidence in e-commerce. All stakeholders, including governments, corporations, consumers, and their representatives, must focus on creating effective redress mechanisms. The rise of e-commerce or online commerce has also led to an increase in online fraud, undermining consumer trust. E-commerce, a

business model or a segment of a larger one, allows businesses and individuals to operate over electronic networks, primarily the internet, and spans all major market segments: business to business (B2B), business to consumer (B2C), consumer to consumer (C2C), and consumer to business. The growth of e-commerce or online commerce necessitates a national strategy to protect consumer rights or interests and create a level playing field, preventing monopolistic dominance by any single entity.

Laws Regulating or Governing E-Commerce in India

E-commerce companies in India must comply with a range of existing rules and regulations. Due to the multifaceted nature of e-commerce, various laws across different sectors govern its operations. Some of the key laws and regulations include:

1. Income Tax Act of 1961
2. Information Technology (IT) Act of 2000
3. Foreign Exchange Management Act (FEMA) of 1999 and Foreign Direct Investment (FDI) Policy
4. Payment and Settlement Systems Act of 2007
5. Companies Act of 2013
6. Laws related to Goods and Services Tax (GST)
7. Consumer Protection Act of 2019

Historical Landscape of Protection of Consumer Rights in India

The roots of consumer safeguard laws in India date back to 3200 B.C., when ethical practices were held in high regard. The rulers of that era prioritized the welfare of their people, focusing not only on social circumstances or conditions but also on the economic prosperity of their citizens. To safeguard buyers' interests, various trade restrictions were put in place. In ancient India, people followed and observed Dharma Shastra, which included social rules, laws and norms that served as guiding principles for public relations. Dharma was based on the Vedas, regarded as the direct words of God.

In the Manu Smriti, Manu discussed the issue of adulteration, stating that "a commodity mixed with another should not be sold as if it were pure." He also outlined punishments for unfair and unjust trade practices, ranging from light penalties for adulteration to severe punishments like mutilation for selling similar items as originals. Additionally, Manu emphasized that contracts involving minors, the elderly, or unauthorized parties were invalid, stressing the importance of competency in agreements. After Manu, Kautilya's Arthashastra, written between 400 and 300 B.C., provided extensive information on fair trade practices and contracts.

In the telecommunications industry, the focus on consumer protection has changed. Instead of just promoting competition, the focus is now on empowering consumers to make better choices. This change recognizes that consumers benefit from competition, but also contribute to it by making informed decisions. As people use communication services more and more, there is a growing need for policies that prioritize customer relationships. The industry is shifting its focus from just promoting competition to also promoting better customer relationships.

The Indian Consumer Protection Act of 1986 was introduced to guard consumer rights, representing a significant change in India's legal framework. This Act was crafted to create a more accessible, efficient, and affordable justice system, especially for issues related to consumers. It quickly gained popularity as a "poor man's legislation" due to its simplicity and ease of access. The Act modernized and expanded consumer rights that had been acknowledged since ancient times in India.

What set the Consumer Protection Act apart was its more flexible approach to justice, bypassing strict procedures and reducing paperwork. It empowered consumers to file complaints with minimal formalities and low court fees, making it a favorable alternative to traditional legal avenues, particularly in consumer rights cases. The Act also permitted government agencies to lodge complaints on behalf

of vulnerable consumers, ensuring even the most disadvantaged individuals were protected.

A major strength of the Act is its coverage of both goods and services, allowing consumers to seek remedies for defects or deficiencies. The consumer forums established at district, state, and national levels have collaborated effectively to provide swift and affordable justice, laying a strong foundation for consumer protection law in India.

However, as technology progressed, the Act's limitations became apparent, necessitating updates. Recognizing the importance of adapting laws to societal changes, amendments were made to address these shortcomings and ensure ongoing consumer protection in the modern era.

Consumer Protection Act of 2019 and E-Commerce

"An Act to provide for protection of the interests of consumers and for the said purpose, to establish authorities for timely and effective administration and settlement of consumers' disputes and for matters connected therewith or incidental thereto" The title of the new Consumer Protection Act of 2019 might seem a little bit long, but it effectively conveys the complete purpose and object of the legislation. Similarly, the Consumer Protection Act of 1986 also had a lengthy title, but after nearly 30 years, it lack or requirements to address issues in the modern technological era. This led lawmakers to replace the old Act with a new Law. On August 6, 2019, Parliament or Legislature passed the Consumer Protection Bill, 2019, and on August 9, 2019, it received Presidential assent, coming into force on July 20, 2020. The 2019 Act, like the 1986 Act, aims to ensure timely and effective justice and the quick resolution of consumer disputes and problems.

Some key points of the Consumer Protection Act of 2019 include:

1. The Act introduces new terminology to meet the needs or requirements of modern consumers. For example, the definition of "advertisement" now includes audio and visual publicity, endorsements, and representations through various media, including the internet. This allows consumers to seek legal recourse for misleading advertisements.
2. New clauses have been added to the CP Act of 2019, such as "Product liability action" and an expanded definition of "Complaint," allowing complaints to be filed against manufacturers, sellers, or service providers based on the case's specifics.
3. The Act also addresses the issue of minors purchasing defective products, allowing parents or guardians to seek relief on their behalf.
4. The definition of "consumer" has been updated to include e-commerce transactions, and new consumer rights have been added, including

protection from hazardous goods and the right to inquire about competing products.

5. One of the most significant additions is the insertion of e-commerce under the scope of safety and security of consumer. The Act now allows consumers to take legal action against e-commerce platforms for rights violations, expanding the Act's scope to better protect e-consumers.
6. New concepts like "Product Liability" have been introduced, holding manufacturers or service providers accountable for damages caused by defective products. This Act of 2019 also provides for the establishment of the Central Consumer Protection Authority to protect or safeguard the consumers from misleading advertisements and unfair practices. Additionally, provisions for addressing consumer grievances have been included to ensure they are resolved promptly.

Consumer Protection (E-Commerce) Rules of 2020

The Consumer Protection (E-Commerce) Rules of 2020 were enacted to protect consumer rights, outlining the duties of e-commerce platforms with regard to both consumers and sellers or service providers. These rules are obligatory, not merely suggestions. Key provisions include:

- a) E-commerce platforms are required to give consumers with clear and unambiguous information about returns, refunds, exchanges, warranties, guarantees, delivery schedules, payment methods and security, procedures for addressing defaults, and the product's country of origin.
- b) E-commerce platforms must address consumer problems or complaints within 48 hours and resolve or settle them within one month. They must also designate a grievance officer to manage consumer issues.
- c) Consumers have the right to return products that are damaged, defective, delayed, or do not match the online description, and sellers cannot refuse returns or withhold refunds.
- d) E-commerce companies are forbidden from manipulating prices to increase profits.

E-Commerce and Consumer Rights in the Present Era

E-commerce, which involves selling products and services online, allows business transactions to occur without being limited by time or location. It encompasses more than just using digital technologies, as it involves reworking business processes and partnerships to create a fully digital environment. The shift from paper-based to digital transactions represents a significant change, driven by the globalization of markets and the integration of information and communication technology (ICT).

As e-commerce expands rapidly, the line between traditional and electronic commerce blurs, increasing consumer vulnerability to new forms of unfair practices. Issues include the inability to inspect products before purchase, receiving incorrect items, and encountering misleading advertisements. Therefore, it is crucial to protect consumers from these technological risks.

The new definition of a consumer now includes anyone who purchases goods or services online, whether through electronic means, teleshopping, direct marketing, or multilevel marketing. To enhance consumer protection in e-commerce and direct marketing, the Government of India's Ministry of Consumer Affairs introduced the Consumer Protection Act of 2019, and the Consumer Protection (E-Commerce) Rules of 2020. These laws, effective from July 2020, require e-commerce businesses to provide detailed product and seller information, appoint a grievance officer, and acknowledge consumer complaints within 48 hours. The Act and Rules strengthen consumer rights and give authorities the power to enforce these rights promptly and effectively.

Cases related to consumer protection in E commerce Era

Several cases have been filed in consumer forums against service providers, focusing on defects in goods, deficiencies in services, and unfair trade practices. Notable cases include:

Manik Sethi vs. Amazon India (2016): Manik Sethi ordered an Mi fitness band from Amazon and discovered discrepancies in the advertised price and the actual MRP. The District Consumer Dispute Redressal Commission found Amazon guilty of unfair trade practices and ordered a refund of the extra amount paid by Sethi.

Yatra Online Pvt. Ltd. vs. Rajesh Kumar Dathik & Ors (2020): Yatra.com sued for copyright infringement, alleging that the defendants copied original content and photographs from its website. The case highlighted significant issues around intellectual property and online content misuse.

Anurag vs. BYJU's Learning (2019) : The complainant, Anurag, enrolled in an online tuition service with BYJU's, agreeing to a payment plan. Despite requesting a lower installment amount, BYJU's deducted a higher amount without consent. The District Commission ruled this as an unfair trade practice and ordered the contract's cancellation and a refund.

Rediff.com India Ltd. vs. Urmil Munjal (2013) : The consumer wanted to return a product purchased online but found no clear return policy. The court held Rediff.com liable for "Deficiency in Service" due to insufficient information provided to the consumer.

Rajinder Singh Chawla vs. MakeMyTrip.com (2013) : The Consumer Court rejected a complaint due to jurisdictional issues, as the online transaction involved multiple geographic areas. This case highlighted the complexities of jurisdiction in online transactions.

Amazon Seller Services Pvt. Ltd. vs. Amway India Enterprises (2019): This case involved a dispute over the unauthorized sale of Amway products on Amazon. The Delhi High Court initially ordered the removal of these products but later allowed their sale, provided Amazon obtained authorization from brand owners. The case highlights the importance of transparency and adherence to consumer protection laws in e-commerce.

Ashok Kumar vs. Snapdeal.com & Ors. (2019): The District Consumer Disputes Redressal Forum ruled in favor of the customer, ordering Snapdeal to refund the purchase amount and pay compensation for mental distress and litigation costs. This case underscores the responsibility of e-commerce platforms to deliver correct products as advertised.

Abhishek Sharma vs. Flipkart (2021): Abhishek Sharma purchased a defective laptop from Flipkart. When the issue wasn't resolved despite multiple complaints, he approached the consumer court. The court ruled in his favor, ordering Flipkart to refund the full amount and compensate for the inconvenience caused. This case emphasizes the need for effective post-sale services and customer satisfaction.

Consumer Education and Research Society vs. Tata Sky Ltd. (2021): Tata Sky's new tariff order significantly increased subscription prices, prompting a complaint. The National Consumer Disputes Redressal Commission (NCDRC) ordered Tata Sky to compensate affected consumers and reduce subscription charges. This case stresses the importance of transparency and fairness in pricing for service platforms.

M/S Naaptol Online Shopping Pvt. Ltd. vs. Laxmi Narain (2020): Laxmi Narain received a smartphone from Naaptol that didn't match the advertised specifications. After failing to get satisfactory redressal, he took the case to court. The District Consumer Forum ordered Naaptol to refund the purchase amount and compensate for mental harassment. This case highlights the importance of truthful advertising and prompt issue resolution by e-commerce platforms.

CCI vs. E-Commerce Platforms (2020): The Competition Commission of India (CCI) investigated Amazon and Flipkart for alleged anti-competitive practices, such as preferential treatment of certain sellers and deep discounting. The ongoing investigation emphasizes the need for transparency and fairness in e-commerce to protect consumer rights, highlighting the increased scrutiny of e-

commerce practices under Indian consumer protection laws.

The National Commission in the case of **Marwar Engineering College and Research Centre v. Hanwant Singh (2014)** clarified that in e-commerce transactions, the jurisdiction for filing a consumer complaint is determined by the consumer's location. These cases demonstrate how Indian courts are holding e-commerce platforms accountable for upholding consumer rights and maintaining fair trade practices, setting important precedents in the digital marketplace.

Conclusion:

The new Laws are considered sufficiently well-built to safeguard or protect online consumers' rights and stimulate India's e-commerce or online growth. Key factors such as safety, security, privacy, warranty, customer service, and website information, along with consumer rights protection laws, are crucial in establishing customer trust. A solid legal enactments and consumer protection measures and actions promise significant e-commerce growth. To create an effective legal mechanism for consumer protection in e-commerce at both national and international levels, the following recommendations are proposed:

1. Develop innovative consumer protection regulations based on internationally recognized principles to ensure sufficient protection and encourage e-commerce transactions.
2. Move beyond merely stating consumer rights in laws; it is essential to increase consumer awareness and ensure strict enforcement of these rights.
3. Implement a "right to the period of reflection," allowing consumers to compare offers and review contracts before making a commitment.
4. Introduce a "right of withdrawal" during a "cooling-off" period, enabling consumers to cancel contracts without penalty if full terms were not disclosed or if there was undue pressure.
5. Establish a "suppliers' right to be compensated" if the consumer withdraws after the service has started.
6. Ban "inertia selling," which involves providing unsolicited services.
7. Set limitations and conditions on the use of certain distance communication methods, such as "cold calling" without prior consent.
8. Modify complaint and redressal procedures to be more consumer-friendly.

A fair, competitive, and advanced market can be achieved by providing maximum security to consumers against unfair trade practices. Adequate legal measures for consumer protection will nurture a new era of consumer rights and a supportive market for businesses. Incorporating these consumer protection principles into the legal framework for e-

commerce transactions will not only safeguards and protect basic consumer rights but also enhance or increase the growth of the e-commerce market. A clearly defined legal framework will ensure consumer protection; build trust and confidence in e-commerce, benefit society, and foster e-commerce growth.

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How to help a stressed-out child with yoga

Dr. Dilip Dattataryao Bhadke

V.D.M.D. College Degloor Dist. Nanded Maharashtra

Corresponding Author- Dr. Dilip Dattataryao Bhadke

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Introduction:

Children under Stress:

Stress is a common feeling we get when we feel under pressure, overwhelmed or unable to cope. Small amounts of stress can be good for us and motivate us to achieve goals like taking an exam or giving a speech. But too much of it, especially when it feels out of control, can negatively impact our mood, physical and mental well-being and relationships. It is not generally realized but a large proportion of the people under stress happen to be children. We do not realize it because we, as adults, are the major stress factors in a child's life. The closer is the kinship; the greater is the potential to cause stress, with the parents unwittingly becoming the greatest offenders! In the adult world, the children are unfortunately unrepresented and remain as voiceless citizens. Often, the child is too small even to understand or express itself, though it may be undergoing stressful conditions. Nature, however, is on the side of the children. Since children are biologically a 'learning machine', most conditions which otherwise would be deemed to be stressful are not perceived as stressful by the little body-systems which are still in the process of learning and growing, and therefore, are yet to arrive at threshold levels of intolerance.

Playground for parents:

In modern society, everyone is conditioned to become an achiever, starting from the child in school. The school is increasingly becoming a playground for the parents, instead of being a place of happy learning and growing for the child. Each child is pitted against another, irrespective of sex or the home environment or socio-economic factors, and the brilliant child gets paraded around like a winning racehorse.

The success of the child at school is viewed as complementing the other acquisitions of status that go with the husband's position as a successful executive, businessman or professional. The hapless child is tutored to pick and choose friends on the basis of adult criteria and not as a spontaneous result of the child's likes and dislikes. Home, which should have the warmth, understanding and the protection of a nest, is turned into a 'commando' training centre. The child is incessantly drilled to do better in school and to measure up to other adult parameters, which do not make sense even to an enlightened mind. All the failings of one or both the parents, real or imagined, and the unrealized ambitions which have been smoldering in the parent's mind for long, are now foisted on the child. It is the child which must make good all rounds. When it grows up, it must avenge any injustice done to the family. If there had been a black sheep in the family before, it is the child which must bring back honor and glory to the family's name. The stress from such psychological piggy-back riding on the child, by the parents and others, is enough to drive the child to

break free by whatever means available to it, even drugs.

With the awareness that spontaneously develops through the practice of yoga, parents would understand that the child is a soul which has taken birth to fulfill its sanskara. The choice of the parents, as much as the choice of the next birth, is determined by sanskara. Most parents, however, impose their will and their choice at every stage in the child's life. They do not realize that the law of sanskara is such that any unfulfilled sanskara must be fully experienced in a next birth. So, the soul takes another birth, this time the birth being determined by the remaining, unfulfilled sanskara plus other sanskaras it might have picked up while 'obeying the wishes of the parents' during its immediate past life. The cumulative sanskara gets the soul deeper and deeper into the cycle of life and death. The poor soul never really gets the opportunity to fulfill its real mission in being born a human being, which is the evolution of the consciousness to the next higher stage.

Besides the obstacles which we put in the path of our child, the child also carries the burden of the genetic programming his or her mind receives from birth. So we handicap our children from the word go. We never really give them a fair start, however misguidedly we give them all the best things in life!

The broken childhood:

The child from a broken home suffers more than either of the separated parents. Its very childhood is robbed from it. The emotional stress of a broken home leaves a permanent scar on the child.

The child develops psychosomatic disorders such as stammering, stuttering and schizophrenia, or gets into antisocial and criminal activities.

Most marriages break up for purely selfish reasons and for reasons of self-gratification of the adults. The needs and the feelings of the child are never considered. The parents can always choose another life partner, but the child has no such choice, as it is born with a set of parents!

When one or both parents die, the child may undergo enormous physical, mental and emotional stress. The child's mind has to rework relationships and adapt to new situations. In sadder terms, the child should be ready to stop being a child, and enter into the harsher, unproductive, working world of the adults, or to become an object of charity. The very uncle who used to bring chocolates for his 'little princess' every time he visited in the past, now visits rarely, and looks at her askance.

The handicapped child:

A handicapped child is under greater stress than its normal brother or sister. Right from birth, the handicap becomes a hurdle in the growth of the child. At every stage, the child has to bypass the use of one or more of its sense organs, such as the eye or ear; or tongue in the case of mutes; or of touch or movement in case of the loss of upper or lower limbs.

To some parents, a physically handicapped child or a backward child is a blow to their ego and to their own feelings of self-worth. The stress a handicapped child might face in such a family environment may be far greater because, in addition to its own handicap, the child has to live with its 'distressed' parents. The parents of such children themselves need special efforts to make them change their attitude, which might be causing stress all round, including to themselves.

Sula Wolf, writing under Children under Stress cites the example of a mentally handicapped child:

"Only when it was inescapably clear that Elizabeth would not manage the transition to an ordinary secondary school did the parents agree reluctantly to let her attend a school for educationally subnormal children. At once the child became happier and made friends. For the first time in her life, she found she could do some things better than other children.

At home, the mother found it no easier to tolerate her immaturity. When she lost her beret, allowed a four-year-old to break her watch or lost her season ticket on the bus, the mother could not contain her irritation.

The tantrums at home continued and the parents finally suggested it would be better for Elizabeth to be away from home in some institution where she could be 'trained'. In view of her good progress at the special school, the education

authorities at first resisted such a plan. But after some months, the stresses at home became too much for the child. She began to steal both from her family and from school...."

One can only imagine the sad outcome.

The gifted child is handicapped, too:

Exactly as the handicapped child finds itself distressed in a normal environment, the gifted child finds itself under stress too. Gifts of exceptionally high intelligence, the ability to memories vast numbers, or to perform mathematical feats and such other talents may remain unrecognized or not understood. On the other hand, recognition of such talents has its own pitfalls. Overindulgence, orchestration of the child's every single moment, and the danger of becoming a performing poodle, performing on demand for the amusement of family and friends or for monetary gains.

Within the exceptional child itself, there is a discrepancy between its intellectual development which takes place at a faster pace and the comparatively slower physical and emotional development. In normal schools (unfortunately, there are hardly any special schools for exceptional children), the class work and other activities become uninteresting. Lack of interest is misinterpreted and punishments in various forms follow, and eventually the child may even become a wreck. Socially, the exceptional child is a loner, both in the family and in school, as his environment fails to cater to his special needs. He gets easily bored and frustration sets in, and he lands himself in a perpetually stressful life situation. In his search for diversion from stress, he may pick up harmful habits and practices.

Emotional stress:

Children undergo great emotional, stress and are torn between their natural love and trust for the parents and their own natural inclination. With a cane in one hand and the purse string in the other, the father holds out the threat of physical harm or economic security. On the other hand, the mother smothers the child with love and mama's cooking, and in the case of a male child, the bond between the mother and son is often very-strong. Mothers are known even to resort to the emotional blackmail of their sons.

G. P. Anyan quotes a case history in Patient Management which is a classical example of the emotional crisis children undergo, particularly in the case of a mother-son relationship.

"A 10-year-old boy presented with multiple tics. He shrugged his shoulders, blinked repeatedly, screwed up his face into an odd shape, and flicked his right arm around. No obvious reason could be found for this behavior. An experienced social worker visited the home, and after a couple of visits discovered the apparent reason.

The boy was a very good pianist, but he did not like the classical music he was made to play. He wanted to choose his own style of music and did not wish to complete his piano examination. Had he followed his own desire to play modern music, his mother would have been most upset. The lad found himself torn between his loyalty to his mother on the one hand, and his frank dislike of the classical music (which was so dear to her) on the other, and consequently he was in a quandary.

The doctor interviewed the family, a compromise was reached, and in a couple of months the tics had completely disappeared.

A stress-free home environment:

The calm and peace of mind achieved through the practice of yoga influences even others who come in regular contact with the practitioner. It has greater impact on children in the family, for children pick up vibes from the parents. Stress and anxiety in one or both parents 'pass on' to the children, no matter how skilful is the attempt at camouflage.

Stress and education:

Swami Yoga bhakti Saraswati, a teacher of English and Yoga in France states in Yoga Education for Children that short yoga exercises before the lessons help to regain tranquility and to increase the faculties of concentration of pupils. She also found that many children have problems with their families which disturb their ability to memories and recommends that the physical, emotional and mental layers of the personality must be harmonized so that teaching can be effective.

Yoga is now being made part of the educational system in some of the States in India.

Maharashtra had Vipassana in schools since 2011

Getting Yoga into curriculum would not be easy in Maharashtra. The state in 2011 has introduced Vipassana in schools. "There already exists a GR dated October 5, 2011 which directs all schools to train class 5-10 children in Vipassana. Several teachers have been trained in the Buddhist meditation form though a very few schools follow it because of lack of support from the government and from parents," said a principal. It would be interesting to see whether government would withdraw it or would accommodate yoga too in the fitness regime of the kids.

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Study of Photoluminescence Properties of $\text{Li}_2\text{M}(\text{MoO}_4)_2:\text{Yb}^{3+}$ (M= Ca, Sr) Phosphor

B.V. Tupte¹, M. M. Bhav², C. D. Mungmode³, D. H. Gahane⁴

¹Department of Physics, S.G.M. College, Kurkheda (M.S.), 441209, India

²Department of Physics, N.H. College, Bramhapuri (M.S.), 441206, India

³Department of Physics, M.G. College, Armori (M.S.), 441208, India

⁴Department of Electronics, N.H. College, Bramhapuri (M.S.), 441206, India.

Corresponding Author- B.V. Tupte

Email- bhaskartupte999@gmail.com

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Abstract:

Yb^{3+} -doped $\text{Li}_2\text{M}(\text{MoO}_4)_2$ (M= Ca, Sr) phosphors have been with successfully synthesized by using combustion synthesis method at 750 °C. The phases of prepared phosphors were confirmed by X-ray diffraction pattern and luminescent properties of phosphor materials were systematically studied. As a result of host absorption of $\text{Li}_2\text{M}(\text{MoO}_4)_2$ (M= Ca, Sr), a broad excitation band ranging from 200 to 400 nm is recorded when Yb^{3+} emission was observed, photoluminescence spectra measured suggests the efficient energy transfer from host to Yb^{3+} ions. Upon ultraviolet excitation, an intense near-infrared emission of Yb^{3+} ($^2\text{F}_{5/2} \rightarrow ^2\text{F}_{7/2}$) is observed in $\text{Li}_2\text{M}(\text{MoO}_4)_2:\text{Yb}^{3+}$ (M= Ca, Sr). All the results indicate that Yb^{3+} doped $\text{Li}_2\text{M}(\text{MoO}_4)_2$ (M= Ca, Sr) crystal can serve as UV excited phosphor that is a promising candidate as an associated application for solid state laser.

Keywords: Combustion Method, crystal structure, Phosphors, solid state laser

Introduction:

The recent interest in research of molybdates is caused by their wide range of structures and promising physical and chemical properties. These materials are high application potential in various fields, such as photoluminescence [1], microwave [2], Li-ion batteries [3], lanthanide activated laser [4], LEDs, laser applications and solid electrolytes [5,6,7,8,9]. Double molybdates containing alkali and rare earth metals are well-known hosts for luminescent rare earth ions for lighting applications [10, 11, 12].

The A-A'-Mo-O (A = alkali metal, A' = alkali earth metal) system, which had been researched infrequently and most of the known compounds have previously only been prepared and characterized as powders were studied [13, 14]. Alkali and alkaline earth metal cations might have totally different influence on the packing of Mo-O anionic units that reciprocally can increase the possibility to form new structures with fascinating properties.

Double molybdates $\text{MLn}(\text{MoO}_4)_2$ (M = Li^+ , Ag^+ , Na^+ , K^+ , Rb^+ , Cs^+ ; Ln = trivalent rare earth ions) with scheelite-like (CaMoO_4) structure, are considered to be efficient luminescent hosts showing high efficiency, excellent thermal, hydrolytic stability, mechanical stability and easy to dope a large number of rare earth ions [15]. In this type of structure, the alkaline ions (A) and rare earth ions (Ln) are randomly distributed on the cation sites. Varying the cation compositions in the host, it

would induce some changes in the sublattice structure around the luminescent center ions; even would change the host structure, hence leading to different photoluminescent properties [16]. They can be efficiently doped with lanthanide ions, due to the lanthanide ions sites in the host. Therefore these materials are prospective high-efficiency luminophores and are attracting increasing interest for photonics and optoelectronics applications [17].

As discussed in earlier work, similarly $\text{Li}_2\text{Ca}(\text{MoO}_4)_2$ and $\text{Li}_2\text{Sr}(\text{MoO}_4)_2$ also belongs to the series of quaternary oxides $\text{K}_2\text{Ba}(\text{LnO}_4)_2$ (Ln = Cr, Mo, W). In present work, $\text{Li}_2\text{Ca}(\text{MoO}_4)_2$ and $\text{Li}_2\text{Sr}(\text{MoO}_4)_2$ synthesizes using combustion synthesis method with a different doping concentration of Yb^{3+} ion. The effect of doping of Yb^{3+} ion in double molybdate $\text{Li}_2\text{Ca}(\text{MoO}_4)_2$ and $\text{Li}_2\text{Sr}(\text{MoO}_4)_2$ analyzes by their optical properties.

Scheelite molybdates and tungstates containing alkaline-earth and rare-earth elements have low thermal expansivities and high chemical and thermal stabilities. Recently various research works carried out related to the preparation and characterization of rare-earth-doped double tungstate [18]. $\text{K}_2\text{Ca}(\text{WO}_4)_2$ have been studied with the doping of Ce^{3+} and Dy^{3+} for white light or colored light via the InGaN LEDs [19]. In present work, optical properties of double molybdates $\text{Li}_2\text{Ca}(\text{MoO}_4)_2$ have been studied for its application in solid-state lasers.

Various active dielectric materials and ferroelectrics have been reported with their synthesis methods, crystal structures, and phase transitions owing to their applications in acoustoelectric devices, logic and memory elements, optic shutters, and so on. Among the ferroelastics, double molybdate $K_2Sr(MoO_4)_2$ containing MoO_4 tetrahedra could be a new ferroelastic compound with identical palmierite-like structure as that of $Pb_3(MoO_4)_2$ and $B_2Pb(MoO_4)_2$ ($B = K, Rb, Cs$) [13]. The crystal structure of $K_2Sr(MoO_4)_2$ changes with temperature. At low temperature, $K_2Sr(MoO_4)_2$ crystal structure in the monoclinic phase with a space group of $C2/c$. At high temperature, $K_2Sr(MoO_4)_2$ crystal structure in the monoclinic phase with a space group of $R\bar{3}m$ [20,22]. Recently attempts are being made to increase the conversion efficiency of lithium-based molybdate of Sr (II) by using it in the form of a thin film or single crystal photoanode in a photoelectric cell in place of polycrystalline material [21]. In present work, Yb^{3+} doped $Li_2Sr(MoO_4)_2$ phosphor synthesizes and studied the optical properties for its application in the photoelectric cell.

Experimental:

$Li_2M(MoO_4)_2:Yb^{3+}$ ($M = Ca, Sr$) phosphors were prepared through combustion technique. The starting AR grade materials (99.99% purity) taken were calcium nitrate ($Ca(NO_3)_2$), strontium nitrate ($Sr(NO_3)_2$), ammonium molybdate ($(NH_4)_6Mo_7O_{24} \cdot 4H_2O$), Ytterbium oxide (Yb_2O_3), and urea (NH_2CONH_2) were used as fuel for combustion. In the present investigation, materials

Results and Discussions

XRD Analysis of Yb^{3+} Doped $Li_2Sr(MoO_4)_2$

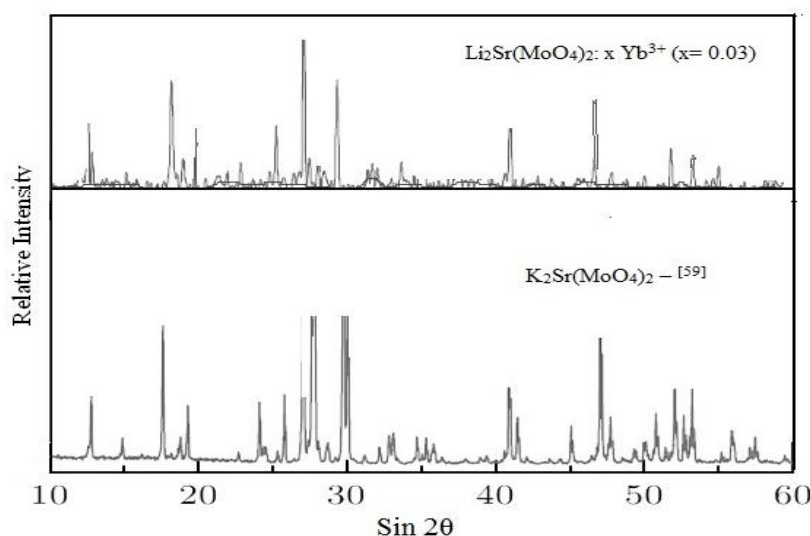


Fig. (1): XRD pattern of $Li_2Sr(MoO_4)_2: xYb^{3+}$ ($x = 0.03$ mole) phosphor

Fig. (1) Represents the XRD patterns of $Li_2Sr(MoO_4)_2: xYb^{3+}$ ($x = 0.03$ mole). All diffraction peaks index well match to the standard result available of α - $K_2Sr(MoO_4)_2$ structure has a space group of $C2/s$ with lattice parameters $Z=4$, $a =$

were prepared according to the chemical formula $Li_2M_{1-x}(MoO_4)_2: xYb^{3+}$ (1,3 mole%). The solution of reagents was mixed together to obtain a homogeneous solution. Yb^{3+} ion was introduced in the form of $Yb(NO_3)_3$ solution by dissolving Yb_2O_3 into HNO_3 solution. The molar ratio of Ytterbium rare-earth ions was changed in relation to $Li_2M(MoO_4)_2$ ($M = Ca, Sr$) phosphor. The compositions of the metal nitrates (oxidizers) and urea (fuel) were calculated using the total oxidizing and reducing valencies of the components, which served as the numerical coefficients so that the equivalent ratio is unity and the maximum heat is liberated during combustion. After stirring for about 15 min, precursor solution was transferred to a furnace preheated to $650^\circ C - 750^\circ C$ and the porous products were obtained. The stoichiometric amount of redox mixture, when heated rapidly at $\sim 700^\circ C$ was boiled, underwent dehydration followed by decomposition generating combustible gases such as oxides of N_2 , H_2O and nascent oxygen. The volatile combustible gases ignite and burn with a flame, and thus provide conditions suitable for the formation of phosphor lattice with dopants. Large amounts of escaping gases dissipate heat and prevent the material from sintering and thus provide conditions for the formation of a crystalline phase. Rare earth ion doped $Li_2M(MoO_4)_2: Yb$ ($M = Ca, Sr$), Yb ions were introduced in the form of an $Yb(NO_3)_3$ solution with the concentration of the Yb ions varied with $x = 1,3$ mole %. Photoluminescence properties were analyzed thus synthesized phosphors.

$14.318(3) \text{ \AA}$, $b = 5.9337(12) \text{ \AA}$, $c = 10.422(2) \text{ \AA}$, $\beta = 105.83(3)^\circ$ and $V(\text{unit cell volume})/Z = 851.9(3) \text{ \AA}^3/4$ [20]. From the XRD patterns, it can be seen that no impurities are observed in the resulting product.

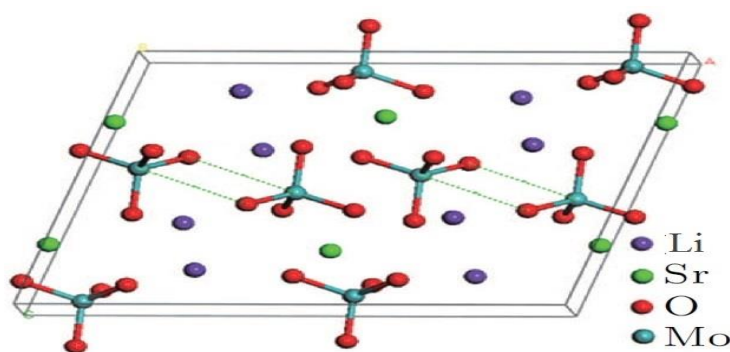


Fig.(2): Structure of $\text{Li}_2\text{Sr}(\text{MoO}_4)_2$ Phosphor

The structure of $\text{Li}_2\text{Sr}(\text{MoO}_4)_2$ is shown in Fig.(2). The Li and Sr atoms are located at the Mo_1 and Mo_2 positions with distances of $\text{Mo}_1\text{--O}_1$ in the range of 2.511–2.588 Å and $\text{Mo}_2\text{--O}_2$ in the range of 2.605–2.986 Å. In addition, MoO_4 tetrahedra with Mo–O

bond lengths of 1.747–1.767 Å^[20] share vertices and edges with Mo_1 and Mo_2 polyhedra. These polyhedra alternatively arrange to form a layered structure parallel to the (100) plane^[22].

Optical properties of Yb^{3+} doped $\text{Li}_2\text{Ca}(\text{MoO}_4)_2$

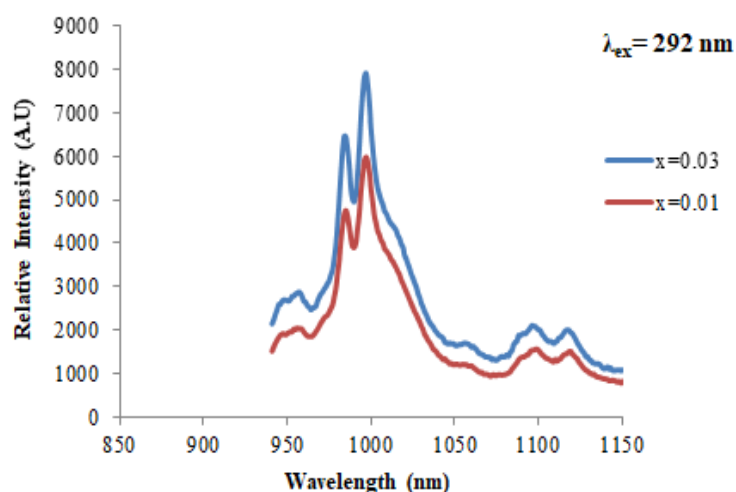


Fig. 3: Emission spectra of $x\text{Yb}_2\text{O}_3$ -doped $\text{Li}_2\text{Ca}(\text{MoO}_4)_2$ ($x = 1, 3$ mole %) phosphors

At the excitation wavelength of 292 nm, a very broad emission band of $\text{Li}_2\text{Ca}(\text{MoO}_4)_2:\text{Yb}^{3+}$ phosphors is observed in the range of 850–1150 nm as shown in Fig.(3). The emission is mainly located in the NIR region of the spectra and the intensity falls towards a longer wavelength region. A broad emission band with distinct peaks related to the transition from the sublevels of $^2\text{F}_{5/2}$ to the levels of the $^2\text{F}_{7/2}$ fundamental state was located. The observed peaks can be assigned to the different

Stark levels of the ground state $^2\text{F}_{7/2}$ based on emission spectra of Yb^{3+} in the hosts^[23].

The maximum intensity was registered for the second peak at around 996 nm while the first peak registers the intensity around 896 nm. Nevertheless, the emission intensity is found to be increased with an increase in Yb^{3+} concentration and shows the highest intensity at 3 mole % after which the intensity may fall due to concentration quenching.

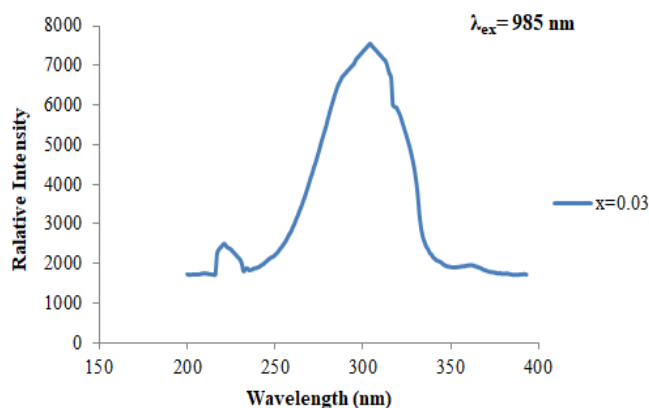


Fig. (4): Excitation spectra of Yb^{3+} doped $\text{Li}_2\text{Ca}(\text{MoO}_4)_2$ phosphors

Fig.(4) present the excitation spectra of 985 nm emission of $\text{Li}_2\text{Ca}(\text{MoO}_4)_2:\text{Yb}^{3+}$ phosphors show a broad excitation band with the center of maximum located at 301 nm, which falls in the near ultraviolet

(NUV) region of the electromagnetic spectrum. The excitation spectrum peak is around 218 nm, which is assigned to the charge transfer (CT) band of $\text{Yb}^{3+} \rightarrow \text{O}^{2-}$.

3.3 Optical properties of Yb^{3+} doped $\text{Li}_2\text{Sr}(\text{MoO}_4)_2$

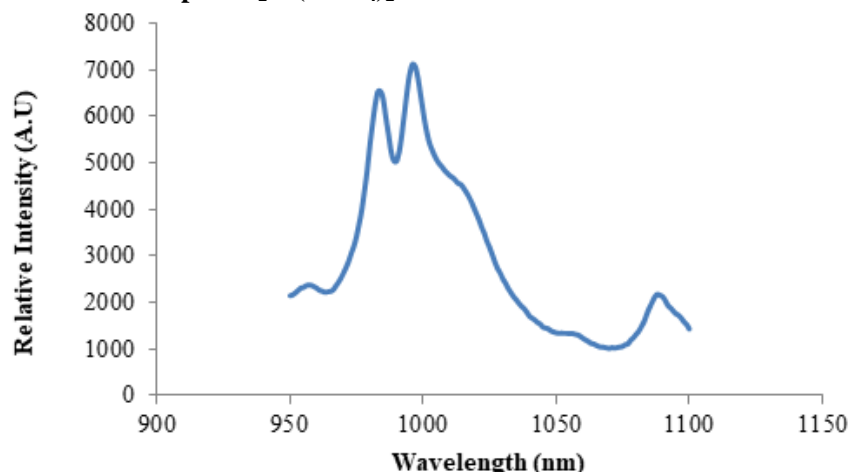


Fig. (5): Emission spectra of $x\text{Yb}_2\text{O}_3$ -doped $\text{Li}_2\text{Sr}(\text{MoO}_4)_2$ ($x = 5$ mole %) phosphors

Fig. (5) Presents the emission spectrum of Yb^{3+} doped $\text{Li}_2\text{Sr}(\text{MoO}_4)_3$ phosphors excited under 313 nm UV light. The emission spectra consist of the fine peaks ranging from 900 -1150nm which attributed the transition $^2\text{F}_{5/2}$ to $^2\text{F}_{7/2}$. The broad emission spectra consist of two peaks located

around 983 nm and 986 nm which show transition Yb^{3+} in the host. The energy absorbed by the MoO_4^{2-} the group is transferred to Yb^{3+} ions levels non-radiatively. That is, the emission corresponding to Yb^{3+} ions has been observed under excitation of the CT band of the MoO_4^{2-} group.

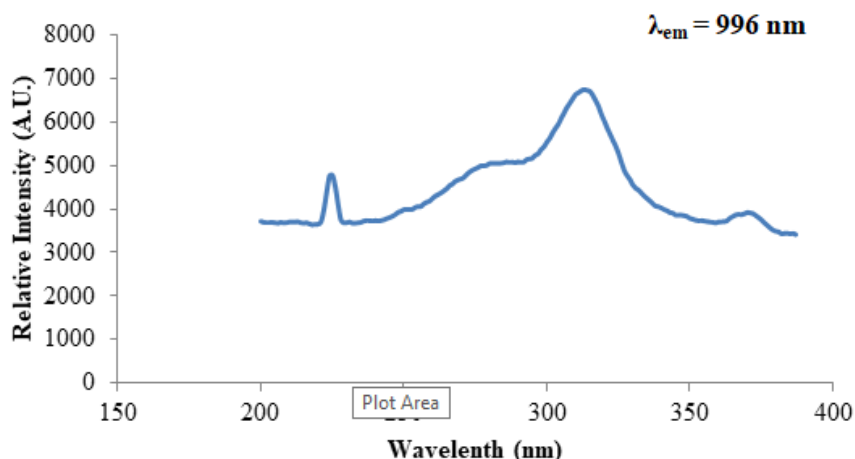


Fig. (6): Excitation spectra of Yb^{3+} doped $\text{Li}_2\text{Sr}(\text{MoO}_4)_2$ phosphors

The Excitation spectra of Yb^{3+} doped $\text{Li}_2\text{Sr}(\text{MoO}_4)_2$ phosphor shown in Fig. (6) . It can be seen that excitation spectra monitored at 996 nm existed narrow broad band from 214 -230 nm corresponding to the charge transfer band of Yb^{3+} to O^{2-} and the strong broad band corresponding to the transition of ground state $^2\text{F}_{7/2}$ to excited state $^2\text{F}_{5/2}$.

Conclusion:

In summary, $x\text{Yb}_2\text{O}_3$ -doped $\text{Li}_2\text{Ca}(\text{MoO}_4)_2$ ($x = 1,3$ mole%) phosphors have been successfully synthesized by using combustion synthesis method. The PL emission spectra of the phosphor materials show two peaks at 982 nm and 996 nm, originating from the electric dipole transitions $^2\text{F}_{7/2}$ to $^2\text{F}_{5/2}$ of Yb^{3+} . The excitation spectra suggest the charge transfer of Yb^{3+} to O^{2-}

which is monitored at 996 nm. The doping of Yb^{3+} can enhance the emission of the phosphors.

Similarly, Yb^{3+} doped $\text{Li}_2\text{Sr}(\text{MoO}_4)_2$ phosphors have been successfully synthesized by using combustion synthesis method. XRD reveals that the structure of the compound consistent with the standard result available $\alpha\text{-K}_2\text{Sr}(\text{MoO}_4)$. From the XRD patterns, it can be seen that no impurities are observed in the resulting product. From the structural analysis, it can be seen that the Structure of Yb^{3+} doped $\text{Li}_2\text{Sr}(\text{MoO}_4)_2$ is very similar to the structure of $\text{K}_2\text{Sr}(\text{MoO}_4)_2$. The emission spectra monitored in NIR region with excitation of 313nm. The emission spectra consist of broad band covering the NIR region with two peaks located at 980 nm and 995 nm. These emission peaks correspond to the transitions of Yb^{3+} ion from

excited to the ground state. The excitation spectrum depicts the charge transfer and excitation of Yb^{3+} ion with narrow and broad band peaks respectively. All results of $\text{Li}_2\text{M}(\text{MoO}_4)_2: \text{Yb}^{3+}$ ion ($\text{M}=\text{Ca}, \text{Sr}$) reveals that it could be the promising candidate in laser field application.

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Assessing Tourism Potential in Nashik District: A Likert Scale Approach to Culture, History, and Heritage Promotion

Dr. Dattatraya V. Harpale¹, Dr. Smita S. Harane²

¹H.P.T Arts & RYK Science College, Nashik Maharashtra.

²MPH Arts, Science and Commerce Mahila College, Malegaon Nashik, Maharashtra.

Corresponding Author- Dr. Dattatraya V. Harpale

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Abstract:

This research paper, titled "Assessing Tourism Potential in Nashik District: A Likert Scale Approach to Culture, History, and Heritage Promotion," aims to explore and evaluate the tourism potential of Nashik District, Maharashtra. Nashik, known for its rich cultural heritage, historical significance, and religious landmarks, presents a unique opportunity for tourism development that can enhance both cultural preservation and economic growth. The study employs a Likert Scale to quantitatively measure the perceptions and attitudes of local residents, tourists, and stakeholders regarding various aspects of tourism in the district, including its cultural, historical, and heritage attractions. The research focuses on identifying key tourist destinations within Nashik that hold significant cultural and historical value. It examines how these sites contribute to the overall tourism experience and the district's economic development. By analyzing the data collected through the Likert Scale, the study provides insights into the strengths and weaknesses of the current tourism offerings and suggests strategies for enhancing the promotion of Nashik's cultural and historical assets. The findings of this research are expected to inform policymakers, tourism planners, and local communities on how to effectively leverage Nashik's rich heritage for sustainable tourism development, ultimately contributing to the district's socio-economic growth. For this study the factor wise Likert scale is calculated. Tourism satisfaction is a psychological outcome and it is concerned with the attribute of behaviors itself. Likert scale is a technique for the measurement of attitude a scale giving values for an individual's reactive attitude. The test is required to choose from a possible answer per item and thus to show a degree of agreement or disagreement with the attitude represented. The response to each question was rated on seven points 'Likert Scale' ranging from 1 to 7.

Keywords: Likert scale stratified random sample, satisfaction.

Introduction

Nashik District, located in Maharashtra, India, is renowned for its rich cultural heritage, historical monuments, and religious significance. Often referred to as the "Wine Capital of India," Nashik is also home to numerous ancient temples, forts, and historical sites that attract a diverse range of visitors. Despite its cultural and historical wealth, the full potential of Nashik as a tourist destination has not been fully realized. This research paper, titled "Assessing Tourism Potential in Nashik District: A Likert Scale Approach to Culture, History, and Heritage Promotion," seeks to evaluate and enhance the district's tourism potential. By employing a Likert Scale, the study systematically gauges the perceptions and attitudes of local residents, tourists, and stakeholders towards Nashik's cultural and historical attractions. The goal is to identify key strengths and areas for improvement in the district's tourism offerings, ultimately providing recommendations for promoting Nashik as a premier destination for cultural, historical, and heritage tourism, thereby boosting local economic growth.

Study Area:

Nashik District, located in the state of Maharashtra, India, is a region with vast tourism potential, rich in cultural diversity across its 15 talukas. Geographically, the district is situated between latitudes 19°35'18" N to 20°53'07" N and longitudes 73°16'07" E to 74°56'27" E, covering an expansive area of 15530 km² (Fig. 1). This strategic location places Nashik at the crossroads of several important neighboring regions. To the northwest, it is bordered by the state of Gujarat, while the Dhule district lies to the north. To the east, Nashik shares boundaries with Jalgaon and Aurangabad districts, and to the south, it is flanked by Ahmadnagar district. The Thane district lies to the southwest. The district derives its name from its headquarters town, Nashik, with two prominent interpretations for its origin. One suggests that the name comes from the town being situated on nine peaks, referred to as "Navashikhara," which translates to "nine peaks" in Sanskrit. Nashik, with its diverse cultural heritage and significant historical sites, offers immense potential for tourism development, making it a focal

point for both cultural and historical exploration within Maharashtra.

Objectives: The broad objectives of the proposed study are:

1. To assess the availability of tourism facilities and their socio-cultural impact in the study region.
2. To evaluate the impact of tourism on the study area using a Likert scale analysis.

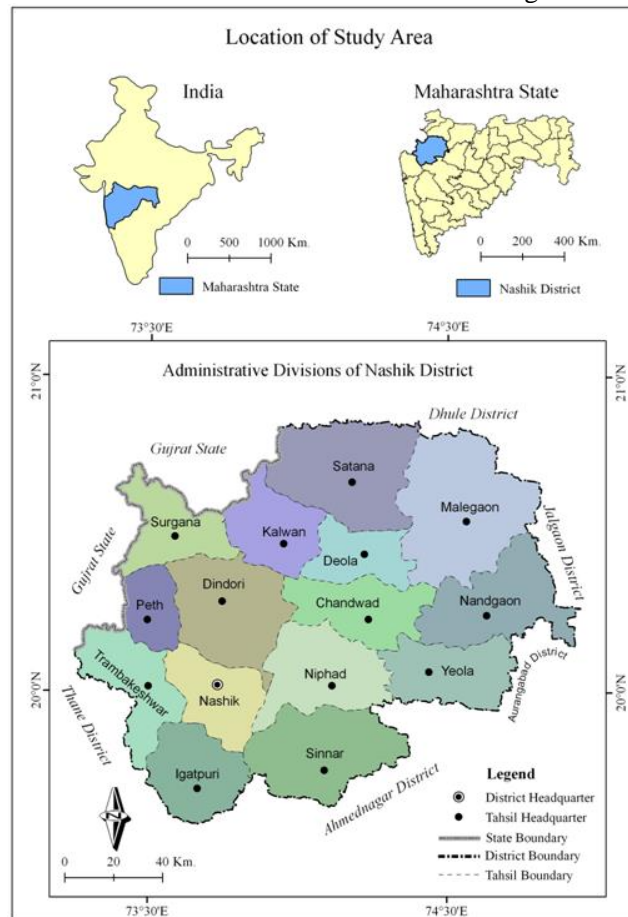


Fig. 1

Database and Methodology:

The attitudinal survey is a widely used method to explore socio-cultural issues by gauging respondents' attitudes towards the impact of tourism. This method involves asking participants to express their feelings and opinions through closed questions or statements. While such surveys provide valuable insights into perceived impacts, it is essential to recognize that they capture respondents' perceptions, which may not always reflect reality (Perce, 1989, p. 223). This study aims to empirically examine the impact of tourism on the local population. Assessing tourists' attitudes is challenging; therefore, a survey was conducted in 2024 to evaluate the environmental impacts of tourism in the study region. During the first visit to Nashik, general information about tourists—such as annual visitor numbers, visiting periods, major fairs and festivals, halting periods, purposes of visits, and demographic details—was collected. In the second visit, questionnaires were personally distributed to tourists at various locations, including tourist sites, railway stations; bus stands, hotels, and lodges. These surveys were conducted during different occasions, such as summer season, rainy season, week end,

Independence Day etc. The socio-cultural impact questionnaire included 15 questions, rated on a seven-point Likert Scale (1-7), and 450 responses were collected. The research paper analyzes the impact of tourism on aspects such as commercialization of traditions, overcrowding, crime rate, and changes in recreation facilities. Random sampling was employed to select respondents at different locations.

Likert Scale:

A Likert scale is a psychometric tool widely used in questionnaires to measure respondents' levels of agreement with statements. Named after psychologist Rensis Likert, the scale is often confused with individual Likert items. A Likert item refers to a single statement that respondents evaluate, typically using levels of agreement or disagreement. In contrast, a Likert scale represents the sum of responses across several Likert items. Although Likert items are sometimes mistakenly referred to as scales due to their visual representation, the term "Likert scale" should be reserved for the aggregated total of multiple items. Likert items commonly use five response levels, but some researchers prefer seven or nine levels. Studies

have shown that 5- or 7-point scales may yield slightly higher mean scores compared to 10-point scales, a difference that is statistically significant. A seven-level Likert item format includes responses ranging from "strongly disagree" (1) to "strongly agree" (7).

Result and Discussion:

Nashik, a district rich in cultural, historical, and heritage significance, is home to several important tourist centres that attract visitors from across the world. One of the most prominent sites is Trimbakeshwar, an ancient Hindu temple dedicated to Lord Shiva and one of the twelve Jyotirlingas. It holds immense religious importance and is a key pilgrimage site, especially during the Kumbh Mela. Another significant heritage site is the Pandavleni Caves, a group of ancient rock-cut caves dating back to the 1st century BCE, located on the Trivashmi Hill. These caves are significant for their intricate carvings, Buddhist inscriptions, and monasteries, offering a glimpse into the region's historical and religious past. Kalaram Temple, located in Panchavati, Nashik, is another notable cultural site. This black stone temple, dedicated to Lord Rama, is known for its architectural beauty and historical

significance, often associated with the Ramayana. The district also boasts the Anjaneri Hills, believed to be the birthplace of Lord Hanuman, and Sula Vineyards, which highlights the district's modern cultural heritage as India's leading wine-producing region. These tourist centers not only reflect Nashik's deep-rooted cultural and religious heritage but also contribute significantly to the district's tourism economy, making Nashik a must-visit destination in Maharashtra.

Tourist Information System Trimbakeshwar:

The Tourist Information System in Trimbakeshwar provides visitors with essential details about the region's attractions, accommodations, and local services. Located near the ancient Trimbakeshwar Temple, a Jyotirlinga site, the system helps tourists navigate the area's religious significance, nearby heritage sites, and festivals like Kumbh Mela. It also offers information on transportation, lodging options, and guides, ensuring a well-rounded experience for pilgrims and tourists alike. The details of the important tourist centers in and around are given in tourist information system (*fig 2*).

Tourist Information System Trimbakeshwar

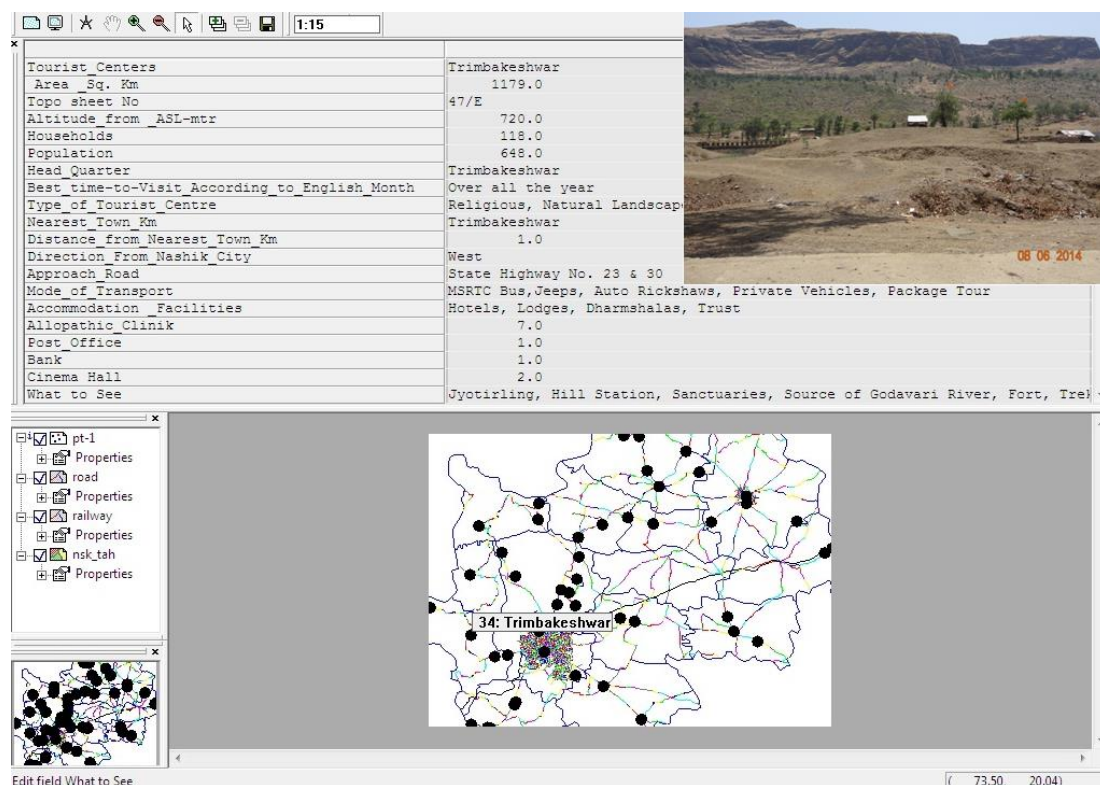


Fig. 2

Socio – Cultural Impact of Tourism on Nashik

Social impacts of the tourism refer to the change in the quality of life of residents of tourist destinations. On the other hand, cultural effects refer

to change in the element of culture resulting from the presence and activities of tourism. Culture is a behavior observed through social relation and material artifacts.

Table 1: Resident's response to socio-cultural impact of tourists on Nashik

Sr. No.	Socio-Cultural Impact	1	2	3	4	5	6	7	Σ	Mean	S.D.
1	Commercialization of traditions and customs	-	12	33	15	70	148	172	450	75	63.37
2	stress on police protection	-	-	28	23	67	132	200	450	90	67.42
3	Over crowding	-	-	-	18	105	129	198	450	112.5	64.36
4	Standard of living	-	45	39	17	92	178	79	450	75	52.4
5	Information centre	-	23	17	33	111	145	121	450	75	51.87
6	Language impact	-	-	61	33	145	112	99	450	90	39.19
7	Religion impact	-	67	123	80	46	89	45	450	75	26.86
8	Recreation	-	-	53	10	103	145	139	450	90	51.7
9	increase in crime rate & Gambling	-	145	101	14	34	67	89	450	75	43.28
10	Changes in recreation facilities	-	47	27	11	115	147	103	450	75	49.58
11	Increasing number of accident	-	-	-	28	145	123	154	450	112.5	50.07
12	Child labour	-	45	25	19	89	189	83	450	75	57.43
13	increasing number beggars	-	-	45	23	60	145	177	450	90	60.01
14	increase in the activities of drug abuse	-	13	17	33	156	108	123	450	75	56.16
15	Changes in Values, norms & Customs	-	-	-	22	115	154	159	450	112.5	54.96
Σ		0	397	569	379	1453	2011	1941	6750		

(Source: Field work 2015)

The mean and standard deviation of residents of the Nashik responses to socio-cultural impact on tourists are calculated in the table 1. In case of Nashik mean and standard deviation of Commercialization of traditions and customs is

respectively 75 and 63.37, overcrowding 112.5 and 64.36, information centre 75 and 51.87, language impact 90 and 39.89, religion impact 75 and 26.86 etc.

Table 2: Frequency distribution of Socio-Cultural Impact on Nashik

Sr. No	Average Score	% of Respondent
1	1	0
2	2	5.88
3	3	8.43
4	4	5.61
5	5	21.53
6	6	29.79
7	7	28.76
Total		100%
Mean		14.29
Standard deviation		11.25

As per table 2 the higher the number of respondent tourists larger the effect on host population of tourist centers. The frequency distribution of Socio-Cultural impact means for Nashik 14.29 and

standard deviation 11.25. So, it can be said that in Nashik there is an overall positive effect of tourism (Fig 3).

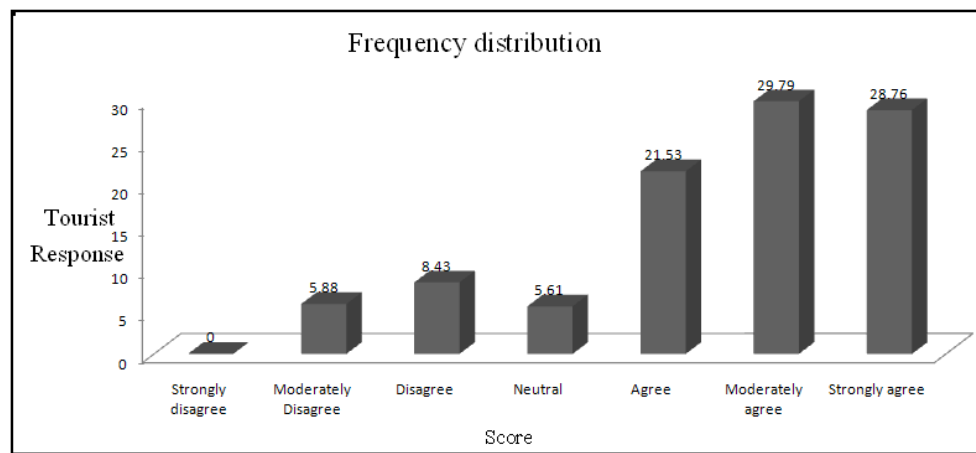


Fig. 3

Now, is there any relation between tourist response and average score of Nashik? This can be checked

Table 3: Result table

$Y = -2.39 + 2.37x^1 + 2.37x^2$	
R^2	0.88
R	0.94
EV	88%
UEV	12%
t	5.43
Level of significant	
	table t
95%	2.78
99%	4.6
99.99%	8.61

There is a correlation between tourist response and average score of Nashik. The explained variance is 88% and unexplained variance is 12%. It indicated that tourist response is depending on score. The equation derived is significant at 99% level. The calculated t value is 5.43 i.e. more than table t value on 99% level. Hence it is clearly indicating that tourist response depends on the score. So, it can be said that in Nashik there is a Socio-cultural impact of tourism.

Conclusion:

It can be summarized that socio-cultural impact depends upon the factors like, commercialization of traditions and customs, overcrowding, information centre, language impact, religion impact, child labour, standard of living, increase in crime rate and Gambling, Changes in recreation facilities, Increasing number of accident etc.

Mostly in the rainy season so many tourists go to enjoy the picturesque of Nashik. The higher the number of tourists larger the effect on host population of tourist centers. The attitude index means for Socio-cultural impact Nashik is 14.29 and standard deviation 11.25. The second degree bivariate regression equation gives idea about tourist response and average score of Nashik. There is a correlation between tourist response and average score of Nashik. So, it can be said that in Nashik there is a positive effect of tourism. Besides this, such study is useful to planners, administrators,

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with second degree bivariate regression equation. $Y = a + b_1x^1 + b_2x^2$

layman and those who are interested in research in the field of economic and social planning, strategic study and social and economic development may get the benefit.

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Study of Urbanization and its positive and negative impact

Dr. Vitthal G. Chavan

Dept.of Geography, Mahatma PhuleMahaviadyalay, Kingaon.

Corresponding Author- Dr.Vithal G. Chavan

Email:- vithalchavanparth@yahoo.com

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Abstract:

Urbanization, the process of population migration from rural to urban areas, has several significant side effects. While it drives economic growth and development, it also presents numerous challenges. Rapid urbanization often leads to overcrowded cities, straining infrastructure and public services. This can result in inadequate housing, traffic congestion, and overburdened healthcare and education systems. Environmental impacts include increased pollution, waste generation, and the loss of green spaces, contributing to climate change and biodiversity loss. Additionally, urbanization can exacerbate social inequalities, with marginalized communities frequently lacking access to essential services. To mitigate these side effects, sustainable urban planning and policies are essential, ensuring that cities can accommodate growing populations while maintaining a high quality of life. present study based on urbanisation and its side effect on various sectors.

Keywords: Dissimilar incomes, overcrowded, violent crime.

Introduction:

The process of urbanization has positive as well as negative economic and social changes. The positive effects include economic development, and education. However, urbanization places stresses on existing social services and infrastructure. Crime, prostitution, drug abuse and street children are all negative effects of urbanization. Also there tends to be a lack of social support for children in school and home by their hard-working, usually poor, parents. Inadequate income, overcrowded housing and poor living conditions create a fertile ground for the development of violence. Violent crime is more visible in the cities than in rural areas and it affects people's everyday life, their movements and the use of public transport. Crime in the city can create a sense of insecurity in its inhabitants. This unsafe feeling in city streets separates residential areas into higher-income and lower-income groups, which reduces the sense of community and forms areas with dissimilar incomes, costs and security levels.

In this study we will look at some of the ways in which these problems and challenges can be addressed by considering the future demands for urban living and by taking a planned approach to the development of new urban areas. Urbanization refers to the process by which an increasing percentage of a population comes to live in cities and urban areas. This shift from rural to urban living is often driven by factors such as

economic opportunities, better access to services, and the promise of improved quality of life. While urbanization has contributed to economic growth, innovation, and improved living standards, it also comes with a range of side effects that can pose significant challenges.

Certainly! Below is a general outline of aims and objectives you might find in a research paper.

Aims and objectives:

1. To Analyze the Drivers of Urbanization
2. To Assess the Impact of Urbanization on Economic Development.
3. To Investigate the Social and Environmental Consequences of Urbanization
4. To Examine Urbanization in Different Geographical Contexts

Positive Aspects of Urbanization

1. Economic Growth: Urban areas are often hubs for economic activities, providing jobs, promoting entrepreneurship, and fostering innovation. The concentration of resources and labor can lead to increased productivity and economic development.

2. Improved Access: to Services: Cities usually offer better access to education, healthcare, and social services. Infrastructure like roads, electricity, and water supply are more developed in urban areas.

3. Cultural and Social Opportunities: Urban centers are often melting pots of cultures, leading to diverse communities, vibrant social life, and opportunities for cultural exchange.

Side Effects of Urbanization:

1. Overcrowding: Rapid urbanization can lead to overcrowded cities where infrastructure and services are strained. Overpopulation in urban areas can result in inadequate housing, leading to the growth of informal settlements or slums.

2. Environmental Degradation: Urbanization can contribute to environmental issues such as air and water pollution, deforestation, and loss of biodiversity. The concentration of industries, vehicles, and waste in urban areas leads to higher pollution levels, which can negatively impact public health.

3. Increased Inequality: While cities can be centers of wealth, they can also exacerbate social and economic inequalities. The gap between the rich and the poor is often more visible in urban areas, with marginalized communities facing challenges in accessing housing, education, and healthcare.

4. Pressure on Infrastructure: The demand for infrastructure such as roads, public transport, water supply, and waste management increases with urbanization. If the growth is too rapid, the existing infrastructure may not keep up, leading to traffic congestion, inadequate sanitation, and water shortages.

5. Social Issues: Urbanization can contribute to social problems such as crime, homelessness, and the breakdown of traditional family structures. The anonymity of city life can lead to feelings of isolation and stress.

6. Health Challenges: Urban areas often face health challenges related to pollution, sedentary lifestyles, and stress. The spread of diseases can be faster in densely populated areas, and mental health issues can be more prevalent due to the high-pressure environment of city living.

Strategies to Mitigate the Side Effects

1. Sustainable Urban Planning: Implementing sustainable urban planning strategies can help balance growth with environmental and social considerations. This includes creating green spaces, promoting public transportation, and ensuring affordable housing.

2. Improving Infrastructure: Investment in infrastructure such as roads, public transport, water, and sanitation systems is crucial to accommodate growing urban populations.

3. Inclusive Policies: Governments should implement policies that address inequality and ensure that all citizens have access to basic services like healthcare, education, and housing.

4. Environmental Protection Measures: Initiatives to reduce pollution, conserve natural resources, and promote green energy can help mitigate the environmental impact of urbanization.

Dr. Vithal G. Chavan

Conclusion:

Urbanization is a complex process with both positive and negative consequences. Managing its side effects requires careful planning, investment in infrastructure, and policies that promote inclusivity and sustainability.

Urbanization creates enormous social, economic and environmental challenges, which provide an opportunity for sustainability with the "potential to use resources much less or more efficiently, to create more sustainable land use and to protect the biodiversity of natural ecosystems." However, current urbanization.

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Removal of Cr (VI) from effluent by Chemical method

Dr. Sujata S. Modhave¹, Dr. Dipak Nighot², Mrs. Shital Wani³

^{1,2,3}AISSMS, College of Engineering, Pune 411 001 (Affiliated to SPPU), India

Corresponding Author- Dr. Sujata S. Modhave

E-mail: modhavesujata0@gmail.com

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Abstract:

In effluent sample, identification of Cr (VI) was done by spectroscopic and volumetric methods. In spectrophotometric method used Diphenyl carbazide reagent (Volgel, 1964). In volumetric method iodometric titration was used, and when analysis of electroplating effluent was carried out the concentration of Cr (VI) was 71.70 and pH 1.51. With the help of UV-Visible spectrophotometer, concluded that effluent having Cr (VI) in dichromate form in effluent. In first step Cr (VI) is convert to Cr (III) by using $\text{FeSO}_4 \cdot 5\text{H}_2\text{O}$. Throughout this process different parameters are affecting reduction reaction such as Effect dose of reducing agent, effect of pH, effect of amount of reducing agent, period required for achievement of reaction, effect of temperature, effect of stirring rate, etc. This reducing agents are effectively used for reduction of Cr (VI) to Cr(III). In the next step, comprehensive generalization of Cr (III) from resultant solution treated with $\text{FeSO}_4 \cdot 5\text{H}_2\text{O}$ reducing agent was tried by using activated charcoal. We observed that pH at which Cr (III) get completely reduced at pH 6.5 on activated charcoal as an adsorbent. In presence of activated charcoal as a adsorbent nearly 99.98 % removal was achieved without oxidation of Cr (III) to Cr (VI).

Keywords: Chromium; reduction; electroplating effluents; removal

Introduction:

In daily routing we face various problems for survival; out of this environmental problem is a big issue. Which is one of the important and effective factors for the human being? Environment pollution problem is not only affected developing country but also developed country. The most concerned environmental pollution is water and air pollution due to industries and domestication. There are various reasons of the water pollution such as industrial effluent, waste water generated from homes, waste water due to effluent treatment etc. The effluents from industries like metallurgy, ore mining and processing, textile, tannery, electroplating, galvanizing, dye and pigment, paint and other metal processing industries, etc. releases more or less amounts of toxic heavy metal ions into environment (Mirlean et al., 2007; Ngah et al., 2002; D. Kar et al., 2008; Demir and Arisoy 2006). Cr(VI) is highly water soluble. As a result Cr(VI) cannot be precipitated and difficult to make immobile. This property of Cr(VI) makes it highly mobile. Most of the chromium in environment is present in Cr(III) and Cr(VI) oxidation states. Between Cr(III) and Cr(VI), Cr(VI) is highly toxic in nature. It is found to be Cr(VI) is 100-1000 times more toxic than Cr(III) (Gauglhofer and Bianchi, 1991). Cr(VI) exists as oxo-species either as CrO_4^{2-} or $\text{Cr}_2\text{O}_7^{2-}$ species which is very strong oxidizing agent. Human population gets exposed to chromium due to occupational and non occupational reasons. Persons particularly working in chromate industry

get exposed to high level of chromium. Chromium inhaled get localized in lung, liver, kidney, spleen, bone marrow, cell, etc. (ATSDER; 1989). Cr(VI) act upon our body at the point of contact. This is due strong oxidizing nature of Cr(VI). Hexavalent chromium is transported to cell membrane easily (Lewis and Bianchi, 1982), which makes Cr(VI) more toxic than Cr(III). In our body Cr(VI) is reduced to Cr(III) by vitamin-C and other reducing substances present in our body. Hexavalent compounds are detected as geno toxic carcinogens (U.S. EPA, 1998; Cervantes et al., 2001). Neither Cr(VI) nor Cr(III) binds strongly to DNA, but reduction of Cr(VI) to Cr(III) in cytoplasm generate free radicals such as OH^\cdot , O_2^\cdot , R^\cdot , etc which cause damage to DNA and thereby act as carcinogen (Wetterhahn; 1984). Zinc chromate was found to be strongest carcinogen of the chromates while soluble compounds, like chromic acid, are much weaker carcinogens (Salnikow et al., 2008). Chronic inhalation of Cr(VI) gives rise to high risk of lung cancer (ATSDR). Exposure of skin to Cr(VI) results into skin damage (WHO, 1988). Exposure of skin to Cr(VI) gives rise to skin irritation, skin ulcer, allergic sensitization, etc. (NAS, 1974; Bagdon and Hazen, 1991; Pedersen, 1982). Cr(VI) has been considered as second most common skin allergen to human population (Polak, 1983, Haines and Nieboer, 1988). The permissible limit of Cr (VI) in drinking water is $50\mu\text{g/L}$ and total Cr is $100\mu\text{g/L}$ (www.epa.gov/iris/toxreviews/0144tr.pdf).

Thin coat of the metals like Cr, Ni, Cu, Ag, etc. is applied on the surface of base metal by electroplating process (Dermentzis et. al., 2011). This process is used to coat surfaces of a wide range of common appliances such as parts of automobile (motorcycle, truck and bus), boat fixtures, bathroom and kitchen fittings, toys, etc. Among the different types of electroplating, chrome plating is the most common and widely preferred to plate automotive parts, bathroom and kitchen fittings, etc. Due to extreme hardness, resistance to heat wear, corrosion and low coefficient of action of hard chrome coating it possesses extensive applications in the industry. Hexavalent chromium in the form of chromic acid is used in the chrome electroplating process. Incomplete consumption of the chromium and washing of the electroplated objects generate effluents containing large quantity of hexavalent chromium (Singh et. al., 2009). Hexavalent chromium exists either in the form of chromate or dichromate ion (CrO_4^{2-} or $\text{Cr}_2\text{O}_7^{2-}$) (Vogel, 1964) and possesses significantly higher levels of toxicity than other valence states of chromium (Horsfall et. al., 2006). Moreover, it is considered as mutagen and carcinogen (USEPA, 2004). Due to these reasons, the Agency for Toxic Substances and Diseases Registry (ATSDR) has listed hexavalent chromium in the top sixteenth hazardous substances (Horsfall et. al., 2006). Physico-chemical methods like precipitation, ion exchange, electrolysis, electro-coagulation, etc. are in use for the removal of heavy metal ions including hexavalent chromium from industrial effluents (Ahluwalia and Goyal, 2007). Hexavalent chromium is highly water soluble and hence difficult to remove. In many chemical methods large quantity of sludge is formed and disposal of sludge causes many environmental problems. Disposal of sludge is nothing but removing pollutant from effluent and creating the pollution at other place. For treatment of chrome-electroplating effluent elemental iron is mostly used. When elemental iron is used chromium is removed by co-precipitation as $\text{Cr}(\text{OH})_3$ along with $\text{Fe}(\text{OH})_3$. Such process do not allows recovery of chromium for further use. There are many reports on removal of Cr(VI) by biosorption using living microorganism (Padma and Dhara, 2006, Mostafa et. al., 2005). These methods are claimed to be effective and low cost methods but these methods are having certain disadvantages. Removal methods involving use of microorganism are time consuming and require precise control over the physicochemical parameters such as temperature, pH, aeration, etc. Metals ions are not biodegradable hence in removal process they get accumulated in the biomass of microorganism. The decomposition of disposed biomass of used microorganism again releases chromium into environment. As Cr(VI) is highly toxic, hence microorganisms cannot be used for removal of

Cr(VI) when its concentration is high (Zayed and Terry, 2003). In the present study we have proposed an alternative two stage low cost physiochemical method for complete removal of chromium from electroplating effluent, where recovery of chromium is possible. In first stage we have achieved reduction of Cr(VI) to Cr(III) by use of costless biomass of Eichhornia. In second stage, Cr(III) was removed from the effluent by simultaneous precipitation and adsorption. This approach was found to be highly successful for complete removal of Cr(VI) from aqueous solution. After bench scale experiment pilot scale experiment was performed. Pilot scale experiment showed that more than 99.0% removal of chromium from the effluent is possible by the proposed method. Survey of literature showed that there are no reports on such methods hence we are reporting work done in our laboratory on this method. As we have used costless and easily available biomass as reducing in place chemical reducing agents the cost of process become low as well Cr(III) do not get contaminated with other metals. Secondly, in final stage we get Cr(III) in concentrated form which can be oxidized by H_2O_2 and NaOH to Cr(VI) and can be reused in electroplating process. The activated charcoal is washed with water till free from acid and dried in an oven. It is used again hence in the process sludge is not produced which is the advantage of our process over other process such use of FeSO_4 or Fe metal.

Materials and Methods:

1) Source and analysis of chrome electroplating effluent: Chrome electroplating effluent was procured from the chrome plating unit located at Chaken Industrial Area, Pune (India). Cr (VI) from the electroplating solution and effluent was analyzed by iodometric method while acid content was analyzed by pH meter. UV-Visible spectrum was recorded using double beam UV-Visible spectrophotometer.

2) Reduction of Cr(VI) by Eichhornia biomass: Eichhornia biomass was harvested from Idryani river Pune (India). Ample of biomass of Eichhornia is available in the river from December to June every year. Biomass was crushed in blender and used for the experiment. Effect of pH was studied by varying the pH of effluent from 1.51 (original pH of effluent) to 7. pH of 100 ml effluent was adjusted to requisite value (± 0.1), to it 5 g crushed biomass was added, and then stirred for 60 min. and filtered. Filtrate was analyzed for Cr(VI) content by spectrophotometric method (De, 1994). Effect of dose of biomass on percent reduction of Cr(VI) and time was studied by varying quantity of biomass from 1 to 5 g. This experiment was performed at original pH and on 100 ml effluent. Kinetics of reduction reaction of Cr(VI) was studied at pH 1.5 (where rate of reduction reaction was observed highest). For kinetics of reaction 200 ml effluent

was used. To it 8 g crushed biomass was added and stirred at 200 rpm. At definite time interval 5 ml effluent was withdrawn from the flask, centrifuged and analyzed for Cr(VI) content by spectrophotometric method.

3) Removal of Cr(III): Effluent treated with *Eichhornia* biomass consists of only Cr(III). This effluent was filtered through activated charcoal bed and then pH was adjusted to 6.5. To 100 ml effluent containing Cr(III), 0.100g powdered activated charcoal was added and resulted suspension was stirred for the 45 minutes at 200 rpm followed by filtration through filter paper. From filtrate Cr(III) was analyzed by spectrophotometry.

4) Pilot scale experiment: For pilot scale process, simple type reactor was designed. Reactor consists of two tanks of 200 liter capacity. Both tanks were equipped with stirrer and pump. The outlets of tanks consist of carbon filter. Into 200 liter effluent 6000 g crushed biomass of *Eichhornia* was added and stirred at 100 rpm till complete reduction of Cr(VI) take place to Cr(III). Resulted suspension was first filtered through carbon filter and filtrate was transferred into another tank. To the filtrate 200 g activated charcoal was added and pH was adjusted to 6.5 ± 0.1 . Resulted suspension was stirred for 45 minutes at 100 rpm. Activated charcoal was allowed to settle at the bottom of tank and then supernatant was taken out through outlet consisting of carbon filter. About 2 liter suspension containing activated charcoal was retained behind in the tank which was filtered under vacuum. Supernatant was analyzed for Cr(III) content by spectrophotometry. Finally, adsorbed Cr(III) from charcoal was recovered by washing it with 2 N H_2SO_4 . Recovered charcoal was washed with distilled water, dried in an oven and reused.

5) Analysis of Chromium: Cr(VI) from solution was analyzed by spectrophotometric method as described by De (1993). Cr(III) was analyzed by same method after oxidation of Cr(III) to Cr(VI) by ammonium persulfate method (Vogel, 1964). The method is highly sensitive and even 0.01 mg in five ml Cr can be determined easily by this method. Wherever necessary solution from which Cr(III) is to be analyzed was concentrated 10 times and then used for analysis.

Results represented in the present paper are the mean of three independent experiments \pm standard deviation.

Results and Discussion:

1) **Cr(VI) content in effluent:** UV-Visible spectrum of the effluent (Fig-1, spectrum shown by dotted line) clearly indicate that Cr(VI) is present in dichromate form in the effluent. Spectrum shows characteristics peaks at 348 and 445 nm which are the characteristics of Cr(VI) in dichromate form (Figgis and Hitchman, 2000). The chemical analysis of effluents used in this study indicate that effluent

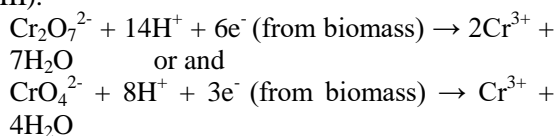
consists of 70.74 ± 0.31 ppm of Cr(VI) and 0.028 mol l^{-1} acid. These results showed that the electroplating effluents consists of large amount of Cr(VI) which is very high than permissible level (2 ppm) (Zayed and Terry, 2003). The observed concentration of Cr(VI) in the electroplating effluents will be extremely harmful to aquatic life (Zayed and Terry, 2003). Therefore, proper treatment is essential to the chrome electroplating effluent before it is allowed to release into the waste water stream or natural water reservoir.

2) **Reduction of Cr(VI) to Cr(III):** It is difficult to remove Cr(VI) in the form of $\text{Cr}_2\text{O}_7^{2-}$ (dichromate) from the aqueous solution. In these form Cr(VI) is highly soluble in the water and do not get precipitated easily. One of the way to remove Cr(VI) is convert it to Cr(III) and then remove Cr(III) by precipitation. Since, Cr(III) can be easily precipitated at neutral to slightly alkaline pH as $\text{Cr}(\text{OH})_3$. Number of chemical method were reported for the conversion of Cr(VI) to Cr(III) such as use of Fe metal, ferrous sulphate, H_2O_2 , H_2S , sodium sulphite, etc. (Junyappon and Weerapong, 2006, Beukes et. al., 2000, Niekerk et. al., 2007, Fendork and Li, 1996, Beukes et. al., 2000). In these methods along with formation of Cr(III) other substances get added into effluent which increases load on treatment method. Use of iron or ferrous sulphate result into formation of Fe(III) while use of H_2S result into formation of colloidal sulphur. Use of H_2O_2 as reducing agent provide relatively cleaner way as it do not generate any chemical species other than the water after reaction with Cr(VI). However, for the completer reduction of Cr(VI) from effluent excess H_2O_2 is required which cause problem in further process. Presence of excess of H_2O_2 in effluent results into oxidation of Cr(III) to Cr(VI) at pH above 7 at which Cr(III) can be precipitate as $\text{Cr}(\text{OH})_3$. Thus, in present study we have tested easily available waste and costless biomasses of different plants such cabbage and cauliflower leaves, sesuvium, *Eichhornia*, etc. as reducing agent to Cr(VI). Among these different biomasses, biomass of *Eichhornia* was found to be more efficient towards the reduction of Cr(VI). Therefore we have selected biomass of *Eichhornia* as reducing agent to Cr(VI). Fresh biomass of a plant consist number of easily oxidisable compounds such as carbohydrates, proteins, enzymes, chlorophyll, etc. which reacts with Cr(VI) and by electron transfer reduces Cr(VI) to Cr(III). In fact Cr(VI) is well known strong oxidizing agent and it is able to oxidize many organic compounds. By oxidation of organic compounds from *Eichhornia* biomass Cr(VI) itself reduces to Cr(III).

Reduction of Cr(VI) to Cr(III) was confirmed by recording absorption spectrum of effluent before and after treatment (fig.1) as well as by colour of the effluent. Cr(VI) in acidic medium

possess characteristic absorption peak at 348 and 445 nm. These peaks get disappeared in spectra of effluent treated with plant biomass. In contrast Eichhornia treated effluent (concentrated solution) showed two characteristic broad peaks at 410 and 572 nm which is a characteristic of Cr(III) in aqueous solution (Figgis and Hitchman, 2000). The effluent treated with biomass do not showed positive test for Cr(VI) with diphenylcarbazide reagent. These observations indicated that Cr(VI) from effluent get reduced to Cr(III) and effluent contains only Cr(III) and not Cr(VI).

3) Effect of pH on reduction reaction of Cr(VI): pH dependence reduction of Cr(VI) was studied to select the best pH for reduction reaction. Results of this experiment are depicted in fig.2. These results indicate that acidic pH is essential for the reduction of Cr(VI) to Cr(III). In alkaline pH reduction of Cr(VI) to Cr(III) was not observed. Depending on pH, in solution state Cr(VI) exists as $\text{Cr}_2\text{O}_7^{2-}$ or CrO_4^{2-} (chromate) ion. These two forms of Cr (VI) undergoes reduction reaction with reducing agent in acidic medium by formation of the water and Cr(III).



H^+ ions in solution facilitate reduction reaction by helping formation of water from oxide ion of chromate or dichromate. Therefore acidic medium is necessary for conversion of Cr (VI) to Cr (III). Reduction of Cr (VI) can be achieved by number of chemical substances and all they requires acidic medium (Kimbrough et. al., 1999). It has been observed that rate of the reduction reaction goes on increasing with decrease in pH of the effluent. H^+ ions favors the reduction of Cr(VI) hence rate of reduction reaction goes on increasing with increase in H^+ ion concentration.

4) Effect of Quantity of Biomass: This experiment was performed to identify minimum quantity of biomass required at room temperature for complete reduction of Cr(VI) from definite quantity of effluent. Results of this experiment are depicted in fig. 3. From these results it is clear that for a fixed volume of the effluent the rate of reduction of Cr(VI) goes on increasing with increase in quantity of biomass of Eichhornia. With increase in the quantity of biomass amount of reducing substances increases in reaction mixture which results into increase in rate of reduction. Result showed that 4 g biomass was sufficient to reduce $98.95 \pm 0.20\%$ of Cr(VI) from 100 ml effluent in 60 minutes. Below 4 g quantity rate of reduction reaction was found low and requires greater time for completion and at 1 and 2 g quantity reduction of Cr(VI) remains incomplete. Above 4 g biomass reaction goes to completion in less than 60 minutes. The percent

reduction observed at 4 g quantity is very close to 100% hence we can conclude that minimum 3 g biomass must be used to bring about complete reduction of Cr(VI) from 100 ml effluent. The quantity of biomass 3 g appears to be high as compare to chemical reducing agents such as $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ (requires 0.110 g for 100 ml). Fresh biomass of any plant consists of large quantity of water. Hence quantity of biomass required for reduction for unit volume of effluent appears to be high. However, if this weight is expressed in terms of dry wt. then it becomes 0.228 g i.e. not too higher than chemical reducing agents.

5) Kinetics of reduction of Cr(VI): To identify time required for complete reduction of Cr(VI) with fixed quantity of biomass, kinetics of reaction was studied at room temperature. Results of this experiment (fig.4) showed that initially rate of the reduction is high which goes on decreasing exponentially with time. In first five minutes of reaction time $49.57 \pm 3.55\%$ reduction of Cr(VI) was taken place while for complete reduction of Cr(VI) about 60 minutes were required. Rate of a chemical reaction is directly proportional to concentration of reactant present at that time in the reaction mixture. As time passes, concentration of Cr(VI) goes on decreasing in reaction mixture hence rate of the reduction of Cr(VI) goes on decreasing. Another reason for decreasing rate of the reduction reaction of Cr(VI) is heterogeneous nature of reactants present in reaction mixture. Biomass of the Eichhornia consists of different bio-molecules which react with Cr(VI) and reduces Cr(VI) to Cr(III). When biomass is crushed in blender and added into reaction mixture some of the bio-molecules dissolve into effluents while some of them remain in solid form. In first phase of reaction, easily oxidisable and water soluble compounds might be reacting with Cr(VI) which results into faster initial rate of reduction reaction. In later phase of reaction, molecules having moderate reducing properties and or present in solid form might be reacting with Cr(VI) which reflects in terms of slow rate of reduction of Cr(VI).

6) Removal Cr(III): The tests performed on filtered effluent which was previously treated with Eichhornia biomass showed that it consists of Cr(III) and dissolved matter from Eichhornia biomass. We have tried to remove Cr(III) as $\text{Cr}(\text{OH})_3$ by precipitation. However, at precipitation pH of Cr(III) (above 7) and in presence of dissolved biomass it has been observed that some quantity of Cr(III) get oxidized again to Cr(VI) ($15.23 \pm 1.53\%$ of total Cr(III) in solution). This is due to less stability of Cr(III) in alkaline medium. It is well reported that in alkaline medium and in presence of oxygen, oxidation of Cr(III) take place to Cr(VI). Hence we have adopted different approach to remove Cr(III) from effluent. In first phase of

removal of Cr(III), acidic effluent was filtered through bed of activated charcoal to remove dissolved matter. In second phase, filtered effluent was treated with activated charcoal (1 mg ml^{-1}) and pH of effluent was adjusted to 6.5 ± 0.1 . This pH is the optimized pH for removal of Cr(III) on activated charcoal. The experiment was performed at pH 4 to 8, which showed that optimum adsorption of Cr(III) take place at pH 6.5. (Fig.5). The suspension containing activated charcoal was stirred for 45 minutes and allowed to settle and supernatant was analyzed for chromium content. The analysis of supernatant showed that it consists of less than 1% Cr as Cr(III) against original content of Cr(III) in the effluent. Activated charcoal act as adsorbent to Cr(III) as well as provide reducing environment which do not allows oxidation of Cr(III) to Cr(VI).

pH 6.5 is very close to precipitation pH of Cr(III) as $\text{Cr}(\text{OH})_3$. Hence to know the exact form of Cr(III) at pH 6.5 we have carried out determination of turbidity with respect to pH. This experiment showed that from pH 6 turbidity of solution starts increasing which is mainly due to precipitation of Cr(III) as $\text{Cr}(\text{OH})_3$ (Fig.6). From this experiment it can be easily concluded that, Cr(III) get adsorbed as $\text{Cr}(\text{OH})_3$ on activated charcoal and get settled along with it. Thus, reducing nature of activated charcoal and its adsorption properties help to removed Cr(III) as $\text{Cr}(\text{OH})_3$ from effluent.

Removal of Cr(III) from solution was confirmed by UV-Visible absorption spectra of concentrated solution (fig.7) and by quantitative analysis of Cr(III). Absorption spectra of Cr(III) shows characteristic peaks at 410 and 572 nm. After removal of Cr(III) absorption spectra of concentrated solution was recorded and it do not showed any such a peak in spectrum. Even though final effluent in concentrated form when treated with H_2O_2 and NaOH do not show the yellow colour or peak in spectrum at 370 nm. After reaction with $\text{NaOH} + \text{H}_2\text{O}_2$ Cr(III) oxidizes to CrO_4^{2-} which is yellow in colour and absorption spectra show characteristic strong absorbance peak at 370 nm (Vogel, 1964). These observations indicate that Cr(III) is removed from the effluent nearly to 100%. Quantitative analysis of concentrated finally treated effluent for Cr(III) by spectrophotometry showed that Cr(III) is present in treated effluent below the detectable level (less than 2 ppm).

7) Adsorption Isotherm: Adsorption isotherm was studied for adsorption of Cr(III) on activated charcoal (fig-8). R^2 value for isotherm is 0.961 which is very close to one indicating that experimental data fits to Freundlich adsorption isotherm model. However, value of Cr(III) adsorbed per 100 mg adsorbent obtained is very low (1.023 mg) which is mainly due to low concentration of Cr(III) present in solution. Intensity of adsorption was found 111 indicating that Cr(III) was quite

strongly adsorbed as $\text{Cr}(\text{OH})_3$ on the activated charcoal.

8) Large Scale Experiment: After bench scale experiment, removal of Cr(VI) from effluent was achieved on large scale (200 litre effluent) successfully. For large scale experiment, similar strategy to bench scale experiment was adapted. Large scale experiment showed that 6.0 kg biomass was sufficient to reduce Cr(VI) completely from 200 litre effluent within 80 minutes. After complete reduction of Cr(VI) from effluent it is taken out through outlet using pump and transferred into another tank. For removal of Cr(III) 1 mg ml^{-1} activated charcoal was added to effluent and then pH was adjusted to 6.5 ± 0.1 by addition of 1N NaOH. Resulted suspension was stirred for 45 minutes and then charcoal was allowed to settle at the bottom of tank. After settling of the activated charcoal at the bottom of tank supernatant was removed from outlet of the tank. It resulted in the formation of 1.8 litre sludge which was left behind in a tank. It consists of activated charcoal on which $\text{Cr}(\text{OH})_3$ is present in adsorbed form. The sludge was filtered under vacuum to recover the activated charcoal. From the recovered charcoal, Cr(III) was isolated by washing it with 1000 ml, 2N H_2SO_4 . The activated charcoal was dried in an oven at 150°C for 2 hr. and reused again. Regenerated activated charcoal do not showed any observable decrease in its adsorption capacity. The supernatant was analysed for presence of Cr(III) and it showed presence of Cr(III) below detectable level. The analysis of acid washing of activated charcoal showed only presence of Cr(III) as $\text{Cr}_2(\text{SO}_4)_3$ and it consists of $13.530 \pm 0.18\text{ g}$ Cr(III). This value is very close to total Cr(VI) content in 200 litre effluent (14.148 g) indicating that in the present process nearly all chromium get removed from effluent. The difference in initial value and final value is about 0.618 g which arises due to association of some quantity of Cr(III) with biomass and activated charcoal. Cr(III) is finally obtained in concentrated form, which can be recycled in electroplating process after oxidation to Cr(VI).

Conclusions:

Cr (VI) from chrome plating effluent can be successfully reduced to Cr(III) by costless and easily available plant biomass and Cr(III) from effluents can be removed using activated charcoal as an adsorbent. Such strategy allows nearly 100% removal of Cr from chrome plating effluent. Large scale experiment showed that process is not effective only at bench scale but equally effective at large scale and can be applied for large scale treatment of effluents. Except plant biomass any of the material is not consumed in the process and waste generated is spent plant biomass which can be easily disposed. Thus, process is relatively clean and provides low cost and easy alternative to existing

process for treatment of chrome electroplating effluent. Pilot scale experiment showed that process can be adopted for treatment of effluent containing Cr(VI). As process is technologically less

complicated and low cost it can be easily accepted by industries for treatment of effluent containing Cr(VI).

Fig-1: Spectra of effluent before treatment (dotted line) and after treatment (solid line ____)

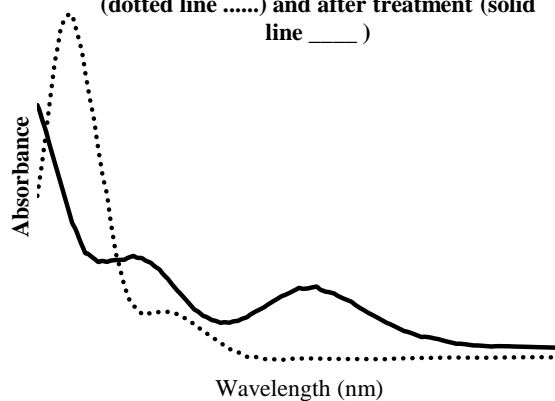


Fig-2: Effect of pH of solution on amount of Cr(VI) reduced in specific time

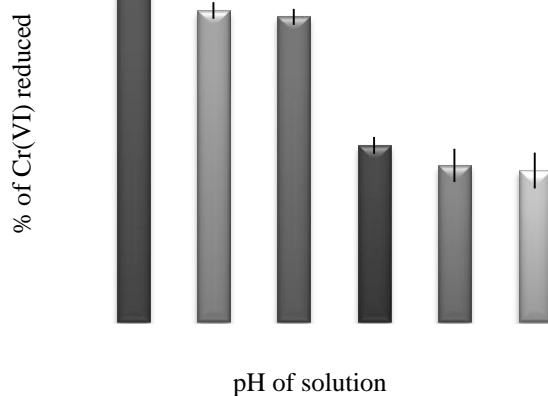


Fig-3: Effect of quantity of biomass used on % of Cr(VI) reduced in specific time and at original pH

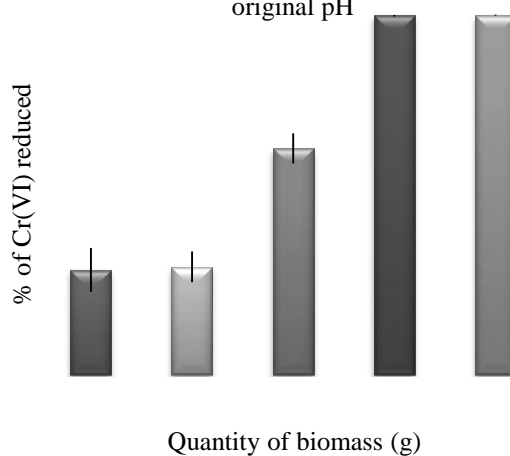


Fig-4: Kinetics of reduction of Cr(VI)

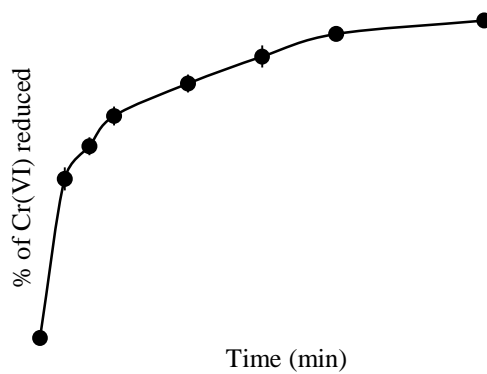


Fig.5: % of Cr(III) removed in presence of activated charcoal as an adsorbent

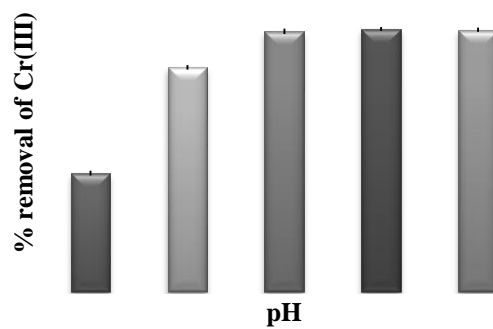
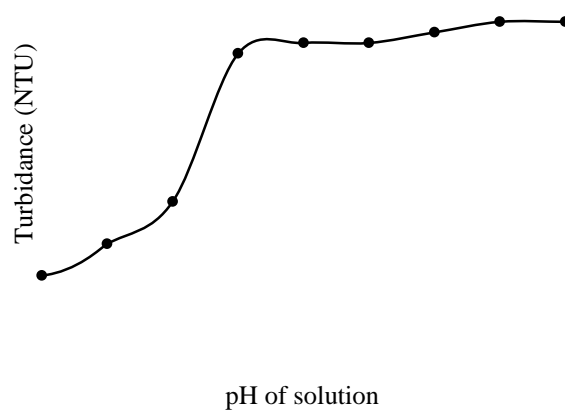
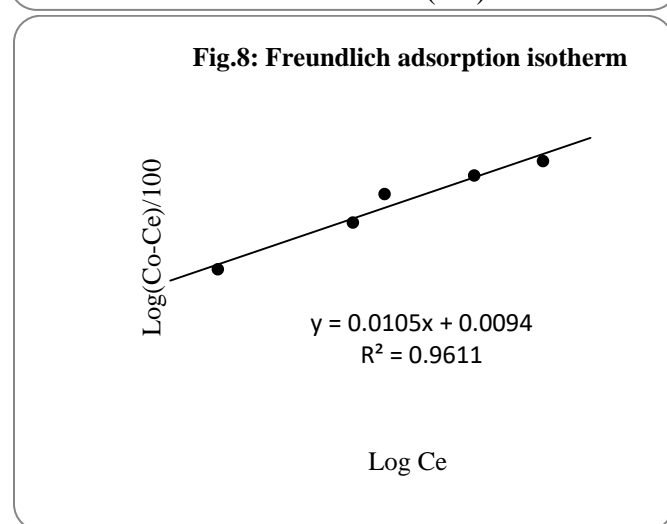
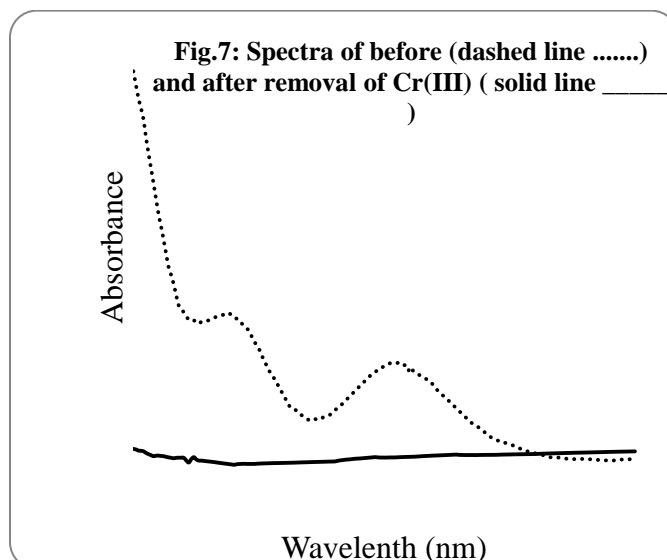


Fig-6: Graph pH against Turbidity of Cr(III) solution





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A Study on Crypto Currency awareness of Women in Chandrapur City

Prof. Rima S. Chopde

Sau.Leena Kishor Mamidwar Institute of Management Studies & Research, Kosara Chandrapur, Maharashtra

Corresponding Author- Prof. Rima S. Chopde

Email- bhartischopde@gmail.com

DOI- 10.5281/zenodo.13860411

Abstract:

This paper explores the growing awareness and participation of women in crypto currency investments, examining the trends, motivations, and challenges unique to female investors. While crypto currency markets have traditionally been dominated by men, recent data suggests an increasing number of women are entering the space. This research aims to understand the factors driving this shift, the awareness and the investment behaviors of women in crypto currency, and the obstacles they face. Additionally, the paper will analyze how gender dynamics influence financial decision-making in the crypto market.

The universe of the study covers whole Chandrapur city as its population. The sampling is selected by using convenient sampling and the sample size is confined as 50.

Keywords: Crypto Currency, Women awareness, Women Investors, Investment behaviour.

Introduction

Crypto currency is a revolutionary digital asset that has transformed the financial landscape since its inception. Unlike traditional currencies, which are regulated by governments and financial institutions, crypto currencies operate on decentralized networks using blockchain technology. This innovation ensures transparency, security, and immutability in transactions. Bitcoin, introduced in 2009, was the first crypto currency, and its success paved the way for thousands of other digital currencies, each with unique features and use cases. As crypto currencies gain mainstream attention, they are reshaping how we think about money, investing, and the future of global finance. The growing interest in crypto currency has seen a significant rise in female participation, marking a shift in the traditionally male-dominated investment landscape. This abstract explores the dynamics of women investing in crypto currency, highlighting the factors driving their involvement, the challenges they face, and the potential for financial empowerment. Despite barriers such as the gender gap in financial literacy and access to resources, women are increasingly leveraging cryptocurrency as a tool for wealth creation and financial independence. This trend underscores the importance of inclusivity in the evolving digital economy and the need for strategies to support and encourage more women to engage in cryptocurrency investments.

About Chandrapur

Fort city of Chandrapur is of historical importance, it was set up by Gond King Khandkya Ballal Shah in 13th Century. The city is situated on the banks of Irai River on one side and Zarpat river

on the other. It is the district headquarters of Chandrapur district. It is famous for TADoba National TIGER RESERVE just a 37 kms from heart of the city. The area of Chandrapur is rich with Coal, Lime Stone as well as other important minerals and High quality Bamboo forests. The important industries in this region include Ballarpur Industries Limited (BGPPL), Aditya Birla Group Cement Factory, ACC Cement, Gujrat Ambuja Cement, ManikGargh Cement (a house of Basant Kumar Birla) to name a few. Earlier Chandrapur was a Nagar Palika now it is a Municipal Corporation with a population around 3, 50,000.

Review of literature

1) **Crypto currency for Beginners: Here's What You Should Know** By Richard Man

2) **Blockchain: An Essential Beginner's Guide to Understanding Blockchain Technology Cryptocurrencies Bitcoin and the Future of Money** By Herbert Jones

Objective of the Study

- 1) To study awareness about Crypto currency in Women
- 2) To study the financial behavior of the women investors
- 3) To Study the investment goals of women

Need for the study:

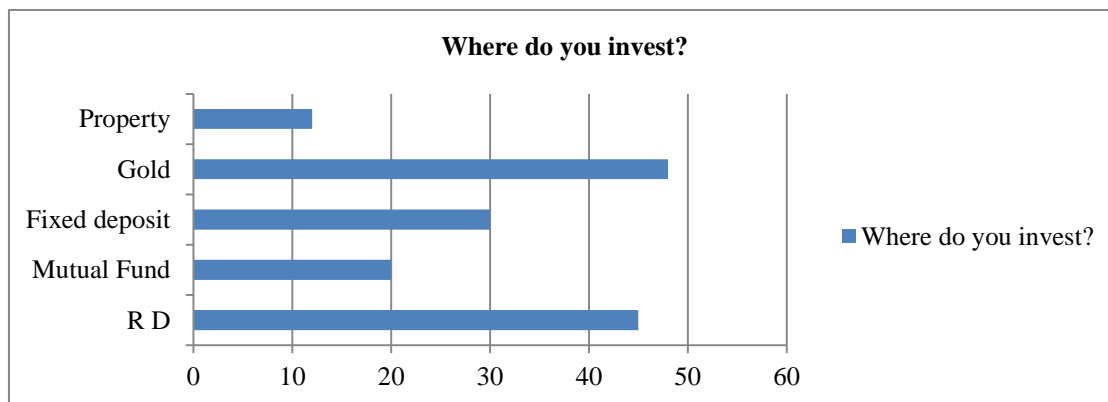
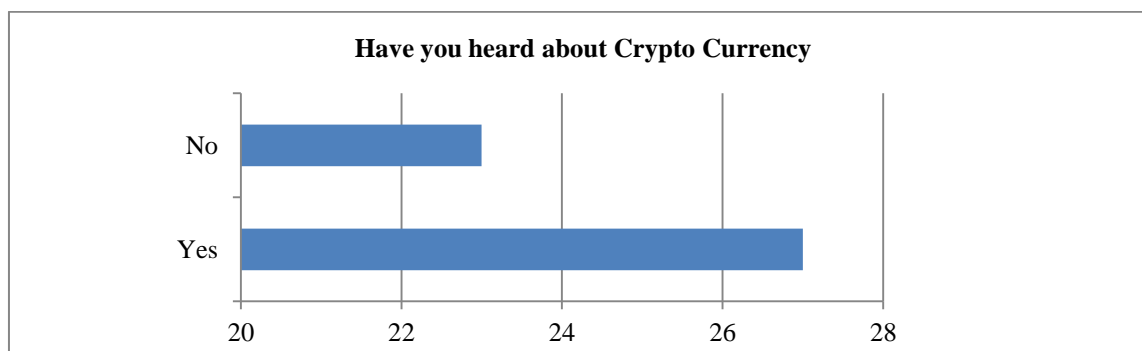
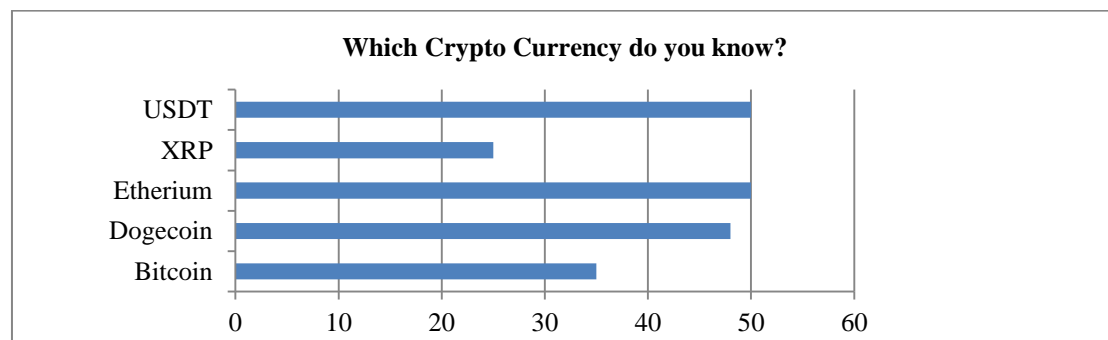
Many people have very little knowledge of management of finances, how credit works and importance of their stable financial condition. Lack of comprehension of financial matters is one of the reasons for problems relating to saving and investment. This study aims at getting an insight into the crypto Currency awareness of women

Hypothesis

- 1) Women are very much aware about the Crypto Currency
- 2) Women have basic knowledge about financial terms and have knowledge about financial risks.

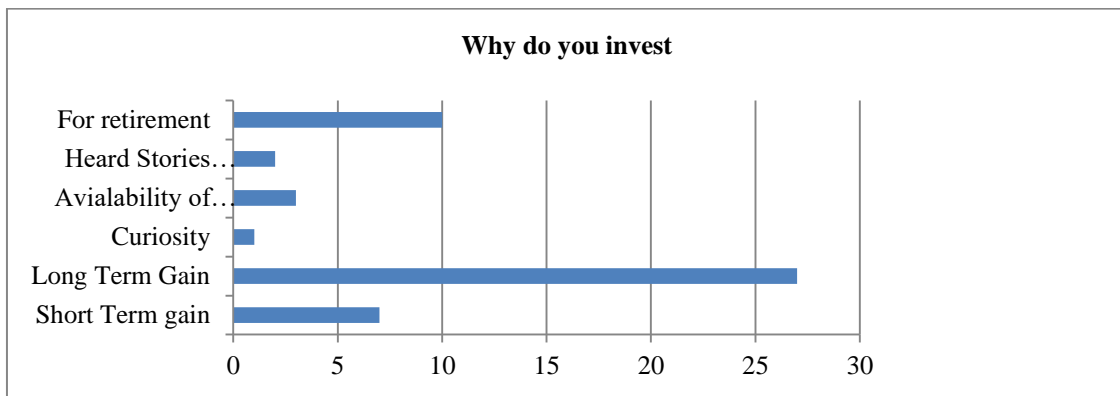
Research Methodology

The study under taken is descriptive in nature, for the collection of data different recourses were used.

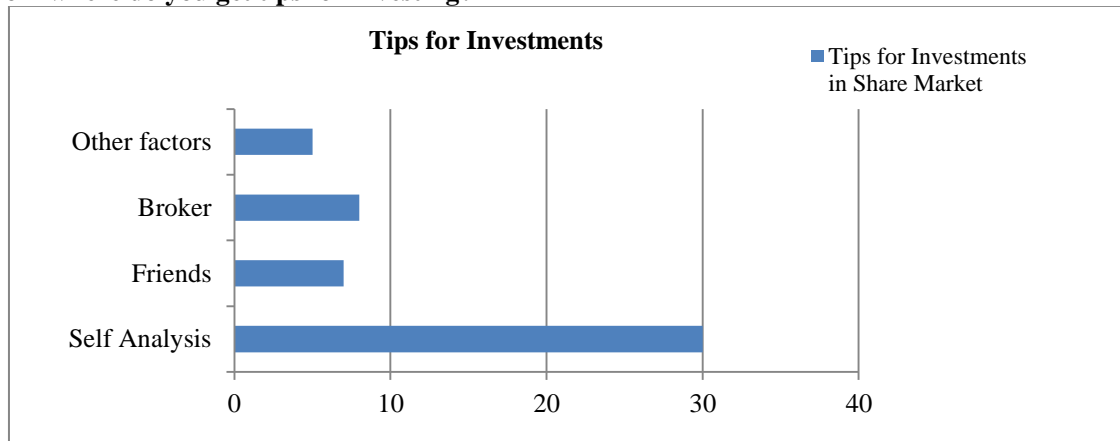
Data Analysis:**1. Where do you invest?****2. Have you heard about Crypto Currency?****3. Which Crypto Currencies do you know?****4. Motivations for Investing**

Primary data collection methods can be divided into two groups: quantitative and qualitative. Primary data was collected through close ended questionnaire.

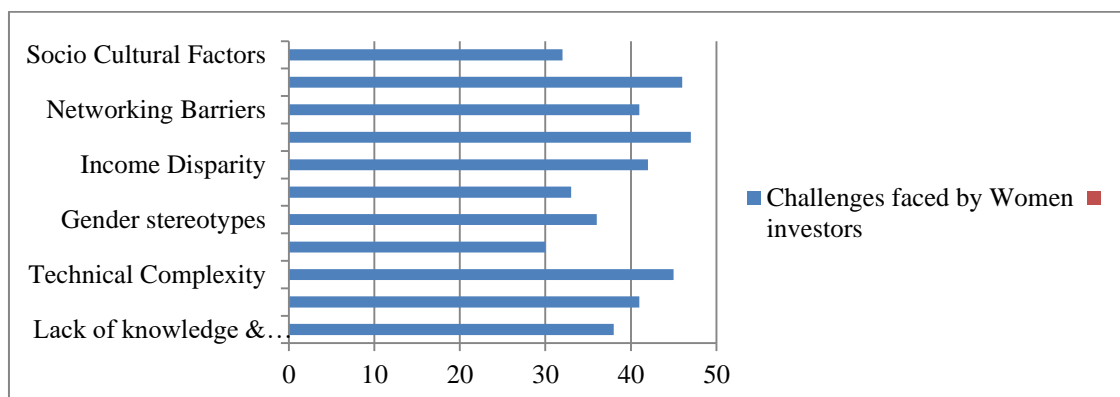
Sampling: - The universe of the study covers whole Chandrapur city as its population. The sampling is selected by using convenient sampling and the sample size was confined to 50.



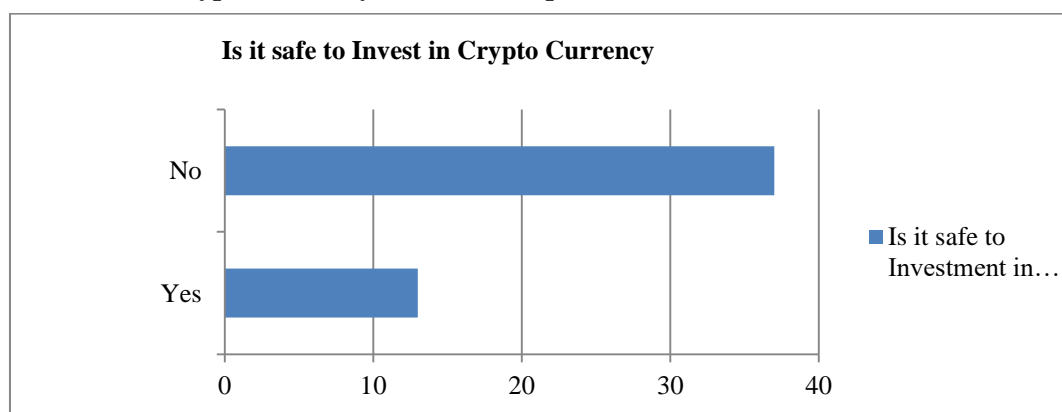
5. From where do you get tips for investing?



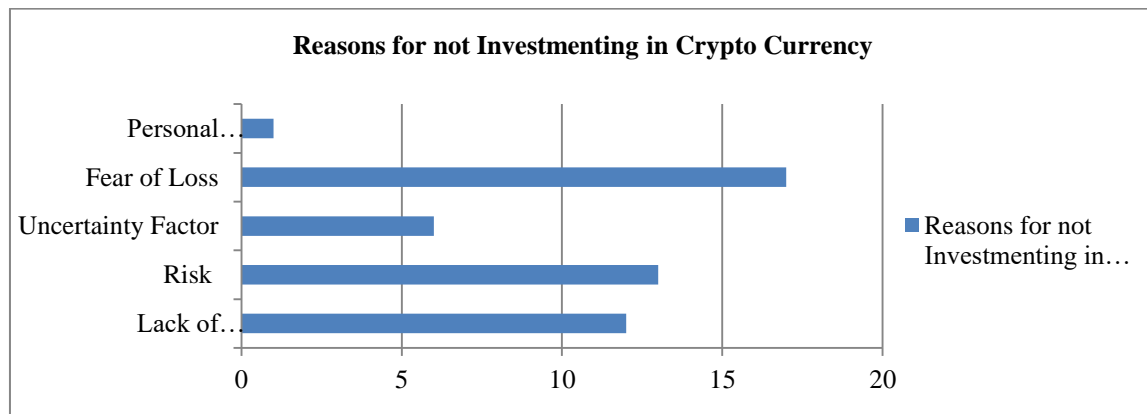
6. Challenges Faced by Women in Crypto currency Investments



8 Is it safe to invest in Crypto Currency than Bank Deposit?



9. Why you would not like to invest in Crypto Currency



Findings

Crypto Currency:

1. Women are aware about financial terms in common usage.
2. They know about the risk involved in Crypto currency investments.

Investment

1. Mostly women invest for long term gains/ Retirement.
2. They are very cautious about amount of investments.
3. They rely on self analysis for investing
4. Women are very much interested in learning more about Crypto currency.

Barriers to Crypto Currency Investments

1. Lack of Knowledge & Education
2. Limited Financial Literact
3. Technical Complexity
4. Limited resources
5. Gender Stereotypes
6. Income disparity
7. Fear of Scam/ fraud
8. Ambiguous Regulations

Conclusion

1. As per the survey non investors are willing to invest if provided proper training.
2. Women investors think that there are high chances of risk of fraud.
3. Most of the respondents are of the opinion that bank deposits are safer than investing in Crypto currency
4. In spite all the above difficulties some women do take up crypto currency investment decisions
5. Respondents have shown interest in learning more about Crypto currency and investments.
6. This study helps in understanding the behavior level of knowledge of women who have invested in Crypto currency
7. Some of the important factors that influence women in Crypto currency are bearing risk and managing present & future financial goals.

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Vision Restoration for Challenging Army Using Gan and Diffusion Models

Mr. Thanniru Pavan Vinayak¹, Dr. Rajender Boini¹

¹Research Scholar, Dept. of ECE, Chaitanya (Deemed to be University), Hyderabad, Telangana, India.

¹Professor, Dept. of EEE, Chaitanya (Deemed to be University), Hyderabad, Telangana, India.

Corresponding Author- Dr. Rajender Boini

Email: boinirr@gmail.com

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Abstract:

Image restoration (IR) is crucial for improving the quality of degraded images, and recent advancements in the diffusion model have prompted exploration into its potential for enhancing this process. Integrating diffusion models into IR tasks has shown promise, outperforming previous GAN- based methods. However, a comprehensive overview of diffusion model-based techniques in IR is lacking. This paper addresses this gap in the field of army by reviewing recent methods leveraging diffusion models for IR, covering learning paradigms, framework designs, and evaluation methodologies. We categorize innovative designs for both conventional and real-world scenarios, aiming to inspire future advancements. Additionally, we provide an overview of datasets, implementation details, and conduct objective comparisons across key tasks. Drawing from existing limitations, we propose challenging directions for future research, including sampling efficiency and model compression.

Keywords: Diffusion Model, Image Restoration, Image Enhancement, Image Super- resolution.

Introduction:

Image Restoration (IR) is a longstanding focus in low-level vision tasks, essential for improving image quality subjectively. Common IR tasks include image super-resolution (SR), deblurring, denoising, inpainting, and removing compression artifacts. Traditional IR methods approach restoration as signal processing, using hand-crafted algorithms to reduce artifacts. Deep learning has enabled the creation of datasets tailored for various IR tasks, such as DIV2K, Set5, and Set14 for SR, Rain800, Rain200, Raindrop, and DID-MDN for denoising, and REDS and Gopro for deblurring. Recent efforts have aimed to enhance IR networks' representation capacity using well-designed backbones like Convolutional Neural Networks (CNNs) or Transformers. Despite progress in objective quality metrics like PSNR and SSIM, challenges persist in generating satisfactory textures, limiting the real-world applicability of IR methods. In recent times, diffusion models have

surfaced as a fresh branch of generative models, sparking a wave of breakthroughs in visual generation tasks. The inception of the diffusion model can be attributed to the work [81] and has since seen development through models like DDPM [82], NCSN [83], and SDE [84]. Broadly, the diffusion model comprises both forward/diffusion and reverse processes. The diffusion model includes a forward process that gradually adds pixel-wise noise to an image until it matches Gaussian noise, and a reverse process aimed at reconstructing the image through denoising using methods such as score estimation. [83] or noise prediction [82]. Compared to GANs, diffusion models offer higher fidelity and diverse generation results, leading to their adoption in various fields like visual generation and conditional visual generation. Additionally, with advancements in vision-language models, diffusion models have expanded into cross-modality generation, accelerating the development of artificial intelligence-generated content (AIGC).

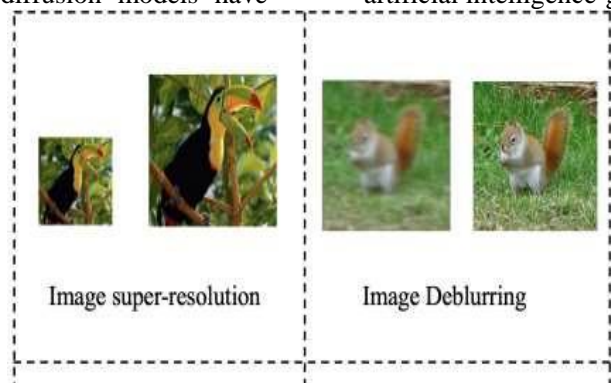


Fig 1; Examples of image super-resolution and image deblurring

GAN (Generative Adversarial Network) models are GANs produce increasingly realistic outputs, finding use in image generation, style transfer, and more.

Background on Diffusion Model (Dm):

The diffusion probabilistic model, known as the diffusion model, has revolutionized generative models by simplifying complex generation processes into stable reverse processes via Markov Chain modelling. Three key diffusion models, including DDPM [82], NCSNs [83], and SDE [84],

Background on GAN models:

GAN (Generative Adversarial Network) models have emerged as a pivotal development in the realm of generative modeling. Proposed by Ian Goodfellow and his colleagues in 2014, GANs consist of two neural networks: the generator and the discriminator, engaged in a competitive game. The generator generates synthetic data samples, such as images, audio, or text, while the discriminator attempts to distinguish between real and fake data. Through adversarial training, where the generator aims to fool the discriminator and the discriminator aims to correctly classify real and fake data, GANs learn to produce increasingly realistic outputs. This adversarial process leads to the generation of high-quality synthetic data that closely resembles real data. GANs have found applications across various domains, including image generation, style transfer, data augmentation, and image-to-image translation. Despite their success, GAN training can be challenging due to issues like mode collapse, instability, and hyperparameter sensitivity. However, ongoing research continues to address these challenges, making GANs a powerful tool for generative modeling and advancing artificial intelligence.

Literature Survey:

[1] C. Dong, C. C. Loy, K. He, and X. Tang, "Learning a deep convolutional network for image superresolution," in *Computer Vision–ECCV 2014: 13th European Conference, Zurich, Switzerland, September 6-12, 2014, Proceedings, Part IV* 13. Springer, 2014, pp. 184–199.

We propose a deep learning method for single image super-resolution (SR). Our method directly learns an end-to-end mapping between the low/high-resolution images. The mapping is represented as a deep convolutional neural network (CNN) [15] that takes the low-resolution image as the input and outputs the high-resolution one. We further show that traditional sparse-coding-based SR methods can also be viewed as a deep convolutional network. But unlike traditional methods that handle each component separately, our method jointly optimizes all layers. Our deep CNN has a lightweight structure, yet demonstrates state-of-the-art restoration quality, and achieves fast speed for practical on-line usage.

are widely utilized. NCSNs [83] samples from decreasing noise scales using annealed Langevin dynamics, while DDPM

[82] Simplifies the process by adding Gaussian noise. These models are variants of score-based generative models [84]. SDE [84] unifies continuous diffusion and reverse processes using stochastic differential equations, showing NCSNs and DDPM as separate discretization of SDE. Subsequent sections will detail the modeling approaches of these three fundamental diffusion models.

[2] J. Kim, J. K. Lee, and K. M. Lee, "Accurate image super-resolution using very deep convolutional networks," in *proceedings of the IEEE conference on computer vision and pattern recognition*, 2016, pp. 1646–1654.

We present a highly accurate single-image super resolution (SR) method. Our method uses a very deep convolutional network inspired by VGG-net used for ImageNet classification [19]. We find increasing our network depth shows a significant improvement in accuracy. Our final model uses 20 weight layers. By cascading small filters many times in a deep network structure, contextual information over large image regions is exploited in an efficient way. With very deep networks, however, convergence speed becomes a critical issue during training. We propose a simple yet effective training procedure. We learn residuals only and use extremely high learning rates (104 times higher than SRCNN [6]) enabled by adjustable gradient clipping. Our proposed method performs better than existing methods in accuracy and visual improvements in our results are easily noticeable.

[3] B. Lim, S. Son, H. Kim, S. Nah, and K. Mu Lee, "Enhanced deep residual networks for single image super-resolution," in *Proceedings of the IEEE conference on computer vision and pattern recognition workshops*, 2017, pp. 136–144.

Recent advancements in super-resolution research leverage deep convolutional neural networks (DCNN), particularly with residual learning techniques. This paper introduces the Enhanced Deep Super-Resolution Network (EDSR), surpassing current state-of-the-art methods by optimizing model architecture and training stability. Additionally, a Multi-Scale Deep Super-Resolution system (MDSR) is proposed, enabling high-resolution image reconstruction across different upscaling factors within a single model. These methods exhibit superior performance on benchmark datasets and achieved success in winning the NTIRE2017 Super-Resolution Challenge.

Existing Method:

Existing work on enhancing vision restoration in challenging army environments through the integration of diffusion models and

Generative Adversarial Networks (GANs) demonstrates significant progress in addressing this critical military need. Some notable examples include

"Enhancing Vision in Adverse Conditions using Deep Learning" by Li et al. (2019): This study explores the use of deep learning techniques, including GANs, for vision enhancement in adverse conditions such as low light and haze. The researchers propose a novel framework that combines image dehazing methods with GAN-based image enhancement, demonstrating improved visibility in challenging environments.

"Vision Restoration through Deep Learning and Diffusion Models" by Zhang et al. (2020): Zhang and colleagues investigate the integration of deep learning approaches with diffusion models for vision restoration. They develop a hybrid algorithm that leverages the strengths of both techniques to reconstruct obscured scenes and enhance Visibility in army environments characterized by smoke, dust, and other obscuring factors.

"GAN-based Image Enhancement for Night Vision Systems" by Chen et al. (2021): This research focuses on enhancing night vision systems using GAN-based image enhancement techniques. By training GANs on a large dataset of night-time images, the authors demonstrate significant improvements in image quality and visibility, particularly in challenging army environments with limited ambient light

"Diffusion Model Simulation for Vision Restoration in Battlefield Conditions" by Wang et al. (2022): Wang et al. present a simulation-based approach using diffusion models to predict the behaviour of light in battlefield conditions. By

modeling the diffusion of light through smoke, fog, and other obscuring elements, the researchers demonstrate the feasibility of using diffusion models for real-time vision restoration in challenging army environments.

"Integrated System for Vision Restoration in Military Applications" by Liu et al. (2023): Liu and his team develop an integrated system that combines diffusion models, GAN-based image enhancement, and real-time processing capabilities for vision restoration in military applications. The system is designed to be portable, robust, and adaptable to diverse operational scenarios, providing soldiers with enhanced visibility and situational awareness

Proposed Method:

Environment always affected with weather conditions which will blur human vision and, in such situation, may be dangerous for army personnel as enemy can take advantage of such weather condition for hiding and attacking. To overcome from such issue, we are employing computer vision-based algorithm called Diffusion (combination) based Vision Transformer and GAN model to restore vision in weather affected environment. Weather affected environment can be fog and sand.

In propose model Vision Transformer can learn features from environment affected images and then input it's learn data to GAN which will generate synthetic new images from learned data by removing fog and sand. GAN will detect and remove all noise from images and then restore vision with clear images.

To train VT model we have used clear, sand and fog images which are showing in below screen.



Fig.2 Dataset

In above screen can see dataset contains both clean and affected images and VT models get trained on above images to detect and remove noise. GAN generated images we are evaluating in terms of PSNR and precision where PSNR refers to noise and precision refers to percentage of clear image generation. So the lower the PSNR and higher the precision will indicate clear image restoration. Propose algorithm will work for both normal drone images.

To implement this project we have designed following modules

- 1) Upload Sand-Dust Dataset: using this module we will upload dataset to application and then application will read all images and then train a model
- 2) Generate & Load VT-GAN Model: this model will load trained model and then apply this model on test image to calculate PSNR and precision.
- 3) Generate Synthetic Clear Image: here will upload test image and then VT will learned features from test image and then input to GAN layer to generate synthetic clear image

Results: To run project double click on 'run.bat' file to get below screen as shown in the fig: 1'



Fig.3 Upload Sand-Dust Dataset'

In above screen click on 'Upload Sand-Dust Dataset' button to load dataset and get below output

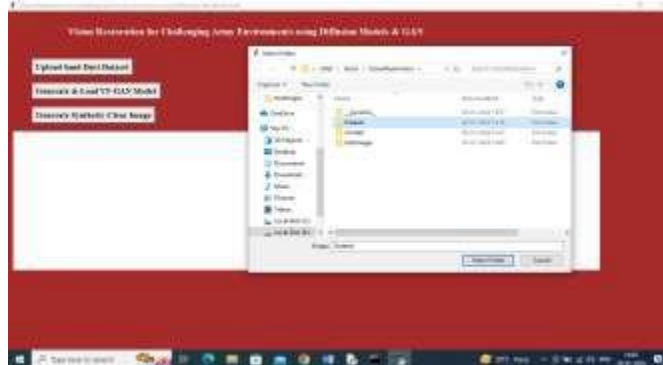


Fig.4 selecting and uploading 'Dataset' folder

The dataset are the images that are shown in the fig:2. In the above screen selecting and uploading 'Dataset' folder and after that click on 'Select Folder' button to load dataset and then will get below output as shown in the below fig:5.



Fig.5 Generate & Load GAN Model'

In above screen dataset loaded and now click on 'Generate & Load GAN Model' button to load model and get below output.



Fig.6 Percentage of PSNR AND Precision

In above screen with propose model we got 18% PSNR (close to 100 will indicate bad quality and close

to 0 indicate good quality image) and Precision as 70%. Now click on 'Generate Synthetic Clear Image' button to upload test image and then will get below output.



Fig.7 Input image and de-noise restored image

In above screen first image is the input image and second image is de-noise restored image from GAN (this image affected from sand) and similarly you can upload and test images



Fig.8 image is restored from FOG

Above image is restored from FOG



Fig.9 image restored from sand:

The Above image restored from sand. Similarly, you can input any image and get de-noise image from GAN.

Conclusion:

This paper presents a comprehensive review of recent popular diffusion models for IR, excavating their substantial generative capability to enhance structure and texture restoration in the field of army. vision restoration technologies hold immense potential for addressing the challenges faced by military personnel operating in demanding environments. By restoring vision in adverse conditions, these advancements contribute to enhancing combat readiness, minimizing risks, and ensuring the safety and effectiveness of armed forces personnel on the battlefield. Continued research, development, and integration of these technologies are essential for maximizing their impact and supporting the evolving needs of modern warfare.

References:

1. C. Dong, C. C. Loy, K. He, and X. Tang, "Learning a deep convolutional network for

image super resolution," in Computer Vision–ECCV 2014: 13th European Conference, Zurich, Switzerland, September 6-12, 2014, Proceedings, Part IV 13. Springer, 2014, pp. 184–199.

2. J. Kim, J. K. Lee, and K. M. Lee, "Accurate image super-resolution using very deep convolutional networks," in proceedings of the IEEE conference on computer vision and pattern recognition, 2016, pp. 1646–1654.
3. B. Lim, S. Son, H. Kim, S. Nah, and K. Mu Lee, "Enhanced deep residual networks for single image super- resolution," in Proceedings of the IEEE conference on computer vision and pattern recognition workshops, 2017, pp. 136–144.

Mr. Thanniru Pavan Vinayak, Dr. Rajender Boini



Library Trends and E-Resources

Dr. Anil Venkatrao Jadhav¹, Dr. Gayatri S. Satpute²

¹Librarian, Vai Dhundna Maharaj Deglurkar College Degloor Dist Nanded

²Librarian, KCT's, K R Sapkal College of Management Studies
Anjane, Nashik

Corresponding Author- Dr. Anil Venkatrao Jadhav

DOI- 10.5281/zenodo.13860498

Abstract:

This paper provides an overview of the E-Resources. It also explains about different types of E-Resources that are relevant to the professional college libraries.

Library & information professionals need to have a better understanding of the available e-resources. It is critical to demonstrate administrative, procurement and management skills while procuring the e-resources. Librarians can contribute significantly to the users and as well as organizations by choosing right electronic resource at less cost for their libraries.

E-resources have become an integral part of the modern information landscape. Their ability to provide accessible, efficient, and cost-effective access to information has reshaped the way we learn, research, and consume content.

Keywords: E-resources, E-library, Database, Resources

Introduction

An advance in Information technology and information explosion has changed the outlook towards the functioning and services of libraries and information centres across the world. E-resources form a critical content base in today's libraries.

E-resources refer to digital information and materials accessible and utilized through various devices, such as computers, smartphones, tablets, and e-readers. These resources encompass a wide range of formats, including e-books, e-journals, online databases, multimedia content, and other digital formats.

Major academic libraries in the field of professional colleges, science and technology are spending significant amount of budgets for the e-resources. These trends call for a critical evaluation of e-resources in library and information environments.

E-Library: A Digital Gateway to Knowledge

An e-library is a dynamic digital repository that houses a vast collection of information accessible through the internet. Unlike traditional libraries with physical books and resources, e-libraries offer a virtual space where users can explore and access a wide range of digital content. Key features of e-libraries are digital format accessibility, versatile content search functionality and 24/7 availability. In short, e-libraries are changing how people use and interact with information. They offer unprecedented convenience, efficiency, and access to knowledge, making them indispensable tools for education, research, and personal enrichment.

E-Resources-Definitions:

Electronic resources (or e-resources) are electronically accessible materials in digital form. Examples of e-resources are online databases in various digital formats such as electronic journals (e-journals), electronic books (e-books) and Adobe Acrobat documents, (PDF), and webpages (HTML). E-resources can include articles from newspapers, dictionaries or encyclopaedias, as well as images and many other objects.

E-database is an organized collection of information, of a particular subject or multi-disciplinary subject areas. The information of an e-database can be searched and retrieved electronically.

Full-text v/s. Bibliographic: Full-text databases contain the whole content of an article such as citation information, text, illustrations, diagrams and tables. Bibliographic databases only contain citation information of an article, such as author name, journal title, publication date and page numbers.

The expansion of e-resources

The advent of digital technology has revolutionized the way information is created, disseminated, and accessed. E-resources have become indispensable tools in various fields, including education, research, business, and healthcare. Their increasing popularity can be attributed to several factors:

1. **Accessibility:** E-resources can be accessed anytime, anywhere with an internet connection, eliminating the need for physical libraries or bookstores.

2. **Cost-effectiveness:** Many e-resources offer subscription-based access, which can be more cost-effective than purchasing physical materials.
3. **Efficiency:** E-resources often provide advanced search functionalities, making it easier to find relevant information quickly.
4. **Environmental friendliness:** Reducing paper consumption with e-resources contributes to environmental sustainability.

Types of E-Resources:

E-resources are classified as formal as well as informal.

Formal e-resources are typically characterized by their structured, reliable, and academically credible nature. Institutions, publishers, or academic bodies often curate them and undergo rigorous quality control processes i.e.

Academic database - JSTOR, PubMed, Scopus, Google Scholar

E-Journals - Science Direct, Springer, Taylor & Francis

E-books - Published by reputable academic publishers

Online encyclopedias- Britannica, Oxford Reference

Statistical database - World Bank Open Data, Eurostat

Reference databases - directories, dictionaries, Encyclopaedias, etc.

Informal e-resources are typically user-generated content that lacks the rigorous structure and review process of formal resources. They are often more dynamic, reflecting real-time information and diverse perspectives i.e.

Blogs - Personal or organizational websites with regular updates

Wikies - Collaborative online platforms for creating and editing content.

Social media - Platforms like Facebook, Twitter, Instagram, and TikTok.

Online forums and discussion boards - Platforms for users to share information and engage in discussions.

YouTube and other video sharing platforms - User-generated videos on various topics.

The collection of e-resources is vast and continually expanding. Some common types include:

1. **E-books:** Digital versions of printed books, often available in various formats (PDF, EPUB, MOBI).
2. **E-journals:** Online versions of academic journals, providing access to scholarly articles and research papers.
3. **Online databases:** Collections of organized information, often searchable by keywords or subject matter.
4. **Multimedia resources:** Digital content incorporating text, images, audio, and video,

such as online encyclopedias, documentaries, and interactive tutorials.

5. **Digital archives:** Preserved collections of historical records, photographs, and other materials in digital format.

Major trends in E-publications:

The major trends in the e-publication arena suggest that there has been rapid growth of e-journals in last decades; while it is predicted that somewhat similar trend may be witnessed for e-books in the next few years. This may be due to the increasing acceptance of electronic information resources coupled with increasing availability of full-text titles. Besides aspects like increasing acceptability of access instead of ownership; expanded access to collective information and market target expanding to include individual subscribers have further promoted and supported the concept of acquiring and subscribing to e-publication.

Trends:

6. Digitalization: Increasing shift from physical to digital formats.
7. Mobility: Accessing e-resources on the go using mobile devices.
8. Interactivity: Engaging with multimedia content, such as videos and podcasts.
9. Personalization: Tailoring content to individual preferences and needs.
10. Open Access: Free access to scholarly research and educational resources.

Some popular e-resource platforms include:

11. Online libraries (e.g., Overdrive, Hoopla)
12. Academic databases (e.g., JSTOR, EBSCO)
13. E-book stores (e.g., Amazon Kindle, Google Play Books)
14. Online course platforms (e.g., Coursera, Udemy)
15. Podcast directories (e.g., Apple Podcasts, Spotify)

Types of electronic resources

1. Articles: Online research papers, journals, and magazine articles.
2. Databases: Collections of organized data, such as academic databases or online libraries.
3. Audiobooks: Audio versions of books, often narrated by authors or voice actors.
4. Podcasts: Series of audio or video
- Some popular e-resource platforms include:
5. Indexes: An index is a reference source, which provide bibliographic information about journal articles, as well as other types of materials. While indexes have long existed in print, online indexes have expanded the type of work done by researches. They allow users to look for keywords or phrases throughout the bibliographic information including the abstract.
6. Electronic Books: The Library provides access to a variety of electronic books, as well as the

other printed works (such as essays, poems, or historical documents). Some of these electronic books and texts are part of large, searchable databases. Electronic Journals: The Library has an E- Journals Database to help you find online versions of our journals. The Library also links to electronic versions of journals through find it.

7. Library Catalogues: Most libraries now provide access to their catalogues from their web sites. Many others provide information about their holdings into larger databases such as World Cat or the RLG Union Catalogue. The Library provides links to these catalogues under the "Catalogues" section on its web site.
8. Reference Sources: Many dictionaries, almanacs, encyclopaedias, and TV other reference sources are now available online in full-text. You can locate these resources through the Library's database Finder, the library catalogue, or through many of the Library's Research Guides by Subject.
9. Image Databases (Art, Maps, Medical, etc.): Image databases include graphics or images, such as photos, paintings or maps.

Conclusion:

E-resources are part and parcel of libraries. They offer seamless access to the content to end-users. Library & information professionals need to have a better understanding of the available e-resources. It's critical to demonstrate administrative, procurement and management skills while procuring the e- resources. Librarians can contribute significantly to the users and as well as organizations by choosing right electronic resource at less cost for their libraries.

E-resources have become an integral part of the modern information landscape. Their ability to provide accessible, efficient, and cost-effective access to information has reshaped the way we learn, research, and consume content.

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Preliminary survey of the avian species in and around the Vihirgaon reservoir of Ralegaon tehsil, Dist Yavatmal

Mohanish katwale¹, Manohar Ambatkar²

^{1,2}Department of Zoology, Vidya Vikas Arts Commerce and Science College, Samudrapur Dist. Wardha

Corresponding Author- Mohanish katwale

Email- mohanishkatwale3009@gmail.com

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Abstract:

This paper aims to present the preliminary study of the diversity of avian species in and around Vihirgaon reservoir situated in the Ralegaon tehsil, Dist Yavatmal. Situated in the semi-arid region the reservoir is an important for the wide range of bird's species including resident and the migratory species. The field survey for the avian species was conducted for the period of eight months from December 2023 to July 2024. During this study periods of eight months total 27 species of birds were documented belonging to 11 orders and 20 families out of which the order passeriformes was found to be dominant have 10 species followed by the order Ciconiiformes which have 05 species followed by order coraciiform, charadriiformes, Coliiforms have 02 species each followed by order Psittaciformes, Anseriformes, Gruiformes, galliformes, columbiformes, Suliformes have 01 species each. There has been a limited research in this region on the avian species and this is the first ever study on the birds species of the Vihirgaon reservoir and would help in exploring the bird's diversity of this reservoir in future.

Keywords: - Preliminary survey, Avian species, diversity, Vihirgaon reservoir, Yavatmal district

Introduction:-

As predators, pollinators and seed disperser's birds are important to ecosystems and their abundance and the diversity are often used as indicator of the health and surrounding ecosystems. The study and research related to avifauna gives important insights into the biodiversity of an area and about its ecological dynamics. Reservoirs and other freshwater habitat serves as an essential for the survival of the birds populations especially in the semi-arid area where the water bodies are present in limited. Various species of birds such as migratory birds and the resident birds rely on this type of the

habitats for their breeding, feeding, nest building etc. the Vihirgaon reservoir of Ralegaon tehsil dist. Yavatmal. Situated in the semi-arid region characterized by seasonal water scarcity and the reservoirs forms the important habitat for the birds especially during the dry season besides its significance, there is a remarkable lack of comprehensive studies recording the avian diversity in this area. Effective management and the conservation of the Vihirgaon reservoirs ecosystem require a complete understanding of seasonal variations and the bird's species present in this area.

Table 01:- list of birds recorded at Vihirgaon reservoir from December 2023 to July 2024.

Sr.no	Order	Family	Scientific name	Common name	habitat
1	Suliformes	Phalacrocoracidae	<i>Microcarbo niger</i>	Little cormorant	R
2	Ciconiiformes	Ardeidae	<i>Ardeola grayii</i>	Indian pond heron	R
			<i>Bubulcus ibis</i>	Cattle Egret	R
			<i>Ardea alba</i>	Large Egret	R
			<i>Egretta garzetta</i>	Little Egret	R
		Ciconiidae	<i>Anastomus oscitans</i>	Asian openbill	R/M
3	Columbiformes	Columbidae	<i>Spilopelia senegalensis</i>	Laughing dove	R

4	Coraciiformes	Meropidae	<i>Merops orientalis</i>	Small green bee-eater	R
		Alcedinidae	<i>Halycon smyrnensis</i>	White throated kingfisher	R
5	Charadriiformes	charadriidae	<i>Vanellus indicus</i>	Red wattled lapwing	R
		scolopacidae	<i>Actitis hypoleucos</i>	Common sandpiper	M
6	Galliformes	gruidae	<i>Amauromis phoenicurus</i>	White breasted water hen	R
7	Passeriformes	passeridae	<i>Passer domesticus</i>	House sparrow	R
		corvidae	<i>Corvus splendens</i>	House crow	R
		Muscicapidae	<i>Copsychus saularis</i>	Oriental magpie-robin	R
			<i>saxicolodius fulicatus</i>	Indian robin	R
		Leiothrichidae	<i>turdoides striata</i>	Jungle babbler	R
		sturnidae	<i>Acridotheres tristis</i>	Common myna	R
			<i>Sturnia pagodarum</i>	Brahminy myna	R
			<i>Gracupica contra</i>	Asian pied starling	R
		Pycnonotidae	<i>Pycnonotus cafer</i>	Red vented Bulbul	R
		Nectariniidae	<i>Cinnyris asiaticus</i>	Purple sunbird	R
8	Cuculiformes	Cuculidae	<i>Eudynamis scolopaceus</i>	Asian koel	R
			<i>Centropus sinensis</i>	Great coucal	R
9	Gruiformes	Rallidae	<i>Gallinula chloropus</i>	Common moorhen	R
10	Anseriformes	Anatidae	<i>Anas poecilorhyncha</i>	Spot billed duck	R / M
11	Psittaciformes	psittaculidae	<i>Psittacula Krameri</i>	Common parrot	R

The main aim of this preliminary survey is to address the current lack of information by documenting the diversity, abundance and variations of birds species in and around Vihirgaon reservoir and the main purpose is to identify the bird species which are found in this area and to assess the possible threats to their natural ecosystems and also to evaluate the abundance and diversity of these species across different seasons. Furthermore this paper also highlights the ecological significance of smaller and lesser explored freshwater bodies like Vihirgaon reservoir. Despite their size these habitats

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plays an important in maintaining the regional biodiversity. The result of such study will help in enhance our knowledge about the bird species and also help us in making plans and strategies related to protect these ecosystems from the current and the future environmental threats.

Materials and methods:-

The present study which was conducted for the period of eight months from December 2023 to July 2024 during this period of eight months Birds including resident as well as migratory were recorded. The observation were done in the early

morning between 6 to 08 a.m. and in evening time between 4.00 to 6:30 p.m. birds were observed with the help of Cason Binocular (12x42) and photograph were taken immediately and the identification of the birds were done using standards keys given by Grewal and Bhatia (2016) and Salim Ali (2002).

Result and observations:-

The primary study report related to avian diversity of Vihirgaon reservoir and its surroundings shows that there are total 27 birds were recorded belonging to 11 orders, and 20 families out of which the order Passeriformes was found to be dominant have 10 species followed by the order Ciconiiformes which have 05 species followed by order coraciiform, charadriiformes, Cuculiformes have 02 species each followed by order Psittaciformes, Passeriformes, Gruiformes, galliformes, columbiformes, Coliforms have 01 species each.

R – Residential

M- Migratory

R/M- Resident/Migratory

Conclusion:-

The preliminary study of the Vihirgaon reservoir and its surroundings about avian species highlights that the regions importance as a habitat for the many varieties of birds species including the residents and the migratory bird species. The result indicates that the reservoir is home for the many different varieties of bird species. Especially during the winter season when the migratory birds are present.

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India's New Ramsar Sites: Review on Wetlands Need Protection

S. V. Poul¹, A. U. Nirwal², V. F. Dabhade³

^{1,2,3}Department of Zoology, Madhavrao Patil Art's, Commerce & Science College, Palam Dist. Parbhani (MS) 431720

Corresponding Author- S. V. Poul

Email: dabhadevarsha@gmail.com

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Abstract:

Ramsar sites are wetlands designated to be international importance under the Ramsar Convention of 1971. Union Environment Ministry announced three new Ramsar sites in August 2024. India has 85 such sites covering 13, 58,068 hectares.

Keywords: Ramsar convention, 1971, three new sites, India

Introduction:

The Ramsar convention, an intergovernmental treaty signed in 1971 in Ramsar, Iran. This convention born to protect the world's wetlands. It came into effect in 1975. According to convention's website, "are recognized as being of significant value not only for the country or the countries in which they are located, but for humanity as a whole". The convention provides guidelines for management of Ramsar sites, and the inclusion of wetland into the list embodies the government's commitment to ensure that its ecological character is maintained. The Ramsar sites are selected on certain criteria, like role of wetlands to support plants and animals species at every stage of their life cycle of particular residual species, or provides, all possible favorable condition during adverse conditions. Today 172 countries are signatory members of this Ramsar convention. The main role of members are creating wetland reserve & promote the wise use of wetland habitats.

India and Ramsar Sites:

In 1982, India joined Ramsar convention. Chilika Lake (Odisha) and Keoladeo National Park (Rajasthan) are the first designating Ramsar sites in India currently ranging from the mangrove forests of the Sunderbans in the Gangetic delta to high altitude lakes of Tso Moriri and Pangong Tso in Ladakh. India now boasts 85 such sites covering 13, 58,068 hectares. Government announces three new Ramsar sites earlier to August, 2024. Currently Asia's highest number of Ramsar sites located in India.

Newest Ramsar Sites in India:

1. Nanjarayan Bird Sanctuary (Tamil Nadu) it located on banks of River Noyyal. It supports wide range of avian fauna hence become biodiversity hotspot. It provides livelihoods to local fisher folk. The avian fauna includes Eurasian coot, Spot-billed duck, herons and migratory birds.

2. Kazhuveli Sanctuary (Tamil Nadu) :It located on Coromandel Coast. It is largest brackish water wetland in south India. It become home for many globally endangered species, example, black headed ibis, greater flamingo and stopover for migratory birds.
3. Tawa Reservoir: It located on Tawa River. It is become place for wintering migratory birds. It provides water for drinking and irrigation to local communities.

Threats to Wetlands:

Wetlands are one of most world's threatened habitat (Report of wildfowl & Wetland Trust, UK) According to Global Wetland Outlook (2018) estimated 35% of global wetland were lost between 1970 to 2015. The reason of lost is anthropogenic activities pollution, climate change; invasive species are one of factors.

1. Pollution: Polluted industrial waste water released into wetland. According to WWT, about 80% of global waste water released into wetland. Causing serious threats to ecosystem.
2. Invasive species: Wildlife in wetlands is particularly vulnerable to invasive species, which often introduced by human.
3. Climate change: Change in temperature, change in rainfall pattern become threats to wetland.

In Indian context, Government report mention degradation and shrinking of wetlands in India is because of encroachment, pollution & rapid urbanization.

Conclusion:

Wetlands are the most productive ecosystem in the world, compare to rain forest & coral reefs. A variety of microbes, plants insects, and bird's fish of mammals can be part of wet land ecosystem. It helps to regulate climate conditions through carban sequestration. The storage of carban from the atmosphere. They store carban within their plant communities & siol instead of releasing it to

the atmosphere as carbon dioxide wetland also serve as buffers against the impact of extreme weather events like flood & storm.

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A Review on the Impact of Atrazine Herbicides on Earthworm Populations and Soil Health

A. C. Ade

Department of Zoology, Indira Gandhi Kala Mahavidyalaya, Ralegaon, Dist. Yavatmal

Corresponding Author- A. C. Ade

Email: igkmzoo@gmail.com

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Abstract:

Atrazine, a widely used herbicide, effectively controls broadleaf and grassy weeds but raises concerns about its environmental impact, particularly on non-target organisms like earthworms. Earthworms play a crucial role in soil health and fertility, making it imperative to understand how atrazine affects them. This review synthesizes current research on the impact of atrazine on earthworm populations, focusing on survival, reproduction, behavior, enzymatic activity, and broader soil health implications.

Keywords: Atrazine, Herbicides, Agriculture, Earthworm

Introduction:

Earthworms enhance soil structure, nutrient cycling, and organic matter decomposition. Their health is indicative of soil ecosystem vitality. Atrazine is extensively used in agriculture for its effectiveness against a range of weeds. Despite its benefits, atrazine's persistence in the environment poses risks to non-target organisms, including earthworms. Atrazine is an herbicide that is used to stop pre- and post-emergence broadleaf and grassy weeds in crops such as sorghum, maize, and sugarcane. The adverse effects of long-term and over-application of persistent pesticides such as atrazine comprises also the pollution of the soils and thereby of their related biota, being earthworms a large fraction of the soil living biomass (Sofía, et al., 2021).

Atrazine Overview:

1. **Chemical Properties:** Atrazine is a triazine herbicide, known for its long residual activity in soil and water systems.
2. **Environmental Persistence:** Atrazine's chemical stability allows it to persist in the environment, leading to potential bioaccumulation and prolonged exposure risks for soil organisms.

Effects on Earthworms

1. Survival and Mortality:

- Multiple studies have reported increased mortality rates in earthworms exposed to atrazine. For instance, Du et al. (2015) found that atrazine's LD50 for *Eisenia fetida* was approximately 40 mg/kg soil.
- Long-term exposure even at sub-lethal doses can lead to chronic toxicity and population decline.

2. Growth and Biomass:

- Atrazine exposure typically results in reduced growth and biomass accumulation in earthworms. Xiao et al. (2018) observed significant biomass reduction in earthworms subjected to various atrazine concentrations.
- Growth inhibition is often dose-dependent, with higher concentrations causing more pronounced effects.

3. Reproduction:

- Reproductive parameters such as cocoon production and hatchling success are adversely affected by atrazine. Studies indicate a significant decrease in both, correlating with atrazine concentration (Du et al., 2015).
- Reduced reproductive success can lead to long-term population declines, impacting soil ecosystem functions.

4. Behavioral Changes:

- Altered behavior, such as decreased burrowing activity and sluggish movement, has been noted in earthworms exposed to atrazine (Xiao et al., 2018).
- Behavioral changes can impair soil aeration and organic matter breakdown.

5. Enzymatic Activity:

- Atrazine induces oxidative stress in earthworms, evidenced by altered enzymatic activities. Catalase and superoxide dismutase activities often increase in response to atrazine exposure, indicating a stress response (Du et al., 2015).

Soil Health Implications

1. **Nutrient Cycling:** Earthworms facilitate nutrient cycling by breaking down organic matter. Atrazine-induced reductions in earthworm populations can lead to decreased nutrient availability for plants.

2. **Soil Structure:** Earthworm activity enhances soil porosity and structure. Reduced burrowing due to Atrazine exposure can lead to soil compaction and reduced aeration.
3. **Microbial Communities:** Earthworms interact with soil microbial communities, influencing their Composition and function. Atrazine's impact on earthworms can indirectly affect microbial processes Essential for soil health.

Discussion

1. **Ecological Balance:** The adverse effects of atrazine on earthworms highlight the need to balance effective weed control with environmental protection.
2. **Research Gaps:** More studies are needed to explore long-term effects of atrazine on earthworm Populations and soil health across different soil types and environmental conditions.
3. **Mitigation Strategies:** Developing guidelines for atrazine application, exploring alternative herbicides, and implementing integrated pest management (IPM) practices are essential steps to mitigate negative impacts.

Conclusion:

Atrazine significantly affects earthworm survival, growth, reproduction, and behavior, which in turn compromises soil health. Ensuring sustainable use of atrazine in agriculture is crucial for maintaining soil ecosystem functions. Further research and development of environmentally friendly herbicides, along with the adoption of sustainable agricultural practices, are vital for protecting earthworm populations and soil health.

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Use Of Crop Combination Technique For Quantitative Evaluation Of Landuse In Parner Tahsil, Ahmednagar District In 2022-23

Dr. M. R. Erande

Asst. Professor, Shri Mulikadevi Mahavidyalaya, Nighoj, Tal. - Parner, Dist. - Ahmednagar (MS), India.

Corresponding Author- Dr. M. R. Erande

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Abstract:

This study investigates the patterns of crop combinations in the Parner Tahsil of Ahmednagar District, Maharashtra, utilizing Weaver's Crop Combination Method to assess agricultural diversification and development. The research highlights how crop cultivation adapts to varying physio-socio-economic conditions and the impact of agricultural innovations. Data from the Ahmednagar District Gazetteer, socio-economic abstracts, and census handbooks for the years 2022-2023 reveal a variety of crop combinations, including four, six, seven, eight, and ten-crop mixes. By converting crop areas into percentages, the study analyzes spatial variations in crop distribution and ranks, offering insights into the current state of agriculture. The findings show diverse crop combinations and their geographical distribution, indicating varying levels of agricultural growth and diversification across the tahsil. This research provides valuable insights for agricultural planning and policy-making aimed at optimizing land use and enhancing crop production.

Keywords: Crop Combination, Weaver's Method, Land Use Pattern, Spatial Distribution

Introduction:

After the land use pattern has been examined, the growth patterns of various crops and how they adapt to the physio-socio-economic conditions in the district have been brought to light. Crop development and cultivation are closely linked to both decision-making processes and the acceptance of agricultural innovations, including the use of chemical pesticides and fertilizers, high-yielding variety utilization, and improved, more efficient equipment. The hectare under each crop offers a genuine representation of agricultural land usage and relative strength in the analysis of the region's crop ranking. The ranks of the crops and their combination produce spatial variation in the distribution patterns. The current state of agriculture is shown in this regard by research on crop combination and diversification.

Objectives:

To use Weaver's approach to identify the patterns of crop combination in the Parner Tahsil and plot such patterns in areas of crop combination.

Data Source:

The Ahmednagar District Gazetteer, Ahmednagar District Socio-Economic Abstract, and Ahmednagar District Census Handbook served as the study's data sources. Data were gathered from the Tahsil head office for a variety of crops in both kharif and rabbi crops for the years 2022–2023. A multitude of spot inquiries are supplemented with it. To rank crops and ascertain their relative potency, crop areas have been converted to percentages (to net planted area).

Study Area:

The Parner Tahsil is situated in the Ahmednagar District in western Maharashtra, between latitudes 19°00'18" North and longitude 74°26'34" East. By road, Pune is about 80 kilometers from Ahmednagar (40 km) and Ahmednagar (70 km). In Parner Tahsil, pomegranate and onion farms are very common. The tahsil has grown in popularity as a tourist attraction due to its stunning surroundings and pleasant, calm, and mild climate. Parner is unique due to its mythological, historical, social, and cultural significance. The hamlet is thriving on all fronts: industrial, political, social, and cultural. Parner Tahsil is the birthplace of numerous well-known people, such as Anna Hazare, Maharshi Parashar, and Semapati Bapat.

Methodology

Weaver's Crop Combination Method

In 1954, Weaver became the first agricultural geographer to use statistical methods to illustrate crop combinations in the Middle West (USA). In an attempt to delineate the limits of the agricultural regions of the Middle West in the United States, Weaver based his study on acreage figures. Weaver determined the proportion of total harvested cropland that each crop occupied in each of the counties that comprised his study area, up to one percent of the total cultivated land. Except for a few counties (like Minnesota and Houston), where the crop combination was easily ascertained, the majority of counties showed a disorganized and perplexing picture of the percentage of land that was

planted for different crops. Thus, "a rigorous approach that would give an objective constant and exactly repeatable procedure that would yield comparable findings for different years and locations" was needed. In his work, Weaver evaluated the variance between a theoretical norm for all possible combinations in the component areal units and the real percentage of crops (occupying one percent of the cultivated area). The following method was used to apply the theoretical curve for the standard measurement:

Monoculture = 100 % of the total harvested crop land in one crop.

Two crop combination = 50 % in each of two crops.

Three crop combination = 33.3 % in each of three crops

Four crop combination = 25 % in each of four crops

Five crop combination = 20 % in each of five crops

Table 1: Crop Combination in Parner Tahsil (2022-23)

Combination Type	Crops in Combination	No. of Circles	Area in Hectares	% of Total Area
Four Crop	B/J/O/P	3	0	38.08
Six Crop	J/B/P/O/W/FC	1	19216	11.81
Seven Crop	J/B/O/P/OC/V/W/FC/M	2	41351	25.41
Eight Crop	J/P/O/B/FC/W/M/OC	1	19838	12.19
Ten Crop	O/B/P/FC/V/W/M/J/OS/OC	1	20353	12.51
Total		08	100758	100.00

(Source: By the Researcher)

J = Jawar

V = Vegetable

FC= Fodder Crops

OC= Other Crops

B = Bajra

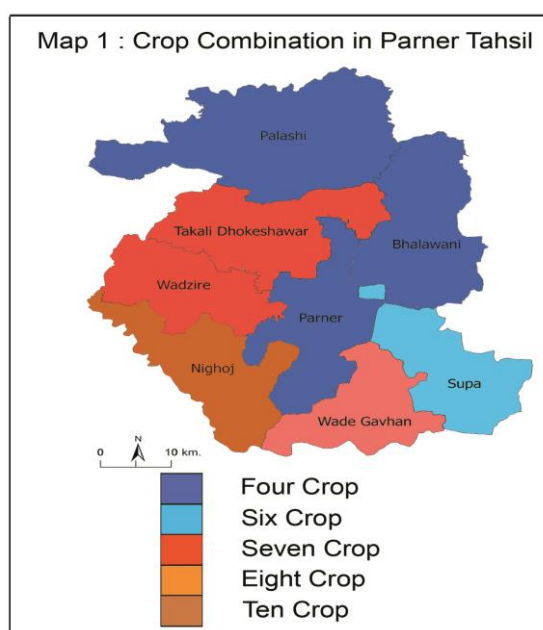
Os= Oil-seeds

O = Onion

W = Wheat

P = Pulses

M = Maize



The five-crop combination exhibits the least variation of the actual percentages from the theoretical curve. The identity and quantity of crops in the fundamental combination for the circle were

Ten crop combination = 10 % in each of ten crops

For the determination of the minimum deviation, the standard deviation method was used:

$$SD = \sigma \Sigma d^2/n$$

Where, d= the discrepancy between the proper percentage on the theoretical curve and the actual crop percentages in a specific county (areal unit) and

n= the number of crops in a given combination.

Square roots were not removed since, as Weaver noted, it was important to consider relative value rather than absolute value, hence the following formula was used:

$$d = \Sigma d^2/n$$

The percentage share of crops in the cropped area in the year (2022-23) was as follows: Jawar 21.05 percent, Onion 16.84 percent, Pulses 15.90 percent, and Bajara 14.58 percent. This example is from the Takali Dhokeshwar circle.

determined by this result to be J/B/P/O/OC (Jawar, Bajra, Pulses, Onion, Other Crops, etc.).

Crop Combination: Application and Results

Regarding Parner Tahsil in 2022–2023, there were four, six, seven, eight, and 10 crop

combinations. (Map 1). The circles and areas under each crop combination are shown in table no. 1 and map no. 1.

1: Four Crop Combination

Four crop combinations show a growth in the number of crops with a comparative degree of crop combination diversity in 2022–2023. This mix of four crops bajara, onion, pulses, and jawar entered in turn. Over the tahsil, the area with the four crop combinations was widely dispersed (Map 2, Table 2).

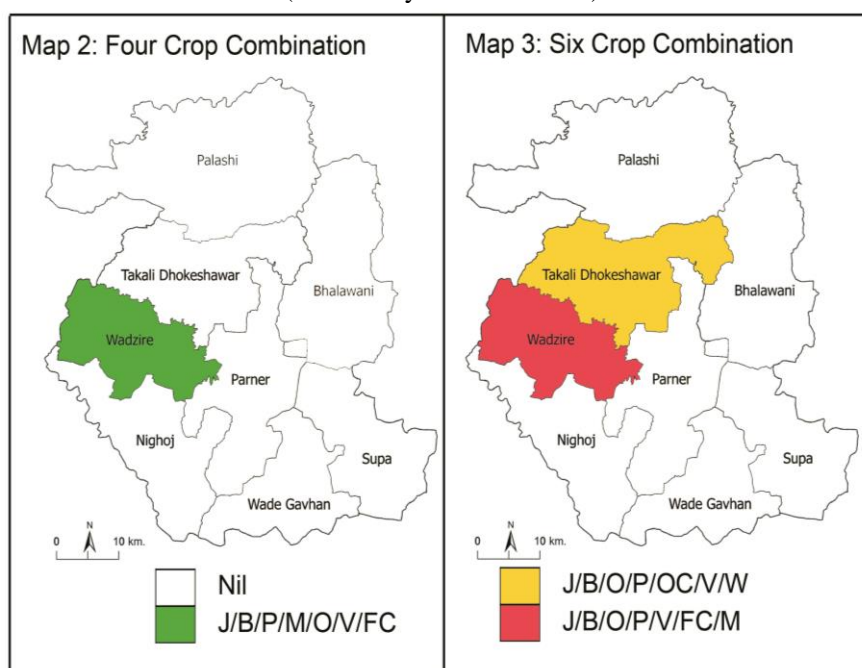
Map 2 shows that the four crop combinations occupied 61964 hectares (38.08

percent of the total area) in the tahsil. In addition, it was evident that the tahsil contained three circles representing four crop permutations. A mixture of Bajra, Onion, Pulses, and Jawar covered 24615 hectares (or 39.72% of the total area) in Palshi. Table 4 and Map 2 show that the combination of pulses, Jawar, Bajra, and Onion occupied 19699 hectares (or 31.79% of the entire area) in Bhalwani and 17650 hectares (28.59% of the total area) in Parner. A large area of the tahsil was attributed to this combination.

Table 2: Four Crop Combinations (2022-23)

Sr. No.	Crops in Order	No. of Circles	Area in Hectares	% of Total Area
1	B/O/P/J	1	24615	39.72
2	P/J/B/O	1	19699	31.79
3	J/P/B/O	1	17650	28.49
	Total	3	61964	100.00

(Source: By the Researcher)



2: Six Crop Combinations

In 1990–91, there was not a single circle under any of the six crop combinations (Map 3). Six crop combinations showed increases in the number of crops with comparatively higher levels of

Table 3: Six Crop Combinations (2022-23)

Sr. No.	Crops in Order	No. of Circles	Area in Hectares	% of Total Area
1	J/B/P/O/W/FC	1	19216	100
	Total		19216	100

(Source: By the Researcher)

Map 3 showed that the six-crop combination area encompassed 19216 hectares (13.25 percent of the total area) in the eastern portion of the circle. Additionally, it was evident that one circle, the Supa circle, contained six crop combinations: Jawar, Bajra, Pulses, Onion, Wheat,

agricultural diversity in 2022–2023. This combination of crops has six entries: Jawar, Bajra, Pulses, Onion, Wheat, and Fodder Crops. The eastern portion of the circle contained the region with the six crop combinations

and Fodder crops. These combinations spanned 19216 hectares, or 100% of the total area (Map 3, Table 3).

3: Seven Crop Combinations

Seven crop combinations show a rise in the number of crops with a comparative degree of crop

combination diversity in 2022-2023. Ten crops total -Jawar, Bajra, Onion, Pulses, Other Crops,

Vegetables, Wheat, Fodder Crops, and Mize were entered in this combination.

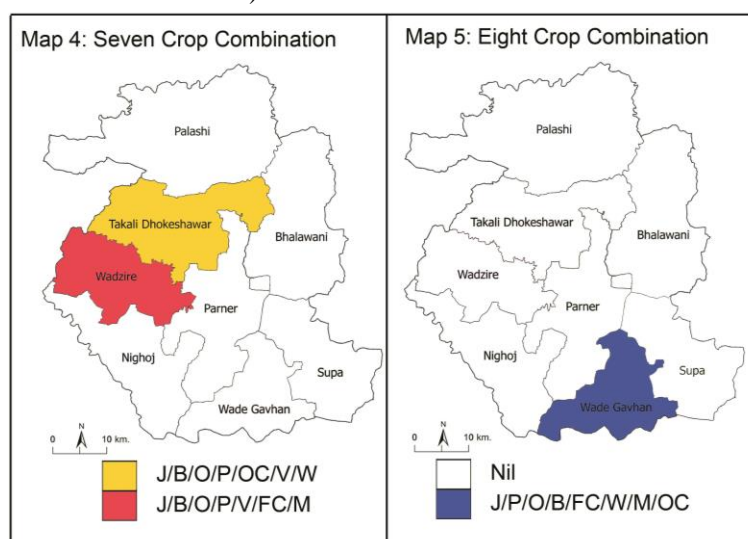
Table 4: Seven Crop Combinations (2022-23)

Sr. No.	Crops in Order	No. of Circles	Area in Hectares	% of Total Area
1	J/B/O/P/OC/V/W	1	23225	56.17
2	J/B/O/P/V/FC/M	1	18126	43.83
	Total	2	41351	100

(Source: By the Researcher)

The seven crop combinations were dispersed throughout the entire tahsil. Map 4 shows that 41351 hectares, or 28.50% of the total area, were covered by the seven crop combinations. Additionally, it was evident that the tahsil had two circles with seven crop combinations in each. Wadzire has a combination of Jawar, Bajra, Onion, Pulses, Fodder Crops, Vegetables, and Mize covering 18126 hectares (43.83 % of total area) in

the tahsil, while Takali Dhokeshwar has a combination of Jawar, Bajra, Onion, Pulses, Other Crops, Vegetables, and Wheat covering 23225 hectares (56.17 % to total area) (Table 4 & Map 4). The circles are situated in Tahsil's western region. The irrigation facilities are very poorly developed in these circles so more crop combination was recorded.



4: Eight Crop Combinations

Eight crops, including wheat, maize, beans, onions, bajra, fodder crops, and jawar, joined together in a single circle to form the eighth crop combination in 2022-2023. According to Map 5, the tahsil's eight-crop combination region was situated

in Wade Gavhan. The eight crop combinations are shown in Table 5 along with their areas, circles, and orders within the tahsil. Table 5 and Map 5 show that the Wade Gavhan circle's eight crop combinations spanned 19838 hectares or 13.67% of the total area.

Table 5: Eight Crop Combinations (2022-23)

Sr. No.	Crops in Order	No. of Circles	Area in Hectares	% of Total Area
1	J/P/O/B/FC/W/M/OC	1	19838	100
	Total	1	19838	100

(Source: By the Researcher)

5: Ten Crop Combinations

Ten crop combinations from 2022-2023 showed increases in the number of crops with comparatively higher levels of agricultural diversity. Ten crops total -onion, bajra, pulses, vegetables,

fodder crops, wheat, meze, jawar, oilseeds, and other crops were included in this combination. The southwest portion of the tahsil was placed to the ten crop combinations.

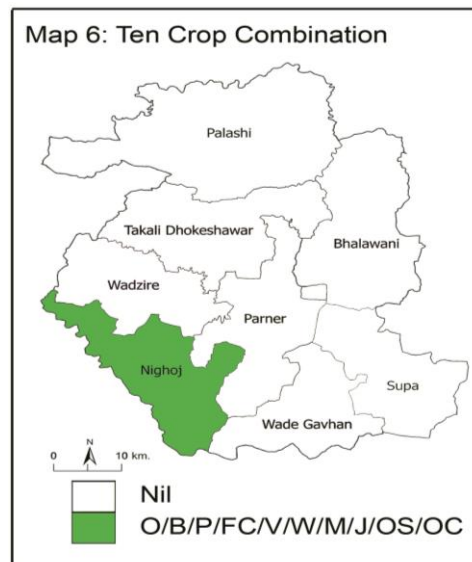
Table 6: Ten Crop Combinations (2022-23)

Sr. No.	Crops in Order	No. of Circles	Area in Hectares	% of Total Area
1	O/B/P/FC/V/W/M/J/OS/OC	1	20353	100
	Total		20353	100

(Source: By the Researcher)

The ten crop combinations were found to be in the southwestern portion of the tahsil, specifically in the Nighoj circle. These combinations covered 20353 hectares, or 14.03 percent of the total area,

and included onions, bajra, pulses, vegetables, wheat, meze, jawar, oilseeds, and other crops (Map 6, Table 6).



Remarks:

Thus, it can be said that the crop combination approach based on primary data, which indicates the levels of agricultural growth for each circle, has shown to be a useful method of circle classification.

1. Throughout the research periods, some of the circles classified as having a low level of growth have stayed at that level. Palshi and Bhalavani are their names. This indicates that to achieve development that has been halted, such circles need to use additional planning tools.
2. The development of Wade Gavhan and Takali Dhokeshwar circles has been raised from low to medium. These modifications are the result of agricultural development and micro-irrigation.
3. It's noteworthy to note that, based on the composite score values, the circles representing Nighoj have developed to a higher degree. This could be as a result of the larger-than-average quantity of agricultural development indicators.

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A Study of the Reasons for Fluctuations in Stock Market Investment in India

Miss. Komal Kedar Rathi¹, Dr. D. N. Padole²

¹Research scholar, VMV Comm, JMT Arts and JJP Science College Wardhman Nagar, Nagpur

²Associate Professor, VMV Comm, JMT Arts and JJP Science College Wardhman Nagar, Nagpur

Corresponding Author- Miss. Komal Kedar Rathi

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Abstract:

This study explores the factors that cause stock market fluctuations in India, a rapidly growing economy with one of the world's most vibrant stock markets. It focuses on economic indicators like GDP growth rates, inflation, interest rates, and currency fluctuations, as well as investor sentiment, media coverage, market rumors, and psychological factors. The study also examines the influence of government policies, including fiscal policies, regulatory changes, and monetary policies enacted by the Reserve Bank of India. Global market trends, such as geopolitical events, economic shifts, and international trade policies, also play a crucial role in influencing the Indian stock market. The findings aim to provide valuable insights for policymakers, financial analysts, and investors, helping them understand the complex nature of stock market movements and make informed decisions in an increasingly globalized financial environment.

Keywords: Stock Market, Investment, Fluctuations, India, Economic Indicators, Investor Sentiment

Introduction:

The Indian stock market stands as one of the most dynamic and rapidly evolving financial markets globally, reflecting the broader economic transformation of the country. Over the years, it has attracted both domestic and international investors, making it a critical component of the global financial system. However, the Indian stock market is also characterized by its high levels of volatility, with frequent and often unpredictable fluctuations in investment patterns. These fluctuations can have profound implications for investors, ranging from short-term market losses to long-term financial planning disruptions.

Understanding the reasons behind these fluctuations is of paramount importance for a variety of stakeholders, including individual investors, institutional investors, policymakers, and financial analysts. For investors, grasping the causes of market volatility can aid in developing more effective investment strategies and risk management practices. For policymakers, insights into these fluctuations can inform the creation of more stable and resilient financial regulations and economic policies. Financial analysts, on the other hand, rely on an understanding of market dynamics to provide accurate forecasts and guidance.

With a focus on a number of significant variables, this study attempts to investigate the complex causes of the variations in the Indian stock market. These include the state of the domestic economy, which has an immediate bearing on investor confidence and market performance. Examples of these are GDP growth, inflation rates, and interest rates. Investment decisions and market

emotions are also greatly influenced by political events, such as elections, policy declarations, and geopolitical conflicts.

Additionally, the behavior of investors themselves, influenced by factors such as media narratives, market psychology, and herd behavior, contributes to market volatility. Finally, the interconnectedness of global markets means that international events—such as economic downturns, changes in foreign policy, and global financial crises—can have immediate and significant impacts on the Indian stock market.

This research aims to give a deeper knowledge of the reasons of stock market swings in India by doing a thorough examination of these elements. By doing this, it hopes to further the conversation about market volatility and provide insightful information that can be used to improve investment plans, influence public policy, and increase the stability of the Indian stock market as a whole.

Research Objectives

- 1) To analyze the economic factors contributing to stock market fluctuations in India.
- 2) To examine the role of investor sentiment in market volatility.
- 3) To assess the impact of government policies on stock market stability.
- 4) To evaluate the influence of global market trends on Indian stock market investments.

Literature Review:

For many years, the study of stock market volatility has been an important field of study. Several studies have identified several elements that affect market behaviour. It has been determined that

a major component influencing market patterns is economic indicators. Robust economic expansion often results in favourable stock market outcomes, and alterations in industrial output, inflation, and interest rates have a substantial influence on stock returns.

Investor sentiment has also been extensively studied in the context of market volatility, with Shiller (2000) highlighting the role of irrational exuberance in stock market bubbles. Baker and Wurgler (2007) further developed this idea, constructing an investor sentiment index that correlates with stock market volatility.

Government policies have also been well documented, with Bernanke and Kuttner (2005) finding that unexpected changes in interest rates lead to immediate and significant market reactions. Mohanty (2004) analyzed the impact of fiscal and monetary policies on the stock market, concluding that government measures play a crucial role in shaping investor confidence and market stability.

Eun and Resnick (1984) discussed the impact of worldwide market correlations on local stock returns. Global events, such as financial crises or geopolitical conflicts, can have significant repercussions on domestic stock markets. Gopinath (2020) investigated how the COVID-19 pandemic affected international financial markets, demonstrating how major market volatility may be brought on by global health emergencies.

Technological advancements and high-frequency trading (HFT) have introduced new dimensions to stock market fluctuations, with Biais, Foucault, and Moinas (2015) exploring how HFT affects market volatility. Behavioral finance has also contributed significantly to understanding stock market fluctuations, with Barberis, Shleifer, and Vishny (1998) proposing a model where investor biases, such as overconfidence and loss aversion, lead to market anomalies and excess volatility.

Research Methodology:

In order to find connections between economic indicators and stock market movements, this study used a mixed-method approach, combining quantitative analysis of historical stock market data with qualitative interviews with investors and financial professionals.

Reasons for Fluctuations in Stock Market Investment in India:

A number of variables, including economic indices like GDP growth, inflation, interest rates, political stability, and elections, can affect changes in the Indian stock market. While inflation can reduce buying power and cause a drop in stock prices, changes in the Gross Domestic Product (GDP) can have an effect on investor confidence. Interest rates, like those determined by the Reserve Bank of India (RBI), have a direct impact on the cost of borrowing and earnings for businesses.

Political stability is closely tied to government policies, including taxation, regulation, and economic reforms. Elections can also cause market volatility due to uncertainty about the future political landscape and economic policies. Global economic trends, commodity prices, foreign institutional investment, and corporate performance can also impact stock prices.

Market sentiment, driven by news, rumors, and speculation, can lead to herd behavior and significant fluctuations. Technological changes and advances in technology can exacerbate these fluctuations.

Market swings and investor decisions can also be impacted by changes in rules, such as tax laws and SEBI guidelines. Market stability may also be impacted by liquidity circumstances, such as the health of the banking industry and the RBI's management of liquidity. Comprehending these variables can aid analysts and investors in making well-informed choices and more accurately projecting future changes in the Indian market.

Results:

The Indian stock market is influenced by a complex interplay of factors, each contributing to its dynamic behavior. Economic indicators like GDP growth, inflation, and interest rates are foundational drivers of market trends, while external influences such as global commodity prices and foreign institutional investments also play critical roles.

Inflation is a nuanced factor that can create uncertainty and anxiety among investors, erode purchasing power, increase costs for businesses, and lead to tighter monetary policies, all of which contribute to market volatility. In periods of high inflation, market corrections are common as investors adjust their expectations for future corporate profitability. Interest rates are another critical factor influencing market behavior, with rising interest rates generally associated with market corrections.

Global influences are also significant in shaping the Indian stock market. Increases in global commodity prices, particularly oil, have a direct impact on inflation and the trade deficit, which in turn affect investor sentiment. Rising oil prices often led to market downturns as concerns over higher import costs and their inflationary effects prompted investors to sell off equities, particularly in sectors like transportation and manufacturing, which are heavily dependent on fuel.

Foreign institutional investment (FII) plays a paramount role in the Indian stock market, with large inflows of capital driving up stock prices but also being vulnerable to sudden outflows of foreign capital, which can trigger sharp corrections. These outflows are often precipitated by global events or shifts in investor sentiment towards emerging

markets, underscoring the importance of global economic conditions in shaping the Indian market.

Political and regulatory factors also play a crucial role in shaping the Indian stock market. Government policies that promote economic growth, reduce regulatory burdens, or enhance the business environment tend to be positively received by the market, leading to bullish trends. On the other hand, political uncertainty or policies perceived as unfavorable to business can lead to increased volatility and market downturns.

SEBI Regulations play a crucial role in maintaining market integrity and stability. The study found that SEBI's regulations, particularly those aimed at enhancing transparency, protecting investors, and preventing market manipulation, have a stabilizing effect on the market over the long term. However, the introduction of new regulations or changes to existing ones can also lead to short-term volatility as investors adjust to the new rules.

Corporate performance is a fundamental driver of stock prices, with companies that consistently meet or exceed earnings expectations tending to see their stock prices rise, while those that underperform face declines. Additionally, corporate actions such as mergers, acquisitions, and dividend announcements can lead to significant short-term fluctuations as investors reassess the company's future prospects.

The Indian stock market is influenced by a broad array of factors, each contributing to its complex behavior.

Discussion:

This study provides a comprehensive analysis of the factors influencing stock market fluctuations in India, focusing on economic fundamentals, inflation, and interest rates. The findings align with existing literature on market behavior, offering valuable insights into the complexities of investment dynamics in emerging markets. Economic fundamentals are crucial for understanding market trends, as robust economic growth tends to support bullish market trends, while economic slowdowns lead to market declines. Inflation has mixed effects, with moderate inflation often signaling a growing economy and potentially beneficial for the stock market, while high inflation can create uncertainty and market anxiety. The relationship between interest rates and market fluctuations also supports existing theories, suggesting that rising rates generally lead to market corrections due to increased borrowing costs and reduced corporate profitability.

Investor sentiment and media influence play a significant role in market volatility, as psychological factors and media narratives can significantly impact investor decisions and market movements. This study highlights the importance of understanding these factors for investors, policymakers, financial institutions, and investor

education. Investors can enhance their portfolio strategies by incorporating insights into how global commodity prices and foreign institutional investments affect the Indian stock market, which can help them anticipate market shifts and make more informed decisions.

Policymakers should adopt stability-oriented economic policies that promote sustainable GDP growth while keeping inflation in check, maintaining investor confidence and reducing market volatility. Foreign investment is crucial, but policymakers should also be prepared to manage potential volatility associated with large capital inflows and outflows. Financial institutions can leverage the study's findings to better understand the relationship between their own health and overall market stability, managing risks during periods of economic stress or dealing with rising non-performing assets (NPAs).

Institutions should focus on providing tools and resources that help investors comprehend market trends and manage risks effectively, including educational programs and analytical tools that enhance investors' ability to navigate complex market conditions. However, the study has several limitations, such as data scope, factor exploration, and qualitative analysis. Future research could explore technological impact, behavioral finance, long-term structural changes, and comparative studies between the Indian stock market and other emerging markets.

Conclusion:

The study reveals that stock market fluctuations in India are influenced by economic, political, and global factors. Key economic indicators like GDP growth, inflation, and interest rates are the primary drivers of market movements. Investor sentiment, heavily influenced by media, social factors, and government policies, also plays a crucial role in market volatility. Understanding these interrelated factors is essential for investors to make informed decisions and mitigate the impact of market fluctuations on their portfolios. The recommendations are for investors to monitor economic indicators, policy changes, and global trends to make informed investment decisions. Policymakers should recognize the impact of their decisions on investor confidence and market stability, and financial institutions should provide tools and resources to enhance understanding of market trends and improve risk management strategies.

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Use of Technologies in Teaching and Learning Process of National Education Policy-2020

Dr. Rajat Rabindranath Mandal

Assistant Professor in Commerce and Management Mahatma Jyotiba Fule Mahavidyalaya,
Ballarpur, Dist: Chandrapur-442701

Corresponding Author- Dr. Rajat Rabindranath Mandal

Email: rajatmandal1001@gmail.com

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Abstract:

In the world of information, technologies acts as the important element and helps others and teachers for their updation. It provides awareness and innovation trends for instructional methodologies for evaluation mechanisms which appreciate the overall and professional development. Most of the technologies enables teachers and students to learn in a ways not only in previous method but also in a newly systematic ways. Effective management of technology is useful when teachers and students use appropriate technologies to obtain timely information to analyse in a systematic manner and to use a professionally. Appropriate use of technologies has a great scope in increasing the process and products of education. The present research paper provides the scope of analysis of National Education Policy and its provisions of its enabling and creating the environment of study culture. It also provides the aim of Aatmnirbhar Bharat through ultimate use of ICT tools for e-learning and supply greater imagination power to teacher as well as students. This research paper analyse the various aspects of use of technologies and their adoption which impacts various disadvantages and advantages in National Education Policy. It was also found that faculty still requires help to use the technologies effectively for the benefits of the students. This kind of support should be provided or arranged by the institutions.

Keywords: Use of technology, methodologies, Technological tools, etc.

Introduction:

Under the Ministry of Human Resource Development (MHRD) the National Education Policy, is revolutionary in a great sense. After nearly 34 years, the currently existing old education policy is being replaced by the New Education Policy (NEP). This is the third amendment of the Indian Education Policy which plays a key role in education system.

On 29th July 2020, the NEP is approved under the chairmanship of honorable Prime Minister Shri Narendra Modi through Union Cabinet and other supervisory authorities "Ministry of Human Resource and Development" which is renamed as "Ministry of Education". Since from last decade, our country has tranformed ourself into a 'use of information technology society' and develop the growing culture of use of technology in the education sector. Today information and knowledge are the important keys to achieve comfort, competition, productivity and wealth. So, this approaches may provides a good quality of education to more and more human beings.

Education sector in the 21st century is the place from which all developments and changes arise. Today use of information technology can help the learning and education process. New information technological tools referred to the

processing of knowledge and applying the methods of transferring, processing and making information in a same direction. The technology includes, storing, gathering publishing, organising and using the data or information in the form of picture graphics, sound, number and text by using telecommunication and computer tools. The most and crutial changes that in learning and teaching process that the student has increases the learning motivations with the use of advanced technology.

The National Education Policy 2020 convert the whole education system by actually focusing on three sub-themes, which are courses and student, development of curriculum, courses and curriculum, etc. This makes development of student enhancement with aptitude and encourage them with multidisciplinary skills and knowledge. This NEP policy will have COVID-19 post implications for many stakeholders. This education system requires the teachers to incorporate the various technological implementations regarding delivery of their lectures, to increase the level of their pedagogical skills and to update themselves for better upliftment of larger society. Other curriculum design would play an important role for preparing a strong foundation of students from theoretical concept learning to real world application knowledge for better upliftment and overall quality of student development. The

policies of NEP encourage the idea of developing the regional language for students and makes higher education accessible throughout the young population in rural and tribal areas of the country. Moreover, the main objective of NEP is to increase the gross enrollment ratio up to 50% which would make subsequently increase the overall employment ratio in future days.

Need of the study:

Both learning and education are the process of throughout lifetime, they have no limit of when to stop and when to start. In general, throughout education processes students gets various types of knowledge and information of various field and the related sector. Hence information technologies atmosphere can speed up or increase the speed of information delivery regarding improvement of teaching-learning process. Both students and teachers are adopting various technological tools to achieve specific and various academic goals of various field-project studies. The use of technologies in teaching and learning process through NEP can reduced the cost of education throughout the country. For example: the more use of broadband internet makes it easy to access various academic resources or information on time for student in various sector. Also, teachers can use this broadband facility of internet to produce and deliver resources or information using graphical and videos study materials. It makes enables students and teachers to communicate through electronic devices or emails with very easy process for each other. Today university, UGC and other educational institutions circulate the data or information online so stakeholders or students gets the information within a few seconds of time. It also improve or facilitates the group discussion of various working groups. It reaches the masses, groups, individuals through its mean and media of privilege and unprivileged facilities. Although use of information technologies can help the students, teachers, researchers, learners, administrator and other institutional planners to get easy access and increase the knowledge treasurer of skill, application and use of various technologies for improving various field and task management. Distance learning, e-learning, m-learning, virtual classrooms are the latest trends and concepts that are emerging through various ways in the education sector. The NEP 2020 support the idea of a single education system all over the country to decrease corruption, complexities and to increase overall education system. Few key recommendations of the NEP policy in education system are promotion of research and development hybrid teaching-learning model, development of necessary infrastructure (Centre for linkages of academic industries incubation centers. etc) and providing knowledge of interdisciplinary studies to students faculty and

other stakeholders which improves the global scenario of universities to build their images in India for upliftment of higher education and its quality.

A very important trends or cycle in the present education system is to change the teaching and learning culture by increase the use of technologies in this system. New learning and teaching methods should contain the facts of orientation for real goals achievement, problem solving methods, co-operative learning and increase the role of teachers etc. However the combination and integration of communication and information technology into the education system is a more complex and complicated process related to learning and teaching activities.

Objectives of the study:

- 1) To know the use and importance of technologies in the learning and teaching activities.
- 2) To find the impact of various technology on the learning and teaching process.
- 3) To know the major advantages and disadvantages of use of information technology in learning and teaching process.

Research Methodology:

This qualitative study and its data is collected from various secondary sources like books, journals, research paper different websites etc. The data for this study is collected from 3 sources (observation, documents and interview). Also this research has been conducted through collecting data from various stakeholders like, parents, teachers and students who could provide different feedback and opinion regarding use of technologies in teaching and learning process of National Education Policy. This makes result which can be used to enhance the various applications of different digital devices in the education environment.

Finding:

Importance and use of technologies in the learning and teaching activities:

Today technology provides us useful enhancing tool in teaching skills and various learning ability. The facilities of audio-visual education can be provided easily with the help of use of technology. A laptop or computer system is a very useful tool in all areas or sector of teaching learning activities. The various multi-media and use of technologies are used in colleges, school and educational institution to communicate the different ideas between teachers and students. Today use of technology and ICT based education is encouraging in the various universities of developed countries. Smart schools, colleges and educational institute have adopted various virtual learning, remote training and online learning procedure through new education system.

Innovative methods of teaching:

Innovation of technology and its use is an important factor which is adopted by human for our development. This makes teachers to use various multimedia for use of diverse learning and teaching style, such as live video, animation etc.

1. E-learning:

Because of Covid-19 and school, college and educational institution lockdown e-learning has been adopted as best teaching and learning method throughout the world. This makes to rising demand for e-learning educational platforms. For educational content e-learning is derived through smart phones, tablets, laptops, computers etc. These effort not only save time but also open many opportunities for interactive learning activity. Also various e-learning courses and its syllabus include podcasts, video and animation that a multimodal approach and practical learning exposure.

2. Assistant audio video learning:

In recent decades, audio-video assisted learning has become greatly popular as displays of college and school classrooms. With digital devices and facilities of internet everyday can be celebrated as "video day". This makes a regular trend which is booming in distance teaching learning conditions, in which teacher and students can learn through computer systems. Audio-video especially animated are extremely important to enrich lessons and makes syllabus comprehensive. It generates student outcomes and decreases teacher's workload.

3. Technology of Block Chain:

The (DLT) Distributed ledger technology brings so many advantages to education, especially data saving and storage from block chain method. Every step brings new data is added and its adds new another "block" to the system, so this storage is technically termed as limitless. The technology of block chain is used in developing (MOOCs) Massive Open Online Courses and developing e-port folios to increase knowledge and skills. Moreover, it can help student approach to publish their accomplishments and achievements during the job-applying phrases.

4. Big data will become get bigger:

To provide more facilities to learner's experience needs to be explore. During Covid-19 it was the time for online learning booming which creates bigger data than ever before. Many instructional designers have made relevant information to learner's experiences to customise and prepare the course in a good and suitable format.

5. Artificially Intelligence (AI):

(AI) Artificially Intelligence can brings automate basic activities in the sector of education, like grading and other statistical analysis. Now, it is possible for teachers to create automate the grading of fill in the blanks and multiple-choice questions

solving project. Thus, automated analysis and grading of students work may not be far behind in overall competition.

6. Analytics of learning:

The present landscape of analytics of learning has dramatically expanded for especially in higher education sector analytics of learning allows various educators to report and measure student learning through just by the web. From that situation, its possible to better understand for them and optimise learning for better upliftment of their future. When teachers analysis regarding insights from student's learning process, they can solve and improve the skill and knowledge acquisition of their students respectively. For this teachers can see what data or information (images, text, videos or graphics) that students enjoy especially and use it more and more in their updating syllabus.

7. To adopt Gamification:

To learn more and more, gamification is the most suitable trend of technology in educational sector with the way of more fun and enjoyment. This makes no reason for students not to take part actively participated in classroom games. Although students can participate and can learn while they are performing in on exciting games of activities.

The trends of gaming elements have encourage and create a positive and funny learning environment for stakeholders. It's because children are fastly engaged in gaming learning videos are getting fast scoring in application of this kind of learning.

8. Learning through Social Media:

Many study applications and educational institutes have adopting social media as a tool for communication in which students can communicate with each other. Various stakeholders can share various study materials which can discuss with each others in a group or easily post or comment on someone else. Also an animated learning audio-video could go spread or viral on social media which can stay or build a study culture of various collaboration and leading to an improved teaching-learning experience.

Impact of various technologies on the learning and teaching process:

Moreover technology has an important and very significant influence in classroom teaching-learning process. Now a day's most of the colleges and school deliver information and knowledge with teaching aids like LCD projector, overhead projector, slide project audio-video picture etc. Sometimes audio-video pictures, tape CD-ROMS and floppy disks are also used by teachers to distribute instruction and information to various discipline. Computer system play a vital or major role in preparing or creating learning-teaching soft and hard copy materials in various sector of knowledge. Besides this, many types of data or

information such as animation, clipart, music, audio-video, live interaction, graphics made effective learning and teaching activities in various in various classroom. The use and purpose of multimedia computer system serves a fruitful and meaningful training achievements in various sector of knowledge. This makes or creates an excellent condition to the computer monitoring classroom without increasing workload of teacher and browses them again and again to achieve the teaching-learning objectives. Today billions of stakeholder or students are adopting the use of internet with reduces the amount or cost of books-buying, and also students or teacher can download the study materials and books from different websites, along with games, picture and movies which helps in their different and overall developments.

Major advantages and disadvantages of use of information technology in learning and teaching process are as follows:

Advantages:

1. Encourage independent and skill learning for a stakeholders or students:

Student or stakeholders can learn and understand on their own without the assistance of anybody.

2. Data or information access make easier:

Through use of computer students can access huge quantity of data or information according to their needs and use.

3. Promote enjoying and exciting way of educating students:

This makes student motivated and encouraged for study culture. This system of learning and teaching process makes student happy and excited to get their learning activities in right and updated ways.

4. More participation and wider accessibility:

The online classes and emergence opens many opportunities to many students who can't access or participate due to financial crisis or any other reasons. Online traditions offer the student for more chances to improve their lifestyle according to their lifestyle.

5. Prepare the student for future competition:

From more and more use of technology and its advancements it will be assumed that future will be technological and digitally focused.

With the collaboration and better use of technologies student will find better job in their respective workplace and reduce the activity of unnecessary things.

6. Co-operative nature of learning:

The use of technology encourages dialogue, facilitates co-operative nature of learning and creates a more interesting and exciting study classroom in knowledge environment.

7. Acquiring useful and variety of learning and writing skills:

The internet supports students towards growth of acquiring useful and variety of knowledge gaining activity. The New Education Policy and its use of technology will provide great digitization and dematerialization support to the student.

Disadvantages:

1. Result in low interest in reading books:

As many things are available in data based which is saved in computer system or mobile and tablets reduces and result in low interest in reading books and writing skills.

2. Discover unwanted and unusual things or work on computer system:

The use of internet doesn't always support student in search of materials which are valuable for them, many times more use of internet can distract the student from the learning process.

3. Hindrance and low performance in academic activity:

Instead of use of technology for proper study of student moreover they are visiting the social networking sites, which give rise to hindrance and low performance in academic activities.

4. Sometimes more expensive:

Sometimes these facilities are not available in the rural area schools. In most cases schools cannot afford the cost of maintenance, purchase and other expenses regarding use of technology, which effect the negative impact on learning and teaching process. "Preventive measures for Fraudulent Transactions"- must be taken.(1)

5. In modern use of technology today's few teachers are not well educated in these sector:

There is a big gap of use of technology and good teaching skills in appropriate and integrated way of teaching and learning process.

6. The prescribed and old curriculum of university colleges and schools:

In prescribed manner the infrastructure, the old pattern of examination and evaluation system are not in a position to facilitate the use and applications of technologies in learning and teaching culture.

7. Reduce the personal and face to face interaction:

Study lessons or chapters delivered through online method always reduces the personal and face to face contact of teachers and students in many sectors of knowledge.

Conclusion:

It can be concluded that the National Education Policy encourage some useful and progressive development and initiatives of e-learning but some disadvantages also occur in national development through teaching-learning process. Hence, a key structure has to be made for bridging the gap in use of internet, access smart

phones and simultaneously a proper way should be used for creating milestone in study culture of student.

Various kinds of equipments and better use of technology can initiate both software and hardware facilities towards teaching-learning process. On the other hand use of technologies in teaching and learning process has a tremendous scope in increasing and improving the processes and product of education in our country. So launching the e-learning and large use of internet data base in teaching and other areas of the country will enhance and support the human beings in present and future days.

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Development of Green Silver Nanoparticles With Wound Healing Property

Harshada Umesh Zate¹, Ranjana G. Khade²

^{1,2} Dept of Microbiology, Seva Sadan's R K Talreja College of Arts, Science and Commerce, Ulhasnagar. Dist Thane. Maharashtra. India.

Corresponding Author- Harshada Umesh Zate

Email- r.khade@ssrkt.edu.in

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Abstract:

Silver nanoparticles (AgNPs) are recognized for their broad-spectrum antimicrobial properties. This study focuses on the green synthesis of AgNPs using *Catharanthus roseus* leaf extracts, which eliminates the need for toxic chemicals and energy-intensive methods typically associated with conventional nanoparticle synthesis. The objective is to produce AgNPs with antimicrobial activity specifically targeting skin pathogens. Aqueous extracts from the leaves of the eco-friendly herb *C. roseus* were employed in the synthesis process. Phytochemical analysis of these extracts revealed the presence of alkaloids, phenols, saponins, and quinine. The successful synthesis of AgNPs was confirmed via UV-visible spectroscopy. The AgNPs synthesized using *C. roseus* extracts were evaluated for their antioxidant and antimicrobial activities against both Gram-positive *Staphylococcus aureus* and Gram-negative *Escherichia coli*. The nanoparticles demonstrated significant antioxidant and antimicrobial effects. Additionally, the wound healing potential of these AgNPs was assessed through the inhibition of protein denaturation assay, which indicated promising wound healing capabilities. These findings highlight the potential of green-synthesized AgNPs for the development of wound healing formulations.

Keywords: AgNPs, *Catharanthus roseus*, antioxidant activity, Wound.

Introduction:

The skin is a major barrier against external infections, providing sensory, thermoregulatory, and defensive functions. General skin damage to organisms demands prompt and effective treatment. Wound healing involves several immune and physiological processes, including inflammation, propagation, remodeling, and scar formation. Different wounds, including post-operative, burn, and chronic ulcers, can cause delays in healing. Several factors, including age, sickness, infection, stress, and diet, might impede healing. Effective treatment is required to minimize patient suffering and reduce treatment costs (Ishfaq, B. *et al.*, 2023). A wound healing study identifies factors influencing the healing process, which may be used or avoided in clinical practice to improve healing results (Kumar, H. *et al.*, 2013). Wound healing entails numerous biochemical reactions that repair and rebuild injured tissues via antioxidant defenses, epithelization, and remodeling phases. There are several therapeutic choices for wound healing, such as non-steroidal anti-inflammatory medicines, commercial antibiotics, and anti-inflammatory pharmaceuticals; however, a number of these therapies have undesirable side effects (Muthukumar, B. *et al.*, 2023).

Silver compounds and ions are widely utilized for hygiene and healing due to their high bactericidal and antibacterial properties (Rigo, C. *et al.*, 2013). Silver has been used to heal infected wounds since

before antibiotics were introduced in modern medicine. However, silver's use is limited because of its high toxicity and the availability of antibiotics. Silver nanoparticles (AgNPs) have gained scientific attention for their possible antibacterial properties. Their broad bactericidal and fungicidal spectrum makes them useful in several medical applications, including pharmaceuticals, cosmetics, and healthcare devices. *Catharanthus roseus*, a plant from the *Apocynaceae* family, is widely used in traditional medicine to cure many ailments. The present study aimed at green synthesis of AgNPs from *C. roseus* leaf aqueous extract with wound healing property.

Materials and methods:

Preparation and phytochemical analysis of aqueous extract of *Catharanthus roseus*

The leaves of *C. roseus* were collected, washed, air dried and powdered in a mixer and aqueous extract was prepared by boiling 10g of the sieved leaf powder in 100 ml of sterile distilled water for 30 min. The extract was filtered through Whatman No.1 filter paper. The qualitative phytochemical analysis of *C. roseus* extracts was performed as per Arunachalam, K. D. *et al.*, (2013).

Biological synthesis and of silver nanoparticles

The biological synthesis of AgNPs was carried out as per the methodology given by Arunachalam, K. D. *et al.*, (2013). The synthesized silver nanoparticles were characterized using UV-visible spectrophotometer using a wavelength scan

between 200 nm and 800 nm. **Determination of Wound Healing potential of the synthesized AgNPs**

The antibacterial activity of AgNPs was evaluated using the agar well diffusion method and the antioxidant activity by DPPH method. DPPH-free radical scavenging activity was determined by the following formula

DPPH scavenging activity (%) =

$$\text{Acontrol} - \frac{\text{Asample}}{\text{Acontrol}} \times 100$$

Wound healing ability was tested in terms protein denaturation assay (Deepa, M. V. *et al.*, (2024). Bovine serum albumin was used as a source of protein and the percentage inhibition of protein denaturation was measured in presence of the green synthesized AgNPs. Aspirin was used as a control. The percentage inhibition protein denaturation of was measured using the following formula.

$$\% \text{ Inhibition of protein denaturation} = 100 \times \left(1 - \frac{A_2}{A_1}\right)$$

Where A1 is the absorption of the control and A2 is the absorption of the test sample.

Results and discussion:

Green synthesis of nanoparticles is gaining interest due to its benefits over chemical and physical synthesis methods, which include non-toxicity, safety for people, eco-friendliness, and economic viability (Mohanpuria, P. *et al.*, 2008). Al-Shmgani *et al.*, (2017) have reported the presence of phytochemicals in *Catharanthus roseus* leaf extract with antioxidant, antimicrobial, and wound-healing activities. Aqueous extract of *C. roseus* was analysed for phytoconstituents and found to various phytochemicals mainly alkaloids, tannins, terpenoids, phenol, saponins, quinines, protein and absence of reducing sugar, flavonoids and sterols. Satish, A. M. *et al.*, (2021) have reported the wound-healing property associated with the phytoconstituents identified in *C. roseus*

Silver nitrate (AgNO₃) was used for the synthesis of silver nanoparticles from the *C. roseus* leaves extract. The silver ions in the solution are reduced to metallic silver using a reducing agent such as sodium citrate. This reduction results in the formation of silver nanoparticles. The synthesis of silver nanoparticles was confirmed by visualising the colour change from pale yellow to a dark reddish-brown colour due to the surface Plasmon resonance phenomenon.

Silver has been used for its well-known antimicrobial properties since roman times however the advances in generating AgNPs have made possible a revival of the use of silver as a powerful bactericide. The antimicrobial activity of silver nanoparticles synthesized by natural plants extract was investigated against pathogenic organisms such as *S. aureus* and *E. coli*. The growth of both the pathogens was inhibited by AgNPs but *S.aureus*

showed highest zone of inhibition compared to *E. coli* (Table 1).

The antioxidant activity of bio-conjugated AgNPs was evaluated using DPPH scavenging assay. DPPH is a stable compound and accepts hydrogen or electron from AgNPs. Antioxidants are beneficial for the management of many deleterious diseases because of their scavenging ability. The reaction mixture with lower absorbance indicated a higher percentage of scavenging activity. The AgNPs exhibited a higher free radical scavenging activity of 82% as compared to ascorbic acid used as standard. Wound healing property of the AgNPs synthesized from *Catharanthus roseus*, was determined in terms of inhibition of protein denaturation as elevated levels of cytokines and proteases in chronic wounds reduce mitogenic activities and response of wound cells, impairing healing. AgNPs showed more than 80% inhibition of protein denaturation. Dose depended wound healing property was shown by AgNPs (Fig. 1).

Conclusion:

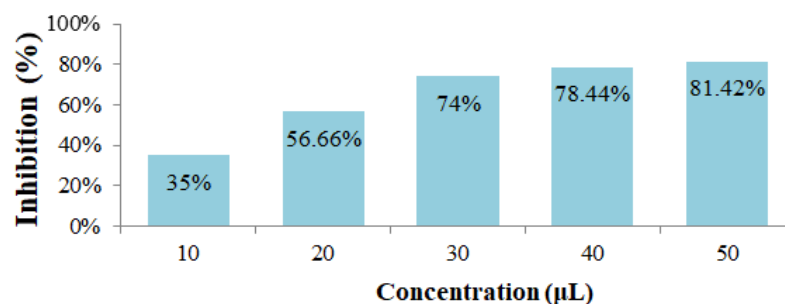
The phytochemical content of *C. roseus* plant reflects its medicinal value. The bio-conjugated AgNPs produced biologically using water extract of *C. roseus* possessed antimicrobial and antioxidant activity alongwith wound healing property. Thus the green AgNPs holds potential for preparation of natural herbal wound healing formulations and herbal bandages. The herbal extract of silver nanoparticles synthesized from *C. roseus* can be used as an alternative over synthetic forms with better relief and natural healing property.

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10.

Figure 1: Wound healing property of green AgNPs synthesized from aqueous extract of *C. roseus*

Table 1: Antibacterial activity of *C. roseus* leaf synthesized silver nanoparticles against *S. aureus*

Sr. No	Test organism	Zone of inhibition in mm
1	<i>Escherichia coli</i>	21
2	<i>Staphylococcus aureus</i>	23



Assessing the Impact of Climate Change on Biodiversity: A Review

Thaware Vivek Hanmantrao

Department of Zoology, Vai. Dhunda Maharaj Degloorkar College, Degloor, Maharashtra, India

Corresponding Author- Thaware Vivek Hanmantrao

Email: vivekthaware96@gmail.com

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Abstract:

Most studies have extensively explored the impacts of climate change on biodiversity. Climate change is having a significant influence on many facets of the natural world. The impacts of climate change on biodiversity are one of the many ecological consequences it poses. This review explores the multifaceted impacts of climate change on biodiversity across scales, from individual organisms to entire biomes. This paper examines the complex impacts of climate change on biodiversity, highlighting how climate shifts disrupt ecological systems from species to biomes. Key impacts include physiological stress and altered life cycles leading to ecosystem imbalances and potential extinctions. The study underscores the underexplored impact of genetic shifts on ecosystem stability and the disruption of critical interspecies relationships, such as those between pollinators and plants. It also warns of significant vegetation and biome changes, like the potential conversion of the Amazon rainforest into savannahs. The research emphasizes the urgent need for informed conservation strategies to protect biodiversity amid accelerating climate change.

Keywords: Biodiversity; Climate change; Genetic shifts; Ecosystem imbalances; Conservation strategies.

Introduction:

The complex web of life on Earth depends not only on the wide variety of species that live there but also on the delicate balance of ecosystems. Biodiversity, which includes the range and diversity of living things at different scales, is essential to preserving ecosystem services and functions that are essential to human welfare. Nevertheless, accumulating data indicates that ecosystems' composition, distribution, and interactions are already changing due to climate change, posing serious risks to biodiversity across the globe. The overuse of natural resources, invasive species, habitat destruction, pollution, and population growth are the main factors posing a threat to biodiversity. One of the most important worldwide issues of our time is climate change. Climate change (CC) is defined as the alteration of an area's climate brought on by both natural and man-made disorders, such as pollution, greenhouse effects, and ozone layer depletion (Kotir, 2011). Climate change is having a significant influence on many facets of the natural world. The impacts of climate change on biodiversity are one of the many ecological consequences it poses. Ecologists, conservationists, and policymakers have all paid close attention to this issue. As our planet continues to undergo unprecedented changes in temperature, patterns of rainfall, and weather events. It is necessary to know the complex interactions between biodiversity and climate change for sustainable development and environmental stewardship. We can work to achieve a future that is sustainable for both nature and

humanity if we take immediate action and show our collective dedication to biodiversity conservation. Developing successful conservation strategies and reducing the negative effects on the ecological systems of our planet require an understanding of the intricate relationships between biodiversity and climate change. In the context of a rapidly changing climate, this research review seeks to provide stakeholders, scientists, and legislators with a thorough foundation for managing biodiversity sustainably and preserving it.

Background:

Climate change has a significant impact on many ecological systems, making it one of the major global challenges of the twenty-first century. Although the Earth's temperature has always fluctuated naturally, the current rate of climate change is unprecedented due to human activity, specifically the burning of fossil fuels and deforestation. The rapid changes in climate patterns are having a great deal of impact on the environment and ecology; loss of biodiversity is just one of the many negative consequences.

Many species are being forced to relocate to higher latitudes or altitudes in order to find suitable habitats. This ultimately change their geographic ranges due to global climate change. These changes may have an effect on the interactions between species and alter the composition of communities. Terrestrial ecosystems are not the only ones impacted by climate change; freshwater and marine ecosystems are also impacted. Rising water temperatures, ocean acidification, and sea level rise

are already having a significant impact on marine and coastal biodiversity. For example, climate change-induced coral bleaching can cause widespread devastation and the loss of important habitats, making coral reefs highly vulnerable. Even though a lot of research has improved our understanding of how biodiversity is impacted by climate change, there are still gaps in our knowledge. This review paper will integrate and evaluate the body of prior research to present a comprehensive picture of the effects of climate change on biodiversity across various species and ecosystems.

Research objectives:

1. To explore how climate change affects biodiversity, focusing on physiological stress, life cycles, and ecosystem imbalances.
2. To investigate the effects of climate change on genetic diversity and interspecific relationships, and their implications for ecosystem stability.

Research hypothesis:

1. Climate change induces physiological stress and shifts in species' life cycles, leading to ecosystem imbalances and increased extinction rates.
2. Climate change reduces genetic diversity and disrupts critical species interactions, resulting in decreased biodiversity and ecosystem functionality.

Methods and limitations

This study reviews literature and analyzes data on climate change impacts on biodiversity. It synthesizes findings on species shifts, genetic diversity, and ecosystem changes, using statistical tools to assess trends and gaps. The research offers valuable insights but is limited by its reliance on secondary data.

Literature Review

Climate Changes

Climate change refers to long-term alterations in a region's (Pepin et al., 2022) or the planet's climate, including shifts in temperature, wind patterns, and precipitation (Zerga & Gebeyehu, 2016). According to the Intergovernmental Panel on Climate Change (IPCC), it involves observable changes in climate properties over decades or longer, such as variations in averages and patterns. These changes can be caused by both natural processes and human activities (Heidari et al., 2020).

Biodiversity

Biodiversity can be summed up as species richness, which is the total number of living organism's species found in a certain area, or region on Earth. In general, species diversity, habitat diversity, genetic diversity (diversity of genes within a species), and diversity in ecosystems (diversity at the level of a community or ecosystem) are all

included in the term biodiversity (Verma A. K., 2016).

Life-Sustaining Factors

Life's existence is primarily reliant on the atmosphere's ability to facilitate evaporation, along with solar radiation, carbon dioxide levels, ambient temperature, and the availability of water and inorganic nutrients (Mojzsis et al., 1996). However, these critical factors that sustain life are being influenced by both human activities and natural processes. As a result, the past century has seen a rapidly growing human population and expanding economies exert escalating pressure on biodiversity resources (Redford K, 1995).

Climate Change and Ecosystems

As noted by (Haddad et al., 2015) changes in temperature and precipitation patterns, which lead to changes in the distribution of habitats, climate change disturbs ecosystems. The fragmentation of habitats brought about by these changes in the climate has become one of the main causes of the decline in biodiversity. Reduced habitat connectivity raises the risk of extinction for species and lowers biodiversity overall.

Impacts of Climate Change on biodiversity

Physiological Stress and Altered Life Cycles

Climate change affects biodiversity at every level, from organisms to entire biomes (Parmesan C., 2006). Individual species may experience physiological stress, altered life cycles, and increased vulnerability to diseases. Rising temperatures and reduced rainfall may cause some lakes, particularly in Ethiopia, to dry up (Mekonnen Teshome Tollera, 2018). Oceans are expected to warm and become more acidic, leading to the extensive deterioration of tropical coral reefs ((Hoegh-Guldberg et al., 2007)). To counteract or lessen these effects, biodiversity can adapt through various mechanisms and responses.

Geographical and Ecosystem Shifts:

Climate change exerts a wide range of impacts that vary in strength and form, affecting individuals, populations, species, ecological networks, and entire ecosystems. Populations can decline or shift geographically as they seek suitable habitats. Ecosystems may lose species, leading to reduced resilience and altered food webs. At the biome level, entire regions could transform, with some ecosystems disappearing entirely and others emerging in new forms. The impacts of climate change on genetic and species diversity could significantly affect ecosystem services. The most severe and irreversible outcome of these changes is species extinction.

Reduction in Genetic Diversity:

At the most fundamental levels of biodiversity, climate change has the potential to reduce genetic diversity within populations. This reduction is often a result of directional selection,

where certain traits become more favoured, and rapid migration, where species move to new areas in response to changing environmental conditions. These genetic shifts can have significant consequences for ecosystem functioning and resilience, potentially altering the stability and health of entire ecosystems (Botkin et al., 2007). Despite these crucial implications, it is important to note that research in this area is still in its early stages, with genetic effects of climate change being explored in only a small number of species. This suggests a critical gap in our understanding of how climate change may influence genetic diversity and, in turn, ecosystem dynamics. The majority of studies on the impacts of climate change have focused on higher organizational levels, such as populations, species, and ecosystems, rather than on genetic effects at the individual level. While these higher-level impacts are undeniably important, the lack of attention to genetic diversity poses a significant challenge for conservation efforts. Genetic diversity is a key component of species' ability to adapt to changing environments, and its loss could lead to decreased resilience and increased vulnerability to environmental stressors (Meyers & Bull, 2002).

Disruption of Species Interactions:

Beyond the direct effects on individual species, climate change is likely to alter the "web of interactions" within communities, impacting the relationships between species (Gilman et al., 2010); (Walther, 2010). When certain species respond to climate change, it can have indirect consequences for the species that rely on them for survival. For instance, a study examining 9,650 interspecific systems, including interactions between pollinators and parasites, suggested that the extinction of associated species could lead to the disappearance of approximately 6,300 other species (Koh et al., 2004). This underscores the potential for widespread ripple effects throughout ecosystems as climate change disrupts these intricate relationships.

Phenological Mismatches:

Climate change is exerting a profound impact on species by disrupting the synchrony between their life cycles and the availability of essential resources, such as food and habitat. This phenomenon is particularly evident in the interactions between flowering plants and their insect pollinators. As temperatures rise and seasons shift, the timing of flowering in plants and the emergence of pollinators are increasingly out of sync. This mismatch can prevent pollinators from finding the necessary nectar and pollen when they emerge, and plants may not receive the pollination they need to reproduce. The result is a cascading effect that threatens both plant and pollinator populations, potentially leading to local or even global extinctions. The disruption of these

relationships has significant implications for the broader ecosystem, as it can alter the structure of plant-pollinator networks, reduce biodiversity, and weaken the resilience of ecosystems to environmental changes (Toby Kiers et al., 2010). The loss of such intricate ecological interactions underscores the urgency of addressing climate change to preserve the delicate balance of life on Earth.

Alterations in Interspecific Relationships:

Climate change is altering interspecific relationships, such as those between competitors, prey and predators, hosts and parasites, and mutualistic partners, leading to significant impacts on community structure and ecosystem functions. As species' distributions and behaviours shift in response to changing climate conditions, these interactions become disrupted, potentially destabilizing ecosystems (Yang & Rudolf, 2010). For example, mismatches in predator-prey dynamics, altered competition, and disrupted mutualistic relationships like pollination can lead to declines in species populations and reduced biodiversity. These changes weaken ecosystem resilience and impair critical functions, increasing the vulnerability of ecosystems to further disturbances.

Vegetation Shifts:

At higher biodiversity levels, climate change can cause significant shifts in vegetation communities, potentially threatening the integrity of entire biomes. The Millennium Ecosystem Assessment predicts that 5% to 20% of Earth's terrestrial ecosystems, such as cool conifer forests, tundra, and savannahs, could undergo substantial changes (Sala et al., 2005). Of particular concern are "tipping points," where gradual climate shifts push ecosystems past critical thresholds, leading to abrupt and irreversible changes (Leadley Paul et al., 2010). These tipping points could result in the permanent loss of unique species and ecosystem services, emphasizing the urgency of addressing climate change to protect global biodiversity.

Threats to Biome Integrity:

A recent study on future biome distributions in tropical South America suggests that large sections of the Amazon rainforest could be converted into tropical savannahs, dramatically impacting the region's biodiversity and ecosystem services (Lapola et al., 2009). Additionally, in higher altitude and latitude areas, alpine and boreal forests are expected to expand northward and raise their tree lines, gradually overtaking and replacing low-growing tundra and alpine communities (Alo & Wang, 2008). These changes threaten existing ecosystems and the species that rely on them, potentially leading to significant biodiversity loss and altered ecological dynamics in these regions.

Conclusion:

Climate change is profoundly impacting biodiversity, disrupting ecosystems and species interactions across various scales. The review highlights that shift in species distributions, altered life cycles, and decreased genetic diversity are leading to ecosystem imbalances and potential extinctions. Significant changes in vegetation and biome integrity, such as the conversion of rainforests into savannahs, further stress the need for urgent and informed conservation strategies. Despite progress, gaps remain in understanding the full implications of climate change on genetic diversity and species interactions. Addressing these challenges requires a concerted effort to integrate ecological and genetic research into effective conservation practices, ensuring the resilience and preservation of global biodiversity in the face of ongoing climate change.

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Bangladesh Crisis and India-Bangladesh Relations: Challenges and Consequences

Dr. Sukhadev Sadashiv Undare

Assistant Professor, Dept. of Political Science, Shivaji University, Kolhapur

Corresponding Author- Dr. Sukhadev Sadashiv Undare

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Abstract:

The ongoing crises in Bangladesh made a very difficult path before it, including political instability, economic challenges, and humanitarian issues, have significant implications for its neighbor India. This paper explores the nature of the Bangladesh crisis and examines the multifaceted impacts on India-Bangladesh relations. By analyzing historical context, current challenges, and future prospects, the paper aims to provide a comprehensive understanding of how the crisis affects the diplomatic, economic, and social interactions between the two countries. It also provides insights into how the evolving situation in Bangladesh affects regional stability and diplomatic relations in south Asian region.

Keywords : Crisis, Diplomatic relations, Regional stability, Political violence, Religious extremism, South Asian Politics, Bilateral relations, Political instability, militancy, Jamaat-e-Islami, Bilateral trade, Minorities.

Introduction :

The relationship between Bangladesh and India, two neighboring countries in South Asia, is deeply intertwined with shared history, geography, and socio-economic interests. However, the persistent crises in Bangladesh have posed several challenges to this bilateral relationship. Understanding these challenges and their consequences is crucial for devising effective strategies for maintaining stability and cooperation in the region. Social unrest in Bangladesh has been driven by factors such as political violence, religious extremism, and ethnic tensions. Social unrest in Bangladesh has been driven by factors such as political violence, religious extremism, and ethnic tensions. With these issues the rise of militant groups and sectarian violence has also contributed to an environment of instability and insecurity. The recent crisis in Bangladesh, exacerbated by political turmoil, economic hardship, and social unrest, presents a new set of challenges for this bilateral relationship. This paper explores the nature of the Bangladesh crisis, its impact on India-Bangladesh relations, and the broader regional challenges and consequences.

Background:

Background India-Bangladesh relations, often tumultuous and at times acrimonious over the past few years; have more or less settled in a less fraught manner. This tragic relationship had its roots in the complex situation surrounding the creation of Bangladesh and subsequent developments. India played a very important role in the success of Bangladesh's struggle against the power of Pakistan Army. The economic difficulties of an inexperienced

country, the assassination of its founder-progenitor Sheikh Mujibur Rahman and the subsequent political difficulties and many of these problems were easily blamed on India. Apart from this many problems also arose which were often natural to arise with neighboring countries. The resulting tensions, along with the heightened reactions of suspicion and disbelief, were also partly responsible for this. Naturally, Bangladesh's perspective on the situation was completely different from that of New Delhi. Some people look for India's hand behind the overall situation of Bangladesh and give India a very bad deal. But from a neutral point of view, Bangladesh's special kind of understanding and problems that concern India can be taken in this way, 'India, smaller than China, the second largest country in the world in terms of population, engineering and technological development. Tenth place in the world. It has the world's fourth largest army, sixth largest navy and eighth largest air force. India's six South Asian neighbors together are a third of India's size and compared to resources, India has vastly advanced in economic, scientific and technological development. Even though South Asia lacks the characteristics of South Asia, India is much more visible than its neighboring countries. These are the facts that the Foreign Minister of Bangladesh, Muhammad Shamsul Haq, put forward to explain how to diagnose the symptoms of difficulties in big countries and small countries. These were the reasons that often flared up from time to time further increasing the tensions between the two countries and secretly influenced the hostilities in Dhaka. But it needs to be noted that in the Bangladesh-India situation, small size was a

relative term in practice. Because actually Bangladesh was not a small country. It was now among the world's great nations in terms of population and resources—though at the time it was poor and underdeveloped.

For the first time in Bangladesh's political history, 2013 general elections were held in an atmosphere of total boycott by opposition parties. The election turned out to be extraordinary with zero percent turnouts at many polling stations. Along with the boycott, this election was also marred by violence. Ever since the general elections were announced in November 2013, the main opposition party in Bangladesh - the Bangladesh National Party - has announced a boycott of the elections. The opposition announced a boycott of the general election in protest against Prime Minister Sheikh Hasina's 1996 constitutional amendment breaking the tradition of establishing a caretaker government to ensure that elections are conducted in a fair environment. An attempt by a UN delegation to broker reconciliation between the ruling Awami League and the opposition Bangladesh National Party failed. America, England as well as India also tried to persuade Bangladesh National Party. But all these efforts failed. 153 constituencies out of 300 constituencies were elected unopposed due to opposition boycott. Voting was held in only 147 constituencies. This election was one-sided because the ruling coalition government's candidate will be elected there as well. It is now certain that Sheikh Hasina and her Awami League will return to power. Secularism Versus Religious Fundamentalism Current politics in Bangladesh is based on ideological struggle. It is a struggle between forces representing two opposing ideologies. These ideologies are secularism versus religious fundamentalism, with Bangladesh's status as a secular state or an Islamic state being a major issue in the conflict. Sheikh Hasina and her Awami League party represent secularism; On the other hand Khaleda Zia and her political party Bangladesh National Party represent religious fundamentalist ideologies and forces. Jamaat-e-Islami, the main affiliate of the Bangladesh National Party, is known as a very radical political party. Jamaat aims to make Bangladesh a strict Islamic nation. This party has a great contribution in the spread of Islam in Bangladesh. He has entered various fields like banking, health services, insurance and has woven a network of numerous religious institutions and organizations throughout Bangladesh. Especially This party has links with many terrorist organizations in South Asia.

Bangladesh Crisis: Challenges and Consequences:

The coup d'état of the democratic regime of the democratic system of Bangladesh has become an event that misses the mark of the democratic

systems of the third world including India. The anti-reservation student movement gradually turned violent across the country. Directly Prime Minister Sheikh Hasina's residence became the target of violent and uncontrolled agitation, killing hundreds and destroying public property. While Sheikh Hasina was trying to restore the secular and development-oriented governance system in Bangladesh, she could not see the discontent among the youth and the tactics of the fundamentalists among the opposition. As a result, violent protests ousted Sheikh Hasina and installed an interim government led by Nobel laureate Muhammad Yunus. Due to this political crisis in Bangladesh, not only did the internal politics of Bangladesh change, but at the same time, this incident affected the balance of power in South Asian politics and international politics alone. Especially, India, which is playing the role of a big brother in South Asia, has faced many challenges due to this incident. It will be interesting to see what this turbulent, restless and unstable neighbor of India has in store for India as well as itself.

Success to 'Jamaat-e-Islami':

Violent protests in Bangladesh ousted Prime Minister Sheikh Hasina. This event is considered as a success of 'Jamaat-e-Islami'. It is openly said that Jamaat's student organization 'Chhatrashibir' played an important role in the violent agitation against Sheikh Hasina. Jamaat-e-Islami, founded under the leadership of the conservative Syed Abul Ala, aimed to make Bangladesh an Islamic state. It was during the liberation struggle of Bangladesh that the true nature of the Jamaat was revealed. At that time, the Jamaat formed various organizations and through them, the soldiers of the Mukti Vahini and the Hindus were oppressed endlessly. Therefore, the founder of Bangladesh Sheikh Mujibur Rahman banned this organization. But after the coup of Sheikh Mujibur Rahman, the then military regime lifted the ban on this organization and it emerged once again as Jamaat-e-Islami Bangladesh. Between 1990 and 2006, the Jamaat came to power in alliance with the Bangladesh Nationalist Party. Surprisingly, Sheikh Hasina's Muslim League also formed an alliance with Jamaat-e-Islami in 1996. But Sheikh Hasina's political thread could not match with the Jamaat. Sheikh Hasina, daughter of Sheikh Mujibur Rahman, who later came to power, convicted several leaders of the Jamaat through a war crimes tribunal for participating in the 1971 Bangladesh Liberation War with the Pakistani army and declared the Jamaat and Chhatrashibir as terrorist organizations. Many people died in the violence that erupted at this time. Due to this incident, once again the violent form of Jamaat came before the world.

Efforts to destroy the radical religious fundamentalism and anti-India principle in Jamaat

and BNP started from Sheikh Hasina. Not only this, Sheikh Hasina started efforts to prevent terrorism through sharing information and joint action against terrorist activities with India. Jamaat is a cadre base party. Jamaat has underground activities but at the same time Jamaat is openly in political alliance with BNP. Jamaat is an extreme conservative-fundamentalist organization and a political party.

Allegations against Sheikh Hasina by BNP:

Sheikh Hasina is accused by the Bangladesh Nationalist Party of running the government by following the policy of Sama-Dam-Dand-Bheda. During Sheikh Hasina's tenure, more than two lakh activists were prosecuted, nearly three thousand people were killed, the secret police force Rapid Action Battalion (RAB) used by Sheikh Hasina to eliminate her opponents. Such serious allegations are made against Sheikh Hasina. Whether these accusations are true or not, but by capitalizing on these accusations, BNP definitely did the job of pouring oil into the agitations.

What went wrong with Sheikh Hasina?:

When the agitation was raging all over the country, some ministers and Prime Minister Sheikh Hasina herself made statements that hurt the sentiments of the protesters. "Why do the protestors have so much hatred and hatred towards the freedom fighters? If reservation is not given to the grandchildren of freedom fighters, then what is going to be given to the grandchildren of Razakars?" Sheikh Hasina's remarks to the protesters resulted in her being ousted from power.

America's role:

US State Department spokesman Matthew Miller expressed grief over the human rights abuses and deaths caused by the violence in Bangladesh and welcomed the announcement of an interim government. The real question is whether America is happy with Sheikh Hasina's departure. The US has accused Bangladesh of human rights violations over the past few years. In December 2021, seven officers of the Rapid Action Battalion (RAB) were banned. RAB is an anti-terrorist police force. RAB was established in 2004 during the tenure of former Prime Minister Begum Khaleda Zia. Within a few years, RAB's working style changed to such an extent that the squad was called the 'Death Squad'. Along with RAB's style of functioning, the US has also raised questions about Sheikh Hasina's government regarding the protection of human rights. But looking at China's increasing interference in South Asia, it is certain that the instability created in Bangladesh will not be in line with America's South Asian interests.

Challenges before the Interim Government in Bangladesh:

An interim government of Bangladesh led by Muhammad Yunus has recently come into existence as per the demands of the student

protesters. The army has announced its full support to the interim government. However, the fact that the interim government will have to function under the control of the army cannot be denied. The head of the interim government, Mohammad Yunus, has a huge challenge to manage the country's law and order. "My best wishes to Professor Muhammad Yunus on his new responsibilities. We hope that Bangladesh will return to normalcy soon, ensuring the safety and protection of Hindus and all other minority communities. India is committed to working with Bangladesh for peace, security, development and fulfillment of people's aspirations", said Prime Minister Narendra Modi in his greeting message.

Challenges before India:

Sheikh Hasina's government was more inclined towards India. India-Bangladesh relations were very friendly during Sheikh Hasina's tenure. But now the situation has changed. This changing scenario has created many challenges for India. Some of these key challenges can be discussed as follows.

A time of India's decisiveness:

Sheikh Hasina is now in India after stepping down from the post. They are waiting for asylum in another country. But this is a testing time for India. Because on the one hand, during the time of Sheikh Hasina, their relations with India have been very cordial and friendly, but now the important question is how the new interim government will be for India.

Anti-Indian elements:

Both Jamaat-e-Islami and Bangladesh Nationalist Party have been known as anti-India political parties since the beginning. These are the powers that did not want to separate Bangladesh from Pakistan. Jamaat and BNP are directly linked to ISIS and Pakistan's intelligence because of their umbilical cord with Pakistan's ideology even today.

Border Crisis:

Political instability in Bangladesh has increased India's border concerns. 4096.70 km between India-Bangladesh. There is such a long international border. Bangladesh directly borders five important constituent states of India namely West Bengal, Assam, Meghalaya, Mizoram and Tripura. Threats like terrorist attacks, illegal infiltration, and smuggling have increased due to the current crisis.

An opportunity for China-Pakistan intervention:

Are China and Pakistan behind the political crisis in Bangladesh? Or is it America? Now the more important problem facing India than these questions is to keep China and Pakistan away from interference in Bangladesh at any cost. In this situation, India's diplomacy will need to be doubled today. On one hand Sheikh Hasina is in India, while on the other hand the forces trying to seize power

are anti-India. India has a big challenge to deal with this political situation.

Impact on bilateral trade:

Bangladesh is India's twenty-fifth largest trading partner. Agricultural and industrial equipment, many food items, electricity, petroleum products etc. are exported from India to Bangladesh in large quantities. Currently, bilateral trade is about \$12.9 billion. But now the situation has changed. Therefore, the question has arisen as to what effect the political crisis in Bangladesh will have on the security of investments made by Indian companies in Bangladesh along with trade.

Attacks on Hindus; A religious crisis for the Indian government:

Hindus constitute about eight percent of the population in Bangladesh today. After the overthrow of Sheikh Hasina and her arrival in India, Hindus and religious places are being attacked. However, if the attacks continue to intensify, this case could turn into a religious crisis for India.

The current political crisis in Bangladesh presents challenges, consequences and opportunities for India-Bangladesh relations. While the instability has strained diplomatic, economic, and social interactions, it also provides an opportunity for both countries to reassess and strengthen their cooperation. Addressing the crisis requires a multifaceted approach that involves diplomatic engagement, economic support, and humanitarian assistance. The future of India-Bangladesh relations will depend on how both nations navigate the complexities of the current situation and work towards mutual stability and prosperity. India needs to properly manage these challenges arising from the political crisis in Bangladesh. It is necessary to allow some time to understand the questions that this incident has raised and will continue to raise. Because even though the interim government has been formed, the dust of the agitation is yet to settle down.

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Innovations in Solar Energy Technology for Sustainable Development: A Review

Mr. Kadam Hanmant Sopanrao

Department of Physics, Vai. Dhunda Maharaj Degloorkar College, Degloor, Maharashtra, India

Corresponding Author- Mr. Kadam Hanmant Sopanrao

Email: kadamhanmant755@gmail.com

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Abstract:

Solar is an environmentally friendly and abundant resource, stands out as one of the most vital renewable energy sources. It plays a critical role in advancing sustainable energy solutions. The vast amount of solar energy available daily makes it a highly appealing option for electricity generation. Both concentrated solar power (CSP) and photovoltaic (PV) technologies are continuously evolving to meet our growing energy demands. The widespread adoption of solar energy applications globally not only supports the energy sector but also contributes to job creation and economic development. This paper examines the role of solar energy in sustainable development, focusing on its applications and the employment opportunities it generates. It offers a comprehensive analysis of solar energy's contribution to environmental sustainability and economic growth. Additionally, the paper explores how solar energy applications help meet energy needs, create jobs, and enhance environmental protection. Finally, it presents a forward-looking perspective on the future of solar energy technology, highlighting its potential to shape the energy sector and drive sustainable development.

Keywords: Solar energy; Renewable energy; Photovoltaic technology; concentrated solar power (CSP); Green technology.

Introduction:

In line with the UN's recommendations, the 2021 Climate Change Conference (COP26) took place in Glasgow, UK. Representatives from 197 countries reached a consensus to reduce reliance on coal and fossil fuels. The conference also emphasized the importance of seizing opportunities for governments to prioritize health and equity within the global climate movement and sustainable development initiatives. One of the key commitments highlighted the urgent need to develop energy systems that safeguard and enhance both the climate and public health [1]. The Paris Climate Agreement, established in 2015, is a global pact aimed at tackling climate change through mitigation, adaptation, and financial support. As a result, representatives from 196 countries agreed to reduce their greenhouse gas emissions [2].

The Paris Agreement is crucial for ensuring a safer and more stable environment for both current and future generations. At its core, this agreement is about protecting people from an increasingly unpredictable and hazardous climate, while guaranteeing the right for everyone to live in a healthy, pollution-free environment, free from the harmful effects of climate change [3]. In recent decades, the demand for cleaner energy sources has surged. In response, policymakers worldwide have developed long-term strategies centred on renewable energy. These strategies aim to lessen reliance on

conventional energy sources and replace them with alternative technologies. Consequently, the global community is increasingly transitioning towards sustainable energy solutions, moving away from traditional fossil fuels [4].

In 2015, the UN established the Sustainable Development Goals (SDGs) as global mandates, calling for a united effort to eradicate poverty, protect the environment, and ensure that by 2030, all people can enjoy prosperity and peace. This calls for a balanced approach to progress, integrating economic and environmental sustainability [5]. Numerous national and international regulations have been put in place to manage gas emissions and pollutants affecting the environment. Despite these efforts, the detrimental effects of rising atmospheric carbon have intensified over the past decade. The production and consumption of fossil fuels release significant amounts of methane (CH₄), carbon dioxide (CO₂), and carbon monoxide (CO), which are major contributors to environmental emissions. Fossil fuels such as coal, oil, and gasoline are extensively used for transportation and electricity generation, making them the leading sources of emissions in these sectors. However, these resources are increasingly seen as depleted and unsustainable due to their excessive consumption [6]. Energy is vital for the survival and advancement of human societies. As civilization has evolved, so has the demand for energy.

Recently, the rapid global population growth and the increasing dependence on technological innovations have further escalated energy needs. In this context, green technology sources are crucial for providing sustainable energy solutions and addressing climate change effectively. Fossil fuels continue to be the predominant source of large-scale energy and are expected to remain so for the foreseeable future. However, renewable energy is poised to become increasingly essential in shaping the future of global energy. The global energy landscape is shifting towards more sustainable energy sources, marking a significant transformation in how we meet our energy needs[7]. The era of peak power generation from fossil fuels is ending, with solar energy set to lead the way in future energy production. Projections suggest that by 2050, solar energy could account for 48% of global energy generation, driven by economic and industrial advancements [8]. In recent years, it has become increasingly clear that to meet the Paris Agreement's objective of limiting global temperature rise, the world must significantly cut greenhouse gas emissions by 2050, aiming for net zero. Achieving net-zero emissions aligns with the vision for sustainable development by mid-century. According to the sustainable development scenario, many developed nations need to reach net-zero emissions by 2050. The International Energy Agency (IEA) has provided the first detailed modelling to outline the strategies necessary over the next decade to achieve global net-zero carbon emissions by 2050. Global greenhouse gas emission statistics reveal notable trends: in 2019, CO₂ emissions from the power sector decreased by 1%, with a more significant drop of 7% in 2020 due to the COVID-19 pandemic. This decline reflects reduced coal-fired energy generation, driven by lower energy demand, the rise of renewable energy, and a shift away from fossil fuels. Consequently, the energy sector was projected to emit approximately 13 Gt CO₂ in 2020, accounting for about 40% of global CO₂ emissions from the energy sector. By 2021, electricity generation levels rebounded to pre-crisis figures. However, due to changes in the energy mix, CO₂ emissions in the power sector are expected to increase slightly before stabilizing until 2030[9].

Given the numerous benefits of solar energy such as its renewability, cleanliness, abundance, cost-effectiveness, low maintenance, and environmental friendliness. This paper underscores its crucial role in ensuring sustainable development. It is vital for researchers, engineers, and consumers to acknowledge these advantages. The primary objective of this paper is to boost public awareness and foster a culture of solar energy adoption in everyday life, positioning it as a leading solution for future energy needs. The paper is

structured as follows: Section 1 offers a summary of the introduction. Section 2 reviews the global installed capacity and applications of solar energy. Section 3 examines the role of solar energy in sustainable development and its impact on renewable energy employment. Section 4 presents an outlook on the future of solar energy. Finally, Section 5 provides conclusions and recommendations for future research.

Research objectives:

1. To Assess the Impact of Solar Energy on Sustainability
2. To explore Advances in Solar Technologies

Research hypothesis:

1. Solar energy significantly improves environmental sustainability and stimulates economic growth.
2. Innovations in PV and CSP technologies improve the performance and cost-effectiveness of solar energy systems.

Methods and limitations:

This study reviews literature and analyses data on innovation of solar technology for sustainable development. The research offers valuable insights but is limited by its reliance on secondary data.

Global Installed Capacity and Utilization of Solar Energy:**Solar Energy Installed Capacity:**

The origins of solar energy date back to the 7th century when mirrors harnessed solar power. The photovoltaic (PV) effect was discovered in 1893, and over several decades, scientists refined this technology for generating electricity. Today, solar energy technology is primarily divided into two main applications: solar thermal and solar PV. Solar PV systems convert sunlight into electricity through solar panels. These PV systems have rapidly become the most cost-effective method for new electricity generation in many regions, thanks to their widespread adoption. For instance, between 2010 and 2018, the cost of electricity generated by solar PV plants fell by 77%. During the same period, the installed capacity of solar PV increased a hundredfold. As a result, solar PV has become a crucial element in creating a low-carbon, sustainable energy system, helping to ensure affordable and reliable electricity while supporting the goals of the Paris Climate Agreement and the 2030 Sustainable Development Goals[10].

To meet growing energy demands, the global installed capacity of solar energy has expanded rapidly. From 2010 to 2020, the installed capacity of photovoltaic (PV) technology surged from 40,334 MW to 709,674 MW. In contrast, concentrated solar power (CSP) capacity, which stood at 1,266 MW in 2010, grew to 6,479 MW over the same decade. As a result, solar PV technology has seen significantly more widespread deployment compared to CSP.

Today, stand-alone solar PV systems and large-scale grid-connected PV plants are extensively utilized around the world, including in space applications.

Application of solar energy:

Solar energy is harnessed directly from the Sun and has seen increasing application globally. It can be used for a variety of purposes, including electricity generation, water desalination, and heating. The main categories of solar energy applications are: (i) photovoltaic (PV) systems and (ii) concentrated solar power (CSP). Solar cells, which convert sunlight directly into electricity, are made from semiconductor materials. These materials typically feature atoms with four electrons in their outer shell. They belong to group IV of the periodic table, or are compounds from groups IV and II, known as II–VI semiconductors. Additionally, materials created from elements in groups III and V are referred to as III–V semiconductors.

Photovoltaic (PV) devices, commonly known as solar cells, are electronic devices that transform sunlight into electrical energy. As one of the fastest-growing renewable energy technologies, PV systems are expected to play a major role in the global electricity generation mix in the future. Solar PV systems can be scaled for large commercial operations or installed in smaller clusters for mini-grids or individual use. They offer a practical solution for providing electricity to remote areas, especially in developing countries rich in solar resources. In recent years, the cost of producing PV modules has significantly decreased, making them not only more accessible but sometimes the most economical energy option. PV arrays have a lifespan of around 30 years and come in various colours depending on the materials used in their manufacture. A common application of solar PV technology is in desalination, particularly through a method known as electrodialysis (ED). In this process, solar PV modules are directly connected to the desalination system, using direct current electricity to remove salt from seawater or brine. The PV–thermal (PV–T) technology integrates traditional solar PV panels with a thermal collector mounted on their rear side, designed to preheat domestic hot water. This setup allows a larger portion of the incoming solar energy to be converted into both electrical and thermal energy. A zero-energy building is designed to achieve net-zero energy consumption, meaning it generates as much energy as it uses, without emitting carbon dioxide. Building-integrated PV (BIPV) technology incorporates solar energy systems directly into the structure of buildings to meet energy needs. Building-integrated PV systems that harness thermal energy (BIPV/T) also feature innovative technologies such as solar cooling [11].

A PV water-pumping system is commonly employed to provide water in remote, rural, and arid regions. This system uses photovoltaic modules to power a water pump, delivering water to the desired location. The efficiency of water pumping depends on factors such as the height the water needs to be lifted and the intensity of sunlight. Similarly, a PV-powered cathodic protection (CP) system is designed to protect metal surfaces from corrosion. This system uses solar energy to supply the necessary power for the CP system, effectively preventing metal deterioration. This technique leverages the substantial current generated by PV solar energy systems for protecting buried pipelines, tanks, and concrete structures from corrosion. Concentrated PV (CPV) technology enhances solar energy capture using refractive or reflective concentrators to direct more sunlight onto PV cells. These systems typically employ high-efficiency solar cells, which are made from multiple layers of semiconductor materials stacked together, achieving efficiencies over 47%. Besides generating electricity, the heat produced can also be utilized for various other applications.

In Concentrated Solar Power (CSP) systems, mirrors are used to focus solar rays onto a fluid, which is then heated to create steam that drives a turbine for electricity generation. CSP systems are commonly used in large-scale power plants, where a field of mirrors directs sunlight to a central receiver located on a tall tower. The heat from the fluid can be used immediately to generate steam or stored for later use. CSP plants can also incorporate molten salts for thermal energy storage, allowing electricity generation even when the sun isn't shining.

Dish engine systems use mirrored dishes to focus sunlight onto a receiver, with the dish assembly tracking the Sun to maximize solar energy capture. The system includes thin tubes that connect to pistons within four-cylinder engines, where expanding hydrogen or helium gas drives the pistons. The movement of the pistons is then used to turn a crankshaft, which powers an electric generator. Another water-treatment method involves reverse osmosis powered by solar thermal energy and concentrated solar power using the parabolic trough technique. This CSP-based desalination method integrates thermal storage for continuous, cost-effective operation. Additionally, solar thermal energy can be used for domestic applications, such as food dehydration, which is a traditional method in some regions for preserving meats, fruits, and vegetables.

The role of solar energy in sustainable development:

Sustainable energy development refers to advancing the energy sector encompassing energy generation, distribution, and consumption while adhering to principles of sustainability. Energy

systems profoundly affect the environment in both developed and developing nations. Therefore, achieving a global sustainable energy system requires enhancing efficiency and minimizing emissions. Demand-side response can enhance flexibility in electricity systems by shifting energy use over time. The rise of renewable technologies has also fostered job creation, with several Asian countries becoming key players in the solar PV panel manufacturing industry. Solar energy has generated more jobs compared to other renewable sources. In developing nations, solar applications have particularly boosted employment opportunities through 'micro-enterprises,' playing a crucial role in poverty reduction, a central aim of sustainable energy development. Consequently, solar energy is vital for achieving sustainability goals and promoting a healthier planet and environment [12]. The global distribution of jobs in photovoltaic (PV) applications is spread across continents as follows: Asia accounts for 70% of PV employment, North America holds 10%, South America has 10%, and Europe also makes up 10%.

The perspective of solar energy:

Investments in solar energy can achieve energy targets and enhance environmental protection by reducing carbon emissions, all without hindering a country's development. In 'Sunbelt' nations, where there is a consistent abundance of solar irradiation throughout the year, solar energy holds significant potential. Countries like the Middle East, Australia, North Africa, China, the USA, and Southern Africa are well-positioned to leverage this potential. These regions experience an average annual solar intensity of over 2800 kWh/m² and a daily average of more than 7.5 kWh/m². The effectiveness of solar PV technology is significantly influenced by the distribution and intensity of solar radiation, which varies across different countries. As a result, some solar energy remains unused and wasted. However, in many countries, particularly in developing regions, the abundance of solar radiation makes it an incredibly valuable resource [13]. The global PV industry has recently thrived due to globalization, which has driven significant economies of scale and vertical integration, leading to robust value chains. As manufacturers tap into a broader network of suppliers, costs have decreased while quality remains high. The expanding global market for integrated PV solar devices is accelerating growth, with solar companies benefiting from substantial government support, including subsidies, favourable trading licenses, and workforce training. Increased competition has also continued investment in both public and private research and development.

To further boost the distribution of solar PV technologies across borders and facilitate new entrants into the market, establishing a robust

quality infrastructure is essential. This infrastructure not only supports local businesses in meeting trade market demands but also enhances the overall efficiency and reach of solar PV technologies. Recent reductions in the cost of manufacturing materials for PV devices are expected to meet the growing global electricity demand. Solar energy, being renewable, clean, and environmentally friendly, is an ideal resource that should be widely adopted. While PV technology has evolved for various uses, its ability to convert sunlight directly into electricity makes it suitable for both space and terrestrial applications. The renewable energy sector overall holds advantages over traditional energy industries. For sustainable long-term development, solar energy source that is inexhaustible, widely available, and easy to harness is essential. The technology that converts solar radiation into electricity is widely known and relies on photovoltaic (PV) cells, which are deployed globally.

Today, several types of solar PV technologies are available, including hybrid, inorganic, and organic solar cells. While silicon-based PV devices have traditionally dominated the solar market, they come with certain limitations, such as high material costs and time-consuming production processes. Additionally, solar energy faces operational challenges, including its inability to function at night, reduced efficiency on cloudy days, and ineffectiveness during sandstorms. To address these issues and enhance reliability, PV battery storage is commonly used. Efforts are ongoing to explore alternative materials to overcome these constraints.

Currently, emerging solar PV technologies using perovskite, organic, and organic/inorganic hybrid materials are beginning to challenge the traditional dominance of silicon-based PV systems. Given the dwindling fossil-fuel resources, it is crucial and anticipated to find innovative ways to implement clean-energy technologies. While solar energy has not yet fully matured, particularly in the area of concentrated solar power (CSP), advancements in photovoltaic (PV) systems have led to a significant increase in global demand for PV applications. Continued efforts are necessary to advance sustainable energy development and explore other clean energy sources. Additionally, thorough experimental and validation processes are essential to create effective cleaner energy solutions and help decarbonize our planet.

Conclusion:

Solar energy is essential for sustainable development, offering a clean, renewable, and abundant power source. Advances in photovoltaic (PV) and concentrated solar power (CSP) technologies have significantly improved efficiency and reduced costs, making solar a leading solution

for future energy needs. Despite challenges like intermittent operation and weather dependency, innovations in PV technology and battery storage are enhancing reliability. Solar energy also drives economic growth by creating jobs and supporting local economies. As technology continues to evolve and global adoption increases, solar energy will play a crucial role in reducing carbon emissions and achieving a cleaner, sustainable energy future.

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Environmental Laws in India: A Brief Introduction

Dr. B. T. Patil

Assistant Professor, Head of the Department of Geography,
Mahatma Jyotiba Phule Mahavidyalaya, Mukhed Dist. Nanded Maharashtra, India

Corresponding Author- Dr. B. T. Patil

Email: drbalwantpatil@gmail.com

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Abstract:

Environmental law is one of the significant domains in the law field as a substantial law in India. The Water Act, 1974, The Air Act, 1981, The Environment Protection Act, 1986, The Noise Pollution Rules, 2000, The Public Liability Insurance Tribunal Act, 1981, The National Environment Tribunal Act, 1995, The National Environment Appellate Tribunal Act, 1997, The Ozone Depleting Substances Rules, 2000. Mainly the environmental law can be explained as legal framework comprising principles, directives, policies, and regulations founded by different local, national, or international units. Its intention or purpose is to safeguard and maintain the environment, verifying its appropriateness for both the present and the future generations. In India there are various laws regarding to protect, balance, and to preserve the environmental sustainable development.

Keywords: Protection, laws, Safeguard, Punishment.

Introduction:

Environmental law is one of the significant domains in the law field as a substantial law in India. Mainly the environmental law can be explained as legal framework comprising principles, directives, policies, and regulations founded by different local, national, or international units. Its intention or purpose is to safeguard and maintain the environment, verifying its appropriateness for both the present and the future generations. In India there are various laws regarding to protect, balance, and to preserve the environmental sustainable development.

Objectives:

- 1) To understand the objectives and main features of the environmental laws.
- 2) To Study the Significance and the important provisions of the environmental laws.
- 3) To know the safeguards and punishment to protect the environmental balance and sustainable development.

Data and Methodology:

The present study is one of the theoretical studies. To avail the various environmental laws texts from the Indian Parliament Library in Portable document file form. And study it very carefully, to obtain the objectives of the present study. And law texts book to be referred. Analytical and descriptive method has been applied for the study.

Result and Discussion:

The Water Act, 1974:

The Water Act of 1974 is one of the significant legislations in India that aims to prevent and control water pollution. It was enacted on March 23, 1974, and came into force on June 23,

1974. The main objectives of the Act are as the following. To prevent and control water pollution; to maintain or restore the wholesomeness of water, and to establish boards for the prevention and control of water pollution are the main objectives of the act.

The main features of the Act include as the following. Prohibition on discharge of pollutants into water bodies, Establishment of Central and State Pollution Control Boards, Regulation of industrial effluents and sewage disposal, Provision for penalties and punishments for non-compliance. The Act has undergone amendments in 1978 and 1988 to strengthen its provisions and make it more effective.

The Air Act, 1981:

The Air (Prevention and Control of Pollution) Act, 1981, is an Indian legislation aimed at preventing and controlling air pollution. It was enacted on March 29, 1981, and came into force on May 16, 1981. The main objectives of the Act are as the following. To prevent and control air pollution, to maintain air quality standards, and to regulate emissions from industrial and vehicular sources are the main objectives of the act. The main features of the Air Act include Establishment of Central and State Pollution Control Boards, Regulation of emissions from industrial processes and vehicles, setting of air quality standards, Prohibition on discharge of pollutants into the atmosphere, Provision for penalties and punishments for non-compliance. The Act has undergone amendments in 1987 and 2015 to strengthen its provisions and make it more effective.

Some of the main provisions of the Act are there as follows to understand. Section 2: Definitions of terms like "air pollutant", "emission", and "pollution" Section 16: Prohibition on discharge of pollutants into the atmosphere Section 21: Power to give directions for closure of polluting units Section 37: Penalties for non-compliance. The Air Act, 1981, plays a crucial role in regulating air pollution in India and ensuring a cleaner environment for its citizens.

The Environment Protection Act, 1986:

The Environment (Protection) Act, 1986, is a comprehensive legislation in India aimed at protecting and improving the environment. It was enacted on May 23, 1986, and came into force on November 19, 1986. The main objectives of the Act are as the following. To protect and improve the quality of the environment, to prevent and abate environmental pollution, to maintain ecological balance and preserve natural resources are the main objectives of the Environment Protection Act, 1986. The salient features of the Act are as the followings; Establishment of the Central Pollution Control Board and State Pollution Control Boards, Regulation of emissions, effluents, and waste management, setting of environmental standards and norms, and the prohibition on handling hazardous substances without permission, provision for penalties and punishments for non-compliance are the significant objectives.

The Environment Protection Act, 1986 has several key provisions, including Sections 3, 6, 7, 8, 15, and 19 sequentially are the power to take measures for environment protection, Prohibition on discharge of pollutants without permission, Power to regulate and restrict industrial activities, Penalties for non-compliance, Power to issue directions for closure of polluting units. The Environment (Protection) Act, 1986, is a crucial legislation that provides a framework for environmental governance in India, and its provisions have been instrumental in addressing various environmental issues.

The Noise Pollution Rules, 2000:

The Noise Pollution (Regulation and Control) Rules, 2000, are a set of rules enacted by the Government of India to regulate and control noise pollution.

The main objectives of these rules are as the under; to limit the level of noise pollution from various sources, to protect public health and welfare, and to preserve the environment. Ambient Air Quality Standards decided by the law, the rules specify the maximum permissible noise levels in different areas. Under this act, Laid down the Restrictions on Noise Levels. These rules play a crucial role in mitigating noise pollution and protecting public health in India.

The Public Liability insurance Tribunal Act, 1981:

The Public Liability Insurance Act, 1991 is an Indian legislation that provides for public liability insurance to cover damages caused by hazardous substances. The main objectives of the Act are, to provide for public liability insurance to cover damages caused by hazardous substances. There are to ensure prompt and adequate compensation to victims of accidents involving hazardous substances. The Act applies to the Owners of hazardous substances, Manufacturers of hazardous substances, Importers of hazardous substances, Transporters of hazardous substances The Act has been amended in 1992 to expand its scope and increase the amount of compensation payable. The Public Liability Insurance Act, 1991, plays a crucial role in providing compensation to victims of accidents involving hazardous substances and promoting environmental safety in India also important.

The National Environment Tribunal Act, 1995:

The National Environment Tribunal Act, 1995, is an Indian legislation that establishes a tribunal to provide speedy and effective disposal of causes related to environmental damage. The main objectives of the Act are as the following, to provide a specialized forum for environmental cases, to ensure swift and effective justice for environmental damages, to hold individuals and organizations accountable for environmental harm, etc. The Act applies to the Cases involving environmental damage or degradation, Cases involving harm to public health and safety due to environmental factors, Cases involving violations of environmental laws and regulations

The National Environment Appellate Tribunal Act, 1997:

The National Environment Appellate Authority Act, 1997 is an Indian legislation that establishes an appellate authority to hear appeals against decisions made by the Government or other authorities under various environmental laws. The main objectives of the Act are there as following, to provide an appellate forum for environmental decisions, to ensure that environmental decisions are made in a fair and transparent manner, to promote environmental justice. The Act applies to the decisions made by the Central Government or State Governments under environmental laws, decisions made by pollution control boards or other environmental authorities. The National Environment Appellate Authority Act, 1997, plays a crucial role in promoting environmental justice and ensuring that environmental decisions are made in a fair and transparent manner in India.

The Ozone Depleting Substances Rules, 2000:

The Ozone Depleting Substances (Regulation and Control) Rules, 2000, are a set of

rules enacted by the Government of India to regulate and control the production, consumption, and trade of ozone-depleting substances (ODS). To phase out the production and consumption of ODS, to protect the ozone layer, to implement India's obligations under the Montreal Protocol are the main objectives of the act. The main content of the rules are as the Prohibition on production and consumption of ODS, Regulation of trade in ODS, Establishment of a licensing system for ODS, Requirements for labelling and packaging of ODS, Provisions for disposal and destruction of ODS, Penalties for non-compliance. The Ozone Depleting Substances (Regulation and Control) Rules, 2000, play a crucial role in protecting the ozone layer and implementing India's international obligations under the Montreal Protocol.

Conclusion:

Environmental laws a crucial role in protecting in the natural world and promoting sustainable development. The laws create the standards and regulations that prevent the pollution and conserve the natural resources and mitigate the impact of human activities on environment.

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Tahsilwise Percentage of Area under Vari Net Sown Area in Nashik District: A Geographical Analysis

Dr. Rajaram D. Davankar

Asst.Prof.in Geography, Dr.Babasaheb Ambedkar Mahavidyalaya, Latur.

Corresponding Author- Dr. Rajaram D. Davankar

Email- rd.davankar@gmail.com

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Abstract:

Shows the tahsilwise distribution of vari crop percentage to net sown area. The varieties of vari crop were grown in the study region, which was recorded 2.53 percent area under vari crops out of the net sown area in the during 2001. During the period of investigation its percentage was decreased to 0.88 percent. Spatio-temporal analysis of tahsils under vari crop for the year 2001 was focuses light on the following facts. Very low percent area under ragi crop was observed in Kalwan, Devla, Baglan, Malegaon, Chandwad, Yevla and Sinner tahsils whereas low percent area under vari crop was noticed in Niphad and Nandgaon tahsils. High percent area under vari crop was found in Igatpuri, Dindori, Nashik and Trimbak tahsils whereas very high percent area under vari crop was occurred in Surgana and Peint tahsils of the study region

Keywords: vari is healthy food, high calcium content, hilly region soil.

Introduction:

In the study region ragi crop was famous hill millets as important hill millet is vari crop. This crop was occupied western part of the region. Vari crop as known by 'varai'. In the study region vari crop cultivation is higher than another foodgrain crops. It is a worthless fodder crop was found in varkas soil or hilly soil after that ragi crop cultivation, it is a poor food crop. Ragi and vari crop cultivation and farm operations are similar process. In the western ghat of hill slopes was occupied with vari and mostly grown in. It was compared to rice or ragi crop cultivators per hector average yield and large lower production. Economically weaker or poor farmers are used vari for cook like rice. Vari is ground into flower as well as converted to the bread or beak and biscuits. The vari ten varieties was evolved as released which gives forty one percent more yield than the local variety (KKV, 1978).

Objective:

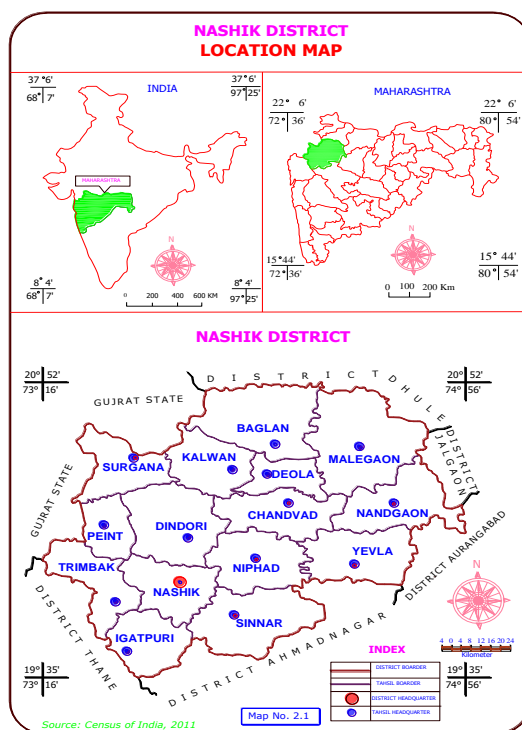
- 1) The main objective of the study to Table and map analysis of Tahsilwise Percentage of Area under Wari to Net Sown Area.
- 2) Find out the characteristics of Tahsilwise Percentage of Area under Wari to Net Sown Area.

Methodology:

- 1) Data will be collected primary and secondary sources like personal interview.
- 2) Use the District census handbook and socio-economic abstract of Nashik District.
- 3) Chose the random sample of fifteen Taluka level places.
- 4) Analyze the characteristic of population density on the basic of data available.

Study Area:

The Study region lies between 19°35'18" North latitude to 20°52'07" North latitude and 73°16'07" East longitude to 74°05'22" East longitude, total geographical area of the region is 15,530 sq.km. The total population of the region is 61, 09,052 as per the census of 2011. The study region is Rhomboidal in the shape with the longer diagonal with 170 km. from South-West to North-East and it is extreme breadth of about 170 km. from North to South. The region is bounded on the North-West by the Dangs and Surat districts of Gujarat state, on the North side by the Dhule district, on the East side by the Jalgaon and Aurangabad district, on the south side by the Ahmednagar district and towards South-West side by the Thane district



Tahsilwise Percentage of Area under Wari to Net Sown Area (2001 and 2021)

Sr. No.	Name of Tahsils	2001	2021	Vol. of Change
1	Surgana	14.10	11.04	-2.96
2	Kalwan	0.04	0.20	0.16
3	Deola	0.02	0.14	0.12
4	Baglan	0.07	0.14	0.07
5	Malegaon	0.9	0.04	-0.05
6	Nandgaon	0.74	0.49	-0.25
7	Chandwad	0.49	0.19	-0.30
8	Dindori	4.17	1.77	-2.41
9	Peint	7.47	4.21	-3.26
10	Trimbak	2.49	0.51	-1.98
11	Nashik	3.03	0.52	-2.50
12	Igatpuri	4.14	2.37	-1.75
13	Sinnar	0.02	1.83	1.81
14	Niphad	0.74	0.71	-0.03
15	Yevla	0.49	0.74	0.25
Total District		2.53	1.65	-0.88

Source: Compiled by the Researcher.

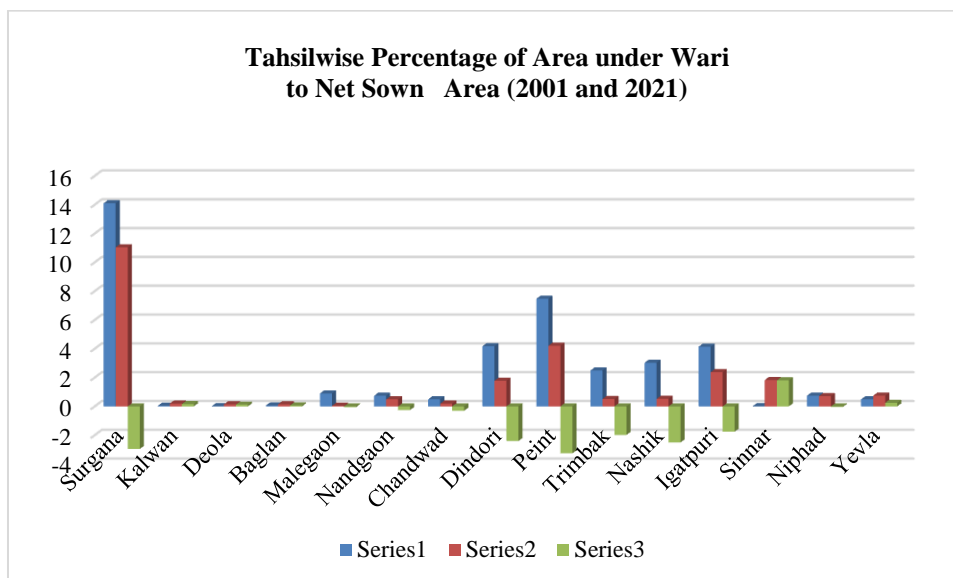


Table and Graph Analysis is the Out of total net sown area under crop vari was registered 1.65 percent in during 2021. Out of total area under vari crop in the category of very low percent area under vari was noticed in Kalwan, Devla, Chandwad, Nandgaon, Malegaon and Baglan tahsils whereas low percent area under vari crop was observed in Trimbak, Nashik, Niphad and Yevla tahsils. Medium percent area under vari crop cultivation was occupied in Dindori and Sinner tahsils while high percent area under vari crop was recorded in Peint and Igatpuri tahsils. Very high percent area under vari crop was noticed in Surgana tahsil of the study region during the period of investigation

In during the period under investigation of the study region area under vari crop was decreased by 0.88 percent. 0.01 to 0.50 percent positive changes was noticed in Baglan, Kalwan, Devla and Yevla tahsils whereas 1.01 to 2.00 percent positive change was found in Sinner tahsil. In the period under investigation there is negative change of 0.01 to 0.50 percent was found in Malegaon, Nandgaon, Chandwad and Niphad tahsils whereas 1.0 to 2.00 percent negative change was recorded in Trimbak and Igatpuri tahsils while 2 to 3 percent negative change was situated in Surgana, Dindori and Nashik tahsils above 3 percent negative change was observed in Peint tahsil during period of investigation of ragi crop.

In the study region some tahsils was increased in Vari crop cultivation percentage because of their irrigation system and their development as well. Due to the fact that farmers are encouraged for taking high yield by using manures, fertilizers, modern seeds and modern farm implements. Because of this, the vari crop area has been increased. Due to a variety of vari crop, irrigation system, electricity and availability of market facilities in the study region has been increased in some tahsils.

Conclusion:

The vari crop was stored many years without physically or climatically damage it is kept dry. The for working people and cattle milk, the crop grain flour was used in making rotis, bread and biscuits also. Vari crop was grown on lighter, hilly region soil, varkas land, konkan hill slopes, poorer upland soils are providing for vari crop cultivation. Vari is better than rice food because high calcium content i.e. 0.33 percent.

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Language and Society-Impact of Technology on Language

Preeti Roberts¹, Dr. A. Vijayanand²

¹Assistant Professor, Kamla Nehru college.,Korba ,C.G

Research Scholar, Dept of English Kalinga University,Naya Raipur,C.G

²Associate Professor, Dept of English Kalinga University,Naya Raipur,C.G

Atal Bihari Vaypayee Vishwavidyalaya.Bilaspur,C.G, Kalinga University.Naya Raipur,C.G

Corresponding Author- Preeti Roberts

Email:- preetiroberts826@gmail.com

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Abstract:

Language is used to inform people around us of what we feel and desire/understand the world .We communicate effectively with our words,gestures and tone of voice in a multitude of situation.Communication helps us to communicate with each other forms bounds,teamwork and it is what seperated us other animal species. Throughout history, technology has played an important role in shaping the way we communicate and express ourselves.Technological advancements have changed language in different ways just a few centuries ago. The impact of technology has changed the ways we communicate.Technology has made communication faster and more efficient. But it has its negative negative impact which can be decreased with the help of parents and parents at homeand teachers at school respectively to delay the use of screen.

Some ways are-

1. Talk, talk, talk
2. Read together
3. Sing song and recite nursery rhymes
4. Describe everything you do
5. Give your child choices
6. Encourage your child to play with words.
7. Expand on what your child says
8. Limit screen time.

Introduction:

Language is a form of human behaviour.The importance of language is essential to every aspect and interaction to our daily lives.We use language to inform people around us of what we feel ,what we desire and understand/question the world around us..We communicate effectively with our words, gestures and tone of voice in a multitude of situation being able to communicate with each other forms bounds, teamwork and it is what seperated human from other animal species.Communication drives our lives and better our selves

According to Henry Sweets, an English phonetician and language scholar stated"Language is the expression of ideas by means of speech -sounds combined into words.Words are combined into sentences, this combination answering to that of ideas into thoughts"

Throughout history, technology has played an important role in shaping the way we communicate and express ourselves.From the very first invention to the rise of internet and social media technological advancements have changed language in ways that were unimaginable just a few

decades ago. The impact of technology is often overlooked, yet it has transformed the way we communicate, learn and interact with one another.

What is Technology?

Technology refers to methods, systems and devices which are the result of scientific knowledge being used for practical. Tecnolgy is the application of conceptual knowledge to achieve practical goals, especially in a reproducible way. The word tecnology can also mean the products resulting from such efforts including both tangible tools such as utensils or machines and intangible one such as software.

Relation between Language and Technology

Through out history technology has played a very important role in shaping the way we communicate and express ourselves.From the very first invention to the rise of internet and social media technological advancements have changed language in ways that were unimaginable just a few decades ago.The impact of technology has changed ways we communicate,learn and interact with one another

Language and technology are inherently intertwined.All technological feats would have

required vast amounts of language to bring into existence. This could be through researches, scientists and engineers communicating with one another to bring an idea to life or through user's communicating directly with the technology itself to prompt it to execute its function. Where one finds technology one may find language. Not only does technology on the presence of language to exist, but technology is also controlled, instructed and modified by language.

Language is required to make a piece of technology or technological programme worth. Technology has had a significant impact on language. It has made communication faster and more efficient.

However it has been always argued that technology has a negatively impact on language skills.

Technological advancements have motivated students to learn new forms of language and specialized speech. Different language learning apps are working on it. But this can lead to slow speech and language development because of much time given to screen. Too much time can delay speech and language development. Studies show that higher screen use results in poorer language skills in toddlers which can result in later learning challenges. The impact of technology can be decreased with the help of parents at home and teachers at school respectively to delay the use of screen.

Some ways can be

1. Talk talk
2. Read together
3. Sing songs and recite nursery rhymes
4. Describe everything you do.
5. Give your child choices.
6. Encourage your child to play with words.
7. Explore on what your child says
8. Limit screen time.

Conclusion:

Language is used to inform people around us of what we feel and desire/understand the world around us of what we feel and desire/understand the world. We communicate effectively with voice in a multitude of situation. Communication helps us to communicate with each other forms bonds, teamwork and it is what separated human from other animal species. Throughout history technology has played an important role in shaping the way we communicate and communicate and express ourselves. Technological advancements have changed language in different ways just a few centuries ago.

The impact of technology has changed the ways we communicate. Technology has made communication faster and more efficient. But it has its negative impact which can be decreased with the help of parents at home and teachers at school respectively to delay the use of screen.

Some ways can be

1. Talk talk
2. Read together
3. Sing songs and Recite nursery rhymes
4. Describe everything you do
5. Give your child choices
6. Encourage your child to play with words
7. Expand on what your child says
8. Limit screen time

Objective:

1. 1 To find out the positive impact of technology on language
2. 2 To find out the negative impact of technology on language.

Methodology:

Literary research methodology is used to read through analyze and sort literatures in order to find out essential attribute in a material

Review of literature:

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Conclusion:

Language is used to inform people, feel, desire, question /understand the world around us. Language helps us to communicate with each other forming bonds and teamworks and it is what separated us from other animal species.

Technological advancements have changed language in different ways. It has made communication faster and more efficient.

Technological advancements have motivated students to learn new forms of language and specialized speech. This can be lead to slow speech and language development because of much time given to screen. Studies show use of higher screen results in poorer language skills in toddlers resulting in later learning challenges

But its negative impact cannot be overlooked which can be only decreased with the help of parents at home and teachers in school. Only with their efforts the use of screen can be delayed.

Some ways can be

1. 1 Talk talk
2. 2 Reading together
3. Sing songs and recite nursery rhymes
4. Describe everything you do
5. Give choices

6. Encourage to play with words
7. Expand on what the child says
8. Limit screen time

Use of research work in society

Although language plays an important role in communication It has helped to form bonds and teamworks and technological advancements has made the language and communication faster and more efficient To decrease the negative impact of technology on language somewhere parents at home and teachers at school will have to take the responsibility ,working manually with the child and thus limiting screen time of the child.This will definitely help the child and avoiding conditions like poorer speech and later learning challenges,thus providing the society with healthy citizens and in turn to the nation who can participate and contribute in the nation build up.

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The Power of Minimisation for Environmental Conservation: A Path to Sustainable Earth

Leena S. Moon¹, Dr. Poorva Bhonde²

¹MA, English & Linguistics, Research Scholar, PGTD of English,
Rashtrasant Tukadoji Maharaj Nagpur University

²Supervisor, Associate Professor, Department of English
Sharadchandra Arts & Commerce College, Butibori (MS)

Corresponding Author- Leena S. Moon

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Abstract:

In the field of environmental conservation, the importance of incorporating thoughtful practices cannot be emphasized enough. This paper delves into the pivotal role of key practices such as reducing tree cutting, minimising expenses, opting for second-hand goods and cutting down on wedding ceremony costs in fostering resource conservation, waste reduction and sustainability. By advocating for the minimisation of unnecessary consumption and waste, we embark on a transformative journey towards a more sustainable and ecologically resilient Earth. This paper underlines the critical need for individuals and societies to embrace practices that prioritize the conservation of our precious resources and the preservation of our planet for future generations. Through a holistic examination of these minimization strategies, this paper underscores the transformative potential of embracing conscious choices to preserve our planet's resources and promote long term ecological resilience for future generations.

Keywords: Minimisation, resource conservation, sustainability

Introduction:

In a world filled with consumerism and abundance, the idea of minimalism offers hope in the battle against environmental degradation. By embracing a minimalist lifestyle, individuals can significantly reduce their impact on the planet and pave the way for a more sustainable future. The relentless cutting down of trees for timber, agriculture and urban development has led to widespread habitat loss, biodiversity depletion and climate change. By avoiding impulse buys and focusing on long-term value, individuals can minimise waste while maximizing the utility of their resources. By adopting a minimalist approach towards consumption, individuals can play a vital role in curbing deforestation.

There are certain practices that can help achieve a balance between human needs and environmental conservation.

Cutting down tree branches only:

One of the most serious environmental issues facing our planet today is deforestation. Saving the Earth is a paramount concern in our modern world and one significant aspect of this endeavour is preserving our precious trees. Trees play a vital role in maintaining ecological balance, providing oxygen, absorbing carbon dioxide, supporting wildlife habitats and contributing to overall environmental health. One aspect of minimisation that can contribute to saving Earth

from exploitation is the practice of cutting down tree branches only when necessary for safety or health reasons. By adopting selective tree pruning techniques and avoiding unnecessary tree trimming, we can minimise the impact on forest ecosystems, preserve biodiversity and maintain vital habitats for wildlife. Trees play a crucial role to reduce carbon dioxide, regulating climate and enhancing air quality, making it essential to prioritise sustainable tree management practices to protect our natural environment. One of the key benefits of pruning tree branches is the promotion of new growth and rejuvenation. When it is done correctly, pruning can stimulate the tree to produce new shoots and branches, leading to denser foliage, improved structure and enhanced resilience. By strategically shaping the tree through selective pruning, arborists (tree surgeon) can encourage regrowth and ensure that the tree remains healthy and robust for years to come. The notion of selectively pruning tree branches instead of felling the entire tree is rooted in sustainable forestry practices. Through careful planning and implementation, arborists and forestry experts can assess the health and growth patterns of trees to determine which branches can be safely pruned without causing long-term harm to the tree. By selectively removing branches that are dead, damaged or obstructing growth, trees can be effectively managed and maintained without jeopardizing their overall health and longevity.

Moreover, pruning tree branches can have positive impacts on tree aesthetics, safety and functionality. By removing dead or diseased branches, trees can be made more visually appealing, reducing the risk of falling limbs that could pose a safety hazard to people and property. Proper pruning can also enhance air circulation and sunlight penetration within the tree canopy, promoting overall tree health and vitality. In addition to the direct benefits to trees, selective branch pruning can also contribute to environmental conservation efforts and sustainable resource management. By maintaining trees in urban and rural areas through responsible pruning practices, we can preserve green spaces, mitigate the effects of climate change and support biodiversity. Trees are essential components of natural ecosystems, providing habitats for wildlife, improving air quality, and reducing soil erosion, by protecting and nurturing trees through thoughtful pruning methods, we can safeguard these invaluable environmental benefits for future generations. It is important to note that the decision to prune tree branches should be guided by a thorough understanding of tree biology, growth patterns and species-specific requirements. Professional arborists and tree care experts possess the expertise and knowledge needed to assess and address the unique needs of individual trees, ensuring that pruning activities are conducted in a manner that promotes tree health and longevity. The practice of selectively pruning tree branches as a means of tree maintenance and care holds great potential for promoting sustainability, environmental stewardship and the conservation of our natural resources. By adopting a holistic approach to tree management that values the health, vitality and longevity of trees, we can strike a harmonious balance between human needs and ecological preservation. Through responsible tree pruning practices, ensuring that our magnificent trees continue to thrive and enrich our planet for generations to come. This sustainable approach allows us to care for trees without resorting to drastic measures that could harm the tree or the surrounding ecosystem.

Minimisation extends beyond environmental impact to personal financial management. By embracing a minimalist lifestyle, individuals can significantly reduce their expenses, leading to a more sustainable use of resources. Cutting back on unnecessary purchases, prioritizing quality over quantity and practicing mindful consumption habits can not only benefit the environment but also contribute to financial stability.

Reduction in wedding ceremony expenses

Planning a wedding is undoubtedly a joyous occasion, but it can also be a stressful and costly endeavour. In the world where extravagant celebrations have become the norm. Ambani weddings are known to be extremely lavish and

extravagant affairs. From the decorations, entertainment, guest, often costing millions of dollars. The wedding of Anant Ambani and Radhika Merchant is luxurious in every way estimated to be worth Rs. 5000 crore. On the other hand many couples are seeking ways to tie the knot without breaking the bank. The concept of minimalist weddings has gained popularity as a practical and sustainable approach to saying 'I do' in a meaningful yet budget friendly manner. By embracing minimisation, couples can have a memorable wedding experience while cutting down on unnecessary expenses. That can have a positive impact on the environment by reducing wedding ceremony expenses. Lavish weddings often generate excessive waste, contribute to carbon emissions through travel and energy consumption and promote a culture of consumerism. By embracing minimalist wedding concepts, such as eco-friendly decorations and sustainable catering options, couples can significantly reduce their environmental footprint while focusing on the meaningful essence of their union. Redirecting resources towards eco-conscious choices and experiences rather than extravagant displays can lead to a more sustainable and mindful approach to celebrating loves and commitment. One key aspect of planning a minimalist wedding is focusing on what truly matters to the couple. By prioritising the elements that hold sentimental value and reflecting their personalities. We do not need to keep the guest list small and intimate. Couples can create a more meaningful experience for guests by inviting family, relatives and friends. We don't need to compromise on investing in good quality food can leave a lasting impression on our guests and create a memorable dining experience. Good food is often a highlight of any event and can contribute to the overall enjoyment of your wedding celebration. Allocating a larger portion of your budget to food and guest attendance can be a cost-effective choice compared to spending on expensive decorations. Quality catering can be a significant expense. Consider hosting the wedding ceremony and reception at a simple and naturally beautiful location, such as a local park, a backyard or a community hall. Minimalist venues not only radiate charm and character but also eliminate the need for expensive decorations and elaborate setups. Embrace creativity by incorporating do-it-yourself (DIY) decorations and personal touches into the wedding festivities. From handmade centrepieces to personalized signage, DIY elements add a touch of originality and sentimentality to the celebration while keeping costs low. Cut down on unnecessary extras such as elaborate floral arrangements, extravagant lighting and luxury transportation. Opt for minimalist decor accents, eco-friendly alternatives and practical choices that complement the overall theme of simplicity. Save on printing and

postage expenses by sending digital wedding invitations instead of traditional paper invites. Digital invitations are eco-friendly, convenient and cost-effective, allowing couples to allocate their budget to other essential aspects of the wedding. Explore sustainable catering options such as local, seasonal and plant-based menus that not only reduce costs but also promote eco-conscious choices. Buffet-style or family-style dining can further lower expenses compared to plated meals. When making budget-conscious decisions, prioritize quality over quantity in all aspects of the wedding planning process. Invest in key elements that hold personal significance while cutting back on unnecessary expenses that do not contribute to the overall experience. By prioritizing the quality of food served and expanding the guest list at your wedding, you can create a warm and welcoming atmosphere that emphasizes connection, celebration and shared moments. Remember that each wedding is unique and choosing to focus on food and guest experience can be a meaningful way to tailor your celebration to your preferences and priorities. By applying these tips and being strategic with your wedding planning, you can cut down on expenses and create a beautiful and memorable celebration without breaking the bank. Remember that the most important aspect of your wedding day is celebrating your love and commitment to each other, regardless of the cost. One of the most effective ways to reduce wedding costs is by opting for a simple yet elegant wedding dress or suit that aligns with a minimalist aesthetic. Instead of splurging on extravagant designer attire, consider renting or borrowing attire is another cost-effective option that can help reduce expenses without compromising style. Changing our habits of constantly buying expensive clothing not only helps us save money but also contributes to reducing environmental degradation. By shifting our mind-set away from the need for excessive consumption and the desire to show off our wealth through material possessions, we can make a positive impact on the environment. By shifting towards a minimalist wardrobe approach, we can promote mindful consumption habits that respect both the planet and the people involved in the clothing supply chain.

Luxury or expensive clothing can contribute to environmental degradation

To save the environment, educating ourselves about the environmental and social impacts of the fast fashion industry can help us make more conscious choices when it comes to our clothing purchases, ultimately leading to a more sustainable lifestyle that values quality over quantity and environmental preservation over conspicuous consumption. The fashion industry is a significant contributor to environmental degradation and social exploitation, with the production of expensive and fast-fashion items leading to resource depletion,

pollution and unethical labour practices. By advocating for minimisation in clothing consumption, individuals can reduce their overall ecological footprint and support a more sustainable fashion system. Choosing quality over quantity, prioritizing sustainable and ethical brands can help combat the culture of overconsumption and disposability prevalent in the fashion industry. The environmental impact of expensive clothing purchases is significant and multifaceted, encompassing various stages of the fashion supply chain from production to disposal. Here are some key insights into how luxury or expensive clothing can contribute to environmental degradation.

Resource Intensive Production: Luxury clothing often involves the use of high-quality materials such as silk, cashmere and leather which require significant natural resources and energy for cultivation, processing, and manufacturing. This can lead to deforestation, water scarcity, soil degradation and pollution in regions where these materials are sourced.

Carbon Footprint: The production and transportation of luxury clothing items, often manufactured in different countries and continents, result in a substantial carbon footprint due to long supply chains and reliance on fossil fuels for shipping. Additionally, energy-intensive production processes and the use of synthetic materials contribute to greenhouse gas emissions and climate change.

Water Pollution: The dyeing and finishing processes in luxury clothing production involve the use of numerous chemicals and water-intensive treatments, leading to water pollution as toxic substances are discharged into water bodies without proper treatment. This pollution not only affects aquatic ecosystems but also poses health risks to communities living nearby.

Waste Generation: The fast-paced nature of luxury fashion trends results in overproduction, unsold inventory and a culture of disposability among consumers. This leads to vast amounts of textile waste ending up in landfills, as many luxury garments are made from synthetic fibres that do not easily biodegrade, further exacerbating the environmental impact.

Social Implications: Beyond environmental concerns, the production of expensive clothing can also involve social implications such as labour exploitation, poor working conditions and violations of human rights in garment factories, especially in developing countries where labour costs are lower. The pursuit of luxury at the expense of ethical labour practices can perpetuate a cycle of exploitation and inequality within the fashion industry.

Given these insights, it is crucial for consumers to be aware of the environmental and social

consequences of their clothing choices, including purchasing expensive items. By advocating for sustainable and ethical fashion practices, such as supporting brands that prioritise transparency, ethical sourcing, fair labour practices and environmentally conscious production methods, individuals can contribute to a more responsible and sustainable fashion industry. Additionally, adopting mindful consumption habits, such as investing in timeless and durable pieces, can help reduce the environmental impact of luxury clothing purchases and foster a more sustainable approach to fashion consumption. In short, eco-friendly clothing brands play a crucial role in promoting sustainability in the fashion industry and offering consumers ethical and environmentally conscious alternatives to traditional fast fashion. By supporting these brands, consumers can contribute to a more sustainable future, where fashion is not only stylish but also mindful of its impact on the planet and the people who produce our clothes. As the demand for sustainable fashion continues to grow, eco-friendly clothing brands serve as beacons of innovation and inspiration, showing that it is possible to create beautiful, high-quality clothing while protecting the environment and championing social responsibility.

Purchase a second-hand car for environmental conservation:

In the realm of transportation, the choice to purchase a second-hand car over a new vehicle can have a profound impact on reducing carbon emissions and resource depletion. With the automotive industry being a significant contributor to greenhouse gas emissions, opting for a pre-owned vehicle can help extend the lifespan of existing resources and reduce the demand for new manufacturing. By supporting the second-hand market and prioritizing efficiency and longevity over novelty, individuals can make a conscious choice to lessen their environmental impact and promote sustainable transportation practices. Opting for a second-hand car in good condition rather than purchasing a new car can indeed have environmental benefits by reducing waste and resource consumption. The production of new cars involves significant energy consumption and emissions of greenhouse gases. By choosing a pre-owned vehicle, you are preventing the need for new manufacturing processes, thereby reducing your carbon footprint and helping to mitigate climate change. Every new car manufactured requires raw materials such as metal, plastics and electronics which are sourced through energy-intensive processes. By purchasing a second-hand car, you are contributing to resource conservation by reducing the demand for new materials and minimizing the impact on natural ecosystems. The automotive industry generates a significant amount of waste through manufacturing processes, including scrap metal, plastics and other by-

products. Choosing a used vehicle means that you are not contributing to the generation of new waste associated with the production of a brand-new car. This not only saves you money upfront but also allows you to make a sustainable choice that aligns with both your financial and environmental values. Through thoughtful consideration, research and proactive maintenance, you can enjoy the benefits of owning a reliable vehicle while reducing your ecological footprint and supporting a circular economy that values resource efficiency and waste reduction. By opting for a second-hand car in good condition, you can make a sustainable choice that aligns with environmental conservation efforts.

Conclusion:

Minimisation can help save the Earth from exploitation. It holds immense potential in driving positive change by adopting minimalistic practices, embracing eco-friendly choices in ceremonies, purchasing second-hand goods, individuals can actively contribute to a more sustainable and resilient planet. Choosing to limit the use of paper products, opting for digital documents and supporting sustainable forestry practices can help reduce the demand for tree resources. Through collective action and a shared commitment to minimisation, we can pave the way for a brighter future for generations to come. It offers insights and recommendations for individuals looking to embrace a more sustainable lifestyle. Further research and personal reflection are encouraged to explore the topic in greater depth.

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The Growing Crisis: Pollution's Impact on Agricultural Land

Dr. Omprakash Wamanrao Jadhav

Associate professor and Head Department of Geography, Shivneri Collage Shirur Anantpal
Dist.Latur

Corresponding Author- Dr. Omprakash Wamanrao Jadhav

Email: jomprakash57@gmail.com

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Abstract:

The impact of pollution on agricultural land is an escalating global crisis with profound implications for food security, ecosystem health, and human well-being. These papers examines how various forms of pollution—airborne, waterborne, and soil contamination—affect agricultural productivity and land sustainability. Air pollutants, such as nitrogen oxides and sulfur dioxide, contribute to soil acidification and nutrient imbalances, while water pollution from agricultural runoff introduces harmful chemicals and pathogens into irrigation systems. Additionally, soil contamination from heavy metals and persistent organic pollutants impairs soil fertility and disrupts plant growth. Through a comprehensive review of recent studies and data, this paper highlights the complex interactions between pollution sources and agricultural land, identifying key factors that exacerbate the crisis. It also explores potential mitigation strategies, including policy interventions, technological advancements, and sustainable agricultural practices. By addressing the multifaceted nature of pollution's impact on agriculture, this paper aims to provide a foundation for developing effective solutions to safeguard agricultural productivity and environmental health in the face of growing pollution challenges.

Keywords: Airborne Pollutants, Nutrient Imbalance, Soil Acidification, Agricultural Productivity, Environmental Health

Introduction:

Agricultural land, vital for global food security, faces an urgent crisis due to pollution. Airborne pollutants, such as nitrogen oxides (NO_x) and sulfur dioxide (SO₂) from industrial and vehicular emissions, lead to soil acidification, disrupting nutrient availability and reducing crop yields. Additionally, acid rain exacerbates soil degradation by leaching essential minerals, further diminishing soil fertility.

Waterborne pollution, primarily from agricultural runoff of pesticides and fertilizers, leads to nutrient enrichment and eutrophication of water bodies. This process causes harmful algal blooms, depleting oxygen levels and contaminating irrigation sources, which in turn degrades soil health and reduces crop quality.

Soil contamination from heavy metals and persistent organic pollutants (POPs), often due to industrial activities and improper waste disposal, further impairs soil fertility and disrupts microbial communities. This contamination can result in toxic accumulation in crops, posing health risks to consumers.

The broader impacts of pollution include loss of biodiversity, disruption of ecosystem services, and public health risks. Addressing these challenges requires a comprehensive approach involving technological advancements, effective policies, and sustainable agricultural practices to safeguard

agricultural land and ensure long-term food security and environmental health.

Objectives:

1. To study Assessing Pollution Sources and Types
2. To study Analyzing Environmental and Health Consequences
3. To Promote Sustainable Agricultural Practices

Data and Methodology:

To complete this research paper all the data is collected from secondary data collection like: newspaper, articles, reference books, internet website, etc.

Result and Discussion

1. Pollution Sources and Types

Airborne Pollutants: Airborne pollution, including nitrogen oxides (NO_x), sulfur dioxide (SO₂), and particulate matter, originates from industrial activities, vehicular emissions, and agricultural practices. These pollutants contribute to soil acidification, which disrupts soil chemistry and nutrient availability. Research has shown that NO_x emissions can lead to increased nitrogen deposition in soils, altering microbial communities and reducing plant diversity. SO₂ contributes to acid rain, which further exacerbates soil degradation.

Waterborne Pollutants: Agricultural runoff, containing pesticides, herbicides, and fertilizers, contaminates water bodies and impacts irrigation systems. Studies have documented how runoff leads

to eutrophication of water bodies, causing algal blooms that deplete oxygen levels and harm aquatic life. Pesticides and herbicides can leach into groundwater, affecting both human health and crop safety.

Soil Contamination: Heavy metals (such as lead, cadmium, and arsenic) and persistent organic pollutants (POPs) from industrial activities and improper waste disposal lead to soil contamination. These contaminants impair soil fertility, disrupt plant growth, and pose health risks through the food chain. Research has highlighted that contaminated soils often have reduced microbial diversity, which is crucial for nutrient cycling and plant health.

2. Impacts on Agricultural Productivity

Soil Health: Pollution negatively impacts soil health by altering its physical, chemical, and biological properties. Acidification reduces soil pH, affecting nutrient availability and microbial activity. Heavy metal contamination can lead to soil toxicity, reducing crop yields and making soils less fertile. Studies indicate that soils with high levels of pollutants often exhibit lower organic matter content and diminished water-holding capacity.

Crop Yields: The adverse effects of pollution on soil health translate into reduced crop yields. For example, research has shown that acid rain can decrease the availability of essential nutrients like calcium and magnesium, impairing plant growth. Pesticide contamination can also lead to plant toxicity, reduced growth rates, and lower crop quality.

Land Sustainability: Sustainable land management is compromised by pollution. Soil erosion, reduced fertility, and contamination hinder long-term agricultural productivity. Studies emphasize the

5. Knowledge Gaps and Research Needs

Long-Term Effects: There is a need for more research on the long-term effects of pollution on agricultural systems. Longitudinal studies can provide insights into how persistent pollutants impact soil health and agricultural productivity over time.

Integrated Approaches: Research is needed on integrated approaches that combine technological, policy, and practice-based solutions to address the multifaceted nature of pollution. Understanding how different strategies interact and complement each other is crucial for effective management.

6. Policy Recommendations

Strengthening Regulations: Enhance regulatory frameworks to limit pollution from industrial and agricultural sources. This includes stricter enforcement of emission limits and better monitoring of pollutants.

Promoting Sustainable Practices: Encourage the adoption of sustainable agricultural practices such as organic farming, agroforestry, and conservation

need for integrated approaches to manage and remediate polluted lands to restore their agricultural potential.

3. Environmental and Health Consequences

Biodiversity Loss: Pollution can lead to significant biodiversity loss by disrupting habitats and reducing plant and animal species diversity. Soil and water contamination affects microbial communities and aquatic ecosystems, leading to diminished ecosystem resilience.

Human Health Risks: The health impacts of polluted agricultural systems are profound. Contaminants in soil and water can enter the food chain, leading to health issues such as gastrointestinal disorders, developmental problems, and increased cancer risk. Research underscores the importance of monitoring and regulating pollutants to protect public health.

4. Current Mitigation Strategies

Technological Solutions: Technological advancements, such as precision agriculture and pollution control technologies, aim to mitigate the impact of pollution. Precision agriculture uses data-driven approaches to optimize the use of fertilizers and pesticides, reducing runoff and emissions. Additionally, technologies like phytoremediation and bioremediation use plants and microorganisms to clean up contaminated soils and waters.

Policy Measures: Policies at national and international levels address pollution through regulations and incentives. The implementation of stricter emission standards, subsidies for sustainable practices and regulations on chemical usage are critical. However, the effectiveness of these measures often depends on enforcement and compliance.

tillage. These practices reduce the reliance on chemical inputs and improve soil health.

Supporting Research and Innovation: Invest in research and development of new technologies and practices for pollution mitigation. Support innovation in pollution monitoring and remediation techniques.

7. Sustainable Agricultural Practices

Best Practices: Implement best practices such as integrated pest management (IPM), cover cropping, and reduced tillage to minimize pollution and enhance soil health. These practices improve soil structure, increase organic matter, and reduce runoff.

Education and Training: Provide education and training for farmers on sustainable practices and pollution management. Capacity building ensures that farmers can effectively implement and benefit from new technologies and practices.

8. Raising Awareness and Encouraging Action

Public Awareness Campaigns: Develop campaigns to raise awareness about the impacts of pollution on agriculture and the importance of

sustainable practices. Engage stakeholders through workshops, seminars, and community outreach.

Stakeholder Engagement: Foster collaboration among policymakers, researchers, farmers, and the public to address pollution challenges. Multi-stakeholder engagement ensures that diverse perspectives are considered in developing solutions.

Conclusion:

Pollution poses a severe threat to agricultural land, impacting soil health, crop productivity, and overall land sustainability. Airborne, waterborne, and soil contaminants collectively degrade soil quality, reduce yields, and disrupt ecosystems. Addressing this crisis requires a multifaceted approach: enhancing regulations, adopting sustainable practices, and investing in technological innovations. While current strategies offer promise, more research is needed to understand long-term effects and integrate effective solutions. Collaborative efforts among policymakers, researchers, and farmers are essential to mitigate pollution's impact and ensure a sustainable agricultural future.

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Geospatial Strategies for Sustainable Tourism: GIS Application in Jalgaon District

Mrs. Panali Saner¹, Dr. Dattatraya V. Harpale², Dr. Smita S. Harane³

¹KTHM College Nashik Maharashtra

²H.P.T Arts & RYK Science College, Nashik Maharashtra

³SPH Arts, Science and Commerce Mahila College, Malegaon Nashik Maharashtra.

Corresponding Author- Mrs. Panali Saner

Email- harpalesir@gmail.com

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Abstract:

The research paper titled "Geospatial Strategies for Sustainable Tourism: GIS Application in Jalgaon District" explores the use of Geographic Information System (GIS) technology to promote sustainable tourism development in Jalgaon District, Maharashtra. Jalgaon, known for its rich cultural heritage, historical sites, and natural beauty, has immense potential for tourism. However, unplanned tourism can lead to environmental degradation, resource depletion, and socio-cultural impacts. This study aims to address these challenges by utilizing GIS as a tool for sustainable tourism planning. The research focuses on identifying key tourist destinations within the district and analyzing their potential for sustainable development. GIS is employed to map and assess the spatial distribution of tourism resources, infrastructure, and environmental factors. The study also examines the socio-economic and environmental impacts of tourism in Jalgaon, offering insights into how GIS can be used to mitigate negative effects and enhance positive outcomes. Through geospatial analysis, the paper identifies areas that require conservation, regions suitable for tourism development, and zones that need infrastructure improvement. The research also highlights the importance of involving local communities in tourism planning to ensure that development is both economically beneficial and culturally respectful. The findings of this study provide valuable recommendations for policymakers, tourism planners, and stakeholders in Jalgaon District. By integrating GIS into the planning process, the paper demonstrates how sustainable tourism strategies can be effectively implemented, ensuring that Jalgaon's tourism sector contributes to long-term environmental preservation, cultural heritage protection, and economic growth.

Keywords: Geographic Information System (GIS), Sustainable planning.

Introduction

Jalgaon District, located in the state of Maharashtra, is a region endowed with rich cultural heritage, historical landmarks, and natural beauty, making it a potential hub for tourism. However, the development of tourism in the district must be approached with sustainability in mind to avoid the pitfalls of unplanned growth, such as environmental degradation and socio-cultural disruption. Geographic Information System (GIS) technology offers a powerful tool for achieving this balance by enabling precise mapping, analysis, and planning of tourism resources and infrastructure. This research paper, titled "Geospatial Strategies for Sustainable Tourism: GIS Application in Jalgaon District," aims to explore how GIS can be utilized to promote sustainable tourism in the region. By leveraging geospatial data, the study seeks to identify key

tourist sites, assess their development potential, and propose strategies that align with the principles of sustainability, ensuring that tourism contributes positively to the district's economy while preserving its cultural and natural assets.

Significance of the study:

This study on the application of Geographic Information System (GIS) for sustainable tourism development in Jalgaon District holds significant importance for several reasons. Firstly, it addresses the critical need for balancing tourism growth with environmental preservation, ensuring that the district's natural and cultural resources are not compromised by unplanned development. By utilizing GIS, the study provides a systematic approach to identifying and managing tourism assets, enabling informed decision-making that can enhance the region's tourism potential while

safeguarding its heritage. Secondly, the research contributes to the broader field of sustainable tourism by demonstrating how advanced geospatial technologies can be applied to real-world challenges. The insights gained from this study can serve as a model for other regions facing similar issues, offering practical solutions for sustainable tourism planning. Ultimately, the study aims to support the long-term economic and social well-being of Jalgaon District by promoting responsible tourism practices.

Study Area

Jalgaon district, located in northern Maharashtra, is the focus of this study on tourism development. Known as the "Banana City" or the "Banana Capital of India," Jalgaon is renowned for its extensive banana plantations and gold jewelry, making it a significant tourist attraction. The district lies between 20° 15' and 21° 15' North latitudes and 74° 55' to 76° 28' East longitudes, with an elevation of about 225 meters above mean sea level. Encompassing an area of 11,765 km², Jalgaon

district is part of the Khandesh region and consists of 15 tehsils, with its administrative headquarters located in Jalgaon city. Jalgaon is bordered by Madhya Pradesh to the north, and by Buldhana, Jalna, Aurangabad, Nashik, and Dhule districts in different directions. It is flanked by the Satpura mountain ranges to the north and the Ajanta ranges to the south. The district is predominantly drained by the Tapi River and its tributaries, including the Girna, Bora, and Panjhra rivers. The climate is diverse, with temperatures ranging from 10°C in winter to 50°C in summer. The district receives an average annual rainfall of about 69 cm, with 85% of it occurring during the monsoon season. According to the 2011 Census, Jalgaon district had a population of 4,229,917.

Objectives of study

1. To gather and analyze information on tourism facilities and the socio-economic background of the study area.
To examine the socio-cultural impact of tourism on the study region.

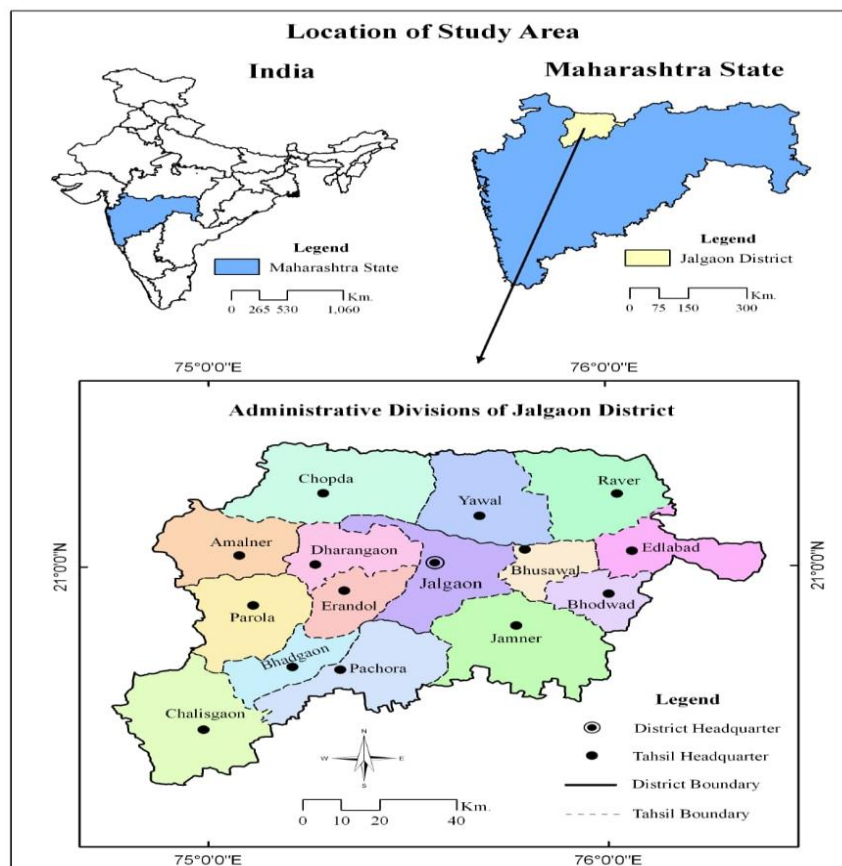


Fig. 1

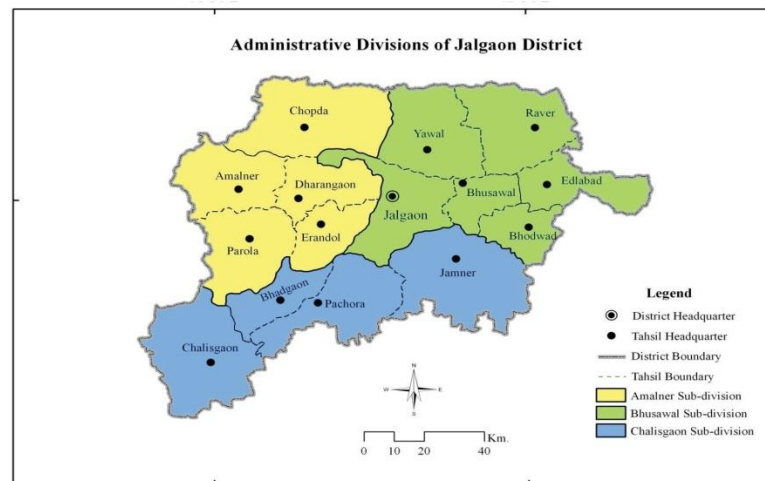


Fig. 2

Database and Methodology

For the research on "Geographic Information System (GIS) for the Sustainable Tourism Development of Jalgaon District," creating a comprehensive database is essential. This database will underpin site suitability analysis and guide decision-making. The components include GIS data for Jalgaon District, covering maps, topography, land use, and natural features. It also encompasses spatial data on existing tourist attractions, infrastructure, and potential sites for new tourist centers, as well as current tourism statistics such as visitor numbers and economic contributions. Data on existing tourist facilities, accommodations, and transportation networks will be collected, alongside environmental impact assessments related to air and water quality, biodiversity, and ecological concerns. Infrastructure details, including road networks, utilities, and communication systems, will also be gathered, along with demographic information on the local population, such as employment rates and income levels. Stakeholder input, obtained through interviews and surveys with local communities and businesses, will further enrich the database. The research methodology involves a systematic approach, starting with a review of existing literature on tourism development and site suitability. GIS data will help identify optimal sites for new tourist centers based on accessibility, proximity to attractions, and environmental factors. Interviews, surveys, and workshops with various stakeholders will provide insights, and a combination of quantitative and qualitative methods will be used to collect and analyze the data.

Potential Tourist Places in Jalgaon District

Jalgaon District, located in the Khandesh region of Maharashtra, offers a diverse range of

tourist attractions, blending natural beauty, cultural heritage, and religious significance. Notable destination is Patnadevi, a picturesque location with historical and religious importance, nestled amidst the Satpura ranges. It is known for the ancient Patnadevi Temple and its serene natural surroundings, making it a perfect spot for spiritual and nature tourism.

Unapdev, a hot water spring located near Chopda, is another popular attraction. It is believed that the spring has medicinal properties, attracting visitors looking for wellness tourism. The site also holds mythological significance, being associated with the epic Ramayana.

Mehrui Lake, situated within Jalgaon city, is a popular recreational spot for locals and visitors alike. The lake is surrounded by lush greenery and provides opportunities for picnics, boating, and bird watching, contributing to the district's eco-tourism potential.

Manudevi Waterfall, located near Adgaon village, is a breathtaking natural site surrounded by dense forests. It is one of the tallest waterfalls in the region and attracts adventure seekers and nature lovers.

Lastly, the Erandol Fort, a historical monument, offers a glimpse into the region's rich past. The fort, though in ruins, is a testament to the Maratha era and provides panoramic views of the surrounding landscape, adding to the district's historical tourism appeal. Muktai Temple: Located in the picturesque town of Muktainagar, this temple is dedicated to Muktai, a revered saint. Pilgrims visit the temple for its spiritual significance and serene surroundings.

These potential tourist places in Jalgaon District highlight the region's varied attractions, making it an emerging destination for cultural, religious, natural, and adventure tourism.

Result and Discussion

The questionnaire designed to assess the socio-cultural impact of tourism in the region consisted of 25 questions, with 300 responses collected. Each response was rated on a seven-point Likert Scale, ranging from 1 to 7, to capture varying degrees of agreement or disagreement. The survey aimed to analyze the effects of tourism on local socio-cultural dynamics, including demand for handicrafts and handloom products, leisure activities, stress on police protection, and the influx of tourists. It also examined negative impacts such as increased drug abuse, gambling, alcohol consumption, prostitution, and issues related to beggars and child labor. Changes in recreation facilities and other local amenities were also assessed. The questionnaire was administered to tourists at various locations using a random sampling method, ensuring a diverse and representative sample of respondents. The data collected offers insights into how tourism is influencing the social and cultural fabric of the

region, helping to inform strategies for sustainable development.

Likert scale

A Likert scale, named after psychologist Rensis Likert, is a widely used psychometric tool in surveys, where respondents indicate their level of agreement with statements. It consists of multiple Likert items, each rated on a scale (typically 5, 7, or 9 levels). The scale sums these responses to assess attitudes, with 1=strongly disagree and 7=strongly agree.

Social-cultural Impact

Tourism has a major impact on social-cultural conditions of the region. Assessment of the social-cultural impact of tourism is particularly important, for the various facts of the social-cultural constitute the basis of much tourist development. The questionnaire for assessment of social-cultural impact consists of 25 questions. These questions will help to understand the social-cultural impact of the tourist on the region.

Table 1: Resident's response to social-cultural impact of tourists on Jalgaon

SN	Social –cultural impact	Social –cultural impact of tourism on Jalgaon							
		1	2	3	4	5	6	7	Σ
1	Demand of handicraft & handloom commodity	6	6	15	23	47	96	107	300
2	Leisure	17	17	42	55	38	66	65	300
3	stress on police protection	30	37	40	33	13	111	36	300
4	Rush of Tourist	12	3	1	12	32	121	119	300
5	Standard of living	12	0	23	17	36	89	123	300
6	Information centre	14	7	23	35	19	102	100	300
7	Impact on language	15	17	30	45	19	50	124	300
8	Impact on Religion	25	20	37	34	13	89	82	300
9	Dual pricing system & attitude towards bargaining	16	0	5	17	23	89	150	300
10	Robbery	16	11	12	7	19	149	86	300
11	increase in the activities of drug abuse	12	13	31	39	19	53	133	300
12	Drinks shop	41	6	0	21	13	120	99	300
13	Gambling	45	90	45	23	29	23	45	300
14	increase in the activities of prostitution	12	45	34	54	43	57	55	300
15	active participation of local social organization towards the facilities of tourists	45	42	34	47	32	54	46	300
16	Change in moral & value	25	26	47	65	18	34	85	300
17	Change in identity of tourist centre	14	32	54	62	32	45	61	300
18	Change in custom & tradition	0	23	45	66	18	68	80	300
19	Change in cultural heritage	29	0	47	32	16	53	123	300

20	Free movement	15	17	45	19	20	58	126	300
21	Population density	36	13	22	17	15	96	101	300
22	Problems of beggar	23	34	47	42	43	45	66	300
23	Change in recreation facility	46	12	45	35	37	47	78	300
24	Frequency of accident	0	14	18	23	25	53	167	300
25	Child labor	32	4	45	67	7	91	54	300

Source: Field work, 2023

The higher the number of respondent tourists larger the effect on host population of tourist centers.

Table 2: Analysis of tourists data

Variance	Factor 1	Factor 2	Factor 3
Var 1	-0.041	0.332	-0.135
Var 2	0.071	0.109	0.251
Var 3	.151	0.154	0.089
Var 4	0.051	0.053	0.203
Var 5	.091	0.270	-0.004
Var 6	-0.177	0.047	0.186
Var 7	-0.086	0.191	0.318

Table 2 shows the factor analysis of tourist data across three factors. Each variance (Var) represents the contribution of different variables to the factors. Factor 1 has a low negative correlation with most variables, except Var 3 with a positive contribution. Factor 2 shows moderate positive correlations with Vars 1, 5, and 7, indicating its role in capturing

these variables' common variance. Factor 3 exhibits higher positive contributions from Vars 4, 7, and a slight contribution from Var 2. Overall, Factor 2 and Factor 3 capture more significant positive correlations, suggesting their importance in explaining the variance in tourist data.

Table 3: Result table

Factor	Result
1	Var1, Var2, Var3, Var4, Var5, and Var6 have loadings with Factor 1. Var1, Var2, and Var3 have negative loadings, suggesting an inverse relationship with Factor 1. Var6 has a relatively strong negative loading, indicating a substantial inverse relationship.
2	Var2, Var3, Var4, Var5, and Var7 have loadings with Factor 2. Var2, Var3, Var4, Var5, and Var7 have positive loadings, suggesting a positive relationship with Factor 2. Var7 has the highest positive loading, indicating a particularly strong positive relationship.
3	Var2, Var4, and Var7 have loadings with Factor 3. Var2 and Var7 have positive loadings, while Var4 has a moderate positive loading. Factor 3 appears to capture a combination of the positive relationships of Var2 and Var7 with a milder positive relationship with Var4.

Table 3 summarizes the factor loadings for three factors. Factor 1 includes Var1, Var2, Var3, Var4, Var5, and Var6. Vars 1, 2, and 3 show negative loadings, indicating an inverse relationship with Factor 1, with Var6 exhibiting a strong negative relationship. Factor 2 includes Vars 2, 3, 4, 5, and 7, all with positive loadings, with Var7 showing the highest positive loading, signifying a strong positive relationship. Factor 3 involves Vars 2, 4, and 7, where Vars 2 and 7 have strong positive loadings and Var4 has a moderate positive loading, reflecting its role in capturing these variables' positive relationships. The factor analysis results provide insightful conclusions about the relationships between various tourist-related

variables in the study. Overall, the analysis highlights how different factors relate to both positive and negative aspects of tourism. Understanding these relationships can help in formulating strategies to enhance the positive impacts of tourism while mitigating its negative effects, thereby contributing to more

Conclusion

The study reveals that socio-cultural impacts of tourism are influenced by various factors such as demand for handicrafts, leisure, police protection, and issues like drug abuse, gambling, and changes in customs. The application of Geographic Information System (GIS) for sustainable tourism in Jalgaon District has highlighted the potential

benefits and challenges of integrating GIS technology in tourism planning. Factor analysis of the data has uncovered key factors like community engagement, environmental impact, and infrastructural development. Negative factor loadings indicate areas needing attention, while positive ones highlight factors supporting sustainable tourism. The research emphasizes a holistic, community-centered approach, focusing on preserving cultural heritage and mitigating environmental impacts. It provides a roadmap for informed, sustainable tourism development, advocating for a balanced approach that integrates technology with community and environmental considerations. Future research should further explore community dynamics and innovative GIS applications for enhanced tourism experiences. This factor could be related to negative aspects of tourism such as overcrowding or increased stress on local infrastructure. Factor 1 reveals a complex relationship with several variables, including Var1, Var2, Var3, Var4, Var5, and Var6. Negative loadings of Var1, Var2, and Var3 suggest an inverse relationship with Factor 1, with Var6 showing a substantial negative correlation, indicating that these variables may negatively influence or be influenced by the underlying construct represented by Factor 1. Factor 2 demonstrates a strong positive relationship with Var2, Var3, Var4, Var5, and especially Var7. The highest positive loading for Var7 suggests that this variable significantly contributes to the positive aspects captured by Factor 2. This factor could be associated with beneficial aspects of tourism, such as increased economic activity or improved local amenities. Factor 3 includes Var2, Var4, and Var7, with Var2 and Var7 showing strong positive relationships and Var4 a moderate positive relationship. This factor seems to encapsulate a blend of positive impacts associated with Var2 and Var7, with a milder positive association with Var4. It suggests a combination of the beneficial influences captured in Factor 2 but with a different emphasis or context.

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Translation as a Means of Cultural Communication and Representation

Prof. Pradip P. Jaiswal¹, Mr. Shrikant C. Chavhan²

¹Asso. Prof. H.O.D. English, Shri.V.R.College, Sawana

²Research Scholar, M.A. English SET

Corresponding Author- Prof. Pradip P. Jaiswal

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Abstract:

Translation goes beyond language, serving as a significant way for cultures to interact and express themselves. This study investigates the role of translation in connecting cultures, promoting comprehension, conserving heritage, and shaping societal perspectives. It explores how translators act as cultural intermediaries and addresses the difficulties and obstacles of translating cultural subtleties. The paper uses case studies and examples to demonstrate how translation impacts cultural identities, promotes cross-cultural communication, and enriches global literary variety.

Introduction:

Translation is crucial for facilitating the sharing of ideas, literature, and knowledge among people speaking different languages. Translation is not just about moving words from one language to another; it also requires understanding cultural differences, idiomatic phrases, historical allusions, and societal standards. This paper seeks to examine the various functions of translation in cultural expression, investigating its effects on cultural identities, perspectives, and global communication. Translation plays a crucial role in cultural exchange by enabling the spread of literature, philosophical concepts, scientific progress, and artistic works. It allows people and communities to interact with various cultural viewpoints, promoting mutual understanding and appreciation. Translations of traditional Chinese literature into European languages have exposed Western audiences to Eastern philosophies and cultural customs. Literature and other cultural items frequently represent shared cultural identity. Translators are essential in the conservation and communication of cultural traditions through their translations of written material. They have to overcome language barriers and uphold the authenticity of the original cultural setting. For instance, adapting indigenous stories from oral to written formats not only safeguards cultural legacy but also increases visibility and acknowledgment. Difficulties arise when translating cultural subtleties due to the embodiment of unique cultural values and social norms in languages. Translation plays a crucial role in human communication by facilitating the transfer

of ideas, literature, and knowledge between different languages. Translation goes beyond just transferring words, as it requires navigating cultural subtleties, idiomatic phrases, historical allusions, and societal conventions. This study seeks to investigate the various aspects of translation as a means of cultural representation, examining its influence on cultural identities, perspectives, and worldwide discussions. Translation is crucial for cultural exchange, as it helps spread literature, philosophical concepts, scientific progress, and artistic works. It allows people and communities to interact with a variety of cultural viewpoints, promoting mutual understanding and appreciation. Translations of classical Chinese texts into European languages exposed Western audiences to Eastern philosophies and cultural practices. Literature and other cultural artifacts play a significant role in preserving collective identity. Translators are essential for safeguarding and passing down cultural heritage by interpreting texts. They have to overcome language barriers while staying true to the original cultural background. The conversion of indigenous oral traditions into written forms not only helps to safeguard cultural heritage but also increases visibility and acknowledgment. Difficulties arise when translating cultural nuances due to the presence of distinct cultural values, social norms, and historical backgrounds in languages. Translators may need to carefully choose how to convey idioms, metaphors, and cultural references to maintain both meaning and cultural relevance when there are no direct equivalents in other languages. For example, adapting humor or folklore for a specific audience

often requires adjustments to connect with them while preserving the core of the original content.

Conclusions:

Foreign cultures' perception and comprehension, molding intercultural dialogue and societal beliefs. Analysis of literary translations from authors like Gabriel Garcia Marquez or Haruki Murakami reveals Colombian and Japanese cultural environments. Study of translated religious texts such as the Bible or the Quran showcases cultural interpretations and influences. Investigation into translation's role in media and entertainment demonstrates its impact on global cultural trends. Ultimately, translation serves as a lively channel for cultural exchange, promoting dialogue, safeguarding heritage, and shaping worldwide perceptions. Translators have a crucial role in connecting different languages and cultures, leading to a deeper comprehension of various societies. With the progress of technology and the increasing global interconnectedness, the importance of translation in encouraging cultural understanding and advancing mutual respect becomes more essential. Subsequent studies should further investigate the changing nature of translation in a connected world, recognizing its transformative effect on global cultural environments.

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Facility Differentiation and Community Dynamics: A Comprehensive Study of Agro-tourism Sites in Nashik District

Ganesh R. Mungase¹, Dr. Dattatraya Harpale², Dr. Smita Harane³

¹Research Student, HPT Arts & RYK Science College Nashik

²H.P.T Arts & RYK Science College, Nashik Maharashtra.

³SPH Arts, Science and Commerce Mahila College, Malegaon Nashik

Corresponding Author- Ganesh R. Mungase

Email- harpalesir@gmail.com

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Abstract:

This research investigates the nuanced landscape of agro-tourism by employing Principal Component Analysis (PCA) to analyze facilities' scores at seven distinct agro-tourism sites in Gangapur, Pimpalgaon, Makhmalbad, Sinnar, Igatpuri, Niphad, and Kalvan. The study aims to uncover underlying patterns, identify communities of similarity, and provide valuable insights for strategic tourism development in the region. The PCA results reveal two distinct communities among the agro-tourism sites, each characterized by unique facilities' scores. Community 1 encompasses Gangapur, Makhmalbad, Sinnar, Niphad, and Kalvan, sharing commonalities in their offerings. In contrast, Community 2 consists of Pimpalgaon and Igatpuri, exhibiting a different profile in terms of facilities. Two principal components, namely Component I and Component II, capture significant variability in the original data. Component I highlights differences in facilities, contributing to the unique characteristics of each site, while Component II further adds to the understanding of variations among the sites. The explained variance, with Component I accounting for 37.54% and Component II for 23.44%, signifies the effectiveness of the PCA in capturing a substantial proportion of the total variance in facilities' scores. The results validate the hypothesis that distinct clusters or communities exist among agro-tourism sites, shedding light on the diverse offerings and characteristics that shape each community. The implications of these findings extend to strategic planning and development initiatives. Understanding the commonalities and differences among agro-tourism sites allows for targeted improvements, tailored marketing efforts, and enhanced competitiveness. The identified communities provide a framework for site-specific enhancements, offering a pathway for sustainable tourism development. This research contributes to the growing body of knowledge on agro-tourism dynamics, emphasizing the need to move beyond traditional scenic beauty considerations. By unraveling the impact of facilities on community formation, the study provides valuable insights for researchers, policymakers, and practitioners seeking to foster sustainable and differentiated agro-tourism experiences in the region.

Keywords: Agro-tourism, Principal Component Analysis (PCA), policymakers.

Introduction:

Agro-tourism, a burgeoning niche within the broader tourism sector, intertwines agriculture and tourism to provide visitors with an immersive rural experience. In the context of sustainability and diversified travel preferences, understanding the intricacies of agro-tourism destinations becomes imperative. This research delves into the facilities and features of agro-tourism sites in the distinct locales of Gangapur, Pimpalgaon, Makhmalbad, Sinnar, Igatpuri, Niphad, and Kalvan, situated in [Your Region]. These sites, each with its unique agricultural and cultural attributes, contribute to the multifaceted tapestry of agro-tourism experiences. The central focus of this study lies in unraveling the complex dynamics that shape agro-tourism destinations, with a particular emphasis on the facilities offered at each site. To achieve this,

Principal Component Analysis (PCA) has been employed to distill key patterns and identify communities of similarity among the sites based on their facilities' scores. The research aims to discern whether distinct clusters or communities emerge, indicating shared characteristics and differentiators within the agro-tourism landscape. As agro-tourism increasingly becomes a focal point for rural development and sustainable tourism practices, insights garnered from this study are expected to inform strategic initiatives for enhancing the visitor experience and contributing to the economic vitality of the region. By delving into the specific facilities that contribute to the uniqueness of each site and understanding the community-based dynamics, this research seeks to provide a comprehensive perspective on agro-tourism development in [Your Region].

Significant of the Study:

The results and conclusions drawn from the Principal Component Analysis (PCA) of agro-tourism sites in Nashik district hold significant importance for various stakeholders in the tourism industry, local communities, and policymakers. The identification of distinct communities among agro-tourism sites provides a strategic framework for tourism development. Understanding the unique facilities that contribute to each community allows for tailored strategies to enhance the appeal and competitiveness of individual sites. This targeted approach can attract a diverse range of visitors, catering to varied preferences and bolstering the overall tourism sector. The delineation of communities based on facilities' scores facilitates community-based differentiation. This insight is crucial for site managers and policymakers seeking to leverage the strengths and characteristics of each community. By acknowledging and enhancing these unique features, agro-tourism sites can create authentic and differentiated experiences that resonate with visitors. Agro-tourism plays a pivotal role in fostering sustainable rural development. The results guide policymakers in crafting initiatives that align with the identified communities, ensuring that development efforts are tailored to the specific needs and strengths of each locale. This, in turn, promotes economic sustainability, preserves local culture, and encourages responsible tourism practices. For visitors, the findings contribute to an enriched understanding of what each agro-tourism site offers. This knowledge empowers tourists to make informed decisions, aligning their preferences with the unique attributes of specific communities. Ultimately, it leads to more fulfilling and personalized visitor experiences, fostering positive word-of-mouth and repeat visits. The research adds to the academic discourse on agro-tourism dynamics by employing PCA as a tool to uncover patterns and communities. It contributes methodologically to the field, showcasing the applicability of statistical techniques in understanding the complexities of agro-tourism destinations. In essence, the importance of these results lies in their practical implications for sustainable tourism development, community empowerment, and the creation of memorable and differentiated agro-tourism experiences in Nashik district.

Objectives

1) To formulate community-specific tourism development strategies based on the identified communities among agro-tourism sites in [Your

Region]. This involves a detailed analysis of the facilities contributing to each community, leading to tailored initiatives that enhance the unique strengths and characteristics of individual locales.

2) To assess the impact of community-based differentiation on visitor experiences and preferences. This involves understanding how the unique features of each community influence visitor satisfaction and engagement.

Hypothesis:

There exist distinct clusters or communities among agro-tourism sites in terms of facilities' scores, suggesting that certain groups of sites share common characteristics. Specifically, we hypothesize that agro-tourism sites within the same community, as identified by PCA, exhibit similarities in the types and quality of facilities offered. Conversely, sites in different communities are expected to show variations in their facilities, indicating unique profiles and potential areas for differentiation in the agro-tourism experience.

Study Area

The district has vast and rich tourism resource potential of different cultural background in all its 15 tahsils. Nashik district lying between 19°35'18" N to 20°53'07" N latitude and 73°16'07" E to 74°56'27" E longitude, with an area 15530 km² (**Fig 1**). Nashik is bounded on the North-West by the Dangs and Surat districts of Gujarat state, on the North by the Dhulia district, on the East by the Jalgaon and Aurangabad district, on the south by the Ahmadnagar district and towards South-West by the Thane district. The district derives its name from that of its headquarters town of Nashik, for the origin of which two interpretations are given. The town is sited on the nine peaks or navashikhara and hence its name. Nashik district comprises 15 Talukas. Agro-tourism can provide more scope for a generation of employment opportunities. Due to increased tourist facilities in terms of different socio-economic and marketing indicators, tourism can reach the vast majority of the population and also the common man. This requires the role of planning, promotion and publicity, which can create a favorable environment for tourism. Tourism development can play an important role in the economic development of the district. Therefore, it is useful for making proper strategy to both developed and undeveloped tourist centers in Nashik district. In addition to this, such unknown places would be the sources of job opportunities so that they may increase their economic status.

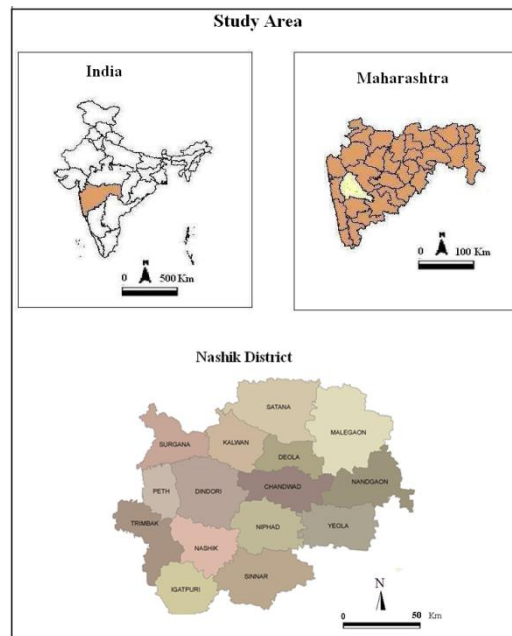


Fig. 1

Methodology and database

The importance of the study lies in the fact that due consideration may be given to the primary data. Researcher has collected data by visiting tourist's attraction centers during field work. Primary data regarding public utilities and amenities have been collected through a questionnaire. For the authentic and reliable information proposed during the field work interviews of the local people have also been taken. All the collected data is finally classified, tabulated and by applying various cartographic and

statistical techniques presented in the form of diagrams, tables, graphs and maps etc. The preparation of tourist information system map following methodology is adopted. Atlas, Gazetteers, District Census Handbook, Tourist maps, etc. use for collection of information, District Resource map of Nashik district published by Geological Society of India, Government published map of Nashik district P.W.D. map, Digital Terrain Model (DTM) and other were completed with help of S.O.I. toposheets and satellite image (Fig. 2).

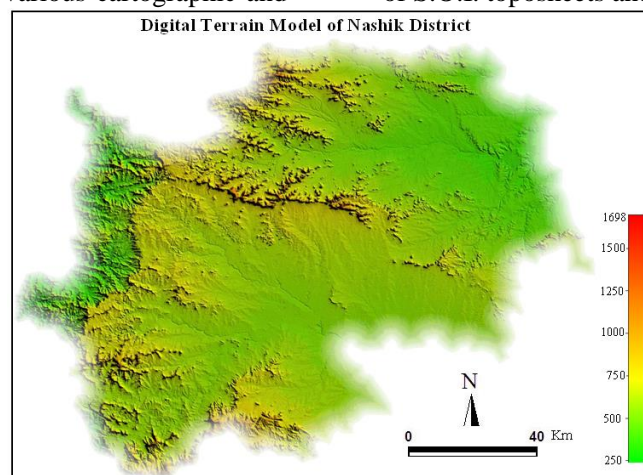


Fig. 2

Agro-tourism Potential in Nashik District

Nashik is often referred to as the "Wine Capital of India" due to its numerous vineyards and wineries. These sites offer tours and tastings, providing visitors with insights into the winemaking process. Nashik is known for its orchards, cultivating a variety of fruits such as grapes, pomegranates, apples, and oranges. Visitors can experience fruit picking, learn about cultivation practices, and taste fresh produce. Flower cultivation, particularly of flowers used in religious rituals and ceremonies, is a significant agricultural

activity in Nashik. Agro-tourists can explore flower farms and learn about the cultivation and trade of these flowers. Some areas in Nashik are conducive to the cultivation of spices. Agro-tourism initiatives can showcase spice plantations, providing educational tours about various spices and their cultivation methods. The integration of agro-based industries and tourism holds significant potential for fostering sustainable development, promoting rural economies, and offering unique experiences to visitors. This dynamic synergy creates a mutually beneficial relationship between agriculture, industry,

and tourism, contributing to the overall growth of a region. Agro-based industries, ranging from farms and vineyards to food processing units, can become key attractions for tourists seeking authentic and immersive experiences. Engaging local communities

and ensuring the preservation of cultural and environmental integrity are crucial considerations in promoting agro-tourism in Nashik district. The fig. 3 shows the agro-tourism sites in Nashik district.

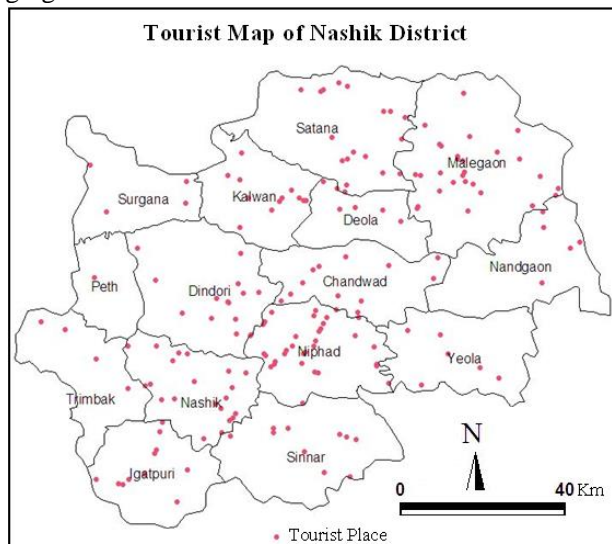


Fig. 3

Result and Discussion

The term potential means something existing but not yet fully exploited. There are various criteria to selecting agro-tourism sites i.e. on the basis of phsiography, climate, and purpose of visit, on the basis of natural and cultural resources. The district has vast and rich tourism resource potential of different cultural background in all its 15 tahsils. Agro-tourism sites are very rich in natural and cultural resources, these tourism resources are not fully utilized because inadequate tourist facility, lack of information regarding this centers. New agro-tourism sites can provide more scope for a generation of employment opportunities due to increases tourist facilities in terms of different socio economic and marketing indicators also bring money and reducing the regional disparities in Nashik district. Agro-tourism sites will be reducing the pressure on existed tourist centers and also reducing the migration of local peoples towards the Nashik city. The development of tourism of any region may be defined as the creation provision or

addition of facilities, amenities and services to meet the needs of the tourist. The facilities such as accommodation, transportation, roads, communication, entertainment and recreation, natural attraction, vegetation, natural attraction and other infrastructural facilities etc. constitute the basic parameter of suitable site. An attempt has been made to analyze 16 micro aspects for potential suitable sites in Nashik district.

Matrix Analysis of Agro-tourism sites:

The agro-tourism sites have been analyzed on the basis of above mention parameters so as to judge qualitative and quantitative aspects of tourist infrastructure at these sites. These are natural attraction, vegetation, roads, public transport, and accommodation, parking facilities, adventure tourism, recreation facility, drinking water, communication and medical facility. The matrix has been prepared based upon the weighted index method. The various parameters are given weightage on a 1 to 5 scale to find out overall tourist convenience at the agro-tourism sites.

Table 1: Matrix Analysis for agro-tourism sites in Nashik

Parameters	Gangapur	Pimpalgaon	Makhmalbad	Sinnar	Igatpuri	Niphad	Kalvan
Natural attraction	5	2	4	5	5	4	4
Scenic attraction	5	2	3	5	4	3	4
pleasant weather	5	4	4	5	3	4	4
Vegetation							
Evergreen	4	4	3	3	3	3	5
Dry deciduous	5	1	3	4	5	3	3
Shrub/bushes	4	5	4	3	5	4	4
Roads							
Metalled	5	4	3	3	4	3	3
Unmetalled	4	3	2	1	4	2	2
Public Transport	5	4	1	1	4	4	5

Accommodation	4	2	3	1	5	3	3
Adventure tourism	5	3	4	5	3	4	4
Recreation	3	2	4	1	5	4	4
Parking facility	1	4	4	3	4	5	4
Drinking water	1	5	4	1	5	5	4
Medical facility	1	3	3	1	4	3	5
Communication	1	5	3	1	5	3	5
Total weight	58	53	52	43	68	57	63

Scale: 1(Low poor condition), 5(High condition), NA (Not applicable)

Result: To perform Principal Component Analysis (PCA) on above data of table 1 i.e. Agro-tourism sites and available tourism facilities' score data, we can use the following Principal Component Analysis statistical method.

Table 2: Result Table

Agro-tourism sites	Component I	Component II	Community
Gangapur	2.5311	-1.4168	1
Pimpalgaon	0.3608	1.8871	2
Makhmalbad	1.0567	-0.0086	1
Sinnar	-4.5617	0.5412	1
Igatpuri	1.0585	3.4653	2
Niphad	-0.0551	-0.8530	1
Kalvan	0.2892	-2.2912	1
Eigen Values	2.6852	1.6692	
Explain Variance	37.54%	23.44%	

The table 2 provides a concise representation of the PCA results. The "Principal Components" table shows the scores for each agro-tourism site on the two principal components (Component I and Component II). The "Eigenvalues" and "Explained Variance" sections provide information about the variability captured by each component, and the "Communities" table assigns each agro-tourism site to a community based on the component with the highest value. The scores in the "Principal Components" table represent the contribution of each agro-tourism site to the two principal components.

Component I: Positive scores indicate higher values in facilities that positively load on this component. Negative scores indicate lower values.

Component II: Similar interpretation applies, where positive scores represent higher values in facilities positively contributing to this component.

Eigenvalues represent the amount of variance explained by each principal component. Explained variance indicates the proportion of total variance in the original data explained by each principal component. Explained Variance for Component I and II are 37.54%, and 23.44% respectively.

Component I: Positive Scores (Gangapur, Makhmalbad, Kalvan, Niphad): These agro-tourism sites have higher scores in facilities that positively contribute to Component I. They may share common features that differentiate them from others. **Negative Scores** (Sinnar, Pimpalgaon, Igatpuri): These sites have lower scores in facilities that contribute positively to Component I.

Component II: Positive Scores (Pimpalgaon, Igatpuri): These sites have higher scores in facilities contributing positively to Component II. **Negative Scores** (Gangapur, Makhmalbad, Sinnar, Niphad,

Kalvan): These sites have lower scores in facilities contributing positively to Component II.

Communities: The "Communities" table assigns each agro-tourism site to a community based on the component with the highest value. The assignment reflects similarities in facilities' scores.

Community 1 (Gangapur, Makhmalbad, Sinnar, Niphad, Kalvan): These sites share similarities in facilities' scores, possibly indicating a common theme or focus.

Community 2 (Pimpalgaon, Igatpuri): These sites have a different profile in terms of facilities.

The two principal components together explain 60.98% of the total variance in the original data, providing a condensed representation of the key patterns in facilities' scores across the agro-tourism sites. Consider these interpretations in the context of research questions and the specific features of each agro-tourism sites in Nashik.

Conclusion:

The Principal Component Analysis (PCA) conducted on the facilities' scores of agro-tourism sites in Gangapur, Pimpalgaon, Makhmalbad, Sinnar, Igatpuri, Niphad, and Kalvan revealed insightful patterns and community groupings. Here are the key conclusions drawn from the analysis: The agro-tourism sites can be categorized into two distinct communities based on their facilities' scores. Community 1 includes Gangapur, Makhmalbad, Sinnar, Niphad, and Kalvan, sharing commonalities in their facilities. Community 2 comprises Pimpalgaon and Igatpuri, exhibiting a different profile in terms of facilities. The two principal components (Component I and Component II) capture significant variability in the original data. Component I highlights differences in facilities related to positive and negative scores, indicating

unique characteristics for each site. Component II further contributes to the understanding of variations among agro-tourism sites. The analysis accounts for a substantial proportion of the total variance in facilities' scores, with Component I explaining 37.54% and Component II explaining 23.44%. The results support the hypothesis that distinct clusters or communities exist among agro-tourism sites based on facilities' scores. Sites within the same community demonstrate similarities, while those in different communities showcase variations in their offerings. Understanding the commonalities and differences among agro-tourism sites provides valuable insights for tourism development and marketing strategies. Tailoring promotional efforts and visitor experiences based on the identified communities can enhance the overall appeal and competitiveness of each site. Future research can delve deeper into the specific facilities contributing to the formation of communities, allowing for targeted improvements. Exploring visitor preferences within each community and assessing the impact on satisfaction and loyalty can guide site-specific enhancements. In conclusion, the PCA results contribute to a nuanced understanding of the agro-tourism landscape, paving the way for strategic planning and development initiatives. The identified communities offer a framework for site-specific improvements and differentiation, ultimately enriching the overall agro-tourism experience in the region.

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Literature Reflects the Culture and Human Life

Dr. Pritee D. Thakare¹, Mr. Shrikant Charan Chavhan²

¹Off. Principal Jijamata, Arts Collge Darwha

²Research Scholar, M. A. English, SET

Corresponding Author- Dr. Pritee D. Thakare

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Abstract:

Literature is often regarded as a reflection of society, offering insights into the specific period it originates from. It serves as a tool through which we can gain understanding of a culture's political, economic, and social landscapes. Literature delves into the complexities of human life and utilizes language as a means of expression. It is believed that each culture presents valuable lessons that can be extracted from its literary works. Literature not only enhances cognitive abilities but also motivates individuals to embrace their humanity and uphold ethical principles. By studying literature, we can delve into the historical narrative of a society, gain perspective on the current situation, and contemplate possible future scenarios. Thus, literature is aptly described as a reflection of societal norms and values.

Introduction:

Indian English Literature is enriched with the varieties of themes. It plays a crucial role in fostering societal improvement by increasing human awareness of ethical principles and societal norms. Poets and writers have historically utilized literary works such as poems and novels to enlighten society. Notable figures like Sant Gadge Baba, Sant Namdev, and Sant Janabai have contributed to social enlightenment through their compositions of Abhangas. These hymns continue to resonate with audiences today as they provide guidance on the ideal societal structure and values. Literature serves as a mirror reflecting the culture and human experiences within a society. This paper aims to reflect the culture and human life in the novels of Chetan Bhagat

Objectives: -

1. To study the novels of Chetan Bhagat.
2. To highlight the culture and human life association in the select novels of Chetan Bhagat.
3. To analyze the new economical or commercial life in Chetan Bhagat's novels.

Chetan Bhagat is a distinguished Indian novelist, motivational speaker, TV personality, and ex-banker. Chetan Bhagat works in all these fields. He is regarded as the most well-known author in India who writes in English. He is also a renowned screenwriter, columnist, and figurehead for young people in India. Chetan Bhagat's almost all the books were bestsellers since their release and have been filmed by famous Bollywood directors. He is the voice of today's youth and being the youth icon, his

Chetan Bhagat reflects the new generation of Liberalization, privatization and globalization in his writing which he witnessed. He shows how the IT

stories are highly appreciated by the new generation. The way he depicts his stories and delineated the characters is heart appealing. He is an ideal author who inspired the youth to inculcate the reading habits. He is also a good columnist and writes columns for many leading newspapers. According to him, novels are entertainment tools through which he expresses his views and opinion about society and the youth. Development issues and national issues are addressed through columns.

Bhagat is certainly a recognizable name in the popular culture of India today. John Storey describes popular culture as a "culture that is widely favoured or well-liked by many people" (Storey 5) and Bhagat's fame especially among his young audience and 'bestseller' status has confirmed that he has firmly established his place in India's popular culture. Even as Bhagat captures media attention and popular imagination; intensive studies on his writings are few. According to Ellen Turner's observation of an Indian society, "traditional forms of Indian adult subjectivity often revolve around marriage, family, and community" (2) and many times an individual is gauged in the society by how well he or she conforms to such accepted notions of behaviour which include ideas concerning marriage and starting a family. A disregard for such traditions and practice is often regarded as blatant individualism which is now seen commonly amongst many of the contemporary Indian youths. Turner is of the opinion that such practice is bound to cause a conflict amongst the older and newer generation of Indians (Turner 2).

industry in twentieth century paved the way for astounding communication technology which today encircles the globe has brought in immense change

in the society that has triggered a fierce competition in this field of information technology. This new culture appears to project an image of India no way similar to that presented by diasporic as well as other Indian English novelists.

Chetan Bhagat has captured the many cultures, traditions, and customs of India in exquisite detail in his novel *Two States*. In this narrative, Chetan Bhagat has deftly addressed several delicate subjects, including cultural differences. He said that love knows no bounds and that it is eternal. He said that many lovers in this country, India, have experienced this and that love has even led them to sacrifice their lives for it. This is a heartwarming tale of two people who find love. This is a tale of love triumphing over suffering and hopelessness, and of how anything is possible if you put in the necessary effort. Every Indian home today has a similar circumstance as the one in this tale. In India even today, we observe that the lovers come from various castes and religion and they strive hard for getting their love.

The novel *Two States* by Chetan Bhagat is inspired by and based on the author's personal experiences. This is the genuine love tale of Chetan Bhagat and his spouse Anusha, as well as Delhi kid Krishna and Tamil girl Ananya. The parents of this couple, who are from separate Indian states, are not prepared for their marriage. Getting married with parental approval is a difficult task. The book highlights the archaic mindset of Indians and how interacts unions are still frowned upon there. In this novel, the protagonists Krish, the hero, and Ananya, the heroine, never give up and are unaffected by their parents' rejection of their love.

The story delves at the difficulties and pressures that students encounter in a competitive and less intellectual setting, as well as their personal conflicts and relationships. It also demonstrates the evil side of the Indian education system, which focuses on cramming rather than learning the concepts underlying the subject. Although there are many positive aspects to the Indian education system, it also has several significant problems. The story begins with Hari, the narrator. He is an ordinary student who hopes to achieve and provide a solid career. His favorite is Neha Sameer Cherian, the daughter of HOD Mr. Cherian of IIT Delhi. Alok is a talented student who struggles to retain his grades due to a lack of focus and motivation.

On one side, Chetan Bhagat illustrates the hardships faced by Alok, a character from a lower socioeconomic background; on the flip side, he presents Ryan, a character from a wealthier background. Ryan is intelligent and self-assured, always managing to achieve his desires. He dislikes his parents for their lack of attention towards him. Through Chetan Bhagat, we explore the contrast

between the lives of rich and poor children: Ryan enjoys material wealth and financial success, yet he lacks the emotional connection with his parents. The question arises: how crucial is parental love for a child's well-being? On one aspect, Alok strives to improve his circumstances and make his parents proud; on another, Ryan harbors resentment towards his parents. Although Alok's parents are close by, he struggles to afford their luxuries. Conversely, Ryan's father provides all the material comforts but fails to spend quality time with him. Chetan Bhagat offers a glimpse into contemporary family dynamics through his narrative.

Throughout the novel, Chetan Bhagat outlines the tribulations of these three friends, the obstacles they encounter, and the various challenges they face, including the relentless expectations from their families, the fierce competition among peers, discrimination from their professors, and their bond that remains unbroken amidst these struggles. The narrative also sheds light on the dynamics of their friendship.

The book "Half Girlfriend" narrates the romance between Riya Somani, a young woman from a wealthy Marwari family, and Madhav, a young man from a modest village in Bihar. They both secure spots in college through a sports scholarship. Madhav is instantly captivated by Riya's basketball skills, and Chetan Bhagat portrays their love story in a way that reflects the reality of modern romance in this novel. The journey of how Madhav falls in love, his relentless pursuit of her, and the challenges he faces in expressing his feelings are vividly depicted through his character's actions. Riya, being from a well-off background, is proficient in English, which is why she opts for it as her major. Madhav, originating from a rural area, struggles with English but manages to form a friendship with her. After spending a few days together, Madhav attempts to broach the subject of their relationship, but Riya advises him to respect her boundaries, stating that she considers him her half girlfriend. Madhav, expressing his desire for a more committed

Relationship. Madhav ends their relationship and leaves. Riya eventually marries her childhood friend, Rohan, and moves to London.

The novel "Half Girlfriend" is a realistic depiction of Indian society, highlighting the misunderstandings between boys and girls in love, as well as the challenges of divorce after marriage. Riya Somani does not agree with Rohan after their marriage; she chooses to break up with him and return to her college friends. Madhav, the protagonist, also tries unsuccessfully to meet her, but eventually, the two reconnect and resume their friendship. In this novel, Chetan Bhagat illustrates the shortcomings of the Indian education system, particularly through Madhav's mother, who runs a

private school in Bihar that lacks toilet facilities for girls. Madhav works hard to address this issue and learns that Bill Gates is coming to India to inspect the school, which provides them with an opportunity to seek help. After realizing that they can make a difference, Madhav expresses his desire to learn English from Riya, and he successfully does so. Here, Chetan Bhagat emphasizes that Madhav's character should always be eager to learn, while also being aware of how society views a divorced woman. Madhav's mother understands that, despite Madhav's deep love for Riya, she does not want her son to marry a divorced woman. She communicates this to Riya, leading Riya to walk out of Madhav's life, leaving him a note for madhav. *Half Girlfriend* is a novel written by Chetan Bhagat about helplessness, struggle, and success. Chetan Bhagat's work honestly shows an affluent girl, Riya, who, despite her wealth, divorces nearly two years after her marriage and is miserable. After the divorce, she thinks something is lacking in her life, so she hunts for her college classmate Madhav, whom she had a crush on in college. On the one side, Chetan Bhagat accurately portrays Riya's impotence, but on the other, he describes Madhav's sufferings and success, such as how Madhav had to struggle after breaking up with Riya, and Madhav was aware of that hardship, which led to Madhav's success in life. Madhav was deeply in love with Riya. Chetan Bhagat teaches society the value of unselfish love. People are supposed to go to any length to find true love, including crossing the seven seas. According to Chetan Bhagat, love should be selfless since love with selfishness is not love; it is simply a

human-to-human interaction. However, Madhav and Riya's love was genuine; they couldn't stay away from each other, which is why they were able to meet because of their hearts. The strands were connected to each other's hearts, and this thread of love was woven by both Madhav and Riya with each other from the heart, and thus they ultimately met and live a happy life together in.

Conclusion:

From this analysis, it is evident that literature reflects society and human existence. Literature is an art form that draws from human experiences and societal structures. It is a universal medium that unveils the intricacies of daily human life and the interdependence of society and human life.

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Tourism in Harmony: Assessing Opportunities and Challenges in the Emergence of Tribal Tourism in Palghar District, Maharashtra

Mr. Samir A. Shrimante¹, Dr. Dattatraya Harpale², Dr. Smita Harane³

¹K.R.T. Arts, B.H. Commerce and A.M. Science (KTHM) College, Nashik, Maharashtra

²H.P.T Arts & RYK Science College, Nashik Maharashtra

³SPH Arts, Science and Commerce Mahila College, Malegaon Nashik, Maharashtra

Corresponding Author- Mr. Samir A. Shrimante

Email- harpalesir@gmail.com

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Abstract

This research explores the dynamic landscape of tourism development in the tribal region of Palghar District, Maharashtra, aiming to shed light on the opportunities and challenges associated with the emergence of this unique tourist destination. The tribal communities in Palghar possess rich cultural heritage, unique traditions, and a pristine natural environment, making them potential attractions for sustainable tourism. The study employs a multidisciplinary approach, combining insights from anthropology, socio-culture study, environmental studies, and tourism management. By engaging with local communities and stakeholders, the research seeks to understand the cultural nuances and environmental considerations that shape the development of tourism in this region. Additionally, an in-depth analysis of existing tourism infrastructure, policies, and community involvement will be conducted to identify key factors influencing the growth of the tourism sector. Furthermore, the research aims to assess the socio-economic impact of tourism on tribal communities, emphasizing the importance of fostering a balance between economic development and cultural preservation. The challenges of infrastructure development, conservation, and community empowerment will be scrutinized to formulate recommendations for sustainable tourism practices. The findings of this research are expected to contribute to the broader discourse on responsible tourism development, providing insights that can inform policymakers, local communities, and businesses involved in promoting tourism in tribal regions. Ultimately, this study aspires to offer a blueprint for the harmonious development of tourism that respects and enhances the cultural and natural assets of the tribal communities in Palghar District.

Keywords: Opportunities and challenges, socio-culture study.

Introduction:

The tribal region of Palghar District in Maharashtra stands at the crossroads of cultural richness and environmental serenity, presenting an emerging landscape for tourism development. This research embarks on a comprehensive exploration of the opportunities and challenges associated with the burgeoning tourism sector in this unique and ethno-culturally diverse region. The communities inhabiting the tribal hinterlands of Palghar are custodians of a profound cultural heritage, characterized by distinct traditions, rituals, and a close symbiosis with the pristine natural surroundings. The motivation for this research arises from the imperative to understand and navigate the complexities inherent in the development of emerging tourist destinations in tribal areas. Palghar's tribal communities have long been insulated from mainstream tourism, offering a novel opportunity to investigate how their cultural ethos can be seamlessly integrated into the tourism narrative. As the global tourism landscape evolves towards sustainability and cultural authenticity, the tribal region of Palghar holds the promise of

providing a distinctive and responsible travel experience. This research adopts an interdisciplinary lens, blending anthropological insights with environmental considerations and tourism management principles. By delving into the socio-cultural fabric of the tribal communities and their interplay with the natural environment, the study aims to decipher the intrinsic factors that influence the trajectory of tourism development. Additionally, it scrutinizes the existing infrastructural and policy frameworks, accentuating the need for a nuanced approach that balances economic gains with cultural preservation and environmental conservation. In the pages that follow, this research unfolds, aiming to contribute valuable insights to academia, policymakers, and stakeholders involved in the development of tourism in tribal regions. Through a judicious analysis of opportunities and challenges, this study aspires to pave the way for a sustainable and culturally sensitive model of tourism development in the tribal heartland of Palghar District.

Study area:

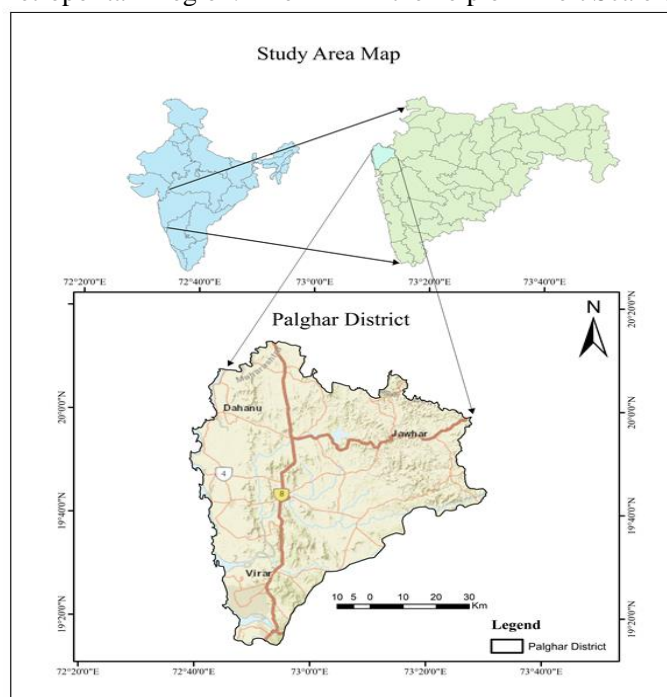
Palghar district is usually the tribal district of Maharashtra. The total area of the district is 5344 km² and population as per 2011 census 2990116. It lies in between 19° 17' 15" N to 20° 13' 45" N latitudes and 72° 38' 35" E to 73° 30' 25" E longitudes (**Fig. 1**). The district comprises eight revenue taluks Jawhar, Mokhada, Talasari, Palghar, Vasai, Vikamgad, Dahanu and Wada. The district headquarters is located at Palghar. There are 5 administrative subdivisions in the district Palghar, Vasai, Dahanu, Wada and Jawhar. The Palghar district came into existence on 1 August 2014. Palghar district is the most North-western district of the state of Maharashtra on the Arabian Sea coast. It is spread between the west coast of the Arabian Sea and the Sahyadri Mountains rows that are east of the Northern district of Palghar. The district is bounded by Nashik districts on the east and northeast and by Valsad district of Gujarat state and Union Territory of Dadra and Nagar Haveli on the north. The Arabian Sea forms the western boundary, while Vasai, Virar is the only Metropolitan Region. The

district comes under the tribal areas of the state of Maharashtra. The main profession of the people agriculture; is support with that people collects wood, Honey, Medicare Herbs and lakhs from forest In coastal areas, fishing is main profession, with that horticulture farm of sapota (Chiku), Betel leaf, mango and coconut plant also there. Palghar district is popular for tribal areas. The palghar district have lots of tourism centers Jivdani temple, Jai vilas palace, Mahalakshmi temple, Vasai fort, Shirgaon fort, Tarapur fort, Arnala fort, Dabhosa waterfall, Vandri Lake, Kelva beach, Chincholi beach, Kalamb beach, Dahanu beach, Bahrot caves, Chhatrapati Shivaji Maharaj monument and Jay sagar dam.

Objectives of study:

The broad objectives of the research emphasizing the overall thrust of the proposed investigation should be clearly mentioned.

1. To collect the information about tourism facilities available in the study area.
2. To examine the socio-culture impact with the help of Likert Scale on study area.

**Fig. 1****Database and Methodology:**

In order to understand the Tourism Potential of Tribal Region in Palghar district, the methodology adopted for the present study is divided into three phases namely pre-field work phase, field work phase and post field work phase. In the first phase i.e. pre-field work phase literature review i.e. previous work carried out by other researchers will be obtained from various journals and internet, visit to the MTDC resort to know about annual tourist flow, collection of Survey of India toposheet (SOI) having scale 1: 250000, Atlas,

Gazetteers, District Census Handbook, Village and Town Directory, Tourist maps, etc. use for collection of information, District Resource map of Palghar district published by Geological Society of India, Government published map of Palghar district P.W.D. map, Digital Elevation Model (**Fig. 2**), Terrain slope map, Shaded relief map and others will be completed with help of S.O.I. toposheets. Questionnaire will be prepared for the actual fieldwork with the help of a supervisor and consultant in the tourism field.

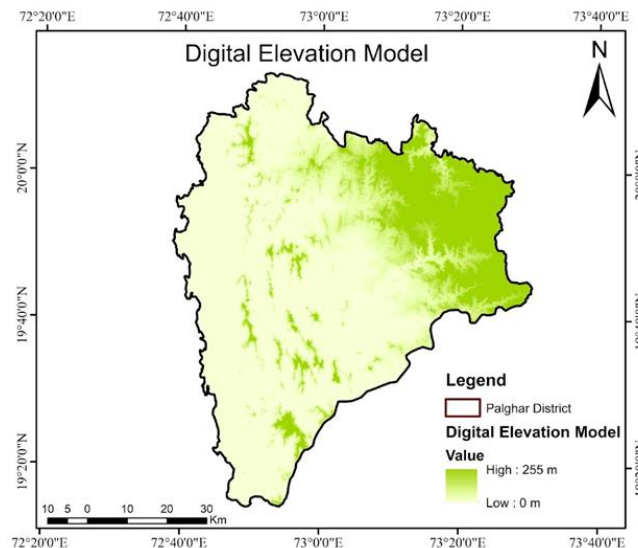


Fig. 2

In the second phase i.e. fieldwork phase extensive field surveys will be undertaken, to existing tourist places and newly found tourist places. The questionnaire will be completed in this phase. During this field surveys tourist facilities regarding destination photographs, GPS reading altitude and the related information will be noted which is also useful to tourism potential of tribal region study. The potential of various places of district to emerge as the tourist center shall be analyses on the basis of scenic beauty, economic importance of the basis of tourist visits, connectivity levels of the tourism spots. As observed different researchers, performances of tourism is dependent upon the quality of services provided as well as the socio-economic and socio-cultural background of the tourists. The collected data will be classified and tabulated by using statistical tools. It will be analyses through tables, charts, maps and diagrams as per required. In the third phase i.e. laboratory work will be carried out. Interpretation of collected/generated data, weighted maps and computed charts, graphs and diagrams are conducive for solving the research problems. To find out the tourism clusters around the existing tourism centers multiple ring buffers were created in GIS environment. These buffers show how many different tourist spots are grouped near the tourism center within a specific areal distance, which are supported for growth of tourism. To find out the development status of study area, we calculate the weighted scores for demographic, social and economic factors using Suryawanshi and Sawant method (2014).

Data and Method of Analysis:

A Likert scale is a psychometric scale commonly used in questionnaires, and is the most widely used scale in survey research, such that the term is often used interchangeably with rating scale even though the two are not synonymous. The format of Seven level Likert item is, 1= strongly disagree, 2= moderately disagree, 3= disagree, 4 = undecided or neutral, 5= agree, 6= moderately agree and 7= strongly agree. The collections of primary data from study region 350 questionnaires' were filled during the field work conducted during year 2023 at entire Palghar district. There are number of criteria for selecting samples i.e. purpose of visit, on the basis of phsiography, (mountain, plateau and plain region), on the basis of natural and cultural resources. Samples should be equally distributed i.e. sampling should be systematically stratified. The total 350 questionnaires' were filled from tourist, tribal people, stakeholders, travel agent, tour guide, transport operator, hotel owners, local peoples etc. Samples are selected in this manner they represent the entire Palghar and same problem found in similar type of agro-tourism centers throughout the district. Tourism has a major impact on socio-culture conditions of the region. Assessment of the socio-culture impact of tourism is particularly important, for the various facts of the socio-culture constitute the basis of much tourist development. The questionnaire for assessment of socio-culture impact consists of 15 questions. These questions will help to understand the socio-culture impact of the tourist on the region.

Table 1: Resident's response to social–cultural impact of tourists on Palghar

SN	Social –cultural impact	Social –cultural impact of tourism							Σ
		1	2	3	4	5	6	7	
1	Demand of handicraft & handloom commodity	16	16	25	33	52	98	110	350
2	Leisure	27	47	42	57	40	67	70	350
3	stress on police protection	45	47	35	43	23	111	46	350

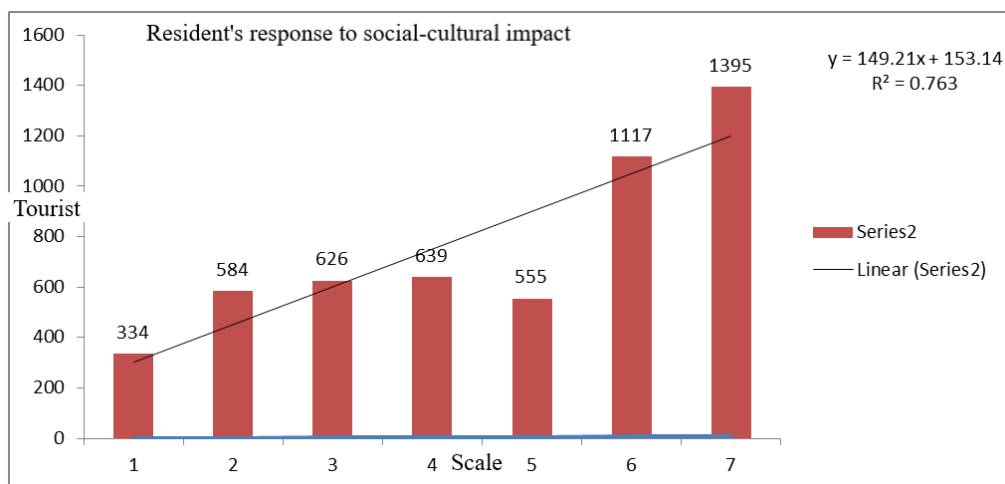
4	Rush of Tourist	12	30	24	12	32	121	119	350
5	Standard of living	12	25	33	30	38	89	123	350
6	Information center	14	35	40	40	80	45	96	350
7	Impact on language	25	37	45	50	19	50	124	350
8	Impact on Religion	30	45	47	34	23	89	82	350
9	Dual pricing system & attitude towards bargaining	16	25	25	23	22	89	150	350
10	Robbery	16	34	40	59	45	70	86	350
11	increase in the activities of drug abuse	17	34	45	49	19	53	133	350
12	Drinks shop	25	28	56	21	11	101	108	350
13	Gambling	45	57	45	87	48	23	45	350
14	increase in the activities of prostitution	18	67	57	54	43	57	54	350
15	active participation of local social organization towards the facilities of tourists	16	57	67	47	60	54	49	350
Total		334	584	626	639	555	1117	1395	5250

Source: Field work, 2023

The higher the number of respondent tourists larger the effect on host population of tourist centers.

Table 2: Resident's response

Likert scale	Respondent
1	334
2	584
3	626
4	639
5	555
6	1117
7	1395
Total	5250



Result: The Pearson correlation coefficient (often denoted as r) is used to measure the strength and direction of a linear relationship between two continuous variables. It's not typically used for ordinal variables like a Likert scale, but it can still

provide insights into the linear association if the assumptions are met. To calculate the Pearson correlation coefficient, the following formula is used:

$$r = \frac{\sum (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum (X_i - \bar{X})^2 \cdot \sum (Y_i - \bar{Y})^2}}$$

This code calculates the Pearson correlation coefficient for data. If r is close to 1, it suggests a strong positive linear relationship, if close to -1, a strong negative linear relationship, and if close to 0,

a weak or no linear relationship. Keep in mind that while the Pearson correlation coefficient is widely used, it assumes a linear relationship and is sensitive to outliers.

Table 3: Result Table

Measure	Value	Relation
Mean (\bar{x})	4.57	
Standard deviation (σ)	2.00	
(R^2)	0.76	
Pearson correlation coefficient (r)	0.69	Positive correlation

The Pearson correlation coefficient (r) for fieldwork data is approximately 0.69. This value indicates a positive linear correlation between the Likert scale and tourist opinion. The closer the value is to 1, the stronger the positive linear relationship. Keep in mind that while the Pearson correlation is a useful measure, it may not capture non-linear relationships, and correlation does not imply causation. The positive value of 0.69 indicates a moderate to strong positive linear correlation between the Likert scale and tourist opinion. As the Likert scale increases, there is a tendency for tourist opinions to increase as well. The positive sign of the correlation coefficient indicates a positive direction. In other words, higher Likert scale values are associated with higher tourist opinions, and lower Likert scale values are associated with lower tourist opinions. The value of 0.6907 suggests a relatively strong correlation. However, keep in mind that correlation values range from -1 to 1. A value of 0 would indicate no linear correlation, while a value of 1 would indicate a perfect positive linear correlation.

Conclusion:

It can be summarized that socio-cultural impact depends upon the factors like, demand of handicraft and handloom commodity, leisure, stress on police protection, rush of tourist, standard of living, increase in the activities of drug abuse, gambling, drinks shop, increase in the activities of prostitution, active participation of local social organization towards the facilities of tourists, change in moral and value, change in identity of tourist centre, change in identity of tourist centre, change in custom and tradition, change in cultural heritage, free movement, population density, problems of beggar, change in recreation facility, frequency of accident, child labor etc. Hence it clearly indicates that the tourist response depends on the Likert Scale. So, it can be said that at Palghar district there is a social-cultural impact of tourism.

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A Comprehensive Analysis of physico-chemical parameters of Soil from the Aurangabad District

Prajakta S. Matade¹, Dr. S. R. Mirgane²

¹Research Student, Dept. of Chemistry, J.E.S. College, Jalna

²Head, Department of Chemistry, J. E. S. College, Jalna

Corresponding Author- Prajakta S. Matade

Email- prajaktamatade5@gmail.com

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Abstract-

The soils indicate an alkaline reactions and are chemically anomalous. After being collected, fifteen representative samples were examined. The pH range of 7.4 to 8.2 soluble salts having an average E.C. of 0.10–0.41 mm hos/cm lies within the average range for electrical conductivity. Most soils have an organic carbon content that varies from low to medium. On the scale, the phosphorus concentration level is in the middle. Soil samples have iron concentrations which range from 0.4 to 6.8 ppm. Because of this, soils typically have low levels of nitrogen and phosphorus but high levels of sulphur and magnesium carbonates. Soil cracking in the summer is usually caused by this chemical makeup. Farmers may use the information to deal with their agricultural issues related to the contents of the soil, and construction professionals can use it to understand the qualities of the soil and prevent underground corrosion from developing it very quickly. Air, temperature, mechanical support, nutrients, water, and air are certain extrinsic factors that influence plant growth.

Keywords- Soil, Physiochemical Parameters, Soil analysis, Underground Condition, Moisture contents.

Introduction-

The word "soil analysis" refers to a collection of several chemical procedures that identify the chemical, physical, and biological properties of soil and has important aspects crucial to the quantity of plant nutrients that are readily available in the soil as well as for understanding underground soil corrosion in various metals and alloys. The lithosphere, or middle zone between the earth's rock cover and atmosphere, is formed by the soil. It is an essential part of the biosphere because it connects the hydrosphere (water bodies) and the terrestrial surface of the earth. The soil may be defined as the upper most weathered layer of the earth's layer in which are blended organisms and products of their death and decay. It is sometimes referred to as the region of the crust where plant roots are found on Earth. In the past couple of years, agriculture has evolved from conventional and traditional ways to more modern complex practices involving chemical pesticides and fertilisers along with advanced irrigation systems. Over time, the consistent application of chemical fertilisers changed the properties of the soil and ultimately reduced output of productivity. As a result, chemicals have permeated into groundwater and surface water sources. The increasing demand for cash crops has led to an acceleration of the deterioration of soil and water quality in commercial agricultural farming practices.¹⁻⁶

Organic matter, inorganic matter, soil organisms, soil moisture, soil solution, and soil air

are the six constituents of the complex system that is termed soil. The composition of the soil is roughly 50–60% mineral content, 25–35% water, 15–25% air and very small amount of organic matter.⁷ Soil pollution is directly caused and impacted due to the variety of sources which includes biological pollutants, radioactive waste, agricultural leftovers, urban waste materials, and industrial litter. Pollution from industry increases the toxicity of the soil. Farms that use irrigation suffer pollution from soluble salt. Soil contamination from sewage is also really bad. Numerous diseases that affect humans are caused by pathogenic organisms found in soil.⁸⁻¹⁰ Man-made mineral deposits into soils, the use of pesticides, fertilisers, and herbicides, as well as dust and precipitation, all contribute to soil contamination. Contaminated water is another issue.¹¹⁻¹⁵

This study has primary goal to assess the various physicochemical and microbiological characteristics of the soil in 15 randomly chosen samples in order to determine the condition of the soil in the chosen sites.

The soil samples were gathered from various locations, including residential, commercial, industrial, roadside, and along construction sites (where farming is done) in fields in the Aurangabad district region. They were then subjected to standard procedures for analysis of various parameters.

Materials and Methods-

• Sample Collection:

The goal of the current study is to examine the physico-chemical parameters of soil samples that were gathered from the Aurangabad district region study area. The parameters of temperature, pH, electrical conductivity, total organic carbon, nitrogen, phosphorus (P_2O_5), and potassium (K_2O) were all measured during the soil characterisation process. The samples were supposed to be taken in between 15 to 20 cm below the surface of soil. The samples are completely dried using hot air drying, sieved at a size of 2 mm and then placed in appropriately labelled bags for examination. In the month of May and June 2024 the targeted samples were collected.

General Characteristics of the Location:

With coordinates of roughly 19.8762° N latitude and 75.3433° E longitude, Aurangabad, a city in Maharashtra, India, is well-known for both its natural beauties and rich history. It is located in Maharashtra's central region. The state capital of Mumbai is located around 330 km to the east of it. The landscape of the area is diverse, ranging with both plains and hills. It is part of the Deccan Plateau, which is made up of both rocky and level terrain. It lies approximately 1,909 feet (582 meters) above sea level. The climate in this area is tropical wet and dry. The summer months of March to June bring hot, dry weather with frequent highs of over 40°C (104°F). It receives moderate to severe rainfall during the monsoon season, which runs from July to September and lowers the temperature. This location experiences mild and pleasant winter temperatures, ranging from 10°C to 30°C (50°F to 86°F), from October to February. When it comes to water bodies the chosen area is close to the Godavari River which is one of the principal river of

Table - I Methods for estimation of soil parameters.

Parameter	Method
Nature, Colour	By observing
EC	Conductometry
pH	Pontentiometry
Organic carbon	Wet oxidation
Available nitrogen	Alkaline permagnate
Available Phosphorous	Colorimetry
Available Potassium	Flame photometry

Results and discussion:

The physio-chemical parameter values are displayed in Figures 1 to 9 and Table II.

this region. Other smaller rivers and streams also flow through the area. This area is surrounded by numerous lakes, which are essential for irrigation and local water supplies. This soil of this region is mostly classified as black soil, which is good for growing cotton and other crops. Regarding agriculture, the main crops grown in this area are various fruits and vegetables, cotton, and sugarcane. Horticulture and agro-based enterprises are also supported in the surrounding areas. When it comes to natural resources, the area is abundant in minerals like basalt and limestone, which are utilised in manufacturing and building. The Aurangabad is a major urban center with significant industrial and commercial activity. Both real estate and infrastructure have grown significantly. There are forested areas in the nearby areas, and wildlife sanctuaries like the Jayakwadi Wildlife Sanctuary are close by, aiding in the preservation of the native flora and fauna. Due to its unique geographic location, Aurangabad has been historically and economically significant, making it one of Maharashtra's notable cities.

Physio-chemical analysis of the samples:

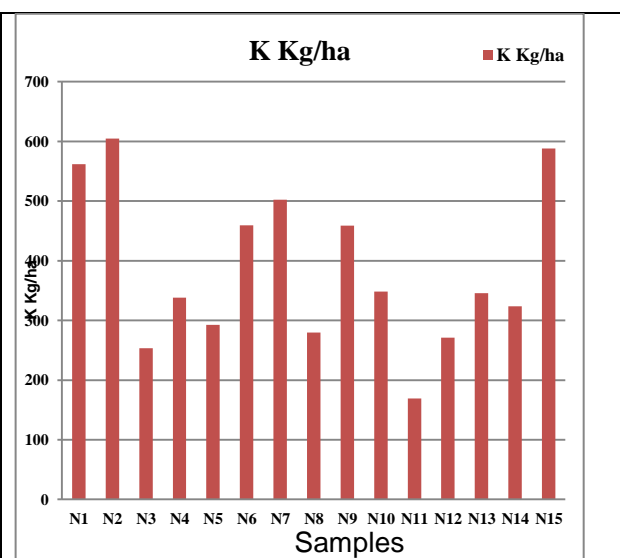
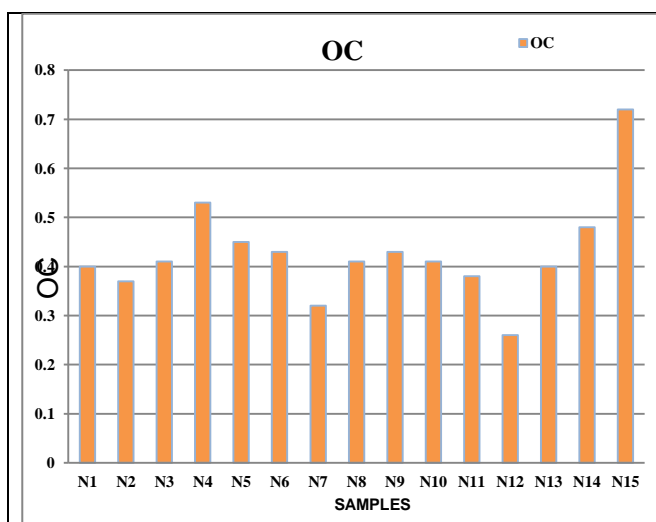
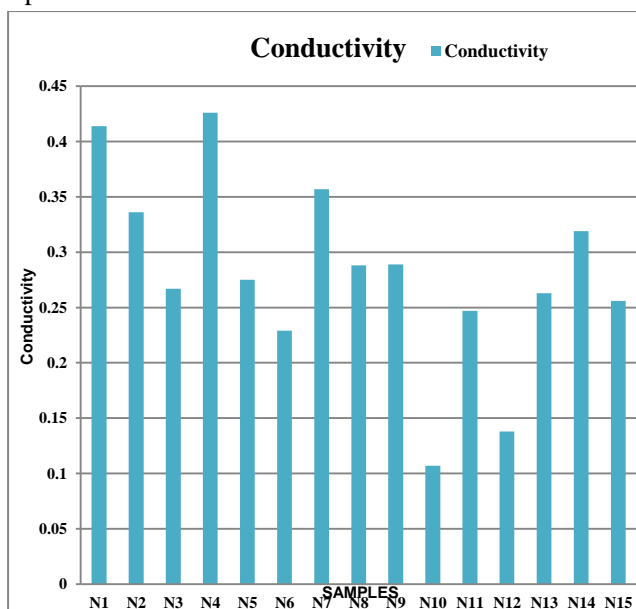
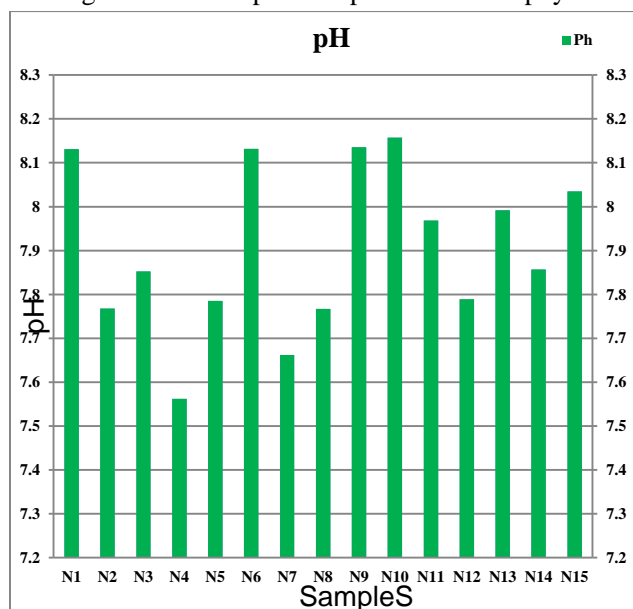
The primary chemical and physical characteristics of the soil, such as pH, EC, OC, N, P, K, Zn, B, Fe, Mn, and Cu have been investigated using soil samples that were collected at a particular depth.¹⁸⁻²⁴ Additionally, because of the numerous activities that are done in the area, the values at different sites change from one another. Some measurements show less content in the soil compared to their ideal value range, while some parameters have beyond the desirable limit. Methods used for estimation of soil parameters are shown in table no.-I. For the purposes of this investigation, fifteen typical samples were collected and examined.

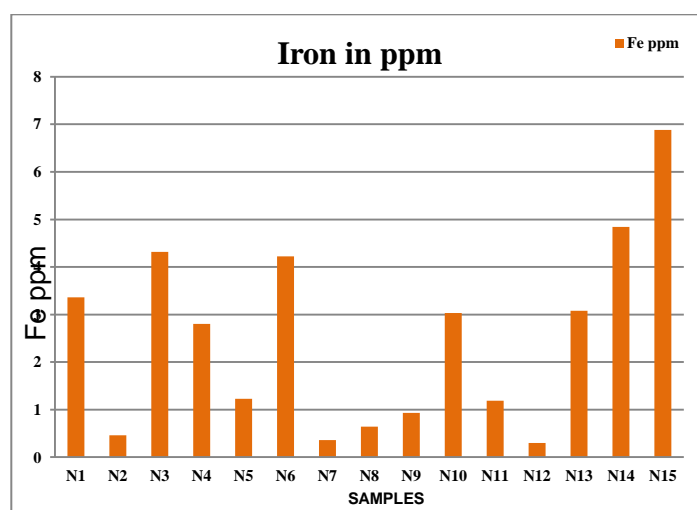
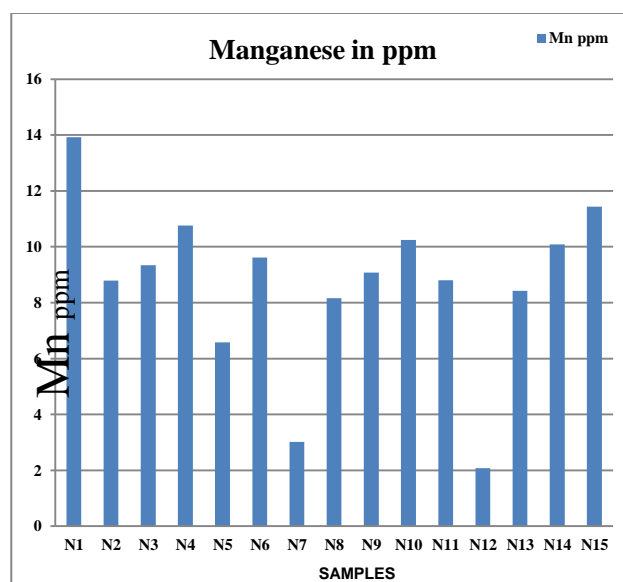
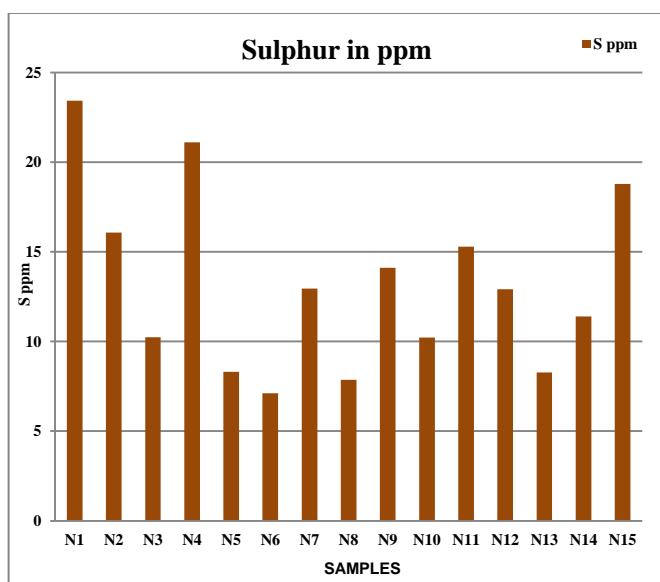
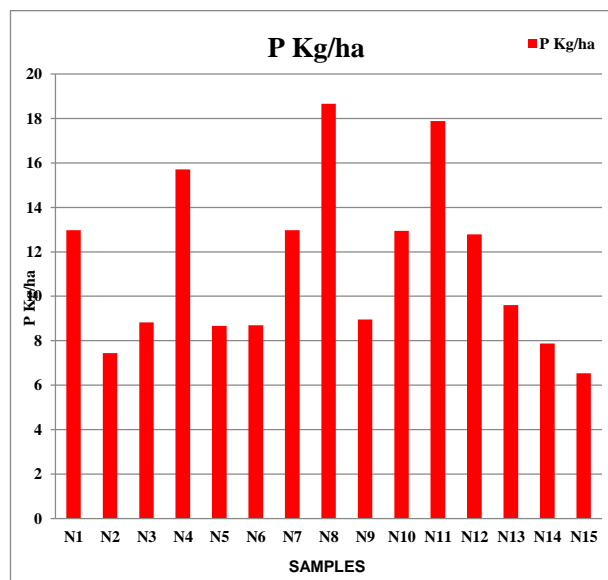
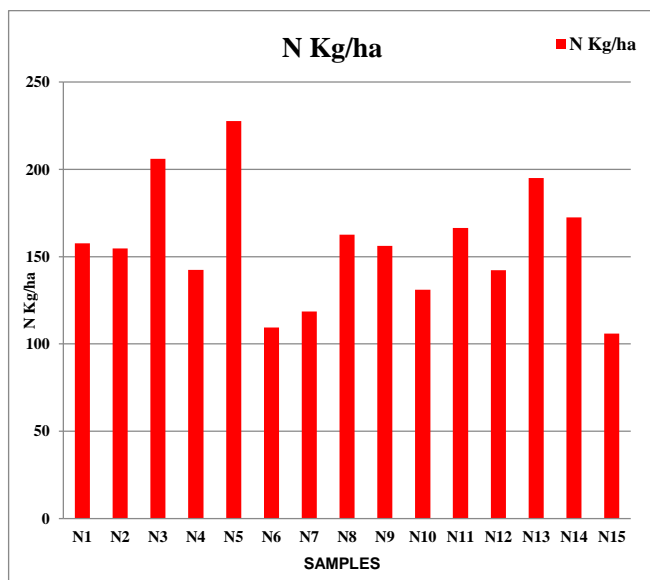
The soil sample was visually seen to be black in colour and brownish in colour.

Sample No.	Colour	pH	Conductivity	OC %	P Kg/ha	N Kg/ha	K Kg/ha	S Ppm	Mn Ppm	Fe ppm
1	Black	8.131	0.414	0.40	12.97	157.56	561.73	23.42	13.92	3.36
2	Black	7.768	0.336	0.37	7.44	154.78	604.77	16.07	8.79	0.46
3	Black	7.852	0.267	0.41	8.82	206.10	253.31	10.23	9.34	4.32
4	Black	7.562	0.426	0.53	15.71	142.49	337.96	21.11	10.76	2.80
5	Black	7.785	0.275	0.45	8.67	227.61	292.68	8.30	6.58	1.23

6	Black	8.132	0.229	0.43	8.70	109.39	459.41	7.11	9.62	4.22
7	Black	7.662	0.357	0.32	12.97	118.50	502.53	12.94	3.02	0.36
8	Black	7.767	0.288	0.41	18.66	162.62	279.76	7.87	8.16	0.64
9	Black	8.135	0.289	0.43	8.96	156.10	458.74	14.10	9.08	0.93
10	Black	8.157	0.107	0.41	12.94	131.06	348.11	10.22	10.24	3.03
11	Black	7.968	0.247	0.38	17.89	166.40	169.16	15.29	8.80	1.19
12	Black	7.789	0.138	0.26	12.78	142.28	271.19	12.92	2.08	0.30
13	Black	7.992	0.263	0.40	9.61	195.05	345.76	8.28	8.42	3.08
14	Black	7.857	0.319	0.48	7.87	172.41	323.51	11.39	10.08	4.84
15	Black	8.035	0.256	0.72	6.54	105.90	587.90	18.78	11.44	6.88

Figures- 1-9: Graphical representation of physio-chemical parameters





The pH ranging in between 7.562 to 8.157, The average pH value of the soil samples is 7.85 as per table No-II. The pH of the soil is slightly alkaline across all samples, which is typical for black soils in this region. This is common in many agricultural

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regions. Conductivity of soil varies from 0.107 to 0.426 mm hos/cm. The average E.C. value of the soil samples is 0.280 mm hos/cm, the conductivity values reflecting low to moderate soil salinity levels. Lower conductivity values suggest better drainage

ability and minimal salinity levels. Organic Carbon (OC) content ranges from 0.26% to 0.72%. The average O.C. value of the soil samples is 0.43%. Higher OC values generally improve soil fertility and structure. The organic carbon content is moderate, which supports soil fertility and structure but could be improved for optimal plant growth.

Nitrogen (N) varies between 6.54 to 18.66 Kg/ha. The average N value of the soil samples is 11.35 Kg/ha as per table no- II. The graphical representation is in Figure 1-9. The nitrogen levels vary widely. Regular fertilization and soil management can help maintain adequate nitrogen levels for crops. Nitrogen content is crucial for plant growth and varies significantly among samples. Phosphorus (P) ranges from 105.90 to 227.61 Kg/ha. The average N value of the soil samples is 159.75 Kg/ha. Phosphorus levels are generally adequate, which is crucial for root development and energy transfer. Phosphorus is essential for root development and energy transfer in plants. Potassium (K) level varies between 253.31 to 604.77 Kg/ha. Potassium is important for overall plant health and stress resistance. The average K content in the soil samples is 396.37 Kg/ha. The potassium levels are high, which supports overall plant health and stress resistance. Sulfur (S) ranges falls in between 7.11 to 23.42 ppm. The average N value of the soil samples is 12.35 ppm. Sulfur is vital for protein synthesis and enzyme function. Sulfur levels are generally sufficient, aiding in protein synthesis and enzyme functions. Manganese (Mn) varies between 2.08 to 15.29 ppm. The average value of Mn in the soil samples is 8.48 ppm. Manganese is crucial for photosynthesis and enzyme functions. Manganese levels vary, but are generally within a range that supports essential plant processes. Iron (Fe) values ranges from 0.30 to 6.88 ppm. The average value of Fe in the soil samples is 2.93 ppm. Iron is important for chlorophyll synthesis and overall plant metabolism. Iron levels vary widely; regular monitoring is important to ensure that iron is not limiting plant growth.

Conclusions:

The soil data indicates that the soil in the Aurangabad region has generally good fertility characteristics, with moderate to high levels of essential nutrients and manageable salinity. Regular soil testing and balanced fertilization practices will help maintain and enhance soil health for optimal crop production. While considering the pH and Conductivity, the slightly alkaline pH suggests the soil may benefit from occasional acidifying amendments if necessary for certain crops. The low conductivity indicates that salinity is not a major issue, which is good for most crops. Organic Carbon: The OC levels are moderate. Improving organic matter through compost or green manures could further enhance soil fertility and structure.

The higher nitrogen levels are generally good, but excessive nitrogen can lead to issues such as nutrient imbalances or environmental pollution. Regular monitoring and balanced fertilization are important. Adequate phosphorus levels are noted, though it's important to manage phosphorus applications carefully to avoid runoff into water bodies. High potassium levels are beneficial, promoting plant health and resilience. It's crucial to maintain a proper balance with other nutrients. Generally sufficient, but monitoring is important as sulfur deficiencies can affect protein synthesis. Manganese and Iron: Both are present at varying levels, which is typical. Monitoring these micronutrients ensures that they are not limiting factors for crop growth.

The investigation into the physicochemical properties of soil samples reveals a range of characteristics across different locations. The observed variations in these parameters highlight their direct and indirect impact on the soil ecosystem, likely due to the uneven distribution of various soil factors. Monitoring soil samples in this manner proves valuable for assessing the concentrations of different elements within the soil. The classification criteria indicate that the soils in the study area generally exhibit a normal pH level. The graphical representation are in Figure 1-9. The nutrient status information derived from this investigation can assist farmers and policymakers in implementing site-specific nutrient management strategies. This data is also beneficial for farmers and construction professionals working in the region. In summary, the findings suggest that the soil is relatively fertile, with good nutrient levels and manageable salinity. However, to ensure optimal crop growth, it is crucial to maintain regular monitoring and adopt balanced soil management practices.

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Green Chemistry Principles: Advancing Sustainable Agriculture

Aithal Sadanand¹, Jadhav Vithal²

¹ Department of Botany, V.D.M.D. College Degloor (M.S)

² Department of Chemistry, V.D.M.D. College Degloor (M.S)

Corresponding Author- Aithal Sadanand

Email: aithalsv@gmail.com

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Abstract:

Green chemistry principles have numerous applications in agriculture, aiming to make agricultural practices more sustainable, environmentally friendly, and less reliant on harmful chemicals. The principles of green chemistry engage in the development of green catalysts and use of non-toxic reagents. Green chemistry emphasizes the use of reactions enhanced atom efficiency, use of solvent free or environmentally benign recyclable solvent system and use of renewable resources. Nowadays, Sustainable chemistry plays a new paradigm in the field of agriculture. Sustainable agriculture and green chemistry are both emerging fields that are increasingly interwoven. Recent years have seen a growing emphasis on sustainable production methods in agriculture, leading to a rise in the use of renewable resources and environmentally friendly practices. This approach aligns with the global demand for reducing environmental impacts and creating sustainable agricultural systems. This article provides valuable insights about green chemistry principles in sustainable agriculture.

Keywords: Green Chemistry, Biopesticides, Sustainable agriculture, Chemical hazards, Renewable energy.

Introduction:

The issue of poverty in underdeveloped countries increases the demand for more productive and industrialized economies, which cause global and local environmental pollution and the non-sustainable use of natural resources [5]. Environmental pollution threats such as atmospheric pollution in cities, acid rain, municipal solid waste, deforestation, desertification, ozone layer depletion, and climate change were underestimated. However, their severe consequences have become more evident, demanding urgent global attention. The idea of sustainable eco-development was presented for the first time in 1987 in the report of the World Commission on Environment and Development of the United Nations.

In the last few years, the production of synthetic pesticides was increasing, and the modern agriculture methods produced major greenhouse gases, e.g., emissions of 84% nitrous oxide (N₂O) annually in all over the world. The adverse impact of contamination in agrochemical fields through indirect or direct exposure to improper use of pesticides affects animals and human health. Pesticides include all chemicals that are used to control or kill the pests, but these pesticides in the food chain, coupled with biomagnifications and bioaccumulation, have adverse effects on entire animals and human life [2]. To minimize these harmful effects, it is essential to increase the use of organic farming practices as a replacement for synthetic pesticides. These pesticides also cause the contamination of groundwater and lead to

eutrophication of rivers and lake waters and the movement of toxic chemicals from surroundings into an organism. There are some pesticides, e.g., DDT, which are soluble and accumulate in fatty tissues and cause biomagnifications in the food chain. **Green chemistry** focuses on the **design** and **development** of products and processes that aim to minimize or eliminate the use and generation of hazardous chemicals that negatively impact both the **environment** and **human health**. The principles of green chemistry involve the development of green catalysts and the use of non-toxic reagents. Green chemistry emphasizes the use of reactions with improved atom efficiency, the use of solvent-free or environmentally benign recyclable solvent systems, and the use of renewable resources.

Green chemistry:

Green chemistry, also referred to as sustainable chemistry, is a field of chemistry dedicated to designing products and processes that reduce or completely eliminate the use and production of hazardous substances. Its primary goal is to lessen the environmental impact of chemical manufacturing and usage by encouraging safer and more sustainable methods. Green chemistry starts at the molecular level and eventually indicates the most important environmentally benign processes and products. Green chemistry starts at the molecular level and eventually indicates the most important environmentally benign processes and products. In 2001, the University of Colorado, Boulder, hosted the IUPAC ChemRAWN XIV

Conference on Green Chemistry: Towards Environmentally Benign Processes and Products.

During this conference, chemists gathered to discuss the impact of agricultural and industrial activities on atmospheric chemistry. They recommended adopting a "design for the environment" framework to collaborate with consumers and ensure the safety of foods and crops produced using green methods, promoting environmentally friendly agricultural practices. In 1998, Paul Anastas and John C. Warner introduced the 12 principles of green chemistry. These principles provide a framework for designing chemical processes and products in a way that minimizes waste, reduces the use of hazardous substances, and enhances environmental sustainability [1]. The principles are:

Prevention: It is better to prevent waste than to treat or clean up waste after it has been created.

Atom Economy: Design synthetic methods to maximize the incorporation of all materials used into the final product.

Less Hazardous Chemical Syntheses: Design synthetic methods that use and generate substances with little or no toxicity to human health and the environment.

Designing safer chemicals: Chemical products should be designed to achieve their desired function while minimizing toxicity.

Safer Solvents and Auxiliaries: The use of auxiliary substances (e.g., solvents or separation agents) should be avoided or made safer when necessary.

Design for Energy Efficiency: Energy requirements of chemical processes should be minimized, and processes should be conducted at ambient temperature and pressure if possible.

Use of Renewable Feedstock: Raw materials should be renewable rather than depleting whenever technically and economically practicable.

Reduce Derivatives: Unnecessary derivatization (use of blocking groups, protection/deprotection, and temporary modification of physical/chemical processes) should be minimized.

Catalysis: Catalytic reagents (as selective as possible) are superior to stoichiometric reagents.

Design for Degradation: Chemical products should be designed so that they break down into harmless products at the end of their useful life and do not persist in the environment.

Real-time analysis for pollution prevention: Develop analytical methodologies to allow for real-time monitoring and control before the formation of hazardous substances.

Inherently Safer Chemistry for Accident Prevention: Substances and the form of substances used in a chemical process should be chosen to minimize the potential for chemical accidents,

including explosions, fires, and releases to the environment.

Green Principles Application In Agriculture

Agrichemicals: The principles of green chemistry are increasingly relevant to agrichemical manufacturing due to their direct impact on human and environmental health. Despite this, many current agricultural practices continue to rely on unsustainable technologies developed during the 'Green Revolution.' This era of intensive production is marked by the use of high-yielding crop varieties, chemical fertilizers, pesticides, and extensive irrigation [4]. According to market research by Food Think, 66% of Americans believe the agriculture industry lacks transparency about food production, with primary concerns surrounding the use of pesticides, insecticides, animal antibiotics, and hormones. As consumers shift their focus towards a sustainable and secure food supply, the agrichemical industry must adapt by embracing a second 'Green Revolution'—one that integrates green chemistry principles to ensure future agricultural products align with environmental and health standards.

Biopesticides: They are a vital component of green chemistry, aligning with its principles by offering environmentally friendly alternatives to synthetic chemical pesticides. They are derived from natural sources, such as plants, microorganisms, or certain minerals, and are designed to control pests in a way that minimizes harm to humans, animals, and the environment [3]. They play an important role in reducing the reliance on synthetic pesticides, which can be harmful and persistent in the environment.

Types of Biopesticides:

Microbial Pesticides: These pesticides use microorganisms such as bacteria, fungi, viruses, or protozoa as their active ingredients. For instance, *Bacillus thuringiensis* is a bacterium that produces toxins targeting specific insect pests, making it an effective tool in pest management.

Plant-Incorporated Protectants (PIPs): PIPs are pesticidal substances produced by plants that have been genetically modified to express specific traits. For example, certain genetically engineered crops produce Bt proteins that act as insecticides, offering built-in pest resistance.

Biochemical Pesticides: These are naturally occurring substances that control pests through non-toxic mechanisms. Examples include pheromones that disrupt pest mating cycles and plant extracts like neem oil, which possesses insecticidal properties without posing significant toxicity risks to non-target organisms.

Solvents: Solvents are essential in numerous chemical processes, including reactions, separations, and formulations. However, traditional solvents are often volatile organic compounds (VOCs) that pose risks to both human health and the environment. Recently, volatile and toxic organic solvents have

been replaced by ionic liquids (ILs), which are organic salts that typically melt below 100°C [8]. Ionic liquids offer high thermal stability, are nearly non-volatile under standard conditions, and can dissolve both polar and non-polar organic and inorganic compounds. Due to their customizable nature, ionic liquids are often referred to as "designer solvents."

Renewable Energy: Renewable energy sources such as solar, wind, hydroelectric, biomass, bio-refineries, geothermal, and ocean energy are crucial for achieving sustainable development and reducing reliance on carbon-based fuels. These renewable resources are key to mitigating global warming by lowering greenhouse gas emissions. In recent years, third-generation biofuels, which are derived from high-yielding, low-input feedstocks, have emerged as a promising renewable energy solution, further contributing to the transition towards a sustainable energy future.

Further Discussion:

Green chemistry seeks the goal towards farm profitability, community prosperity, and improving soil quality by reducing the dependence on the use of non-renewable resources, e.g., synthetic fertilizers and pesticides, and minimizing the adverse effects on water quality, wildlife, and safety. There are various alternatives to chemical farming, such as biological agriculture, organic farming, natural farming, bio-dynamic agriculture, and ecological agriculture. Bio-pesticides are organic in nature, so they can be employed in farming for controlling pests, insects, and weeds and also for plant physiology and productivity [7].

These biopesticides are biodegradable to the environment. Therefore, for sustainable developments, shift agricultural farming into green chemistry manufacturing processes, use of crop protection and production, and develop green agrochemicals. Thus, sustainable agriculture and green chemistry are both revolutionary fields and intertwined. For this, green chemists need that the farmers use green technology for sustainable agriculture, and farmer's needs safe and green agricultural inputs.

The biocatalysts have been used increasingly in agrochemicals, pharmaceuticals, and food industries; these can help in reducing waste and improving the yield of products. The population of the world stands at 7 billion and will increase up to 9.3 billion by 2050. This will require food production to be increased by 70% in order to meet the demand. Therefore, it is necessary to increase crop productivity and reduce pre-harvest loss and post-harvest loss from pest attack by employing biochemical processes with green techniques.

Conclusion:

Green chemistry intersects with sustainable agriculture through three key aspects these are;

First, the principle of green chemistry recommended the use of bio-based materials or feedstock or raw materials that are renewable, e.g., agricultural waste products. Chemists should emphasize the work on developing the biopesticides, biofertilizers, and biocatalysts for transforming the agricultural materials into high-value products and also enhancing their production and protection.

Secondly, the integration of green chemistry with agriculture aids in site remediation. In traditional farming, farmers do not know how to deal with valuable tools and leave some unwanted chemicals that contaminate the environment (in soil, air, and water). Thirdly, green catalyst is safe to remove the specific chemicals, including pesticides, from water. Thus, green chemists will help the farmers learn how to tackle contamination, remove pollutants and unwanted chemicals, and manage the use of recycled water.

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Geographical Audit of surface water resources in Ahmadpur tahsil

Dr. Parmeshwar Vishwanathrao Poul

Shankarrao Chavan Mahavidyalaya, Ardhapur Dist. Nanded

Corresponding Author- Dr. Parmeshwar Vishwanathrao Poul

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Abstract:

A water resource is one of the most important substances on the Earth. As per research study today's fresh water is a scarce resource. India being poor in water resource management, the scarcity of water is a well-known fact in India. Most of the rain falling on the surface tends to flow away rapidly, leaving very little for there charge of groundwater. As a result, in the most parts of India experience lack of water. Ahmadpur is one of tahsil in Latur district experiencing same water scarcity due to lack of water resource management. Water resource management is must for sustainable development and to overcome water scarcity of Ahmadpur. It is known that water resource mangment require appropriate water resource information. In this study surface water resources audit and analysis have been done to genrate water resource information for water resource management. New data format, techniques such as Geogrpahical information system (GIS), Remote Sensing (RS) and methods aer used to extract information. Study area most of the area surface runoff coeffience is below 0.38 and surface water collection capacity is below 278 liter per Sq. meter because Ahmadpur thasil majority land comes under gentele slope and agriculture use. Ahmadpur tahsil surface water potential is appraised it is about 215.34 MCM (Million Cubic meter) and inflow water is about 87 MCM. All over Ahmadpur tahsil 255.49 MCM water is collected in various water storage structures out of 303.28 MCM. Overall 84.24 % surface water resource development found in Ahmadpur tahsil.

Keywords: Water Audit, Water Conservation and management.

Introduction: Water is one of part of our life but today knowingly unknowingly we ignore its important. As per research study today's fresh water is a scarce resource. The reality of global water crisis cannot be ignored and India being poor in water resources management. Most of the rain falling on the surface tends to flow away rapidly, leaving very little for there charge of groundwater. As a result, in the most parts of India experience lack of water. Majority of Indian tahsil demand of water is already outstripping the supply. Ahmadpur is one of tahsil in Latur district experiencing same water scarcity due to lack of water management. Water resource management is must for sustainable development and to overcome water scarcity of Ahmadpur. It is know that water mangment require proper water resource information. Persent study surface water resources georapical analysis has been done to genrate water resouce information using GIS and Remote Sensing tecnology.

Study Area: Ahmadpur tahsil is selected as a study area, which is one of the tahsils of Latur District in eastern Maharashtra. Its latitude and longitude extends is about 18° 30' 28" to 18° 50' 20" North latitude and 76° 40' 34" to 77° 10' 20" East longitude covering an area of 811 sq. km. It is situated on 450m to 600m above mean sea level.

Data and Methodology: Persent study five (56 B/10, B/13, B/14 and 56 F/1, F/2) SOI toposheets on 1:50000 scale are used to define study area and there drainage system. Soil and surface water resource inofrmation of study area has been colected from water resources information systm of India (India-WRIS) and Google Eath to make soil and water resource distribution map. NRSC, ISRO, Thematic Services, Bhuvan's 1:50000 scale land use land cover map is used to understand there landutilization. Persent study Ahmadpur tahsil area is divided in to 16 watershaed using Arc gis's software Arc hydrology tool for geographical analyses of water resource. All watersheds AH-1 to AH- 16 code is give for study convenience. Digitization work has been carried out for entire geographical analysis of watershed using GIS software (ArcGIS ver: 9.2). The order was given to each stream by following Strahler (1964) stream ordering technique. The attributes were assigned to create the digital data base for watershed layer. Runoff co-efficient is calculated based on field site observation. Field observation has been done in land use , soil and slope categorey. Soil depth, land use class and Slope percentage these three paramenter layers are cterated in GIS softwaver and using waitage overlay anlysis. All layer avearge values are used to define runoff co-efficient.

Runoff co-efficient (k) : Runoff co-efficient (k) is calculated using following equation.

$$\text{Runoff co-efficient (k)} = \frac{\text{Soil depth layer (k)} + \text{land use layer (k)} + \text{Slope percentage layer (k)}}{3}$$

Where :

K = Runoff co-efficient (k)

Soil depth layer (k) = Soil's depth-wise runoff co-efficient value.

land use layer (k) = land's use-wise runoff co-efficient value.

Slope percentage layer (k) = Slope's percentage-wise runoff co-efficient value.

Table 1.1 Soil's depth-wise runoff co-efficient (k) value

Soil Depth	Shallow to deep (50cm)	Very Shallow (10 to 25 cm)	Extremely Shallow (< 10cm)
Runoff co-efficient (k)	0.3	0.33	0.38

Slope	0-2%	2-6%	6-12%	12-24%	> 24%
Runoff co-efficient (k)	0.3	0.33	0.38	0.36	0.47

Table 1.2 Slope's percentage-wise runoff co-efficient (k) value

Table 1.3 Land use-wise runoff co-efficient (k) value

Land use class	Agriculture	Agriculture Fallow	Barren	River	Water Body	Settlement	Barren Scrub
Runoff co-efficient (k)	0.31	0.42	0.46	0.8	0.9	0.6	0.42

Runoff co-efficient (k) value is an average value of study area practice value

Source: Compiled by Author

Runoff : Runoff is calculated using following formula.

$$\text{Runoff} = \text{Runoff co-efficient (k)} * \text{Rainfall (in m)}$$

Surface water potetial: Surface water potetial is claculated using following equation.

$$\text{Surface water potetial in cubic meter} = \text{Area (in Sq.m)} * \text{Runoff (in m)}$$

Surface water resource development: Surface water resource development is claculated using following procedure

$$\text{Surface water resources development \%} = \frac{\text{Surface Water Potetial (in cubic meter)}}{\text{Surface watre resources Structure storage capacity (in cubic meter)}}$$

Result & Discussion:

In order to utilize surface water, it is necessary to first understand from where surface water comes. This surface water is collected precipitation water in reservoir, river, lake etc. Collection of precipitation water associates with surface water potential and water resources development. To define surface water potential two things are important area precipitation and runoff. Present study Ahmadpur tahsil surface water resource potential has been calculated using surface runoff coefficient and precipitation parameter. Ahmadpur tahsil annual surface water resource potential is 303.29 (Million Cubic Meter) MCM.

Overall Ahmadpur surface water resource potential is not unique. Runoff coefficient and precipitation vary region to region in Ahmadpur. Runoff coefficient, surface water resource potential, surface water resource development and future surface water resources view these things have been discussed bellow.

Surface runoff coefficient:

Surface runoff coefficient is runoff controlling parameter. Ahmadpur classified in five classes for study the surface runoff coefficient. At Ahmadpur very high surface runoff coefficient found at water body area.

Fig.1

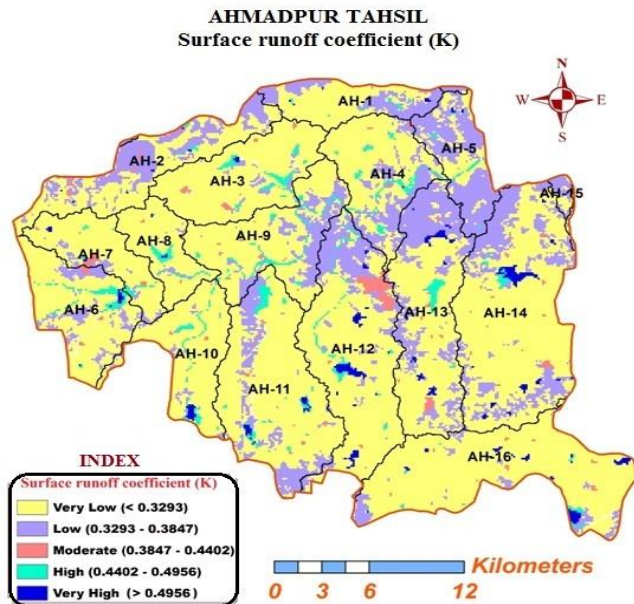
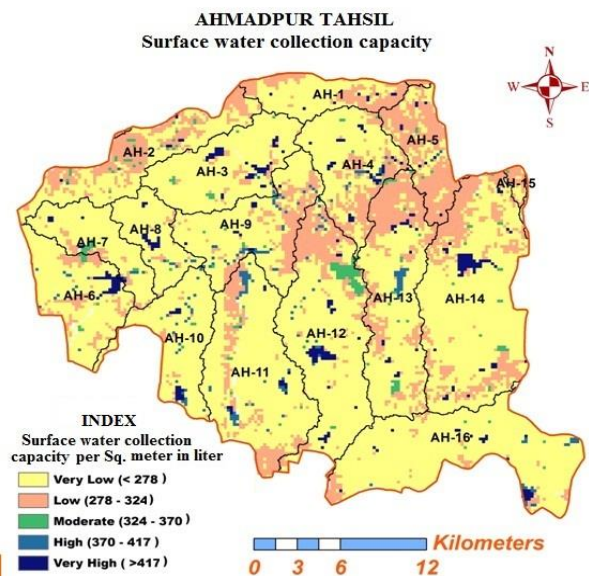


Fig 2



A) surface water collection capacity: Present study surface runoff is considered as a surface water collection capacity. Surface runoff is calculated by using rainfall and runoff coefficient information of study area. Surface runoff means the occurrence of surplus water exceeding the limit or capacity of surface. Other word runoff means surface water flow or collection capacity per unit. For this study per square meter area water collection is shown in liter measurement. On the basis of histogram distribution Surface water collection potential is classified in five classes. Ahmadpur very high surface water collection potential observed at water body area. There water collection capacity is more than 417 liters per sq m. Watershed- wise very high surface water collection potential detail is given in following table.

B) Surface water resource potential: To develop surface water resource and management strategy in any area first it is need to assessment of there surface water potential. As same present study Ahmadpur tahsil surface water resource potential is appraised; it is about 215.34 MCM and inflow water is about 87 MCM. Watershadewise surface water resource potential is givnen following table.

Table 1.4 Overview of Ahmadpur Tahsil Surface water resource

Watershed	Surface water resource potential (in MCM)	Surface water inflow (in MCM)	Total surface water resource potential (in MCM)	Surface water resource Storage capacity (in MCM)	Surface water resource development in percentage	Surface water's resource balance (In MCM)	Future surface water resource development	Surface water's balance after future surface water resource development (In MCM)
AH-1	7.62	0.00	7.62	3.30	43.38	4.31	6.29	-1.98
AH-2	12.78	0.00	12.78	5.90	46.22	6.87	6.27	0.61
AH-3	13.15	0.00	13.15	9.88	75.14	3.27	1.27	2.00
AH-4	12.86	0.00	12.86	9.36	72.76	3.50	5.39	-1.89
AH-5	8.73	0.00	8.73	108.94	100.00	-100.	5.37	-105.58
AH-6	10.76	51.87	62.62	8.29	13.24	54.33	10.30	44.03
AH-7	7.49	0.00	7.49	4.24	56.65	3.25	0.00	3.25
AH-8	6.06	0.00	6.06	2.78	45.88	3.28	0.00	3.28
AH-9	14.28	0.00	14.28	8.94	62.57	5.35	8.35	-3.01
AH-10	9.47	23.91	33.38	8.70	26.06	24.68	2.01	22.67
AH-11	19.98	7.41	27.39	12.62	46.09	14.77	2.32	12.45
AH-12	22.42	4.76	27.18	20.62	75.86	6.56	2.49	4.07
AH-13	19.88	0.00	19.88	17.39	87.47	2.49	2.28	0.21
AH-14	28.52	0.00	28.52	19.71	69.10	8.81	9.60	-0.79
AH-15	0.95	0.00	0.95	0.28	29.07	0.68	0.00	0.68
AH-16	20.41	0.00	20.41	14.55	71.31	5.85	3.25	2.61
Total	215.35	87.95	303.29	255.50	84.24	47.80	65.18	-17.38

Source: Compiled by Author

C) Surface water resource development: Surface water is usually the main source of water in this region. There are several difficulties to appraisal of water resource development. First a decision has to be made about the kinds of resources which have to be computed. Present study farm pond, contour bund, percolation tank, cement bandhare, Kholhapuri type bandhare, minor, medium, major irrigation project etc surface water resources are consider for computing surface water resource development. In Ahmadpur tahsil 255.49 MCM water is collected in various water storage structure out of 303.28 MCM surface water resource potential. Ahmadpur tahsil's total surface water potential is about 215.34 MCM and inflow is about 87.94 MCM. There is overall 84.24 % surface water resource is developed. Detail watershed-wise surface water resource development is discussed here. Kopra-Kingaon minor irrigation project are constricted in this class area. Minimum irrigation projects are constricted in this area compare to this area surface water resource potential.

Ahmadpur tahsil area total surface water resource potention is about 303 MCM out of that 255 MCM water collect in various surface water resources. About 48 MCM water is remain as surface water resource balance which can be utilize. Watershed-wise maximum surface water resources balance found in AH-6, AH-10, AH-14 and AH-8.

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Business Model Development in the Digital ERA: Study of Digital Network

Shirish Shabadi

Research Scholar, Ahilyadevi Holkar Solapur University, Solapur

Corresponding Author- Shirish Shabadi

Email- sashirish1234@gmail.com

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Abstract:

In the digital era, business model innovation has become a vital area of focus across various industries as they adapt to market demands driven by increasing digitization. This study explores the practice and positioning of business model innovation within the context of a new generation digital platform in the Information Network sector, using a case study approach. By analyzing the platform's evolution, structure, functionalities, and its impact on users and the market, the research highlights its unique contribution to business model innovation. Furthermore, a comprehensive analysis of profit models, core value chains, business strategies, and competitive dynamics in digital information networks reveals the emergence and diversity of new economic models. The study also examines the influence of financial technology, mobile payments, the sharing economy, and e-commerce on business model innovation, showcasing various pathways for companies aiming to innovate in the digital age. Finally, the research provides insights into future business model innovation through the exploration of innovative approaches such as enhancing customer value, leveraging data-driven decision-making, and integrating multiple channels.

Keywords: Business Model, Digital ERA

Introduction:

The swift evolution of digital technology and the progress of worldwide informatization have made the digital era the new standard for company growth. In this setting, businesses must contend with quickly shifting consumer preferences and intense competition. To keep up with these changes, they must quickly look for new and creative business models. "Using the new generation digital platform of the information network as a case study, this article seeks to fully comprehend the internal mechanisms of business model innovation in the digital age as well as to thoroughly explore the practice and strategy of business model innovation in the digital age".

Digitization, also referred to as digitalization, has become increasingly prominent in recent times, establishing itself as a lasting trend. This is evident in the impressive statistics: a search for "digital transformation" on Google returns nearly 40.3 million results, "digital business model" yields 818 thousand results, "digital entrepreneurship" shows 439 thousand results, and the term "digital" itself generates a staggering 8.1 billion results. Clearly, anything digital is a hot topic in both academia and industry, especially in the context of transforming business models to align with sustainable and circular economies. Discussions at conferences, the development of innovative business plans, and political debates are all heavily influenced by digital concepts and their related terminology.

However, there is a notable lack of agreement on the definitions of these various terms, particularly within academic circles. Similar to other contemporary ideas, such as artificial intelligence, there is considerable confusion, and the term "digital" risks becoming just another overused buzzword. The complexity of the digital landscape is further exacerbated by differing perspectives across research fields, such as social sciences and engineering, each with its own understanding of digital concepts and how they relate to one another. The same holds true for many interpretations of "digital": It is unclear how these might be understood—whether they are new approaches to recognizing and interacting with customers, or whether "digital" just refers to technology or the formulation of a new company strategy. It is difficult to construct, develop, and discuss roots, applications, impacts, and, ultimately, sustainable policies in the absence of a shared understanding. The academic discourse would lack a foundation without these relationships. Consequently, it is essential to have a common understanding of these relationships since doing so is a precondition for knowledge generation and exchange as well as the eventual application of "digital" to environmentally and economically sustainable activities. This means that everyone must have a shared knowledge of the phrases that are most commonly used in the digital environment and how they relate to one another.

Overview of Innovations of Business Model in Digital ERA:

- **Digital ERA and Business Model:**

Business models in the digital age have developed into more intricate and all-encompassing organizational structures rather of being limited to straightforward exchanges of a specific good or service. The digital age and business models are intimately related, and the broad use of digital technology facilitates more flexibility and diversity in the creation, use, and invention of business models. Businesses are now more concerned with developing a network of relationships with customers and extending their reach through digital channels than they are with focusing solely on product sales. In the digital age, integrating digital technology to become the company development engine is critical to a successful business strategy. In the digital age, business models have shifted from singular offline transactions to diverse services on digital platforms, with an increasing emphasis on interconnectivity. An more effective system of corporate operation has been created through the integration of digital information flow, cash movement, and logistics. Businesses must have a thorough understanding of how digital technology is embedded in order to better comprehend how business models evolve.

- **Digital Trends Impact on Business Model:**

The digital trend has significantly altered business paradigms, influencing not only how companies run but also how customers behave. Digitization has impacted every part of the business ecosystem as a result of the widespread use of technologies like cloud computing, cellphones, and the Internet of Things. First off, the globalization of business has been fueled by the digital trend. Businesses can expedite the internationalization of goods and services by optimizing and integrating global supply networks using digital technology. Businesses in the digital age can more easily adjust to the demands of the global market since they are not limited by geographic location. Second, company personalization has increased thanks to the digital trend. Businesses can better understand customer wants and offer individualized, customized goods and services by analyzing large amounts of data. In addition to meeting the unique needs of each customer, customization makes businesses more competitive in the marketplace. The sharing economy and platform economy have also grown as a result of the digital trend. Businesses can more easily engage with customers, suppliers, and other stakeholders using digital platforms, facilitating resource sharing and exchange. The sharing economy model's rise has further altered conventional company models, placed an emphasis on collaboration and sharing, and created a new corporate ecosystem.

- **Innovation of Business Model Characteristics and Innovations:**

Innovation in business models is a crucial strategy for businesses to adapt to the digital era. Innovation in goods and services is simply one aspect of it; another is how businesses can create long-lasting operational frameworks. By changing an organization's basic principles, rationale for profit, and cooperative strategies, business model innovation seeks to accomplish long-term success of the enterprise. Business model innovation can be conceptualized as a disruptive rebuilding of conventional business operations. By recombining resources and competencies, it dismantles industry barriers, penetrates the boundaries of established industries, and develops new business logic. Innovation in products and services is simply one aspect of business model innovation; another is the worldwide optimization of the business ecosystem. There are several ways in which business model innovation manifests itself. It highlights the worth of the user first. Businesses may better position themselves in the market and deliver goods and services that live up to customer expectations by having a thorough understanding of user wants. Second, digital transformation is the main emphasis of business model innovation. In addition to being a tool, digitization is essential for accomplishing business model innovation. It can achieve thorough business model upgrades, increase market borders, and boost enterprise operational efficiency. Once more, win-win collaboration is emphasized by innovative business models. Through resource complementarity, shared platforms, and other strategies, businesses in the digital age build cooperative partnerships that create a more transparent and collaborative corporate ecosystem.

Digital ERA and Business Model Innovative Practices:

- **E-Commerce:**

In the digital age, e-commerce has emerged as a key feature of business model innovation, offering a more comfortable purchasing experience and enabling traditional commerce to transcend regional boundaries through online platforms. As the Internet has become more widely used, e-commerce has evolved from business-to-consumer (B2C) to consumer-to-consumer (C2C) to online-to-offline (O2O). E-commerce platforms give customers access to a wealth of product options and information, enabling them to shop online at any time and from any location. This mode increases the effectiveness of products circulation while fostering the digitization of the supply chain and logistics optimization. E-commerce platforms, which have a distinct business logic from traditional retail, also better satisfy the customized wants of customers through data analysis, tailored recommendations, and other methods. Online platforms' innovative

business models are also evident in their social and interactive features. Through social network integration, several e-commerce platforms have enabled social sharing of products, enabling consumers to engage with friends during their purchasing experiences, thereby creating a model of social e-commerce. This creative business strategy increases user knowledge and confidence in companies and products while also broadening the possibilities of e-commerce.

- **Economy Model Transform:**

Another example of a digital era business model innovation is the sharing economy, which connects and shares resources by making full use of idle resources. This concept has been popular in a variety of industries, including carpooling, office space sharing, and bicycle sharing. The sharing economy paradigm, which maximizes resource usage through platform-based services, has transformed the conventional ways of ownership and use. By using technology to create a trust mechanism, the sharing economy platform dramatically enhances resource usage by enabling strangers to share. The introduction of this strategy increases resource usage efficiency and gives people access to more financial resources. The sharing economy concept is not without its issues, though, including resource waste and privacy protection. Therefore, to maintain the sharing economy's sustainable development, laws and regulations, platform governance, and other facets of its business model innovation must be continuously updated.

- **Finance Technology and Mobile Payment:**

As smartphones have grown in popularity, mobile payments have emerged as one of the major forces behind the invention of business models in the digital era. While mobile payments provide seamless digital transactions, traditional payment methods are restricted by time and location. The emergence of mobile payments has allowed financial technology to advance financial services and encourage innovation in the financial industry. "Real-time financial transfers and settlements are now possible on mobile payment systems thanks to digital technology and safe encryption techniques". This method has altered the way that financial transactions are often conducted, improving convenience and efficiency of payment. Financial technology platforms also use artificial intelligence, big data analysis, and other techniques to deliver more intelligent and personalized financial services, including risk management and intelligent investment advice. But "there are other problems like data security and privacy protection. Therefore, to build user confidence in mobile payments and financial technology, business model innovation necessitates ongoing security and credibility building".

Digital ERA and Business Models Innovation Strategy:

- Mechanism for Creating and Delivering Value to Customers

In the era of digitalization, generating consumer value and efficient delivery methods are essential components of innovative company models. In addition to offering goods and services, innovative businesses concentrate on satisfying their clients' core needs and generating distinctive value via experience design and consumer insights. Rich tools and opportunities for creating value for customers are offered by digital technology. Businesses may enable the customisation of goods and services by gaining a greater understanding of consumer behavior and preferences through big data analysis. With the use of augmented reality (AR) and virtual reality (VR) technology, consumers can now engage with products in a more immersive and natural way. Digital technology enhances the effectiveness of goods and services and offers more adaptable distribution options in terms of mechanism of delivery. "Enterprises can achieve online purchasing, remote work, cloud services, etc., using technologies like e-commerce, the Internet of Things, and cloud computing, which significantly improves customer convenience and experience".

- **Process of Decision Making:**

Data is becoming a major factor in company decision-making in the digital age. Businesses that use a data-driven approach to decision-making gather, analyze, and use a great deal of data to inform their marketing, operational management, and strategic planning choices. Businesses can more correctly forecast future development trajectories by using big data analysis to mine client demands, competitive dynamics, and market trends. Additionally, data analysis can lower costs, increase efficiency, and optimize production and supply chain operations. Technologies related to artificial intelligence and machine learning are crucial for making decisions based on data. Businesses can obtain more precise forecasts, more useful customized recommendations, and more intelligent risk management by building intelligent models. The decision-making cycle is shortened and the scientific method of decision-making is enhanced by the data-driven approach. Businesses are better able to adapt to changes in the market, provide new goods and services faster, and stay nimble in a highly competitive environment.

- Construction of an ecosystem and integration of multiple channels:

To provide a more comprehensive and diverse shopping experience, businesses today integrate multiple channels, including online platforms, physical stores, and offline touchpoints, rather than relying solely on a single channel. E-

commerce platforms play a crucial role in this multi-channel integration. Companies develop mobile apps, social media pages, online marketplaces, and other avenues to expand customer interactions and increase brand presence. At the same time, consumers enjoy more flexible and diverse shopping options thanks to the seamless blending of online and offline channels. Building an organic commercial ecosystem is the main goal of ecosystem creation, which draws together a variety of collaborators. This involves cooperating with partners, suppliers, developers, and other parties to offer users all-inclusive services and experiences. Additionally, platform openness and interoperability are emphasized in ecosystem creation. Businesses can collaborate with other businesses and create a wider service network by using open APIs and data sharing. Businesses may better adapt to market changes and satisfy the wide range of user wants by using this cooperative model. In the digital age, customer value creation, data-driven decision-making, multi-channel integration, and ecosystem construction are crucial tactics for business model innovation that can aid companies in becoming more competitive and better able to adjust to market changes. Businesses can accomplish innovation, sustainable development, and better satisfy the requirements of users in the digital age by using these tactics.

Conclusion:

As an example of business model innovation in the digital age, the Information Network's new generation digital platform has effectively shaped a robust and organic business ecosystem through multichannel integration, data-driven decision-making processes, deep customer value creation, and ecosystem construction strategies. "In addition to addressing user information demands with notable success, the platform's primary value chain has improved user stickiness through social interaction and e-commerce features, making it an essential component of users' lives. The platform's profit model is comprised of advertising revenue, service fees, and e-commerce transactions, indicating a varied approach to business operations". By

integrating cutting-edge technologies like blockchain and artificial intelligence, the platform's features will be further improved and the level of service intelligence elevated. "In order to provide users with material that better fits their needs and interests; the platform will also continuously improve its data analysis and personalized recommendation algorithms in response to the increased demand for tailored services from users".

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Linguistic Hegemony and Cultural Marginalization: Globalization's Impact on English and Regional Languages in India

Mr. Bivash Mandal

Assistant Professor of English, Hyderabad Institute of Technology and Management

Corresponding Author- Mr. Bivash Mandal

Email- bivashm.sh@hitam.org

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Abstract:

Globalization has profoundly altered linguistic landscapes across the globe, with English emerging as the predominant global language. This paper delves into the intricate dynamics of how globalization has reinforced the hegemony of English in India, marginalizing regional languages and cultures. The perceived usefulness of English in international trade and communication has led to its widespread adoption as the lingua franca, displacing indigenous languages with rich cultural histories. This linguistic shift is not merely a consequence of global economic integration but also a reflection of sociocultural transformations that have redefined language learning and usage. The paper critically examines the implications of this trend on English language teaching (ELT), highlighting the transition from traditional literary-focused pedagogy to a communication-centered approach designed to meet market demands. Furthermore, it explores the risks posed to regional languages, which face the threat of extinction as younger generations increasingly prioritize English over their mother tongues. By analyzing these developments, the goal of the study is to present a nuanced view of how language globalization has affected Indian culture and education.

Keywords: Globalization, Linguistic Hegemony, Language Marginalization, English Language Teaching

Introduction

The concept of "globalization" is widely recognized as having gained prominence in the 1980s, often seen as a post-modern development. However, globalization is, in fact, a long-standing historical process that accelerated significantly during the latter portion of the 1940s. Globalization is having a significant impact on many aspects of society now and will continue to do so, especially language. Among the most significant outcomes of globalization is the widespread dissemination and interconnection of languages, especially English. It is often recognised that English is spreading around the world. Remarkably, Approximately 25% of English speakers worldwide are native speakers, but the majority of non-native speakers nevertheless use English even in the absence of native speakers.

Discussion:

Our is home to approximately 7,105 living languages; however, 1,481 of these languages are currently endangered, and 906 are on the brink of extinction. By the end of this century, half of the languages still in use could disappear if aggressive steps are not taken. Languages that are not written or recorded would not only mean the disappearance of cultural richness but also the loss of significant traditional wisdom, especially ingrained in native tongues. Out of all these dialects, English is the only one where more people speak it as a foreign language than as their mother tongue. According to Crystal, there are three times as many non-native

English speakers as native speakers. He asserts that "a language achieves a genuinely global status when it develops a special role that is recognized in every country" (p. 3). Crystal emphasizes that English's global prominence isn't due to not because most countries use it as their native tongue, but instead owing to the unique responsibilities certain languages play in those nations. English has an elevated social standing due to its inherent socioeconomic power, which encourages individuals to use it as their language preference in international circumstances.

In recent decades, the role of English as the common language for political, scientific, and economic communication has expanded significantly. As said by Crystal, English is the official language of communication in 85 percent of multinational organizations worldwide. Additionally, English is used in Ninety percent of published scholarly publications and eighty percent of major global cinema productions and industries are authored in English. The development of technology is one of the characteristics that define globalization, exemplified by the emergence of online platforms. In the era of globalization, there are two trends that reinforce one another: the expansion of English as a global language and the development of internet usage as a quick means of communication. The internet has completely changed how people communicate with one another and how English is learnt and taught since its birth.

It is the growth of the internet and digital communication that has most significantly. By the last decade of the twentieth century, the way computers were used for language acquisition had changed. The computer has changed from being a tool for data collection and presentation to a device for information gathering and interaction through the introduction of the internet. For the very first instance, Language students can converse swiftly and inexpensively with international native speakers and other language learners of the target language. Also, the internet is having an increasing effect on language standards related to lexicon, phonetics, and syntax, which has an effect on how much emphasis most educators place on using 'proper' language. For instance, the creation of an abridged version of English in chat rooms and the so-called virtual world is a result of this widespread technology.

Some instances of this pattern are abbreviations such as "2day" (today), "cu" (see you), "b4" (before), and "c%l" (cool), "RUOK?" (Are you OK?). Syllabic values are also assigned to capital letters in internet communications, such as "thN" (then) and "nEd" (need). In some cases, like "ru2cnmel8r?" (Are you two seeing me later?), there is an employment of less than half of the characters utilized in standard sentence building. In online communication, it seems that sentences are typically shorter and avoid certain complicated structures (such dependent clauses). Individuals who want the words they use to sound "cool" sometimes appropriate computer terminology into regular talk. Sayings like "She's multitasking" (she is doing two distinct tasks at once), "It's my turn to download now," and "E you later" (goodbye, see you later) are some examples. The internet has a big impact on language learning and linguistics.

Language studies have always used descriptive and prescriptive methods. Prescriptivism promotes the idea that one language variety is intrinsically more valuable than rest and that the speech community as a whole ought to adopt this variety. It usually prefers a conventional written form of the language that closely resembles the great classics of that language. People are viewed as utilizing the language "correctly" when they write or talk in a standardized style, and "incorrectly" when they do not. The English prescriptive grammar rule that states a sentence should never start with "an". The prescriptive approach ignores the fact that many people do start sentences with "an" in everyday language use. In contrast, the descriptive method doesn't criticize language use that deviates from uniform regulations. Instead, it describes the variations in language use and provides an explanation of these variances' causes. American English, for instance, adopts the spelling "encyclopedia," although conventional British English favors "encyclopaedia." American spelling

is becoming more widely embraced in British periodicals as a result of America's 20th-century dominance over the United Kingdom.

We barely ever think of shortened communications as inappropriate because they are so common in daily communication. Phrases like "@home" (at home), "so wot" (so what), and "good nite" (good night) are now widely used phrases.

A significant effect of globalization is its impact on English Language Teaching (ELT). There is no denying that globalization has an impact on education. The use of computers or laptops, televisions, tape recorders, LCD projectors, email, and blogs demonstrates how globalization has transformed teaching media. Prior to globalization, the majority of educators used straightforward teaching tools like images, chalkboards or whiteboards, real objects, and similar tools. However, today, many teachers widely use computers or laptops, LCD projectors, email, and other technological tools to support the method of teaching and learning.

Furthermore, the emphasis of teaching English has shifted over time. Previously, teaching English literature was prioritized. Even if this strategy might not have been particularly effective in helping students learn English for everyday use, it undoubtedly broadened their perspectives. Today, the emphasis has shifted primarily to communication skills. English is now seen as a language of possibilities that can lead to employment in the current job market.

The English language's hegemony aids in its ongoing dissemination. People acquire it in order to operate more efficiently on a worldwide basis. As English spreads, so too does the culture associated with it. English is becoming ubiquitous worldwide because it is the language of pop music, blockbuster films, and advertising; people aspire to speak it, and it is an essential instrument for success. Still, even though globalization has enabled the widespread dissemination and dominance of English, it has also resulted in the loss of additional languages and cultural traditions.

However, globalization has played a role in endangering and extinguishing several languages. Rather than teaching their kids their home tongues, many parents encourage them to learn English, believing that English will give them a competitive edge in the worldwide community. These parents pick the prevailing language above their own because they erroneously believe that kids can only acquire one language. Children quit speaking their original tongue as a result, and it starts to disappear and become endangered.

Migration is another way that globalization leads to the endangerment and extinction of languages. Globalization facilitates easier migration, allowing people to move to different countries. For

instance, a large number of Indians immigrate to Canada, Australia, or the United States. In these new environments, parents often prioritize English over their mother tongues when educating their children.

There is no denying the importance of language to a civilization. Through vocabulary, salutations, comedy, and other aspects, language helps to shape culture. Fundamentally, language is the basis of civilization. People lose their connection to culture when they are illiterate. This pattern is already visible in India. A country once deeply proud of its rich cultural heritage is now witnessing the erosion of its cultural identities.

Conclusion:

Globalization has had a profound impact on English, teaching of English, and other languages as English advances towards developing into the world

tongue. The twenty-first century's fast shifting economic landscape is making English a component of the "global village," eliminating other tongues in the process. English language instruction has also been greatly impacted by globalization, which has resulted in modifications to methodology and instructional resources.

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Role of Political Party on Women's Leadership

Dr. Patil Shyam Pundlikrao

Dept Political science, Shahir Annabhau Sathe mahavidyalaya,
Mukhed, District –Nanded, Maharashtra.

Corresponding Author- Dr. Patil Shyam Pundlikrao

Email:- shyampundlikraopatil@gmail.com

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Abstract:

The primary and most efficient structure by which women become politically involved and win elections is the political party. Ideological groups' practices, strategies, and values can profoundly affect ladies' political cooperation and portrayal. In fact, political parties select candidates for local and national office, provide funding for campaigns, mobilize voters, prioritize policy and governance, and form governments. There was a significant gap between political parties' written general commitments to achieving gender equality and specific measures to enforce and implement these commitments, according to a study conducted by International IDEA in 33 African countries. One more review zeroed in on Latin America uncovered that 30% of ideological groups scarcely allude to orientation equity in their inside administration archives by any means. Equal opportunities for men and women are essential components of progress, national and international security, and a just society. A primary interventional procedure in friendly work looks to advance orientation strengthening by means of ladies' successful commitment to legislative issues. This paper talked about the problems that women face in Indian politics. The primary objective of this paper is to investigate the difficulties that women leaders in politics face. To accomplish the point of this paper, auxiliary wellsprings of data was utilized.

Keywords: Orientation equity, underlying interventional technique, orientation strengthening, discretionary changes.

Introduction:

Ladies are continually communicating their authority impact felt in trade, the executives, the scholarly world, design, medical care, and different areas on a nearby, public, and overall scale. Even though they have the necessary skills and abilities, women are increasingly motivated to break through the traditional glass ceiling that prevents them from reaching leadership positions. Leadership is unaffected by gender. A bunch of authority characteristics work out easily or are sustained in individuals developing into strong pioneers with a wide following. Women in Leadership - Introduction, n.d., states that leaders can be male or female. Females seek after to be under-addressed in political office from one side of the planet to the other, and they keep on knowing less about and take part in legislative issues than guys (Goyal, 2019) [4]. (Ogbogu, n.d.) [Women's participation in politics and the democratic process varies worldwide, but it has become an important part of contemporary discussions about development and governance] 6] . Ladies' political commitment to any country gives a preview of how ladies are respected in the public eye. Any nation's advancement is additionally reliant upon fair inclusion of people. Ladies keep on engaging for uniformity in the public arena. Due to their limited involvement in Indian politics, their difficulties and

issues are frequently ignored and not acknowledged. Various articles and case studies on female political leadership are selected and examined for this purpose. This study found that Indian women face a variety of obstacles, including patriarchal views, weak informal networks, finances, religion, and educational level. This paper discusses solutions to these problems, such as the development of electoral reforms that encourage females to participate in an equitable manner, the enhancement of women candidates' competence in politics, increased government support for women's representation in politics, and the application of social media and education to alter public perceptions. The paper concludes that Indian women have a bright future in politics, even though India is still a long way from achieving the required 33% female representation in government. A gender-balanced political leadership is necessary for the continued existence of Indian democracy.

However, it remains to be seen whether women in positions of authority are actually less corrupt. In light of an artefactual field explore in country Bihar, Gangadharan, Jain, Maitra and Vecchi (2015) exhibit that in towns that have recently encountered a female town boss, ladies show a more noteworthy propensity to fitting assets while going about as a pioneer, opposite men. A potential clarification set forth by the creators is that female chiefs hope to be

dealt with inadequately, prompting an unavoidable outcome where they act in a negative way. On the other hand, in a climate with few potential open doors for administration, ladies act nearsightedly and take one-off choices whenever gave an open door as they don't anticipate being reappointed.

Background:

The primary and most efficient structure by which women become politically involved and win elections is the political party. Ideological groups' practices, strategies, and values can profoundly affect ladies' political cooperation and portrayal. In fact, political parties select candidates for local and national office, provide funding for campaigns, mobilize voters, prioritize policy and governance, and form governments. It is vital to quantify and to figure out the flimsy responsibility of the UN and global local area, as completely stayed quiet during the cycle and succeeded no power in driving the gatherings to submit to the SCR1325 or even to consider ladies without whom this transformation will have had a misfortune and less effect during the time spent bringing down the tyrant. I accept the time has come to have an alternate and elective way for ladies to get their presence and to battle against prohibition. Because there was no genuine commitment on the part of the political parties to include women, the implementation of election rules must first be based on justice and credibility. We realize that the Sudan situation is repeated wherever up to this second, and we can say that ladies are encircled areas of strength for with, male centric standards that is even shown with the Assembled Countries work and obligation to engage ladies and to end infringement of their freedoms. By the by, the presence of ladies political pioneers is found to have other positive social results. According to Iyer and Mani (2012), who looked at data from the National Crime Records Bureau (NCRB) and found a significant increase of 26% in the number of crimes committed against women that were documented following the increased political participation of women as a result of the amendment of 1993. The researchers investigate further and discover that this is caused not by an increase in actual crimes committed against women but rather by an increase in the reporting of such crimes. There is an expansion in the responsiveness of the police under ladies political agents, which urges ladies to voice their interests.

Objective:

Governmental issues and its accomplices are meeting this e-Conversation to trade information on the job of ideological groups in advancing ladies' political cooperation and portrayal and great practices on ways of expanding and fortify their commitment to accomplishing orientation fairness in legislative issues and the more extensive society. Ideological group pioneers and individuals,

lawmakers, specialists, professionals, and scientists are welcome to join the e-Conversation from 13 August to 3 September 2019. The entries will add to the elaboration of a Merged Answer that will increase the information base accessible on this point. While there is still far to go for ladies' political portrayal in India, particularly at more elevated levels of government, with additional female political pioneers and more ladies practicing their popularity based freedoms, we can expect strategy change that might contribute towards India's better exhibition on different marks of ladies' financial support and opportunity, instructive fulfillment, and wellbeing and endurance. Most likely more than any other group in today's society, young Indian women represent aspirational India. Allowed a portion of an opportunity, they might bring another energy into our stale legislative issues, and move it towards conveyance of essential necessities wellbeing, nourishment, schooling and jobs.

Historical framework:

Ladies' remaining in post-autonomy India recuperated strength and started to progress. Ladies started to participate in numerous parts of life, including legislative issues, social, financial aspects, culture, and religion. In order to obtain a higher education, they are enrolling in educational institutions. They have become experts, like doctors, lawyers, researchers, instructors, teachers, chiefs, leaders, etc, because of their acknowledgment of the significance of training. India is positioned eighteenth as far as political strengthening On the planet Monetary Discussion's Worldwide Orientation Hole Report 2020. India's status was greatly impacted by Indira Gandhi's two terms as Prime Minister—from 1966 to 1977 and again from 1980 to her death in 1984. Gandhi's significance as an unmistakable female government official should not be neglected. In 1992, the 73rd Constitutional Amendment mandated that women hold one third of village government head positions. The program was executed to work on female political contribution at the metropolitan level. The legislation requiring women to be represented in politics has resulted in an increase in the number of female elected municipal officials. According to estimates, women make up 30 to 50 percent of elected officials at the local level in India, which has been trying to track the number of female panchayat representatives. Nagaland, Sikkim, and Manipur are among the Indian states without any ladies clergymen. No state has even 33% of ladies priests - Tamil Nadu has the best extent of female pastors at 13%, while 68% of states have under 10% female presence in state administrative roles. A 2014 study found that women's vote share in India increased significantly over the previous 50 years, which was regarded as a positive trend.

Challenges faced by women leaders:

Ladies pioneers have higher and more troublesome issues than guys since they should likewise fight with discernments. With additional ladies who take up positions of authority, beforehand unnoticed worries and snags related with such a position are currently becoming obvious. Life is turning out to be progressively intense for them because of rising feelings of anxiety and various obligations at work and at home, as well as the nonstop need to show off her abilities (Ladies and Initiative, n.d.). Ladies' political commitment is hampered or worked with by different conditions, including financial status, topographical, social, and political framework structure. Here we feature techniques and best practices for expanding ladies' significant political cooperation from around the world, which incorporate ladies' shares, orientation councils, preparing and limit building, and supporting ladies in positions of authority. The time between war and peace is also an important time to enshrine gender equality principles and establish the conditions that will continue to promote women's political participation. Despite the widespread belief that female political leaders can serve as role models for girls and women in society, it does not appear that this mechanism applies to political candidacy. According to Bhalotra, Clots-Figueras, and Iyer (2018), who looked at data at the constituency level for every state election in India from 1980 to 2007, there is a decrease in the number of new female candidates after a woman wins an election. This decline coincides with male backlash against women performing non-traditional roles (see, for instance, Gangadharan et al.) and is most pronounced in states with ingrained gender bias and political parties led by men. 2014).

Political obstacle:

Ladies' political portrayal and headway are hampered by four essential political snags. Nonappearance of party support, like confined monetary help for female applicants, limited admittance to political associations, and more severe guidelines and certifications applied to ladies; a lack of well-developed educational programs for women's leadership in general and for preparing young women for political careers; and the fundamental nature of the male-dominated electoral system (Singh, 2011) [10] Ladies are kept from taking part in legislative issues for various reasons. There are many elements like; the present social worth framework, the private-public hole with regards to space character, and male prevalence in political foundations, which are answerable for less cooperation of ladies in governmental issues. They have been not able to gather help and administrations for developing their political supporters because of their low offer in India's internal ideological group structure. Ladies don't get

suitable monetary sponsorship from ideological groups to campaign for office. One of the down to earth methodologies for ideological groups to embrace is to lay out and deliberately apply clear orientation responsive principles and strategies for inside vote based system. The requirement for unequivocal inward standards and techniques on the ID, designation and determination of contender for important, influential places and dynamic inside the ideological groups and elective public situations at all levels can't be over underlined. It is accordingly a basic to guarantee that ladies take part similarly and are addressed in the party designs and cycles with the command to authorize the party rules and methodology on generally speaking inward majority rules government, remembering for administration and competitors' determination. Potential candidates and party supporters can better comprehend the internal democracy processes and hold party leaders accountable to the established rules when a party has clear rules and procedures for the candidate selection process and these rules are respected.

Social obstacle:

One of the main hindrances to ladies being politically drawn in is ignorance. They know nothing about their essential and political freedoms because of an absence of mindfulness. In addition to how seats are distributed in polls, parties also discriminate within their own ranks. Women's political participation is also hampered significantly by poverty. The primary victim is the daughter of a poor family, and she faces numerous obstacles. Ladies are likewise displayed to have a more noteworthy pace of exiting school than men. Ladies' reasoning is prepared one might say to acknowledge that they are of a lesser class than guys since this has been the perspective of numerous in the public eye because of social and social norms. The position framework, or social class structure, is likewise a critical boundary. Women from lower castes were unable to attend school because their families did not have much money. To accommodate their family, numerous ladies were associated with low-paying position. The majority of women in India do not own property or land. They don't for even a moment get a piece of their folks' resources (Singh, 2011) [10] . The country's chronic frailty circumstance for ladies is likewise a major obstruction to their contribution. Access to healthcare facilities varies widely across the nation. Orientation disparity in medical care settings happens even before birth. The family's preference for sons leads to the termination of the majority of girl children. After they are born, daughters do not receive the same feeding services as men. Because of conjugal obligations and endowment frameworks, ladies are additionally viewed as less lucky. Medical clinics are likewise expressed to as "orientation one-sided" since guys go to emergency clinics at a

higher rate than ladies. One might believe that female political leaders are less effective at promoting economic growth, at least in the short to medium term, given the association of their policies with redistribution. Bhalotra et al. (Bhalotra et al. 2018), give proof in actuality. They find that women legislators raise economic performance in their constituencies by about 1.8 percentage points per year more than men legislators do, based on data from 4,265 assembly constituencies in India from 1992 to 2012. This striking result is attributed by the researchers to female leaders being less corrupt, more effective, and motivated than male leaders.

Overcome the challenges

Ladies' gatherings have focused on the strengthening of Indian ladies to beat difficulties of segregation and viciousness. Strengthening is connected to family backing and better remaining inside the home, the two of which are undermined by aggressive behavior at home and rape. Women are prohibited from running for public office or even voting due to poverty and illiteracy. One loses confidence in running for public office when they are unable to comprehend Panchayat Raj regulations.

Developing competency for women candidates in politics

□ coaching in governmental issues. Women can improve their political skills and prepare for political positions through guidance and training programs.

Positions in the neighborhood Ladies who work at the neighborhood level get what it takes they need to progress to more significant levels of government and professions in provincial and public legislative issues. Subsequently, measures pointed toward empowering ladies to join civil governmental issues can be particularly gainful in expanding ladies' political commitment.

Female-specific platforms. A huge number improvement drives incorporate reinforcing ladies' foundation, connections, and pools of future competitors.

□ Supported Preparing: The outcomes of providing female candidates with ongoing, methodical training are better than those of providing training during a single election cycle. By including female local leaders or trainees who share their knowledge, training becomes more applicable and efficient.

□ Finance: To conquer the hindrance of monetary hardship, ladies are being shown how to gather pledges and financing networks are being laid out.

□ Administration abilities: Examples of ways to increase elected women's influence and leadership include providing orientations for newly appointed women, providing training in leadership skills, providing opportunities for networking, and

providing opportunities to stimulate policy discourse.

Support from government for women in politics

The efforts to encourage women to join political parties should receive support from the state. These organizations organize seminars and trainings, encourage more women to run for office, and provide opportunities for female politicians to network. Expanded ideological group support for ladies cooperation in politics (Compendium of Good Practices for Propelling Ladies' Political Cooperation in the OSCE Locale, Association for Security and Participation in Europe (OSCE) Office for Vote based Foundations and Common liberties. Gatherings will be held in helpful and inviting areas, and on occasion when ladies will actually want to join in. Gender audits should be conducted by political parties in order to develop gender action strategies. Financial assistance for caring responsibilities or the provision of child care. Women's wings or groups within parties. Training programs that are tailored to the needs of women and men. Women in campaign leadership positions should be trained and promoted. Set goals for female attendance at party conventions and ensure that women are given safe seats. Share your experiences with people from other countries and locations.

Political Parties Expression of Commitment to Gender Equality!!

It is impossible to miss that the majority of ideological groups, in our contemporary world would generally communicate interest and obligation to orientation uniformity, from the place of being current and withstanding to global common liberties contract, obviously it was for the most part communicated for politeness and wound up offering empty talk to the reason. I will investigate the instance of the late Sudan's upheaval, where 70% of those undeniable in the city of each and every city and neighborhood in the nation where as a matter of fact ladies, and there was a justification behind ladies to check in millions against the past tyranny and Muslim Fellowship that governed the country for close to 30 years, as the principal focus during that severe system where as a matter of fact ladies. The main regulations presented in the 1989 where the public orders, that designated ladies in work place, schools, colleges and even roads and inside their home, nice regulations were sanctioned to restrict ladies to the homes, and to restrict their development and occasion to authorize a clothing for all ladies, that is the hijab. The opposition forces kept thanking women for taking part in the revolution, with patriarchal arrogance, ignorance, and utterly masculine mussels, while the world have witnessed Sudanese women leading the revolution and being the backbone of the movement in every single corner of the country, the commitment seems

to wither away, by the collaboration of international organizations as well as the new opposition forces, more than that they went into proposal of 40% for women, and entered that in the peace document, with no shame or any sense of being just As a result, it is once more a complete betrayal of Sudanese women, who suffered the most under the brutal Islamist regime and are hoping for a new era that will protect their rights and put an end to oppression.

Political Parties and Women Candidates

Put together by DARYL ANN GLENNEY (not confirmed) on Thu, 2019-08-15 10:08

I'm a long-term crusade specialist in the US, where, in my experience, both major ideological groups are barriers as opposed to passages for ladies competitors. It's improved, yet there are still a few major difficulties, particularly in the South and states like Florida where the populace slants more seasoned:

- (1) Depending on the demographics of the region, both parties frequently become captives of the Good Old Boys, and women are seen as workers rather than leaders.
- (2) Women are more likely to be the sacrificial lambs, losing seats but allowing the party to boast, "Look, we recruited a woman!" rather than recruiting women for seats they might win.
- (3) While running for Congress - and winning - doesn't necessarily in every case require ascending the stepping stool from nearby to state to Washington, ladies who have prevailed at the metropolitan and administrative levels don't necessarily get party support for higher races. Party foundations seldom engage in neighborhood races - a large number of them are neutral.
- (4) Money is still an issue; while ladies Really do add to ideological groups, time after time the bigger sums come from well off men and the multiplication of business PACs.
- (5) Obviously, global examination shows that laying out party quantities prompts more ladies in office, however it is profoundly improbable that the U.S. could or would do that.

Sadly, I am not optimistic about altering the tumultuous party system in the United States. In any case, we want to keep on supporting the ladies' gatherings and issue-based associations that have additionally become powerful players in races.

Women And Political Parties In Israel

women politicians are systemic. My examination shows that ladies government officials in Israel don't approach the very pathways towards political administration that men lawmakers do. In view of a quantitative examination of Israeli regulation, I find that as ladies parliament individuals gain position inside the lawmaking body they become "orientation specialists" and enact solely on issues we can to a great extent classify as

"ladies' issues." Legislation like this focuses primarily on sexual assault and abuse, motherhood, and participation in the labor force. Senior legislators as a rule gain political clout and are hence pursued as valuable political accomplices and co-supporters for regulative proposition. In Israel, only junior women Knesset members ask senior women Knesset members to co-sponsor gender-related bills. The solitary idea of regulative concentration among ladies Knesset Individuals is made sense of by inclination of their male partners and ideological groups and not their arrangement inclinations. Accordingly, ladies government officials in Israel are obstructed inside political establishments and are additionally replaceable by different ladies up-and-comers adding to ladies legislators high turnover rate. They can't advance inside their gatherings and become more all inclusive competitors with expansive official plans.

Women's equal representation and participation in politics and public life is essential in a democracy.

We realize that ladies' political authority brings about improved results for ladies and young ladies, as well concerning the entire of society. Having more ladies in political authority conveys progress in arrangement regions that are essential for monetary development and advancement. Indeed, even without these outcomes, the contention for ladies' strengthening is verifiable. A vote based system can't manage for half of the populace not to be completely and similarly participated in direction. WFD's work thinks about the social, social, financial, and political elements that prevent ladies from completely partaking in legislative issues and administration. We work with accomplices to foster frameworks and techniques that test and change them. Our projects help to implant orientation examination all through all parts of parliamentary business, support ladies' political administration and end brutality against ladies in legislative issues. In the mean time, our exploration and strategy counsel feature the advantages of ladies' political support and prescribes ways of bridling those advantages. Ladies assume significant parts as chiefs and pioneers, yet progress on ladies' political portrayal has been delayed across a significant part of the world. Only 25% of national parliamentarians are women, and women hold the highest political office in only 22 countries. Getting ladies in top administrative roles is basic — however it is additionally sufficiently not. Conventional orientation jobs, cognizant and oblivious inclinations, and biased mentalities and standards keep on presenting boundaries to ladies' full and significant interest.

Implementing Special Measures To Facilitate Women's Meaningful Participation In Politics

Ladies' perceivability in, influential places and authority is vital to changing neighborhood mentalities about their administration. Seeking after exceptional measures for orientation consideration, including shares, saved seats, and benchmarks, can assist with helping ladies' significant portrayal in government and positions of authority. "There's unbalanced interest in ladies lawmaker's appearance and family structure... such generalizations can't persevere in the event that we drag them out from the dark and focus a light on them." — Julia Gillard, Previous Top state leader of Australia

- Focused on, governmental policy regarding minorities in society projects can be strong strategies to break into male-overwhelmed organizations of force. The Global Database of Gender Quotas maintained by International IDEA monitors the application of quotas to enhance women's political representation and participation. Such governmental policy regarding minorities in society measures can guarantee appointive responsibilities on orientation correspondence and inward party structures.
- To encourage women to participate in politics, almost two-thirds of nations have constitutional or other legal provisions like quotas, reserved seats, and benchmarks. Quotas should be tailored to the country's context and include sanctions for noncompliance in addition to a numerical target. In Bolivia, ladies hold 53% of the seats in the Bolivian Office of Appointees and 47 percent of the seats in the upper house thanks to willful party amounts and enacted standards at different degrees of government and approvals for rebelliousness. In Australia's Public Parliament, focuses at the passage level brought about the Work Party floating close to orientation equality in portrayal.
- In Afghanistan, the Public Fortitude Program's necessity of orientation adjusted local area improvement committees changed perspectives about ladies in administrative roles, bringing about a 22 percent increment in acknowledgment of ladies' enrollment in town chambers. Girls' attendance at school and women's mobility across villages increased as a result of women's representation on these councils.

Building A Pipeline Of Women Leaders And Sustaining Support For Gender Equality

Building capacities and altering perceptions of women's leadership roles can be aided by providing mentorship and skill-building opportunities for women to run for office, acquire subject-matter expertise, and assert political authority. It was vital that we were comprehensive since we were building our majority rules system, and we needed all ladies, all voices to be addressed in the Parliament and in the political circle. One

reason we drew in with the Islamist party is on the grounds that they were the triumphant party, and assuming we are not kidding around about directing our requests and accomplishing foundational change we really want to draw in with that power." " On the off chance that we don't put resources into endeavors to change the interior party processes, we will continuously find that ladies will be underestimated and underrepresented in all, influential places and navigation, since orientation balance won't occur by some developmental marvel." — Senior Advisor for Democracy and Inclusion, Rumbidzai Kandawasvika-Nhundu, International

- The Tunisian association Aswat Nissa, drove by Ikram Ben Said, trains female possibility to campaign for chose position and sorts out countrywide projects empowering ladies to cast a ballot. One member of Aswat Nissa, Ichrak Rhouma, was casted a ballot onto the Chamber of Sidi Hassine in Tunis. She has credited her more profound information on ladies' freedoms and points like orientation delicate planning to Aswat Nissa. Political getting sorted out endeavors by ladies' gatherings and decentralization changes requiring even and vertical orientation equality acquired ladies' support Tunisia's 2018 metropolitan decisions near equality.

• Orientation designated public subsidizing for ideological groups can defeat the monetary obstructions that represent a hindrance to ladies' equivalent portrayal. Orientation delicate planning is additionally basic for supported help to the orientation fairness plan by designating assets to the particular necessities and needs of ladies.

- Putting resources into supported mediations to change ideological groups begins with inside archives, rules, and guidelines. Ideological groups can standard orientation inside their inner frameworks by creating orientation delicate approach frameworks, backed by monetary help; guaranteeing comprehensive, orientation adjusted up-and-comer enrollment; also, supporting ladies in their missions all along.

Making orientation councils can support for ladies' dynamic cooperation in governmental issues, harmony, and security processes by featuring their voices and commitments in a significant manner.

- The bipartisan Ladies, Harmony and Security (WPS) Legislative Gathering in the US and the Equivalent Open doors Council in Ukraine look to guarantee that the WPS objectives, including propelling ladies' significant political support, are viewed as public safety and international strategy needs.

• On the Women, Peace, and Security Index, Mauritius, the highest-ranked country in Sub-Saharan Africa, established 48 Gender Focal Points in all ministries and established a Parliamentary

Gender Caucus in 2017. Workshops were also held by the caucus with counterparts in Uganda and Rwanda to discuss best practices.

- Ladies drove social developments, common society associations, and political pioneers can assist with major areas of strength for building and encourage responsibility and straightforwardness, remembering for where a vote based system has been subdued and during changes following rough clash or emergency.
- Laura Alonso worked to ensure that anti-corruption policies took a gender perspective as she headed the Anticorruption Office and was a former Member of Congress in Argentina.
- During the 2019 revolution in Sudan that toppled President Omar al-Bashir, women of all ages and backgrounds demonstrated against al-Bashir's nearly 30-year rule in support of accountability, justice, and a change in the regime. Ladies — like Alaa Salah, who drove a horde of dissidents in singing — were at the cutting edge of the transformation and exhibited for political change as well as against male controlled society in both people in general and confidential circles. In addition, women's organizations launched the "The time has come" campaign to protest sexism and al-Bashir's Public Order law, which controlled what women could wear, who they could talk to, and what jobs they could hold.

Capitalizing On The Post-Conflict Moment To Advance Equality

The time between war and peace is also a crucial window of opportunity to advance women's political participation and gender equality, both of which contribute to peace's long-term viability. To benefit from this second, guaranteeing ladies' significant support in true harmony talks to casual peacebuilding drives is vital. Supporting ladies at all phases of harmony processes is basic for building neighborhood trust in formal political cycles and giving data and specialized skill to political pioneers, who are strategically situated to advocate for ladies' issues. Three promising examples are the peace processes in South Sudan, the Philippines, and Colombia:

- In the Colombian cycle prompting the 2016 nonaggression treaty, the Orientation Sub-Commission of Arranging Gatherings remembered ladies and consolidated an orientation point of view for harmony discussions. The sub-commission was instrumental in involving women's civil society organizations and enacting 130 commitments to gender equality in the peace accord. Ladies' gatherings additionally fabricated public help for the harmony talks and worked with ladies mediators to integrate orientation issues into the plan, for example, land freedoms for native ladies and repayments for casualties of sexual and orientation based viciousness.

- In the Philippines harmony process in 2014, which stopped many years of common conflict in Mindanao, ladies took part in both the formal and casual talks. Miriam Coronel Ferrer, the primary female boss harmony mediator, diverted ladies' grassroots voices into the conventional harmony talks. Ladies' gatherings likewise effectively upheld for the reception of orientation arrangements in the nonaggression treaty and the foundation of a Non military personnel Security Part with 70% female enrollment that checked the truce and attempted to safeguard regular citizen networks.

- In South Sudan, the Ladies' Alliance — containing 44 ladies' gatherings — offered specialized help for female members in the proper harmony talks in 2018 and served to arrange a 35 percent quantity for ladies in leader bodies effectively.

Context globally: Complete structures and responsibilities All the milestone peaceful accords and responsibilities recognize and specify the need to review orientation disparities and kill all types of victimization ladies of any age in all circles of life remembering ladies' support and portrayal for influential places and navigation at all levels. In the United Nations Charter, the preamble states that there is a need "to reaffirm faith in fundamental human rights, in the dignity and worth of the human person, in the equal rights of men and women." These principles, the right to equality and the prohibition of discrimination, are the foundation of gender equality and women's political participation and representation in politics and decision-making. The General Statement of Common liberties (UDHR), which frames the premise of bills of freedoms remembered for some public constitutions, additionally reveres the privilege, everything being equal, to non-separation, remembering for the premise of sex (Articles 1 and 2). Ladies' political interest and portrayal isn't just a major basic freedom yet is a crucial key for economical turn of events and a vote based system. Ladies are obviously qualified for partake and address themselves in cycles and organizations where choices that influence their lives are made. The Global Agreement on Common and Political Privileges (ICCPR) contains specific arrangements on the right to equity among people out in the open and political life. Specifically, that's what the ICCPR states: Without regard to any of the distinctions mentioned in Article 2 and subject to reasonable restrictions, every citizen shall have the following rights and opportunities: to participate in the management of public affairs either directly or through representatives who are freely chosen; to participate in genuine periodic elections, which shall be held by secret ballot and shall be of universal and equal suffrage to guarantee the free expression of the electors' will (Article 25).

The central, transformative promise of the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs) is "Leave no one behind" (LNOB). Consequently, SDG 5 on accomplishing orientation balance and engaging all ladies and young ladies is an inherent empowering agent for maintainable turn of events and delegate a majority rules government for every nation and the world at large. SDG 5 specifies the essential aggregate activity for change and establishing favorable conditions towards meaningful uniformity for all ladies and young ladies. To assume the test of making an interpretation of SDG 5 into reality for ladies and young ladies across the world, it is central to address the critical areas of orientation imbalance, for example, orientation based separation in regulation and practically speaking, viciousness against ladies and young ladies, the absence of and inconsistent admittance to and responsibility for assets, ladies' inconsistent support and portrayal both private and public dynamic positions. The issue isn't whether ladies are fit for playing out a functioning job being developed, a vote based system and harmony building, since they have consistently and as of now contribute at many levels in both the private and open arenas. The intricacy lies in revealing and changing the dug in the foundational and precise separation and underestimation of ladies and young ladies to make an interpretation of ladies' support into basic impact and dynamic being developed and a majority rule government building. In spite of the presence of these extensive structures, across the world, ladies keep on experiencing critical segregation in completely practicing their entitlement to take part nevertheless face huge boundaries to get to important, influential places at all degrees of direction, despite the fact that they comprise half of the total populace. Indeed, even with the reception of the 1995 Beijing Announcement and the Stage for Activity which set the global objective for arriving at orientation balance in political navigation, ladies are underrepresented across all degrees of force (UN Ladies, 2020). While a few outstanding subjective and quantitative additions towards expanding ladies' support and portrayal has been made throughout the course of recent many years, particularly at the regulative level, this progress is slow and lopsided across the districts of the world. For example, the world worldwide typical on the support and portrayal of ladies in parliament is at 25% in 2020. Only 53 nations² had achieved at least 30% female representation in their national parliaments as of August 2020. The predominance of men among parliamentarians, cabinet ministers, members of the judiciary, local and regional authorities, heads of state and government, and executives in the private sector demonstrates the persistent underrepresentation of women

(International IDEA, 2013). The World Economic Forum estimates that closing the political gender gap will take 95 years³. At the current rate, gender parity in parliaments will take another 48 years to achieve, according to the International IDEA GSoD Indices, in 2019.

Representative democracy and political parties Political

Parties are still the primary means by which people can elect their representatives and may be considered essential to democratic politics and representation. In contemporary representative democracies, the primary functions of political parties are; to create government programs and policies that are consistent (the interest articulation function); to send requests from society and total them (the interest accumulation capability); to enlist, select and situate individuals for positions in government and the council and to supervise and control government (Global Thought 2007). Political parties are seen as one of the most important institutions for inclusive participation and accountable representation, so their role in modern representative democracy has long been crucial (International IDEA 2012). By and large, individuals engage in open life through ideological groups and backing applicants and gatherings that mirror their perspectives and interests. While the discussion about whether ideological groups make a majority rule government more fair proceeds, in many nations ideological groups are distinguished as instrumental in the enlistment, selection and appointment of contender for public office, socialization of planned political delegates and pioneers, dispersing political data and presenting residents to popularity based legislative issues (Worldwide Thought 2007). Although it is generally acknowledged that political parties play a crucial role in representative democracy and the process of democratization in the majority of nations, they are also viewed as increasingly weak and lacking in many areas when it comes to carrying out the tasks necessary for a functioning democracy. These incorporate institutional, primary and philosophical qualities and societies which can make parties act in manners in opposition to a vote based system. Particularly, political parties frequently impose barriers on women and generally fail to fulfill their responsibilities as representatives in ensuring that men and women are equally represented in positions of power and decision-making at all levels. Guaranteeing the comprehensive portrayal of the perspectives, interests and needs of all residents — all kinds of people — is significant to the viable working of ideological groups and for their authenticity and representativeness. According to International IDEA (2016), it is widely acknowledged that women's inability to effectively participate in the governance of their societies and

the legitimacy of democratically elected institutions are undermined when women's perspectives are not taken into account when making political decisions.

Public constitutions and regulations are fundamental to safeguard and propel orientation fairness and ladies' strengthening inside the private and open arenas, remembering ladies' political support and portrayal for influential places and independent direction at all levels. In addition to formal guarantees of equal rights for men, women, and children, gender equality in national constitutions also entails substantive equality in the exercise and enjoyment of these fundamental rights. Ensures on orientation uniformity and non-segregation in public constitutions and regulations at last impact how people partake and are addressed in legislative issues and public navigation and administration. While public constitutions and regulations are key in articulating ensures on orientation correspondence and ladies' political strengthening, ideological groups need to assume a huge part in making an interpretation of the conventional freedoms into useful activity. The interest and execution of party measures for propelling ladies' political investment and portrayal is educated by two key benchmarks; the presence of public regulation ordering an orientation quantity for races to public positions (counting public councils and neighborhood districts) and public regulation relating to ideological groups commanding a specific orientation based focus in inward party bodies and administrative roles. The electoral system and the provision of effective sanctions for noncompliance with national laws, both of which are necessary for the successful and meaningful implementation of such legal targets, are equally significant. It is similarly vital that the reception of orientation standards is joined and supported by a change of socio-social, political and institutional frameworks, which stay male-overwhelmed, hamper the advancement of orientation balance.

Political parties as “gatekeepers” on women’s participation and representation

Ideological groups are reliably recognized as answerable for ladies' underrepresentation, given their job as the fundamental 'watchmen' to elective, influential places and navigation at all levels in many nations (Worldwide Thought 2016). This is because women's chances and abilities to gain access to positions of power and decision-making are significantly impacted by intraparty democracy. This applies to situate inside the gatherings as well concerning all chosen political situations at the public or neighborhood government levels. The prevailing manly model of the activity of force in political life and inside ideological groups expands on customary perspectives that underestimate ladies and make "barriers" at different levels that forestall

ladies to go into legislative issues and public navigation at all levels. It is also difficult to reconcile women's active participation in politics with their domestic roles and responsibilities due to the media's portrayal of women in politics, which reinforces gender-based stereotypes. Despite the fact that ladies are pursued as citizens and are in many cases dynamic allies of ideological group preparation and battling, their support doesn't by and large convert into consideration and is never coordinated with their cooperation and portrayal in governmental issues and direction at all levels. The difficulty lies in the political will to accelerate women's access to and substantial presence in politics in ways that guarantee their genuine inclusion in political parties and their participation in leadership and decision-making processes at all levels. Considering that ideological group frameworks are frequently characterized as 'majority rule' in any event, when the female portion of the populace is significantly under-addressed, this is an undeniable inconsistency — in practically all nations of the world as ladies keep on being under-addressed at all degrees of navigation, including inside ideological groups. Ideological group constitutions and strategy resolutions set out wide the standards, values, rules, and techniques for institutional navigation and practices, articulate how, when, by whom and utilizing what systems will the party accomplish its objectives (Global Thought, 2019). These incorporate the distinguishing proof, choice and selection of possibility for inside initiative and public dynamic positions.

Women's political participation and representation are influenced by a number of important factors. Supply-side elements uncover the orientation based contrasts, for example, ladies having less monetary and capital assets to put resources into political professions, less time due to the conceptive/homegrown jobs, general absence of inspiration for ladies to take part in challenged political cycles and more modest resourced political organizations in contrast with men. According to the demand-side factors, even though women have political aspirations, party gatekeepers and voters evaluate their abilities, qualifications, and experiences in a manner that is distinct from that of their male counterparts during the identification, nomination, and selection processes for candidates and elections. This highlights the innate ideological groups' own predispositions that favor men over ladies competitors and ideological groups' conviction that electors incline toward men as applicants (Norris and Lovenduski 1995). Every one of the elements are urgent for creating implementable measures and methodologies to address ladies' low cooperation and portrayal and close orientation holes in legislative issues. A stock

side viewpoint involves that ideological groups ought to zero in on making and advancing circumstances and open doors that lead ladies desire for political office. An interest side point of view suggests that ideological groups ought to change their 'up-and-comers' ID, designation and determination cycles and practices, assess their measures for reasonable competitors and reconsider how female up-and-comers are introduced to the electorate. Focusing on the consideration of both of these variables, with the obligation to give significant open doors and impetuses to ladies wannabes and up-and-comers, is fundamental assuming that gatherings are to take a stab at meaningful orientation balance in legislative issues.

Political parties as transformative agencies on women's

support and portrayal The developing acknowledgment that the equivalent access of ladies and men inside political and electing processes is incredibly impacted by intra-party a majority rules system processes, involves that techniques on ladies' political strengthening should be regulated and incorporated inside ideological groups. While a few ideological groups in various nations have created designated measures to even out the inward battleground for ladies, many gatherings are as yet hesitant to embrace inward change to advance considerable orientation correspondence among ladies and men. Carrying out instruments to destroy orientation disparities and the obstructions against ladies' cooperation and portrayal is certainly not a simple undertaking. This is because of a complex combination of things, like the legal frameworks for electoral systems and political parties, socioeconomic, cultural, and political factors, party ideologies, and the political systems and contexts in which political parties operate. According to International IDEA (2016), these factors have a direct impact not only on women's opportunities to attain positions of power and influence within and outside political parties, but also on the political will of those parties to advance gender equality in politics. Ideological group constitutions and strategy reports to lay out empowering conditions for the significant and persuasive support and portrayal of ladies, the standardization of orientation balance goals and systems in governmental issues and gatherings is a crucial stage towards achieving uniformity among ladies and men in open life and navigation. As one of the many elements affecting the levels of ladies' cooperation and portrayal in legislative issues and public administration, ideological groups' constitutions and strategy records formalize and express the ideological groups' situations concerning orientation uniformity in political authority and navigation.

Women's political parties

Numerous ideological groups in all areas across the world have had standardized structures for ladies since their foundation. It is anticipated that the women's organizations will be in charge of promoting gender equality and women's empowerment both within and outside of political parties. Be that as it may, putting the obligation regarding orientation uniformity and ladies' strengthening exclusively under the ladies' units has brought about eliminating orientation issues from the standard political plan and needs of most ideological groups. Moreover, it is broadly contended that the ladies' designs don't by and large partake in or impact party choices and their job is in many cases restricted to representative capabilities and guaranteeing that ladies stick to the partisan principal as expected by the predominately male authority. Subsequently, rethinking and reinforcing the situating and job of the ladies' units inside the ideological groups could upgrade ladies' support and voice to impact vital political cycles and choices inside ideological groups and at various levels. Such endeavors would be reciprocal and commonly supporting with the mediations of the generally speaking ideological group orientation strategy execution.

The consideration of orientation equity and ladies' strengthening in ideological groups' constitutions and strategy archives additionally will in general be impacted by the presence of public regulation requiring ideological groups to have positive activity measures. While the express responsibilities in ideological groups' approach records are considered as fundamental initial phases in recognizing the presence of orientation imbalances, the requirement for down to earth, orientation responsive procedures to address these disparities inside the ideological groups is similarly significant. For instance, making sure that women are included and represented in the top leadership structures of political parties, such as National Executive Committees and Secretaries General. According to International IDEA (2013), an examination of political party commitments to gender equality in 33 African nations revealed a significant lack of political will and a disconnect between the parties' written commitments and the existence of measures to carry them out. The examination in 18 Latin American nations likewise uncovered that there is an absence of political will from ideological groups to rise above the orientation balance manner of speaking and work for considerable equity inside ideological groups and governmental issues overall (Global Thought and IDB 2011).

Positive social outcomes from women's leadership

Women's political leadership has been shown to have a number of positive effects on society, including a reduction in inequality (WEF, 2017), increased cross-party and ethnic cooperation (Markham, 2013), and increased prioritization of social issues like health care, education, parental leave, and pensions (Markham, 2013). Also, ladies' political cooperation has been demonstrated to be especially powerful to ladies in their networks. The presence of women in decision-making positions in both the public and private sectors is positively correlated with female voter turnout, female political participation, and public service responsiveness to women. The presence of enacted orientation standards for up-and-comer determination affects the portrayal of ladies in ideological groups' dynamic bodies and the extent of ladies competitors handled by parties for races to both lower and upper houses. Such official measures are critical towards encouraging orientation equity in intra-party authority choice. Despite the fact that orientation predispositions remain yet endure, since the cooperation and portrayal of ladies keeps on being lower in the situations with more noteworthy power or impact in the ideological groups, there has been continuous expansions in ladies' presence in the designs of higher political administrative roles

Role Model Effect

The presence of women in parliament may also serve as a model for others. A review highlighted the significance of ladies good examples for people, everything being equal, to standardize "the thought and practice of ladies holding power" (O'Neil, Board and Domingo, 2015). According to the findings of a study that was carried out in India in 2012, the increased number of women serving as village leaders had the effect of closing the "aspiration gap" that existed between girls and boys by nearly 25 percentage points and eventually erasing or reversing the gender gap in educational outcomes. Young ladies additionally started investing less energy in family exercises in regions with expanded ladies' authority in the town (Beaman and others, 2012). These good examples can meaningfully influence future ladies' portrayal. Following the 2018 general races in Fiji, ladies represent 20% of the portrayal in Parliament, a record high for the country.³ This is credited to the good example impact. In certain nations with administered orientation portions, the ideological groups' primaries for competitors' and party administration choice is interrelated and represented by the public regulation on orientation quantities for up-and-comers' determination. In Rwanda, for instance, a law stipulates that women must make up at least 30% of the leadership structures at all levels of political parties. For instance, in a few LAC

nations there has been a significant expansion in the support and portrayal of ladies on gatherings' Public Chief Councils. Honduras, Ecuador, Bolivia, Costa Rica, and Nicaragua are just a few of the nations that have performed admirably. Parity measures for the nomination (Bolivia, Costa Rica, and Honduras) and/or composition of these bodies (Costa Rica and Ecuador) have been enacted in these nations. These findings are consistent with previous analyses of the factors that influence the presence or absence of women in these organizations. These analyses have come to the conclusion that the existence of a quota or parity law has a significant impact on a more gender-balanced composition.

Importance of women's political leadership

Worldwide responsibilities In the Beijing Stage for Activity, coming from the Fourth World Meeting on Ladies, Beijing 1995, the prioritization of ladies' administration was illustrated in areas G.1 and G.2: "take steps to "increase women's capacity to participate in decision-making and leadership" and "ensure women's equal access to and full participation in power structures and decision-making," respectively.

Twenty years later, the Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development called for "women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life" in order to achieve gender parity in leadership.

Show on the Disposal of Victimization Ladies unequivocally makes reference to ladies' political fairness (Articles 7-9) and examines ladies' equivalent support at all levels (Article 7b): "States Gatherings will go to all suitable lengths to wipe out victimization ladies in the political and public existence of the nation and, specifically, will guarantee to ladies based on equivalent conditions with men, the option to take part in the detailing of government strategy and the execution thereof and to serve in a position of authority and carry out all open roles at all degrees of government" (Part II, Article 7b). Collectively, these commitments show that women's right to equality in political decision-making positions cannot be achieved without equality.

Leaders and citizens: Women's political participation in India

India's upcoming state elections have made women's political participation a prominent topic of discussion. Nalini Gulati and Ella Spencer examine the evidence regarding various aspects of women's political engagement in the nation, including women's representation in government, women's roles as political leaders, and women's roles as active citizens, in this post. Through the ratio of women to men in ministerial positions, the ratio of women to men in parliamentary positions, and the

ratio of female to male heads of state over the past 50 years, the sub-index for political empowerment measures the gender gap at the highest level of political decision-making. The time that Indira Gandhi served as Prime Minister—from 1966 to 1977 and again from 1980 to her assassination in 1984—has a significant impact on India's position. While Gandhi's job as a conspicuous female pioneer ought not be disregarded, it truly does fairly slant our understanding of India's situating in the list. The other two estimates that comprise the list see India positioned 69th with 30% of ladies in clerical positions, and 122nd with 17% of ladies in parliament. The sub-record likewise neglects to figure state-level administration, where critical powers sits. Of India's 28 states, right now just West Bengal has a female Boss Pastor. In addition, leadership is the sole focus of the political empowerment sub-index. Women's political representation at various levels of India's political system, women as political leaders, and women as active citizens are among the topics we examine in this post in relation to women's political participation in India.

Women's political representation in India

In 1992, the 73rd Sacred Correction commanded that 33% of town government head positions in the nation ought to be saved for ladies. The goal of implementing the policy was to boost women's political representation at the local level. A huge collection of examination has since been done to think about the effect of the strategy, exhibiting a sharp expansion in the quantity of ladies chose as town sarpanch (Duflo 2005). In addition, an empirical study by O'Connell (2020) demonstrates that the mandate is responsible for a significant portion of the rise in the number of female candidates running for state and national legislature seats since the middle of the 1990s. In any case, female portrayal in higher workplaces stays low. Specifically, the portrayal of ladies at the state level has fallen essentially behind, barring ladies from significant seats of institutional power and independent direction. The IGC has gathered information on the creation of state government administration from their sites, starting around 30 Walk 2021. There are no female ministers in six Indian states, including Sikkim, Manipur, and Nagaland. No state comes near 33% of female priests - the most elevated extent of female clergymen is in Tamil Nadu with 13%, and 68% of states have under 10% female portrayal in state positions of authority. Figure 1 underneath portrays the low paces of female portrayal in ecclesiastical situations in Indian states.

Women as political leaders

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Women as active citizens

The sex proportion of electors in India has shown a great increment from 715 during the 1960s to 883 during the 2000s, with the 2019 general political decision being the initial time when ladies were bound to cast a ballot when contrasted with men. However, women are less likely to identify with a political party or participate in politically oriented public activities like election campaigns or protests. A review in Uttar Pradesh supports that the greatest orientation holes are to be sure in non-electing cooperation as opposed to in electing investment. The orientation holes are somewhat made sense of by variables, for example, ladies having fundamentally lower information about political foundations and appointive guidelines; lingering behind men on self-surveyed administration abilities; also, requiring authorization to head outside. An experiment conducted in Madhya Pradesh examined ways to increase women's political participation. The results showed that women who were members of a self-help group were twice as likely to attend village assembly meetings or make a claim on local leaders. It is suggested that women's coordinated efforts to jointly demand representation and combat men's backlash are largely to blame for the positive effect. Chattopadhyay and Duflo - in the review referenced above - show that ladies are bound to take part in the policymaking system on the off chance that the head of their town committee is a lady. The percentage of women who participate in the Gram Samsad when

the Pradhan is a woman is significantly higher. Additionally, women in these villages are twice as likely as men to have made a complaint or request to the Pradhan in the preceding six months. The specialists note this as being reliable with the possibility that political correspondence is impacted by residents and pioneers having a place with a similar orientation. They also suggested that female Pradhans' policy decisions may be influenced by this increased participation of female villagers in policymaking.

Conclusion:

This paper proposes creating an environment that is conducive to increasing women's political participation because it is essential for successful governance to have women involved in politics. It additionally proposes that the established lawful system be improved to all the more likely oblige the necessities of ladies in governmental issues. Ladies ought to likewise be monetarily engaged by approaching training, position, and money. Additionally, it is suggested that members of political parties receive leadership and gender awareness training for upcoming female leaders. Gender-sensitive and egalitarian policies should be included in the agendas and operations of political parties, and their implementation should be evaluated. In order to improve women's chances of empowerment, it is essential to focus on important issues. These incorporate schooling and preparing programs, the counteraction of various sorts of criminal and brutal demonstrations, the necessity of equivalent privileges for them, the disposal of unfair treatment against them in light of variables like race, standing, class, strict principle, identity, orientation,

and financial class, and empowering them to partake in governmental issues. As per the WEF Worldwide Orientation Hole Report 2020, India positions eighteenth concerning political strengthening, obviously better than its position in different components of the file: 149th in financial cooperation and opportunity, 112th in instructive accomplishment, 150th in wellbeing and endurance, and 108th in the general file. The political strengthening positioning sits over the UK's positioning of twentieth and altogether over the US position of 68th.

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Flood Hazard in Madhubani District, Bihar (India)

Dr. Rajeshwar Ray

Assistant Prof. (Guest Faculty)

University Department of Geography, B.R.A. Bihar University, Muzaffarpur, Bihar (India)

Corresponding Author- Dr. Rajeshwar Ray

Email- ray123yash@gmail.com

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Abstract

The chief aim of the present research paper is to identify the areas of the Madhubani district which are vitally affected by flood during rainy season and provide a remedial Solution. The district is a plain region with several rivers Balan, Kamla, Kosi, Sugawe are the major rivers of the district which bring flood. Voluminous siltation in the tamed channel of these due to which huge heap of sands are deposited between two embankments.

Secondary data has been from collected governments records. Primary data may be collected with the help of questionnaire from the respondents living in flood prone areas of the district. Water discharge system of the region is to be evaluated and it must be so strong. Roads in the flood prone areas should be constructed are repaired as soon as possible above flood level so as to distribute the flood and fodder easily and safely particularly in the rainy season.

The present paper will evaluate the responsible causes of flood and intensity of flood hazards in the study area. Flood can be controlled by adopting semi-aquatic flood life style, spreading awareness among the people of flood prone area and the construction of check dams in the upper reaches. Some measures have been suggested to control the flood variability and also for sustainable development of the district.

Keywords: - Flood, Hazard, Evaluate, Sustainable etc

Introduction :-

Flood means introduction of extensive land area with water for several days. It is generally associated with rivers and people conceive. Flood as the outcome of accumulation of huge volume of water coming out of the river's bank. We know that flood is a natural phenomenon in response to heavy and erratic rainfall continuing incessant for several days. The erratic nature of rainfall is one of the main causes of flooding because streams are not able to carry to excess of rainwater. Flood plays therefore a vital role in regulation of the level of the human settlement. The repeated flooding disastrous therefore has consequences of losses of crops lives stock, human lives and settlement.

Study Area:-

Madhubani district is the district of North Bihar plain. It is a part of Darbhanga Division. Its administrative headquarters are located in Madhubani. The district has an area of 3501 square kilometres and has a population of 4487379 as of 2011 census in India. It is the heart of Mithila culture and tradition. It is an important district from the point of view of the study of the flood hazard. The study area is located between 27°7' to 26°40' N latitudes and 85°21' to 86°45' east longitudes.

Bihar is the integral part of the middle Ganga plain. It covers an areas of 94163 sq. km. River Ganga divides Bihar in two parts, North Bihar and South Bihar research district. Madhubani is

situated in North Bihar. North Bihar is highly affected by flood. Heavy rainfall in catchment areas, situation in the rivers beds, release of huge quantity of water from Nepal changing the course of rivers, eroding and over topping of banks are some of the major causes of floods in Madhubani district in Bihar. These has been increased conversions of forests to agricultural and postural land in the middle hills of Nepal, which significantly contributes to the flood damage in Madhubani district. There was an increase in the annual run off in the Sapt Koshi from the 1950s, both the rainfall also increased correspondingly at several stations in the basin. Another reason for the flood damage is that people have been increasingly occupying the flood plains and have been assuming that the river volume has increase to great extent.

Research district Madhubani is located in the northern most part of the state of Bihar bordering Nepal. Madhubani is among the most flood affected areas in the state of Bihar and has trend of having flood in every two years and massive flood in every 10 years interval. In these flood prone areas where poverty is seen in its form, with accompanying hazard and unsafe condition the well-being and growth of communities become a serious challenge which in the long run have a bearing in the household.

Conclusion :-

Flood hazard have had very devastating impacts on societies and have destroyed livelihood and investments of staggering monetary value and importance to development.

However, adequate involvement of technology are leading to the creation of people cantered early warning system that enhances residents awareness and preparedness to flood events to significantly reduce the adverse impacts of these disasters on people. This chapter discussed various aspects of flood disaster management including early warning system. Flood mitigation and adaptation strategies, the relevance of monitoring, evaluation and mainstreaming flood disaster management into national level with special reference in Madhubani district.

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Global Warming and Natural Hazards

Mr. Satish A. Jambhalikar

H.O.D. Public Administration, V.D.M.D. College, Tq. Degloor,
Dist. Nanded- 431717

Corresponding Author- Mr. Satish A. Jambhalikar

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Abstract:

Today global warming is very serious problem for all the human beings, many scientists, academicians, politician, NGO's, geographers, environmental scientists are seriously engaged in the study of the global warming. It is very essential to discuss, and analyze, and explain the causes, effects and solutions of Global Warming. It is phenomenon of increasing average air temperatures near the surface of Earth over the past one to two centuries. Climate scientists have since the mid-20th century gathered detailed observations of various weather phenomena (such as temperatures, precipitation, and storms) and of related influences on climate (such as ocean currents and the atmosphere's chemical composition). These data indicate that Earth's climate has changed over almost every conceivable timescale since the beginning of geologic time and that the influence of human activities since at least the beginning of the Industrial Revolution has been deeply woven into the very fabric of climate change.

Keywords: Global warming, Conservation, Climate, Ocean Current.

Introduction:

Today global warming is very serious problem for all the human beings, many scientists, academicians, politician, NGO's, geographers, environmental scientists are seriously engaged in the study of the global warming. It is very essential to discuss, and analyze, and explain the causes, effects and solutions of Global Warming. It is phenomenon of increasing average air temperatures near the surface of Earth over the past one to two centuries. Climate scientists have since the mid-20th century gathered detailed observations of various weather phenomena (such as temperatures, precipitation, and storms) and of related influences on climate (such as ocean currents and the atmosphere's chemical

composition). These data indicate that Earth's climate has changed over almost every conceivable timescale since the beginning of geologic time and that the influence of human activities since at least the beginning of the Industrial Revolution has been deeply woven into the very fabric of climate change.

Methodology:

This article used simple methodology to discuss the issue of global warming. The research scholar is focused on the major reasons for the increasing global warming. The present article evaluates human beings direction of progress, either it is in the right direction or at the cost of losing environment. The paper discusses about harmfulness of global warming to human beings.

What is Global Warming?



Global warming is a term used for the observed century-scale rise in the average temperature of the Earth's climate system and its related effects. Scientists are more than 95% certain that nearly all of global warming is caused by increasing concentrations of greenhouse gases (GHGs) and other human-caused emissions. Global warming in the hydrological cycle and sea-level rise are expected to cause serious negative impact on natural ecosystems, human health, and economy. It is predicted that global warming will disrupt ecosystems and will result in loss of species diversity, as many species will be not be able to adapt to rapidly changing environmental conditions. Some ecosystems, such as tropical montane, mangrove forest, and Arctic ecosystems, **Effects of Global Warming:**

are likely to disappear because warmer climate or sea-level rise will not support them. In the high latitudes, warming will cause degradation of permafrost and an increase of methane release from wetlands. Because methane is the next important greenhouse gas after CO₂, this will also amplify global warming.

Causes Global Warming:

Global warming is a serious issue and it is not the only problem but a number of environmental issues. Global warming is an increase in the surface temperature of the earth that has changed various life forms on the planet. The things that cause global warming are divided into two categories it include “natural” and “human influences” of global warming.



Human effects on Global Warming

Human effect is a major problem presently because human do not take care of the mother's earth. Human causes are contributing mostly for the global warming more than the natural causes. The earth has been changing for many years until now it is still changing because of modern lifestyle of human beings. Human activities include industrial production, burning fossil fuel, mining, cattle rearing or deforestation.

It started with industrial revolution. Industrial have been using fossil fuels for power machines. Everything that we use is involved in fossil fuel. For example, when we buy a mobile phone, the process of making mobile phone have involve machines and machines uses fossil fuels, during the process carbon dioxide is releasing to the atmosphere. Besides industrial, transportation such as cars is also releasing carbon dioxide from exhaust.

The other major contributing factor is mining. During the process of mining, the methane will trap below the earth. Besides, rearing cattle will also

cause methane because cattle released the form of manure. Cattle are important because it make the latter equally responsible for the occurrence of global warming.

Deforestation is also leading to the increase in the global warming. Deforestation is a human influence because human have been cutting down trees to produce papers, wood, build houses or more. If human continuing deforestation, carbon dioxide will concentrate in the atmosphere because trees can absorb carbon dioxide from atmosphere. Besides, human also release carbon dioxide when breathe. Therefore the amounts of millions of people breath have release carbon dioxide to the atmosphere. If human continue deforestation, human breathing that release carbon dioxide will stay at the atmosphere.

The Green House gases also effect global warming. There are many effects that will happen in the future if global warming continues. That includes polar ice caps melting, economic consequences, warmer waters and more hurricanes, spread of diseases and earthquake First effect is

polar ice caps melting. As the temperature increase, the ice at the North Pole will melt. Once the ice melt the first effect will be raise on sea levels because the melting glaciers become oceans. According to the National Snow and Ice Data Center “if the ice melted today the seas would rise about 230 feet”. It affects many low lying areas such as the Netherlands. In future, the Netherlands will be cover by water once the North Pole is melted. However, it is not going to happen so fast but the sea level will continue rise.

Another effect is the species loss of habitat. Species that include polar bears and tropical frogs will be extinct due to climate change. Besides, various birds will migrate to other places because animals are not like humans. They cannot adapt the habitat that changes their living or temperature.

Next effect is more hurricanes will occur and economic consequences still affect as well. Hurricane causes damage to houses and government need to spend billions of dollars in damage and people need places to stay or have been killed. Once a disaster happens many people have died and diseases happen. Diseases are more serious because it can spread to other people very fast and more people will get the disease and the disease maybe come more serious because of different weather.

Solution to control the Global Warming

There are solutions that can stop global warming. However human beings and governments need to work simultaneously to implement the global warming solutions. To reduce global warming we can do to reduce the contribution of greenhouse gases to the atmosphere. Therefore, the solutions that we can reduce global warming are reducing gasoline, electricity and our activities that cause global warming.

To reduce gasoline mean we have a choice to choose a hybrid car that reduce using gasoline. Besides, petrol price are increasing. If a person everyday drives to work they need to pump petrol after 3 days and causes carbon dioxide. Another way to reduce gasoline is take public transport or carpool to work. It can help reduce carbon dioxide and save cost.

Another way to reduce global warming is recycle. Recycle can reduce garbage by reusing plastic bags, bottles, papers or glass. For instance, when we buy foods, we can use our own containers instead of plastic bags. Another example is after finish drinking the water from the bottle; we can reuse it or use our own bottle. If all this is being reuse, human can reduce deforestation and help save environment. Besides, turn off electricity if unused. It can save thousands of carbon dioxide and buy product that have energy saving because it saves cost and save environment.

Finally, human should stop open burning such as burning dry leafs or burning garbage. It will release carbon dioxide and toxic if burning garbage with plastic. Besides, government should reduce deforestation because the earth temperatures are increasing. Trees will help to improve the temperature on earth.

Conclusion:

1. Global warming is problem created by human beings.
2. Use of petrol, chemical fertilizers, pesticides, deforestation are contributing to global warming.
3. All other existing species are in danger to survive.
4. If human beings do not work seriously to control global warming whole animal and plants could not live and survive.
5. Human beings should minimize the use of products which are contributing to enhance global warming.
6. In case human beings do not take the issue of global warming seriously there will be major ecological problems like the rise in the sea level.
7. Finally it could lead to the destruction of all the humanity and only human beings will be responsible for it.

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Sugarcane Agriculture and its Effects on Natural Resources in Latur District

Dr. Khakre Rajeshwar D.

Associate Professor. & Hod. Geography Dept.

Jaikranti Arts Sr. College, Latur

Corresponding Author- Dr. Khakre Rajeshwar D.

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Abstract:

This paper examines the impact of sugarcane cultivation on natural resources in the Latur district of Maharashtra, India. Sugarcane is a major cash crop in this region, but its cultivation has raised concerns due to its high-water consumption, effects on soil quality, and impact on local ecosystems. The study analyses the water use patterns, soil degradation, and deforestation associated with sugarcane farming, highlighting the need for sustainable agricultural practices.

Keywords: Sugarcane, Natural Resources, Water Consumption, Soil Degradation, Latur District, Sustainability.

Introduction:

1.1 Background

Sugarcane is a vital crop in India's agricultural landscape, contributing significantly to the economy, particularly in regions like Maharashtra, which is one of the leading producers of sugarcane in the country. The Latur district, located in the Marathwada region of Maharashtra, has emerged as a significant hub for sugarcane cultivation over the years. This crop, favoured for its profitability and steady demand in the sugar and ethanol industries, has led to the widespread conversion of agricultural land into sugarcane fields. However, the intensive nature of sugarcane farming, especially in a region like Latur that experiences semi-arid climatic conditions, has sparked concerns about its sustainability and the strain it places on natural resources. The Latur district is characterized by its reliance on agriculture as the primary economic activity, with a large proportion of the population engaged in farming. Sugarcane, being a water-intensive crop, has a considerable impact on the district's water resources, which are already limited due to erratic rainfall patterns and recurring droughts. Over the last few decades, the expansion of sugarcane cultivation has not only increased pressure on water resources but also raised questions about soil health, biodiversity, and the long-term viability of this agricultural practice.

1.2 Problem Statement

The cultivation of sugarcane in Latur district, while economically beneficial, has led to several environmental challenges. The most pressing issue is the depletion of groundwater levels, as sugarcane requires large quantities of water throughout its growing cycle. This over-extraction of water has exacerbated the water scarcity problem in the district, which is already

prone to droughts. Additionally, the continuous monocropping of sugarcane has resulted in soil degradation, affecting its fertility and leading to increased use of chemical fertilizers. The environmental impact is further compounded by deforestation and the loss of biodiversity as natural habitats are converted into agricultural land.

These issues highlight the need to evaluate the sustainability of sugarcane agriculture in Latur district, considering its adverse effects on natural resources. The challenge lies in balancing the economic benefits derived from sugarcane farming with the need to conserve water, maintain soil health, and protect local ecosystems.

2. Objectives

This research aims to systematically analyse the effects of sugarcane agriculture on natural resources in the Latur district. The key objectives include:

1. Assessing the water usage patterns associated with sugarcane cultivation and its impact on groundwater levels.
2. Evaluating the extent of soil degradation resulting from continuous sugarcane farming, focusing on issues such as nutrient depletion, erosion, and salinization.
3. Investigating the changes in land use, particularly deforestation, and its impact on local biodiversity and ecosystems.
4. Proposing sustainable agricultural practices and policies that can mitigate the negative environmental impacts while maintaining the economic viability of sugarcane farming.

3. Significance of the Study:

The findings of this research are expected to contribute valuable insights into the environmental challenges posed by sugarcane agriculture in the

Latur district. By understanding the extent of these impacts, stakeholders, including farmers, policymakers, and environmentalists, can work towards developing strategies that promote sustainable agricultural practices. This study also aims to provide a framework for balancing the economic benefits of sugarcane cultivation with the need to conserve natural resources, ensuring the long-term sustainability of agriculture in the region.

4. Methodology

The methodology for studying the effects of sugarcane agriculture on natural resources in the Latur district involves a combination of field research, data analysis, and qualitative assessment. The approach is designed to comprehensively evaluate the environmental impacts of sugarcane farming on water resources, soil quality, and biodiversity. This section outlines the specific methods used for data collection, analysis, and interpretation.

4.1. Data Collection

- **Primary Data:**
- **Field Surveys:**

Conducted structured field surveys across selected villages in Latur district where sugarcane cultivation is prominent. The surveys included detailed questionnaires administered to farmers, focusing on their agricultural practices, water usage, soil management, and observations of environmental changes over time.

- **Interviews:**

In-depth interviews were conducted with local farmers, agricultural experts, and government officials to gather insights on the socio-economic aspects of sugarcane farming, challenges faced by the farmers, and their awareness of environmental issues.

- **Soil Sampling:**

Soil samples were collected from various sugarcane fields to analyse soil health indicators, including nutrient content, pH levels, salinity, and organic matter. Sampling was done before and after the sugarcane harvesting season to assess changes in soil quality.

Secondary Data:

Government Reports: Reviewed reports and data published by the Maharashtra State Agricultural Department, the Central Ground Water Board, and other relevant bodies to obtain information on groundwater levels, land use patterns, and historical agricultural trends in the Latur district.

Satellite Imagery and GIS Data:

Analysed satellite images and Geographic Information System (GIS) data to study land use changes, particularly the conversion of forested areas into sugarcane fields. GIS was also used to map water resource distribution and soil erosion hotspots.

5. Impact of Sugarcane Cultivation on Water Resources and Soil Quality

Sugarcane cultivation in the Latur district has significantly influenced the region's water resources and soil quality, posing both short-term and long-term environmental challenges. As a water-intensive crop, sugarcane demands substantial quantities of water, while its continuous cultivation without adequate soil management practices leads to soil degradation. This section provides a detailed analysis of these impacts.

5.1 Impact on Water Resources

High Water Consumption:

Sugarcane is one of the most water-intensive crops cultivated in India, requiring approximately 1,500 to 2,500 Liters of water per kilogram of sugar produced. In Latur district, where water resources are already limited due to low and erratic rainfall, the extensive cultivation of sugarcane places a tremendous strain on both surface water and groundwater. Farmers primarily rely on groundwater for irrigation, which has led to a significant depletion of aquifers over the years.

Depletion of Groundwater Levels:

Over-reliance on groundwater for sugarcane irrigation has resulted in a sharp decline in the water table in many parts of Latur. The Central Ground Water Board (CGWB) reports that several areas in the district have reached critical levels of groundwater depletion, with wells and boreholes running dry during the peak growing season. This depletion is not only unsustainable but also threatens the water security of the district, affecting both agricultural productivity and the availability of drinking water.

Impact on Surface Water Bodies:

The diversion of surface water for sugarcane irrigation has reduced the flow of rivers and streams in Latur. Many traditional water bodies, such as ponds and small lakes, have either dried up or experienced reduced water levels, impacting local ecosystems and communities that depend on these water sources for domestic and livestock needs. The reduced surface water availability has also led to conflicts among farmers, particularly during drought years when water is scarce.

Inefficient Irrigation Practices:

The prevalent use of flood irrigation, a method where large volumes of water are applied to the fields, exacerbates water wastage. Despite the availability of more efficient irrigation techniques like drip irrigation, their adoption has been slow due to the initial investment costs and lack of awareness among farmers. As a result, a significant proportion of the water used in sugarcane cultivation is lost to evaporation and runoff, further intensifying water scarcity in the region.

Consequences for Other Crops:

The water-intensive nature of sugarcane cultivation has led to reduced water availability for other crops, forcing many farmers to either switch to sugarcane or abandon farming altogether. This shift has resulted in a monoculture landscape, reducing crop diversity and increasing the vulnerability of the agricultural system to market fluctuations and climatic stresses.

Impact on Soil Quality Soil Nutrient Depletion:

Sugarcane is a heavy feeder crop, extracting significant amounts of nutrients, particularly nitrogen, phosphorus, and potassium, from the soil. In the absence of adequate soil management practices, such as crop rotation or the use of organic fertilizers, continuous sugarcane cultivation leads to the rapid depletion of these essential nutrients. Over time, this nutrient depletion results in declining soil fertility, requiring higher inputs of chemical fertilizers to maintain yields, which further degrades soil health.

Soil Salinization:

The excessive use of groundwater for irrigation, especially in areas with poor drainage, has led to the accumulation of salts in the soil, a process known as salinization. High levels of salinity reduce soil productivity, inhibit plant growth, and can render the land unfit for cultivation. In Latur district, soil salinization has been observed in several sugarcane-growing areas, posing a serious threat to long-term agricultural sustainability.

Soil Erosion:

The intensive nature of sugarcane farming, coupled with deforestation and land clearance, has accelerated soil erosion in the Latur district. The removal of natural vegetation for expanding sugarcane fields leaves the soil exposed to wind and water erosion. This erosion is particularly severe during the monsoon season when heavy rains wash away the topsoil, reducing the land's ability to retain moisture and support healthy crop growth.

Decline in Soil Organic Matter:

Continuous monocropping of sugarcane without the incorporation of organic matter, such as crop residues or compost, leads to a decline in soil organic carbon. Organic matter is crucial for maintaining soil structure, moisture retention, and microbial activity. The depletion of organic matter results in compacted soils with reduced water infiltration and poor aeration, further degrading soil health and productivity.

Impact on Soil Microbial Activity:

Healthy soils depend on a vibrant community of microorganisms that decompose organic matter, fix nitrogen, and contribute to nutrient cycling. However, the overuse of chemical fertilizers and pesticides in sugarcane cultivation disrupts the natural balance of soil microorganisms,

leading to a decline in soil biodiversity. Reduced microbial activity not only hampers nutrient availability but also makes soils more susceptible to disease and pest infestations.

Conclusion:

The cultivation of sugarcane in the Latur district has provided substantial economic benefits but at a significant environmental cost. The high-water requirements of sugarcane have led to the depletion of both groundwater and surface water resources, exacerbating the region's water scarcity and threatening the long-term sustainability of agriculture. Furthermore, continuous sugarcane farming has degraded soil quality through nutrient depletion, salinization, and erosion, jeopardizing future crop productivity. These impacts underscore the need for a balanced approach that integrates sustainable agricultural practices, such as efficient water use, soil conservation, and crop diversification, to protect the region's natural resources while maintaining agricultural viability. Addressing these challenges is crucial for ensuring the long-term resilience of Latur's agricultural sector and the well-being of its communities.

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Analysis of violence in the English Nursery Rhymes

Dr. Digambar Kulkarni

Head, Department of English, Vai. Dhunda Maharaj Deglurkar College
Degloor, Nanded

Corresponding Author- Dr. Digambar Kulkarni

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Abstract:

Present paper is an attempt to explore unique of interpretation of nursery rhymes that we sing them daily without knowing their meaning in the real sense. In this study the dark aspect of nursery rhymes are been revealed. These nursery rhymes have been singing not only in England but all over the world. But How many of us are really knows we singing them mindlessly. The impact of colonization on colonized people is so indelible that we did not even try to comprehend the meaning their meaning and what will be the effect of singing nursery rhymes on our children?. But it is reality that there is black sinister stories to these seemingly innocent behind nursery rhymes?

Keywords: - Montessori education, emotional connections, innocent-sounding, atrocious acts, silver bells and cockleshells.

Introduction:

Pre-school learning is supposed to be tender and smooth that we should give to our children. Perhaps every culture developed Institutions for these education and nurturing of young kids under the age of six came relatively late in the development of school systems. It is the most highly significant stage in human development was there much interest in making formal arrangements for the education of the young minds. The first 'nursery schools' was opened by the idealist socialist reformer, Roberts Owen, who is from Scotland in 1816.

The concept of child learning was derived from the theories of Kindergarten founder, Friedrich Froebel. The first and foremost kindergarten for kids was started in 1851 in England. The nursery school was originally started in a small room in the house which not a building designated to the youngest child. They were often very similar to the sort you see in films, with typical features like a rocking horse. Certainly in Victorian age, children were not supposed to send school especially higher class starta. It wasn't for these parents that the day nursery was created for though. For centuries mothers have been the teaching in the duty while the father went to work. Only women from the poorest families needed to contribute to the household income in order to get by, but those who

needed childcare most were in the worst situation to afford it.

As when the arrival of Maria Montessori's in India with Britishers the concept of education have been changed., Mahatma Gandhi and Rabindranath Tagore and were aware attracted by this new education system. Tagore had founded many "Tagore-Montessori" schools in India (even at Shantiniketan), in 1929 Indian interest in Montessori education was strongly represented at the International Congress in 1929. The school like Montessori's work in India started with her entry there in 1939. Present education system was founded in India in the form of preschools and schools that are now attached with the Association Montessori International.

Maria Montessori established a teacher training courses and the training centres near Adyar, Madras. Her job of training continued in India through her appointed and trained representatives, Albert M. Joosten and S. R. Swamy, before spreading further. In 1939 leaders of the Theosophical Society, supported and helped the work of Nursery school In 1940. was the difficult when Britishers requested Indians to support them in the world war so Indians entered in World War II. It was the important mark Indians feel that britishers were not our enemy. So It was the suitable time of nurturing the English Nursery

Schools. She went back to Europe for a brief period. Montessori back to India for a second time .The same year to conduct a few more courses in Chennai, Pune, Ahmedabad and Karachi. The Montessoris then back to Europe, leaving Albert Max Joosten as their representative in India

The dark aspects of English Nursery Rhymes:

It very interesting fact that the earliest nursery were originated long back in the 14 th century .As chronologically developed its to the golden age of the 18th century of course, the roots go back further, every era probably had it's own rhyme created for children. According to child development experts Sue Palmer and Ros Bayley, nursery rhymes with music significantly aid a child's mental development and spatial reasoning, reported the BBC. Seth Lerer, dean of arts and humanities at the University California – San Diego, has also emphasised the ability of nursery rhymes to foster emotional connections and cultivate language. "When we sing we' are participating in something that bonds parent and child." It is strange that kid sing these nursery rhymes we are engaging our child with centuries-old tradition that seems to be harmless on the surface.

In this study there an attempt of unfolding some nursery which are compiled rhymes which do not spell love, care innocence:

1 "Baa baa black sheep
Baa, Baa, Black Sheep
Baa baa black sheep,
Have you any wool?"

This innocent-looking and sounding nursery rhyme is talking about a sheep . Its wool comes with a set of actions that toddlers and pre-schoolers which can easily imitate. But the rhyme is actually from about the Great Custom. When King Edward had imposed a burdensome and heavy tax on wool in 1275. Apparently, this act of imposing the high and harsh tax resulted in one-third of the sheep wool being given to the king (or the Master), another third of produced sheep wool as the tax for the church (or the Dame), and the remaining part third will left for the farmers. The previous version of the rhyme is actually doesn't mention a third part to the lad or the boy, as the lyrics goes, "And none for the little boy who cries down the lane," a possible given reference to the miserable and poverty ridden farmers during that time. There were some people also wonder if its their choice of the colour was black. Certainly it has racial , religious undertones, although of course, it is quite possible . Due to that it was only because of

Dr. Digambar Kulkarni

the / B/ sound that was used in the rhyme scheme used the word the black instead of the white. Who knows it? Can anybody imagine or Would you have guessed that a simple looking nursery rhyme is rooted in the medieval wool tax which was imposed in the 13th century by The King Edward I? Under the new cruel rules, one third of the amount of a sack of wool went to him; another portion of mony went to the church and the last whatever it remains will left to the farmer. Thus, it was the thw pitiful condition farmer because nothing was left for the shepherd boy. So that boy was shown as crying down the lane. The colour black is bad ominous of Black sheep which will bring bad luck because their fleeces cannot be dyed and so they were worth less to the farmer. This rhyme is a very negative and pathetic a tale of misery of the farmer . Reciting this kind of nursery rhyme what motivation will be expected from such songs.

2 "London Bridge Is Falling Down

London Bridge is falling down,

Falling down, falling down.

London Bridge is falling down,"

It is very strange nursery rhyme that told a tale of disaster of falling London Bridge. Apart from this many theories of this kind are based on the origin of this popular nursery rhyme. This nursery is used widely and extensively in a children's game. In this rhyme children sing the tune and play the game of passing under the arch formed by the hands of two friends, with the arch falling down when the song ends. The most commonly accepted story behind this nursery rhyme is perhaps the supposed historical attack of Olaf II of Norway, which devastated and destroyed London Bridge in the early 1000s. But Some historians cannot agree as to whether this was a true event or not. Another story behind the song is theory that is related to the superstition and whim that human sacrifice has to be made in order to keep the bridge strong, safe and upright from evil souls. when the great London Bridge was finally taken down to dust in 1831, they found human skulls and the body were found inside its moorings. It is possibly linked to a form of medieval punishment where a person who is punished is locked in a room and left there to die—and possibly serving as the said human sacrifice. So these human skull were found in the London Bridge. If this the theme of this song then why this be why part of the nursery rhyme , "take the key and lock her up?"

3 “Ring a ring o roses, or ring around the rosie
 Ring Around the Rosy
 Ring around the rosy
 A pocketful of posies
 Ashes, ashes
 We all fall down!”

Here, again, what child hasn't locked hands with their friends and playmates, sung this nursery rhyme in tune, and flopped into their bottom, laughing and giggling at “Ashes, ashes, we all fall down”? But it is widely believed that Ring o Ring o Roses rhyme is showing plague related epidemic time when thousands of people died during the Great Plague of London in the year 1665. In that epidemic near about estimated 15% of England's population died in the plague. The disease plague which caused a red coloured, rosy rash, and they used “a pocketful of posies” to cover the disgusting and awful smell from the rash! No wonder there's a reference to “ashes, ashes” at the end. However, some historians believed this to be erroneous and not true. They offer a different story which relates the rhyme to the 19th century religious ban placed on dancing among many Protestants. So people of that time get around the ban, adolescents started to the play-party, where they would form ring games instead of square dancing. However, the first story seems to have more similarity and likeness to this nursery rhymes, though, wouldn't you say? You might want to reconsider doing the “atishoo, atishoo, we all fall down with your child because it is significantly means fall dead. That is why, one interpretation shows that present rhyme may relate to the incident of 1665's The Great Plague of London: the rosie” being the malodorous and ugly rash that developed on the patients skin of bubonic plague sufferers, the stench of which then needed concealing with a pocket full of posies.

The epidemic of Bubonic plague killed 15 per cent of Britain's population, hence atishoo, atishoo, we all fall down (dead).”

4. Rock-a-bye baby

It is considered that this rhyme reminds us of events preceding the Glorious Revolution of England. In this rhyme the baby in question is considered as the son of King James II of England, But the baby was widely believed to be another man's child, smuggled into the birthing room to ensure a Roman Catholic heir. The rhyme is projecting the concept of the laced connotation: the wind may be the Protestant forces blowing in from the Netherlands; the doomed cradle the royal House of Stuart. The

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old and earliest recorded version of the words in print shows the ominous footnote: “so, this may be serve as a warning sign of the Proud and ambitious, who climb so high that they generally fall at last.

5. Mary, Mary quite contrary

This is about Bloody Mary, who is the daughter of King Henry VIII. Who is always want to finish protestants, his concerns was to torture and murder the Protestants. Queen Mary was a great supporter of Catholic. Her garden here is an symbol of the graveyards which were filling with graves of Protestants. The “silver bells were thumbscrews; while “cockleshells are used as instruments to torture which were attached to male genitals. Ouch!

6. Georgie porgie

On the surface level above nursery rhyme is looking child-friendly rhyme. But, actually is has a sexual undertone to it. Georgie Porgie is a character of George Villiers, a bisexual nobleman who lived from 1592 to 1628. George was greatly supported and favoured by King James I. His intimate friendship with the king was known to everyone. So that he was able to gain immense power and position in just a short period of time. He was named as the first Duke of Buckingham at the age of just 31. George and King James I were rumoured to be lovers due to their close friendship, and from accounts of various court diaries and letters proved this to be true. King James I even publically declared his love for George by ,’You may be sure that I love the Earl of Buckingham more than anyone else, and more than you who are here assembled.’ Though George had a covert romantic and lesbian who is having an affair with the king, he was a womanizer also (..kissed the girls forcibly and made them cry..), and he had sexual relationships with numerous beautiful women, including the daughters and even the wives of many English noblemen. Because of the king favoured him, the English noblemen could not prosecute him, thus explaining the line, “when the boys came out to play, Georgie Porgie ran away .

7. Humpty dumpty

The nursery song , Humpty Dumpty has own story that does not please ,educate or motivate from any angle . The song is about imaginary two fat people's odd, fragile egg-shaped thing/persons. It turns out that the supporters of King Charles I. Humpty Dumpty was used to gain control and administrate over the city of Colchester during the English Civil War. Once in Colchester, the cannon sat on church tower until a barrage of cannonballs destroyed the

tower and they sent Humpty into the marshland below. Although, they retrieved, the cannon was beyond repair. Humpty the cannon was a feared and effective weapon.

8. Three blind mice

The real story Three blind mice is also unknown to many of us, the notions Bloody Mary and the rhyme. Among these Three Blind Mice actually have one thing in common they refer to the same rude and ruthless person. The farmer's wife described this rhyme as Mary I, the daughter of King Henry VIII and the Catholic Queen, Catherine, who ruled England from 1553 to 1558. who is known as "Bloody Mary" because of her heinous and atrocious acts. She ordered the brutal torture and execution of many Protestants during her short-lived time. On the other hand, the three blind mice referred to in the rhyme are three Protestant noblemen who were charged and accused of secretly planning to kill Queen Mary, and they were not blind. As in the given punishment, these three men punished horrible death sentence as , they were burned alive!

9. Oranges and lemons

In this English rhyme a guilty and condemned man is going to his execution. 'Here comes a chopper / To chop off your head!', past a slew of famous London churches: St Clemens, Old Bailey, St Martins, , Bow, Stepney, and Shoreditch. According to Random House's book Max Minckler, as late as 1941 the Society was condemning 100 of the most common nursery rhymes, including Humpty Dumpty and Three Blind Mice, for "harbouring unsavoury elements. A lot of children's literature is rotted in a very dark origin. Seth Lerer , Dean of arts and humanities at the University California explained to Today.com. that 'Nursery rhymes are part of long-standing traditions of parody and a popular political resistance to high culture and royalty.'" It is true that, in a time when to caricature royalty or politicians was punishable by death, nursery rhymes proved a potent way to smuggle in coded or thinly veiled messages in the form of children's entertainment. By and large in illiterate societies, the catchy sing-song melodies helped people remember the stories and, crucially, pass them on to the next generation.

Now, it is already known the gruesome hidden meanings behind these nursery rhymes would you still chant them to your little ones? Nearly each and every mother has sung nursery rhymes to her little one since time immemorial, be it

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during playtime or as a lullaby. But did you know that some of the most well-known rhymes are anything but also innocent? Probably no one would ever equate Mother Goose with the likes of horror writers Stephen King, H.P. Lovecraft, or Mary Shelley, but after this post, you might be willing to rethink your position!

10.' Mary Mary Quite Contrary

Mary, Mary, quite contrary

How does your garden grow

With silver bells and cockleshells

And pretty maids all in a row.'

Again when we think of contrariness as a tiny character flaw and the nursery rhyme full of flowering plants, this is actually a reference to Queen Mary I of England, also known as Bloody Mary. Because of her firm belief in the faith of Catholicism, due to this she heavily persecuted—and executed!—hundreds of Protestants. Do you know that silver bells and cockleshells are not things that you use in a garden, but they are rather devices for torture?

11. Jack and Jill

'Jack and Jill went up the hill,

To fetch a pail of water

Jack fell down and broke his crown

And Jill came tumbling after'

If you ever imagined why this nursery rhyme ends with Jack breaking his crown and Jill coming tumbling after him, it may be because it has less than sunshiny origins in the first place. One theory is that it may talk about the French Revolution, when Louis XVI of France and his wife Marie Antoinette were convicted of treason and consequently they were beheaded—the reference to Jack's losing his "crown," and Jill tumbling after him. However, present rhyme is said to have been in existence at least thirty years before that event. Another story of its is that it's a parody on the reformation of tax laws on liquid measures during the reign of King Charles I. Parliament turned down his proposal, so King Charles I pushed to reduce the volume down to half- and quarter-pints, which were then known as jacks and gills!

Singing nursery rhymes is a very fun pleasing activity for parents to do with children. But now that you know the possibly dark and gloomy origins of some of these rhymes, would you still want to sing them? Of course, one may suggest that turning dark events into innocent-sounding rhymes is one way that humans learn to cope with difficulty, so maybe it's not such a bad idea after all.

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A Study of Concept of Sustainable Development

Dr. R. B. Madale

Asso. Prof. in Geography S.V.College, Mukramabad

Corresponding Author- Dr. R. B. Madale

Email : rbmadale@gmail.com

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Abstract :

Development is a permanent aspect of human being. Making changes and improvements in the current situation that leads to the growth of a positive attitude in that situation. Development is a continuous process. Development is mainly related to economic, social, political, cultural spheres. Creating better conditions in all these areas is a sign of development. Sustainable human development depends on economic development and ecological balance. In the second half of the 20th century, environmental degradation and imbalance became a major challenge. The World Commission on Environment and Development was established during the global development. This commission was established in 1987 AD under the United Nations. The first chairman of this commission was the then Prime Minister of Norway G.H. Brunt Land made recommendations such as examining environmental issues for sustainable development, taking care not to deplete natural resources, and meeting the current needs of people without endangering the ability of nature to meet the needs of future generations. This development was termed sustainable sustainable development by the Brunt Land Commission.

Keyword: Sustainable development, Meaning, Elements ,Goal, Need.

Objectives Objective and Methodology:

This research paper is prepared on the basis of secondary sources.and two Objectives are following

- 1.To Study of Sustainable development.
- 2.To study of the need and objectives of Sustainable development.

Introduction:

Human lives in natural and social environment. Resource utilization is essential for economic development. Emphasis on economic development for increasing population, poverty eradication becomes orderly. It can be seen that industrial and technological progress has influenced the natural and social elements of the environment. Industrial development causes environmental degradation in many ways.

Mining activities cause soil and water pollution. Industrial waste causes air and water pollution. The fruits of economic development should benefit the present generation as well as the future generations. Financial for this It is necessary to coordinate social factors with development and environment'. A related concept is sustainable development. Development is a permanent aspect of human being. Making changes and improvements in the current situation so as to increase the positive

outlook in that situation is associated with development. Development is a continuous process. After the economic policy of 1990, the aim of the development also changed, instead of the policy, the development should remain in a permanent form and there should be a sustainable development with the aim of not decreasing. Sustainable human development depends on economic development and ecological balance.

Concept of Sustainable development:

Human lives in natural and social environment. Resource utilization is essential for economic development. Emphasis on economic development for increasing population, poverty eradication becomes orderly. It can be seen that industrial and technological progress has influenced the natural and social elements of the environment. Industrial development causes environmental degradation in many ways. Mining activities cause soil and water pollution. Industrial waste causes air and water pollution. The fruits of economic development should benefit the present generation as well as the future generations. Financial for this Social factors need to be coordinated with development and environment. A related concept is sustainable development. Development is a

permanent aspect of human being. Making changes and improvements in the current situation so as to increase the positive outlook in that situation is associated with development. Development is a continuous process. After the economic policy of 1990, the aim of the development also changed, instead of the policy, the development should remain in a permanent form and there should be a sustainable development with the aim of not decreasing. Sustainable human development depends on economic development and ecological balance.

Resource utilization decisions are made according to the needs of the current generation. But the concept of sustainable development also considers the needs of future generations. United Nations in 1987 former Prime Minister of Norway and Director of World Health Organization G. H. The World Commission on Environment and Development was established under the chairmanship of Bratland. This committee introduced the concept of sustainable development for the first time. "Development came to mean meeting the present needs of people without compromising the ability of nature while meeting the needs of future generations. This development was termed as sustainable/sustainable development by the Bratland Commission.

Meaning of Sustainable Development:

Sustainability and development are two synonyms. Eternal means eternally existing, lasting forever. The word eternal came into use in the 1970s. During this decade, various issues such as increased migration, urbanization, hunger, scarcity of food, drink etc. took a fierce form in developing nations. The word sustainable came to be used as a parallel to the word environment and environment. Development means change, growth and improvement.

Following are the definitions given by some thinkers of sustainable development.

1. Robert Allen :- "Sustainable development is the development which achieves long-lasting fulfillment of human needs and improvement in quality of human life".

2. Peirce :-

"Sustainable development is not just a concept. It means the preservation of our resources and the development of the entire society".

3. Vasundhara Parishad, 1992 :

" Sustainable development is that which is economically beneficial and socially just".

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4. World Commission on Environment and Development:

Sustainable development is the ability of the present generation to meet the needs of future generations without compromising their own needs. From this it is clear that sustainable development is called to stabilize the environment against any stress. Homogeneity in development and environmental resources on which society is dependent It is called sustainable development.

Elements of sustainable development:-

Efficient use of natural resources:-

Resource utilization is essential for economic development. But judicious use of resources is important. The concept of sustainable development also does not mean complete restriction of resource use, but more efficient use of natural resources and the environment, thereby achieving long-term benefits. This will benefit the present and future generations.

Qualitative standard of living of future generations Sustainable development :-

The objective of the concept is the present use of natural resources and environment.

Along with raising the standard of living of the current generation, the qualitative standard of living of the future generations will not decrease. Sustainable use of natural resources means the present while considering the needs of future generations needs are met.

Reduction of Pollution :-

In the concept of sustainable development, efforts are made to reduce environmental pollution. An attempt is made to transmit a clean, beautiful, healthy environment from one generation to the next. Increasing pollution of the environment means lowering the standard of living of future generations. For this, pollution control methods are adopted.

Economic Development :-

Sustainable development does not mean limiting economic development. Natural resources and the environment are used in such a way that the pace of current and future economic development is coordinated.

The World Development Report of 2003 suggested that "the need to emphasize sustainable development is not limited to economic development, but also to environmental and social issues. Unless social and environmental management is properly integrated with economic development or properly transitions Until it doesn't.

Sustainable Development Goals :

The goal of development is to meet the needs, hopes, aspirations and expectations of human beings. For sustainable development, it is necessary to provide all opportunities to meet basic human needs. If the daily living of man goes beyond the minimum standard of living, then he can be said to have all/maximum chances of survival and only if such a situation exists, the minimum daily needs will continue to be met stably. To maintain the minimum standard of living of the people and provide them with opportunities to fulfill their needs beyond the minimum standard of living is called sustainable development. In that sense, further sustainable development

Objectives are set.

Rejuvenation of the previous ecological degradation factor The seasonal cycle can be regularly controlled by reviving the environmental degradation factors due to human activities or natural calamities, e.g. deforestation, tree felling.

Making future production out of past losses :-

Past losses can also be converted into future productivity by experimenting with creating sustainable products from old waste materials. Eg: Processing of waste paper for printing of books, newspapers manufacture and printing of usable paper,

Management of resources for changing human needs :

As mentioned by Henri Fayol any task can be successfully and properly managed if there is management. Development is variable. Change and progress are two sides of development. But this change is in line with human needs Only then can it be fruitful. Sustainable development is essential to balance the changing needs and expectations of the citizens by properly managing the resources available to the nation.

Sustaining environmental quality:

Along with the present generation, the future generation can also get development opportunities through the sustainability of the environment. If the environment is sustainable and sustainable, the fruits of development can be enjoyed by future generations and the capacity to carry forward the legacy of development can be created through sustainable development.

Keeping pace with growing population:

Population growth is a major challenge in development governance and environmental governance. Population growth disrupts the supply

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of resources. As a result there is no permanence in development. A growing population and limited resources are counterproductive to development. Sustainable development implements the techniques of resource supply and proper utilization even in the face of problems like population growth. Hence, sustainable development is useful in addressing such issues.

Controlling pollution and environmental degradation:

The concept of sustainable development seeks to control pollution. Degradation of environment harms the future generation. Sustainable development transfers a controlled, balanced, empowered environment to future generations. Therefore, one of the objectives is to improve the quality of life of the future generation. Humans have acknowledged the inextricable relationship of social and economic development with the environment through sustainable development. Although the concept of sustainable development has gained momentum in the recent 10/15 years, it is an old concept.

Need for sustainable development:- Different countries of the world are at different stages of development. The right to development is a fundamental human right. Developed western states played it. But they ignored the environmental impact. Currently, the world society is divided into two parts, poor and rich, due to lack of sustainable development. Most of these questions concern consumption of sustainable wealth in an unsustainable manner and the creation of its substance has arisen from it. So far, human centered development has been seen mainly in some developed countries. The need for sustainable development for overall development can be stated as follows.

1. Poverty alleviation
2. Bridging the wealth gap. Bridging the rich-poor gap.
3. Reducing environmental pollution and environmental degradation.
4. Restriction of soil / natural degradation.
5. Conservation of biological resources and biodiversity.

Conclusion :

In summary it is clear that environment and development Although there is a functional area of environmental governance, very limited efforts are made for it. Actually the human resource of

environment administration is sufficient. Human resource of environment administration is adequate. Enforcement of the law by the Environment Administration is a sign. Similarly, to create sustainable development and stable environment through nature conservation through love of nature, environmental governance and environmental laws and their strict enforcement is the right way of environmental governance.

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प्रसार माध्यमाची सामाजिक आणि आर्थिक व्यवस्थेची भूमिका

प्रा. डॉ. बालाजी लक्ष्मणराव शिंदे

वृत्तपत्रविद्या विभाग प्रमुख, पुण्यक्षोक अहिल्यादेवी होळकर महाविद्यालय, राणीसावरगाव, तालुका गंगाखेड, जिल्हा परभणी.

Corresponding Author- प्रा. डॉ. बालाजी लक्ष्मणराव शिंदे

Email- patilbalaji53@gmail.com

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सारांश:

प्रसार माध्यमांची आर्थिक, सामाजिक रचना हे मुद्दे महत्वाचे मानले जातात. मात्र काही दशकातील नवीन तंत्रज्ञानामुळे या घटकाला नवीन आयाम मिळाले आहे. सामाजिक व्यवस्थेमध्ये प्रसारमाध्यमांचे महत्त्व वाढले आहे. त्याचबरोबर आर्थिकही मोठ्या प्रमाणावर वाढत आहे. जागतिकीकरणामुळे देशातील सर्वच क्षेत्रावर बदल झपाट्याने झाले आहे. यात माध्यमाच्या तंत्रावर बोलायचे झाल्यास सकाळची बातमी सकाळी वाचकांना वाचता येते. सामाजिक जाणिवेतून येणाऱ्या अपेक्षा आणि नियम, अटी, आर्थिक व्यवस्थेतून येणारे नफा, तोटा याचे दडपणामुळे माध्यमांना सामोरे जावे लागते. यातच राजकीय परिस्थितीचा अभ्यास केला गेला तर वाचक मालकावर परिणाम कसा झाला. याचा चिकित्सक पद्धतीने अभ्यास करावा लागतो. अद्यावत तंत्रज्ञानाची आवश्यकता आहे.

प्रस्तावना:

तंत्रज्ञान घेण्यासाठी आर्थिक मजबुती असणे आवश्यक आहे. म्हणजेच ज्यांच्याकडे पैसा आहे. त्यांनीच प्रसार माध्यमे सुरू केली पाहिजे, असे गणित झाले आहे. प्रसार माध्यमेही चर्चाही रोखठोक, चांगली, दमदार, निपक्ष, नवीन तंत्रज्ञानाचा वापर होत आहे. प्रसारमाध्यम हे उद्योग आहेत. हे उद्योग सुरू करण्यासाठी भरपूर पैसा व मनुष्यबळ, तंत्रज्ञान लागते. या सर्वबाबी असल्याशिवाय योग्य तो ग्राहक व नफा मिळत नाही. वाढत्या स्पर्धेमध्ये टिकून राहण्यासाठी अनेक बाबी कराव्या लागतील. त्यात ग्राहकांचा विचार, कागद लिखाण मनुष्यबळ, नुसते मनुष्यबळ नव्हे तर पात्रताधारक मनुष्यबळाचा विचार करावा लागतो. कोरोनाच्या काळानंतर मुद्रित माध्यमावर संकट येताना दिसते. मात्र सोशल मीडिया वाहिन्यांचा विचार केला तर वाढता प्रभाव दिसत आहे. समाजातील अनेक संस्कार व्यवस्था कमकुवत असताना प्रसार माध्यमाची व्याप्ती आणि प्रभाव मात्र वाढतच चालला आहे. सामाजिक, राजकीय व्यवस्था नाविन्यपूर्ण सांस्कृतिक, सामाजिक चर्चा, सर्वे आदी विषयावर प्रसारमाध्यमांचे स्थान भक्कम होत आहे.

माध्यमांचा प्रभाव:

माध्यमांशिवाय सामाजिक विषय हाताळणे कठीण आहेत. लोकशाही व्यवस्थेत माध्यमांचा उल्लेख आहे. माध्यम उद्योग हा कोणत्याही उद्योगासारखा मानला जात नाही. माध्यम उद्योग हा समाजसेवाशी निगडित आहे. या उद्योगाचा इतर उद्योगाची तुलना होऊ शकत नाही.

प्रसारमाध्यमातील उत्पादनांचा कच्चा माल समाजाच्या संस्कृतीतून घेण्यात आलेल्या असतो. अंतिमतः त्या संस्कृतीवरही त्याचे परिणाम होत असतात. माध्यमामुळे समाजामध्ये बदल राजकीय सांस्कृतिक, कृषी उद्योग आदी बदल घडवून आणायचे काम केले जाते. उद्योगधंद्याला मूलभूत सूत्रे लागू आहेत. तसेच मूलभूत सूत्रे ही माध्यम उद्योगाला लागू आहे. प्रसारमाध्यमातील दूरदर्शन, आकाशवाणी यांनीही आर्थिक या विचार करावा लागतो. त्यामुळे भारताला स्वातंत्र्य मिळाल्यानंतर वीस वर्षात आकाशवाणी मधून दूरदर्शन बाहेर पडला. लगेच उत्पन्न वाढीसाठी जाहिराती स्वीकारू लागले आहेत. त्यानंतर भारतातील नागरिकांना जाहिरातीला पैसे द्यावे लागतील त्याशिवाय जाहिरात प्रसारित होत नाही, असे मत तयार झाले. त्यानंतर ग्राहक, जाहिराती मालक असे तीन घटक तयार झाले.

प्रसारमाध्यमांची बाजारपेठ:

प्रसारमाध्यमांची पहिली बाजारपेठ हे ग्राहक असते. मुद्रित माध्यमाचा विचार केला तर वाचक वर्ग मोठा असला पाहिजे, यांचा विचार केला तर महिन्यांचा वापर मोठ्या प्रमाणात झाला पाहिजे. यासाठी ग्राहकांची संख्या किती आहे. याचा आकडा काढून संबंधित माध्यमाला जाहिराती दिल्या जातात. त्या जाहिरातीचा फायदा ग्राहकांना होणे आवश्यक आहे. जेवढे ग्राहक वाढतील तेवढेच जाहिरात दिली जाते. म्हणजेच ग्राहकाकडून वाचक, श्रोते, दर्शन आदीकडून मिळणारा पैसा हे उत्पन्नाचे एक साधन आहे. वस्तूची माहिती ग्राहकापर्यंत पोहोचल्यामुळे

जाहिरातदाराकडून पैसा मिळतो. हे दुसरे साधन आहे. आपल्या खपानुसार उत्पादन साधनांचा वापर करीत असता. खासगी नभोवानी व वृत्तपत्रे यांचा संसार जाहिरातीद्वारा मिळणाऱ्या रकमेतून चालवावा लागतो. स्टार प्लस, झी, सोनी, ई टीव्ही, एबीपी आदी वाहिन्यासह वृत्तपत्रे, पाक्षिक, साप्ताहिक, मासिक इत्यादींचा समावेश आहे. जाहिरात दिली म्हणजे मालकी झाली नाही, प्रसारमाध्यमांनी जास्तीत जास्त जाहिरात मिळविण्यासाठी प्रयत्न करीत असतात. म्हणजे जाहिराती मिळाल्या किंवा दिल्या म्हणजे विश्वासाहता राहणार नाही, असे म्हणता येत नाही. अनेक वेळा कंपन्यांच्या जाहिराती घेतल्या. त्याच कंपनीविरुद्ध बातम्या प्रकाशित होऊ शकतात. आर्थिकतेच्या दृष्टीने विचार केल्यास जाहिरातीवर अवलंबून असणाऱ्या प्रसारमाध्यमांचे यश अपयश त्यांचे ग्राहक किती, कोण आहेत, या निकषावर ठरविले जाते.

प्रसारमाध्यमांमध्ये जाहिरात कि मजकूर:

प्रसारमाध्यमांमध्ये जाहिरातीबरोबर चांगला मजकूर असणे महत्वाचे मानले जाते. म्हणूनच मुद्रित माध्यमांमध्ये पहिले पान व शेवटचे पानावर इतर पानापेक्षा अधिक जाहिराती घेतल्या जात नाहीत. त्यामुळे ग्राहकाला दर्जा प्राप्त होतो. जेवढा आशय दर्जेदार असतो, तेवढाच वृत्तपत्राचा खप अधिक असतो. ज्या वृत्तपत्राचा खप अधिक असतो त्या वृत्तपत्राला जाहिराती मिळू शकतात म्हणजेच आर्थिक उत्पन्नाचा साधन म्हणूनही त्या जाहिरातीकडे पाहिले जाते. ग्राहक आधारित बाजारपेठेमध्ये त्याला विशेष महत्व आहे. चित्रपट किंवा मालिका पाहिल्या जातात. मालिका पाहताना जाहिराती येतात. ज्या जाहिरातीचा फरक प्रेक्षकावर होईलच, असे सांगता येत नाही. परंतु जितके जास्त ग्राहक, वाचक तेवढेच जास्त जाहिरातीचे उत्पन्न असे असते, असे सर्वसाधारण गणित आहे. ग्राहक वाढूनही चालत नाही. तर वाचक वर्ग बघितला पाहिजे. ज्या लोकापर्यंत पोहचणे आवश्यक आहे. वाचक वर्ग सर्वसामान्य असला पाहिजे. हा प्रकार अमेरिकेमध्ये प्रसार माध्यमातील मालिकावर सर्वप्रथम विकसित झाला. साबणाची जाहिरात करायची होती. त्यासाठी सर्वसाधारण वाचक वर्ग निवडून जाहिरात केली. त्या जाहिरातीला प्रतिसाद मिळाला. त्यानुसार बहुतेक देशांमध्ये वाचक पाहून जाहिराती केल्या जातात. त्या जाहिराती मालिकांमधून सर्रास केल्या जातात. त्यामुळे ग्राहक उपयोगी वस्तू जाहिरात दराचे मोठे पाठबळ आहे. वाहिन्यावर कोण बनेगा करोडपती? चांगला चित्रपट, नाविन्यपूर्ण मालिका तर मुद्रित माध्यमात चांगला स्तंभ, अग्रलेख, लेख दिला जातो. माध्यमउद्योगात नवीन उद्योगपती पडेल आणि ते टिकेल असे सांगता येत येणार नाही.

माध्यम उद्योग:

नव्याने माध्यम उद्योग सुरू केल्यास हे उद्योग टिकलच असे सांगता येत नाही, कारण ज्यांचे आदी प्रकाशने आहेत. ते हे इतर आवृत्ती प्रकाशित करू शकतात. त्यांना इतर आवृत्ती प्रकाशित किंवा नव्याने सुरू करणे सोपे जाते. उदाहरण सकाळ, लोकमत, पुढारी, देशोन्नती इत्यादी वर्तमानपत्रांचा उल्लेख आपल्याला करता येते. महाराष्ट्रामध्ये तशा आवृत्ती सुरू केल्या आहेत. माध्यम उद्योगाला आर्थिक संदर्भात आंतरराष्ट्रीय व्यापाराचेही स्वरूप येत आहे. जागतिकीकरणामुळे आंतरराष्ट्रीय व्यापाराचे बदलले आहे. विविध देशांच्या खुल्या अर्थव्यवस्थेमुळे प्रसार माध्यमात स्पर्धा सुरू झाली. त्यामुळे वाढता सांस्कृतिक संबंध असे निर्मितीची भूक आशय वितरणाच्या तंत्रज्ञानातील प्रगती, यामुळे आंतरराष्ट्रीय व्यापाराला मोठ्या प्रमाणावर चालना मिळाली आहे. रायटर्स, एपी, वृत्तसंस्था, हॉलीवुडचे चित्रपट, इतर देशातील दूरचित्रवाणी कार्यक्रम निर्मिती कंपन्या, डिस्नेसारख्या कंपन्यांचे कार्यक्षेत्र त्यांच्याच देशापुरते सीमित नाहीत. यावर बहुराष्ट्रीय कंपन्यांचा प्रभाव आहे. वितरण व्यवस्थेमध्ये तंत्रज्ञान झपाट्याने विकसित झाले आहे. त्यामुळे खरेदी-विक्री करणे अधिक सुलभ झाले आहे. हॉलिवूडमधील चित्रपट भारतात हिंदी भाषा मधून दाखवले जातात. त्याचबरोबर परदेशी संगीताची सीडी किंवा ध्वनिफीत चटकन भारतातील स्रोत यांना ऐकायला आणि पाहायला मिळत आहे. अनेक भारतीय चित्रपटांनी सुद्धा प्रदेशातील चित्रपट दाखवून चांगला व्यवसाय सुरू केला आहे. यामधून निर्मिती, दिग्दर्शक भारतीय ग्राहकऐवजी आंतरराष्ट्रीय ग्राहकासाठी निर्मितीकडे वळू लागले आहेत. याचधर्तीवर भारतातील दूरचित्रवाणीवरील कार्यक्रम इतर देशांमध्ये विकले जातात. याला चांगला प्रतिसाद मिळत आहे. माध्यम उद्योगांनी विकसित देशांमध्ये व्यवसाय करण्याचे कमी केले आहे. अमेरिकेचे आर्थिक सामर्थ्य, युद्ध सामग्रीच्या 24 तास चालणाऱ्या वाहिन्यासमोर व जास्तीत जास्त पानभर मजकूर कसा द्यावा, ही एक मोठी समस्या निर्माण झाली, अशा वेळी स्थानिक माहिती पुरेशी पडत नाही.

माध्यमातील कायदे:

इतर देशातून व आपल्या काही समाज, काही राज्यातील चांगल्या आशयाची माहिती वृत्तपत्रात द्यावी जेणेकरून वाहिन्यापेक्षा हा आशय महत्वाचा, विषयाचा, चर्चेचा ठरू शकतो. कायदे आणि धोरणानुसार वितरण आणि मालकीच्या पातळीवर बहुराष्ट्रीय माध्यम कंपन्यावर नियंत्रण ठेवण्याचा प्रयत्न करीत आहे. वृत्तपत्राच्या क्षेत्रातील परदेशी गुंतवणुकीबाबत 2002 साली मंजूर करण्यात आला आहे. माध्यमांच्या मालकीचा संबंध थेट आर्थिकशी असतो. माध्यमातील आशय हा माध्यमांना अर्थपुरवठा करण्याच्या

हितसंबंधांना पोषक असतो, असे माध्यम तज्ञ अल्टचल यांनी सांगितले. माध्यम उद्योगात केवळ मालकांचेच नव्हे तर अर्थ पुरवठा करणारे जाहिरातदार, ग्राहक, सहकार यांचाही प्रभाव दिसून येतो. या सर्वमध्ये मालकाला मोठे स्थान आहे, म्हणून मालकाचा निर्णय हे प्रसारमाध्यमातील ग्राहक शासन आदींना महत्वाचा असतो.

प्रसारमाध्यमांची मालकी चार प्रकारची असू शकते. यामध्ये व्यक्तिगत मालकी, व्यापारी, अव्यापारी संस्था, सार्वजनिक क्षेत्राचा समावेश आहे. वैयक्तिक गुंतवणुकीवर अवलंबवलेली असलेली वृत्तपत्र वाहिनी याचा प्रभाव मात्र जास्त दिसून येतो. कारण त्याला निकाल द्यावा लागतो. सर्वस्वी जबाबदारी त्यांचे स्वतःचीच असते. त्यामुळे चांगले निर्णय घेण्यात वेळ लागणार नाही. वैयक्तिक मालकीच्या माध्यम संस्थांना महत्त्व आहे. प्रसारमाध्यमातील व्यापारी मालकीचा एक महत्वाचा प्रकार आहे. यात खासगी गुंतवणूक व सार्वजनिक गुंतवणुकीत चालणाऱ्या माध्यम उद्योग आहेत.

खासगी गुंतवणुकीतून चालणारी टाइम्स ऑफ इंडिया, सकाळ, लोकसत्ता, स्टार न्युज आदि वाहिनींच्या उल्लेख आहे. मात्र रजिस्टर ऑफ कंपनीद्वारे, नोंदणी द्वारे मालकीचा म्हटलं की, उपप्रकार आहे. तर काही व्यापारी शेअर्स द्वारे निधी जमा करून माध्यम उद्योग सुरू करतात व व्यापारी तत्वावर चालणाऱ्या संस्था हा माध्यम मालकीचा तिसरा प्रकार आहे. यामध्ये नफा कमविणे हा उद्देश नसतो. सार्वजनिक मालकी म्हणजे स्वायत्त मंडळातर्फे चालविणाऱ्या माध्यमाचा समावेश आहे. माध्यम उद्योग चालक हे आशयाला महत्त्व देणारा असतो.

माध्यमांतील जनमत:

माध्यमांमध्ये जनमत निर्मितीची ताकद असली पाहिजे. सत्ता आणि संवर्धन टिकविण्यासाठी राजकीय पक्ष व व्यक्तीकडून माध्यमांचा वापर केला जाण्याचा इतिहास जुना आहे. इतर देशांमध्ये राजकीयचा वापर करून माध्यम उद्योग ताब्यात घेतले जातात. मात्र भारतात प्रसारमाध्यम उद्योग हे सरकारच्या ताब्यात सर्वच नाही, त्यामुळे माध्यम उद्योग हा सरकारच्या बाजूने मते मांडतीलच असे नाही. आणीबाणीच्या काळात असे प्रकार झाले. मात्र माध्यम उद्योगांचा त्याला दुजोरा दिला नाही. यात राजकीय व्यापारी इतरांची अनेक वृत्तपत्रे आहेत. स्वातंत्र्यपूर्व काळापासून सुरू झालेली परंपरा आजही कायम सुरू आहे. शिवसेनेचे मुखपत्र सामना, ऑर्गनायझर, पश्चिम बंगाल मधील डाव्या पक्षाचे मुखपत्र गणशक्ती असे विविध उदाहरणे देता येतील.

माध्यमांतील ग्राहक:

माध्यमांना एक संघटन म्हणून मालकांशी, समाजांशी, जाहिरातदारांशी, पुरवठादारांशी, कर्मचाऱ्यांशी, ग्राहकांशी संबंध ठेवावे आणि टिकवावे लागतात.

प्रा. डॉ. बालाजी लक्ष्मणराव शिंदे

जाहिरातदाराचे संबंध टिकविण्यासाठी अनेकदा ग्राहक नाराज होतो. जाहिराती असल्या की, वाचकांना संपादकीय मजकूर वाचायला मिळत नाही. दूरचित्रवाणी वरील कार्यक्रम पाहताना अडचणी येतात. त्यामुळे ग्राहकांची बाजू घेतली तर जाहिरातदार नाराज होतात. जाहिरातदाराची बाजू घेतली तर आर्थिक फटका बसण्याची शक्यता आहे. माध्यमाने सर्व घटकांना सांभाळून पुढे गेले पाहिजे, माध्यमात अनेक मतभेद निर्माण होतात. संपादकीय विभाग त्यांच्या वाचकांची अधिक जागरूक असते. भारतातील बहुतांश वृत्तपत्रातील संपादकीय विभागाच्या मताला प्राधान्य मिळत असतं. वृत्तपत्रांची आर्थिक गणिते बदलली तस-तसे संपादकीय वर्गाच्या अधिकार क्षेत्रावर बंधने येऊ लागली. सध्याच्या परिस्थितीत विचार केला गेला तर संपादकीय विभागाच्या बरोबरीने किंवा त्यापेक्षा अधिकार व्यवस्थापन विभागाला अधिक दिला जातो, असे चित्र पहावयास मिळते.

समारोप/निष्कर्ष:

सध्याच्या संपादकापुढे अधिक किटकिट आणि गुंतागुंतीचे आव्हाने आहेत. अशा आव्हानांना तोंड देऊन वृत्तपत्र यशस्वी चालून दाखविणे कठीण काम आहे. त्यासाठी आजच्या संपादकाजवळ लिखाण कौशल्य, विचार सामर्थ्य बरोबरच व्यवस्थापकांची उद्दिष्टे, वाचक वर्ग, जाहिरातदार आदी घटकांचा अभ्यास असावा लागतो. बहुतांश अनेक वृत्तपत्रात व्यवस्थापकीय संपादक याच पदावर काम करतात. त्यांच्याजवळ लिखाण कौशल्य असलेच पाहिजे असे राहिले नाही. गेल्या काही वर्षांमध्ये माध्यमातील शिक्षण प्रशिक्षण घेणाऱ्यांची संख्येत वाढ होत आहे. अनेक लोक माध्यम क्षेत्रात येऊन प्रत्यक्ष कामातून शिकत असत.

औपचारिक शिक्षण देणाऱ्या संस्थांही नव्हत्याच, मात्र 90 च्या दशकानंतर माध्यमातून शिक्षणाची गरज ओळखून संख्या वाढू लागली. आज घडीला शंभरहून अधिक विद्यापीठातून वृत्तपत्राचे शिक्षण दिले जाते. माध्यम व्यवसायिकांच्या शैक्षणिक पार्श्वभूमीवर क्रांतिकारक बदल घडून आला, असे म्हणावे लागेल. त्याचबरोबर पुरुषाबरोबर महिलांची संख्याही वाढवावी, माध्यम उद्योगातील विविध विभागात महिलांचे वर्चस्व दिसत आहेत.

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पश्चिम विदर्भातील राजकीय घराणी : एक विश्लेषणात्मक अध्ययन**Dr. Santosh Narayan Kayande¹, Asst. Prof. Nasir Kasam Sheikh²**¹ Ph.d. Guide, Shri Shivaji Arts Comm. & Science College, Akot Tq. Akot Dist. Akola, Maharashtra, Center Code - 203² Research Scholar, Shri Vitthal Rukmini College Sawana**Corresponding Author- Dr. Santosh Narayan Kayande****DOI- 10.5281/zenodo.13866207****सारांश:**

महाराष्ट्र राज्यातील अतिशय महत्वाचा व विदर्भातील पाश्चिम विदर्भातील लोकसभा मतदार संघ, विधानसभा मतदार संघ आणि विधानपरिषद तसेच स्थानिक स्वराज्य संस्था आणि पंचायत समिती व जिल्हा परिषदेत निवडून आलेल्या राजकीय घराण्यांची माहिती यांची मांडणी करण्यात आलेली आहे तसेच राजकीय प्रक्रियेत राजकीय घराणी यांचा असलेला सहभाग प्रस्तुत प्रबंधात मांडण्यात आलेला आहे पश्चिम विदर्भातील नामांकीत व प्रमुख व प्रसिद्ध राजकीय घराणी, संजय शामराव धोत्रे, वसंतराव रामराव धोत्रे, सुधाकरराव रामकृष्ण गणगणे, हिदायततुल्ला बराकततुल्ला पटेल, सैय्यद नमिकोद्दीन खतीब, डॉ. रणजित विठ्ठलराव पाटील, गुलाबराव रामराव गावंडे, अण्णासाहेब कोरपे, मो. अजहर हुसेन, बाबासाहेब धावेकर, नारायण हरिभाऊ गव्हाणकर आणि प्रतिभादेवी भगवंतराव तिडके, वसंतराव फुलसिंग नाईक, सुधाकरराव राजूसिंग नाईक, मनोहरराव राजूसिंग नाईक, पुंडलिकराव गवाने, भावनाताई गवळी, अॅड. अनंतराव अप्पाराव देवसरकर, प्रकाश पाटील देवसरकर, माणिकराव गोविंदराव ठाकरे, जवाहरलाल अमोलकचंद दर्डा, शिवाजी राठोड, अॅड शिवाजीराव मोघे आणि अण्णासाहेब पारवेकर यांच्या राजकीय घराण्यांचे राजकीय प्रक्रियेत असलेल्या सहभागाचे अध्ययन करण्यात आलेले आहे विशेषतः अकोला व यवतमाळ जिल्ह्यातील प्रमुख अध्यासातील राजकीय घराणी यांचा प्रस्तुत शोध प्रबंधात अभ्यासकाने अभ्यास केला आहे.

बीज शब्द:- विधानसभा मतदार संघ आणि विधानपरिषद तसेच स्थानिक स्वराज्य संस्था आणि पंचायत समिती व जिल्हा परिषदेत निवडून आलेल्या राजकीय घराण्यांची माहिती यांची मांडणी करण्यात आलेली आहे

अ) यवतमाळ जिल्हा - यवतमाळ जिल्ह्यातील राजकीय घराणी यांची राजकीय प्रक्रियेत असलेली सक्रीयता यांचे अध्ययन पुढील प्रमाणे केलेले आहे.

१) वसंतराव फुलसिंग नाईक –

वसंतराव नाईक यांनी १९५२ मध्ये मध्यप्रदेश या राज्याच्या विधानसभेची निवडणूक लढविली आहे त्या निवडणूकीत ते प्रथम विजयी झाले. त्यानंतर त्यांनी मुंबई विधानसभेची १९५७ मध्ये निवडणूक लढविली असता ते विजयी झाले आहे आणि १९६६ मध्ये यवतमाळ जिल्ह्यातील पुसद विधानसभा मतदार संघातून विजयी झाले. आणि १९७७ मध्ये ते वाशिम लोकसभा मतदार संघातून विजयी झाले आणि ०५ डिसेंबर १९६३ ते २० फेब्रुवारी १९७५ मध्ये महाराष्ट्र राज्याचे मुख्यमंत्री झाले. त्यानंतर त्यांचे पुतणे सुधाकरराव राजूसिंग नाईक हे राजकीय प्रक्रियेत सहभागी झाले. गहुली ता. पुसद जि. यवतमाळ येथील ग्रामपंचायतचे सरपंच, पुसद नगर परिषदेचे अध्यक्ष, यवतमाळ जिल्ह्या परिषदेचे अध्यक्ष आणि १९७८, १९८०, १९८५, १९९० आणि १९९९ ला

पुसद विधानसभा मतदार संघातून विजयी झाले. महाराष्ट्र राज्याचे कॅबिनेट मंत्री या पदावर त्यांनी काम केले. कृषीमंत्री, ऊर्जा मंत्री, शिक्षणमंत्री अशा विविध खात्याचे मंत्री म्हणून त्यांनी कार्यकाळ पूर्ण केला. २५ जुन १९९१ ते २२ फेब्रुवारी १९९३ या कालखंडात महाराष्ट्र राज्याचे मुख्यमंत्री होते. हिमाचल प्रदेश या राज्याचे राज्यपाल १९९४ साली झाले. महाराष्ट्र राज्याचे कॅबिनेट मंत्री १९८० ला झाले. (गृहनिर्माण, पशुसंवर्धन आणि मत्स्य व्यवसाय मंत्री) महाराष्ट्र राज्यात १९९५ ला शिक्षण दुग्धव्यवसाय विकास व पशुसंवर्धन कॅबिनेट मंत्री झाले. १९८६ ला उद्योग महसुल आणि समाजकल्याण कॅबिनेट मंत्री महाराष्ट्र राज्याचे झाले. १९८८ ला समाजकल्याण, उर्जा आणि संसदीय कामकाज कॅबिनेट मंत्री झाले. १९९० ला महसुल आणि संसदीय कामकाज कॅबिनेट मंत्री झाले.

२. पुंडलीकराव रामजी गवळी

पुंडलीकराव गवळी यांचे वडील हे शेतकरी कुटुंबात जन्माला आलेले आहेत. त्यानंतर त्यांचे पुत्र पुंडलिकराव गवळी हे सर्वात प्रथम शिवसेना या पक्षातून

१९९८ साली वाशिम लोकसभा मतदार संघातुन पहिल्यांदा विजयी झाले. आणि त्यानंतर त्यांची मुलगी कु.भावनाताई पुंडलीकराव गवळी ह्या वाशिम - यवतमाळ लोकसभा मतदार संघातुन १९९९, २००४, २००९, २०१४ आणि २०१९ ह्या पाच वेळा विजयी झालेल्या आहेत. आणि आजही त्या राजकीय घराणी म्हणुन त्यांचा राजकीय वारसा पुढे नेत आहेत.

३. **अॅड. अनंतराव अप्पाराव देवसरकर**

अनंतराव देवसरकर यांचे वडील सर्वसाधारण शेतकरी होते. परंतु त्यांचे पुत्र हे नागपूर विद्यापीठातुन वकीलीची पदवी पुर्ण केल्यानंतर ते राजकीय प्रक्रियेत सक्रीय झाले. आणि त्यांनी १९६२ मध्ये नागपूर विद्यापीठात विद्यार्थी संघटनेचे अध्यक्षपद मिळविले. १९७२ ते १९७६ मध्ये ते यवतमाळ जिल्हा मध्यवर्ती सहकारी बँकेचे ते अध्यक्ष होते. तसेच ते १९७७ मध्ये पुसद सुतगिरणीचे अध्यक्ष होते. १९७८ मध्ये उमरखेड महागांव विधानसभा मतदार संघातुन ते विजयी झाले. १९९९ मध्ये परत ते उमरखेड महागांव विधानसभा मतदार संघातुन विजयी झाले. तसेच ते उमरखेड महागांव मतदार संघात १९८०, १९८५, १९९५, २००४ या दरम्यान पराभुत झाले. त्यानंतर त्यांचे पुत्र राम अनंतराव देवसरकर हे यवतमाळ जिल्हा परिषदेचे २००९ ला अर्थ व बांधकाम सभापती झाले.

४. **माणिकराव गोविंदराव ठाकरे**

माणिकराव ठाकरे यांचे वडील गोविंदराव ठाकरे हे शेतकरी होते. परंतु त्यांचे पुत्र माणिकराव ठाकरे हे १९७३ साली दारव्हा तालुक्यात युवक काँग्रेसचे अध्यक्ष होते. १९७९ साली यवतमाळ जिल्हा परिषदेचे सदस्य होते. तसेच ते १९८५, १९९५ मध्ये दारव्हा विधानसभेतुन विजयी झाले. वाशिम-यवतमाळ लोकसभेतुन २०१९ ला पराभुत झाले. आणि २००९ व २०१२ मध्ये ते विधानपरिषदेचे सदस्य झाले होते. १९९३ ते १९९५ मध्ये ते महाराष्ट्र राज्याचे राज्यमंत्री झाले. १९९९ ते २००३, २००३ ते २००९ मध्ये महाराष्ट्र राज्यांचे परत राज्यमंत्री झाले. २००४ ते २०१५ मध्ये महाराष्ट्र प्रदेश काँग्रेस कमीटीचे अध्यक्ष झाले. १९९३ मध्ये पालघर जिल्ह्याचे पालकमंत्री २००३ मध्ये ते यवतमाळ जिल्हा प्रदेश काँग्रेस कमेटीचे व दादर नगर हवेली आणि दिव व दमन चे ऑल इंडिया काँग्रेस कमेटीचे प्रभारी होते. २०१९ च्या

निवडणुकीत ते तेलंगणा राज्याचे प्रभारी होते आणि सध्या ते तेलंगणा राज्याचे प्रभारी म्हणुन आहेत.

५. **जवाहरलाल अमोलकचंद दर्डा**

जवाहरलाल दर्डा यांचे वडील व्यापारी होते. परंतु त्यांचे पुत्र जवाहरलाल अमोलकचंद दर्डा हे १९७२, १९७८, १९८४ आणि १९९० या दरम्यान महाराष्ट्र राज्याच्या विधान परिषदेचे सदस्य होते. तसेच ते १९७८, १९८०, १९८५, १९८६, १९९१ आणि १९९३ या दरम्यान महाराष्ट्र राज्यांचे कॅबिनेट मंत्री होते. त्यांचे पुत्र विजय जवाहरलाल दर्डा हे राज्यसभा या सभागृहाचे सदस्य १९९८, २००४ आणि २०१० पासुन ते राज्यसभा या सभागृहाचे सदस्य आहेत. तसेच लोकमत मिडीया ग्रुपचे सदस्य, लोकमत वृत्तपत्राचे अध्यक्ष आहेत. तसेच त्यांचे भाऊ राजेंद्र दर्डा हे औरंगाबाद विधानसभा पश्चिम मतदार संघातुन १९९५ मध्ये पराभुत आणि १९९९, २००४ मध्ये ते विजयी झाले. तसेच २००९ मध्ये औरंगाबाद पूर्व विधानसभा मतदार संघातुन विजयी झाले. आणि २०१४ मध्ये औरंगाबाद विधानसभा पूर्व मतदार संघातुन पराभुत झाले होते. राज्यमंत्री पद त्यांनी प्राप्त केले होते. तसेच ते लोकमत प्रसार समुहाचे ते मुख्य संपादक आहेत.

६. **शिवाजी बळीराम राठोड**

शिवाजी बळीराम राठोड यांचे वडील हे राजकारणी नव्हते. त्यांचा प्रमुख व्यवसाय हा शेती होता. परंतु त्यांचे पुत्र शिवाजी बळीराम राठोड हे पंचायत समिती महागांव चे १९९९ च्या दरम्यान सदस्य होते. त्यानंतर ते यवतमाळ जिल्हा परिषदेचे सदस्य २००४ च्या दरम्यान जिल्हा परिषद सदस्य झाले होते. तसेच ते जिल्हा मध्यवर्ती बँक यवतमाळ चे २०१२ मध्ये संचालक होते. आणि सध्याच्या परिस्थितीत ते राष्ट्रवादी काँग्रेस पक्षाचे पुसद शहराचे सरचिटणिस आहेत. त्यानंतर त्यांची पत्नी कमल राठोड ही महागांव पंचायत समितीची २००५ च्या दरम्यान सभापती होती. म्हणजेच राजकीय प्रक्रियेत राजकीय घराणी म्हणुन यांचा अभ्यास करणे गरजेचे आहे.

७. **शिवाजीराव शिवरामजी मोघे**

शिवरामजी मोघे हे सामाजिक आणि शेतकरी होते त्यांचा राजकारणाशी संबंध नव्हता. म्हणजेच त्यांनी कोणतीही निवडणुक लढविली नव्हती. परंतु त्यांचे पुत्र शिवाजीराव मोघे हे राजकीय प्रक्रियेत सहभागी होते. आणि ते राजकारणी म्हणुन राजकीय घराणी म्हणुन ओळखले

जातात. केळापूर विधानसभा मधून ते १९८०, १९८५, १९९३ आणि १९९९ या दरम्यान विजयी झाले होते. तसेच १९९०, २००४ च्या दरम्यान केळापूर विधानसभेतुन पराभूत झाले होते. आणि ते १९७८ च्या दरम्यान दिग्रस विधानसभेतुन पराभूत झाले. तसेच आणि विधानसभा मतदारसंघा मधून २००९ ला ते विजयी झाले. २००४ साली वाशिम-यवतमाळ लोकसभेची निवडणूक त्यांनी लढविली होती. नागपूर जिल्ह्याचे २००३ आणि २००९ दोनवेळा ते पालकमंत्री होते. अशा

ब) अकोला जिल्हा - अकोला जिल्ह्यातील राजकीय घराणी यांची राजकीय प्रक्रियेत असलेली सक्रीयता यांचे अध्ययन पुढील प्रमाणे केलेले आहे.

१) सैय्यद नतीकोद्दिन खतीब:-

सैय्यद नतीकोद्दिन खतीबहे बाळापुर विधानसभा मतदार संघातून १९९५, २००४ आणि २०१४ च्या विधानसभेच्या निवडणुकीत पराभूत झालेले आहे. परंतु विधान परिषद स्थानिक स्वराज्य मतदार संघातून २००६ मध्ये ते विजयी झालेले आहेत. त्यानंतर त्यांच्या कातुम्बातून त्यांची पत्नी रजिया सैय्यद नतीकोद्दिन खतीब ह्या बाळापुर विधानसभा मतदार संघातून २००९ मध्ये त्या पराभूत झालेल्या आहेत. परंतु त्या बाळापुर नगर परिषदेच्या १९९० ते २००३ या दरम्यान अध्यक्ष होत्या त्यानंतर त्यांचे पुत्र सैय्यद एनोद्दिन सैय्यद नतीकोद्दिन खतीब हे बाळापुर अगर परिषदेचे २००८ पासून २०१८ पर्यंत अध्यक्ष व सदस्य होते.

२) डॉ.मो अजहर मो. असगर हुसेन:-

मो.असगर हुसेन हे अकोला नगर परिषदेचे १९५५ ला सदस्य होते. तसेच ते लोकसभा पश्चिम मतदार संघातून १९६८ व १९७३ ला लोकसभा सदस्य होते. त्यांचे पुत्र डॉ. मो.अजहर हुसैन हे १९७८ ला अकोला नगर परिषदेचे १९७४ ला बांधकाम सभापती होते. लोकसभा पश्चिम लोकसभा मतदार संघातून १९७१ ला विजयी झाले. व १९८९ ला ते अकोला लोकसभा पश्चिम मतदार संघातून पराभूत झाले. तसेच अकोला विधानसभा १९७८ विजय झाला, १९८८ व २००९ ला ते पराभूत झाले आणि १९९४ ते २००० ला ते विधान परिषद चे सदस्य होते. तसेच महाराष्ट्र राज्याचे परिवहन राज्य मंत्री १९७८ ला व १९८० ला कृषी आरोग्य व महसूल राज्यमंत्री आणि १९९० ला ते युवक कल्याण राज्यमंत्री होते. त्या नंतर त्यांचे पुत्र डॉ.मो.झीशान अजहर हुसेन हे अकोला महानापालिका चे २०१३ ते २०१८ या दरम्यान विरोधी पक्ष नेता म्हणून त्यांनी कार्यकाल पूर्ण केला.

३) डॉ. रणजीत विठ्ठलराव पाटील :-

डॉ.रणजीत पाटील यांचे वडील हे विधान परिषदेचे १९६८ व १९८० ला विजयी झाले होते. त्या नंतर त्यांचे पुत्र डॉ.रणजीत पाटील हे पदवीधरमतदार संघ अमरावती विभाग विधान परिषदेचे ते २०११ ते २०१७

आणि २०१७ ते २०२३ या कार्यकाळात ते विधान परिषदेचे पदवीधर मतदार संघातून निवडून आले होते. त्यानंतर त्यांचा २०२३ मध्ये विधान परिषद पदवीधर मतदार संघातून ते पराभूत झाले. काही कार्यकाळात ते गृहराज्य मंत्री विधी व न्याय नगर विकास व सामान्य प्रशासन, संसदीय कार्य ही खाती त्यांनी सांभाळली होती.

४) वसंतराव रामराव धोत्रे :-

वसंतराव धोत्रे यांचे वडील हे राजकारणात पूर्वी पासून सक्रीय नव्हते. परंतु वसंतराव धोत्रे हे राजकारणात सक्रीय होते. बोरगाव मंजू विधानसभा मतदार संघातून १९८५ व १९९० या दरम्यान ते विजयी झाले त्यानंतर ते १९८६ ते १९८८ ला सहकार राज्य मंत्री म्हणून कार्य केले. त्या नंतर त्यांचे पुत्र शिरीष वसंतराव धोत्रे हे कृषी उत्पन्न बाजार समिती अकोला चे २००८ पासून ते २०२८ पर्यंत ते सभापती आहेत..

५) संजय शामराव धोत्रे :-

शामराव धोत्रे हे मध्यप्रदेश विधान सभेत १९४८ मध्ये निवडून आले होते. त्यावेळी महाराष्ट्र राज्याची स्थापना झाली नव्हती. त्यानंतर त्यांचे पुत्र संजय शामराव धोत्रे हे मुर्तीजापुर विधान सभा मतदार संघातून १९९९ ला ते निवडून आले होते. त्यानंतर ते अकोला पश्चिम लोकसभा मतदारसंघा मध्ये २००४, २००९, २०१४ आणि २०१९ या चार वेळा ते निवडून आलेले आहेत. त्यांनी बियाणे कृषी महामंडळ अकोला चे ते २००० ते २००४ ला सदस्य होते. तसेच २०२१ पासून ते मानवी संसाधन व शिक्षण महाराष्ट्र राज्य मंत्री सध्या कार्यरत आहेत.

६) गुलाबराव रामराव गावंडे :-

रामराव गावंडे हे राजकारणात सक्रीय नव्हते ते सर्वसाधारण शेतकरी होते त्यांचे पुत्र गुलाबराव गावंडे हे कारंजा विधानसभा मतदार संघ -१९९० व बोरगाव मंजू मतदार संघ -१९९५ व अकोट विधान सभा मतदार संघ - २००४ विजयी झालेले आहेत. त्यांनी क्रीडा राज्यमंत्री म्हणून कार्य केलेले आहेत. तसेच ते बाळापुर विधान सभा मतदार संघातून २०१९ ला पराभूत झालेले आहेत..

७) हिदायततुल्ला बराकतुल्ला पटेल :-

राकतुल्ला पटेल ग्रामपंचायत अकोट मधून ते १९६८ मध्ये ते निवडून आले होते. त्या नंतर त्यांचे पुत्र हिदायततुल्ला पटेल हे १९९२ ते १९९७ मध्ये अकोला जिल्हा परिषद चे सभापती होते, त्यानंतर ते १९९८ ला अकोट खरेदी विक्री संघ चे अध्यक्ष होते. तसेच त्यांनी अकोट विधान सभा निवडणूक मध्ये २००४ ला ते पराभूत झाले आणि त्यांनी अकोला पूर्व लोकसभा निवडणूक २०१४ व २०१९ या दरम्यान ते पराभूत झाले आहेत.

८) नारायण हरिभाऊ गव्हाणकर :-

हरिभाऊ गव्हाणकर हे सर्वसाधारण शेतकरी कुटुंबातून होते. शेती हा त्यांचा मुख्य व्यवसाय होता. तांचे पुत्र नारायण हरिभाऊ गव्हाणकर बाळापुर विधान सभा मतदार संघातून १९९५ व २००४ ला विजयी झालेले आहेत. आणि १९९९, २००९ व २०१४ ला ते बाळापुर विधान सभा मतदार संघातून पराभूत झाले होते, त्यानंतर

त्यांचे पुत्र रामकुमार नारायण गव्हाणकर हे अकोला जिल्हा परिषदेचे २०१३ ते २०२४ पर्यंत सदस्य आहेत .

९) बाबासाहेब नारायण धाबेकर :-

नारायण धाबेकर यांचा मुख्य शेती व्यवसाय होता, त्यांचा राजकारणाशी फारसा संबंध नव्हता. परंतु त्यांचे पुत्र बाबासाहेब धाबेकर हे राजकारणात सक्रीय होते. बाबासाहेब धाबेकर हे अकोला जिल्हा परिषदेचे १९७२ ते १९८५ या दरम्यान अध्यक्ष होते. तसेच ते कारंजा विधानसभा मतदार संघातून १९८५, १९९५ व १९९९ मध्ये ते विजयी झाले आणि कारंजा विधान सभा मतदार संघातून १९९० ला ते पराभूत झाले. तसेच त्यांनी अकोला पूर्व लोकसभा मतदार संघातून निवडणूक लढविली असता ते २००९ ला पराभूत झाले होते,

१०) सुधाकरराव रामकृष्ण गणगणे :-

रामकृष्ण गणगणे हे सामाजिक कार्यकर्ते होते परंतु ते राजकारणी नव्हते. रामकृष्ण गणगणे यांचे पुत्र सुधाकरराव गणगणे हे १९७४ साली NSUI चे अध्यक्ष राहिले आणि १९७७ साली महाराष्ट्र युवक काँग्रेस चे ते अध्यक्ष होते. अकोट विधान सभा मतदार संघातून १९७८ व १९८५ ला विजयी झाले. त्या नंतर ते अकोट विधान सभेतून १९९०, १९९५, २००९ व २०१४ ला पराभूत झाले आणि अकोला पूर्व लोकसभा निवडणूक लढविली असता ते पराभूत झाले. सुधाकरराव गणगणे हे महाराष्ट्र राज्याचे ऊर्जा, क्रीडा व युवक कल्याण व पर्यटन राज्यमंत्री होते. तसेच ते १९७८ मध्ये अकोला जिल्ह्याचे पालक मंत्री होते.

११) वामनराव रामकृष्ण कोरपे :-

रामकृष्ण कोरपे हे सर्वसाधारण शेतकरी होते आणि त्यांनी कोणतीही निवडूक लढविली नाही. रामकृष्ण कोरपे यांचे पुत्र वामनराव रामकृष्ण कोरपे कारंजा विधान सभेतून १९७८ ला पराभूत झाले. आणि अकोला जिल्हा मध्यवर्ती सहकारी बँक अकोला चे २७ वर्ष अध्यक्ष होते. तसेच त्यांनी अकोला जिल्हा सहकारी साखर कारखाना स्थापन केला. वामनराव कोरपे यांची पत्नी कुसुमताई वामनराव कोरपे ह्या मुर्तीजापुर विधान सभा मतदार संघातून १९५२ व १९६२ ला त्या विजयी झाल्या. विदर्भातील पहिल्या आमदार अशी त्यांची ओळख

१२) प्रतिभा भगवंतराव तिडके :-

भगवंतराव तिडके यांच्या पत्नी प्रतिभा तिडके ह्या मुर्तीजापुर विधान सभा मतदार संघातून १९६७ व १९७२ ला विजयी झाल्या .त्या नंतर त्यांचे पुत्र सुहास भगवंतराव तिडके हे मुर्तीजापुर विधान सभेतून १९८५ ला विजयी झाले, त्या नंतर मुर्तीजापुर विधान सभा मतदार संघातून १९९० ला पराभूत झाले. अकोला जिल्हा सहकारी बँकेचे संचालक म्हणून काही काळ होते.

(३) संशोधनाची उद्दिष्टे : प्रस्तुत शोध निबंधाची खालीलप्रमाणे उद्दिष्टे मांडण्यात आली आहेत.

१.यवतमाळ व अकोला जिल्ह्यातील राजकीय घराणी यांचा शोध घेणे.

२.यवतमाळ व अकोला जिल्ह्यातील राजकीय घराणी यांचा राजकीय प्रक्रियेत असलेला सहभाग.

३.यवतमाळ व अकोला जिल्ह्यातील राजकीय घराणी राजकीय प्रक्रियेत अजूनही सक्रीय असणाऱ्या कारणांचा शोध घेणे.

(४) संशोधनाची गृहीतके: प्रस्तुत लघु शोध प्रबंधाची खालीलप्रमाणे गृहीतके मांडण्यात आलेली आहेत.

१.यवतमाळ व अकोला जिल्ह्यातील राजकीय घराणी राजकारणात पूर्वीपासून सक्रीय असल्याचे दिसून येते.

२.यवतमाळ व अकोला जिल्ह्यातील राजकीय घराणी राजकीय प्रक्रियेत टिकून आहे असे दिसून येते.

३.यवतमाळ व अकोला जिल्ह्यातील राजकीय घराणी राजकारणात सक्रीय असण्याकरीता काय कारणे आहे.

(५) संशोधन पद्धती: प्रस्तुत लघु शोध प्रबंधाचे अध्ययन करण्याकरीता पुढील संशोधन पद्धतीचा उपयोग करण्यात आला आहे.

१.विश्लेषणात्मक संशोधन पद्धती

२.वर्णनात्मक संशोधन पद्धती

(६) तथ्य संकलन: प्रस्तुत लघु शोध प्रबंधाचे अध्ययन पूर्ण करण्याकरीता तथ्य संकलन पद्धतीचा अवलंब करण्यात आला आहे.

(अ) प्राथमिक साधने

१. यवतमाळ व अकोला जिल्ह्यातील राजकीय घराणी यांनी लढविलेल्या निवडणुकांची माहिती.

२. यवतमाळ व अकोला जिल्ह्याच्या राजकारणात सक्रीय असणाऱ्या राजकीय घराण्यांची माहिती.

३. मुलाखत व प्रश्नावली पद्धतीचा संशोधन पूर्ण करण्याकरीता अवलंब केला जाईल.

(ब) दुय्यम साधने

यवतमाळ व अकोला जिल्ह्यातील राजकीय प्रक्रियेत सहभागी असलेल्या राजकीय घराण्यांच्या विषयी प्रकाशित व अप्रकाशित माहिती, वेगवेगळ्या शोध प्रबंधातील माहिती, संशोधन अहवाल, वृत्तपत्रातील माहिती, शासनाचे वेगवेगळे अहवाल यांचा दुय्यम साधने म्हणून संशोधन पूर्ण करण्यासाठी वापर केला जाईल.

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बोली भाषा आणि समाज एक अभ्यास

प्रा. डॉ. श्रीहरी चव्हाण

मराठी विभाग, पुण्यश्लोक अहिल्यादेवी होळकर महाविद्यालय राणीसावरगाव जि. परभणी

Corresponding Author- प्रा. डॉ. श्रीहरी चव्हाण

Email- shriharichavan74@gmail.com

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सारांश:

भाषेच्या द्वारे माणूस इतरांशी परस्परांशी आचार, विचारांची देवाण-घेवाण भाषेच्या माध्यमातून करतो. त्यातूनच समाजाची बांधणी होत असते. एखाद्या समाजाची परिस्थिती कशा प्रकारची आहे याची जाणीव आपल्याला त्या भाषेचे मूल्यमापन भाषेवरून करता येऊ शकते. त्या समाजाची एकंदरीत परिस्थिती त्या समाजाची प्रगती, अप्रगती, ज्ञान, अज्ञान याची माहिती भाषेच्या माध्यमातून एकंदरीत माहिती मिळते. मानवी संदेशनाची मौखिक किंवा लिखित पद्धती म्हणजे भाषा होय. मानवी जीवनाचे प्रत्येक अंग हे भाषेने व्यापले आहे. भाषा आणि समाज यांची सहसंबंध असून भाषा संस्कृतीक संक्रमण करते. भाषेच्या माध्यमातून संचिते एका पिढीकडून दुसऱ्याकडे संक्रमण होतात.

मुख्य शब्द: मराठीतील बोलीभाषा, आदिवासी बोलीभाषा, मारवाडी बोलीभाषा, मालवणी बोलीभाषा, झाडीबोली, नागपुरी बोलीभाषा

प्रास्ताविक:

आज आधुनिक काळामध्ये पाहिल्यानंतर असे लक्षात येते की, जागतिकीकरणामुळे सर्वच घटकावर परिणाम झालेला दिसून येतो. खाजगीकरण आणि उद्योगीकरण यामुळे खूप बदल झालेला आहे. भाषेच्या संदर्भात विचार केल्यानंतर असे दिसून येते इंग्रजी भाषेचा परिणाम होत आहे. मूळ भाषा व बोलीभाषा येणाऱ्या काळामध्ये शिल्लक राहते किंवा नाही याची कल्पना येत असून आशा परिस्थितीत बोली भाषेचे संवर्धन आणि भाषा बोली व समाज यांचा सहसंबंध असण्याच्या दृष्टिकोनातून बोली अभ्यास करणे खूप महत्वाचे आहे. आज जी प्रमाणभाषा आहे ती भाषा सुद्धा बोलीभाषा होती. प्रमाणभाषेचे व्याकरण व शब्दकोश तयार केले जातात. तसेच बोली भाषेचे व्याकरण व शब्दकोश तयार केले जातात. बोली भाषेच्या अभ्यासामुळे वेगवेगळ्या प्रांतातील त्या ठिकाणची संस्कृती, समाजातील चालीरीती आणि सण- उत्सव आचार-विचार, आहार, पोशाख अशा अनेक गोष्टी आपल्याला समजून घेता येतात. आज आधुनिक काळात बोलीभाषेकडे बघण्याचा दृष्टिकोन

बदलेला दिसून येतो. बोलीभाषा ही अशुद्ध, अडाणी, गावंढळ माणसाची भाषा असते अशा प्रकारची समज होती.

भाषा ही मानवी जीवनाचे अविभाज्य अंग आहे. भाषेचा अभ्यास ही प्रत्येक समाजाची शैक्षणिक व सांस्कृतिक गरज आहे. एकंदरीत मानवी जीवनाच्या क्षेत्रात भाषा अपरिहार्य आहे. प्रत्येक भाषा ही विशिष्ट वर्गाची मालमत्ता नसून ती एक सर्वोपयोगी असून ही एक सामाजिक संस्था आहे. बोली भाषा ही समाजातील दैनंदिन व्यवहाराचे स्वभाविक एक साधन आहे. परिस्थितीला अनुरूप अशा भाषेत सामग्रीचा ती उपयोग करते. मुख्य परंपरेने चालत आल्यामुळे त्यामध्ये एक प्रकारचा जिवंतपणा असतो. बोली साधी असून ती परिणामकारक असते. स्वाभाविकता हेच तिचे वैशिष्ट्य होय. समाजातील शिकलेला वर्ग व उच्च समजला जाणाऱ्या लोकांकडून प्रमाण भाषेचा वापर केला जातो. तर समाजामध्ये मोठ्या प्रमाणात इतर कष्टकरी, कामगार, अशिक्षित, सर्वसामान्य वर्गातील लोकांकडून भाषेचे एक वेगळे स्वरूप वापरले जाते. बोली म्हणजे विशिष्ट समाज गटाची परस्पर विनिमय करण्याची बोलीभाषा होय. भाषेमुळे समाजाची निर्मिती

होते. माणूस हा सामाजिक प्राणी आहे. तो समाजाशिवाय राहू शकत नाही. भाषेच्या द्वारे माणूस इतरांशी परस्परांशी आचार, विचारांची देवाण-घेवाण भाषेच्या माध्यमातून करतो. त्यातूनच समाजाची बांधणी होत असते. एखाद्या समाजाची परिस्थिती कशा प्रकारची आहे याची जाणीव आपल्याला त्या भाषेचे मूल्यमापन भाषेवरून करता येऊ शकते. त्या समाजाची एकंदरीत परिस्थिती त्या समाजाची प्रगती, अप्रगती, ज्ञान, अज्ञान याची माहिती भाषेच्या माध्यमातून एकंदरीत माहिती मिळते. मानवी संदेशनाची मौखिक किंवा लिखित पद्धती म्हणजे भाषा होय. मानवी जीवनाचे प्रत्येक अंग हे भाषेने व्यापले आहे. भाषा आणि समाज यांची सहसंबंध असून भाषा संस्कृतीक संक्रमण करते. भाषेच्या माध्यमातून संचिते एका पिढीकडून दुसऱ्याकडे संक्रमण होतात. आधुनिक युगाचा विचार केल्यानंतर मानवी जीवनात भाषेला अत्यंत महत्त्व असून बोलणारा प्राणी असे माणसाला म्हटले जाते. एका विशिष्ट समूहाकडून वापरले जाणारे शब्द त्याचे उच्चार आणि त्याची उपयोजन पद्धत म्हणजे भाषा होय.

बोली भाषेचे स्वरूप: अनेक वर्षांपासून मानव भाषा वापरात येऊ लागली. एकमेकांना संवाद करण्यासाठी संवाद आणि संप्रेषण हे कोणत्याही भाषेचे प्रमुख अट आहे. संप्रेषणाच्या स्तरावर सर्व भाषांची एकंदरीत कार्यप्रणाली जवळपास सारखीच दिसून येते. विचार आणि भावना व्यक्त करण्यासाठी मुकावाटे उच्चारले जाणारे ध्वनी हवेत विरून जातात. ध्वनीचे कालाचे अस्तित्व दीर्घकाळ टिकण्यासाठी ध्वनींना चिन्हे दिली गेली. या चिन्हे व्यवस्थेमध्येमधूनच भाषेचे लेखन सुरू झाले. म्हणजे लेखन भाषाव्यवहारातील नंतरची क्रिया होय. बोलले जाणे हे कोणत्याही भाषेची पहिली आणि प्रधान असते. मुळातच भाष्य म्हणजे बोलणे यावरून भाषा ही संज्ञा रूढ झाली आहे. मानवी व्यवहाराच्या विनिमयाची प्रधान माध्यम भाषा असते. भाषिक विनिमय संवादाच्या पातळीवरची असते. त्यामुळे भाषा आणि बोली या तात्विक अंतर राहत नाही. मराठी विश्वकोशातील तज्ञांनी विविध भाषा अभ्यासकांनी खालील प्रमाणे काही व्याख्या केलेल्या आहेत.

तर्कतीर्थ लक्ष्मण शास्त्री जोशी: यांच्या मते "ज्या व्यक्ती समूहाला आपण पूर्णपणे एकरूप असे भाषिक रूप वापरते असे वाटते त्याची भाषा म्हणजे बोली येथे व्यक्तीसमूह व त्याची भाषा याला गृहीत धरून केलेली आहे".

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ना.गो. कालेलकर: यांच्या मते "बोली हे दैनंदिन व्यवहाराचे स्वाभाविक साधन आहे. परिस्थितीला अनुरूप अशा भाषेक सामग्रीचा ती उपयोग करते. मुख्य परंपरेने आल्यामुळे तिच्या अंगी एक प्रकारचा जिवंतपणा असतो. ती साधी पण परिणामकारक असते. आपले रूप प्रतिष्ठेच्या आरशात पाहू ते इतरांना आकर्षक असे करण्याचा प्रयत्न करायला तिला वेळ नसते. तिची स्वाभाविकता हेच तिचे वैशिष्ट्ये काहीना ते ओघळ वाटेल हा ज्याच्या त्याच्या मनोवृत्तीचा आणि संस्काराचा प्रश्न आहे"

स. ग. मानसे: एखाद्या विशिष्ट लोकसमूहातील किंवा भौगोलिक प्रदेशातील व्यक्तींच्या अंगवळणी पडलेले आणि त्यामुळे प्रायः मुद्दाम शिकावे न लागणारे व विचारांची देवाण-घेवाण करण्यासाठी सहजगत्या उपयोगी पडणारे ध्वनी रूप साधन म्हणजे बोली"

मराठीतील बोलीभाषा: भारत हा बहुभाषिक देश असून भारतामध्ये अनेक भाषा बोलल्या जातात. मराठी ही एक त्यापैकी भाषा असून देशामध्ये मराठी बोलणारी माणसे सगळ्याच राज्यामध्ये दिसून येतात. जगातील ज्या काही प्रमुख भाषा आहेत त्याचप्रमाणे मराठी भाषा ही वेगवेगळ्या पद्धतीने बोलली जाते. बोलीभाषा आहे. बोलीभाषा ही दर बारा कोसावर त्याच्या उच्चार, शब्दसंग्रहात, वाक्यप्रचारात बदल दिसून येत असतो. लिखित भाषेत फारसा काही फरक दिसून येत नाही. मूळ मराठी बोलीवर त्या स्थानिक राज्याच्या भाषेचा प्रभाव दिसून येतो. मी मराठी बोलतो असे कोणी म्हटले तर कुठली मराठी भाषा बोलता असा प्रश्न उपस्थित होतो. मराठी भाषेचे व्याकरण एकच असले तरी स्थानिक मराठी भाषेचे कोकणी मराठी, कोल्हापुरी मराठी, कारवारी मराठी, अहिराणी, मारवाडी, नागपुरी असे अनेक प्रकार असून त्या ठिकाणी असणाऱ्या स्थानिक लोक जीवनातले अनेक शब्द त्यात आलेले दिसून येतात. भौगोलिक परिसरानुसार कोल्हापुरी, चंदगडी, नागपुरी मारवाडी कोकणी वराडी, बेळगाव, मालवणी, मोरस मराठी, झाडीबोली, नंदवारी, खालयांगी, डोंगरांगी, जामनेरी, खानदेशी, असे अनेक बोलीचे उपप्रकार होतात.

आदिवासी बोलीभाषा: ही बोलीभाषा महाराष्ट्रात अनेक ठिकाणी बोलली जाते या बोली भाषेमध्ये प्रामुख्याने गोंड, भिल्ल, वारली, पावरी, मावची, कोरकू, कोलामी, कातकरी, आशा प्रकारच्या बोलीभाषा असून यापैकी कातकरी व भिल्ल या बोलीभाषा अतिप्राचीन बोलीभाषा समजली

जाते. गोंड बोलीभाषा महाराष्ट्रात व मध्यभारतात मोठ्या प्रमाणात अनेक भागात बोलली जाते. यामध्ये चंद्रपूर, गडचिरोली, नांदेड, अमरावती, नागपूर या जिल्ह्यात बोलली जाते. त्याच बरोबर शेजारच्या आंध्रप्रदेशच्या सिमेलगतही गोंडी बोलीभाषा बोलली जाते. महाराष्ट्रात आदिवासी बोलीमध्ये गोंडी बोलीभाषा जास्त प्रमाणात बोलली जाते. गोंडी बोलीला लिपी असल्याचे अलीकडच्या काही संशोधक पुरावे सांगतात. गोंडी बोलीचा अभ्यास करणारा जर्मन भाषातून 'जूल ब्लाच' यांनी आंतरराष्ट्रीयता शोधण्याचा प्रयत्न केला. भिल्ली बोलीभाषा ही गुजरात मध्यप्रदेश महाराष्ट्र आणि राजस्थान या राज्यामध्ये प्रामुख्याने बोलली जाते. या बोलीभाषेवर त्या त्या स्थानिक राज्याचा प्रमाण बोली भाषेचा प्रभाव असल्याने महाराष्ट्रात ती मराठीची बोलीभाषा म्हणून समजली जाते.

मारवाडी बोलीभाषा: मराठवाड्यात वापरली जाणारी बोलीभाषा ही ठसकेबाज मराठी बोलीभाषा असून ही मारवाडी भाषेत वापरली जाणारी भाषा ही गावठी किंवा शिवरायळ असून हे मारवाडी बोलीभाषा हे या भाषेचे वेगळेपण होय. मराठवाड्या बोली भाषेचे वैशिष्ट्य आहे. नांदेड जिल्ह्याला लागून असलेल्या तेलंगणा हे राज्य असल्यामुळे तेथील बोलणाऱ्या लोकांची भाषा हे वेगळेपण दिसून येते. महाराष्ट्राच्या सीमेवरती असलेल्या कर्नाटकाच्या सीमेवर असलेल्या उस्मानाबाद व लातूर जिल्ह्यात थोडी वेगळी भाषा बोलली जाते. लातूरी भाषेवर काही वेळा क्रियापदावर कानडी भाषेचा परिणाम झालेला दिसून येतो. या भाषेत उर्दू शब्दही आढळतात.

मालवणी: मालवणी ही बोलीभाषा दक्षिण आणि सिंधुदुर्ग या जिल्ह्यात ही भाषा बोलली जाते. मालवणी या भाषेला कुऱ्हाळी असेही म्हणतात. ही बोली बोलताना हेल काढून बोलली जाते. बोलताना नाकातून म्हणजेच अनुनासिक उच्चार हे या बोलीचे वैशिष्ट्य आहे. मच्छिंद्र कांबळे यांच्या मालवणी नाटकामुळे ही भाषा जास्त प्रसिद्धीला आली. मालवणी बोलीत अनेक वैशिष्ट्यपूर्ण शब्द दिसून येतात.

झाडीबोली: झाडीबोली ही बोलीभाषा भंडारा गोंदिया चंद्रपूर आणि गडचिरोली या प्रदेशात बोलली जाते. या बोलीला झाडीबोलीअसेही म्हणतात. मराठीतील ण,छ,श,ष,ळ ही पाच व्यंजने झाडीबोली भाषेत वापरली जात नाहीत. झाडीबोली या भाषेतील काही शब्द मुकुंदराज यांच्या विवेकसिंधू या ग्रंथात असलेले अनेक अपरिचित

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शब्द आजही झाडीबोली या बोलीभाषेत प्रचारात असलेले दिसून येतात.

नागपुरी: नागपुरी ही बोलीभाषा पूर्व विदर्भातील नागपूर वर्धा चंद्रपूर जिल्ह्यात काही भाग आणि गडचिरोली काही भागात तसेच भंडारा गोंदिया या जिल्ह्यात बोलली जाणारी ही काहीशी वेगळी बोलीभाषा आहे. तसेच मध्य प्रदेशातील शिवनी छिंदवाडा, बालाघाट व रायपूर या भागात ही बोली प्रचलित आहे. वऱ्हाडी आणि झाडीबोली या बोली भाषेतील अनेक शब्द यात असले तरी ही बोली वेगळी आहे. या बोलीवर हिंदी भाषेचा प्रभाव दिसून येतो.

समारोप: अशाप्रकारे अनेक प्रकारच्या बोलीभाषा बोलल्या जातात . बोली भाषेचा उपयोग दैनंदिन व्यवहार सुरळीत पार पाडण्यासाठी एक भाषिक साधन असून ती आपोआपच जिवंत राहते. यासंदर्भात ना.गो कलेलकरानी केलेले विधान खूप महत्वाचे आहे."बोली हे दैनंदिन व्यवहाराचे स्वभाविक साधन आहे. परिस्थितीला अनुरूप अशा भाषिक समुग्रीचा ती उपयोग करते. मुख्य परंपरेने चालत आल्यामुळे तिच्या अंगी एक प्रकारचा जिवंतपणा असतो. बोलीभाषा ही साधी असते. तिची स्वाभाविकता हेच तिचे वैशिष्ट्य होय" विशिष्ट प्रदेशातील गटाकडून देवान-घेवानासाठी दैनंदिन व्यवहारासाठी वापरल्या जाणाऱ्या विशिष्ट भाषिक स्वरूपात बोली म्हणता येईल. बोलीभाषा ही आजच्या काळातील नसून ती अनेक वर्षांच्या प्रवासातून व रोजच्या व्यवहारातून विकास झालेला दिसून येतो. भाषेचा अभ्यास करणाऱ्या संशोधकच्या मते बोली टिकली तर, भाषा टिकतील भाषा टिकल्या तर संस्कृती टिकेल संस्कृती टिकली तर समाज आणि त्याची मूल्य व्यवस्था टिकून राहतील. म्हणून समाजामध्ये बोलीभाषा ही महत्वाची आहे. कोणत्याही भाषिक समूहाची भाषा एकरूप नसते, प्रदेशानुसार वेगवेगळी बोलीभाषा पाहायला मिळते.समाजातील भेदानुसार ती भिन्नभिन्न रूपे धारण करीत राहते.

संदर्भ ग्रंथ:

- 1) मराठी भाषा उद्गम आणि विकास-वा .ल कुलकर्णी
- 2) भाषा आणि संस्कृती-ना.गो कालेकर
- 3) समाजभाषा विज्ञान प्रमुख संकल्पना-रमेश वरखेडे
- 4) भाषा इतिहास आणि भूगोल-ना.गो कालेकर
- 5) आधुनिक भाषा विज्ञान सिद्धांत आणि भूगोल
- 6) उपयोजन- मिलिंद स. मानसे

इतिहास आणि पर्यटन सहसंबंध.

प्रा. डॉ. देशमुख गंगाधर बालाजीराव

इतिहास विभाग, वै. धुंडा महाराज देगलूरकर महाविद्यालय देगलूर.

Corresponding Author- प्रा. डॉ. देशमुख गंगाधर बालाजीराव

Email- deshmukhgangadhar1989@gmail.com

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सारांश:

इतिहास आणि पर्यटन सहसंबंध हा आजच्या पर्यटनाचा मुख्य हेतू असून इतिहासातूनच पर्यटन या बाबीला सर्वप्रथम चालला मिळालेली आहे. प्रारंभीच्या मानवी उत्क्रांतीच्या अवस्थेपासून मानवाने केलेली भटकंती पुढे त्याचे रूपांतर प्रवास आणि त्यानंतर आजच्या स्थिती मधील पर्यटन या बाबी एकमेकांशी पूरक असून ऐतिहासिक घटना घडामोडी आणि त्यातून भारतीय संस्कृती समाजजीवन राज्यव्यवस्था आदी बाबी प्राचीन, मध्ययुगीन आणि आधुनिक कालखंडातील विविध ऐतिहासिक स्थळे, स्मारके, कला स्थापत्य यातून इतिहास आणि पर्यटन सहसंबंध जाणवतो.

मुख्य शब्द :-

इतिहास आणि पर्यटन सहसंबंध दर्शवताना भटकंती प्रवास आणि पर्यटन संकल्पना स्पष्ट केलेले आहे. त्याचबरोबर, ऐतिहासिक पर्यटनाचे स्वरूप, प्राचीन भारतीय ऐतिहासिक स्थळे आणि पर्यटन सहसंबंध, मध्ययुगीन भारतातील ऐतिहासिक स्थळे आणि पर्यटन सहसंबंध, आधुनिक भारतातील ऐतिहासिक स्थळे आणि पर्यटन सहसंबंध इत्यादी बाबीची सविस्तर मांडणी केलेली आहे.

प्रस्तावना :-

इतिहास आणि पर्यटन यांचा सहसंबंध हा एकाच नाण्याच्या दोन बाजू होय. कारण इतिहासातून पर्यटनाला मनोरंजनाला संस्कृतीला वेगळी ओळख, वेगळे अस्तित्व, मिळण्यास मदत झाली. मानवी उत्क्रांतीच्या पहिल्या टप्प्यापासून मानवाचे जीवन भटकंतीचे होते. नाविन्यपूर्ण बाबी शोधण्याची सवय जडत गेली. मानवाच्या भटकंतीतूनच पुढे प्रभावी शोध आणि बोध घेतल्यानंतर मानवी जीवन सुसंस्कृत व प्रभावी बनले गेले. मानवाने वेगवेगळ्या ऋतूमध्ये मानवी जीवनात बदल, शोध, नाविन्यता आदी बाबी आपल्या आयुष्याचा भाग बनवून घेतले. पुढे भटकंती ही दैनंदिन गरजा पूर्ण करण्यासाठी होऊ लागली. हीच भटकंती मानवी जीवनातील पर्यटनाची पार्श्वभूमी होय. मानवाने अन्न, वस्त्र, निवारा या गरजा पूर्ण करण्यासाठी वेळोवेळी वेगवेगळ्या भागात संघर्ष करत तेथील भौगोलिक वातावरण, हवामान, जमीन, ऋतुचक्र, नैसर्गिक साधन संपत्ती, मानवेत्तर प्राणी, आदी बाबीची

माहिती घेत मानवी आयुष्य सुखकर बनवू लागला. आज आपण पर्यटन हा शब्द आनंद, मनोरंजन, वेगळेपण, ऐतिहासिक, भूगोलिक, सांस्कृतिक, धार्मिक, अध्यात्मिक, कला स्थापत्य, नाविन्यपूर्ण बाबीची ओळख बदल दृष्टिकोनातून पाहतो. पर्यटनाची मूळ प्रेरणा ही मानवी जीवनातील शोधाची, गरजेची, व सुखकर जीवन जगण्याची, धडपड यातून उदयास आलेली दिसून येते. प्रवास ही बाब अतिशय प्राचीन कालखंडापासून मानवी जीवनाचा अविभाज्य घटक बनलेला आहे. प्रवासातून नाविन्यता, वेगळेपण, प्रवासातील अनुभव, उचित मुख्य हेतू आदी बाबीतून नवीन प्रदेश तेथील संस्कृती, समाज जीवन, राहणीमान, प्रथा परंपरा, व्यवसाय, व्यापार, ओळख होण्यास प्रारंभ झाले. प्राचीन भारतीय इतिहासाचा विचार करता तत्कालीन स्थितीमध्ये सिंधू संस्कृतीचा अन्य संस्कृतीशी असलेला संबंध, व्यापार, उद्योग व्यवसाय त्याचबरोबर मानवी आचार विचार, आणि बदलाची पार्श्वभूमी अन्य संस्कृतीचे वेगळेपण, या बाबी प्रवास यातून

साध्य झालेले आहेत. जगातल्या प्राचीन वेगवेगळ्या संस्कृतींचा एकमेकांशी मानवी जीवनाशी सहसंबंध काही अंशी जाणवतो. यातून तत्कालीन भटकंती आजच्या स्थितीतील प्रवास, पर्यटन, या बाबी मानवी जीवनाचा इतिहास अभ्यासताना पावलोपावली खुणा दर्शवतात. त्यामुळेच इतिहास हा विषय पर्यटनाच्या दृष्टीने सहसंबंध दर्शवणारा आहे. इतिहासातून पर्यटन या बाबीला आजच्या स्थितीमध्ये जी चालना मिळत आहे. त्यास इतिहास हा घटक महत्त्वपूर्ण आणि सहसंबंध लक्षात आणून देणारी बाब होय.

प्रस्तुत संशोधनाची उद्दिष्टे:-

- (1) मानवी उत्क्रांती आणि भटकंतीच्या अवस्थेतून पर्यटनाची सुरुवातीची प्रेरणा अभ्यासणे.
- (2) प्राचीन भारतीय इतिहास, प्रवास, पर्यटनाला चालना देणारी परंपरा होय.
- (3) भारतीय समाज, संस्कृती, स्थानिक इतिहास, वास्तुकला आदी बाबीतून ऐतिहासिक पर्यटन. समजून घेणे.
- (4) इतिहास आणि पर्यटन सहसंबंध अभ्यासणे.

संशोधनाची गृहीतके :-

- (1) मानवाच्या भटकंतीच्या जीवनातूनच ऐतिहासिक पर्यटनाला सुरुवात झाली.
- (2) प्रारंभीचे मानवी जीवन हे पर्यटनाला चालना देणारे ठरले.
- (3) प्राचीन भारतीय संस्कृती आणि इतिहास पर्यटनाचा गाभा आहे.
- (4) प्राचीन ते आधुनिक काळापर्यंत पर्यटन आणि इतिहास यांचा सहसंबंध आहे.

भटकंती /प्रवास /पर्यटन संकल्पना :-

प्रारंभीच्या काळात भटकंती ही एक प्राचीन व अपूर्ण बाब होती. मानवाने सुरुवातीला कोणताही उद्देश किंवा हेतू न ठेवता साधेपणाने आपल्या दैनंदिन गरजा पूर्ण करण्यासाठी भटकंतीस सुरुवात केली. याच भटकंतीतून विविध भूप्रदेश, वातावरण, भौगोलिक पार्श्वभूमी, समजण्यास मदत झाली. पुढे याच भटकंतीच्या आधारे मानवी जीवन वेगवेगळ्या सुख सोयी निर्माण करण्याची संकल्पना दृढ बनत गेले. याच भटकंतीला पुढे शोध हा शब्द वापरण्यास सुरुवात झाली. मानवाला आवश्यक असणाऱ्या बाबी आपल्या अवतीभवतीच्या वातावरणात सदैव उपयोगी पडणाऱ्या गरजेचा एक भाग बनला. प्राचीन

कालखंडात मानवाने विविध भागात वस्ती स्थान निर्माण करून स्वतःचे वेगळे अस्तित्व निर्माण करण्याची प्रेरणा नागरी संस्कृतीच्या माध्यमातून केलेली दिसून येते. सिंधू नदीच्या काठावर नागरिक संस्कृती ही मानवाने सुरुवातीच्या काळात स्थळ, काल आणि भौगोलिक स्थिती, दैनंदिन गरजा आदी बाबींचा विचार करून आपल्या संकल्पनेतून नगररचना ही भारतीय संस्कृतीची पहिली. मुहूर्तभेट हडप्पा, मोहेंजोदडो, लोथल, कालीबंगन आदी सिंधू संस्कृतीच्या खोऱ्यात वसलेल्या स्थळांच्या माध्यमातून स्थिरता, स्थानिक, स्वजीवन, स्वसंस्कृती या बाबींचा उदय झाला.

सिंधू संस्कृतीच्या उदया पासून मानवाने आपल्या स्वकर्तृत्वाच्या बळावर वेगवेगळ्या भौगोलिक स्थितीचा मानवी जीवन सुखकर बनवण्यासाठी वापर करण्यास प्रारंभ केला. नैसर्गिक साधन संपत्ती मानवाच्या गरजा यातून विविध भौगोलिक, ऐतिहासिक, सांस्कृतिक, धार्मिक आणि आर्थिक स्थितीला प्रोत्साहन देण्यासाठीची सुरुवात झाली. पुढे याच महत्त्वपूर्ण घटकाच्या आधारे प्राचीन भारतीय लोकांचा शेजारील भूभागात स्थित असणाऱ्या लोकांशी संपर्क संबंध येऊन त्यातून वेगवेगळ्या घटकांच्या आधारे देवाण-घेवाण सहसंबंध निर्माण होऊ लागला. यातून आचार विचार, व्यापार, उद्योग, व्यवसाय, दैनंदिन आवश्यक वस्तू, या बाबींचे आदान प्रदान झाल्यानंतर मानवाला नाविन्यपूर्ण बाबीची संकल्पना निर्माण होण्यास बळ मिळाले. प्रारंभीच्या भटकंतीच्या बाबीतून पुढे प्रवास ही संकल्पना पुढे आहे. प्रवासातून धार्मिक, आर्थिक, नाविन्यता, शोध आनंद, या बाबी प्रकर्षाने पुढे येत गेल्या.

आधुनिक कालखंडात मानवाने आपल्या आयुष्यात आनंद मिळवण्यासाठी दैनंदिन कामातून वेळ काढून सुखी समाधानी जीवनाचा आस्वाद घेण्यासाठी ऐतिहासिक, भौगोलिक स्थळांना भेटी देण्यास प्रारंभ केला. या स्थळातून भौगोलिक स्थितीतून मानवाला आपल्या पूर्वजांनी निर्मितीस आणलेल्या वेगवेगळ्या स्थळाबद्दल कुतूहल, जिज्ञासा, वेगळेपण स्वाभिमान या बाबी निर्माण होऊ लागल्या पर्यटनाच्या माध्यमातून वेगवेगळ्या ऋतूत वेगवेगळ्या स्थानावर घडल्या जाणाऱ्या महत्त्वपूर्ण बाबी लक्षात घेऊन त्यातून स्वतःच्या आयुष्यात आनंद निर्माण करण्यासाठी मानवाने प्रयत्न करण्यास प्रारंभ केला यातून पर्यटन या संकल्पनेचा वापर होऊ लागला.

ऐतिहासिक पर्यटनाचे स्वरूप:-

प्राचीन काळातील मानवाने सुसह्य जीवन जगण्यासाठी आपल्या जीवनात वेळोवेळी बदल करून नागरी संस्कृती विकसित केली. नागरी संस्कृतीच्या माध्यमातून पुढे मानवाने वेगवेगळ्या भागात प्रवास करून नवीन प्रदेशाचा शोध घेत वस्ती स्थान निर्माण केले. याच वस्तीस्थानाचे पुढे अन्य संस्कृती तेथील लोकजीवन आणि समाजव्यवस्थेची व्यापार उद्योग व्यवसाय या माध्यमातून संबंध प्रस्थापित झाले .स्थानिक किंवा दूरच्या प्रदेशातील लोकांशी व्यापार उद्योगधंद्याच्या माध्यमातून प्रवास सुरू झाला. या प्रवासातून निरक्षणातून वेगवेगळ्या बाबी लक्षात येऊ लागले .त्या बाबीतून आर्थिक ,सामाजिक, धार्मिक, सांस्कृतिक, घटना घडामोडीचा विकास होत गेला. मानवी संस्कृतीचा विकास झाल्यानंतर वेगवेगळ्या भागात प्रवास करण्याची संकल्पना पुढे येऊ लागली अन्य भूप्रदेश तेथील नाविन्यपूर्ण बाबी पाहण्याची जिज्ञासा निर्माण होऊन प्रवास वर्णनास सुरुवात झाली. इ.स.वी सन पूर्व 4000 मध्ये बेबीलोनया सुमेरियानाचा गुप्त खजिन्याचा शोध घेण्यासाठी निघालेल्या ग्रीक लोकांच्या प्रवास वर्णनाचा उल्लेख आढळून येतो. व्यापाराच्या उद्देशाने सर्वप्रथम भारताची संबंध ठेवण्यासाठी युरोपियन जगतातील देशांनी वेगवेगळ्या भागात प्रवास दौरे काढण्यास प्रारंभ केला .यासाठी नवीन प्रदेशाच्या शोध घेणे त्यातून व्यापार त्याचबरोबर साम्राज्य विस्तार हा मुख्य हेतू पुढे ठेवून प्रवासास सुरुवात झाली. ख्रिस्त पूर्व तिसरा शतकात अलेक्झांडर चे शोध कार्य त्याचबरोबर इसवी सनाच्या सातव्या शतकाच्या अखेरीस मार्कोपोलो यांचे शोध कार्य हे प्रवासाने पर्यटनाच्या दृष्टीने महत्त्वपूर्ण मानले जाते. अठराव्या शतकात पर्यटन ही बाब व्यापार, उद्योग, मनोरंजन, भटकंती, या बाबीतून वेगवेगळ्या उद्देश मनोकामना बाळगून दृढ बनत गेली. पुढे ख्रिश्चन, बौद्ध, हिंदू आणि मुस्लिम अशा धर्मांचे धार्मिक ठिकाणाला वेळोवेळी भेट देण्यास प्रारंभ झाला. प्राचीन ,मध्ययुगीन आणि आधुनिक कालखंडात निर्मिती झालेल्या विविध कला स्थापत्य आणि तत्कालीन स्थितीत नाविन्यपूर्ण आणि अभूतपूर्व बाबीतून पर्यटनाला चालना मिळाली. प्राचीन भारतीय संस्कृतीची ओळख ,वारसा ,संरक्षण आणि संवर्धन, या बाबी ऐतिहासिक पर्यटनाच्या दृष्टिकोनातून महत्त्वपूर्ण भूमिका बजावण्याची पार्श्वभूमी निर्माण

प्रा. डॉ. देशमुख गंगाधर बालाजीराव

झाली.18 व्या शतकात इंग्लंडमध्ये झालेल्या औद्योगिक क्रांतीनंतर जगातील अन्य देशात सुद्धा त्याचे पडसाद, परिणाम जाणवू लागले. इ.स.वी सन 1830 मध्ये सर्वप्रथम रेल्वे वाहतूक इंग्लंडमध्ये सुरुवात झाली. या बाबीचा वाहतुकीचे स्वस्त आणि सुलभ साधन म्हणून वापर होण्यास प्रारंभ झाला. ऐतिहासिक पर्यटनाला महत्त्वपूर्ण स्थान निर्माण करून देण्याचे काम इतिहासाने केलेले दिसून येते.

ऐतिहासिक स्थळांचे पर्यटनाच्या दृष्टीने सहसंबंध

(अ) प्राचीन भारतीय ऐतिहासिक स्थळे आणि पर्यटन सहसंबंध :-

प्राचीन भारतीय इतिहास आणि संस्कृतीची माहिती ही प्राचीन ऐतिहासिक स्थळे यातून मिळण्यास मदत होते. प्राचीन काळाचा विचार करता सिंधू संस्कृती ही पहिली नागरी संस्कृती म्हणून नावारूपा ला आली या संस्कृतीतून स्थानिक समाज ,संस्कृती ,समाज जीवन ,राहणीमान ,वास्तुकला ,शिल्पकला, अशा अनेक बाबी प्रकर्षाने दिसून येतात. आज आपण प्रारंभीच्या मानवी जीवनाचे चित्र हडप्पा मोहेंजोदडो, लोथल ,कालीबंगन अशा अनेक ठिकाणावरून सिंधू संस्कृती ची ओळख व्याप्ती स्वरूप हे पर्यटनाच्या दृष्टिकोनातून महत्त्वपूर्ण आहे. भारतातील वैदिक धर्म ,बौद्ध धर्म ,जैन धर्म, यांच्या आचार विचार आणि आध्यात्मिक तत्त्वज्ञानावर आधारित विविध धार्मिक स्थळे त्या त्या धर्माचे अधिष्ठान म्हणून ओळखले जाते. यावरून भारतीय संस्कृतीची वेगळी ओळख पर्यटनाच्या आधारे सामान्य जनमानसाला समजण्यास मदत होते. मौर्यकालीन कला स्थापत्य हे प्राचीन भारतीय राजकीय ,सामाजिक, घटना घडामोडीचे उदाहरण म्हणून तत्कालीन राजवाडे, किल्ले, यातून दिसून आलेली प्रगती ही धर्म आणि तत्त्वज्ञानाशी निगडित असलेली दिसून येते. त्यात प्रामुख्याने मंदिरे, स्तूप विहार, चैत्यगृह, यांची रचना तत्कालीन धर्म आणि संस्कृतीचे केंद्र होते. प्राचीन भारतीय संस्कृती धर्म तत्त्वज्ञान समजून घेण्यासाठी विदेशातील अनेक लोक भारतात वैदिक हिंदू धर्मातील विविध मंदिरे, त्याचबरोबर बौद्ध धर्मातील स्थळांना भेटी देऊन भारतीय इतिहास समजून घेण्यास प्रारंभ झालेला होता. बौद्ध धर्मातील 84 हजार विहार जे सम्राट अशोकाने बौद्ध भिक्षूंसाठी बांधले .त्याचबरोबर सारनाथ येथील अशोक स्तंभ, अजिंठा येथील बौद्ध धर्माची लेणी हे बौद्ध धर्माचे प्रतीक आणि शिकवण देण्याची परंपरा होय. जैन लेणी, शिरूर येथील लेणी ,माहूर

येथील लेणी ,अंबाजोगाई येथील लेणी ,हिंदू धर्मातील चोल मंदिर स्थापत्य त्यामध्ये प्रामुख्याने द्रविड शैलीने परिपूर्ण कोरंगनाथ मंदिर, तंजोर मंदिर,सुब्रमण्य मंदिर. गुप्तकालीन लोहस्तंभ, विष्णू मंदिर ,जबलपूर भूमीरा मंदिर, गया येथील दशावतार मंदिर, अजिंठा गुफात निर्मिती झालेल्या चैत्य आणि विहार, पल्लवकालीन कला स्थापत्य त्यामध्ये प्रामुख्याने दगडातून निर्मिती झालेले महाबलीपुरम चे स्थापत्य, या स्थापत्य रचनेतून तत्कालीन धार्मिक त्याचबरोबर समाजजीवन वैदिक धर्माशी कसे निगडित होते याची जाणीव होते. महाराष्ट्रात स्थित राष्ट्रकूट कालीन स्थापत्याचा विचार करता वेरूळचे कैलास मंदिर अभूतपूर्व स्थापत्य म्हणून ओळखले जाते. असणाऱ्या मंदिर स्थापत्य मध्ये प्रामुख्याने होट्टल येथील मंदिरे , औंढा नागनाथ मंदिर परळी वैजनाथ मंदिर ,वेरूळचे घृणेश्वर मंदिर, रेणुका देवीचे मंदिर माहूर ,आदींचा यात सामावेश आहे.प्राचीन कालखंडातील विविध कला स्थापत्य या बाबींचा विचार करता यातून विविध केलेला प्रोत्साहन मिळाले. त्याचबरोबर ती वस्तू ती रचना पाहण्यासाठी त्यातील अनुभूती घेण्यासाठी सद्यस्थितीत देश विदेशातील पर्यटक पर्यटनाच्या दृष्टीने भारताकडे ऐतिहासिक पर्यटन हा उद्देश बाळगून मार्गक्रम करत आहेत. यातून प्राचीन ऐतिहासिक पर्यटन स्थळे सहसंबंध दाखवतात.

(ब) मध्ययुगीन भारतातील ऐतिहासिक स्थळे आणि पर्यटन सहसंबंध :-

भारतावर मध्ययुगीन कालखंडात विविध परकीय सत्तेचे अधिकार प्रस्थापित झाल्यानंतर त्यांच्या धर्म संस्कृतीनुसार स्थापत्य रचना, होण्यास प्रारंभ झाला.दिल्ली सल्तनताच्या कालखंडात मजिद ,मकबरा ,भवन आदीची निर्मिती इस्लाम शासन व्यवस्थेची ओळख निर्माण करून देतात. कुवत-उल- इस्लाम मजिद, कुतुबमिनार ही उत्तम उदाहरणे आहेत, मोगल कालीन स्थापत्यात प्रामुख्याने बादशाह शाहजानचा कालखंड हा सुवर्णयुग म्हणून ओळखले जाते .या कालखंडात मुघल कालीन स्थापत्य रचना आणि त्याची वैशिष्ट्ये पाहता भारतात विविध वास्तू शिल्प निर्मिती आले. मुघल कालखंडातील येथील आग्रा येथील ताजमहल ,लालकिल्ला यात प्रामुख्याने मूळ भारतीय व मुघल शैलीचे दर्शन घडून येते. मुघल शासकांनी तत्कालीन स्थितीत आपल्या शासन काळात वेगवेगळ्या वास्तू निर्मितीच्या माध्यमातून स्वतःचा कालखंड स्वतःचे अस्तित्व

प्रा. डॉ. देशमुख गंगाधर बालाजीराव

दाखवण्याचा प्रयत्न केलेला आहे. मध्ययुगीन कालखंडात भारतात दक्षिण व उत्तर भागात विविध मठ आणि मंदिरांची निर्मिती झालेली होती. त्यामध्ये नागर, द्रविड ,वेसर, आशा अनेक कला शैलीच्या माध्यमातून रचना झालेली आढळून येते. ओरिसा मंदिर, खजुराहो मंदिर, महाराष्ट्रातील विविध गड किल्ले त्यात रायगड ,पुरंदर, प्रतापगड, शिवनेरी ,सिंहगड,देवगिरीचा किल्ला अशा विविध वास्तू ही मध्ययुगीन कालखंडातील ऐतिहासिक स्थळांचा ठेवा असून त्या माध्यमातून मध्ययुगीन कालखंडाचा इतिहास समजण्यास मदत होते. आजच्या स्थितीत मध्ययुगीन कालखंडातील अनेक वास्तू पर्यटनाची एक माध्यम म्हणून ओळखले जात आहे.

(क) आधुनिक भारतातील ऐतिहासिक स्थळे आणि पर्यटन सहसंबंध:-

भारतीय स्वातंत्र्य लढ्यात सहभागी झालेल्या अमर हुतात्मे त्याचबरोबर तत्कालीन परिस्थितीमध्ये सत्याग्रह ,चळवळ, विविध उठाव, यामध्ये सक्रिय सहभाग घेऊन हुतात्मे पत्करलेल्या भारतीयांच्या आठवणी स्मृति जागृत राहावे म्हणून आधुनिक कालखंडात विविध शहरात अशा वीर पुरुषांचे ऐतिहासिक घटनेचे साक्षीदार असणाऱ्या लोकांच्या स्मारकाची निर्मिती झालेली आहे.त्यातून भारतीय स्वातंत्र्यलढा त्याच बरोबर भारतीय लढ्यातील महत्त्वपूर्ण घटना घडामोडी व्यक्ती व्यक्ती समुदाय अशा असंख्य बाबी आधुनिक कालखंडात नवीन पिढीला भारतीय स्वातंत्र्याची माहिती प्रेरणा आणि स्वाभिमान जागृत राहावा ही भावना ठेवून अनेक ऐतिहासिक स्मारकांची निर्मिती करण्यात आली. त्यामध्ये साबरमती आश्रम, दिल्ली येथील अमर ज्योती, विविध वस्तू संग्रहालय, तेर वस्तुसंग्रहालय, बहादुरपूर येथे वस्तुसंग्रहालय भवन, अशा अनेक बाबींचा समावेश आधुनिक भारतातील ऐतिहासिक स्थळे आणि पर्यटन यातून दिसून येतात.यातून ऐतिहासिक पर्यटन ही बाब पर्यटकांच्या दृष्टीने सहसंबंध दर्शवणारे आहे.

निष्कर्ष:-

इतिहास आणि पर्यटनाचा सहसंबंध हा मानवाच्या उत्क्रांतीपासून दिसून येतो .मानवाने केलेली प्रगती प्रारंभीच्या काळात भटकंती प्रवास आणि आजच्या स्थिती मधील पर्यटन या बाबीत प्रामुख्याने पर्यटनाच्या दृष्टीने पाऊल खुणा म्हणून ओळखल्या जातात. त्याच आधारे आज पर्यटन हा एक स्वतंत्र व्यवसाय त्याचबरोबर भारतीय

संस्कृती, समाज जीवन, भारतीय इतिहास, ऐतिहासिक घटना घडामोडी समजून घेण्यासाठी प्राचीन मध्ययुगीन आणि आधुनिक कालखंडातील विविध स्थळे तेथील आठवणीला उजाळा देण्याचे काम करतात .म्हणून आजच्या स्थितीतील अस्तित्वात असणाऱ्या विविध स्थळे स्मारके पर्यटन स्थळे म्हणून नावारूपाला येत आहे. यातून भारतीय इतिहासाबरोबरच तत्कालीन समाज जीवनातील राज्यव्यवस्थेतील वेगवेगळ्या पैलूची कला कौशल्याची स्थापत्याची ओळख ही करून देण्याचे काम ऐतिहासिक विविध स्मारके आणि स्थळे करून देत आहेत. म्हणून पर्यटन शास्त्राला ऐतिहासिक पार्श्वभूमी लाभलेले आहेत. सद्यस्थितीतील पर्यटन हे आनंद उत्साह किंवा बदल या दृष्टिकोनातून पाहत असलो तरी ऐतिहासिक पर्यटन हे मानवी जीवनातील अविभाज्य घटक असून भूतकाळातील घडलेल्या घटना या सामाजिक,आर्थिक, धार्मिक ,सांस्कृतिक, दृष्टिकोनातून मानवाला जीवन जगण्याची कला आदर्श व्यक्तिमत्व घडवण्याची प्रेरणा निर्माण करून देते .म्हणून इतिहास आणि पर्यटन या बाबी एकमेकांशी सहसंबंध दर्शवणाऱ्या दिसून येतात.

संदर्भ ग्रंथ :-

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विदर्भ प्रदेशातील व्यावसायिक संरचनेचे कालिक विश्लेषण**डॉ. राजेंद्र जनार्दन ढगेकर**

भूगोल विभाग, शा. वि. ज्ञा. वि. संस्था, (स्वायत्त) अमरावती.

Corresponding Author- डॉ. राजेंद्र जनार्दन ढगेकर**Email- rajendradhagekar1987@mail.com****DOI-10.5281/zenodo.13866750****सारांश:**

भौतिक वातावरण कोणत्याही क्षेत्रातील आर्थिक क्रियाकलापांच्या प्रकारावर प्रभाव टाकते. विदर्भ प्रदेश हा भौतिकदृष्ट्या मैदानी प्रदेश, पठारी पर्वत आणि डोंगराळ प्रदेशाने विभागलेला आहे. येथील अर्थव्यवस्था मोठ्या प्रमाणावर शेतीवर आधारित आहे. येथे सुरुवातीपासून कृषीने प्रदेशाच्या विकासात महत्त्वपूर्ण भूमिका बजावली आहे. व्यावसायिक संरचनेचा अभ्यास हा प्राथमिक, द्वितीयक व तृतीयक व्यवसायात गुंतलेल्या लोकसंख्येच्या आकडेवारीनुसार करण्यात आलेला आहे. विदर्भ प्रदेशातील व्यावसायिक संरचनेत काळानुरूप सातत्याने बदल झालेला दिसून येतो. येथील व्यावसायिक संरचनेवर प्रामुख्याने भौगोलिक घटकांचा प्रभाव प्रकर्षाने पडलेला जाणवतो. सन २००१ ते २०११ या काळात प्राथमिक व्यवसायात गुंतलेल्या लोकसंख्येचे सर्वाधिक प्रमाण हे यवतमाळ जिल्ह्यात आढळत असून ते अनुक्रमे ८६४५४५ व १०७३२२२ एवढे आहे. तर सर्वात कमी हे प्रमाण वाशीम जिल्ह्यात आढळून येते. तसेच अध्ययन काळात तृतीय व्यवसायात गुंतलेल्या लोकसंख्येचे प्रमाण हे नागपूर जिल्ह्यात आढळून येते. एकंदरीत नागपूर जिल्ह्याच्या नागरीकरणाचा येथील व्यावसायिक संरचनेवर प्रभाव पडलेला दिसून येतो.

बिजसंज्ञा: लोकसंख्या, व्यावसायिक संरचना, अभिक्षेत्रीय व कालिक वितरण**प्रस्तावना:**

लोकसंख्येची व्यावसायिक संरचना ही संबंधित देशाच्या किंवा प्रदेशाच्या विकासाची निर्देशक असते. जगात वेगवेगळ्या भागात विविध प्रकारचे व्यवसाय केले जातात. हे व्यवसाय प्रामुख्याने प्रत्येक देशातील अथवा प्रदेशातील नैसर्गिक साधनसंपत्तीशी निगडित असतात. एखाद्या क्रियेचे आर्थिकदृष्ट्या उत्पादनक्षम कार्यातील स्वरूप आणि व्याप्ती यावर कोणत्याही प्रदेशाच्या विकासाचा निर्देशांक निर्धारित असतो. तसेच उपलब्ध संधी, स्त्रियांची काम करण्याची इच्छाशक्ती, त्यांचा पुढाकार व पुरुषांनी स्वतः जोखीम पत्करून नवीन उद्योग सुरू करण्याची उद्योजकता इत्यादी घटकांवर प्रदेशाची विकास पातळी अवलंबून असते. प्रदेशाची किंवा देशाची व्यावसायिक संरचना ही प्राथमिक, द्वितीयक व तृतीयक पद्धतीने अभ्यासता येते. आधुनिक काळात अनेक तज्ज्ञांनी चतुर्थ सेवा या वेगवेगळ्या श्रेणीमध्ये वर्गीकृत केलेल्या आहे. ज्यामध्ये संशोधन आणि प्रशासकीय कामांचा समावेश होतो. प्रा. कोलोन क्लार्क यांनी अनेक देशांच्या अर्थव्यवस्थेचा अभ्यास करून व्यवसायाचे किंवा आर्थिक क्रियांचे तीन भागात विभाजन केले आहे.

१) प्राथमिक व्यवसाय :

यात नैसर्गिक साधनसंपत्तीवर अवलंबून असलेल्या व्यवसायाचा समावेश होतो. उदा. शेती, खाणकाम, वनउद्योग, पशुपालन, मासेमारी. सदर व्यवसाय हे नैसर्गिक संपत्तीवर आधारित असल्याने एक प्रकारे लोकसंख्येचा भार हा नैसर्गिक व ऊर्जा साधनांवर पडतो.

२) द्वितीयक व्यवसाय :

द्वितीयक व्यवसायामध्ये उद्योग, निर्माण, शक्ती उत्पादन येतात. देशात उद्योगधंद्याचा विकास महत्त्वाचा असतो. कारण उद्योगधंद्यामुळे लोकांना पक्का माल प्राप्त होतो. यामुळे लोकांना रोजगार उपलब्ध होतो. देशाचा किंवा प्रदेशाचा विकास हा मोठ्या प्रमाणात उद्योगधंद्यावर आधारित असतो. हे उद्योग शेती, खनिज व इतर कच्चा मालावर अवलंबून असतात.

३) तृतीयक व्यवसाय :

द्वितीयक व्यवसायामध्ये उत्पादन झालेल्या वस्तु उपभोक्ता किंवा उद्योगपती यांच्यापर्यंत पोहोचविणे हा सेवा तृतीय आर्थिक क्रियेमध्ये समाविष्ट होतात. प्राथमिक व द्वितीयक व्यवसाय हे आर्थिक क्रियेमध्ये समाजाला आवश्यक असणाऱ्या वस्तुचे उत्पादन करते तर तृतीय आर्थिक क्रियेमध्ये व्यक्ती समाजाला आवश्यक असणाऱ्या वस्तूचे उत्पादन करते. तसेच चतुर्थ आर्थिक क्रियेमध्ये व्यक्ती लोकांपर्यंत सेवा पोहोचविण्यासाठी कार्य करतात.

अभ्यास क्षेत्र:

महाराष्ट्र राज्याची पाच भौगोलिक विभागात विभागणी करण्यात आलेली आहे. ते विभाग म्हणजे कोकण, पश्चिम महाराष्ट्र, खानदेश, मराठवाडा व विदर्भ होय. प्रस्तुत शोध प्रबंधासाठी विदर्भ या प्रदेशाची अभ्यास क्षेत्र म्हणून निवड करण्यात आलेली आहे. विदर्भाचे स्थान हे उष्णकटिबंधात येत असून याचा अक्षवृत्तीय विस्तार १८°४२' उत्तर ते २१°४६' उत्तर व रेखावृत्तीय विस्तार

७५.०५७' पूर्व ते ८१.०००' पूर्व आहे. महाराष्ट्र राज्यात पूर्वेला वसलेल्या विदर्भ प्रदेशाचे क्षेत्रफळ ९७४०४ चौ.कि.मी. असून महाराष्ट्र राज्याच्या एकूण क्षेत्रफळापैकी ३१.६६% क्षेत्रफळ विदर्भाने व्यापलेले आहे.

सांख्यिकीय स्रोत व संशोधन पद्धती :-

प्रस्तुत शोध निबंधासाठी सन २००१ ते २०११ या कालावधीतील सांख्यिकीय माहिती विचारात घेण्यात आली आहे. विदर्भ प्रदेशातील व्यावसायिक संरचनेचे तुलनात्मक अध्ययन करण्यासाठी लागणारी सांख्यिकीय आकडेवारी व माहिती प्रामुख्याने दुय्यम स्रोताद्वारे प्राप्त करण्यात आलेली आहे.

द्वितीयक स्वरूपाची माहिती ही भारत जनगणना अहवाल, सामाजिक व आर्थिक समालोचन, महाराष्ट्र राज्याचा आर्थिक अहवाल, महाराष्ट्र राज्य सांख्यिकीय गोषवारा इत्यादी. तसेच विविध शासकीय, निम शासकीय व खाजगी संस्थाद्वारे प्रसिद्ध माहितीच्या आधारे प्राप्त करण्यात आली आहे.

अध्ययनाचा हेतू व उद्देश :-

प्रस्तुत लघुशोध निबंधाचा उद्देश हा विदर्भ प्रदेशातील वर्ष २००१ ते २०११ या कालावधीतील

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जिल्हे	प्राथमिक व्यवसाय		द्वितीयक व्यवसाय		तृतीय व्यवसाय	
	२००१	२०११	२००१	२०११	२००१	२०११
बुलढाणा	८१८८२४	९८८६७४	१३७०४	१३७७०	१८३४८७	२१७१९७
अकोला	४५९१५१	५१८२०१	९७६२	९६६०	२०३०७२	२४०२९३
वाशिम	३८१४६३	४७५७९३	५७४१	७१२२	६८१२५	८६८७७
अमरावती	७७१५२५	८६६७३६	१९४९४	२०९९८	३०४६०३	३४८५८८
यवतमाळ	८६४५४५	१०७३२२२	१३३३५	१७८९९	२४१०५७	२६४८७८
वर्धा	३७७९६७	४१५१५९	११२३४	१३७८५	१६११५०	१७९२९१
नागपूर	५९४५५३	६३०१९३	३८०८३	५२४१९	९०५७१३	११८५९४८
भंडारा	३७८४५३	४३५२८२	२८७८६	१७१६९	१२९६४६	१४४८५४
गोंदिया	३९३६६३	४६७९२३	५६९६६	३२५२५	१२८९६७	१६४९७१
चंद्रपूर	६०४७७८	६९४९६१	२००३२	२१३४६	३०५९८१	३४१८६५
गडचिरोली	४०८७१५	४७३१७१	८१८७	११३२१	८०२०२	९९७४५

स्रोत : महाराष्ट्र राज्य सांख्यिकीय गोषवारा २००१, २०११

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सारणी क्र. १ चे अवलोकन केले असता असे निदर्शनास येते की, विदर्भ प्रदेशात सर्वाधिक लोकसंख्या ही प्राथमिक व्यवसायात गुंतलेली आहे. विदर्भ प्रदेशातील यवतमाळ जिल्ह्यात सर्वाधिक १०७३२२२ एवढी लोकसंख्या ही प्राथमिक व्यवसायात गुंतलेली आहे. त्यानंतर बुलढाणा जिल्ह्यात ९८८६७४ एवढी लोकसंख्या प्राथमिक व्यवसायात गुंतलेली आहे. तर सर्वात कमी प्राथमिक व्यवसायात गुंतलेली लोकसंख्या ही वर्धा जिल्ह्यात ४१५१५९ व भंडारा जिल्ह्यात ४३५२८२ आढळून येते. विदर्भ प्रदेशात द्वितीय व्यवसायात गुंतलेल्या लोकसंख्येचे

व्यावसायिक संरचनेचा जिल्हा निहाय व दशवार्षिक तुलनात्मक अभ्यास करून विदर्भ प्रदेशातील बदलत्या व्यावसायिक संरचनेचे विश्लेषण करणे हा आहे.

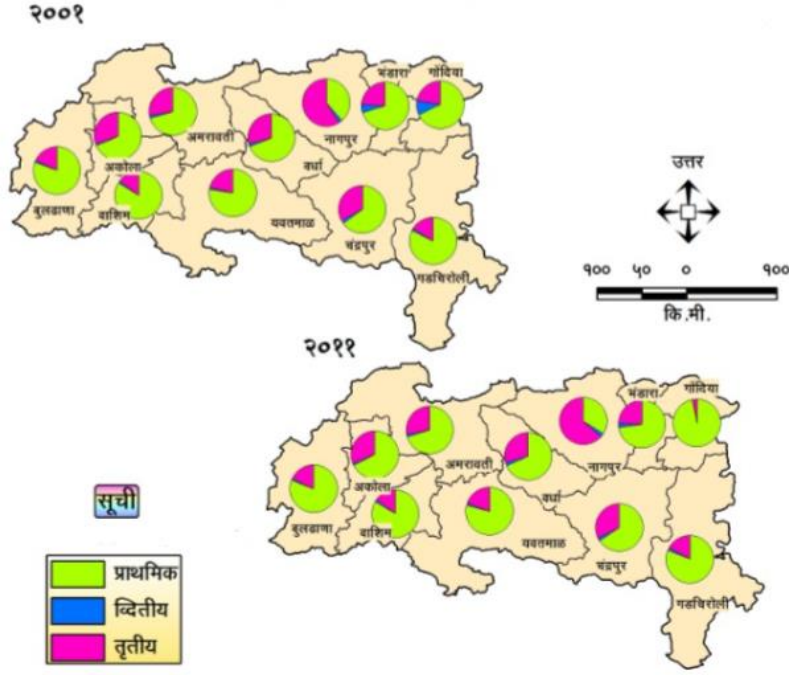
विदर्भ प्रदेशातील व्यावसायिक संरचना – २००१

२००१ मध्ये एकूण कार्यकारी लोकसंख्येपैकी सर्वात जास्त लोकसंख्या ही प्राथमिक व्यवसायात गुंतलेली आढळून येते. यवतमाळ जिल्ह्यात २००१ मध्ये सर्वात जास्त ८६४५४५ लोकसंख्या ही प्राथमिक व्यवसायात गुंतलेली आहे तर त्या खालोखाल बुलढाणा व अमरावती जिल्ह्यात अनुक्रमे ८१८८२४ व ७७१५२५ लोकसंख्या प्राथमिक व्यवसायात गुंतलेली आढळते. सर्वात कमी लोकसंख्या ही वर्धा व वाशिम जिल्ह्यात अनुक्रमे ३७७९६७ व ३८१४६३ आढळून येते.

तसेच द्वितीय व्यवसायात सर्वाधिक लोकसंख्या ही गोंदिया व नागपूर जिल्ह्यात अनुक्रमे ५६९६६ व ३८०८३ इतकी दिसून येते तर सर्वात कमी लोकसंख्या ही गडचिरोली जिल्ह्यात ८१८७ व वाशिम जिल्ह्यात ५७४१ एवढी आढळते. अभ्यास प्रदेशात सन २००१ मध्ये तृतीय व्यवसायात सर्वाधिक लोकसंख्या ही नागपूर जिल्ह्यात तर सर्वात कमी वाशिम जिल्ह्यात आढळते.

प्रमाण हे सर्वात जास्त नागपूर व गोंदिया जिल्ह्यात अनुक्रमे ५२४१९ व ५२५२५ दिसून येते तर सर्वात कमी लोकसंख्या ही वाशिम जिल्ह्यात ७१२२ आढळते. तसेच सन २०११ च्या जनगणनेनुसार, विदर्भ प्रदेशात तृतीय व्यवसायात गुंतलेल्या लोकसंख्येचे प्रमाण द्वितीय व्यवसायातील लोकसंख्येपेक्षा अधिक असल्याचे दिसून येते. २०११ मध्ये सर्वात जास्त तृतीय व्यवसायातील लोकसंख्या ही नागपूर जिल्ह्यात ११८५९४८ व अमरावती जिल्ह्यात ३४८५८८ आढळून येते. तर सर्वात कमी तृतीय व्यवसायातील लोकसंख्या ही वाशीम जिल्ह्यात ८६८७७ व गडचिरोली जिल्ह्यात ९९७४५ दिसून येते.

नकाशा क्र. १ विदर्भ प्रदेशातील व्यावसायिक संरचना २००१ – २०११



निष्कर्ष :

विदर्भ प्रदेशातील व्यावसायिक संरचनेचा अभ्यास केला असता असे दिसून येते की, विदर्भ प्रदेशात जिल्हानिहाय प्राथमिक व्यवसाय करणाऱ्या लोकसंख्येचे प्रमाण हे अधिक आहे. कारण विदर्भ प्रदेशात शेती हा प्रमुख व्यवसाय आहे. विदर्भात उद्योगधंद्यांचा विकास न झाल्यामुळे लोकांना शेती कार्याशिवाय पर्याय नाही. त्याचप्रमाणे द्वितीय व्यवसायापेक्षा तृतीय व्यवसायातील लोकसंख्येचे प्रमाण अधिक आहे. विदर्भ प्रदेशात २००१ ते २०११ या संशोधन काळात प्राथमिक व्यवसायातील लोकसंख्या वाढल्या लोकसंख्येबरोबर सतत वाढत आहे. त्याचप्रमाणे तृतीय व्यवसायातील लोकसंख्या देखील मोठ्या प्रमाणात वाढतांना आढळून येते.

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- ६) भारत जनगणना अहवाल २०११

शाश्वत विकासाचा मार्ग स्वीकारावाच लागेल

प्रा. डॉ. शशिकांत तोळमारे^१, प्रा. डॉ. सूर्यकांत पवार^२

^१श्री योगानंद स्वामी कला महाविद्यालय वसमत, जि. हिंगोली.

^२शिवाजी महाविद्यालय रेणापूर जि. लातूर.

Corresponding Author- प्रा. डॉ. शशिकांत तोळमारे

Email- shashikant.tolmare@gmail.com

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सारांश:

शाश्वत विकासही काळाची गरज आहे. कारण जगामध्ये लोकसंख्येत भरमसाठ वाढ होत आहे. तर दुसऱ्या बाजूला नैसर्गिक साधनसंपत्ती वेगाने घटक आहे. या पार्श्वभूमीवर विकासात असमतोल निर्माण होऊन अनेक प्रश्न निर्माण होत आहेत. शिवाय या विकासातील असमतोलामुळे आर्थिक सामाजिक सांस्कृतिक राजकीय धार्मिक समस्या निर्माण होत आहेत. दुसऱ्या बाजूला आपण येणाऱ्या पिढीला शुद्ध पर्यावरण देऊ शकत नाही. येणाऱ्या पिढीकडे नैसर्गिक साधन संपत्ती व संतुलित विकास सातत्यपूर्ण विकास शाश्वत विकास पोचवायचा असेल तर जीवनाच्या सर्व क्षेत्रात शाश्वत विकासाकडे लक्ष देणे गरजेचे आहे. पृथ्वीवर विकासाच्या नावाखाली पर्यावरणाचे मोठ्या प्रमाणात शोषण केले जात आहे. अमर्याद विकासाच्या नावाखाली नैसर्गिक साधनांचा अमर्याद वापर होत आहे. या सर्वांचा परिणाम म्हणून एका बाजूला जगाची लोकसंख्या वेगाने वाढत असताना दुसऱ्या बाजूला जगातील नैसर्गिक साधनसंपत्ती मात्र प्रचंड वेगाने घटत आहे. म्हणून या पार्श्वभूमीवर मागील पिढ्यांनी आमच्यापर्यंत पोहोचविलेला नैसर्गिक साधनसंपत्तीचा वारसा विकासाचा वारसा कायम ठिकून ठेवण्यासाठी संपूर्ण विश्वाच्या भल्यासाठी पर्यावरण संतुलन राखून विकास प्रक्रिया गतिमान करण्यासाठी वैश्विक मानवाला शाश्वत विकासाचाच मार्ग स्वीकारावा लागेल. या शाश्वत विकासातच आमचे व आमच्या नंतर येणाऱ्या पिढ्यांचे हित आहे, हे विसरून चालणार नाही. खऱ्या अर्थाने विश्वाचे कल्याण साधावयाचे असेल तर विकासाचा मार्ग शाश्वत विकासाच्या मार्गानेच साध्य करावा लागेल. यातच संपूर्ण मानव जातीचे हित आहे. म्हणून शाश्वत विकास ही संकल्पना समजून घेणे अत्यंत गरजेचे आहे.

बीज संज्ञा : शाश्वत विकासाचा मार्ग स्वीकारावाच लागेल.

प्रस्तावना :

शाश्वत विकास संकल्पना सन १९८७ मध्ये मांडण्यात आली. आवर कॉमन फ्युचर या सदराद्वारे ब्रुटलँड अहवालातूनही संकल्पना पुढे आली. शाश्वत विकास म्हणजे असा विकास जी की वर्तमान काळातील व भविष्यकाळातील समाजांच्या गरजांची पूर्तता करताना निसर्गाकडे दुर्लक्ष होणार नाही. याचाही विचार केला जावा असा मूलभूत विचार मांडला थोडक्यात काय तर केवळ मानवाची भौतिक उन्नती साध्य करण्याचा विचार न करता पर्यावरण व मानव कल्याणाचा विचार वर्तमान व भविष्याचा विचार साधनसंपत्ती व विकासाचे यथायोग्य नियोजन करण्यासाठी जाणीवपूर्वक प्रयत्न करणे होय. थोडक्यात काय तर विकासा एकांगी न करता प्रकृती पर्यावरण व मानव हिताचा वर्तमान व भविष्याचा विचार करून जो विकास साधला जातो, त्याला शाश्वत विकास किंवा सातत्यपूर्ण विकास किंवा सस्तेनेबल डेव्हलपमेंट असे म्हणतात.

शाश्वत विकासाच्या संदर्भात संयुक्त राष्ट्र संघाने पुढाकार घेऊन लोक जागृती करण्याचा प्रयत्न केला. सन २०१५ ते २०३० पर्यंत जगात शाश्वत विकास साध्य करण्यासाठी काही निश्चित उद्दिष्टे ठरवण्यात आली. या उद्दिष्टांची पूर्तता करण्यासाठी संकल्प करून प्रयत्न व नियोजन करण्याचे ठरले.

शाश्वत विकासासाठी काही उद्दिष्टे निश्चित करण्यात आली पुढील प्रमाणे :

- १) जागतिक गरिबी निर्मूलन करणे.
- २) जागतिक उपासमारी रोखणे.
- ३) जागतिक आरोग्य संवर्धन करणे.
- ४) जगाला स्वच्छ पिण्याच्या पाण्याचा पुरवठा करणे.
- ५) जगाला शाश्वत व परवडणारी ऊर्जा विकसित करणे.
- ६) जगात आर्थिक सामाजिक सांस्कृतिक व सर्वांगीण शाश्वत विकास साध्य करणे.

7) जागतिक विषमता कमी करण्यासाठी जाणीवपूर्वक प्रयत्न करणे.

8) नियोजनबद्ध नगरांचा व महानगरांचा विकास करणे.

9) वस्तू व सेवांचे उत्पादन व वितरण योग्य पद्धतीने करणे.

10) नैसर्गिक साधन संपत्तीचे जतन व संवर्धन करणे.

11) हवा पाणी जमीन यांचे प्रदूषण रोखणे.

12) कल्याणकारी व न्याय पूर्ण समाज व्यवस्था निर्माण करणे.

संशोधन पद्धती :

प्रस्तुत संशोधन पेपर तयार करण्यासाठी द्वितीय सामग्रीचा उपयोग करण्यात आला. जसे शासनाचे विविध अहवाल तसेच जागतिक पर्यावरण विभागाचे अहवाल, संकेतस्थळावरील माहिती इत्यादी.

विषय विवेचन :

शाश्वत विकास म्हणजे असा विकासाचा मार्ग जो वर्तमान काळातील लोकांच्या गरजा पूर्ण करून भविष्यकाळातील लोकांच्या गरजांची पूर्तता करण्याची क्षमता असणारी प्रणाली किंवा पद्धती होय. हा विकास केवळ भौतिक नसेल तर सामाजिक सांस्कृतिक आर्थिक पर्यावरणीय व सर्वांगीण पातळीवर संतुलित विकासाध्य करून वर्तमान गरजांची पूर्तता व भविष्याची तरतूद यात केली जाईल, असा दूरगामी विकासाचा विचार हा शाश्वत विकासाचा आरंभ आहे. यात केवळ मानव कल्याणाचे विचार केला जात नाही तर मानवासोबत निसर्गाचे हित निसर्गाचे कल्याण निसर्ग व मानव यांच्यात संतुलन साधण्यासाठी विचार येथे केला जातो. हे शाश्वत विकासाचे तत्व साध्य करण्यासाठी प्रमुख तीन मार्गांचा अवलंब करता येतो.

शाश्वत विकासाचे प्रमुख तीन मार्ग :

- 1) सामाजिक पातळीवर विकास.
- 2) आर्थिक पातळीवर विकास.
- 3) पर्यावरणीय पातळीवर विकास.

या मुख्य तीन टप्प्यांच्या माध्यमातून किंवा तीन पातळीवर विकास प्रक्रिया गतिमान करताना पर्यावरणाचा वर्तमानाचा व भविष्याचा विचार केला जातो. थोडक्यात काय तर भौतिक विकास केवळ एकांगी पणे न करता सर्वच स्तरावर सकारात्मक विचार व वर्तन करून मानवाचे व पर्यावरणाचे हित जोपासून विकास करण्यावर भर दिला जातो.

यातील पहिला टप्पा किंवा सामाजिक विकास साध्य करताना लोकांना शिक्षण आरोग्य गरिबी निर्मूलन समाजाचे सर्वच पातळीवर सशक्तिकरण करण्यावर भर दिला जातो. हे केवळ वर्तमानाचा विचार न करता भविष्याचा विचार करून नियोजन व कार्य केले जाते. म्हणून शाश्वत विकासाचा अर्थ प्राप्त होतो. या पार्श्वभूमीवर सामाजिक विकास साध्य करण्यासाठी प्रयत्न केले जातात.

शाश्वत विकासाच्या दुसऱ्या टप्प्यात आर्थिक विकासाचा प्राधान्य देताना स्थिर आर्थिक विकास प्रा. डॉ. शशिकांत तोळमारे, प्रा. डॉ. सूर्यकांत पवार

सातत्यपूर्ण आर्थिक विकासाचा महत्त्व दिले जाते. या अनुषंगाने विचार करता गरजेनुसार नवनवीन तंत्रज्ञानाचा वापर यंत्रज्ञानाचा वापर नवीन रोजगाराच्या संधी या बाबीकडे प्रयत्नपूर्वक लक्ष दिले जाते. हे सर्व प्रदीर्घ काळाचा विचार करून भविष्याचा वेध घेऊन वर्तमानातच नियोजन केले जाते.

शाश्वत विकासाच्या तिसऱ्या टप्प्यात पर्यावरणीय विकासाकडे प्रयत्नपूर्वक लक्ष दिले जाते. निसर्गाला हानी पोहोचून विकास होणार नाही, याची दक्षता घेतली जाते. विकास साध्य करताना पर्यावरणीय संतुलन बिघडणार नाही याची खबरदारी घेतली जाते. वर्तमान व भविष्यकालीन पर्यावरणाचा विचार करून विकासाचे मॉडेल तयार केले जाते.

या मार्गाने शाश्वत विकास साध्य करताना प्रदूषण नियंत्रण नैसर्गिक साधनांचा पुनर्वापर अधिकाधिक चिरंतन ऊर्जा साधनांचा वापर करण्यावर भर दिला जातो. थोडक्यात काय तर मानवी विकासाची ध्येय साध्य करताना पर्यावरणाला हानी पोहोचणार नाही पर्यावरण प्रदूषित होणार नाही याची काळजी घेतली जाते, याची दक्षता घेतली जाते. अशा प्रकारे या तीन मार्गाने किंवा तीन टप्प्यातून शाश्वत विकासाचे उद्दिष्ट पूर्ण होऊ शकते

शाश्वत विकासाची उद्दिष्टे पूर्ण करण्यासाठी बरील प्रमुख तीन टप्प्यांचा किंवा मार्गांचा अवलंब करावा लागेल. यासाठी शाश्वत विकासाचे चित्र प्रत्यक्षात अवतरीत करण्यासाठी पुढील प्रमाणे आपणाला नियोजन करावे लागेल. उपाययोजना कराव्या लागतील

- 1) शाश्वत शेतीचा विकास अर्थात जैवविविधतेची जपणूक करून आपणाला सेंद्रिय पद्धतीने शेतीमध्ये नवनवीन प्रयोग करावे लागतील.
- 2) शाश्वत ऊर्जा साधनांचा विकास करावा लागेल. अर्थात सौर ऊर्जा पवन ऊर्जा भूऔष्णिक ऊर्जा व भरती ओहोटी पासून ऊर्जा निर्माण करावी लागेल.
- 3) शाश्वत जलसंपत्ती निर्माण करताना जल पुनर्भरण जलसंवर्धन करून जल प्रदूषण कमी करावे लागेल.
- 4) शाश्वत शहर किंवा शाश्वत नागरी विकासाकडे लक्ष द्यावे लागेल. अर्थात हेक करत असताना सार्वजनिक वाहतूक प्रणालीचा वापर करावा लागेल. हरित क्षेत्राची निर्मिती करावा लागेल. कचऱ्याचे व्यवस्थापन करावे लागेल व शहराचे नियोजन करावे लागेल.

अशाप्रकारे वर दिलेल्या विविध मार्गांचा अवलंब करून विविध कार्यपद्धतीचा अवलंब करून आपण शाश्वत विकासाचे तत्व आत्मसात करू शकतो. ज्यामुळे निसर्ग व मानव दोघांचे कल्याण शक्य आहे. कोणताही विकास करत असताना केवळ वर्तमानाचा विचार न करता भविष्यकाळाचा विचार करून व भूतकाळापासून बोध घेऊन विकास प्रक्रिया जाणीवपूर्वक राबवावी लागेल यातच सर्वांचे हित आहे.

शाश्वत विकासाचे फायदे किंवा लाभ :

- 1) पर्यावरणाचे संरक्षण होण्यास मदत होईल.
- 2) आर्थिक सामाजिक सांस्कृतिक विकास शक्य होईल.
- 3) सामाजिक न्याय प्रस्थापित होईल व कल्याणकारी राज्य अस्तित्वात येईल.
- 4) साधन संपत्तीचा योग्य उपयोग होईल.
- 5) मानवाचा गुणात्मक विकास होण्यास मदत होईल.

शाश्वत विकास साध्य करण्यातील अडचणी :

- 1) अल्पकाळात विकास शक्य नाही दीर्घकाळ प्रतीक्षा करावी लागेल.
- 2) राजकीय इच्छाशक्तीचा अभाव.
- 3) तंत्रज्ञानाची मर्यादा.
- 4) लोकजागृतीचा व लोकसह्यमाचा अभाव.
- 5) जागतिक सहकार्याचा अभाव.

अशाप्रकारे शाश्वत विकास संकल्पना, शाश्वत विकासाची व्याख्या, शाश्वत विकासाची पार्श्वभूमी, शाश्वत विकासाची उद्दिष्टे, शाश्वत विकासाचे टप्पे किंवा पायऱ्या, शाश्वत विकास साधण्याचे मार्ग, शाश्वत विकासाचे फायदे व शाश्वत विकास निर्माण करण्यासाठी येणाऱ्या अडचणी इत्यादीचे आपण सखोल पणे माहिती पाहिलेली आहे

संदर्भ ग्रंथ :

- 1) आवर कॉमन फ्युचर ब्रुटलँड रिपोर्ट.
- 2) संयुक्त राष्ट्रसंघाचा शाश्वत विकास अहवाल.
- 3) द इकॉनॉमिक अँड सस्टेनेबल डेव्हलपमेंट बाय सिमोन डार्ट्झ.
- 4) एन्व्हायरमेंट इकॉनॉमिक्स अँड इंटरोडक्शन बाय बरी फेईल्ड.
- 5) शाश्वत विकासाचे सिद्धांत व अनुप्रयोग.

रामायण कालीन शिक्षण व्यवस्था

डॉ. संजीवनी श्रीपाद नेरकर

संस्कृत विभाग प्रमुख, वैकुंठवासी धुंडा महाराज देगलूरकर महाविद्यालय देगलूर

Corresponding Author- डॉ. संजीवनी श्रीपाद नेरकर

Email- Deshmukh.sanjivani@gmail.com

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लेख सारांश :-

रामायण पंथ आणि रामाचा काळ भारतीयच नव्हे तर संपूर्ण विश्वाच्या दृष्टीने अत्यंत महत्वाचा मानला जातो. रामराज्य यावे, ही संपूर्ण जगताची इच्छा आहे. एक आदर्श राज्य म्हणून राम राज्याकडे पाहिले जाते. पण शासन व्यवस्थाच नव्हे तर समाज, अर्थ, नीती, कुटुंब या प्रमाणेच या रामराज्यातील शिक्षण व्यवस्था देखील अतिशय मार्गदर्शक होती. या शिक्षण व्यवस्थेवर माझी काही मते, चार मी या लेखांमधून मांडणार आहे. माणसांमध्ये हा अंतर्बाह्य विकसित होत असतो पण माणूस समाजात जगताना त्याला पदोपदी शिक्षणाची आवश्यकता असते. शिक्षण म्हणजे शिस्त क्षमता आणि नम्रता या तीनही बाबी शिक्षणा मधूनच व्यक्तीस प्राप्त होत असतात आजच्या काळात समाजात दुही दिसून येते सर्वत्र अराजकता विकट अशी परिस्थिती दिसून येते याचे कारण आजची शिक्षण व्यवस्था ही प्रशासनाच्या आधीन आहे. ती स्वतंत्र नाही म्हणूनच ही व्यवस्था सुशिक्षित व्यक्ती निर्माण करित आहे परंतु सक्षम विनयशील चरित्रवान व्यक्ती मात्र या व्यवस्थेतून निर्माण होताना दिसत नाहीत पण आपला भारताचा इतिहास पाहिला तर उत्तम शिक्षण व्यवस्थेचा भक्कम पाया असलेला आपणास दिसून येतो राम राज्यामध्ये जशी समाज व्यवस्था कुटुंब व्यवस्था अर्थव्यवस्था आदर्श होते त्याच पद्धतीने त्याखालील शिक्षण व्यवस्था देखील तितकीच आदर्श होती हे दिसून येते या लेखांमधून मी रामायण कार्य शिक्षण व्यवस्थेच्या मुख्य बिंदूवर प्रकाश ठाकणे आहे तुने आपले विचार मांडीत आहे.

मुख्य शब्द:- रामायण, गुरुकुल, गुरु शिष्य संबंध, विचारांचे अधिष्ठान, तपोवन पद्धती, विनामूल्य शिक्षण, सक्षम असे गुरुवर्य, गुरुशिष्यांची प्रेमळ संबंध.

प्रस्तावना:-

Man is social animal, असे अरीस्टॉटल ने म्हटलं आहे. माणसास समाजाची आवश्यकता असते आणि तो समाजाशिवाय राहू शकत नाही. माणसांमध्ये हा अंतर्बाह्य विकसित होत असतो पण माणूस समाजात जगताना त्याला पदोपदी शिक्षणाची आवश्यकता असते. शिक्षण म्हणजे शिस्त, क्षमता आणि नम्रता या तीनही बाबी शिक्षणा मधूनच व्यक्तीस प्राप्त होत असतात. आजच्या काळात समाजात दुही दिसून येते, सर्वत्र अराजकता, विकट अशी परिस्थिती दिसून येते. याचे कारण आजची शिक्षण व्यवस्था ही प्रशासनाच्या आधीन आहे. ती स्वतंत्र नाही म्हणूनच ही व्यवस्था सुशिक्षित व्यक्ती निर्माण करित आहे, परंतु सक्षम, विनयशील, चरित्रवान व्यक्ती मात्र या व्यवस्थेतून निर्माण होताना दिसत नाहीत पण आपला भारताचा इतिहास पाहिला तर उत्तम शिक्षण व्यवस्थेचा भक्कम पाया असलेला आपणास दिसून येतो राम राज्यामध्ये, जशी त्या काळात समाज व्यवस्था, कुटुंब व्यवस्था, अर्थव्यवस्था आदर्श होती,

त्याच पद्धतीने शिक्षण व्यवस्था देखील तितकीच आदर्श होती हे दिसून येते.

उद्देश्य :

या लेखांमधून मी रामायण कालीन शिक्षण व्यवस्थेच्या मुख्य बिंदूवर आपले विचार मांडीत आहे. जेणेकरून आजच्या शिक्षण व्यवस्थेत काही यासम बदल करता येतील, या उद्देशाने हा लेख मी लिहीत आहे. रामायण कालीन शिक्षण व्यवस्थेचे काही मुख्य बिंदू पुढीलप्रमाणे –

विचारांचे अधिष्ठान, तपोवन पद्धती, विनामूल्य शिक्षण, सक्षम असे गुरुवर्य, गुरुशिष्यांची प्रेमळ संबंध, जीवनाधार असेच तत्वज्ञान, शिक्षणपद्धती, ब्रह्मचर्य व्रताचे पालन, भावनाशील असे शिक्षण, तत्कालीन स्त्रीशिक्षण, ज्ञानोपासना, तेजस्वी अशी ब्राह्मण संस्था, नीतिमतेचा आधार, प्रशासन मार्गदर्शक आणि स्वतंत्र शिक्षण व्यवस्था. यांचे स्पष्टीकरण हे पुढीलप्रमाणे :-

1.विचारांचे अधिष्ठान:

शिक्षण व्यवस्थेमध्ये विचारांचे अधिष्ठान होते प्रत्येक बाब ही सतत याच्याशी जोडलेली असायची असतो मा सद्धमय तमसो मा ज्योतिर्गमय हा शिक्षणाचा मुख्य हेतू असायचा .विचार व जीवन यांची सांगड घातलेली असायची सद्विचार आधीच जीवन असल्याने समय कृती सम्यक आचार सम्यक विचार सम्यक चरित्र हे निर्माण करण्यासाठी प्रयत्न होत असे ज्ञानाच्या माध्यमातूनच भक्ती व कर्म यांचा पाया असेल म्हणूनच सर्वत्र संतुलित समन्वयवादी वातावरण समाजात दिसे.

२.तपोवन पद्धती:

तत्कालीन शिक्षण व्यवस्थेचे हे मुख्य वैशिष्ट्य आहे या शिक्षणाची माणसाच जीवन जगताना गरज असेल ते प्रत्येक शिक्षण पोहण्यात त्याला प्राप्त होत असे शौचाचा रंग शिक्षा येत तपोवनात शौचविधी प्र साठी कसे जावे इथपासून सर्व तत्त्वज्ञान पर जीवन उपयोगी असे शिक्षण दिले जाई.निसर्ग , गुरु सानिध्य, ज्ञानाधिष्ठित विनम्रता , सदाचरण व सत्शील सहाध्यायी च्या सहवासात देखील तपोवन शिक्षणपद्धती ही राज्य सत्ते सही मार्गदर्शक असे .याचे रामायणामध्ये आपणास ठिकाणी दाखले सापडतात.

३.विनामूल्य शिक्षण:

तत्कालीन काळामध्ये शिक्षण हे विनामूल्य व क्षमता दिसत होते तपोवनात श्रीमंत-गरीब असा भेद नव्हता .”विनीतवेष्टेण प्रवेष्टव्यानि तपोवनानि नाम” हे अभिज्ञान शाकुंतल मधील दुष्यंत राजा च्या मुखी चे वचन त पोहण्याचा गरिमा अभिव्यक्त करताना दिसते शिक्षक सत्ता व ऋषी सत्ताच तिथे चालत असे.

४.सक्षम गुरुवर्य:

गुरु म्हणजे जो रघुला शिश्रातील लागते लघु तेस गुरुत्वाचा परिवर्तित करण्याची क्षमता ठेवतो तो या पद्धतीचे सक्षम सर्वतोपरी परिपूर्ण ज्ञान संपन्न अध्यात्माची जोड असलेले गुरुवर्य हे विद्यार्थ्यास प्रत्येक विषयाचे ज्ञान देण्यास समर्थ असत उदाहरणादाखल वशिष्ठ ऋषी विश्वामित्र हे नाव देखील येथे पुरेसे आहे.

५.गुरु शिष्य ते प्रेमळ संबंध:

आपल्या चरणा मधूनच शिष्याला जीवन उपयोगी ज्ञान व मूल्ये यांची रुजवणी करणाऱ्या गुरु वशिष्ठ ऋषी सारख्या व राम इत्यादीसारख्या शिष्यांच्या मध्ये परस्परात अत्यंत प्रेमळ असे संबंध होते “सहनाववतु सह नौ भुनक्तु,” अशी विचारसरणी या शिक्षणा मागे होते आत्मीयता आदर या गुणांचे सहाचर्य या संबंधांमध्ये दिसून येतात.

६.जीवनाधार असे तत्वज्ञान:

जीवनातील प्रत्येक बाबींमध्ये आवश्यक असलेल्या तत्वज्ञानाची पेरणी हे गुरु शिक्षण मध्ये करीत असत पैसा हा जगण्याचा आधार नसून ते एक सामान्य साधन मानले जाईल विचारास सच्चरित्र जीवनाचे अधिष्ठान मानले जाईल म्हणूनच या भक्कम तत्वज्ञानावर सक्षम अशी बरीच ही चरित्रे रामायण काळात आपल्याला दिसून येतात.

डॉ. संजीवनी श्रीपाद नेरकर**७.शिक्षण पद्धती:**

विद्यार्थी चेत् त्यजेत् सुखम् |

ही मुख्य भावना या शिक्षणाच्या मूळ स्थानी होते विद्यार्थ्यांतील सूक्त अव्यक्त तसेच व्यक्त गुण हे जागृत करून त्यांना त्यांची शक्तीस्वरूप बनविणे हे या शिक्षण पद्धतीचे ध्येय होते ज्ञानानंद हा मूळ पाया अनुशासन यावरच आधारलेला होता राजांचा मुलांनाही याच कठोर व अनुशासित जीवनशैलीचा अवलंब करावा लागे.तपोवन पद्धतीस आपण आज आधुनिक भाषेत रेसिडेंशियल एज्युकेशन सिस्टीम असे म्हणता येईल तपोवनं नाम तपसः वनम्| अर्थात तपो व्रत सहनम् हे सामर्थ्य शिष्याला इथेच प्राप्त होत असे.

८.ब्रह्मचर्य व्रत पालन:

शिष्यांनी ब्रह्मचर्य व्रताचे पालन करणे अनिवार्य असे समावर्तन नंतरच गुरु व मातापित्यांच्या आज्ञेने गृहस्थ जीवन स्वीकारले जाईल शिक्षण घेताना भोजन नियम आचरण नियम पोशाख नियम धर्मनियम व्रतस्थपणे पालन करावे लागत असे इन्द्रियनिग्रह ज्ञानोपासना आणि सदाचरण व्रतस्थ राहूनच तेजाची उपासना होईल आणि यामधूनच तेजस्वी तपस्वी व तत्व युवा व्रतस्थ शिष्याचे निर्मिती होईल संपूर्ण समाजात मार्गदर्शन करीत असत.

९.भावनाशील शिक्षण:

तत्कालीन शिक्षण विचार भावना ज्ञान व आचरण यांचा सुंदर मिलाफ असे या सुंदर समन्वयात्मक गुंफणातूनच संतुलित असा समाज उभारला जाईल बुद्धिमत्तेने बरोबरच भावनिक उच्चांक यासाठीही प्रयत्न होत असे शिक्षण हे व्यक्ती समाज कुटुंब या सहज ईश्वर व निसर्ग यांच्याशीही जोडलेले असायचे त्यामुळे उच्चशिक्षित हा कुटुंब देव समाज यांच्यापासून कधीही दूर जात नसे.

१०.स्त्री शिक्षण:

तत्कालीन स्त्रियांना असे शिक्षण मिळत असे की जेणेकरून त्यांच्यातील स्त्रीत्व जपले जाईल तिच्यातील निर्मिती क्षमतेला उजागर करण्याचे शिक्षण तिला दिले जाईल जेव्हा राम मनात निघत होता तेव्हा वसिष्ठ ऋषी सीते विषयी म्हणतात – पालयिष्यति मेदिनीम्|अर्थात या पृथ्वीचे पालन हे सीता करेल किती मोठा विश्वास वसिष्ठ ऋषींनी तिच्याविषयी दाखवला .यातच तत्कालीन स्त्री शिक्षणाची इतिकर्तव्यता पडताळता येऊ शकते स्त्री ही निती मती बुद्धी मती पंडिता तत्वज्ञाने याच बरोबर बसला सहचारिणी सक्षम व पालनकर्ते व्हावी यासाठी रामायणकालीन स्त्री शिक्षणात सर्वतोपरी प्रयत्न दिसून येतो.

११.ज्ञानोपासना:

ज्ञानोपासना हे मुख्य गमक आहे या शिक्षण व्यवस्थेचे .

“स्वाध्याय प्रवचनाभ्याम् न प्रमदितव्यम् |”

हे तत्व पालन करीतच ज्ञानाची उपासना केली जाईल कठोर आचरण नियम पालन करीत बुद्धीला धार दिली जाई .वेद इत्यादी ग्रंथोपासना व तत्वज्ञान पर गुरुवाक्य यावर निष्ठा असे .

१२.तेजस्वी ब्राह्मण संस्था:

सुविचारांचे वस्ताद आचरणाचे सतत अनुसरण करविणारे तेजस्वी गुरुवर्य ब्रह्मवृंद हे सामर्थ्य संपन्न असतात वेळ पडली तर शासन कर त्यावरही अंकुश ठेवण्याचे सामर्थ्य या गुरुवारी यांमध्ये होते अशी वसिष्ठ विश्वामित्र यांची अनेक उदाहरणे रामायणामध्ये ठिकठिकाणी वाचावयास मिळतात .परंतु आज हे ब्राह्मण या विघडल्यामुळे समाज मृतप्राय झालेला आहे प्रज्ञावान मेधा संपन्न अनिष्ट बुद्धी तत्त्वनिष्ठ असे ब्राह्मण असेल तरच समाज तेजस्वी होईल रामायणकालीन शिक्षण व्यवस्थेचे मूळ म्हणजेच हे तेजस्वी ब्राह्मण्य.

१३.नीतिमत्तेचा आधार:

नीतिमत्ता संतुलित तथा समन्वय अता व सदाचरण हा या शिक्षण व्यवस्थेचा पाया म्हणूनच तर या व्यवस्थेतून अनेक आदर्श चरित्रे व समाज घडला व आज इतकी शतके उलटून गेली तरीही आधुनिक समाज हा आज देखील याच रामराज्याची अपेक्षा करतो आहे.

१४.प्रशासन मार्गदर्शक:

ही शिक्षण व्यवस्था वेळोवेळी प्रशासन व प्रशासक यांना मार्गदर्शन ही करित असे .व त्यांच्यावर अंकुश ही ठेवत असे . रामायण कालीन संस्कृतीचे आधारस्तंभ म्हणजे वसिष्ठ व विश्वामित्र यांच्यासारखे गुरुवर्य. प्रजेसाठी राज्यसत्ता अन्नधान्य इत्यादी गरजांचा पुरवठा करी व्यवस्था करी तर ब्रह्म सत्ताही ज्ञान विचार तेज व प्रेम हे त्यांच्या मध्ये कसे होईल यासाठी प्रयत्नशील राहिल या सुंदर समन्वय यामधूनच सुंदर पोषक सशक्त सक्षम आणि संतुलित समन्वयवादी असा व्यक्ती व समाज घडवला जात असे.

१५.स्वतंत्र शिक्षण व्यवस्था:

या शिक्षण व्यवस्थेचे स्वतंत्रता हे सतीश यशाचे गमक होय जय महाराज या सत्तेच्या आधी नाते पासून शिक्षण व्यवस्था दूर होईल स्वतंत्र होईल तेव्हा ती उत्तम सक्षम असे शिष्य गृहस्थ व्यक्ती कुटुंब समाज व राष्ट्र निर्मिती करू शकेल हे मात्र नक्की .

एकंदरीत राम कालीन शिक्षण व्यवस्था म्हणजे way of life(जीवन प्रणाली),way of worship(उपासना प्रणाली),way of thinking(विचार प्रणाली). यांचा एक सुंदर मिलाफ आहे यातूनच आपला हा भारत देश पुन्हा एकदा सुजल सुफल होऊन सोने की चिडिया बनून उद्या सृष्टीस मार्गदर्शन करू शकेल हे मात्र नक्की .

इति शम्|

धन्यवाद .

संदर्भित ग्रंथ:

1. वाल्मिकी रामायण (मुळ)
2. वाल्मिकी रामायण, सद्दीचार दर्शन, मुंबई
3. दशावतार, सद्दीचार दर्शन, मुंबई

अमरावती शहरातील ध्वनी प्रदूषणाचे मूल्यांकन - एक भौगोलिक अध्ययन

डॉ. प्रविण म. माटोडे

शासकीय विदर्भ ज्ञान विज्ञान संस्था, (स्वायत्त) अमरावती.

Corresponding Author- डॉ. प्रविण म. माटोडे

Email- pravinmatode777@gmail.com

DOI- 10.5281/zenodo.13867066

सारांश :-

अनुकूल पर्यावरणात नगराचे व्यक्तिमत्व, क्षेत्रीय, प्रसव व कार्यात्मक बहुविविधता विकसित होत जाते. नागरीकरण प्रक्रियेद्वारे नगराचा सातत्याने विकास होतो. परंतु काळानुरूप या विकासाबरोबरच शहरात काही समस्या सुद्धा उदयास येतात. त्यामुळे नगराच्या पारिस्थितीकीवर प्रतिकूल परिणाम घडून येतो आणि शहरी पर्यावरणात असमतोल निर्माण होवू लागतो.

अमरावती हे शहर पश्चिम विदर्भातील महत्त्वाचे मध्यवर्ती केंद्र असून विदर्भातील नागपूर नंतर दुसऱ्या क्रमांकाचे सर्वात मोठे शहर आहे. शहराच्या विकासाबरोबरच येथे प्रदूषणाच्या समस्या प्रकर्षाने जाणवतात. शहराच्या 'केंद्रीय व्यवहार क्षेत्रातील' राजकमल चौक, इतवारा, जुने कॉटन मार्केट या ठिकाणी दिवसा सर्वाधिक 75 डेसिबल दरम्यान ध्वनी तीव्रता आढळून येते. शहरातील औद्योगिक क्षेत्रात दिवसा सर्वाधिक 62 डेसिबल ध्वनी प्रमाण आढळून येते तसेच निवास व शांतता क्षेत्रात अनुक्रमे ६३ व ६६ डेसिबल ध्वनी तीव्रता दिसून एकंदरीत शासनाने निर्धारित केलेला ध्वनि स्तर मर्यादा प्रमानांकापेक्षा अधिक शहरातील व्यापार, निवासी व शांतता या क्षेत्रातील ध्वनी पातळी वाढलेले दिसून येते. शहरात उद्भवणाऱ्या ध्वनी प्रदूषणाचा शहराच्या पर्यावरणावर व मानवी जीवनावर प्रतिकूल परिणाम होत आहे.

बीजसंज्ञा:- ध्वनी पातळी, ध्वनी प्रदूषण, निवास क्षेत्र, केंद्रीय व्यवहार क्षेत्र (CBD), औद्योगिक क्षेत्र.

प्रस्तावना :-

मानवी संस्कृतीचे स्थल व कालसापेक्ष दृश्य मानवी अधिवासात प्रतिबिंबित होते शहरी पर्यावरणाची विभवता कालोघात शहराच्या उत्कर्षास तथा अधोगतीस कारणीभूत ठरते नागरिकरण, औद्योगिकीकरण या प्रक्रियेमुळे पर्यावरणावर प्रचंड ताण पडून शहरात पर्यावरणीय समस्या उद्भवतात. आज नागरी भागात जल , वायू, भूमी, कचरा इत्यादी प्रदूषणाबरोबर ध्वनी प्रदूषण ही ज्वलंत पर्यावरणीय समस्या जाणवते

Noise हा शब्द लॅटिन 'Nausea' शब्दापासून आला आहे. ज्याचा अर्थ अनावश्यक किंवा अप्रिय आवाज आहे. ज्यामुळे अस्वस्थता येते. आवाजाचे रूपांतर गोंगाटात होते तेव्हा त्याचा प्राण्यांच्या, मानवाच्या व पक्ष्यांच्या श्रवणसंस्थेवर प्रतिकूल परिणाम होतो. जगभरात शहरी भागांत ध्वनी प्रदूषण हे सार्वजनिक आरोग्यावर आणि स्वास्थ्यावर परिणाम करणारे प्रमुख घटक म्हणून ओळखले गेले आहे. ८० डेसिबलच्या पुढे आवाज हा गोंगाट बनू शकतो. कारण यामुळे श्रवणसंस्थेस हानी पोहोचते. जागतिक आरोग्य संघटनेने (डब्ल्यूएचओ) शहरासाठी सुरक्षित आवाजाची पातळी ४५ डेसिबल निश्चित केली आहे. आंतरराष्ट्रीय मानकांनुसार ६५ डेसिबल पर्यंतचा आवाजाची पातळी सहन करण्यायोग्य मानलेली आहे जीवनशैली आणि मानकांनुसार जगातील वेगवेगळ्या

देशांची स्वतःची ध्वनी प्रदूषणची मानके आहेत. भारतात, ब्युरो ऑफ इंडियन स्टॅंडर्डने (बीआयएस) औद्योगिक क्षेत्रातील ध्वनी पातळी ४५ ते ६० डीबीदरम्यान ठेवण्याची शिफारस केली आहे.

वर्ल्ड हेल्थ ऑर्गनायझेशन (WHO) ने २०१८ च्या मार्गदर्शक तत्वांमध्ये निवासी क्षेत्रांसाठी 55 डेसिबल मानकाची शिफारस केली होती, तर रहदारी आणि व्यवसाय क्षेत्रांसाठी, मर्यादा 70 डेसिबल होती. तर रस्त्यावरील ध्वनी प्रदूषणाची मर्यादा 53 डेसिबल निश्चित केली. युनायटेड नेशन्स एन्व्हायर्नमेंट प्रोग्राम (UNEP) च्या फ्रंटियर 2022 शीर्षकाच्या अलीकडील अहवालानुसार, सर्वाधिक 119 डेसिबल ध्वनी प्रदूषणाची नोंद झाली आहे. उत्तर प्रदेशातील मुरादाबाद हे शहर जागतिक स्तरावर दुसऱ्या क्रमांकाचे ध्वनी प्रदूषित शहर आहे. मुरादाबादमध्ये ११४ डेसिबल ध्वनी प्रदूषण नोंदवले गेले आहे. भारतात मुरादाबाद नंतर ध्वनी प्रदूषणात कोलकाता (89 डेसिबल), आसनसोल (89 डेसिबल, जयपूर (84 डेसिबल), दिल्ली (83 डेसिबल) या शहरांचा क्रमांक लागतो. अमरावती शहरात उद्भवणाऱ्या ध्वनी प्रदूषणाचा शहराच्या पर्यावरणावर, मानवी जीवनावर प्रतिकूल परिणाम होत असल्याने या प्रदूषण समस्येचे अध्ययन करणे अगत्याचे ठरते.

अभ्यास क्षेत्र:

अमरावती शहर हे पश्चिम विदर्भातील महत्वाचे महसूली आयुक्तालय असून विदर्भातील नागपूर नंतर दुसऱ्या क्रमांकाचे सर्वात मोठे शहर आहे. शहर हे महाराष्ट्र राज्याचा ईशान्य भागात स्थित असून अक्षवृत्तीय विस्तार २०°५३'००" उत्तर ते २०°५९'००" उत्तर अक्षांश व रेखावृत्तीय विस्तार हा ७७°४३'००" पूर्वे ते ७७°४८'००"पूर्व रेखांश एवढे आहे. येथील भूपृष्ठरचना पठारी स्वरूपाची असून समुद्रसपाटीपासूनची सरासरी उंची ही ४४३ मीटर आढळते. महानगरपालिका असणाऱ्या या शहराचे एकूण क्षेत्रफळ १२१.६४ चौ.कि.मी. एवढे असून शहराची विभागणी ८१ वार्ड व ४३ प्रभागामध्ये करण्यात आलेली आहे.

संशोधनाचा उद्देश:

प्रस्तुत लघुशोध निबंधाचा उद्देश हा अमरावती शहराच्या पर्यावरणीय स्थितीचा आढावा घेऊन ध्वनी प्रदूषणाचा स्तर अभ्यासणे तसेच शहरातील व्यवसायिक, व्यापार, निवास, शैक्षणिक तसेच केंद्रीय व्यवहार क्षेत्रातील ध्वनी प्रदूषणाचे मूल्यांकन करणे व त्या मागील कारणमीमांसा अभ्यासणे.

सांख्यिकीय स्रोत व संशोधन पद्धती :-

सदर लघुशोध निबंधासाठी लागणारी दुय्यम स्वरूपाची सांख्यिकीय आकडेवारी व माहिती ही अमरावती शहर पर्यावरण अहवाल पुस्तिका - २०१८, महाराष्ट्राची आर्थिक पाहणी २०२३-२४ व अमरावती महानगरपालिकेद्वारे प्रकाशित विविध अहवाल आणि मुद्रित साहित्याच्या आधारे संकलित करण्यात आली आहे. सारणीयन व संस्करण करून आवश्यक तेथे आलेख व सारणी क्र. १.१ अमरावती शहरातील ध्वनी तीव्रता २०१८-१९

आकृत्यांच्या साहाय्याने सदर माहिती प्रदर्शित करण्यात आलेली आहे

अमरावती शहरातील ध्वनी पातळी (२०१८-१९)

उपरोक्त सारणी क्रमांक १ वरून असे लक्षात येते की वर्ष २०१९ मध्ये सर्वाधिक ध्वनी तीव्रता ही दिवसा ७५ डेसिबल वाणिज्य क्षेत्रात आढळून येते तर या क्षेत्रात हे प्रमाण रात्रीच्या वेळी मात्र ४९ डेसिबल इतके आढळून येते औद्योगिक क्षेत्रात दिवसा ६२ डेसिबल तर रात्री हे प्रमाण ४८ डेसिबल एवढे दिसून येते. शांतता क्षेत्रात दिवसा ६६ डेसिबल तर रात्रीच्या वेळी ५३ डेसिबल ध्वनी तीव्रता आढळून येते. वर्ष २०१८ ते २०१९ या सात वर्षांच्या काळात शहरातील ध्वनी तीव्रते सातत्याने बदल झालेला दिसून येतो

वर्ष २०१२ ते २०१९ या सात वर्षांच्या काळात शहरातील ध्वनी तीव्रतेत सातत्याने बदल झालेला दिसून येतो वर्ष २०११ १२ मध्ये औद्योगिक क्षेत्रात सर्वाधिक ७५ डेसिबल ध्वनी तीव्रता दिवसा दिसून येते तर २०१९ मध्ये हे प्रमाण ६२ डेसिबलने घट होऊन ६२ डेसिबल पर्यंत आढळते रात्रीच्या दोन्ही तीव्रते सुद्धा २२ db बंद झालेला दिसून येतो निवास क्षेत्रात दिवसा ६६ डेसिबलने घट तर तीन डेसिबलने वाढ झालेली आढळून येते तसेच वाणिज्य क्षेत्रात सुद्धा या काळात तफावत आढळून येते या क्षेत्रात दिवसा ६६ डेसिबलने वाढ तर सहा डेसिबल घट झालेली स्पष्ट होते अमरावती महानगरपालिकेने निर्धारित केलेल्या शांत क्षेत्रात दिवसा ध्वनी पातळी ११ डेसिबलने वाढ तर रात्रीच्या वेळी १३ डेसिबलने वाढ झालेली दिसून येते वरील विवेचनावरून असे लक्षात येते की शहरातील केंद्रीय व्यापार क्षेत्रा निवास क्षेत्र औद्योगिक क्षेत्र या क्षेत्रात ध्वनी तीव्रता शहराच्या इतर क्षेत्राच्या तुलनेत सर्वाधिक आढळून येते.

अ.क्र.	शहरी क्षेत्र	ध्वनी पातळी (डेसिबल)		अ.क्र.	शहरी क्षेत्र	ध्वनी पातळी (डेसिबल)	
		दिवस	रात्री			दिवस	रात्री
अ)	व्यापार क्षेत्र	७५	४९	क)	औद्योगिक क्षेत्र	६२	४८
१.	जुना कॉटन मार्केट	६६	४८	१.	एमआयडीसी अमरावती	६२	४८
२.	राजकमल चौक	७२	४९	२.	एमआयडीसी सातुर्णा	५४	४१
३.	दसरा मैदान	६८	४८	३.	नांदगाव औद्योगिक क्षेत्र	५९	४६
४.	पठाणपुरा	६९	४७	ड)	शांतता क्षेत्र	६६	५३
५.	इतवारा	७४	४९	१.	इर्विन रुग्णालय	६६	५३
६.	मुख्य बस स्थानक	७१	४८	२.	महिला महाविद्यालय	६४	५१
७.	शेगाव नाका	६७	४४	३.	शिवाजी विज्ञान महा.	६१	५२
८.	पंचवटी चौक	६८	४६	४.	बोंडे रुग्णालय	६५	५०
९.	गोपाल नगर	६६	४३	५.	धन्वंतरी रुग्णालय	६३	४९
१०.	बडनेरा	६९	४५	इ)	गणपती उत्सव दरम्यान		
ब)	निवास क्षेत्र	६३	४८	१.	अंबादेवी	७५	४९
१.	रुख्मिणी नगर	५७	४१	२.	गाडगे नगर	६४	४६
२.	अंबापेठ	६०	४३	३.	अमरावती रेल्वे स्टेशन	६८	४५
३.	विलास नगर	६३	४५	४.	रुख्मिणी नगर	५२	४४
४.	दस्तुर नगर	५६	४०	५.	चपराशीपुरा	४५	४१
५.	जमील कॉलनी	६२	४४	६.	बुधवारा	६५	४७
६.	गोपाल नगर	५७	४१	ई)	दुर्गा उत्सव दरम्यान		

७.	साई नगर	५१	३७	१.	अंबादेवी क्षेत्र	७४	५३
८.	रवी नगर	५६	४१	२.	राजकमल चौक	६२	५१
९.	गाडगे नगर	५८	४४	३.	दस्तुर नगर	४६	४८
				४.	संत ज्ञानेश्वर सभागृह	५२	४७

निवास क्षेत्रातील ध्वनी पातळी

उपरोक्त सारणी क्र. १.१ वरून असे निदर्शनास येते की शहरातील निवास क्षेत्रात दिवसा सर्वाधिक ध्वनी त्रिव्रता ही जमील कॉलनी येथे 65 डेसिबल तर सर्वात कमी हे प्रमाण साईनगर व हर्षराज कॉलनी येथे 51 डेसीबल आढळून येते. जमील कॉलनी खालोखाल ध्वनी त्रिव्रतेचे प्रमाण अनुक्रमे आंबापेठ 60 डिसेंबर विलासनगर 63 डेसिबल व बडनेरा येथे 60 डेसिबल आढळून येते या निवास क्षेत्रात दिवसाच्या तुलनेत रात्री मात्र सरासरी १० ते १२ डेसिबल ध्वनी पातळीची घट झालेली आढळून येते. गाडगे नगर येथे रात्रीच्या वेळी इतर निवास क्षेत्राच्या तुलनेत सर्वाधिक ध्वनी त्रिव्रता 44 डेसिबल इतके दिसून येते. या शहरात दिवसा ध्वनी पातळी सरासरी ५६.५ डेसिबल तर रात्री हे प्रमाण 41.18 डेसिबल एवढे आढळते.

औद्योगिक क्षेत्रातील ध्वनी पातळी

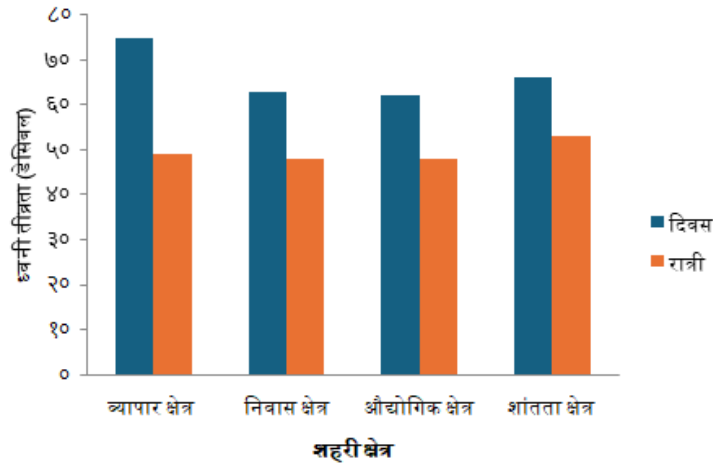
वरील सारणी क्र १.१ वरून असे लक्षात येते की अमरावती एमआयडीसी या औद्योगिक क्षेत्रात दिवसा सर्वाधिक 62 डेसिबल ध्वनी प्रमाण आढळून येते तर सातूर्णा येथील औद्योगिक क्षेत्रात 54 डेसिबल तसेच नांदगाव औद्योगिक क्षेत्रात मात्र 59 डेसिबल ध्वनी तीव्रता दिसून येते एमआयडीसी अमरावतीच्या तुलनेत सातूर्णा औद्योगिक वसाहतीत ध्वनी त्रिव्रतेचे प्रमाण 8 डेसिबलने तर नांदगाव

औद्योगिक क्षेत्रात केवळ 3 डेसिबलने कमी आढळून येते नांदगाव औद्योगिक क्षेत्रात अवजड व मोठ्या स्वरूपाचे उद्योग सुरू असल्याने येथे रात्री 46 डेसिबल ध्वनी स्तर दिसून येते एकंदरीत शहरातील या प्रमुख तीन औद्योगिक क्षेत्रात दिवसा सरासरी 58.33 डेसिबल तर रात्री सरासरी 45 डेसिबल ध्वनी त्रिव्रता दिसून येते.

वाणिज्य क्षेत्रातील ध्वनी पातळी

शहराच्या एकूण क्षेत्रापैकी 0.48% क्षेत्र व्यावसायिक क्षेत्राने व्यापलेले आहे. शहराचे व्यापार क्षेत्र हे राजकमल राजापेठ इतवारा बाजार कॉटन मार्केट इर्विन चौक जयस्तंभ चौक चित्रा चौक सराफा बाजार इत्यादी क्षेत्रात वसलेले आहे. अमरावती शहराच्या व्यवसायिक क्षेत्रात दहा प्रमुख किरकोळ व घाऊक व्यापार क्षेत्राचा समावेश होतो या व्यवसायिक क्षेत्रापैकी सर्वाधिक ध्वनी त्रिव्रता इतवारा बाजार येथे दिवसा 74 डेसिबल एवढे आढळून येते तर या खालोखाला राजकमल चौक येथे 72 डेसिबल तर अमरावती बस स्थानक येथे दिवसा 71 डेसिबल ध्वनी त्रिव्रता आढळून येते. शहराच्या संपूर्ण व्यापार क्षेत्रातील दिवसा सरासरी ध्वनी पातळी ही 68.72 डेसिबल तर रात्री हे प्रमाण 46.70 डेसिबल एवढे आढळते.

अमरावती शहरातील ध्वनी तीव्रता २०१८-१९



शांतता क्षेत्रातील ध्वनी पातळी

अमरावती महानगरपालिकेने महाविद्यालये, रुग्णालये समाविष्ट असणाऱ्या सहा क्षेत्रांना शांतता क्षेत्र म्हणून घोषित केले आहे. यात इर्विन रुग्णालय क्षेत्रात सर्वाधिक दिवसा 66 डेसिबल ध्वनी त्रिव्रता तर सर्वात कमी हे प्रमाण विदर्भ महाविद्यालय येथे 60 डेसिबल आढळून येते तसेच महिला महाविद्यालय ६४ डेसिबल श्री शिवाजी सायन्स कॉलेज ६१ डेसिबल धनवंती रुग्णालय ६३ डेसिबल आढळून येते. या शांत क्षेत्रात दिवसात ध्वनी त्रिव्रतेची सरासरी प्रमाणे हे 63.16 डेसिबल तर रात्रीचे सरासरी प्रमाणे हे 50.67 डेसिबल आढळून येते.

डॉ. प्रविण म. माटोडे

सण-समारंभ दरम्यान ध्वनी त्रिव्रता

शहरात साजरे होणारे गणपती व दुर्गा उत्सवात सुद्धा ध्वनी प्रदूषणाची तीव्रता वाढल्याचे दिसून येते गणपती उत्सवादरम्यान अंबादेवी परिसरात दिवसा सर्वाधिक 75 डेसिबल तर अनुक्रमे अमरावती रेल्वे स्टेशन 68 डेसिबल, गाडगे नगर 64 डेसिबल, बुधवारा 65 डेसिबल ध्वनी त्रिव्रता आढळून येते तर सर्वात कमी हे प्रमाण रुक्मिणी नगर येथे 52 डेसिबल एवढे आढळून येते. गणपती समारंभा दरम्यान शहरात सरासरी दिवस 58.50 ध्वनी त्रिव्रता आढळून येते तसेच दुर्गा उत्सव दरम्यान

अंबादेवी, सराफा, राजकमल चौक या ठिकाणी 70 ते 47 दरम्यान ध्वनी प्रमाण आढळून येते.

निष्कर्ष

वर्ष 2019 या कालावधीतील अमरावती शहरांमधील ध्वनी पातळीचा अभ्यास केला असता असे निदर्शनास येते की, शासनाने निर्धारित केलेला ध्वनी स्तर मर्यादा प्रमाणांपेक्षा अधिक शहरातील व्यापार, शांतता व निवासी या क्षेत्रात ध्वनी पातळी वाढलेले दिसून येते. शहरातील ध्वनी प्रदूषणात सातत्याने वाढ होत आहे. शहराच्या केंद्रीय व्यवहार विभागातील किरकोळ व घाऊक व्यापार क्षेत्रात सर्वाधिक दिवसा ध्वनी त्रिव्रता ही 70 डेसिबल पेक्षा अधिक तर रात्री हे प्रमाण 40 डेसिबल पेक्षा अधिक आढळून येते शहराच्या वाढत्या नागरिकरणामुळे प्रतिदिन ६० वाहनांची भर पडत असल्याने शहरी वाहनांच्या संख्येत वाढ होऊन ध्वनी त्रिव्रता वाढत असल्याचे निदर्शनास येते. तसेच वाहतूक साधनांच्या प्रमाणाबरोबरच सण, समारंभ, बैठक, प्रदर्शनी, स्पर्धा, प्रचार प्रसार, मिरवणुका, उत्सव इत्यादी कार्यक्रमात वापरले जाणाऱ्या कर्कश लाऊड स्वीकार वाहनांचे हॉर्न कारखान्यातील यंत्रांचा कर्कश आवाज इत्यादी सांस्कृतिक घटकांचा एकत्रित प्रभाव अमरावती शहराच्या ध्वनी प्रदूषणावर झालेला दिसून येतो.

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कै. के. ना. देशमुख यांचे शैक्षणिक कार्य

प्रा. प्रकाश नागनाथ वारे

संशोधक, वै. धुंडा महाराज देगलूरकर कॉलेज देगलूर

Corresponding Author- प्रा. प्रकाश नागनाथ वारे

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प्रस्तावना :

ज्ञानेश्वरांनी एका ठिकाणी असे म्हटले आहे की " आदित्यचे झाडे !सदा सन्मुख सूर्याकडे " या उक्तीस आनुसरून असे म्हणता येईल की, आयुष्यात एक ध्येय निश्चित केल्यावर माणसाची सगळी वाटचाल त्या ध्येयास अनुसरून होत असते या उक्ती प्रमाणेच सगरोळीकर कैलासवासी कर्मयोगी केशवराव देशमुख हे एक व्यक्तिमत्व असे आहे की ज्यांनी आपले सर्व जीवन एका विशिष्ट ध्येयासाठी समर्पण केले आहे तसे पहिले तर बाबासाहेब देशमुख हे मूळात खूप मोठे वतनदार ,जमीनदार ,यांची आर्थिक स्थिती अतिशय चांगली, घरात सर्वत्र वैभव नांदत असताना या वैभवाचा आस्वाद घेत अतिशय ऐशोअरामात आपले जीवन व्यतीत करता आले असते पण त्यांनी एक वेगळाच मार्ग निवडला आणि त्या मार्गाने नेहमीप्रमाणे वाटचाल करण्यास सुरुवात केली. तो मार्ग म्हणजे समाजसेवेचा आणि त्यांच्या असे लक्षात आले की सर्व दुःख, दारिद्र्य व असंस्कृतपणाचे मूळ कारण म्हणजे शिक्षणाचा अभाव हे आहे.

कै. के. ना देशमुख यांच्या शैक्षणिक कार्याची सुरुवात :

शिक्षणाचा प्रसार करण्याच्या मुख्य उद्देशाने 1959 मध्ये संस्कृती संवर्धन मंडळाची स्थापना केली शिक्षण हा संस्थेचा मुख्य उद्देश असला तरी शिक्षणासोबतच विद्यार्थ्यांची बौद्धिक, नैतिक ,सांस्कृतिक उन्नती साधने तसेच शेती, व्यापार, उद्योग याची भरभराट करणे ग्रामीण भागाची उन्नती करणे हेही उद्देश ठेवण्यात आले. पितृतुल्य श्री शंकररावजी किलोस्कर व त्यांचे एक सहकारी श्री ना.धो. ताम्हणकर यांच्या घटप्रभा व नाशिक येथील भेटीतून त्यांच्या सल्ल्याने इचलकरंजी संस्थांचे माजी निवृत्त शिक्षण अधिकारी श्री गो.रा.चोळकरांशी संपर्क साधला. त्यांच्या खंबीर नेतृत्वाखाली 1 मे 1960 ला शारदानगरच्या चैतन्यमय भूमीत प्रवेश करून सर्वप्रथम पाणीपुरवठ्या करिता एक विहीर खोदण्यास व काही झोपड्या उभारण्यास सुरुवात केली. 12 मे 1960 रोजी विहिरीला पाणीही लागले त्यानंतर जरूरी पुरत्या झोपड्या तयार झाल्या. सर्व तयारी झाल्यावर प्रत्यक्षपणे शैक्षणिक कार्यास दिनांक 15 जून 1960 रोजी हैदराबाद मुक्तिसंग्रामाचे थोर नेते स्वामी रामानंद तीर्थ यांच्या हस्ते पाचवी ते आठवी वर्गाचे उद्घाटन म्हणजेच छत्रपती शिवाजी महाराज हायस्कूलचे उद्घाटन

करण्यात आले यांच्यासोबत सन्माननीय दिगंबररावजी बिंदू हे सुद्धा उद्घाटनास उपस्थित होते. श्री गो.रा. चोळकरांच्या संपर्कातून पुढे बाबासाहेबांचे संबंध श्री प.प्पू. बाबुरावजी जगताप, श्री अण्णा खैर यासारख्या अनेक थोर व्यक्तींशी आला त्यांचे अनमोल असे मार्गदर्शन संस्थेत प्राप्त झाले विशेषता श्री गणेश ,श्री अण्णा खैर, श्री भास्करराव काकासाहेब कर्वे, श्री बाबुरावजी जगताप या पुण्याच्या मंडळींनी संस्था कार्यात अनमोल मार्गदर्शन तर केलेच पण त्यांनी वेळोवेळी संस्थेस भेट देऊन चुका दाखवल्या, मार्गदर्शन केले व योग्य सहकार्याची दिशा दाखवली. (बिल्वदले पान 86). चार झोपड्यातून केवळ 7 शिक्षक व 78 विद्यार्थ्यांनी सुरुवात झालेल्या छत्रपती शिवाजी हायस्कूल या रोपट्याचे खूप मोठे वटवृक्ष झालेले आज आपणास पहावयास मिळते. जवळपास शंभर ते दीडशे एकरच्या वसाहतीत एक किलोमीटरच्या परिसरात पसरलेल्या विविध इमारतीतून जवळजवळ 378 शिक्षक, डॉक्टर तसेच अनेक कार्यकर्ते जे की शिक्षकेतर कर्मचारी म्हणून कार्यरत आहेत यांच्या परम सेवेतून असंख्य असे विद्यार्थ्यांची जडण घडण या संस्कृती संवर्धन मंडळाच्या

विविध संस्थेतून झालेली आपणास पहावयास मिळते.(एकता मार्च 2012 पान 32)

श्री छत्रपती शिवाजी हायस्कूल मध्ये वाढती विद्यार्थी संख्या लक्षात घेऊन ग्रामीण भागाचा सर्वांगीण विकास साधण्यास तंत्र विषयाची आवश्यकता आहे म्हणून बाबासाहेबांनी तंत्र विषयाची परवानगी मिळविली. यासाठी मा. शिक्षण संचालक वि.वी. चिपळूणकर यांचे संस्थेला अमूल्य मार्गदर्शन लाभले 1993 साली तंत्र विषयाची तुकडी जून पासून या संस्थेत कार्यान्वित झाली. त्यासाठी योग्य ते साहित्य खरेदी केले व कार्यशाळा उभारली तज्ञ कर्मचाऱ्यांची नेमणूक केली. कार्यशाळेची इमारत स्वखर्चाने बांधून शैक्षणिक क्षेत्रात नवे पाऊल टाकले.

पुढे शासनाने अनुदान देण्यास प्रारंभ केला या विभागात तंत्र विषय हा ऐच्छिक म्हणून आठवीपासून विद्यार्थ्यांसाठी खुला करण्यात आला. आठवी ते दहावीपर्यंत या विद्यार्थ्यांनी हा विषय घेऊन एस.एस.सी ची परीक्षा दिल्यास त्यांना पुढे व्यवसाय शिक्षण म्हणजे काय? त्यात कोणता विषय निवडावा? याविषयी ज्ञान व व्यावसायिक श्रम प्रतिष्ठा आत्मसात होते या उद्देशानेच या विषयाची मान्यता घेण्यात आली होती. इयत्ता आठवीत साठ विद्यार्थ्यांना या विषयासाठी प्रवेश देण्यात येतो तेच विद्यार्थी एस.एस.सी परीक्षेत तंत्र विषय घेऊन परीक्षा देऊ शकतात या विषयाची परीक्षा बोर्डाकडून घेतली जाते हे विषय शिकवण्यासाठी संस्थेत एकूण आठ कर्मचारी कार्यरत करण्यात आले एक सहाय्यक अधिव्याख्याता विभाग प्रमुख म्हणून इंजी. ड्रॉइंग व कम्प्युटर सायन्स हे विषय शिकवतात तर चार निदेशक वेगवेगळे विभाग सांभाळतात यात कारपेंट्री, वेल्डिंग, प्लंबिंग,फिटिंग, वायरिंग इत्यादी शिकविण्यासाठी कार्यरत असलेले सर्व कर्मचारी तंत्र व योग्य प्रशिक्षण प्राप्त असेच बाबासाहेबांनी घेतले. (कर्मयोग्याची कथा लेखिका प्रा. सौ. नम्रता भट्ट)

शिक्षणात बदल व प्रयोग केले तरी जोपर्यंत भारतीय संस्कृतीमधील मूल्य शिक्षणाचा संचार शिक्षण पद्धतीत होणार नाही तोपर्यंत सर्व प्रयोग व्यर्थ ठरणार आहेत याची जाणीव बाबासाहेबांना झाली होती म्हणूनच सर्व व्याप सांभाळत आधुनिक विज्ञानाचा स्वीकार करूनही बाबासाहेबांच्या शिक्षण संस्थेत नैतिक शिक्षण व संस्कार याकडे दुर्लक्ष होऊ दिले जात नाही. बाबासाहेब

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विज्ञानवादी दृष्टिकोन ठेवणारे होते पण सोबतच आपल्या देव ,देश व धर्मावर त्यांची नितांत श्रद्धा होती त्यांच्या विज्ञानवादी दृष्टीकोन ,कालबाह्य कर्म करण्यास नकार, ही स्वभाव वैशिष्ट्ये त्यांच्या देव ,देश आणि धर्मावर श्रद्धा कधी ही मारक ठरली नाही.शिक्षणाचा त्यांनी आजच्या प्रमाणे व्यापार होऊ दिला नाही चारित्र्याचे संवर्धन व्हावे हाच उद्देश ठेवून त्यांनी या क्षेत्रात पदार्पण केले होते. पुढची पिढी केवळ शिक्षित होऊन फारसे काही साध्य होणार नाही तर शिक्षणासोबत ही पिढी सुसंस्कारित व सुदृढ व्हावी ही भूमिका समोर ठेवूनच ते कार्य करत होते. शैक्षणिक उपक्रमासोबतच इतर विविध उपक्रम या ठिकाणी राबवले जातात व त्यातूनच भावी पिढीला सुसंस्कृत घडवण्याचे कार्य या संस्थेतून केले जात आहे.

बालक मंदिराची सुरुवात :

श्री छत्रपती शिवाजी हायस्कूलची अतिशय जोमाने सुरुवात झाल्यानंतर बाबासाहेबांनी आपला मोर्चा बालक मंदिर उभारण्यासाठी वळविला खऱ्या अर्थाने मुलांना योग्य संस्कार देण्याची गरज असते आणि योग्य संस्काराची सुरुवात ही प्राथमरी म्हणजेच बालक मंदिरातूनच चांगल्या प्रकारे करता येते या विश्वासाने बाबासाहेबांनी शारदानगर परिसर व सगरोळी परिसरातील वेगवेगळ्या विभागात बालक मंदिरांची साखळी सुरू केली यात लोकमान्य बालक मंदिर, जिजामाता बालक मंदिर, सावित्रीबाई फुले बालवाडी, जनता बालवाडी तसेच श्री छत्रपती शिवाजी बालक मंदिर असे विविध संस्थेच्या माध्यमातून लहान मुलांना शिक्षण व संस्कार देण्याचे कार्य बाबासाहेबांनी आपल्या परिसरात केले याचबरोबर खेड्यातील महिलांना रोजगारासाठी व शेतातील कामासाठी शेतावर जावे लागते व त्या महिलांचे लहान मुलांची व्यवस्था व्हावी महिलांना आपल्या त्या लहान मुलांना ऊन पावसात शेतावर घेऊन जावावे लागू नये यासाठी म्हणून त्यांनी शारदानगर परिसरात पाळणाघराची सुरुवात केली व शिरीष कुमार पाळणाघरे नावाने दोन युनिटची शारदानगर परिसरात सुरुवात केली.

श्री छत्रपती शिवाजी बालक मंदिर (फिटपर्सन इन्स्टिट्यूट) :

कौटुंबिक कलहामुळे कित्येकदा घरातील मुलांना रिमांड होम मध्ये पाठविले जाते अशा मुलांसाठी म्हणून बाबासाहेबांनी छत्रपती शिवाजी बालक मंदिर हे शारदा नगर या ठिकाणी सुरू करण्यात आले. या बालक मंदिरातून

बऱ्याच विद्यार्थ्यांवर सुसंस्कार करून बाबासाहेबांनी चांगल्या मार्गाला लावलेले आपणास दिसून येते त्याचेच एक उदाहरण म्हणजे श्री छत्रपती शिवाजी बालक मंदिर फिटपर्सन इन्स्टिट्यूट मध्ये दिनांक 21 जुलै 2019 रोजी कोर्ट कमिटेड रिमांड होम नांदेड कडून कोर्ट कमिटेड मुले शारदानगर सगरोळी येथे पाठवण्यात आली यात सहावीत शिकणारा जाधव रामदास नावाचा एक मुलगा होता तो तसा हुशार व नम्र स्वभावाचा सर्वा बरोबर वस्तीगृहाच्या सर्व उपक्रमात हा पुढाकाराने भाग घेणारा पुढे हा रामदास 1993 साली दहावीची परीक्षा चांगल्या मार्कांनी उत्तीर्ण झाला.

श्री छत्रपती शिवाजी बालक मंदिरातून संस्कारित होऊन उत्तीर्ण झालेल्या रामदास जाधव याला मदत करण्यासाठी म्हणून बाबासाहेबांनी त्यांचे खेही संस्थेचे हितकर्ते व प्रेमी श्री.अ. श.आपटे यांच्याशी संपर्क करून रामदास यास पुणे येथे विद्यार्थी सहाय्यक समितीच्या वस्तीगृहात प्रवेश मिळवून देण्यात आला. तेथे त्यांनी संस्थेचे तथा तेथील वस्तीगृहाचे सर्व नियम पाळून आपले कॉलेजचे शिक्षण पूर्ण केले शिक्षण घेत असताना सवडीच्या वेळात तो नियमित काही कमाई करी. त्यातूनच तो स्वतः आपले कपडे ,शैक्षणिक साहित्य इत्यादीचा खर्च भागवी. व्यवस्थितपणा तथा टापटीप स्वभाव व धडाडीची वृत्ती तसेच सभ्ये व सुसंस्कारितपणा यामुळे पुण्यासारख्या शहरात त्याने अनेक थोरांच्या ओळखी झा करून घेतल्या, त्यातूनच आपटे रोडवरील हॉटेल श्रेयस चे मालक श्रीमान बाळासाहेब चितळे यांच्याशी रामदास चा संबंध आला.

जे का एकदा ओळख झाली ती कायम टिकली त्यांनी दाखवलेल्या विश्वासाने त्याचे सार्थक केले आज रामदास जाधव श्री बाळासाहेब चितळे यांच्या घरचाच एक मानला जातो केवळ श्री बाळासाहेब चितळेच नाहीत तरी त्यांच्या कर्तृत्वामुळे व सुसंस्कृत व सौजन्यशील वागणूकीमुळे चितळे परिवारातील सर्वच मंडळी रामदास जाधव यास त्यांच्या घरातलाच एक सदस्य मानतात .सर्वत्र घरात तथा समाजात जातीवादाच्या भस्मासुर थैमान घालत असताना रामदास जाधव याने शारदानगर येथे झालेल्या संस्कारातून लाभलेल्या सुजाण व सुसंस्कृत वागणूकीने या सर्व अभेद्य अडथळांवर मात करून एक अतिशय श्रीमंत घरात आपले स्थान मिळवले हे फक्त आणि फक्त शारदानगरच्या संस्काराचीच देन आहे असे आज तो मानतो.

प्रा. प्रकाश नागनाथ वारे

(बिल्वदले: बाबासाहेब देशमुख यांच्या स्फुट लेखांचा संग्रह पान क्रमांक 15).

आनंद बालग्राम :

दुसऱ्या महायुद्धाच्या भयंकर संहारानंतरच्या काळात असंख्य बालके पोरकी झाली होती. त्यांच्यासाठी युरोपमधील अनेक सरकाराने अनेक अनाथालय काढली, समाजातील अनाथ बालकांची समस्या हि प्रत्येक देशातील एक गंभीर समस्या आहे गुन्हेगारी वृत्तीच्या लोकांकडून या अनाथ मुला-मुलींना वाम मार्गाला लावून आपला स्वार्थ साधला जातो अशा अनाथ बालकांचा प्रतिपाल करणे महत्वाचे आहे.

बालग्राम चळवळीच्या कल्पनेचे बीज सर्वप्रथम ऑस्ट्रिया येथील श्री हरमन मायनर यांच्या मनोभूमीमध्ये अंकुरित झाले श्री हरमन मायनर यांच्या असे लक्षात आले की अनाथ मुलांच्यावर पोरकेपणाचे दडपण व एकाकी आयुष्य त्यामुळे अनेक प्रकारचे न्यूनगंड निर्माण होतात कौटुंबिक जिवाळ्याच्या वातावरणाची त्यांना गरज असते त्यांच्यासाठी त्यांनी चिल्ड्रन्स व्हिलेज अर्थात बालग्राम ही संस्था स्थापन केली आणि आदर्श कुटुंब कल्पनेच्या पायावर त्याचा वृक्ष साकार झाला संकटग्रस्त बालकांच्या सर्वांगीण विकासावर त्यांचा भर असून पहिल्या बालग्रामची ऑस्ट्रिया मध्ये स्थापना होऊन डॉक्टर मायनर हे आंतरराष्ट्रीय बालग्राम चळवळीचे जनक म्हणून संबोधले जातात

सन 1974 साली दैनिक लोकसत्ता मध्ये आलेली एक छोटी बातमी बाबासाहेबांच्या वाचनात आली. निवृत्त समाज कल्याण संचालक श्री बाबासाहेब जाधव यांनी पुण्यात बालग्रामची स्थापना केली आहे बाबासाहेबांनी त्यांची भेट घेतली व शारदानगर मध्ये बालग्राम स्थापन करण्याचा निर्णय घेतला एवढा मोठा प्रकल्प करण्यासाठी पैसा उभा करणे महाकठीण काम होते. काही प्रमाणात शासनाची मदत मिळाली .आनंद बालग्रामच्या कार्याची सुरुवात 17 डिसेंबर 1974 मध्ये 9 मुला मुलींच्या एका सदनाने झाली दिनांक 11 एप्रिल 1980 रोजी बालग्रामच्या कार्यालया पुढे सुबक असे तुळशी वृंदावन बांधून प.पु. श्री धुंडा महाराज देगलूरकर यांच्या हस्ते वृंदावनात तुळशीचे रोप लावून तेथे निरंजन ज्योत पेटून आनंद बालग्रामचे उद्घाटन करण्यात आले. आनंद बालग्राम प्रकल्प हा एक अत्यंत चांगला आणि माणुसकीचे दर्शन घडविणारा प्रकल्प आहे. जन्मता कोणतेही मूल गुन्हेगारी प्रवृत्तीचे नसते.

घरातील व आजूबाजूच्या वार्ड संस्कारामुळे मुले गुन्हेगारी प्रवृत्तीची होत असतात प्रत्येक मुलाला घरातील आई वडील व नातेवाईकांकडून प्रेरणा संस्कार मिळाले तर निश्चित जगातील गुन्हेगारी फार मोठ्या प्रमाणात कमी होऊ शकते नेमका हाच विचार करून संस्कृती संवर्धन मंडळाने म्हणजेच बाबासाहेबांनी शारदा नगर येथे समाजातील अनाथ मुला मुलीसाठी बालग्रामची (चिल्ड्रेन्स व्हिलेज) निर्मिती करून समाजाप्रती आपली बांधिलकी प्रकट केली आहे. या बालग्रामची प्रेरणा बाबासाहेबांना निवृत्त समाज कल्याण संचालक बाबासाहेब जाधव यांच्या बालग्राम पासून मिळाली आहे. (एकता मार्च 2012 पान क्र.32)

आनंद बालग्राम मध्ये 12 ग्रहमाता व 108 अनाथ, निराधार, संकटात सापडलेली मुले मुली असून कौटुंबिक वातावरणात एकत्र रहात आहेत. उपेक्षित मुलांच्या सुधारणेत मातेची भूमिका महत्त्वाची असते लहान मुलांचे शिक्षण संगोपन हे आईकडून होत असते.कौटुंबिक वातावरणात जे मुलाला मिळते ते आपण दुसऱ्याकडून कधीच देऊ शकत नाही.

आई व मुले सतत एकमेकांच्या सानिध्यात राहतात आणि सर्वात लहान मुलाला आईच्या कुशीत विश्वास मिळत असतो जेव्हा हे काम करावयास प्रत्यक्ष आई अस्तित्वात नसते तेव्हा बालग्रामची माता तितक्याच तत्परतेने ते काम करते बालग्राम सदनातील माता आणि आठ नऊ भावंडे, मुलांना प्रेम, आपुलकी, सुरक्षिततेची भावना याच बरोबर शिक्षणाची व्यवस्था यामुळे बालग्रामची संकल्पना मुलांचे कल्याण साधू शकते. या बालग्रामची ग्रहमाता ही स्त्री केवळ पगारी कर्मचारी नसते तर ती त्या नऊ मुलाची माताच असते मातेच्या ममतेने ती नऊ मुलांची आई बनून त्याचे खाणे, पिणे, झोपणे, आरोग्य, स्वच्छता, संस्कार याबाबतची काळजी घेत असते मुलांना घरात राहण्याचे सुख सुरक्षितता सारक काही मिळतं त्यांच्यात परकेपणाची भावना निर्माण होऊ दिली जात नाही मुलेही भावंडा प्रमाणे राहतात त्यांच्यासाठी उभारल्यावर शिक्षण घेतात काही अनाथ मुलं-मुली येथे शिकून मोठी झालीत आणि संस्थेमध्येच त्यांना रोजगार व निवास व्यवस्था उपलब्ध करून देण्यात आली काही मुलं-मुली शिकून अन्यत्र केले पण त्यांनी बालग्राम मधील आपल्या घराशी ऋणानुबंध कायम ठेवला .बालग्राम मध्ये प्रवेश घेऊन शिक्षण पूर्ण केलेली अशी १४० मुले मुली आज निरनिराळे उद्योग

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व्यवसाय करून कर्तबगारिने जीवन जगत आहेत. आत्तापर्यंत सात मुलीचे विवाह येथे झाले असून आज समाजात त्या सन्मानाने जीवन जगत आहेत.श्री एस. जी.जगताप हे या विभागाचे अध्यक्ष म्हणून गेली पंचवीस वर्षे कार्यरत असून मुलांना मामा म्हणून प्रिय आहेत या शिक्षण संस्थेत कार्यरत असणारी माणसे बाबासाहेबांनी पारखुण घेतलेली आहेत संस्थेची उपहारगृह चालवणारे श्री संजय सावरीकर हे भवानी भक्त असून आत्तापर्यंत सगरोळी ते तुळजापूरच्या आठ पायी वाऱ्या त्यांनी केल्या आहेत.संस्कृती संवर्धन मंडळ अंतर्गत असे अनेक उपक्रम अनेक शाखा कार्यरत आहेत.

राजश्री श्री छत्रपती शाहू सैनिकी विद्यालय :

छत्रपती शिवराय हे बाबासाहेबांचे दैवत वीर वृत्ती या दैवी संपत्तीचे त्यांना जबरदस्त आकर्षण नाशिकच्या भोसला मिलिटरी स्कूलच्या नियमक मंडळाचे ते सदस्य असल्याने तेथे अनेक वेळा बाबासाहेबांचे जाणे येणे होत आसे. भोसला मिलिटरी स्कूल च्या प्रमाणे एखादी विद्यालय आपल्या भागातही असावे अशी त्यांची मनोमन इच्छा होती पुढे युती सरकारच्या काळात राज्यातील प्रत्येक जिल्ह्यात एक सैनिकी विद्यालय स्थापन करण्याचा निर्णय घेण्यात आला या निर्णयाचे स्वागत करत बाबासाहेबांनी सर्वात प्रथम आपल्याकडे म्हणजेच संस्कृती संवर्धन मंडळाला सैनिकी स्कूल मिळावे यासाठी प्रयत्न केले व सैनिक स्कूल मिळवण्याचा बहुमान बाबासाहेबांना मिळाला सन 1996 च्या मे महिन्यात ही परवानगी संस्कृती संवर्धन मंडळ मिळाली व जून पासून विद्यालयाला सुरुवात झाली संस्थेची कर्तव्यनिष्ठ व शिस्तप्रिय कार्यकर्ते श्री अरविंद दिगंबरराव देशमुख यांची राजश्री शाहू सैनिकी विद्यालय चे पहिले प्राचार्य म्हणून नेमणूक करण्यात आली तसेच इतर शिक्षकांचे व कमांडर ची नेमणूक होऊन विद्यालय संस्थेच्या जागेत सुरू झाले योगायोगाने राजश्री शाहू सैनिक विद्यालय इमारतीचे भूमिपूजन करण्यासाठी शिवरायांचे वंशज श्री छत्रपती शाहू महाराज यांच्या शारदानगर मध्ये आगमन झाले व त्यांच्या हस्ते नवीन वास्तूच्या भूमिपूजनाचे कार्य संपन्न करण्यात आले.

राजश्री छत्रपती शाहू सैनिकी विद्यालयाच्या इमारतीचे बांधकाम हे संस्थेलाच करावयाचे होते परंतु त्यासाठी पुरेसा पैसा उपलब्ध नव्हता म्हणून बाबासाहेबांनी एक अभिनव उपक्रम राबविला शिवशाहीर बाबासाहेब पुरंदरे यांच्या जाणता राजा या नाटकाचे प्रयोग दहा दिवस

नांदेड येथे घेण्यात आले व या प्रयोगातून मिळालेल्या निधीतून छत्रपती शाहू सैनिकी विद्यालयाच्या बांधकामास सुरु करण्यात आले व नियमित कालावधीत एक भव्य सुंदर वास्तू, क्रीडांगण ,भोजन गृह ,अश्वशाला, वस्तीग्रह अशा संपूर्ण सोयीयुक्त अशी इमारत तयार झाली व त्यानंतर सैनिकी विद्यालयाचे या वास्तूत स्थलांतर झाले. या वास्तूत सर्वसाधारण व्यक्ती जरी वास्तू पाहण्यासाठी गेला तरी त्या व्यक्तीच्या मनात राष्ट्रप्रेम, राष्ट्रभावना, सैनिकाविषयीचे अभिमान, हे सहजगत्या निर्माण होऊन जाते. वास्तूतील प्रत्येक भिंतीवर सुंदर असे विविध सैनिकांचे उत्कृष्ट असे फोटो आपणास पहावयास मिळतात तसेच वास्तूच्या प्रांगणात असलेल्या रणगाड्याची प्रतिकृती आपल्या मनात देशाभिमान व सैनिका विषयीची प्रेम निर्माण करते सर्व विद्यार्थ्यांत असलेली सैनिकी शिस्त व देशाभिमान आपणास या ठिकाणी पहावयास मिळतो.

या ठिकाणी सुसज्ज अशी अश्वशाला असून येथील विद्यार्थ्यांना घोडेस्वारीचे प्रशिक्षण उत्कृष्ट पद्धतीने दिले जाते तसेच नांदेड जिल्ह्यातील सर्वात सुंदर व स्वच्छ असे स्विमिंग पूल सैनिकी स्कूलच्या प्रांगणात आहे व या स्विमिंग पूल च्या वापर येथील विद्यार्थ्यांना पोहण्याचे प्रशिक्षण देण्यासाठी केले जाते व या स्विमिंग पूल वर प्रशिक्षण घेऊनच बरेचसे विद्यार्थी राज्य पातळीवरील जलतरण स्पर्धेत भाग घेऊन यशस्वी झालेले सुद्धा आपणास दिसून येतात. सैनिकी विद्यालयाच्या पाठीमागील बाजूस डोंगर माथ्यावर विद्यार्थ्यांना ट्रेकिंग व घोडेस्वारी चे प्रशिक्षण दिले जाते. पाठीमागील बाजूस डोंगर व चहुबाजूने मोठमोठ्या वृक्षांच्या सानिध्यात असलेली सुंदर अशी राजश्री श्री छत्रपती शाहू सैनिकी विद्यालयाची वास्तू सर्व विद्यार्थ्यांना राष्ट्राभिमान व राष्ट्रप्रेमाची सतत प्रेरणा देत असते.

फक्त सुंदर व भव्य वास्तू उभी करणे हे बाबासाहेबांचे उद्दिष्ट कधीच नव्हते उद्देश पूर्तीसाठी ते फक्त साधन रूपाने उपयोगात आणले जाते छत्रपती शाहू सैनिक विद्यालय याचा अपवाद नाही दुर्बलांच्या रक्षणाला पौरुषाची साधना करण्याची उद्दिष्टे पुढे ठेवून येथे उपक्रम आजही या ठिकाणी राबविले जातात बाबासाहेब आपल्या या सैनिकी स्कूल च्या विविध उपक्रमापासून अपेक्षा व्यक्त करताना असे म्हणतात की दहा ते चार या सहा तासात पुस्तकी शिक्षणातून सुयोग्य संस्काराची जाणच नाहीशी होत चालली आहे गुरु तर सोडाच पण आई-वडील यांचाही आदर

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कोणी ठेवींना झाला आहे कुठल्याही विद्यालयाचा ध्येयवाद ,तत्व, आपली संस्कृती याची जाण शिकविणाऱ्यातच नाही तर शिकणाऱ्यात कुठून येणार ? कार्यकर्त्याने प्रथम भोगवादावर नियंत्रण ठेवणे आवश्यक आहे मुलावर योग्य संस्कार करण्याची व्रत शिपायापासून ते प्रमुखापर्यंत सर्वांनी घेतले तर सुसंस्कारित मनाबरोबर शरीर सुदृढ बनत जाते. यातून पाच टक्के भावी पिढी जरी सुदृढ झाली तरी वाईट वागण्याची कोणाची हिमतच होणार नाही. यासाठी सूर्योदयापासून रात्री दुसऱ्या प्रहार पर्यंत या भावी पिढीवर सुसंस्कार कसे बांधले जातील हाच ध्यास सर्व कार्यकर्त्यांच्या ध्यानीमनी पाहिजे सुसंस्कारित पौरुष जागृत होऊन त्याचे पुल्लिंग फुलवले पाहिजे हाच आपला ध्यास हाच आपला धर्म असे बाबासाहेब मानत असत.

राजश्री श्री छत्रपती शाहू सैनिक विद्यालयाकडून म्हणजेच येथील प्राचार्य शिक्षक व कर्मचारी तसेच विद्यार्थ्यांकडून वरील ध्येय साध्य करण्यासाठी बाबासाहेब सतत प्रेरणा देत असत. हे सैनिकी विद्यालय म्हणजे सगरोळीचे भूषण असून इयत्ता पाचवी ते बारावी पर्यंत पूर्णतः निवासी शिक्षणाची सोय असलेले विद्यालय ,महाराष्ट्र राज्य शिक्षण मंडळ ,पुणे ,यांनी निर्धारित केलेले अभ्यासक्रमा -बरोबरच संरक्षण, संगणकशास्त्र , सामान्य ज्ञान, नेतृत्व विकास, युद्ध शास्त्रातील प्रगत तंत्रज्ञान, शारीरिक कवायती, गिर्यारोहण, जलतरण आणि अन्यकला असे विविध उपक्रम राबवून शिस्तप्रिय, देशप्रेमी , सुदृढ ,भावी नागरिक घडविण्यासाठी हे विद्यालय कटिबद्ध आहे.याचेच ध्योतक म्हणून फक्त दहा वर्षांच्या अल्पकाळातच या सैनिक विद्यालयाने सर्वच क्षेत्रात आपला ठसा उमटविलेला आहे सगरोळी सनराईज सारख्या उपक्रमामध्ये सर्व भारतीय मॅरेथॉन मध्ये प्रथम येणारे धावपटू, अनेक विज्ञान प्रदर्शनात सतत प्रथम क्रमांक पटकावणारे वैज्ञानिक, खेळ, वादविवाद स्पर्धा, चित्रकला यात भाग घेणारे गुणवंत तसेच 2001 च्या प्रजासत्ताक दिनी महाराष्ट्र पथकाचे नेतृत्व करण्याचा मान मिळवणारा प्रफुल्लचंद्र अशा अनेक रत्नांना येथे पैलू पाडले गेले. नवनवीन उपक्रमा शिवाय येथे एकही दिवस जात नाही. आज पर्यंत या शाळेने सैन्य दल, अर्धसैनिक दल, पोलीस या खात्यांना अनेक सुदृढ व सक्षम तरुणांचा पुरवठा केला.

संजीवनी आरोग्य मंदिर :

संस्थेच्या शाळेत मुलांची वाढती संख्या व बालवाडी पासून ते ज्युनिअर कॉलेजपर्यंत असलेले सर्व विद्यार्थी यांना होणाऱ्या लहान सहान आजार ,अपघात या सर्व गोष्टीसाठी वैद्यकीय सुविधांची अत्यंत गरज आहे हे बाबासाहेबांच्या लक्षात आले आसपासच्या परिसरात आरोग्याची सुविधा नव्हतीच त्यामुळे शारदा नगरला अशी सोय उपलब्ध करावी असा विचार बाबासाहेबांच्या मनात आला आणि त्यांनी संजीवनी आरोग्य मंदिर या नावाने 1960 साली दवाखान्याची सुरुवात शारदा नगर येथे करण्यात आली. बाबासाहेबांचे परममित्र डॉक्टर पारखे यांना बाबासाहेबांना विनंती केली व त्यांच्या विनंतीला मान देऊन डॉक्टर पारखे कुंडलवाडीहून सगरोळी ला येत.

शाळेतील एका शिक्षकाला काही उपचाराची माहिती डॉक्टर पारखे यांनी दिली व सर्वसाधारण आजारासाठी जे काही औषध गोळ्यांची आवश्यकता असते त्याविषयीची माहिती त्या शिक्षकाला देऊन शाळेतील विद्यार्थ्यांच्या आरोग्याची काळजी घेण्याचे कार्य त्या शिक्षकांनी व डॉक्टर पारखे यांच्या कडून करण्यात येऊ लागले संजीवनी आरोग्य मंदिरासाठी सर दोराबजी टाटा ट्रस्ट कडून आर्थिक मदत मिळाली व त्यांच्या आर्थिक मदतीच्या बळावर संजीवनी आरोग्य मंदिराची इमारत व आवश्यक सुविधा निर्माण करण्यास बाबासाहेबांना यश आले.

संजीवनी आरोग्य मंदिरात द्वारे परिसरातील लोकांची आरोग्य तपासणी व औषधोपचार निरनिराळ्यात तज्ञ डॉक्टरांना बोलवून केले जाते. वेळोवेळी आरोग्य शिबिराचे आयोजन तसेच यासारखे इतर उपक्रम याठीकाणी राबविण्यात येतात. सुरुवातीला या सेवेची व्याप्ती मर्यादित स्वरूपात होती पण लोकांची गरज व कामाची व्याप्ती वाढल्याने अमेरिका स्थित श्री रतिलाल शहा व श्रीमती बोनि शाह यांच्या सहकार्याने 1990 साली चंपाबेन नानालाल हॉस्पिटलचे सुसज्ज अशी दोन मजली इमारत तयार झाली या हॉस्पिटलमध्ये 23 खाटांची सोय असून शस्त्रक्रिया ग्रहाची सोय आहे.पुणे, लातूर, नांदेड, देगलूर इत्यादी शहरातील तज्ञ डॉक्टर मंडळींना पाचारण करून त्यांच्या मार्फत रुग्णाची तपासणी व औषधोपचार मोफत केला जात. यात कॅन्सर तसेच इतर रोगनिदान शिबिराचे आयोजन ही केले जाते.

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आयुर्वेद उपचार पद्धतीचा खेडोपाडी प्रचार व प्रसार व्हावा म्हणून संस्थेने गावकऱ्यांना आयुर्वेदाचे महत्त्व पंचकर्म चिकित्सा शिबिर, तज्ञ वैद्यमार्फत रुग्ण तपासणी, औषधोपचार व औषधी लागवडीसाठी शेतकऱ्यांना वनौषधीचे वाटप ,योग प्रशिक्षण,आयुर्वेदीक डॉक्टरांची कार्यशाळा तसेच कुटुंब नियोजनाचे महत्त्व पटवून कुटुंब नियोजनाची साधने, माता व बालसंगोपन, लसीकरण इत्यादी उपक्रम संस्कृती संवर्धन मंडळाच्या माध्यमातून शारदानगर सगरोळी या ठिकाणी राबविले जातात. **(कर्मयोगी ची कथा लेखिका प्रा सौ नम्रता भट पान क्रमांक 10&11).**

वेदव्यास संस्कृत माध्यम विद्यालय :

बाबासाहेबांची हिंदू देवता बरोबरच देववाणी संस्कृतवर नितांत श्रद्धा होती त्यामुळेच शारदा नगरात श्रीरामचे व विद्येची देवता सरस्वतीचे असे दोन देखणे मंदिर उभारले गेले आहेत या मंदिरात स्वच्छता तर राखली जातेच पण देवतांची नियमित पूजाअर्चा ही केली जाते. सर्व भाषेची जननी ज्ञानसंपन्न सर्वात प्राचीन अशा देव आणि संस्कृत भाषेबद्दल बाबासाहेबांना खूप अभिमान व प्रेम होते. **(एकता पान क्रं.41)**

संस्कृत ही सर्व भारतीय भाषांची जननी असून आजच्या प्रगत वैज्ञानिक युगातील विविध क्षेत्रात मार्गदर्शक ठरेल असे आघात ज्ञान भंडार संस्कृत भाषेत उपलब्ध आहे.आयुर्वेदिक महाविद्यालया मधून शिकवले जाणारे संपूर्ण ज्ञान हे जर आपण पाहिले तर संस्कृत भाषेतच मोठ्या प्रमाणात उपलब्ध असलेले आज आपणास पहावयास मिळते.

" संस्कृतिः संस्कृताधिताः" म्हणूनच संस्कृतीची जपवणूक संस्कृत भाषेच्या ज्ञानविना अशक्य आहे असे बाबासाहेबांना वाटत आणि या दिशेने बाबासाहेबांचे विचार चक्र भिरभिरते झाले आज शालेय शिक्षण प्रत्येक प्रांतीय भाषेच्या माध्यमातूनच नव्हे तर इंग्रजी तसेच उर्दू माध्यमातूनही उपलब्ध आहे मग संस्कृत माध्यमातून शिक्षण देणारी शाळा का नसावी या गुढ प्रश्नाने ते अस्वस्थ झाले आणि देवभाषेला म्हणजेच संस्कृत भाषेला परत वैभव प्राप्त करून देण्याचा दृढ संकल्प बाबासाहेबांनी केला व शारदानगर सगरोळी येथे संस्कृत माध्यम शाळा काढण्याचा मानस केला. संस्कृत भाषा क्षेत्रातील अनेक मान्यवर पंडितांची पुणे येथे बैठक आयोजित करून सर्वांगाने वैचारिक

मंथन झाले अनेकाने अनेक शंका उपस्थित केल्या उदाहरणार्थ संस्कृत शिकण्यासाठी विद्यार्थी मिळतील काय? पुस्तके मिळतील काय ? असे व्यवहारिक प्रश्न होते. विविध संभाव्य अडचणीकडे लक्ष वेधले एकंदर हा विचार न पटनारा असा निष्कर्ष अनेकाने काढला पण अशक्य तथा माधार हे शब्द बाबासाहेबांच्या चारित्र्यकोषात नव्हतेच.

संस्कृत माध्यमातील शाळा करण्याची योजना कार्यान्वित करण्याचे ठरविण्यात आले त्यासाठी लागणारे शिक्षक व संस्कृत माध्यमातील पाठ्यपुस्तकांची उपलब्धता ही मोठी अडचण होती ही अडचण पुणे येथील प्रभाकर जोशी म्हणजेच बापूसाहेब यांनी दूर केली या संस्थेत कार्यरत अध्यापक तथा कार्यकर्त्यातून या प्रकल्पासाठी योग्य व्यक्तीची निवड करून त्यांना प्रारंभिक संस्थेतच बापूसाहेबांनी प्रशिक्षण दिले व त्यांच्या त प्रचंड आत्मविश्वास भरला त्यापैकीच सौ विद्या देशमुख ह्या एक होत. सौ विद्या देशमुख यांच्या निर्देशनाखाली जून 1996 मध्ये श्री वेद व्यास संस्कृत माध्यमिक विद्यालयाच्या रूपाने एका क्रांतीपर्वस शारदानगर सगरोळी येथे सुरुवात झाली. (kbvbw लेखक गुरुनाथराव देशमुख भालचंद्र देगलूरकर पान क्रमांक 101)

एक एक वर्ग पुढे नैसर्गिक वाढीने प्रतिवर्षी जोडले गेले महाराष्ट्र राज्य पाठ्यपुस्तक निर्मिती व अभ्यास मंडळाचे सर्व विषयाचे पाठ्यपुस्तके संस्कृत मध्ये भाषांतराचे कार्यही तज्ञांच्या मार्गदर्शना-खाली विद्यालयातील अध्यापकांनीच केले प्रस्तुत प्रकल्पास मा.पंडित गुलाम दस्तगीर, श्री कवीश्वर, श्री किशोर जी व्यास, श्री बहुलकर(टिळक महाराष्ट्र विद्यापीठ, पुणे) श्री पंकज चांदे(कुलगुरू कवी कालिदास संस्कृत विद्यापीठ, नागपूर)श्री चमूकृष्ण शास्त्री (संस्कृत संस्था दिल्ली) यांनी वेळोवेळी संस्थेस भेट देऊन मार्गदर्शनाचा लाभ दिला. या प्रकल्पाच्या वाटचालीत आजही तांत्रिक अडचणी येतात पण यावर मात करीत मार्ग काढण्याची प्रेरणा बाबासाहेबांनीच आपल्या तालमीत वाढलेल्या कार्यकर्त्यांना दिली आहे व या प्रेरणेच्या अंतर्भूतच आज सुद्धा संस्कृत माध्यमाच्या शाळेची योग्य अशी वाटचाल आपणास दिसून येते.

श्री छत्रपती शिवाजी मूकबधिर विद्यालय:

सर्वांसाठी शिक्षण ही संकल्पना साकारण्याचा दृढ संकल्पच बाबासाहेबांनी सोडला होता म्हणूनच पाळणाघर, बालवाडी, बालक मंदिर, प्राथमिक, माध्यमिक,

प्रा. प्रकाश नागनाथ वारे

उच्चमध्यमिक यासोबतच शारीरिकदृष्ट्या, अपंग व असमर्थ म्हणून शाळा शिक्षणापासून वंचित मुला मुलींना प्रवाहात आणण्यासाठी म्हणून 1982 साली कै. धुंडा महाराज देगलूरकर मूकबधिर विद्यालय सुरु केले .

स्वतंत्र इमारतीत अवश्यक तांत्रिक उपकरणे व साधनांच्या साहाय्याने १ ली ते १० वि पर्यंतच्या शिक्षणाची सोय उपलब्ध केली. या तुकबधिर विद्यालयात बरेच विद्यार्थी शिक्षण घेत आहेत. सौ. वैनजंती हेल्लेकर ह्या ट्रेन्ड शिक्षिका अपंग एकात्मता योजने आंतर्गत ह्या शाळेची जबाबदारी पार पाडीत आहेत. या शाळेतून शिक्षण घेऊन आगदी सामान्य मुलाप्रमाणे या शाळेतील मुले तालुका व जिल्हा पातळीवरील विविध सांस्कृतिक उपक्रमात भाग घेवून यशस्वी झाले आहेत या माध्यमातून शिक्षण घेऊन व्यवसाय शिक्षणात प्रवेशित अनेक मुली मुले स्वाभिमानी व स्वावलंबी जीवनांचा आनंद घेत आहेत. (कर्मयोग्याची कथा प्रा.नम्रता भट पान क्र११).

निष्कर्ष :

कै. के. ना. देशमुख उर्फ बाबासाहेब देशमुख सगरोळीकर यांनी सगरोळी सारख्या ग्रामीण भागात विद्यार्थ्यांच्या शिक्षणाची सोय व्हावी म्हणून बालवाडी पासून ते उच्चशिक्षणापर्यंतच्या शैक्षणिक संस्थेचे जाळे उभे करून परिसरातील गोरगरीब विद्यार्थ्यांना शिक्षणाची सुविधा निर्माण करून दिली.

जे विद्यार्थी शिक्षणापासून वंचित होते आपल्या गरीब परिस्थितीमुळे शिक्षण घेऊ शकत नव्हते अशा विद्यार्थ्यांना वस्तीगृहाची व्यवस्था करून शिक्षण देण्याचे कार्य बाबासाहेबांनी केलेले आपणास दिसून येते शिक्षणासोबतच सुसंस्कारित करणे मानवी मूल्याची जपणूक करणे हे बाबासाहेबांच्या शारदानगर सगरोळी येथील शिक्षणाचा मूळ उद्देश होता.

याच बरोबर तंत्रशिक्षण तसेच ग्रामीण भागातील विद्यार्थ्यांमध्ये कृषीविषयक ज्ञान निर्माण व्हावे म्हणून कृषी विज्ञान केंद्राची सुद्धा सुरुवात शारदानगर सगरोळी येथे केलेली आपणास पाहावयास मिळते. निराधार, अपंग अशा विद्यार्थ्यांच्या शिक्षणाची सुद्धा व्यवस्था आनंद बालग्राम तसेच वै धुंडा महाराज देगलूरकर मूकबधिर विद्यालय या माध्यमातून केलेली आहे.

संदर्भसूची :

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तुलसीदास कृत रामचरितमानस में पर्यावरण

प्रा. डॉ. अभिमन्यु नरसिंगराव पाटील

हिंदी विभाग प्रमुख, वै. धुंडा महाराज महाविद्यालय, देगलुर

Corresponding Author- प्रा. डॉ. अभिमन्यु नरसिंगराव पाटील

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सारांश :-

श्री रामचरितमानस में पर्यावरण के संदर्भ में महान संत गोस्वामी तुलसीदास ने पर्यावरण संरक्षण को स्थान दिया है। अपने पदों और चौपाइ के माध्यम से नदी, पर्वत, पेड़, पशु पक्षी, प्राणी आदि के महत्व को बताया है। अगर पर्यावरण अच्छा है तो मनुष्य, पशु पक्षी सब खुशी से रहते हैं। इसलिए पर्यावरण का रक्षण हमें करना है। साथ में पर्यावरण को स्वच्छ भी रखना हमारी जिम्मेदारी भी है। हमारे जीवन को प्रभावी करनेवाले सभी जैविक और अजैविक तत्वों, तथ्यों, प्रक्रियाओं और घटनाओं के समुच्चय से निर्मित इकाई है। यह हमारे चारों ओर व्याप्त है और हमारे जीवन की प्रत्येक घटना इसी के अंदर सम्पादित होती है। हम मनुष्य अपनी समस्त क्रियाओं से इस पर्यावरण को भी प्रभावित करते हैं। इस तरह प्रत्येक जीवधारी और पर्यावरण में अटुट संबंध है। आज बड़े बड़े शहरो राष्ट्रीय आंतरराष्ट्रीय संगोष्ठीया होती हैं। प्राचीन काल में भी आश्रम में संगोष्ठीया होती थी। आज भी और प्राचीन काल में वैसाही विचार मंथन होता है।

शब्दार्थ :- पर्यावरण = परी+ आवरण, जीवधारी = जिसमें जीव हो, पुरईन = कमलिनी, भारद्वाज = ऋषि, गीधराज = जटायु भक्तिकाल = हिंदी साहित्य के चार कालों में से एक, पारितंत्रीय = पर्यावरणीय, समष्टी = संपूर्णता, दोहा = दो पक्तियों का, चौपाईया = चार पक्तियों की, संगोष्ठी = कॉन्फरन्स

प्रस्तावना:

हिंदी साहित्य के महान संत तुलसीदास का स्थान हिंदी साहित्य में बहुत ही महत्वपूर्ण है। भक्तिकाल में जो भक्ति की धारा चली उनमें रामभक्ति शाखा के प्रवर्तक तुलसीदास माने जाते हैं। उन्होंने 12 किताबों की रचना की उनमें से रामचरितमानस सबसे श्रेष्ठ है। गोस्वामी तुलसीदास की जयंती अगस्त महीने में 11 अगस्त 2024 को मनाई गई। उन्होंने रामचरितमानस की रचना अवधी भाषा में की जो उत्तर भारत में सबसे ज्यादा बोली जाती थी। तुलसीदास जी के जन्म और मृत्यु के संबंध को लेकर अलग-अलग बातें प्रचलित हैं। कुछ लोगों ने उनके जीवनकाल को इ. स. 1497 से 1623 के बीच माना है। तो कुछ लोग इ.स. 1543 से 1623 तक माना है। जानकारी के अनुसार उनकी माता का नाम हुलसी और पिता का नाम आत्माराम दुबे था। उनका जन्म एक ब्राह्मण परिवार में हुआ था। और जन्म के समय उनका नाम रामबोला था। उन्होंने अयोध्या, चित्रकूट और काशी में रहकर भगवान राम की आराधना की, रामचरितमानस को विश्व के सर्वश्रेष्ठ लोकप्रिय काव्यों में

46 वा स्थान प्राप्त है। उन्होंने रामचरितमानस के अलावा वाल्मिक ऋषि, गीतावली, दोहावली, संस्कृत रामायण आदि काव्यों की रचना की। वह भगवान राम के सच्चे भक्त थे। अपनी पत्नी रत्नावली के ठुकराने से वह राम भक्ति में लग गए और एक महान संत बन गए।

अंग्रेजी में पर्यावरण को (Environment) कहा जाता है। पर्यावरण शब्द दो शब्दों से मिलकर बना है। "परी" जो हमारे चारों ओर है, "आवरण" जो हमें चारों ओर से घिरे हुए हैं, अर्थात् पर्यावरण का शाब्दिक अर्थ होता है चारों ओर से घिरे हुए। पर्यावरण उन सभी भौतिक, रासायनिक एवं जैविक कारकों की समष्टिगत एक इकाई है जो किसी जीवधारी अथवा पारितंत्रीय आबादी को प्रभावित करते हैं। तथा उनके रूप जीवन और जीवित को तय करते हैं। पर्यावरण ऐसा है कि जो प्रत्येक जीव के साथ जुड़ा हुआ है। और हमारे चारों तरफ वह हमेशा व्याप्त रहता है। पर्यावरण में सभी जैविक और अजैविक तत्वों, तथ्यों, प्रक्रियाओं और घटनाएं आती हैं। यह हमारे चारों ओर व्याप्त

है, और हमारे जीवन के प्रत्येक घटना को प्रभावित करता है। हर एक जिवधारी और पर्यावरण के बीच अटूट संबंध है।

प्राचीन काल से लेकर सभी भारतीय भाषाओं के साहित्य में पर्यावरण हमें देखने को मिलता है। इसे हिंदी साहित्य कैसे अछूता रहता है। हिंदी साहित्य में भी अनेक कवि, संत, लेखकों ने पर्यावरण के संदर्भ में पर्यावरण के महत्व के संदर्भ में अपने साहित्य में उसका महत्व बताया है। प्रत्येक जीवधारी का पर्यावरण के साथ अटूट संबंध है। अगर हमें प्रकृति के गोद में रहना है तो अपने आप पर्यावरण के साथ रहना है। आदिकाल से लेकर पर्यावरण कितना महत्वपूर्ण है यह बताने की कोशिश की गई है। हिंदी साहित्य के महान संत कवि तुलसीदास ने अपने काव्य में पर्यावरण की चर्चा की है। अपने काव्य के साथ रामचरितमानस में पर्यावरण के संदर्भ में महत्वपूर्ण बातें बताई गई है। रामचरितमानस में यह पर्यावरण को भी हमारे जीवन का अभिन्न अंग होने के साथ जीवन को सुखी बनाने या सुखी रखने में इसकी अनिवार्यता तथा उसका महत्व बताया गया है।

"राम सिया जस सलिल सुधासम। उपमा बीची विलास मनोरम॥

पुरईन सघन चारु चौपाई। जुगति मंजु मनि सीप सुहाई॥"

राम और सीता का यश अमृत के समान जल है। इसमें जो उपमाएँ दी गई हैं, वही तरंगों का मनोहर विलास है। सुंदर चौपाइयाँ ही इसमें घनी फैली हुई पुरईन कमलिनी है, और कविता की युक्तियाँ सुंदर मनी उत्पन्न करने वाली सुहानी सीपियाँ हैं। "छंद सोरठा सुंदर दोहा, सोई बहुरंग कमलकुल सोहा" कहकर मानस में सीता राम के यश की तुलना पवित्र सरोवर के अमृत रूपी जल से और चौपाइयों की सुंदरता कमलिनियों से करते हैं। तथा छंदो और दोहा आदि की सरोवर में खिले कामलो से करते हैं। इसका अर्थ यह हो जाता है की प्रकृति पर्यावरण में निहित यह वनस्पति हमारे जीवन में आनंद भरने के लिए उतना ही महत्वपूर्ण है जितना की मानस की चौपाइयाँ और दोहे हैं।

"भरद्वाज मुनि बसहि प्रयाग,

माघ मकर गति रवि जब होई। तीरथपतिहि आव सब कोई।

देव दनुज किंनर नर श्रेणी। सादर मज्जहि सकल त्रिबेनी॥

भरद्वाज आश्रम अति पावन, परम रम्य मुनिवर मन भावना।

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तहाँ होइ मुनि रिषय समाजा, जाहि जे मज्जन तीरथ राजा।

ब्रह्म निरूपन धरम विधि बरनहि तत्व विभाग

एहि प्रकार भरिमाघ नहाही, पुनि सब निज-निज आश्रम जाही॥"

रामचरितमानस के बालकांड में एक प्रसंग है, की प्रयागराज में स्थित गंगा, जमुना, सरस्वती के पवित्र संगम को विभिन्न सामाजिक, आध्यात्मिक, शैक्षिक, दृष्टिकोण से अत्यंत लोकोपकारी तथा उपयोगी कहा गया है। तुलसीदास कहते हैं कि, माघ के महीने में जब सूर्य भगवान मकर राशि में प्रवेश करते हैं, तब बहुत सारे लोग तीर्थराज प्रयाग में आते हैं वहां पर देवता, किन्नर और मनुष्य सभी आदर पूर्वक इस संगम में स्नान करते हैं वहां के अक्षयवट का स्पर्श करके भगवान के श्रीचरणों के स्पर्श का अनुभव प्राप्त करते हैं। इसे देखे तो यह स्पष्ट हो जाता है कि प्रयाग के संगम क्षेत्र में वन, उपवन, जलवायु, वनस्पतियाँ समूचा पर्यावरण सबके लिए आकर्षक और रमणीय है। सभी को सुख शांति प्रदान करने के साधनों से परिपूर्ण है, ऐसी भूमि ऐसा स्थान जहां सब एक अच्छी भावना से आते हैं और अपने आप को इस संसार रूपी जीव से मुक्ति का अनुभव करते हैं। वहां के ऋषि मुनि अपने समय के उत्कृष्ट विचारक, चिंतक माने गए हैं। हर वर्ष माघ मास में विभिन्न प्रयाग जाते हैं।

वहां स्थित भारद्वाज के आश्रम में संत समागम होता है। ज्ञान विज्ञान पर चर्चा के साथ दर्शनशास्त्र, विधिशास्त्र, समाजशास्त्र, लोक कल्याण ऐसे विषयों पर गहन विचार मंथन होता है। इन बातों को आज के संदर्भ में जोड़ दिया जाय तो आज ऐसे स्थान पर मेडिकल कॉन्फ्रेंस या राष्ट्रीय अंतरराष्ट्रीय महत्व के महत्वपूर्ण विषयों पर संगोष्ठियाँ होने अधिवेशन होते हैं। इसका अर्थ यही हो जाता है कि ऐसे चर्चा पवित्र वातावरण में मनुष्य अपने आप को भूलकर प्रकृति के पर्यावरण के गोद में शरण जाता है। ऐसे स्थान को देखे तो प्रकृति की भौगोलिक जलवायु और पर्यावरण स्थिति देखकर ऐसे आयोजन बहुत महत्वपूर्ण है, यह पर्यावरण का ही एक रूप हमें दिखाई देता है।

"मज्जन कीन्ह पंथ श्रम गयउ, सुचि जल पिअत मुदित सब भयऊ।

गिरि वन नदी ताल छवि छाये, दिन दिन प्रति सब होत सुहाए।

खग-मृग वृन्द आनंदित रहहीं, मधुप मधुर गुंजत छवि लहही ।"

इस दोहा चौपाई के माध्यमसे तुलसीदास कहना चाहते हैं की, प्रकृति अगर पुरे रूप से खुश होकर प्रसन्न होती है तो सृष्टी पर चारो ओर हरियाली और खुशी का माहोल छा जाता है । जैसे जब पर्याप्त वर्षा होती है तो जलाशय, ताल-तलैया, नदी-नाले पर्याप्त जल से भर जाते हैं । तब धरती हरा शालु पहने जैसा लगती है । धरती पर सस्य श्यामला होती है । पैड़ पौधो वनस्पतियां समृद्ध होती है । धन धान्य प्रचुर मात्रा में होता है । उस धन धान्य पर निर्भर सभी जीव-जंतु, पशु-पक्षी, मानव सभी प्रसन्न रहते हैं । यहाँ प्रकृति और पर्यावरण का सुंदर वर्णन किया गया है ।

सीता की रक्षा में जटायु का बलिदान

"गीधराज सुनि आरत बानी, रघुकुल तिलक नारि पहिचानी ।"

सीता की रक्षा करते समय जटायु का घायल होना बाद में मर जाना । जटायु मर जाने के बाद राम व्दारा अपने हाथों से उसका यथोचित अंतिम संस्कार करना, पशु पक्षियों और मनुष्यों की परस्पर निर्भरता एवं एक दूसरे के लिए उपयोगिता आवश्यकता दर्शाकर कवि ने पर्यावरणीय संतुलन की महत्ता भी बताई है ।

इसके साथ ही साथ जहां जटायु का व्यवहार किसी बेबस लाचार की निस्वार्थ सहायता पर जोर देता है तो श्री राम का व्यवहार जीवन में उपकारी के प्रति कृतज्ञता की भावना की शिक्षा देता है । इस प्रसंग से हमें पर्यावरण में पशु पक्षी और मानव के बीच जो संतुलन बनाए रखना है, तभी प्रकृति बनी रहेगी संतुलन बिगड़ गया तो प्रकृति भी अपन रूप दिखाकर विनाश की ओर जाएगी । यह संदेश रामचरितमानस में तुलसीदास ने दिया है, जो आज भी हमें उतना ही महत्वपूर्ण लगता है ।

रावण जब सीता को उठाकर लंका ले जाता है । तब श्रीराम और उनकी सेना सीता की खोज करते घुमते हैं । उसको पता चलता है की सीता समुद्र के उस पार है वहाँ जाना है तो समुद्र को लागकर जाना पड़ेगा । श्रीराम समुद्र से प्रार्थना करते हैं परंतु समुद्र मार्ग नहीं देता । तब श्रीराम क्रोध में आकर अपनी शक्ति का उपयोग करना चाहते हैं तब समुद्र देवता श्रीराम के सामने आते हैं और पर्यावरण और साथ में मानव और प्रकृति का संतुलन की बात कहते हैं ।

यद्दयपि तदपि नीति असि गाई, विनय करिय सागर सन जाई ।

प्रथम प्रणाम कीन्ह सिर नाई, बैठे पुनि तहँ दर्भ डसाई।"

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इसका यही अर्थ हो जाता है कि हम प्रकृति के साथ मनमानी नहीं कर सकते । आज हम देख रहे हैं की प्रकृति को हम अपने हिसाब से चलाने की कोशिश कर रहे हैं । लेकिन प्रकृति कभी-कभी हमको उसका रूप झलक दिखा रही है, तो हम भय से कांप रहे हैं । रामचरित्र मानस में राम ने समुद्र को याचना की प्रार्थना की और उस से मार्ग मांगा । अगर राम चाहते तो समुद्र को सुख्ा सकते थे लेकिन उन्होंने ऐसा नहीं किया । क्योंकि अगर ऐसा करते तो प्रकृति के विरोध में उसका काम होता ।

और यह प्रकृति के लिए और सृष्टि के लिए लाभदायक नहीं होता । इसीलिए राम ने समुद्र से याचना की प्रार्थना की इस तरह उन्होंने प्रकृति के साथ कोई नुकसान नहीं पहुंचा रामेश्वरम में सेतुबंध इसका यही उदाहरण हम पर्यावरण प्रकृति के संदर्भ में देख सकते हैं । सेतुबंध और शिवलिंग की स्थापना के पश्चात भगवान राम "जो गंगाजल लाई चढ़इहहिं, सो सायुज्य मुक्ति नर पइहहिं" कहना जहां देवसलिला गंगाजी के जल को मोक्ष अर्थात जीवन का अनन्य परम सुख दिलाने वाला बताकर उनके संरक्षण की आवश्यकता पर जोर दिया गया है । वही अयोध्या आगमन पर "जन्मभूमि मम पुरी सुहावनि, उत्तर दिसि बह सरयू पावनी" कहकर यह बताने की चेष्टा की गई है कि हमारे गांव नगरों की समृद्धि एवं रमणीयता में नदियों का महत्वपूर्ण योगदान होता है । या यों कहे कि अगर हमें जीवन में सुख, समृद्धि, सरसता, सुंदरता चाहिए तो नदियों का संरक्षण हमारी प्राथमिकताओं प्रतिबद्धताओं में शामिल करना होगा ।

आज श्रीरामचरितमानस में कही बातों की आवश्यकता है । इस तरह हम देख पाते हैं कि श्रीरामचरितमानस के विभिन्न प्रसंगों के प्रकृति के विभिन्न अवयवों नदी, पर्वत विभिन्न प्रकार की वनस्पति, जीव, जंतु, पशु पक्षी आदि को देवी देवताओं से जोड़कर तथा हमारे जीवन में उनकी उपयोगिता आवश्यकता तथा महत्व को सिद्ध करके तुलसीदास जी ने पर्यावरण संतुलन की आवश्यकता पर जोर दिया है ।

इसके साथ-साथ देश और समाज के लिए पर्यावरण की उपयोगिता अनिवार्यता के कारण इसके संरक्षण की आवश्यकता पर भी पर्याप्त मात्रा में बल दिया गया है । अंत हम यही कहते हैं कि पर्यावरण के दृष्टिकोण से भी रामचरित्र मानस की आवश्यकता आज भी है, कल भी थी, और आगे भी रहेगी । सैकड़ों वर्षों के बाद भी यह अक्षय बनी हुई है

इसमें कोई कमी नहीं आई है। आज भी उतनी ही प्रासंगिक है जितनी आज से लगभग 500 वर्ष पूर्व थी।

संदर्भ ग्रंथ :-

- 1) श्रीरामचरितमानस :- गोस्वामी तुलसिदास
- 2) पर्यावरण अध्ययन :- डॉ. रतन जोशी
- 3) पर्यावरण अध्ययन :- डॉ. चंद्रप्रकाश शुक्ल

बीड तालुका ग्रामीण मंडळातील वसाहतींचे भौगोलिक विश्लेषण

प्रा. डॉ. देशमुख एस. बी.

भूगोल विभाग, नवगण कला व विज्ञान महाविद्यालय चौसाळा, ता.जि.बीड, महाराष्ट्र (INDIA)

Corresponding Author- प्रा. डॉ. देशमुख एस. बी.

Email- sbdparali@gmail.com

DOI- 10.5281/zenodo.13867237

सारांश (Abstract) :-

ग्रामीण वस्त्यांचे प्रकार वस्तीतील घराच्या अंतरावरून आणि घरांच्या संख्येवरून निश्चित केलेले असतात. उदा. एखाद्या वस्तीतील घरे खुप जवळ जवळ, दाटीवाटीने असतील तर त्यास केंद्रीय वस्ती म्हणतात. जर एखाद्या वस्तीतील घरे दुरदुर अंतरावर असतील तर त्यास विखुरलेली वस्ती म्हणतात पण वस्तीचे प्रारूप निश्चित करत असताना वस्तीतील घरांचे अंतर आणि संख्या विचारात न घेता वस्तीतील घरामुळे वस्तीला जो भूमितीय आकार प्राप्त झालेला असता जे बाह्यरूप प्राप्त होते त्याचा विचार करण्यात येतो. त्यावरून वस्तीचे प्रारूप ठरविले जाते. ग्रामीण वस्तीचा अभ्यास करताना ग्रामीण वस्तीच्या प्रारूपांचा अभ्यास करणे आवश्यक ठरते. वस्ती विकसीत होत असताना त्यावर काही नैसर्गिक व मानवनिर्मित घटकांचा प्रत्यक्ष-अप्रत्यक्ष परिणाम वस्तीच्या वितरणावर होत असतो. प्रामुख्याने भौगोलिक पर्यावरणाचा व मानवनिर्मित घटकांचा परिणाम वस्तीच्या आकारावर होत असतो.

Keywords: - ग्रामीण वस्ती, विखुरलेली वस्ती, वस्तीस्थान, वस्ती प्रारूप

Information: - वस्ती भूगोल ही मानवी भूगोलाची एक महत्वपूर्ण शाखा आहे. वस्ती भूगोलात मानवी वस्त्याच्या विविध प्रकारांचा अभ्यास केला जातो. या वस्त्यावर तेथील प्रादेशिक स्थानांचा पर्यावरणाचा परिणाम होत असतो म्हणून त्या पर्यावरणरूप मानवी वस्तीवर परिणाम होत असतो. त्याला अनुसरून मानवी वस्तीचे स्वरूप बदलत असते म्हणून स्थळानुसार व कालानुसार विविध क्षेत्रात प्रगती होत असते. डिकिन्सन या वस्ती भूगोल तज्ञाच्या मते भौगोलिक घटकांची क्षेत्रीय व्यवस्था म्हणजे वस्ती होय. ग्रामीण वस्तीचे वर्गीकरण करण्याचे विविध मार्ग आहेत. तसे स्थळ व निवास एकुण ग्रामीण लोकसंख्या, ग्रामीण क्षेत्र इत्यादीचा वर्गीकरणासाठी विचार केला जातो.

Study Area:- प्रस्तुत अभ्यासासाठी घेतलेल्या लघुशोध निबंधाचे अभ्यास क्षेत्र हे बीड ग्रामीण तहसिलचे क्षेत्र आहे हा बीड तालुका महाराष्ट्र, मराठवाडा या प्रशासकीय विभागातील एक तहसिलचा भाग आहे. भौगोलिक क्षेत्राचा विचार करता बीड जिल्हा हा 18018' आणि 19027' उत्तर अक्षांश आणि 75045' पुर्व ते 76057' पुर्व रेखांश दरम्यान आहे. याच्या उत्तरेस छत्रपती संभाजीनगर व जालना

जिल्हा, ईशान्येस परभणी जिल्हा, अग्नेयेस लातूर जिल्हा आणि पश्चिमेस धाराशिव जिल्हा आहे. अभ्यास क्षेत्रातील जिल्ह्याचे क्षेत्रफळ 1393 चौ.कि.मी. बीड तहसिलची 20211 ची लोकसंख्या 277823 होती. जिल्ह्याची नोद महसुली विभागात विभागणी आहे. ते म्हणजे बीड व अंबाजोगाई

Objectives:-

- 1) अभ्यास क्षेत्रातील ग्रामीण वस्तीचे प्रकार शोधणे.
- 2) बीड तहसिल क्षेत्रातील ग्रामीण वस्तीच्या प्रकारांचा वितरणावर परिणाम करणाऱ्या घटकांचा अभ्यास करणे.

Database and Methodology:- लघुशोध निबंध पुर्णपणे दुय्यम प्रकारच्या संकलित माहितीवर आधारीत असून बीड जिल्हा सांख्यिकीय पुस्तकातून लोकसंख्या व भौगोलिक क्षेत्रफळ व वसाहतीची आकडेवारी प्राप्त केली आहे व याद्वारे Dispersal Index काढला आहे.

Settlements Forms :- अभ्यास क्षेत्र हे उंची नदी काठी प्रदेश आहे. नदी पात्रापासून दुर आहे. सुपीक जमीन क्षेत्रात लागवड केली जाते. Compact Settlement उच्च मुल्याद्वारे दर्शविले जाते आणि कमी मुल्य विखुरलेली Settlement

दर्शवितात. Dispersal value ranges 374.79 ते 645.07 पर्यंत आहे. डिस्पर्सल इंडेक्सचे वर्तुळनिहाय मुल्य तक्ता

क्र.1.1

प्रमाणे

.तक्ता क्र. 1.1 :- ग्रामीण वस्तीचे मंडळनिहाय प्रकार (डिस्पर्सल इंडेक्स 2011)

अ.क्र.	मंडळ	वसाहतीची सरासरी लोकसंख्या	वसाहतीचे सरासरी अंतर	फैलाव मुल्य
1	राजुरी (नं.)	1220.06	2.67	456.96
2	पेंडगाव	1112.51	2.28	487.84
3	पिंपळनेर	1116.05	2.45	450.02
4	मांजरसुंबा	1101.89	2.94	374.79
5	बीड	1561.08	2.42	645.07
6	नाळवंडी	1103.16	2.66	414.72
7	चौसाळा	1034.11	2.52	410.36
8	नेकनुर	2050.94	3.34	619.05

स्त्रोत :- संशोधक संकलीत तक्ता

कॉम्पॅक्ट सेटलमेंट नेकनुर आणि बीड सर्कल आहे. पाऊस हा वसाहतीच्या प्रकारांवर परिणाम करणारा एक प्रमुख घटक आहे. तलाव आणि विहीरीच्या आसपास संक्षिप्त वसाहती आढळतात. ज्या भागात तलाव नाहीत त्या भागात विहीरीच्या आसपास वसाहती आहेत. मुस्लीम राजवटीच्या मध्ययुगीन काळात बाह्य अराजक घटकांपासून संरक्षणाची गरज सर्वात महत्वाची होती. त्यामुळे बहुतांश वस्त्या कॉम्पॅक्ट आहेत. विस्तीर्ण सुपीक भागात पाण्याची पातळी आहे तेथे वसाहती अतिशय सामान्य आहेत. अशा वसाहती बीड आणि चौसाळा मंडळात आहेत. विखुरलेल्या वसाहती कोरड्या आणि खराब खडकाळ जमिनीच्या भागात आढळतात. मांजरसुंबा व चौसाळा मंडळात विखुरलेल्या वसाहती प्रामुख्याने आढळतात. दळणवळणाची सुविधामुळे रस्ते आणि रेल्वे मार्ग वाढले आणि वसाहतीया जुन्या उभारणीला अडथळा निर्माण झाला.

ग्रामीण भागात बंधारे, पाझर तलाव, कालवे अशी शेतीची विकास कामे सुरु झाली आहेत आणि त्यामुळे कामे संपली तरी बाहेरून मजुर येवून गाव सोडून स्थाईक झाले आहेत. मागास वर्गीय लोकांना ग्रामीण भागात शासनाकडून मोफत जमिनी व घरे दिली जातात आणि गावातून काही अंतरावर नवीन वसाहत निर्माण झालेल्या आहेत. कमी पर्जन्यमान असलेल्या खडबडीत, स्थलापत्ती सारख्या प्रतिकूल भौतिक परिस्थितीच्या क्षेत्रामध्ये विखुरलेल्या वसाहती आहेत. राजुरी नवगण, पेंडगाव, पिंपळनेर, नाळवंडी आणि चौसाळा मंडळामध्ये प्रमुख वस्तीच्या आजुबाजूला कारागीर व इतर मागास लोकांची वस्ती

असलेल्या वाड्या किंवा उपवस्ती किंवा अशा प्रकारच्या विखुरलेल्या वस्त्या आढळतात.

निष्कर्ष (Conclusion) :- मध्यम आणि चतुर्थास विचारा घेऊन, ग्रामीण वसाहतीचे प्रकार ओळखण्यासाठी विखुरलेल्या निर्देशकांची मुल्ये चार श्रेणीमध्ये विभागलेली आहेत. प्रसार मुल्ये कमी दुर मांजरसुंबा (374.79) आणि बीड मंडळासाठी उच्च (645.07) नोंदवली गेली. बीड आणि मांजरसुंबा येथील सुपीक मंडळामध्ये संक्षिप्त प्रकार आढळतात तर अर्ध संक्षिप्त वसाहती बीड आणि चौसाळा मंडळामध्ये आढळतात विखुरलेल्या वस्त्या प्रामुख्याने दिसून येतात. ज्या क्षेत्रावर भौतिक परिस्थिती योग्य नाही अशा ठिकाणी विखुरलेल्या स्वरुपातील वस्त्या राजुरी, पेंडगाव, पिंपळनेर, नाळवंडी आणि चौसाळा मंडळात आढळतात. या मंडळात प्रतिकूल भौगोलिक परिस्थिती आहे म्हणून वस्तीप्रकार विखुरलेल्या स्वरुपाचा आहे.

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भारतातील पाणीटंचाई व त्यावर उपाय

प्रा. डॉ. नागनाथ माधवराव फड

भूगोल विभाग प्रमुख, कै. बाबुराव पाटील महाविद्यालय, हिंगोली

Corresponding Author- प्रा. डॉ. नागनाथ माधवराव फड

Email:-Nagnathphad2@gmail.com

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सारांश:

भारतामध्ये पाणीटंचाई ही एक गंभीर समस्या बनली आहे, ज्यामुळे देशातील सामाजिक, आर्थिक, आणि पर्यावरणीय घटकांवर मोठा परिणाम होत आहे. या शोधनिबंधात पाणीटंचाईची प्रमुख कारणे, जसे की अनियमित पर्जन्यमान, जलस्रोतांचे कमी होत असलेले जलाशय, जल व्यवस्थापनातील कमतरता, आणि वाढती लोकसंख्या यांचा सखोल अभ्यास केला आहे. विविध भौगोलिक आणि पर्यावरणीय घटकांच्या आधारे पाणीटंचाईची समस्या देशातील वेगवेगळ्या भागांमध्ये कशी तीव्र होत आहे, यावरही चर्चा करण्यात आली आहे. शहरीकरण आणि औद्योगिकीकरणामुळे जलवापराच्या असमतोलाने पाणी संकट अधिक तीव्र झाले आहे.

या शोधनिबंधात जलसंवर्धनाच्या उपाययोजनांचा आढावा घेण्यात आला आहे, ज्यामध्ये जलस्रोतांचे पुनरुत्थान, पाण्याचे पुनर्वापर, आणि जलसंधारणाच्या तंत्रांची प्रभावीता मोजण्याचा प्रयत्न करण्यात आला आहे. पाणीटंचाईच्या समस्येवर मात करण्यासाठी जलसंवर्धनाचे प्रभावी धोरण आणि जनजागृती महत्त्वाची असल्याचे या अभ्यासातून स्पष्ट होते. भविष्यातील पाणीटंचाईच्या संभाव्य परिणामांना कमी करण्यासाठी आणि जल व्यवस्थापन साधण्यासाठी ठोस उपाययोजनांची आवश्यकता आहे.

बीजसंज्ञा:- (Keywords) पाणीटंचाई (Water Scarcity), जलव्यवस्थापन (Water Management), पर्जन्यमान (Rainfall Patterns), जलसंवर्धन (Water Conservation)

प्रस्तावना:- (Introduction)

भारत एक कृषिप्रधान देश असून, पाण्याचे महत्त्व अनन्यसाधारण आहे. परंतु, जलसंपत्तीचा असंतुलित वापर, अनियंत्रित शहरीकरण, आणि हवामानातील बदल यामुळे पाणीटंचाई ही एक गंभीर समस्या बनली आहे. भारतातील 54% भूभाग जलदूत कसा आहे, याचा विचार केला तर, वार्षिक जलस्रोत वापर 1,123 बिलियन क्यूबिक मीटर आहे, ज्यात 91% पाणी शेतीसाठी वापरले जाते. परंतु, 2030 पर्यंत, देशातील जलस्रोतांची मागणी 1,500 बिलियन क्यूबिक मीटरपर्यंत वाढण्याचा अंदाज आहे, ज्यामुळे गंभीर पाणीटंचाई निर्माण होऊ शकते.

भारताचे भूगर्भजलस्तर दरवर्षी 0.3 मीटरने घटत आहे, हे चिंताजनक आहे. जलस्रोतांच्या व्यवस्थापनातील अपयशामुळे आज भारतातील 600 दशलक्ष लोकसंख्या पाण्याच्या अभावाचा सामना करत आहे. या परिस्थितीत, जलसंवर्धन, पाणी पुनर्भरण, आणि नवीन तंत्रज्ञानाचा वापर करणे अत्यंत आवश्यक ठरते. सिंचन प्रणालींचा कार्यक्षम

वापर, पाण्याचा पुनर्वापर, आणि वर्षाव जलसंवर्धनाचे आधुनिक तंत्रज्ञान हे उपाय जलसंपत्तीचे शाश्वत व्यवस्थापन साधण्यासाठी महत्त्वाचे आहेत. त्यामुळे, शोधनिबंधाच्या माध्यमातून पाणीटंचाईवर योग्य तोडगा शोधणे आणि त्याच्या प्रभावी अंमलबजावणीचे मार्गदर्शन करणे हाच आमचा उद्देश आहे.

अभ्यास उद्दिष्टे:- (Objectives)

1. भारतातील पाणीटंचाईची कारणे आणि परिणामांचा अभ्यास करणे.
2. जलसंवर्धनाच्या उपाययोजनांचा अभ्यास करणे .

माहिती स्रोत:- (Data source)

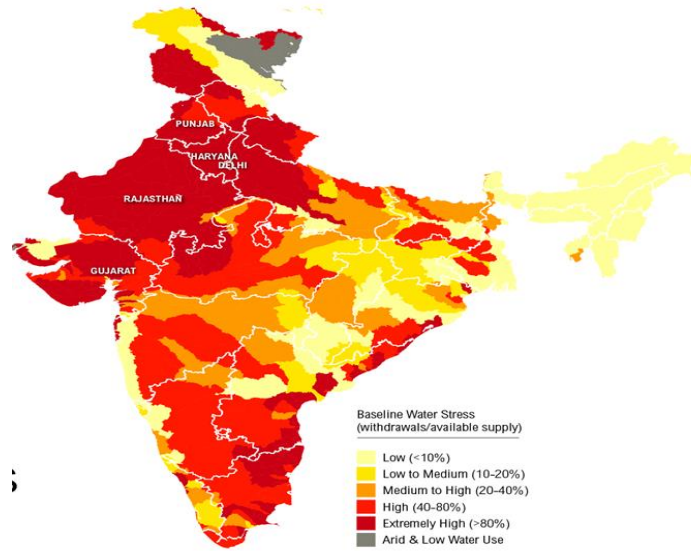
सदर शोध निबंधासाठी प्राथमिक व दुय्यम माहितीचा वापर केलेला आहे .प्राथमिक माहिती संशोधकांनी संकलित केलेली आहे. तर दुय्यम माहिती मध्ये पुस्तके संदर्भ ग्रंथ, मासिके, जिल्ह्याचे अहवाल इत्यादीचा वापर केलेला आहे.

भारतातील पाणी टंचाईची कारणे

1. **लोकसंख्येतील झपाट्याने वाढ (Rapid Population Growth):** भारताची लोकसंख्या 1951 मध्ये 36 कोटी होती, ती 2021 मध्ये सुमारे 138 कोटीवर पोहोचली आहे. या प्रचंड वाढलेल्या लोकसंख्येने पाणी स्रोतांवर प्रचंड ताण निर्माण केला आहे. लोकसंख्येच्या वाढीसोबतच पाण्याच्या मागणीत लक्षणीय वाढ झाली आहे, ज्यामुळे पाणी टंचाई वाढली आहे.
2. **भूजलाचा अतिवापर (Over-Exploitation of Groundwater):** भारतात भूजल हा पाण्याचा मुख्य स्रोत आहे. शेतकऱ्यांनी सिंचनासाठी भूजलाचा प्रचंड वापर केला आहे. केंद्रीय भूजल मंडळाच्या अहवालानुसार, भारतात सुमारे 60% सिंचन

भूजलावर अवलंबून आहे. परिणामी, अनेक भागात भूजल पातळी धोकादायक पातळीपर्यंत खाली गेली आहे, ज्यामुळे जलसंकट अधिकच गडद झाले आहे.

3. **असमान पर्जन्यमान वितरण (Uneven Distribution of Rainfall):** भारतात मान्सूनचा पाऊस पाण्याचा मुख्य स्रोत आहे, परंतु हा पाऊस नियमितपणे आणि एकसमानपणे पडत नाही. उदाहरणार्थ, पश्चिम बंगालमध्ये वर्षभरात सरासरी 1,500 मिमी पाऊस पडतो, तर राजस्थानमध्ये हा आकडा 300 मिमी पेक्षा कमी असतो. पावसाच्या या असमान वितरणामुळे काही भागात पुरेसा पाणी साठा होतो, तर काही भाग पाणीटंचाईने त्रस्त होतात.



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4. **नदी व जलस्रोतांचे प्रदूषण (Pollution of Rivers and Water Sources):** औद्योगिक आणि घरगुती कचऱ्यामुळे भारतातील अनेक नद्या आणि जलस्रोत प्रदूषित झाले आहेत. उदाहरणार्थ, गंगा नदीमध्ये रोज सुमारे 500 दशलक्ष लिटर प्रदूषित पाणी मिसळले जाते. या दूषित पाण्याचा वापर कमी होत असल्याने पाणी टंचाई अधिक तीव्र झाली आहे.
5. **शेतीतील पाणी वाया घालवणे (Water Wastage in Agriculture):** भारतातील पारंपारिक सिंचन पद्धतींमध्ये पाण्याचा मोठ्या प्रमाणात अपव्यय होतो. उदाहरणार्थ, बागायती पिकांसाठी पुरेसं पाणी मिळण्यासाठी शेतकरी अधिक पाणी वापरतात, ज्यामुळे भूजल स्रोत लवकर आटतात.
6. **औद्योगिकीकरण आणि शहरीकरण (Industrialization and Urbanization):** जलद औद्योगिकीकरण आणि शहरीकरणामुळे पाण्याची

मागणी प्रचंड वाढली आहे. 2021 च्या अहवालानुसार, भारतातील शहरांमध्ये 70% पेक्षा अधिक पाणी टंचाईचे संकट आहे. यामध्ये मुंबई, दिल्ली, बेंगलुरु आणि चेन्नई यांसारख्या शहरांचा समावेश आहे.

7. **वनसंपत्ती कमी होणे (Deforestation):** भारतातील वनसंपत्ती कमी होत आहे, ज्यामुळे पावसाचे पाणी जलस्रोतांमध्ये साठवले जात नाही आणि मृदा धूप होते. 2001 ते 2021 दरम्यान, भारताने सुमारे 1.6 दशलक्ष हेक्टर जंगल गमावले आहे, ज्यामुळे जलसंकट वाढले आहे.
8. **खराब जल पायाभूत सुविधा (Poor Water Infrastructure):** भारतात पाण्याच्या वितरणासाठी पुरेशा पायाभूत सुविधा नाहीत. गळती, चोरी आणि अकार्यक्षम पाणी व्यवस्थापनामुळे पाण्याचा अपव्यय मोठ्या प्रमाणात होतो. अंदाजे 40% पाणी गळतीमुळे

वाया जाते, ज्यामुळे शहरी भागात पाणी पुरवठा अडचणीत येतो.

9. **हवामान बदल (Climate Change):** हवामान बदलामुळे भारतातील मान्सून पद्धती अनिश्चित झाल्या आहेत. परिणामस्वरूप, पाऊस कमी प्रमाणात आणि अनियमितपणे पडत आहे, ज्यामुळे जलसंकट वाढत आहे. उदाहरणार्थ, 2022 मध्ये केरळमध्ये सरासरीपेक्षा 20% कमी पाऊस झाला, ज्यामुळे जलसंकट तीव्र झाले.
10. **भूपृष्ठ पाण्याचा कमी वापर (Underutilization of Surface Water):** भारतातील अनेक जलस्रोत योग्य प्रकारे वापरले जात नाहीत. उदाहरणार्थ, देशात सुमारे 91 मोठे जलाशय आहेत, परंतु तेवढा पाण्याचा उपसा होत नाही. परिणामी, अनेक भागांत पाणी टंचाई कायम आहे.
11. **भूजल पुनर्भरणाचा अभाव (Lack of Groundwater Recharge):** भूजलाचा उपसा करण्यावर भर असताना त्याचे पुनर्भरण होत नाही. पाण्याचे योग्य साठवण आणि पुनर्भरणाच्या अभावी भूजल पातळी कमी होते. परिणामी, जलसंकट अधिक तीव्र होते.
12. **पाण्याचे खाजगीकरण (Privatization of Water Resources):** काही भागात जल स्रोत खाजगीकरण झाल्यामुळे गरीब आणि दुर्बल वर्गाला पाणी उपलब्ध होत नाही. उदाहरणार्थ, झारखंड आणि ओरिसा राज्यांमध्ये मोठ्या खाण कंपन्यांनी पाण्याचे स्रोत खरेदी केले आहेत, ज्यामुळे स्थानिक लोकांना जलसंकटाचा सामना करावा लागतो.
13. **परंपरागत जलसंवर्धन पद्धतींची उपेक्षा (Neglect of Traditional Water Conservation Methods):** भारतातील परंपरागत जलसंवर्धन पद्धतींचा अपुरा वापर झाल्यामुळे जलस्रोतांचे संवर्धन करण्यात अडथळा येतो. उदाहरणार्थ, राजस्थानच्या पुष्कर क्षेत्रातील "बावडी" प्रणालीचा योग्य वापर न झाल्यामुळे जलस्रोत कोरडे पडले आहेत.
14. **पाण्याच्या वापरातील असमानता (Inequality in Water Usage):** समाजातील विविध गटांमध्ये पाण्याच्या वापरात मोठी असमानता आहे. संपन्न लोकसंख्या अधिक पाणी वापरते, तर गरीब आणि ग्रामीण भागातील लोकांना पुरेसे पाणी मिळत नाही. यामुळे पाणी टंचाई वाढते.
15. **पाण्याचा अकार्यक्षम वापर (Inefficient Use of Water):** घरगुती, औद्योगिक आणि शेती क्षेत्रांमध्ये पाण्याचा अकार्यक्षम वापर होत आहे. उदाहरणार्थ, काही शहरांमध्ये प्रतिव्यक्ती पाणी वापर 200

लिटरपेक्षा जास्त आहे, जे जागतिक सरासरीपेक्षा जास्त आहे.

16. **जलस्रोतांचे राजकीयकरण (Politicization of Water Resources):** अनेकदा जलस्रोतांच्या व्यवस्थापनात राजकारणाचा हस्तक्षेप होतो. नदी जलवाटपाच्या मुद्द्यावरून राज्यांमध्ये वाद निर्माण होतात, ज्यामुळे जलसंकटाचे समाधान मिळत नाही. उदाहरणार्थ, कावेरी नदीच्या पाणीवाटपावरून तामिळनाडू आणि कर्नाटक राज्यांमध्ये सतत तणाव असतो.
17. **पाण्याच्या किमतीतील विसंगती (Discrepancies in Water Pricing):** पाण्याचे किमती ठरवताना मोठी विसंगती आढळते. ग्रामीण भागातील शेतकऱ्यांना पाण्याचा पुरवठा स्वस्तात मिळतो, तर शहरी भागात पाण्याचे दर खूप जास्त असतात. यामुळे पाण्याच्या अयोग्य वापराला प्रोत्साहन मिळतो.
18. **पाण्याच्या अपव्ययाची सवय (Habitual Wastage of Water):** अनेक लोक पाणी वाया घालवण्याच्या सवयीचे शिकार झाले आहेत. पिण्याच्या पाण्याचे वापर अत्यधिक होतो आणि योग्य संवर्धनाच्या पद्धतींचा वापर केला जात नाही. परिणामी, जलस्रोत लवकरच आटतात.
19. **संस्थात्मक अकार्यक्षमता (Institutional Inefficiency):** पाणी व्यवस्थापनाशी संबंधित संस्थांची अकार्यक्षमता मोठ्या प्रमाणात आहे. राज्य आणि केंद्र सरकारांमधील ताळमेळाच्या अभावामुळे जलस्रोतांचे प्रभावी व्यवस्थापन होत नाही. यामुळे पाणीटंचाईची समस्या अधिक बिकट होते.
20. **नैसर्गिक आपत्ती (Natural Disasters):** पुर, दुष्काळ, चक्रीवादळ यांसारख्या नैसर्गिक आपत्तींमुळे पाणी व्यवस्थापन कठीण होते. उदाहरणार्थ, 2019 च्या बिहारच्या पुरामुळे जलस्रोत दूषित झाले आणि पिण्याच्या पाण्याची समस्या निर्माण झाली.

पाणीटंचाईवर मात करण्यासाठी उपाययोजना:-

1. **वर्तुळाकार जल अर्थव्यवस्था (Circular Water Economy):** वर्तुळाकार जल अर्थव्यवस्था म्हणजे पाण्याचा पुनर्वापर, पुनर्प्रक्रिया, आणि पुनर्निर्माण ह्यांचा समावेश असलेली प्रणाली आहे. ही प्रणाली उद्योग, शेती, आणि घरगुती पाणी वापराच्या सर्व क्षेत्रांमध्ये लागू केली जाऊ शकते. उदाहरणार्थ, सिंगापूरमध्ये पाण्याच्या पुनर्वापरासाठी "NEWater" तंत्रज्ञानाचा वापर केला जातो. त्यामुळे सिंगापूर 40% पाणी पुनर्प्रक्रियेद्वारे प्राप्त करते. अशा तंत्रज्ञानाच्या वापरामुळे जलस्रोतांवरील अवलंबित्व कमी होते आणि त्याच वेळी पाणी उपलब्धतेचे प्रमाण वाढते.

2. **पाणी-बचत तंत्र (Water-Saving Techniques):** ठिबक सिंचन (Drip Irrigation) आणि तुषार सिंचन (Sprinkler Irrigation) यासारख्या पाणी बचतीच्या तंत्रांचा अवलंब केल्यास शेतीमध्ये 50% पेक्षा अधिक पाण्याची बचत होऊ शकते. उदाहरणार्थ, राजस्थानमधील बागायती शेतीत ठिबक सिंचनाच्या वापरामुळे जलस्रोतांचा अपव्यय कमी झाला आहे आणि पीक उत्पादनात लक्षणीय वाढ झाली आहे. यामुळे शेतकऱ्यांचे उत्पन्न वाढले आहे, तसेच जलस्रोतांची शाश्वतता टिकून राहिली आहे.
3. **जनजागृती मोहिमा (Awareness Campaigns):** जलसंधारणाच्या महत्वाबद्दल जनजागृती निर्माण करण्यासाठी सरकारी व खाजगी संस्था विविध कार्यक्रम राबवतात. उदाहरणार्थ, महाराष्ट्र सरकारने "जलयुक्त शिवार" अभियान चालवले, ज्याद्वारे लोकांमध्ये जलसंधारणाची जाणीव वाढवली गेली. याच्या परिणामी, राज्यात पाणी साठवण क्षमतेत 1.5 लाख हेक्टरने वाढ झाली आहे. जनजागृतीमुळे लोकांच्या वर्तणुकीत बदल होऊन पाण्याचा अधिक शाश्वत वापर केला जातो.
4. **जल पायाभूत सुविधांमध्ये सुधारणा (Infrastructure Improvement):** जल वितरणाच्या पायाभूत सुविधांमध्ये सुधारणा करण्याची आवश्यकता आहे. सध्याच्या गळतीमुळे भारतात दरवर्षी 30-40% पाण्याचा अपव्यय होतो. नवीन तंत्रज्ञानाच्या साहाय्याने पाईपलाइन आणि कालवे यांचे अद्ययावत करणे आवश्यक आहे. उदाहरणार्थ, तामिळनाडू सरकारने पाणी वितरणासाठी आधुनिक तंत्रज्ञानाचा वापर करून गळती 10% पर्यंत कमी केली आहे, ज्यामुळे पाणी उपलब्धतेत लक्षणीय वाढ झाली आहे.
5. **हवामान अनुकूलन (Climate Adaptation):** हवामान बदलाच्या परिणामांना तोंड देण्यासाठी जलव्यवस्थापनाच्या योजनांत अनुकूलता आवश्यक आहे. उदाहरणार्थ, केरळमध्ये 2018 च्या पुरातनतर हवामान बदलाच्या अनुकूलतेसाठी नवीन जलव्यवस्थापन योजना लागू केल्या गेल्या. या योजनांमुळे पुढील पुराच्या परिस्थितीत पाण्याचे योग्य नियोजन करून जलस्रोतांचे संरक्षण करण्यात यश आले आहे.
6. **भूजलव्यवस्थापन (Groundwater Management):** भारतात 60% पाणी भूजलातून मिळवले जाते, ज्याचा अतिशय उपसा केल्यामुळे पाण्याच्या पातळीत लक्षणीय घट झाली आहे. भूजल पुनर्भरणाच्या पद्धतींमध्ये रेन वॉटर हार्वेस्टिंग (Rainwater Harvesting) आणि पर्जन्य जलसंधारण यांचा

- समावेश आहे. उदाहरणार्थ, गुजरातमधील सौराष्ट्र प्रदेशात भूजल पुनर्भरणासाठी रेन वॉटर हार्वेस्टिंग चा वापर केल्यामुळे पाण्याच्या पातळीत 5 मीटरने वाढ झाली आहे.
7. **वर्षावजल संधारण (Rainwater Harvesting):** वर्षावजल संधारणाच्या प्रणालीने पाण्याची उपलब्धता वाढवता येते. उदाहरणार्थ, चेन्नई शहराने वर्षावजल संधारण अनिवार्य केले आहे, ज्यामुळे शहरातील पाणी उपलब्धतेत 25% वाढ झाली आहे. या प्रणालीमुळे जमिनीतील पाण्याचा स्तर सुधारतो आणि पाण्याचा अपव्यय कमी होतो.
8. **जलस्रोतांचे पुनरुज्जीवन (Revival of Water Bodies):** नद्या, तलाव, आणि जलाशयांचे पुनरुज्जीवन हे जलसंधारणाचे महत्वाचे उपाय आहेत. उदाहरणार्थ, दिल्लीच्या यमुना नदीच्या पुनरुज्जीवन प्रकल्पाद्वारे नदीच्या पाण्याची गुणवत्ता सुधारण्यात आली आहे, ज्यामुळे नदीवरील अवलंबून असलेल्या लाखो लोकांना शुद्ध पाणी उपलब्ध झाले आहे.
9. **जल साक्षरता (Water Literacy):** पाण्याच्या महत्वाची जाणीव करून देण्यासाठी शालेय स्तरावर जल साक्षरता कार्यक्रम राबवले जातात. उदाहरणार्थ, महाराष्ट्रातील शाळांमध्ये जल साक्षरता अभियान राबवून विद्यार्थ्यांमध्ये जलसंधारणाच्या महत्वाची जाणीव करून दिली गेली आहे, ज्यामुळे स्थानिक पातळीवर पाण्याच्या वापरात सुधारणा झाली आहे.
10. **जल गुणवत्ता निरीक्षण (Water Quality Monitoring):** पाण्याच्या गुणवत्तेचे सतत निरीक्षण करणे आवश्यक आहे. उदाहरणार्थ, पंजाबमधील नद्यांच्या पाण्याचे दूषित करणाऱ्या घटकांचे नियमित निरीक्षण केल्यामुळे पाण्याच्या गुणवत्तेत सुधारणा करण्यासाठी तात्काळ उपाययोजना केल्या गेल्या आहेत.
11. **तांत्रिक नवकल्पना (Technological Innovations):** तांत्रिक नवकल्पना जसे की डिसॅलिनेशन (Desalination) आणि जल पुनःप्रक्रिया (Water Recycling) ह्या उपायांचा वापर करून पाण्याची उपलब्धता वाढवली जाऊ शकते. उदाहरणार्थ, गुजरातच्या कच्छ जिल्ह्यात डिसॅलिनेशन तंत्रज्ञानाद्वारे खाऱ्या पाण्याचे गोड्या पाण्यात रूपांतर करून 10 लाख लोकांना पिण्याचे पाणी उपलब्ध करण्यात आले आहे.
12. **शाश्वत शेती (Sustainable Agriculture):** शाश्वत शेती पद्धतींचा अवलंब करून पाण्याचा वापर कमी केला जाऊ शकतो. उदाहरणार्थ, पंजाबमधील

शेतकऱ्यांनी पारंपारिक तांदूळ लागवडीऐवजी कमी पाणी लागणाऱ्या पिकांचा अवलंब केल्यामुळे पाण्याच्या वापरात 30% बचत झाली आहे.

13. **औद्योगिक जल व्यवस्थापन (Industrial Water Management):** उद्योगांनी पाणी पुनर्प्रक्रिया तंत्रज्ञानाचा वापर करून जलसंपत्तीचा शाश्वत वापर करावा. उदाहरणार्थ, महाराष्ट्रातील काही उद्योगांनी पाण्याचे पुनर्प्रक्रिया केंद्रे उभारून त्यांच्या पाण्याच्या वापरात 40% बचत केली आहे.
14. **शहरातील जल व्यवस्थापन (Urban Water Management):** शहरांमध्ये जल व्यवस्थापनाचे प्रभावी उपाय राबवणे आवश्यक आहे. उदाहरणार्थ, बेंगळुरू शहराने पाण्याचे गळती दर 20% कमी करण्यासाठी जल वितरण प्रणालीमध्ये सुधारणा केली आहे, ज्यामुळे शहरातील पाणी उपलब्धतेत लक्षणीय वाढ झाली आहे.
15. **जनता सहभाग (Community Participation):** स्थानिक पातळीवर पाणी व्यवस्थापनात समुदायाचा सहभाग वाढवणे आवश्यक आहे. उदाहरणार्थ, राजस्थानच्या अलवर जिल्ह्यातील अरवरी नदीचे पुनरुज्जीवन स्थानिक समुदायांच्या सहभागामुळे शक्य झाले आहे, ज्यामुळे नदी पुन्हा वाहू लागली आणि जलस्रोतांची उपलब्धता सुधारली.
16. **प्राकृतिक संसाधनांचे संरक्षण (Natural Resource Conservation):** वनक्षेत्राचे संरक्षण करून जलस्रोतांचे व्यवस्थापन करणे आवश्यक आहे. उदाहरणार्थ, हिमाचल प्रदेशातील वनसंवर्धनाच्या योजनांमुळे जलस्रोतांचे संरक्षण होऊन पाण्याच्या उपलब्धतेत सुधारणा झाली आहे.
17. **सरकारी धोरणे (Government Policies):** सरकारने पाणी टंचाईवर मात करण्यासाठी शाश्वत जल व्यवस्थापन धोरणे तयार करावी. उदाहरणार्थ, "प्रधानमंत्री कृषी सिंचाई योजना" (PMKSY) च्या माध्यमातून भारत सरकारने जलसंधारणाचे प्रयत्न वाढवले आहेत, ज्यामुळे शेतीमध्ये पाण्याचा अपव्यय कमी झाला आहे.
18. **पारदर्शकता आणि उत्तरदायित्व (Transparency and Accountability):** जल व्यवस्थापनाच्या प्रक्रियेत पारदर्शकता आणि उत्तरदायित्व सुनिश्चित केले पाहिजे. उदाहरणार्थ, महाराष्ट्रातील "जलयुक्त शिवार" अभियानांतर्गत झालेल्या कामाची पारदर्शकता सुनिश्चित करण्यासाठी स्वतंत्र पद्धतीने ऑडिट केले गेले, ज्यामुळे जल व्यवस्थापनात सुधारणा झाली.

19. **मास मीडिया आणि तंत्रज्ञानाचा वापर (Use of Mass Media and Technology):**

जलसंधारणाबद्दल जनतेला माहिती देण्यासाठी मास मीडिया आणि डिजिटल तंत्रज्ञानाचा प्रभावी वापर करणे आवश्यक आहे. उदाहरणार्थ, पाणी बचतीसाठी "स्वच्छ जल क्रांती" मोहीम अंतर्गत डिजिटल माध्यमांचा वापर करून जनजागृती करण्यात आली, ज्यामुळे पाण्याचा शाश्वत वापर करण्याची जनजागृती वाढली.

20. **सार्वजनिक-खाजगी भागीदारी (Public-Private Partnerships):**

सार्वजनिक आणि खाजगी क्षेत्राच्या सहकार्याने जल संसाधनांच्या व्यवस्थापनासाठी आवश्यक संसाधनांची आणि कौशल्यांची देवाणघेवाण केली पाहिजे. उदाहरणार्थ, गुजरातमध्ये "सरदार सरोवर" प्रकल्पाच्या माध्यमातून सार्वजनिक-खाजगी भागीदारीतून जल व्यवस्थापनात मोठ्या प्रमाणात सुधारणा झाली आहे.

निष्कर्ष: (conclusion)

भारतातील पाणीटंचाई ही एक गंभीर समस्या असून ती देशाच्या सामाजिक, आर्थिक, आणि पर्यावरणीय बाबींवर परिणाम करत आहे. पाणीटंचाईची प्रमुख कारणे म्हणजे अनियमित पर्जन्य, जलस्रोतांचे कमी होत असलेले जलाशय, जल व्यवस्थापनाची कमतरता, आणि वाढती लोकसंख्या.

यामुळे जलवापराचा असमतोल निर्माण झाला आहे. कृषी, उद्योग, आणि घरगुती पातळीवर पाण्याचा अतिवापर होत असल्याने पाण्याचे संकट वाढत आहे. जलसंवर्धनाचे उपाय योग्यरित्या न केल्यास भविष्यात पाण्याची कमतरता आणखीनच तीव्र होण्याची शक्यता आहे. काही भागांमध्ये अतीपर्जन्यामुळे पूर येतो, तर काही भागांना सतत दुष्काळाचा सामना करावा लागतो. पाण्याचे असमान वितरण आणि साठवणूक यामुळे समस्या वाढत आहेत.

जलसंपदांच्या अप्रभावी व्यवस्थापनामुळे आणि भौगोलिक असमानतेमुळे देशातील काही भागांमध्ये जलसंकट अधिक तीव्र झाले आहे.

जलसंवर्धनाच्या उपाययोजना जसे की पाण्याचे पुनर्वापर, जलसंधारण, आणि जलस्रोतांचे पुनरुत्थान यावर भर देणे आवश्यक आहे.

अशा प्रकारे, पाणीटंचाईच्या समस्येवर उपाययोजना करण्यासाठी जलसंवर्धनाचे प्रभावी धोरण आणि जनजागृती हवी आहे. अन्यथा, आगामी काळात पाण्याचे संकट अधिकच वाढण्याची शक्यता आहे.

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शाश्वत विकास आणि ठाणे शहरातील पर्यावरण

प्रा. अनिल महादेव बोराडे

पी.डी.कारखानीस कला व वाणिज्य महाविद्यालय, अंबरनाथ मुंबई विद्यापीठ

Corresponding Author- प्रा. अनिल महादेव बोराडे

Email- boradeanilel@gmail.com

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गोष्टावारा:

शाश्वत विकास ही संकल्पना असा विकास सुचवते जो वर्तमान पिढ्यांच्या गरजा पूर्ण करते, परंतु भविष्यातील पिढ्यांच्या गरजा पूर्ण करण्याच्या क्षमतेला धोका न आणता. या संकल्पनेत पर्यावरणीय, सामाजिक व आर्थिक घटकांचा समतोल साधला जातो, ज्यामुळे दीर्घकालीन आणि सर्वसमावेशक विकास साध्य होतो.

ठाणे शहरातील शाश्वत विकासामध्ये पर्यावरणीय आव्हाने आहेत. त्यामध्ये ठाण्यातील तलाव आणि नद्या, उपवन तलाव आणि ठाणे खाडी, प्रदूषणामुळे प्रभावित होत आहेत. औद्योगिक व गृहनिर्माण क्षेत्रांतून येणाऱ्या सांडपाण्याचा योग्य शुद्धीकरण न झाल्यामुळे जल प्रदूषण वाढत आहे. वाहनांची संख्या व औद्योगिकीकरण वाढल्याने प्रदूषणामुळे हवेची गुणवत्ता कमी झाली आहे. यामुळे नागरिकांच्या आरोग्यावर परिणाम होतो आहे. ठाणे शहरातील भूखंडाचा वाढता विकास, निसर्गसंपत्तीचा नाश व झाडांची मोठ्या प्रमाणात कत्तल होऊन जैवविविधता धोक्यात येत आहे.

ठाणे शहरात शाश्वत विकासाच्या उपाययोजनांमध्ये नैसर्गिक संसाधनांचे जतन करणे आवश्यक आहे. ठाणे महानगरपालिका जलवायू परिणामांना तोंड देण्यासाठी विविध हरित योजना राबवते, ज्यात नूतनीकरणीय ऊर्जा स्रोतांचा वापर, पाणी पुनर्वापर प्रणाली व कचरा व्यवस्थापन सुधारणा आहेत. ठाणे शहराने हरित पट्टे व उद्यानांची संख्या वाढवली आहे. पर्यावरणाचे रक्षण करताना नागरिकांसाठी स्वच्छ, हिरवे व आरोग्यदायी सार्वजनिक क्षेत्रे विकसित करण्यावर भर दिला जातो. ठाणे शहरात नागरिकांना पर्यावरणीय संरक्षणासाठी शिक्षित करणे व शाश्वत विकासाच्या प्रक्रियेत सामील करणे महत्त्वाचे मानले जाते. हरियाली, ह्रोप, पर्यावरण दक्षता मंच, जिज्ञासा व इको फ्रेण्डली उद्योग या स्वयंसेवी संस्था आणि पर्यावरणवादी संघटनांचे ठाण्यातील शाश्वत पर्यावरणीय संरक्षणात योगदान दिले आहे. शाश्वत विकासाच्या संकल्पना अंगीकारून, ठाणे शहर भविष्यात पर्यावरणपूरक शहर म्हणून विकास करण्याच्या दिशेने पुढे जात आहे.

कीवर्ड: ठाणे शहरातील पर्यावरणीय आव्हाने व जनजागृती, ठाणे शहरातील नैसर्गिक संसाधन व्यवस्थापन, ठाणे शहरातील, जैवविविधता संवर्धन, ठाणे शहरातील शहरीकरण आणि पर्यावरण

प्रस्तावना :

शाश्वत विकास म्हणजे पर्यावरणीय अथवा नैसर्गिक साधन सामुग्रीची कोणतीही हानी न होता केलेल्या विकास होय. शाश्वत विकास या संकल्पनेला असा विकास अभिप्रेत आहे जो वर्तमान पिढ्यांच्या गरजा पूर्ण करतो, परंतु भविष्यातील पिढ्यांच्या गरजा पूर्ण करण्याच्या क्षमतेला धोका न आणता विकास साध्य करतो. या संकल्पनेत पर्यावरणीय, सामाजिक, आणि आर्थिक घटकांचा समतोल साधला जातो, ज्यामुळे दीर्घकालीन आणि सर्वसमावेशक शाश्वत विकास साध्य होतो. ठाणे शहरातील पर्यावरण संरक्षण आणि संवर्धनासाठी समुदायांसाठी संघटना स्थापित करण्याचा मुख्य उद्दिष्ट वातावरणीय संवर्धन, जलवायू परिवर्तनाच्या प्रतिक्रिया संबंधित शिक्षण आणि समुदायाच्या आधावर असलेल्या प्रभावांचे समाधान करणे गरजेचे आहे. संघटना एक सामुदायिक संगठन म्हणून

स्थापित केली पाहिजे, ज्यात स्थानीय लोकांचे सहभागीत्व आणि समर्थन असेल. ह्या संघटनेत स्थानीय समुदायातील युवक, स्थानिक जनता आणि अन्य स्थानिक समाजाचे सदस्य सहभागी होणे आवश्यक असते. संघटनेच्या कामाची सार्वजनिकता करण्याची योजना आणि कार्यक्रम तयार केले पाहिजेत, जसे की सामुदायिक संमेलन, वार्षिक अहवाल आणि सामुदायिक सभा या प्रकारे, ज्यामध्ये सामुदायिक सहभागीत्व, क्रियाशीलता आणि पर्यावरणीय संरक्षणाचे महत्त्व पर्यावरणाशी संबंधित कार्य करणाऱ्या संघटनांचे आहे. त्या ठाणे शहरातील पर्यावरणीय शाश्वत विकासासंबंधित कार्य करणाऱ्या संघटनांचे कार्य पुढीलप्रमाणे पाहता येतील.

संशोधनाची उद्दिष्टे :

शाश्वत विकास म्हणजे पर्यावरणीय, सामाजिक आणि आर्थिक विकासाच्या संतुलिततेसाठी ठरवलेले लक्ष्य. मुख्यतः शहराच्या समतोल आणि सर्वसमावेशक विकासावर लक्ष केंद्रित केली जातात. यामध्ये खालील प्रमुख उद्दिष्ट्यांचा समावेश आहे:

१. नागरीकीकरणाच्या चुकीच्या प्रक्रियेमुळे ठाणे शहरातील पर्यावरणीय साधन सामुग्रीची नाश झाला आहे. शहराचा शाश्वत विकास करत असताना नैसर्गिक साधन सामुग्रीचे जतन करणे.
२. ठाणे शहरातील दारिद्र्य निर्मूलन, पोषणयुक्त सुरक्षित अन्न, आरोग्य सेवा व गुणवत्तापूर्ण शिक्षणाच्या सुविधा उपलब्ध करणे.
३. ठाणे शहरातील महिलांच्या हक्कांचे संरक्षण करून लिंग समानतेसाठी प्रयत्न करणे.
४. ठाणे शहरातील जनतेसाठी स्वच्छ पाण्याची सुविधा उपलब्ध करणे.
५. ठाणे शहरातील पर्यावरण रक्षणासाठी जल प्रदूषण, हवा प्रदूषण, वायू प्रदूषण, सुरक्षित व टिकाऊ ऊर्जा स्रोतांचा, नैसर्गिक संसाधनांचे संरक्षण व पर्यावरणीय संतुलन अभ्यासणे.
६. ठाणे शहरातील जनतेसाठी सर्व समावेशक शाश्वत आर्थिक विकास साधणे.

संशोधन कार्यपद्धती :

प्रस्तुत संशोधनात ऐतिहासिक संशोधनपद्धतीचा वापर करण्यात आला. संशोधनासाठी संबंधित प्राथमिक आणि दुय्यम साधनांचा प्रसंगानुरूप आवश्यक त्या ठिकाणी आधार घेतलेला आहे. प्रस्तुत संशोधनाच्या पाठीशी असलेल्या सैद्धांतिक संकल्पना स्पष्ट करण्यासाठी वर्णनात्मक, विक्षेपणात्मक पद्धती व चिकित्सक अभ्यास पद्धतीने संशोधनात्मक अध्ययन केले आहे.

शाश्वत विकासात पर्यावरणाशी संबंधित कार्य करणाऱ्या संघटना:

शहरीकरणामुळे हरित क्षेत्र कमी झाले. रिअल इस्टेट विकास करत असताना मॉल्स आणि निवासी संकुलांच्या उभारणीसाठी झाडे मोठ्या प्रमाणात तोडली गेली. औद्योगिक आणि व्यावसायिक क्षेत्राच्या वाढीमुळे हरित क्षेत्रांचे नष्ट होणे पर्यावरणासाठी हानिकारक आहे. रस्ते आणि इन्फ्रास्ट्रक्चर प्रकल्प राबविताना महामार्ग आणि फ्लायओव्हरच्या बांधकामासाठी वृक्षतोड करण्यात आली. नवीन ट्रान्सपोर्ट नेटवर्कमुळे वनक्षेत्रांचे नुकसान झाले. औद्योगिक पार्क आणि कारखान्यांसाठी जमिनीचा वापर, ज्यामुळे नैसर्गिक वनस्पतीची मोठ्या प्रमाणात हानी झाली. या कारणांमुळे ठाणे शहरातील हरित क्षेत्र कमी होत गेले आहे. हे हरित क्षेत्र वाढवीत असताना शाश्वत विकास हा महत्वाचा घटक आहे. शाश्वत विकासासाठी ठाणे शहरातील पर्यावरणीय संघटनांच्या कामाची दखल घेणे आवश्यक ठरते. त्या ठाणे शहरातील पर्यावरणाशी संबंधित कार्य करणाऱ्या संघटनांचे कार्य पुढीलप्रमाणे पाहता येतील.

प्रा. अनिल महादेव बोराडे

हरियाली :

“ठाण्याच्या सृष्टीसौंदर्याशी समरस होऊन तरुण पिढीलाही आपल्याबरोबर घेऊन जाणारे पुनर्मांगी हेच हरियालीचे प्रमुख आहेत. येऊरच्या डोंगराला हिरवेगार करून त्यांनी आपल्या कार्याची सुरुवात केली. त्यानंतर ठाणे शहरातील तलाव सुशोभीकरण, पर्यावरणरक्षण, संजय गांधी राष्ट्रीय उद्यानातील कारवीचा फुलोरा, नव्या युगाची नवी वटपौर्णिमा, निसर्ग पूजा आणि वृक्ष अभियान, ठाण्यातील नाल्यांवरील बांधकाम, यामुळे भविष्यकालीन ठाण्यावरील दुष्परिणाम इत्यादी विविध घटकांबद्दल त्यांनी भरीव कामे केली आहेत.”¹ त्यांचे वैशिष्ट्य म्हणजे तरुणांनाही लाजवेल असा त्यांचा उत्साह आहे. त्यामुळे वृक्षदिंडी, पक्षी निरीक्षणासाठी येऊरच्या जंगलात उभारलेल्या झोपड्या यांसारखे प्रकल्प, तसेच शाळा-महाविद्यालयीन विद्यार्थ्यांना एन.एस.एस. मार्फत भिवंडी, खारिगाव, टिकुजीनी वाडी येथील वृक्षलागवड कार्यक्रम चालू आहेत. भविष्यातील दृष्टीने निसर्ग शिक्षण व निसर्ग संस्कार व्हावे यासाठी आदर्श वन योजनेची वाटचाल सुरू आहे.

होप :

होप व हरियाली या ठाण्यातील जुन्या संस्था मानल्या जातात. निसर्ग परिचय, निसर्गप्रेमी व्यक्तींचा परिवार वाढवण्याचे काम त्या करीत आहेत. यातून कळव्याच्या खाडी जवळील उद्यान उभे राहिले आहे. या उद्यानात कळवा ते साकेत संकुला पर्यंत खाडीच्या किनाऱ्याचे पूल नंदनवनात रूपांतर करण्याची योजना आहे. तिथे डम्पिंग ग्राऊंडवर जिल्ह्यातील पहिले पक्षी अभयारण्य साकारत आहे. येथे पक्षी निरीक्षणाच्या आणि अभ्यासाच्या सोयीसह योगा, व्यायाम, जॉगिंग ट्रॅक, वॉटर फ्रंट, मॅग्नो आदी मनोरंजनात्मक सांस्कृतिक सुविधा निर्माण करत आहे.

पर्यावरण दक्षता मंच :

कचरा निर्माण करण्याची शक्ती, समृद्धी सोबत वाढत जाते. परंतु कचऱ्याची विल्हेवाट लावण्याची निसर्गाची शक्ती दिवसेंदिवस कमी होत जाते. हे ओळखून ठाणे महानगरपालिका व पर्यावरण दक्षता मंच यांनी कचरामुक्ती प्रकल्प संदर्भात एक आव्हान पत्र जाहीर केले.

त्यानुसार ओला व सुका कचरा वेगळा करून त्याची विल्हेवाट लावून पर्यावरणाचे रक्षण करण्याचा हा हेतू होता. ठाण्यातील वाढती लोकसंख्या व पर्यायाने वाढणारा कचरा, त्याने होणारे प्रदूषण याला पायाबंद घालण्यासाठी कचऱ्याची ओला व सुका अशी विभागणी करून त्याची विल्हेवाट लावणे. तसेच वैद्यकीय कचऱ्याची शास्त्रोक्त पद्धतीने विल्हेवाट लावण्यासाठीची मोहीम पर्यावरण दक्षता मंचने हाती घेतली आहे.

जिज्ञासा :

“जिद्द, ज्ञान आणि साहस या त्रिसूत्रीवर आधारलेली जिज्ञासा ही संस्था गेली १५ वर्षे शालेय विद्यार्थ्यांच्या सर्वांगीण विकासासाठी विविध उपक्रम सातत्याने राबवत आहे. त्यात जिज्ञासा विज्ञान मंच, जिज्ञासा सैनिक शिक्षक वर्ग, हिमालय साहस शिबीर, जिज्ञासा कला मंच, शिक्षक पाठ्यकृती योजना, कै. चिंतामणी देशमुख, कै. दिलीप महाजन स्मृती व्याख्यानमाला इत्यादींचा समावेश आहे.”² भविष्यकालीन संस्थेच्या वाटचालीत आदिवासी विद्यार्थ्यांना सहभागी करून घेणे. हुशार आणि गुणी विद्यार्थ्यांसाठी शिष्यवृत्ती देणे या योजना आहेत.

ठाण्यातील इको फ्रेण्डली उद्योग:

“दिनकर दत्तात्रय दामले हे ठाण्याचे जेष्ठ सामाजिक कार्यकर्ते होते. ज्या वयात माणसे निवृत्तीची भाषा बोलू लागतात त्यावेळी त्यांनी आपल्या आयुष्याची नवी इनिंग सुरू केली. वयाच्या पन्नाशीत नवा उद्योग उभारला. उद्योगही असा निवडला की ज्याला पर्यावरणीय मोल आहे. अन् तो पालिका महापालिका आदि स्थानिक स्वराज्य संस्थांशी निगडित आहे. असा पारंपरिक शववाहिनीला पर्याय म्हणून गॅसवर आधारित इको फ्रेण्डली शववाहिनीचा आगळा-वेगळा उद्योग निर्माण करण्यात त्यांची सामाजिक दृष्टी महत्त्वाची मानावी लागेल.”³ मृतदेह जाळण्यासाठी मोठ्या प्रमाणावर लाकडे लागतात. लाकडे मिळण्यासाठी वृक्षतोड करावी लागते. वृक्षतोडीमुळे पर्यावरणाचा-हास होतो. लाकडाचे सतत वाढणारे भाव, ओल्या लाकडांमुळे पावसाळ्यात स्मशानात लोकांना होणारा त्रास शिवाय त्यामुळे होणारे प्रदूषण आणि लोकसंख्या वाढीचा भस्मासूर इ. अनेक कारणांमुळे त्यांनी हा नाविन्यपूर्ण उद्योग सुरू केला. “आज देशात त्यांच्या ७० ठिकाणी इकोफ्रेण्डली शववाहिन्या आहेत. महाराष्ट्र व मध्यप्रदेश यांनी त्यांच्या उद्योगाला साथ दिली आहे. ठाणे, मुंबई, सांगली, मिरज, कोल्हापूर, इचलकरंजी, नाशिक, नागपूर, इंदूर व रामपूर इ. ठिकाणी या उद्योगाने आपले बस्तान बसविले आहे. डिझेल, एलपी. जी. पाईप नॅचरल गॅस यावर या शववाहिन्या चालतात. गॅसवर आधारित शववाहिनीमुळे आजवर ५ लाख वृक्षांची तोड वाचली असून त्यामुळे अनेक पर्यावरणीय फायदे होऊन शाश्वत विकासास मदत होत असल्याचे निष्पन्न झाले आहे.”⁴ लाकडांमुळे जलप्रदूषण थांबले आहे. होणारे हवेतील कार्बन डायऑक्साईडचे प्रमाण या शववाहिन्याच्या वापरामुळे कमी होण्यास मदत झाली आहे.

ठाणे शहरात औद्योगिकीकरण घडून आले परंतु त्यामुळे शहरात पर्यावरणीय प्रदूषणाची समस्या उदभवली. वायू प्रदूषणामुळे औद्योगिक कारखान्यांमधून निघणाऱ्या धुरामुळे वायू प्रदूषण वाढले. वाहनांच्या संख्येत वाढ झाल्याने हवेतील प्रदूषक कणांची वाढ झाली.

कारखान्यांच्या धुरामुळे हवेची गुणवत्ता खालावली, ज्यामुळे स्थानिक आरोग्यावर परिणाम झाला. जल प्रदूषणामुळे कारखान्यांमधून निघणारे रासायनिक पाणी नदी आणि तलावांमध्ये सोडल्याने जलप्रदूषण झाले. ठाणे-बेलापूर औद्योगिक क्षेत्रातील रासायनिक आणि औषधनिर्माण कंपन्यांमुळे नद्यांमध्ये रासायनिक कचरा मिसळला, ज्यामुळे जलप्रदूषण झाले. घनकचऱ्याचा अयोग्य व्यवस्थापनामुळे पाण्याचे स्रोत दूषित झाले. ठाणे खाडी आणि आसपासच्या क्षेत्रांतील जैवविविधतेला धोका निर्माण झाला. ध्वनी प्रदूषणामुळे वाहतुकीच्या वाढत्या प्रमाणामुळे आणि औद्योगिक यंत्रसामग्रीमुळे आवाज प्रदूषणात वाढ झाली. या सर्व घटकांनी ठाणे शहराच्या पर्यावरणीय परिस्थितीवर नकारात्मक परिणाम घडून आलेला दिसतो. जैवविविधतेवर परिणाम झाला, वायुप्रदूषण आणि उष्णतेत वाढ झाली. या बदलांमुळे ठाण्याच्या पर्यावरणावर नकारात्मक परिणाम झाले.

निष्कर्ष :

१. नागरीकीकरणाच्या चुकीच्या प्रक्रियेमुळे ठाणे शहरातील पर्यावरणीय साधन सामुग्रीची नाश झाला आहे.
२. शहराचा शाश्वत विकास करत असताना नैसर्गिक साधन सामुग्रीचे जतन व संवर्धन करणे आवश्यक आहे.
३. ठाणे महानगराच्या विकासासाठीच्या भविष्यातील योजनांमध्ये लोकांना सामील करून घेण्यामध्ये ठाण्यातील स्थानिक संघटनांचे शाश्वत विकासातील योगदान महत्त्वपूर्ण आहे.
४. विविध शहरातील प्रदूषणाची पातळी वाढत असलेल्या आजच्या काळात ठाणे शहरातील विविध पर्यावरणीय संस्थांचे शाश्वत विकास व पर्यावरण संवर्धनार्थ करत असलेले कार्य अत्यंत मौलिक स्वरूपाचे आहे.
५. दारिद्र्य निर्मूलन, पोषणयुक्त सुरक्षित अन्न, आरोग्य सेवा व गुणवत्तापूर्ण शिक्षणाच्या सुविधा उपलब्ध केल्याने ठाणे शहराचा शाश्वत विकास सहज शक्य आहे.
६. ठाण्यातील इको फ्रेण्डली उद्योगांसारख्या उपक्रमांमुळे शहराचा शाश्वत विकासाकडे वाटचाल सहज शक्य आहे.

संदर्भ ग्रंथ:

१. दळवी दाऊद, समर्थ ठाणे २०२०-वेध ठाण्याच्या भविष्याचा, समर्थ भारत व्यासपीठ, ठाणे, २००८, पृ. २१९.
२. चिटणीस शुभा, तेजोनिधी, शारदा प्रकाशन, ठाणे. पृ. ४१.
३. ठाण्यातील विविध सामाजिक संस्थांच्या प्रश्नावली २०७.
४. नेलेंकर श्री.वा., ठाणे नगरपालिका ते महानगरपालिका (१८६३ ते २०१६), व्यास क्रिएशन्स, ठाणे, फ्रेब्रुवारी २०१७, पृ. १८२

मराठवाड्याच्या पाणी प्रश्नावर जल व्यवस्थापन एक शाश्वत पर्याय (विशेष संदर्भः शेंबोलीगावचे जलव्यवस्थापन)

सुलक्षणा विठ्ठल भोसले¹, प्रा. डॉ. परमेश्वर पौळ²

¹संशोधक, भूशास्त्र विभाग, एस. आर. टी. विद्यापीठ, नांदेड

²भूगोल विभाग, शंकराच चव्हाण महाविद्यालय, अर्धापूर जि. नांदेड.

Corresponding Author- सुलक्षणा विठ्ठल भोसले

Email: rsingle75@gmail.com

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सारांशः

पाणी पृथ्वीवरील सर्वात महत्वाची संपदा आहे. सजीव सृष्टीची उत्पत्ती पाण्यामुळे झाली, सजीव प्राणीमात्रांच्या जीवनात प्राणवायू नंतर पाण्याचा क्रम लागतो. म्हणूनच पाण्याला जीवन असे संबोधले आहे. पाणी हा नैसर्गिक स्रोत असला तरी त्याचे असमान वितरण, वाढती मागणी व व्यवस्थापनाच्या अभावामुळे सध्या त्याची दुर्मिळता व दुर्भिक्ष्य जाणवू लागली आहे. जगात सध्या निम्न्या पेक्षा अधिक राष्ट्रे पाणीटंचाईने त्रस्त आहेत. जागतिक बँकेचे जलतज्ञ फॅकनमार्क यांच्या निकषांनुसार प्रत्येक व्यक्तीला सर्वसाधारण वर्षभरात १७०० घन मीटर एवढे पाणी उपलब्ध पाहिजे. सध्या जगात सुमारे ५० राष्ट्रांत दरडोई फक्त १००० घन मीटर एवढे पाणी उपलब्ध आहे. महाराष्ट्र राज्य प्रगतीशील राज्य म्हणून ओळखले जात असले तरी दुष्काळाच्या प्रश्नावर आदयाप राज्याला विजय मिळविता आला नाही. सध्या महाराष्ट्रात एकूण ३२६७ धरणात ४८७०५ द.घ मीटर पाण्याची साठवण क्षमता निर्माण केली आहे, तरी पण केवळ एकूण लागवडी क्षेत्राच्या २२% सिंचन क्षमता महाराष्ट्रात विकसित झाले आहे. महाराष्ट्रात भारताच्या एकूण प्रकल्पाचा मोठा वाटा आहे. शिवाय त्याचे वितरण समन्यायी तत्वानुसार होत नसल्याने प्रादेशिक वाद उद्भवता दिसतात. याचच अर्थ पाण्याचे जलव्यवस्थापन योग्यरीत्या केले जात नाही. याचा सर्वात जास्त फटका मराठवाडा हा विभागाला बसला आहे. मराठवाड्यातील पाणी समस्येवर पाणी व्यवस्थापन हाच शाश्वत पर्याय आहे हे शेंबोलीच्या जलव्यवस्थापनातून सिद्ध होते. शेंबोली प्रमाणे महाराष्ट्रातील संपूर्ण गावांचा पाणी ताळेबंद, जलसाक्षरता वाढून डॉ. परमेश्वर पौळ यांच्या जलव्यवस्थापन पद्धतीचा वापर केला तर आणि गावाचा शाश्वत विकास होईल.

प्रस्तावना (Introduction):

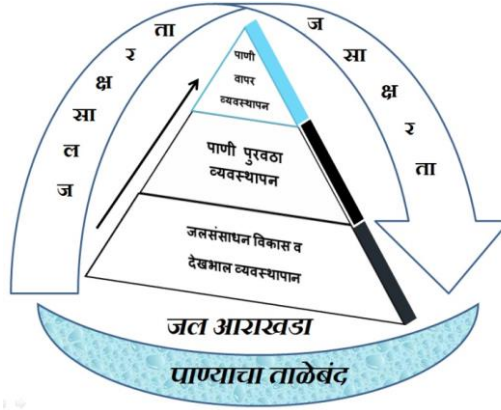
मराठवाडा हा विभाग तुटीच्या भागात येतो. येथे दरडोई ४६३ घन मीटर एवढे पाणी उपलब्ध आहे. सध्या या भागाला भयंकर अशा पाणीटंचाईला तोंड द्यावे लागते. येथे पडणारा सरासरी पाऊस ७०० ते ८०० मी.मी. इतकाच आहे शिवाय तो केवळ ४६ दिवसच तोही १५ ते २० तासातच पडूज जातो. हा लोकसंख्यांच्या गरजे पेक्षा कमी तो ही वर्षातील ८७६० तास पुरवण्यात जलव्यवस्थापनाच्या कसोटीत आपण कमी पडलो. एखाद्या प्रदेशात किंवा ठिकाणी कमी वेळात, कमी खर्चात योग्य नियोजन करून उपलब्ध पाण्याचा समान वापर करणे म्हणजेच जलव्यवस्थापन होय. मराठवाड्याचे जलव्यवस्थापन अवघड असले तरी ते शक्य आहे. या पार्श्वभूमीवर केसस्टडी करण्यासाठी शेंबोलीगावाचे जलव्यवस्थापन हा विषय अभ्यासासाठी निवडला आहे.

१) उद्दिष्टे:

- जलव्यवस्थापनासाठी शेंबोली गावाचा पाण्याचा ताळेबंद तयार करणे.

- गावातील पाण्याची उपलब्धी, मागणी व तुट इत्यादीचे अध्ययन करणे.
- गावातील जलव्यवस्थापनाची उपयुक्तता तपासणे.
- पाणीटंचाईवर लोकसहभाग व जलसाक्षरतेचे महत्त्व स्पष्ट करणे.

२) माहितीचे स्रोत व संशोधन पद्धती : शोध निबंधासाठी गावाचा सर्वे, निरीक्षण, मुलाखत या प्राथमिक स्रोतांचा व जनगणना २०११, ग्रामपंचायत अहवाल २०१७-१८, तालुका कृषी विभाग अहवाल २०१७-१८ या दुय्यम स्रोतांचा उपयोग केला आहे. या संशोधनात खालील संशोधन पद्धतीचा वापर करण्यात आला आहे. गावचे जल आरोग्य ठरविण्यासाठी महाराष्ट्र शासनाने तयार केलेली प्रमाणित पद्धत. पाण्याचा ताळेबंद तयार रण्यासाठी महाराष्ट्र शासनाने तयार केलेली पद्धत. डॉ. परमेश्वर पौळ यांची जलसंसाधन विकास देखभाल, पाणी पुरवठा व पाणी वापर या तीन टप्प्यांतील पाण्याच्या ताळेबंद व जलसाक्षरता जलव्यवस्थापनपद्धत.



आकृती क्र. १ डॉ. परमेश्वर पौळ यांची जलव्यवस्थापन पद्धत.

३) अभ्यास क्षेत्र : शोध निबंधासाठी मराठवाडा विभागातील नांदेड जिल्ह्यात मुदखेड तालुक्यातील शेंबोली हे गाव निवडले आहे. गावाचे भौगोलिक क्षेत्रफळ ७३७ हेक्टर आहे. येथे मृदा काळी-खोल, काही ठिकाणी गाळयुक्त आहे. येथील सरासरी पर्जन्य ९५० मी.मी. आहे. या ठिकाणचे हिवाळ्यात तापमान १५° से. ते २५° से. तर उन्हाळ्यात ३५° से. ते ४२° से.

असते येथील लोकसंख्या २७३९ असून येथील प्रमुख व्यवसाय शेती हा आहे.

४) विवेचन व स्पष्टीकरण: मराठवाड्यातील पाणी टंचाईवर उपाय म्हणून सुरवाती पासून गरज पडली की केवळ जल साठे निर्माण केले गेले ते ही पाण्याचा ताळेबंद न करता. शिवाय जलसाक्षरतेचा अभावामुळे निर्माण जल साठ्यातील पाण्याचे व्यवस्थापन योग्य रित्या केले गेले नाही.

सारणी क्र. १ महाराष्ट्रातील निर्मित सिंचन क्षमता व प्रत्यक्ष सिंचन याचे प्रमाण

अनु. क्र.	विभाग	पेरणी क्षेत्र लक्ष हेक्टर	निर्मित क्षमता		सिंचित क्षेत्र		
			लक्ष हेक्टर	%	लक्ष हेक्टर	निर्मित क्षमते %	लागवड हेक्टर क्षेत्राशी %
१	मराठवाडा	५६.४४	१०.५१	१८.६	२.७६	२६.२	४.९
२	विदर्भ	५७.०३	१०.७७	१९.९	४.४१	४०.९	७.७
३	ऊर्व. महाराष्ट्र	९८.५२	२६.१०	२६.५	११.२४	४३.०	११.४
	महाराष्ट्र	२१२	४७.३८	२२.३४	१८.४१	३८.८	८.७

सारणीत पाहिल की लक्षात येते मराठवाड्यातील प्रकल्पासह महाराष्ट्रात प्रकल्पाच्या निर्मित सिंचन क्षमतेच्या ४५ % पेक्षा कमी व मराठवाड्यात तर २६.२ % प्रत्यक्षात सिंचन होते. याचा अर्थ पाण्याचा पूर्ण वापर होत नाही. मोठ्या प्रमाणात पाण्याची गळती, चुकिचे पीक प्रारूप, जास्तीचा पाणी वापर व यातून होणारे वाष्पीभवन यामुळे पाणी वाया जाते. कामपुरते पाणी असताना देखील पाण्याचा पर्याप्त वापर होत नाही म्हणूनच मराठवाडा दुष्काळ वाढा म्हणूनच जगाला परिचीत झाला आहे. संपूर्ण महाराष्ट्राचा खोरे निहाय ताळेबंद करून विभागाचे भौगोलिक घटक व लोकसंख्यानुरसार समतुल्य पाण्यासाठी प्रकल्पाची निर्मिती व देखभाल होणे गरजेचे होते. आता यात राज्य व विभागीय पातळी बरोबरच गावपातळी पासून पाण्याचे व्यवस्थापन केले तर मराठवाड्यातील पाणी टंचाईवर तो शास्वत पर्याय होऊ शकेल याची पडताळणी शेंबोली गावातील उपलब्ध असलेल्या पाण्याचे जलव्यवस्थापन डॉ. पौळ यांच्या विकसित केलेल्या तीन टप्प्यात विभागणी करून विवेचन केले आहे.

अ) जलसंसाधन विकास व देखभाल व्यवस्थापनातून पाण्याची उपलब्धी: जल साठे निर्माण करताना भौगोलिक व सामाजिक घटकाला विचारात घेऊन पाण्याच्या

ताळबंदानुसार जलसाठ्याचे ठिकाण, प्राकार, संरचना, आकाराची निवड करावी लागते जेणे करून पाण्याचा पर्याप्त वापर करता येईल. शेंबोली गावात २०१८-१९ या वर्षात १०४३ मी.मी. प्रजन्य ७६७.१९ क्षेत्रात पडल्यामुळे ७६८८.८९ टी.सी.एम. पाण्याची उपलब्धी झाली. त्यापैकी ६६१० टी.सी.एम पाणी वापरण्याची साठवणक्षमता गावात निर्माण केली आहे. शिवाय या गावात इसापूर धरणाचे ३०१४ टी.सी.एम पाणी बाहेरून उपलब्ध होते. असे एकूण ९६२४ टी.सी.एम पाण्याचे गावाला उपलब्धी होते. या गावात पाण्याची साठवण करण्यासाठी जलसंसाधन विकास व देखभाल व्यवस्थापनासाठी खालील कामे केले आहेत.

१) नाला रुंदीकरण : शेंबोलीगावचे एकूण भौगोलिक क्षेत्र ७३७ हेक्टर आहे. या गावाच्या पूर्वे बाजूला गावच्या जवळून नाला जातो तो ५ कि.मी लांब आहे. तो नाला काळाच्या ओघात नष्ट झाला होता. लोकसहभागातून नाल्याचे पुनर्जीवन करण्यात आले. नाला हा २० फूट रुंद ३ कि.मी लांब व ३० फूट खोल अशा प्रमाणात काम झाले. त्यामुळे पडलेल्या पावसाचे पाणी नाल्यात साठवल्याने भूजल पातळीत वाढ झाली आहे.



आकृती क्र. २ नाला रुंदीकरणामुळे निर्माण झालेला पाणी साठा

२) लोकसहभागातून नदीचे पुनरुज्जीवन :

शेंबोली गावच्या जवळून सीता नदी वाहते. ती गोदावरीची उपनदी आहे. ही नदी गावाला संजीवनीच्या रुपात लाभली आहे. म्हणून गावचे लोक या नदीला सीतामाय म्हणतात. सीतामाईच नैसर्गिक पात्र गाळाने भरून नष्ट झाले होते. नदीला पावसाळ्यात पूर येऊन गावात व गाव शिवारात पाणी शिरायचे त्यामुळे गावकरी त्रस्त होते. गावकऱ्यांनी जेव्हा यावर तोडगाकाढण्याचा विचार केला तेव्हा गावचे सरपंच जलनायक बाळासाहेब देशमुख यांच्या पुढाकाराने लोकसहभागातून नदीचे पुनरुज्जीवन करण्यात आले. नदीपत्रातून ७५० घन मीटर गाळ काढण्यात आला. संबंधित गाळ शेतकऱ्यांना मोफत देऊन शेत जमीन सुपीक करण्यात आली. याचा फायदा शेंबोली, पांढरवाडी, पाटनुर, सीताबोरगाव, नागेली या गावांना झाला आहे.

३) विहिरी व बोरवेल :

नाला सरळीकरण, नदी पुनरुज्जीवन कार्यक्रमाने कमालीची भूजल पातळीत वाढ झाली. गावात सुमारे १०५ विहिरी असून बारा महिने विरीहीला पाण्याची उपलब्धी असते. विहिरीची सर्वसाधारण खोली ३० फूट आहे. गावात १४५ बोरवेल असून १३६ बोरवेल मोठ्या प्रमाणात पाणी उपलब्ध आहे. बोरवेलची सरासरी खोली ३०० फूट आहे. गावचे भूजल क्षेत्र ८७% असून भूजलपातळी २५ फुटावर आहे. कमी भूजलक्षेत्र १३७ आहे. गावात २५० घरात वॉटर हार्व्हिंग करण्यात आले आहे. गावातील एक हीपाण्याचा थेंब वाहून जाणार नाही याची काळजी घेतली आहे. याद्वारे १७१० टी.सी.एम. पाण्याची उपलब्धी होते.

४) साखळी बंधारे: सितानादीच्या पात्रातगावाच्या सुरवातीपासून ते पुढे पूर्वेकडे २५ कि.मी. अंतरा पर्यंत वेगवेगळ्या गावाच्या सहकार्याने १० मोठे मातीचे साखळी बंधारे घालण्यात आली असून पाण्याचा एक ही थेंब वाहून जात नाही त्यामुळे नदीपात्रात पाणी उपलब्ध राहते.

सारणी क्र. २ शेंबोली गावातील एकूण पाणी उपलब्धी

संरचना	संख्या	साठवण क्षमता (टी.सी.एम.)
के.टी वेअर	०२	४९००
विहीर	१०५	८४०
बोरवेल	१४५	८७०
बाहेरील पाणी	-	३०१४.६६

एकूण पाणी	९६२४.६६
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ब) पाणी पुरवठा व्यवस्थापन : महाराष्ट्रात मोठ्या प्रमाणात जलसंधारण क्षेत्र विकसित केले गेले परंतु त्यांच्या प्रभावी अंमलबजावणी अभावी पाणी पुरवठा व्यवस्थापन कुचकामी ठरत आहे. शेंबोली गावाने पाणी पुरवठा व्यवस्थापनाचे तत्वे स्वीकारल्याने पाणीटंचाईचा प्रश्न मार्गी लागला आहे. देण्यासाठी सूक्ष्म सिंचन पद्धतीचा वापर केलेला आहे.

गावातील पाणीपुरवठा करण्यासाठी खालील गोष्टी गावात करण्यात आल्या आहेत.

१) कालवा : शेंबोली गाव ऊर्ध्व पैनगंगा प्रकल्प कालव्याच्या क्षेत्रात येते. या गावच्या हद्दीत कालवा गेल्याने ६४६ हेक्टरला. पाणी देण्याचे शास्त्र शुद्ध पाणी व्यवस्थापन करण्यात आले आहे. गावातील शेतकऱ्यांनी शेतीला पाणी



आकृती क्र. ३ ऊर्ध्व पैनगंगा प्रकल्प कालवा

२) उपसासिंचन : गावात उपलब्ध असलेल्या १०५ विहिरीव १४५ बोअरवेल व नाला व नदीपात्रातून ६४६ हेक्टरला पाणी दिले जाते.

३) ग्रामीण पाणी पुरवठा योजना : गावात शासकीय पाणी पुरवठा योजना आहे. पाईप लाईन अध्यावत आहे. २५० घराला हवाई पाणी पुरवठा करण्यात आला आहे. गावातील ५०० नळाला तुट्या आहेत.

क) पाणी वापर व्यवस्थापन : पाणी वापर व्यवस्थापनात हे गाव जागृत आहे पुढील दोन पद्धतींनी पाणी वापर

व्यवस्थापन केले जाते. यात पाणी बचत व पाणी पुनर्वापर पद्धतीचा समावेश आहे.

१) घरघुती पाणी बचत : या गावाला घरघुती वापरासाठी ६९.३९ टी.सी.एम. पाणी लागते हे गाव घरघुती पाणी बचत पद्धतीने दिवसाला २७३०९ लिटर पाण्याची बचत करते. वर्षाला पाणी बचत ९९,९७,३५० लिटर होते ती पुढील ८१ दिवस वापरता येईल एवढी आहे.

सारणी क्र. ३ घरघुती पाणी बचत

शासकीय नियमा नुसार पाणी वितरण			प्रत्यक्ष पाण्याचा वापर		
गावची लोकसंख्या	प्रत्येक व्यक्तीला लागणारे पाणी	पाणी वापर	शेंबोली गावात प्रत्यक्ष प्रती व्यक्तीला पाणीपुरवठा	पाणी वापर	पाणी बचत
१	२	$३ = (१ \times २)$	४	$५ = १ \times ४$	$६ (३ - ४)$
२७३९	५५ लिटर	१,५०,६४५	४५ लिटर	१,२३,२५५	२७३९०

स्त्रोत:- ग्रामविकासअधिकारी, शेंबोली

२) शेतीतील पाणी बचत पद्धत:- या गावातील शेतीला एकूण ५८५६ टी.सी.एम पाणी लागते तर हे गाव पाणी बचत पद्धतींनी २६८३ टी.सी.एम. पाण्याची बचत करते.

सारणी क्र. ४ शेतीतील पाणी बचत

पिके	पाटपद्धतीनेसिंचन	सूक्ष्मसिंचन	सूक्ष्मसिंचनामुळेबचत
कांदा	३८.५	२३.१	१५.४
टोमॅटो	६५	३८	२६
मिर्ची	२५.५	१५.३	१०.२
वांगे	२४	१४.४	९.६
कोबी	१२	७.३	४.७
भेंडी	१५	८	६
कापूस	१८७.५	११२.५	७५
तूर	१२०	२१.६	९८.४
हळद	३६०	२१.६	१४४
ऊसनवीन	११००	६६०	४४०
ऊसजुना	१२६०	७५६	५०४
नारळ	६०	३८.४	२१.६
पेरू	५६	३३.६	२२.४
केळी	२५६५	१५३९	१०२६
संत्रा/मोसंबी	७००	४२०	२८०
	६५८८.५	३९०५.२	२६८३.३

३) पुनर्वापर व्यवस्थापन पद्धती : गावातील पाणी शुद्धीकरण प्रकल्पाचे वाया जाणारे पाणी झाडासाठी, धुनेभांडी, स्वच्छतालयासाठी, पुनर्भरण करण्यासाठी वापरले जाते.

सुलक्षणा विठ्ठल भोसले, प्रा. डॉ. परमेश्वर पौळ

पाण्याचा ताळेबंद (गाव: शेंबोली, ता. मुदखेड, जि. नांदेड)

मिळणारे पाणी	
पाण्याची उपलब्धी = क्षेत्र X पाऊस मी.मी. / १००	
एकूण पडलेले पाणी = ७३७.१९ X १०४३ / १००	
= ७६८८.८९ टी.सी. एम.	
पाण्याचे विभाजन:	
वाढून जाणारे पाणी २०.००% = १५३७.७७	
वाष्पीभवन २०.००% = १५३७.७७	
मातीतील ओलावा २०.००% = १५३७.७७	
भूजल ४०.००% = २९५९.२७६	
एकूण उपलब्ध पाणी: = ७८०० टी.सी. एम.	
संरचना संख्या = एकूण पाणी	
के.टी. वेअर ००२ = ४९०० टी.सी. एम.	
विहीर १०५ = ८४० टी.सी. एम.	
बोखेरा १४५ = ८७० टी.सी. एम.	
पाणलोट क्षेत्राबाहेरून काढल्याने येणारे पाणी: ३०१४.६६ टी.सी. एम.	
वापरण्यासाठी एकूण उपलब्ध पाणी = (अडविलेले पाणी + क्षेत्राबाहेरून काढल्याने येणारे पाणी)	
= ९६२४.६६ टी.सी. एम.	
वापरलेले पाणी	
घरगुती पाणी वापर	
माणसे = ७४.९८ टी.सी. एम.	
जनावरे = ११ टी.सी. एम.	
शेतकरी मंद्या = ०.७९	
कुक्कुटपालन = ०.४ टी.सी. एम.	
सार्वजनिक वापर = २.७३७७ टी.सी. एम.	
घरगुती पाणी एकूण वापर = ८९.३९ टी.सी. एम.	
शेतीसाठी लागणारी गरज	
खरीप पिकासाठी पाणी वापर = २४००.८ टी.सी. एम.	
खरीप हंगामातील ट्रि.कॅ. वा. पि/ पाणी वापर = १४१२.३५ टी.सी. एम.	
टी.एम.सी	
रब्बी व उन्हाळी हंगामातील पि. पाणी वापर = २०४४.००२ टी.सी. एम.	
शेतीसाठी लागणारी एकूण वापर = ५८५६.००	
विंगर शेत जमिनीसाठी पाणी वापर = ३२४.२५	
एकूण वापरलेले पाणी = (घरगुती पाणी वापर + शेतीसाठी पाणी वापर + विंगर शेतीसाठी)	
= ६२४९.५६ टी.सी. एम.	

उरलेले पाणी

शिल्लक पाणी = वापरण्यासाठी उपलब्ध पाणी - एकूण वापरलेले पाणी

शिल्लक पाणी = ९६२४.६६ टी.सी. एम. - ६२४९.५६ टी.सी. एम.

= ३३७५.०६ टी.सी. एम.

आकृती क्र. ४ शेंबोली गावाचा पाणी ताळेबंद

निष्कर्ष : आज मराठवाड्यातील बहुतांश गावांना पाणी टंचाईला सामोरे जावे लागते. परंतु शेम्बोली गावाने जलव्यवस्थापनातून पाणी टंचाईतून मात केली आहे. या गावाचे अनुकरण इतर गावांनी तेथील भौगोलिक परिस्थितीनुसार केले तर तेथील पाणी समस्या दूर कराता येणे शक्य आहे. जलव्यवस्थापनातून शेंबोली हे गाव १०० % सिंचनाखाली आले आहे. त्यामुळे उत्पादनात भरमसाठ वाढ झाली. मराठवाड्यात इतर भागात देखील या प्राणाने शेती उत्पादनात वाढ करता येऊ शकते. जलव्यवस्थापनातून तेथील भूजल पातळीत कमालीची वाढ झाली आहे. यांचा परिणाम २५ फुटावर मुबलब पाणी उपलब्ध आहे. या गावाने पावसाचे पाणी जमिनीवर साठविण्याचे व मुरवीण्याचे योग्य तंत्र अवलंबिल्यामुळे बाष्पीभवन थांबले ही बाब विशेष आहे. या परिसरातील ५ गावांनी लोकसहभाग घेऊन सीता नदीचे सरळीकरण, रुंदीकरण, खोलीकरण करून मातीच्या बंधाऱ्याची साकळी उभारली त्यामुळे हा परिसर पाणीमय झाला आहे. याचच अर्थ जलसंधारणाचे कामे लोकसहभागातून चांगली होतात. पाणी हे सार्वजनिक साठवून ठेवता येते व सर्वांना ते वापरता येते हे गावाने दाखविले. शेम्बोली गावाच्या जलव्यवस्थापनातून ही बाब स्पष्ट होते की जलसंधारणेने उपलब्ध झाल्यानंतर जलपूरवठा व जलवापर सहज करता येते मराठवाड्यातील पाणी समस्येवर पाणी व्यवस्थापन हाच शाश्वत पर्याय आहे हे शेम्बोलीच्या जलव्यवस्थापनातून सिध्द होते. शेंबोली प्रमाणे महाराष्ट्रातील संपूर्ण गावांचा पाणी ताळेबंद, जलसाक्षरता वाढून डॉ परमेश्वर पौळ यांच्या जलव्यवस्थापन पद्धतीचा वापर केला तर आणि गावाचा शाश्वत विकास होईल.

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राष्ट्रीय शैक्षणिक धोरण 2020 च्या अंमलबजावणीतील आव्हाने**Ghate Babarao Gangaram¹, Dr. Pawar Gopal Ramrao²**^{1,2} Vivekanand B.Ed. College, Udgir**Corresponding Author- Ghate Babarao Gangaram****Email:- ghatebg35837@gmail.com****DOI- 10.5281/zenodo.13867476****सारांश:-**

शालेय शिक्षणाच्या सर्व स्तरावर सार्वत्रिक प्रवेश संधी सुनिश्चित करत राष्ट्रीय शैक्षणिक धोरण 2020 मध्ये शालेय पूर्व ते माध्यमिक अशा सर्व स्तरावर शालेय शिक्षणाला सार्वत्रिक संधी सुनिश्चित करण्यावर भर देण्यात आला आहे. पायाभूत सुविधा सहाय्य, शाळाबाह्य मुलांना मुख्य प्रवाहात आणण्यासाठी कल्पक शिक्षण केंद्रे, विद्यार्थी आणि त्यांच्या अध्ययन स्तराचा मागोवा, औपचारिक आणि अनौपचारिक शिक्षण पद्धतींसह शिक्षणाचे अनेक मार्ग सुलभ करणे, शाळांसमवेत समुपदेशक किंवा उत्तम प्रशिक्षित सामाजिक कार्यकर्त्यांची सांगड, एनआयओएस आणि राज्यातल्या मुक्त शाळा याद्वारे 3, 5, आणि 8 व्या इयत्तेसाठी खुले शिक्षण, व्यावसायिक अभ्यासक्रम, प्रौढ साक्षरता आणि जीवन समृद्ध करणारे कार्यक्रम या मार्गाने हे उद्दिष्ट साध्य करण्यात येणार आहे राष्ट्रीय शैक्षणिक धोरण 2020 अंतर्गत सुमारे 2 कोटी शाळाबाह्य मुले मुख्य प्रवाहात आणली जाणार आहेत.

शब्द संज्ञा : शिक्षण, शैक्षणिक धोरण, अभिजात भाषा, भारतीय परंपरा, प्राचीन शिक्षण व्यवस्था इ.**प्रस्तावना :-**

कोणत्याही देशात सरकारने शिक्षण धोरण ठरविणे आणि त्यासाठी गरजेनुसार विविध समित्या आणि आयोगांची स्थापना करणे, ही बाब फारशी नवी नाही. आयोगांच्या स्थापनेस संबंधित सरकारांची व राज्यकर्त्या वर्गाची धोरणे कारणीभूत असतात. उदाहरणार्थ, भारतीय राज्यघटनेने कलम २१ अन्वये ६ ते १४ वर्षे वयोगटातील बालकांसाठी शिक्षणाची तरतूद सरकारने करावी, असे राज्याला सूचित केले होते; तथापि, भारतीय राज्यसंस्थेच्या प्राधान्यक्रमावर प्राथमिक शिक्षणाचा प्रश्न नसल्याकारणाने प्राथमिक शिक्षणाला प्राथम्य दिले गेले नाही. म्हणून, स्वातंत्र्योत्तर भारतातील पहिला शिक्षण आयोग हा उच्च शिक्षणासाठी विशेषतः विद्यापीठीय शिक्षणासाठी स्थापन केला गेला आहे.

विशेषतः, के. कस्तुरीरंगन समितीचा अहवाल आणि कस्तुरीरंगन अहवालावरील धोरण हे शिक्षणावर विस्तृत भाष्य करते. या धोरणान्वये पूर्व-प्राथमिक, प्राथमिक, माध्यमिक, उच्च माध्यमिक आणि उच्च शिक्षण या सर्वच स्तरांवर आमूलाग्र बदल होणार आहेत. तसेच, शिक्षणाचा आशय, अध्यापनपद्धती, शिक्षक प्रशिक्षण, शाळांची रचना, विद्यापीठ रचना असे सर्वच क्षेत्र बदलणार आहेत. शिक्षकांचे प्रशिक्षण, शिक्षणाचे खाजगीकरण, बहुविद्याशाखीय शिक्षण, ऑनलाईन शिक्षण, उच्च शिक्षण क्षेत्रातील सर्वच संस्थांची पुनर्रचना, नियमन, दूरस्थ शिक्षण,

शिक्षणामध्ये तंत्रज्ञानाचा वापर अशा शिक्षणाच्या सर्वच उपांगांमध्ये आमूलाग्र बदल होणार आहेत.

राष्ट्रीय शिक्षण धोरण २०२० हे २१ व्या शतकातील पहिले शैक्षणिक धोरण आहे आणि या धोरणाचे ध्येय आपल्या देशातील वाढत्या विकासात्मक आवश्यकतांवर उपाययोजना करणे, हे आहे. या धोरणामध्ये SDG4 सह २१ व्या शतकातील शिक्षणाच्या महत्वाकांक्षी उद्दिष्टांशी सुसंगत अशी नवीन प्रणाली तयार करण्यासाठी, भारताच्या परंपरा आणि मूल्ये यांवर भर देऊन शैक्षणिक रचनेचे नियमन आणि व्यवस्थापन यासह या रचनेच्या सर्व पैलूंमध्ये बदल आणि सुधारणा प्रस्तावित आहेत. राष्ट्रीय शिक्षण धोरण विशेषतः, प्रत्येक व्यक्तीच्या सृजन क्षमतेच्या विकासावर जास्त भर देते.

शिक्षणाने केवळ आकलन क्षमता विकसित केल्या पाहिजेत असे नाही तर साक्षरता आणि संख्याज्ञान या मूलभूत क्षमता आणि उच्च दर्जाच्या तार्किक आणि समस्या निराकरण क्षमतांचे नव्हे तर सामाजिक, नैतिक आणि भावनिक क्षमतांचा विकाससुद्धा केला पाहिजे.

शिक्षण व्यवस्थेतील मूलभूत सुधारणांच्या केंद्रस्थानी शिक्षक असला पाहिजे. नवीन शिक्षण धोरणाने शिक्षकाला सर्व पातळ्यांवर आपल्या समाजातील सर्वात आदरणीय आणि आवश्यक सदस्य म्हणून पुनर्स्थापित करण्यासाठी मदत करणे अत्यावश्यक आहे. कारण तो खरोखर आपल्या नागरिकांच्या पुढील पिढीला आकार देतो. शिक्षकांना सक्षम करण्यासाठी आणि त्यांनी आपले काम शक्य तितक्या प्रभावीपणे करावे म्हणून या धोरणाने शक्य त्या सर्व गोष्टी केल्या पाहिजेत. तसेच सर्वोत्तम आणि

बुद्धिमान व्यक्तींना सर्व पातळीवर शिक्षकी पेशात सामावून घेण्यासाठी नवीन शिक्षण धोरणाने मदत केली पाहिजे. त्यासाठी त्यांची उपजीविका, आदर, सन्मान आणि स्वायत्तता या गोष्टी सुनिश्चित केल्या पाहिजेत तसेच शिक्षण व्यवस्थेमध्ये गुणवत्ता नियंत्रणाच्या मूलभूत पद्धती आणि दायित्व या गोष्टी स्थापित केल्या पाहिजेत.

नविन शैक्षणिक धोरणाचे प्रमुख वैशिष्ट्ये:-

१. दहावी बोर्ड परीक्षा रद्द
२. फक्त 12 वीला बोर्ड परीक्षा असेल
३. शिक्षण पद्धती 5+3+3+4 या सुत्रानुसार असेल (पहीले पाच वर्षे शिक्षणाचा पहीला टप्पा + दुसरे तीन वर्षे प्राथमिक शिक्षण तिसरे तीन वर्षे माध्यमिक शिक्षण चौथे चार वर्षे उच्च माध्यमिक शिक्षण पद्धती).

४. पदवी अभ्यासक्रमामध्ये बदल करण्यात आला असून पदवी चार वर्षांची करण्यात आली आहे.

नविन शैक्षणिक धोरणाचे उद्दिष्ट्ये :-

- १) नवीन शैक्षणिक धोरण २०२० याची चिकित्सा करणे.
- २) या शैक्षणिक धोरणाच्या अंमलबजावणीतील आव्हाने याचा शोध घेणे.
- ३) नवीन शैक्षणिक धोरणात वंचित घटकांचे स्थान शोधणे,
- ४) १९८५ चे व नवीन शैक्षणिक धोरण २०२० याचा रचनात्मक अभ्यास करणे.
- ५) नवीन शैक्षणिक धोरणातील आकृतीबंधात भविष्यात शिक्षणास भेडसावणा-या परिणामाचा
- ६) शालेय आणि महाविद्यालयीन शिक्षण अधिक समग्र, बहु शाखीय, 21 व्या शतकाच्या गरजांना अनुरूप करत

भारताचे चैतन्यशील प्रज्ञावंत समाज आणि जागतिक ज्ञान महासत्ता म्हणून परिवर्तन घडवण्याचा आणि

प्रत्येक विद्यार्थ्याच्या आगळ्या क्षमता पुढे आणण्याचा अभ्यास करणे.

गृहीतके :-

नवीन राष्ट्रीय शैक्षणिक धोरण 2020 चा विद्यार्थ्यांच्या स्वावलंबनावर परिणाम करतो. विद्यार्थ्यांच्या आत्मनिर्भरतेसाठी नवीन राष्ट्रीय शैक्षणिक धोरण 2020 ची भूमिका महत्त्वाची आहे.

संशोधन कार्यप्रणाली :-

सदर संशोधन हा वर्तणुकीचा अभ्यास आहे आणि आवश्यक दुय्यम डेटा भारत सरकारच्या विविध वेबसाइट्स, मासिके, वृत्तपत्रे, जर्नल्स आणि इतर स्रोतांकडून प्राप्त केला जातो. या माहितीचे नंतर विश्लेषण आणि पुनरावलोकन केले जाते आणि निष्कर्ष काढले जातात.

राष्ट्रीय शैक्षणिक धोरण 2020 च्या अंमलबजावणीतील आव्हाने :-

शालेय शिक्षण :-

शालेय शिक्षणाच्या सर्व स्तरावर सार्वत्रिक प्रवेश संधी सुनिश्चित करत राष्ट्रीय शैक्षणिक धोरण 2020 मध्ये शालेय पूर्व ते माध्यमिक अशा सर्व स्तरावर शालेय शिक्षणाला सार्वत्रिक संधी सुनिश्चित करण्यावर भर देण्यात आला आहे. पायाभूत सुविधा सहाय्य, शाळाबाह्य मुलांना मुख्य प्रवाहात आणण्यासाठी कल्पक शिक्षण केंद्रे, विद्यार्थी आणि त्यांच्या अध्ययन स्तराचा मागोवा, औपचारिक आणि अनौपचारिक शिक्षण पद्धतींसह शिक्षणाचे अनेक मार्ग सुलभ करणे, शाळांसमवेत समुपदेशक किंवा उत्तम प्रशिक्षित सामाजिक कार्यकर्त्यांची सांगड, एनआयओएस आणि राज्यातल्या मुक्त शाळा याद्वारे 3, 5, आणि 8 व्या इयत्तेसाठी खुले शिक्षण, व्यावसायिक अभ्यासक्रम, प्रौढ साक्षरता आणि जीवन समृद्ध करणारे कार्यक्रम या मार्गाने हे उद्दिष्ट साध्य करण्यात येणार आहे. राष्ट्रीय शैक्षणिक धोरण 2020 अंतर्गत सुमारे 2 कोटी शाळाबाह्य मुले मुख्य प्रवाहात आणली जाणार आहेत.

नवा अभ्यासक्रम आणि शैक्षणिक आराखड्यासह बालवयाच्या सुरवातीलाच काळजी आणि शिक्षण बालवयाच्या सुरवातीलाच काळजी आणि शिक्षण यावर भर देत 10+2 या शालेय अभ्यासक्रम आकृती बंधाची जागा आता 5+3+3+4 अभ्यासक्रम आराखडा अनुक्रमे 3-8,8-11,11-14,14-18 वयोगटासाठी राहिल. यामुळे 3-6 वर्षे हा आतापर्यंत समाविष्ट न झालेला वयोगट शालेय अभ्यासक्रमा अंतर्गत येईल, जगभरात हा वयोगट, बालकाच्या मानसिक जडणघडणीच्या विकासा साठी अतिशय महत्त्वाचा मानला जातो. नव्या पद्धतीत तीन वर्षे अंगणवाडी / शाळापूर्व वर्गासह 12 वर्षे शाळा राहणार आहे.

एनसीईआरटी, बालवयाच्या सुरवातीची काळजी आणि शिक्षण यासाठी 8 वर्षांपर्यंतच्या बालकांसाठी राष्ट्रीय अभ्यासक्रम आणि शैक्षणिक आराखडा विकसित करणार आहे. अंगणवाडी आणि पूर्व शालेय सह विस्तृत आणि बळकट संस्थांच्या माध्यमातून ई सी सी ई देण्यात येईल. ई सी सी ई अभ्यासक्रमात प्रशिक्षित शिक्षक आणि आंगणवाडी कार्यकर्ते यासाठी असतील. मनुष्य बळ विकास, महिला आणि बाल विकास मंत्रालय, आरोग्य आणि कुटुंब कल्याण मंत्रालय आणि आदिवासी विकास मंत्रालय ई सी सी ई नियोजन आणि अंमलबजावणी करणार आहे.

पायाभूत साक्षरता आणि संख्या शिक्षण साध्य करणे :-

पायाभूत साक्षरता आणि संख्या शिक्षण ही शिक्षणाची पूर्व अट आहे हे जाणून राष्ट्रीय शिक्षण धोरण 2020 मध्ये एम एच आर डी कडून पायाभूत साक्षरता आणि संख्याशिक्षण राष्ट्रीय मिशन स्थापन करण्याचे आवाहन

करण्यात आले आहे. सर्व प्राथमिक शाळेत सार्वत्रिक पायाभूत साक्षरता आणि संख्या शिक्षण साध्य करण्यासाठी राज्ये अंमलबजावणी आराखडा तयार करतील. देशात राष्ट्रीय ग्रंथ प्रोत्साहन धोरण आखण्यात येईल.

शालेय अभ्यासक्रम आणि शिकवण्याच्या पद्धतीत सुधारणा :-

21 व्या शतकाची प्रमुख कौशल्ये आवश्यक शिक्षण आणि चिकित्सात्मक विचार वाढवण्यासाठी अभ्यासक्रम कमी करणे आणि अनुभवातून शिक्षणावर अधिक लक्ष केंद्रित करून विद्यार्थ्यांचा सर्वांगीण विकास करणे हा शालेय अभ्यासक्रम आणि शिकवण्याच्या पद्धतीचा उद्देश असेल. विद्यार्थ्यांची लवचिकता आणि विषयांचे पर्याय वाढतील. कला आणि विज्ञान, अभ्यासक्रम आणि अवांतर उपक्रम, तसेच व्यावसायिक आणि शैक्षणिक शाखा यांच्यात कुठल्याही प्रकारचे कठोर विभाजन असणार नाही. शाळांमध्ये व्यावसायिक शिक्षण 6 वी पासून सुरू होईल आणि त्यात इंटरनशिपचा समावेश असेल. एनसीईआरटी द्वारे एक नवीन आणि सर्वसमावेशक राष्ट्रीय शालेय शिक्षण अभ्यासक्रम रूपरेषा एनसीएफएसई 2020-21 विकसित केली जाईल.

बहुभाषिकता आणि भाषेची ताकद :-

या धोरणामध्ये किमान इयत्ता 5 वी पर्यंत आणि प्राधान्याने 8 वी आणि त्यानंतरही मातृभाषा / स्थानिक भाषा प्रादेशिक भाषा हे शिकवण्याचे माध्यम असावे यावर भर देण्यात आला आहे. शालेय आणि उच्च शिक्षणाच्या सर्व स्तरांवर विद्यार्थ्यांना तीन-भाषांच्या सूत्रासह संस्कृतचाही एक पर्याय दिला जाईल. भारतातील इतर अभिजात भाषा आणि साहित्य देखील पर्याय म्हणून उपलब्ध असतील. 'एक भारत श्रेष्ठ भारत' उपक्रमांतर्गत इयत्ता 6-8 साठी 'भारताच्या भाषा' विषयावरील मजेदार प्रकल्प / उपक्रमात विद्यार्थी सहभागी होतील. माध्यमिक स्तरावर विविध परदेशी भाषांचा पर्याय देखील दिला जाईल. दिव्यांग विद्यार्थ्यांकरिता वापरण्यासाठी भारतीय सांकेतिक भाषा (आयएसएल) संपूर्ण देशभरात प्रमाणित केली जाईल आणि राष्ट्रीय आणि राज्य अभ्यासक्रम सामुग्री विकसित केली जाईल. कुठल्याही विद्यार्थ्यावर कोणतीही भाषा लादली जाणार नाही.

मूल्यांकन सुधारणा :-

एनईपी 2020 मध्ये सारांशात्मक मूल्यांकनाकडून नियमित आणि रचनात्मक मूल्यांकनाकडे वळण्याची कल्पना मांडली आहे जी अधिक योग्यता-आधारित आहे शिक्षण आणि विकासाला उत्तेजन देणारी आहे आणि विक्षेपण, चिकित्सात्मक विचार प्रक्रिया आणि वैचारिक स्पष्टता या सारखी उच्च कौशल्ये तपासते. इयत्ता 3, 5 आणि 8 वी मध्ये सर्व विद्यार्थी शालेय परीक्षा देतील जी योग्य यंत्रणेद्वारे घेण्यात येईल. इयत्ता 10 आणि 12 वी

साठी शिक्षण मंडळाच्या (बोर्ड) परीक्षा सुरूच राहतील मात्र समग्र विकासाच्या उद्देशाने त्यांची पुनर्चना केली जाईल. दर्जा निश्चिती संस्था म्हणून पारख (समग्र विकासासाठी कामगिरी मूल्यांकन आढावा आणि ज्ञानाचे विक्षेपण) हे एक नवे राष्ट्रीय मूल्यांकन केंद्र स्थापन केले जाईल.

न्याय्य आणि सर्वसमावेशक शिक्षण :-

जन्माच्या वेळेची परिस्थिती किंवा अन्य पार्श्वभूमीमुळे कोणताही मुलगा शिकण्याची आणि उत्कृष्टतेची संधी गमावणार नाही हे एनईपी 2020 चे उद्दीष्ट आहे लिंग, सामाजिक- सांस्कृतिक आणि भौगोलिक ओळख आणि अपंगत्व समाविष्ट असलेल्या सामाजिक आणि आर्थिकदृष्ट्या वंचित गटांवर (एसईडीजी) विशेष भर दिला जाईल. यामध्ये लिंग समावेश निधी आणि वंचित प्रदेश आणि गटांसाठी विशेष शैक्षणिक क्षेत्र स्थापन करण्याचा समावेश आहे. दिव्यांग मुले प्रशिक्षण, संसाधन केंद्रे, राहण्याची सुविधा सहाय्यक उपकरणे, योग्य तंत्रज्ञान-आधारित साधने आणि त्यांच्या गरजांनुसार तयार करण्यात आलेल्या अन्य सहाय्यक साधनांच्या मदतीने पूर्व- प्राथमिक टप्प्यापासून उच्च शिक्षणापर्यंतच्या नियमित शालेय शिक्षण प्रक्रियेत पूर्णपणे भाग घेण्यास सक्षम असतील. प्रत्येक राज्य / जिल्ह्यात कला-संबंधित, करिअरशी संबंधित आणि खेळाशी संबंधित उपक्रमांमध्ये भाग घेण्यासाठी एक खास डे-टाइम बोर्डिंग स्कूल म्हणून "बाल भवन्स" स्थापन करायला प्रोत्साहन दिले जाईल. सामाजिक चेतना केंद्रे म्हणून मोफत शालेय पायाभूत सुविधा वापरता येतील.

मजबूत शिक्षक भरती आणि करिअर मार्ग :-

शिक्षकांची भरती सक्षम पारदर्शक प्रक्रियेद्वारे केली जाईल. बढती गुणवत्तेवर आधारित असेल ज्यामध्ये बहु-स्रोत नियमित कामगिरी मूल्यांकन आणि उपलब्ध प्रगतीचे मार्ग याद्वारे शैक्षणिक प्रशासक किंवा शिक्षक होता येईल. एनसीईआरटी, एससीईआरटी, शिक्षक आणि विविध पातळी व प्रदेशातील तज्ज्ञ संघटना यांच्याशी विचारविनिमय करून राष्ट्रीय शिक्षक शिक्षण परिषद 2022 पर्यंत शिक्षकांसाठी राष्ट्रीय व्यावसायिक मानके (एनपीएसटी) विकसित करेल.

शालेय प्रशासन :-

शाळा संकुले किंवा समूहांमध्ये आयोजित केल्या जाऊ शकतात जे प्रशासनाचे मूलभूत घटक असतील आणि पायाभूत सुविधा, शैक्षणिक ग्रंथालये आणि बळकट व्यावसायिक शिक्षक समुदायासह सर्व संसाधनांची उपलब्धता सुनिश्चित करेल.

शालेय शिक्षणासाठी मानक निश्चिती आणि मान्यता :-

एनईपी 2020 मध्ये धोरण आखणी, नियमन, संचलन आणि शैक्षणिक बाबींसाठी स्पष्ट, स्वतंत्र यंत्रणेची कल्पना केली आहे. राज्ये केंद्रशासित प्रदेश स्वतंत्र राज्य शालेय मानक प्राधिकरण (एसएसएसए) स्थापन करतील. एसएसएसएने ठरवलेल्या सर्व मूलभूत नियामक माहितीचे पारदर्शक सार्वजनिक स्वयं-प्रकटीकरण सार्वजनिक प्रतिष्ठा

आणि दायित्वासाठी प्रामुख्याने वापरले जाईल. एससीईआरटी सर्व हितधारकांशी सल्लामसलत करून शालेय गुणवत्ता मूल्यांकन आणि मान्यता रूपरेषा (एसक्यूएएफ) विकसित करेल.

उच्च शिक्षण :-

2035 पर्यंत जीईआर 50 टक्क्यां पर्यंत वाढवणे व्यावसायिक शिक्षणासह उच्च शिक्षणामध्ये सकल नोंदणी गुणोत्तर 26.3 टक्के (2018) वरून 2035 साला पर्यंत 50 टक्के पर्यंत वाढवण्याचे एनईपी 2020 चे उद्दिष्ट आहे. उच्च शिक्षण संस्थांमध्ये 3.5 कोटी नवीन जागा वाढवण्यात येतील.

समग्र बहुशाखीय शिक्षण :-

या धोरणात व्यापक आधारभूत, बहु-शाखीय, लवचिक अभ्यासक्रमासह सर्वसमावेशक पदवी शिक्षण अभ्यासक्रम विषयांचे सर्जनशील संयोजन, व्यावसायिक शिक्षणाचे एकात्मिकरण आणि योग्य प्रमाणीकरणासह बहु प्रवेश आणि निर्गम टप्प्यांची कल्पना केली आहे पदवी शिक्षण 3 किंवा 4 वर्षांचे असू शकते आणि या कालावधीत अनेक निर्गमन पर्याय आणि योग्य प्रमाणीकरण असू शकतात. उदाहरणार्थ, 1 वर्षा नंतर प्रमाणपत्र, 2 वर्षांनंतर प्रगत पदविका, 3 वर्षांनंतर बॅचलर डिग्री आणि 4 वर्षांनंतर बॅचलर विथ रिसर्च.

वेगवेगळ्या उच्च शिक्षण संस्थांकडून मिळवलेल्या शैक्षणिक उपलब्धी डिजिटली संग्रहित करण्यासाठी अकेडेमिक बँक ऑफ क्रेडिट ची स्थापना केली जाईल जेणेकरून माहिती हस्तांतरित करता येईल आणि अंतिम पदवी मिळवल्यावर त्याची गणना केली जाईल.

बहुशाखीय शिक्षण आणि संशोधन विद्यापीठांची स्थापना (MERU)- ही आयआयटी, आयआयएमच्या तोडीची देशातील जागतिक दर्जाच्या सर्वोत्कृष्ट बहुशाखीय शिक्षणासाठी आदर्शवत म्हणून स्थापित केली जातील.

नॅशनल रिसर्च फाउंडेशनची स्थापना केली जाईल, या सर्वोच्च संस्थेच्या माध्यमातून प्रबळ संशोधन संस्कृती आणि उच्च शिक्षणामध्ये संशोधन क्षमता वृद्धिंगत करण्यात येईल.

नियमन :-

भारतीय उच्च शिक्षण आयोगाची (HECI) स्थापना करण्यात येईल, वैद्यकीय आणि कायदेशीर शिक्षण वगळता उच्च शिक्षणाशी संबंधित एकमेव उच्च संस्था असेल. एचईसीआयचे 4 स्वतंत्र घटक असतील नियमनासाठी, राष्ट्रीय उच्च शिक्षण नियामक परिषद (एनएचईआरसी), दर्जात्मक व्यवस्थेसाठी जनरल एज्युकेशन कौन्सिल (जीईसी), निधीसाठी उच्च शिक्षण अनुदान परिषद (एचईजीसी) आणि मूल्यांकनासाठी राष्ट्रीय मूल्यांकन परिषद (नॅक) असेल. एचईआयसी तंत्रज्ञानाच्या मदतीने

हस्तक्षेप (फेसलेस इन्टरव्हेशन) करेल आणि एचईआयसीला नियम आणि मानदंडांचे पालन न करणाऱ्या उच्च शिक्षण संस्थांना दंड करण्याचे अधिकार असतील. सार्वजनिक आणि खासगी उच्च शिक्षण संस्था याच नियम, मूल्यांकन आणि शैक्षणिक मानदंडांद्वारे संचालित केल्या जातील.

तर्कसंगत संस्थात्मक संरचना :-

उच्च शैक्षणिक संस्थांचे रुपांतर विशाल, उत्तम स्रोत असलेल्या, सळसळत्या बहुविषयी संस्थांमध्ये केले जाईल. यात उच्च गुणवत्तेचे शिक्षण, संशोधन आणि समुदाय प्रतिबद्धता असेल. विद्यापीठाच्या परिभाषेत बहुविध संस्था येतील ज्यात संशोधन केंद्रीत विद्यापीठे ते शिक्षण-केंद्रीत विद्यापीठे आणि स्वायत्त पदवी प्रदान करणारी महाविद्यालये असा विस्तार असेल.

महाविद्यालयांची संलग्नता 15 वर्षांत टप्प्याटप्प्याने समाप्त केली जाणार आहे आणि महाविद्यालयांना पातळी-आधारीत यंत्रणेच्या माध्यमातून श्रेणीबद्ध स्वायत्तता देण्यात येईल. कालांतराने प्रत्येक महाविद्यालय एकतर स्वायत्त पदवी देणारे महाविद्यालय किंवा विद्यापीठाचे घटक महाविद्यालय म्हणून विकसित होईल.

प्रेरित, उत्साही आणि सक्षम अध्यापक :-

एनईपीने प्रेरित, उत्साही आणि क्षमता निर्माण करणाऱ्या अध्यापकांच्या नियुक्तीसाठी स्पष्टपणे परिभाषित, स्वतंत्र, पारदर्शी पद्धतीने नियुक्ती करण्याची शिफारस केली आहे. अभ्यासक्रम/अध्यापनाचे स्वातंत्र्य, उत्कृष्टतेला उत्तेजन देणे, संस्थात्मक नेतृत्वाला मदत केली जाईल. मुलभूत निकषांप्रमाणे काम न करणाऱ्या अध्यापकांना जबाबदार ठरवले जाईल.

शिक्षकांचे शिक्षण :-

एनसीटीई एनसीईआरटीशी सल्लामसलत करून शिक्षक शिक्षणासाठी एक नवीन आणि सर्वसमावेशक राष्ट्रीय अभ्यासक्रम आराखडा, एनसीएफटीई 2021 तयार करेल. 2030 पर्यंत, शिक्षणासाठी किमान पदवी पात्रता ही 4 वर्षांचा एकात्मिक बी.एड. पदवी असेल. गुणवत्तेची तडजोड करणाऱ्या नियमनबाह्य शैक्षणिक संस्थांविरुद्धात (टीईआय) कडक कारवाई करण्यात येईल.

मार्गदर्शक मोहीम :-

एका राष्ट्रीय मार्गदर्शक मोहिमेची (नॅशनल मिशन फॉर मॅन्टॉरिंग) स्थापना करण्यात येईल-यात उत्कृष्ट कामगिरी बजावलेल्या ज्येष्ठ/निवृत्त अध्यापकांचा समावेश असेल. भारतीय भाषांमध्ये शिकवणारे शिक्षकही यात असतील-जे थोड्या आणि दीर्घ काळासाठी मार्गदर्शक म्हणून विद्यापीठ/महाविद्यालयीन शिक्षकांना मदत करतील.

विद्यार्थ्यांना आर्थिक मदत :-

एससी, एसटी, ओबीसी आणि एसईडीजी विद्यार्थ्यांच्या गुणवत्तेस प्रोत्साहन देण्याचे प्रयत्न केले जातील. राष्ट्रीय शिष्यवृत्ती पोर्टलचा विस्तार करून

शिष्यवृत्ती प्राप्त विद्यार्थ्यांच्या प्रगतीचा मागोवा घेतला जाईल. खासगी संस्थांना देखील मोठ्या प्रमाणावर शिष्यवृत्ती देण्यासाठी प्रोत्साहन दिले जाईल.

मुक्त आणि दूरस्थ शिक्षण :-

पटनोंदणी वाढविण्यात महत्त्वपूर्ण भूमिका बजावण्यासाठी याचा विस्तार केला जाईल. ऑनलाईन कोर्सेस आणि डिजिटल कोष, संशोधनासाठी निधी, सुधारित विद्यार्थी सेवा, विशाल मुक्त ऑनलाईन कोर्सेसची पत-आधारित मान्यता इत्यादी उपायांची अंमलबजावणी वर्गखोल्यांमध्ये उच्च दर्जाच्या गुणवत्तेबरोबरच निश्चित केली जाईल.

ऑनलाईन शिक्षण आणि डिजिटल शिक्षण :-

सध्या संपूर्ण देशामध्ये कोविड-19 झालेला झालेला प्रसार लक्षात घेवून शिक्षण धोरण तयार करताना पर्यायी शैक्षणिक पद्धतींचा व्यापक विचार करण्या आला आहे. त्यामुळे सर्वकष ऑनलाईन शिक्षण आणि डिजिटल शिक्षणाला चालना देण्यासाठी आलेल्या शिफारशी विचारात घेवून शैक्षणिक सज्जता सुनिश्चित केली जाणार आहे. सध्याच्या महामारीच्या काळामध्ये वैयक्तिकरितीने परंपरागत पद्धतीने शिक्षण देणे शक्य नाही, त्यामुळे दर्जेदार शिक्षणासाठी पर्याय शोधण्यात आले आहेत. मनुष्यबळ विकास मंत्रालयामध्ये ई-शिक्षणाच्या आवश्यकता पूर्ण करण्यासाठी शालेय आणि उच्च शैक्षणिक वर्गासाठी डिजिटल पायाभूत सुविधा, शैक्षणिक सामुग्री तयार करणारे विभाग आणि डिजिटल शिक्षणासाठी समर्पित विभाग तयार केले जातील.

शिक्षणामध्ये तंत्रज्ञान :-

'नॅशनल एज्युकेशनल टेक्नॉलॉजी फोरम' (एनईटीएफ) म्हणजेच 'राष्ट्रीय शैक्षणिक तंत्रज्ञान मंच' या स्वायत्त संस्थेची निर्मिती करण्यात येणार असून याद्वारे विचारांच्या देवाणघेवाणीसाठी एक व्यासपीठ मंच उपलब्ध करून देण्यात येणार आहे. या मंचाद्वारे शैक्षणिक मूल्यवर्धन, मूल्यांकन, तसेच नियोजन, प्रशासन यासाठी तंत्रज्ञानाचा वापर कशा पद्धतीने करता येऊ शकतो, यासाठी स्वतंत्रपणे विचारांचे आदान-प्रदान केले जाणार आहे. वर्गातील शिक्षणात सुधारणा व्हावी, शिक्षकांना व्यावसायिक प्रशिक्षण मिळावे वंचित घटकांना शैक्षणिक सुविधा जास्तीत जास्त मिळाव्यात आणि शैक्षणिक नियोजन, प्रशासन तसेच व्यवस्थापन सुनियोजित पद्धतीने व्हावे, यासाठी सर्व स्तरावरच्या शिक्षण कार्यक्रमांमध्ये तंत्रज्ञानाचे एकात्मिकरण केले जाईल.

भारतीय भाषांचा प्रसार :-

सर्व भारतीय भाषांचे संवर्धन, त्यांचा प्रसार व्हावा तसेच त्यांच्यामध्ये एक प्रकारे चैतन्य निर्माण व्हावे याची सुनिश्चिती करण्यात येणार आहे. यासाठी 'एनईपी'ने दिलेल्या शिफारशीनुसार इंडियन इन्स्टिट्यूट ऑफ ट्रान्सलेशन अँड इंटरप्रीटेशन (आयआयटीआय) म्हणजेच

Ghate Babarao Gangaram, Dr. Pawar Gopal Ramrao

राष्ट्रीय अनुवाद आणि भाष्य संस्था तसेच नॅशनल इन्स्टिट्यूट (किंवा इन्स्टिट्यूट्स) फॉर पाली, पर्शियन अँड प्राकृत, म्हणजेच पाली, पर्शियन आणि प्राकृतसाठी राष्ट्रीय संस्था यांची स्थापना करण्याचा सल्ला देण्यात आला आहे. संस्कृत आणि इतर भाषा विभागांच्या सुदृढीकरणाची शिफारस करण्यात आली आहे. तसेच उच्च शिक्षण संस्थांमध्ये अधिकाधिक मातृभाषेचा किंवा स्थानिक भाषेचा उपयोग शिकवण्याचे माध्यम म्हणून केला जावा, असेही सुचवण्यात आले आहे.

शिक्षणाचे आंतरराष्ट्रीयीकरण संस्थात्मक सहकार्यातून करण्यात येवू शकते. तसेच विद्यार्थी आणि शिक्षक यांच्या देवाणघेवाणीचा विचार करून करता येवू शकतो. त्यामुळे आपल्या देशामध्ये जगामधल्या अव्वल क्रमांकाच्या विद्यापीठांना प्रवेशाची परवानगी देण्यात येईल. बाहेरच्या सर्वोत्कृष्ट विद्यापीठांना आपल्या देशात कॅम्पस उघडता येणार आहेत.

व्यावसायिक शिक्षण :-

उच्च शिक्षण प्रणालीमध्ये व्यावसायिक शिक्षण हा अनिवार्य आणि अविभाज्य भाग असेल. जी तंत्रज्ञान विद्यापीठे, आरोग्य विज्ञान विद्यापीठे, विधी कायदा आणि कृषी विद्यापीठे आहेत, त्यांना आता बहुउद्देशीय संस्था बनवण्याचे उद्दिष्ट असणार आहे.

प्रौढ शिक्षण :-

शंभर टक्के तरुण आणि प्रौढ साक्षरता प्राप्त करण्याचे उद्दिष्ट या धोरणाचे आहे.

शिक्षणासाठी वित्तपुरवठा :-

शैक्षणिक क्षेत्रामध्ये सार्वजनिक गुंतवणूक वृद्धीसाठी केंद्र आणि राज्य सरकारे एकत्रित काम करणार आहेत. शक्य तितक्या लवकर ही गुंतवणूक जीडीपीच्या 6 टक्क्यांपर्यंत पोहोचावी, असा उद्देश यामागे आहे.

निष्कर्ष :-

कोणत्या समाजाच्या आणि देशाच्या सर्वांगीण विकासात शिक्षणाचे मोठे योगदान आहे. नवीन राष्ट्रीय शैक्षणिक धोरण 2020 हा त्याचा सर्वसमावेशक भाग आहे, त्यात पुढील 30 वर्षांच्या शिक्षणाचे शैक्षणिक नियोजन निश्चित केले आहे. नवीन शैक्षणिक धोरण विद्यार्थ्यांचे कौशल्य ओळखण्यास मदत करते. नवीन राष्ट्रीय शैक्षणिक धोरण विद्यार्थ्यांच्या आत्म-विकासाला चालना देईल.

नवीन राष्ट्रीय शैक्षणिक धोरण विद्यार्थ्यांना त्यांचे आत्मनिर्भरता वाढवून एक उत्तम व्यक्तिमत्व विकसित करण्यास मदत करेल. सर्व समावेशक आणि बहुविद्याशाखीय शिक्षणाने एकात्मिक पद्धतीने सुधारणा करण्याचा प्रयत्न केला पाहिजे. मानवी क्षमता मानसिक सांस्कृतिक सामाजिक शारीरिक भावनिक आणि नैतिक आर्थिक दीर्घकालीन प्रदान करण्यासाठी उच्च शिक्षणामध्ये एकूण नोंदणी वाढवणे. 2035 पर्यंत ते 26.3% वरून 50% पर्यंत नेणे आणि स्वावलंबी बनवणे हे उद्दिष्ट आहे.

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आजकालचे सामाजिक न्यायाचे प्रश्न: एक दृष्टिक्षेप**डॉ. संदीपान श्रीमंत नवगिरे**

मराठी विभाग प्रमुख, प्र.द्वा.कारखानीस महाविद्यालय, अंबरनाथ (पू.) जिल्हा- ठाणे. ४२१५०१

Corresponding Author- डॉ. संदीपान श्रीमंत नवगिरे**Email- sandipan.navgire28@gmail.com****DOI- 10.5281/zenodo.13867644****गोष्टवारा:**

व्यक्ति, समाज, देश यांचे सामाजिक, व्यावहारिक, जैविक, न्यायिक पातळीवरील एक परस्पर संबंधाचे स्वरूप असते. व्यक्ति व समाजाच्या कर्तृत्वाच्या प्रगतीचा आलेख त्यांच्या अंतर्बाह्य संबंधावर अवलंबून असतो. विशेषतः सामाजिक पातळीवरील प्रश्न व्यक्ति आणि समाजाच्या दृष्टीने मोठे गुंतागुंतीचे असतात. एकाच वेळी ते ते प्रश्न व्यक्तीचे आणि समाजाचेही असतात; कारण प्रत्येक व्यक्ति हा कोणत्या न कोणत्या समाजाचा घटक असतो. आणि समाज देशाचा घटक असतो यामुळे बऱ्याचदा व्यक्तीचे प्रश्न हे समाजाचे होवून बसतात. समाजाचे प्रश्न हे व्यक्तीचे होवून जातात. प्रस्तुत शोधपर लिखाणात स्वातंत्र्याच्या ७८ वर्षांच्या काळात आपल्या आजूबाजूला समांतर वेळी व्यक्ति आणि समाजाचे अनेक प्रश्न पुरेशा प्रमाणात सुटलेले नाहीत. प्रश्न सामाजिक, राजकीय, धार्मिक, आर्थिक, सांस्कृतिक, नैतिक, न्यायिक पातळीवरचे असतात. आपण इथे फक्त सामाजिक पातळीवरचे महत्वाचे प्रश्न नेमके काय आहेत? कशा स्वरूपाचे आहेत? कधीपासूनचे आहेत? ते प्रश्न आजतागायत का सुटले नाहीत? या सर्व प्रश्नांची चर्चा साधार पद्धतीने करण्याचा इथे प्रयत्न केला आहे. उदा. स्वतंत्र भारतात सामाजिक न्याय हा प्रश्न मोठा गंभीर आहे. शिक्षण, रोजगार, मूलभूत सुविधा, स्वातंत्र्य, स्वाभिमान, प्रतिष्ठा, हक्क अधिकार, न्याय, समानता असे अनेक प्रकारचे प्रश्न असू शकतात. आजही हे प्रश्न पूर्णपणे सुटलेले आहेत असे चित्र किती ठामपणे पहावयास मिळते सभोवतालच्या परिस्थितीत हे पाहणे आवश्यक वाटते. इथला एकेकाळचा स्त्रीवर्ग आणि मागासवर्ग यांच्या बाबतीत जी धोरणे घटनात्मक पातळीवर ठरविली गेली त्याचा लेखाजोखा काय सांगतो आहे. या दोन वर्गांची आजची शैक्षणिक, राजकीय, सामाजिक, आर्थिक प्रगती ७५ वर्षांच्या काळात जेवढी होणे आवश्यक आहे तेवढी खरंच झाली आहे का? त्यातही विशेषतः सामाजिक न्याय ह्या प्रश्नांची आज काय अवस्था दिसते. आजूबाजूला शंभर टक्के प्रगती आपण साधली आहे का? हा मुद्दा अतिशय गंभीरतेने घ्यावा लागेल. कायदे आहेत, यंत्रणा आहेत, अमलबजावणीचे नियम आहेत. तरीही मुळापासून व्यक्ति व समाज पातळीवरचे न्यायाचे प्रश्न अर्धवट स्वरूपात लटकलेले अधांतरीच दिसत आहेत; ते का अधांतरी आहेत? त्यावर काही उपाय आहेत का? याचा विचार या संशोधनातून करण्याचा प्रयत्न केला आहे. विषय व्यापक आहे, ज्वलंत आहे, राष्ट्रीय ऐक्य आणि समता याच्याशी जोडला गेलेला विषय आहे. मुळात प्रत्येक माणसाला स्वातंत्र्यात आणि स्वाभिमानात जगण्याचा अधिकार आहे. सामाजिक न्यायाचे प्रश्न त्याच्या मुळाशी निगडित असतात. म्हणून हा विषय मला महत्वाचा वाटतो.

किंवदं: सामाजिक न्यायाचे वर्तमान काळातील स्वरूप, राज्यघटनेतील सामाजिक न्यायाचा आग्रह, १९५० नंतरच्या काळातील मागासवर्गीय समाज व स्त्रीवर्ग यांच्या सामाजिक न्यायाची स्थितीगती पाहणे, सामाजिक न्याय मिळण्यामागील अडचणी व उपाय योजना यांचे चिंतन.

प्रस्तावना:

आपला भारत देश विविध धर्म, पंथ, जाती, विचारधारा यांनी सजलेला आहे. जगाच्या नकाशात आज भारतासारख्या विकसनशील देशाची एक ऐतिहासिक दृष्टीने स्वतंत्र ओळख आहे. भारतीय संस्कृतीची व भाषेची प्राचीनता सिद्ध करणारे अवशेष याची साक्ष देतात. भारताची म्हणून एक स्वतंत्र धार्मिक, सामाजिक, सांस्कृतिक राजकीय, विचारांची एक विरासत आहे, यात शंका नाही. प्राचीन भारतात उद्योग व्यवसायाच्या देवाण-

घेवाणीचेही काही संदर्भ संशोधकांना मिळालेले आहेत. यावरून असे म्हणता येते की, कोणत्याही देशाची प्रगती ही त्याला मिळालेल्या ऐतिहासिक वारसा, विचारातून व वर्तमान काळात त्या देशातील समाज वर्गाने स्वीकारलेल्या परिवर्तनात्मक विचार धारेवर अवलंबून असते. भारतासारखा देश सुद्धा त्याला अपवाद कसा असेल. बाराव्या शतकापासून ते ब्रिटिश वसाहतीच्या सत्तेपर्यंत भारताचा विचार केला असता कित्येक धार्मिक, सामाजिक, राजकीय उलाढाली झालेल्या आहेत. या उलाढाली

वेगवेगळ्या काळात वेगवेगळ्या उद्देशाने झालेल्या आहेत. पण त्यात एक मोठा काळ धर्मप्रवण व्यवस्थेचा राहिला होता. त्यात दुमत असण्याचे कारण नाही. ब्रिटिश भारतात येईपर्यंत आपल्या देशात पारंपारिक धर्मसत्ता प्रत्यक्ष अप्रत्यक्ष काम करत होती. चातुर्वर्ण व्यवस्था ही त्यापैकीच एक गोष्ट होती. इंग्रजी राजवटीच्या निमित्ताने तमाम भारतीयांना नव्या धर्मजीवनाचा, सत्तेचा, संस्कृतीचा, भाषेचा, पेहरावाचा, शिक्षणाचा परिचय झाला. तो परिचय पुढे गडद पद्धतीने अधोरेखित होत गेला. त्यातून पुढे राष्ट्र नावाच्या स्वतंत्र विचारसरणीचा जन्म झाला. भारताच्या दृष्टीने विचार केला असता १८१८ ते १९४७ एवढा आपला प्रदीर्घ काळ पारतंत्र्यात गेला. या काळात इंग्रजी सत्ता व जीवन संस्कृतीचा थेट प्रभाव भारतीय समाज मनावर अधिकाधिक पडत गेला. इंग्रजी सत्ताधीशांच्या मर्जीने या देशात अनेक नव्या व्यवस्था निर्माण झाल्या. मुद्रणकला नवशिक्षण, विज्ञान, रेल्वे, रस्ते, टपालखाते नोकरशाही, इत्यादी व्यवस्था उभ्या राहिल्या. याच व्यवस्थेत स्वातंत्र्य नावाची एक नवी गरज आपल्याला भासू लागली. पुढे तर इंग्रजी काळात भारतात अनेक आंदोलने, चळवळी, सत्याग्रह, लढे देऊन भारताला १९४७ ला ब्रिटिशांनी स्वातंत्र्य बहाल केले. आज त्या स्वातंत्र्याला जवळपास ७८ वर्षे झाली आहेत. त्या ७८ वर्षांच्या भारतीय स्वातंत्र्याच्या वाटचालीचा लेखाजोखा सामाजिक न्यायाच्या दृष्टिकोनातून कसा करता येईल ? तो विचार प्रस्तुत संशोधनपर लेखनाचा मुख्य विचाराचा कणा आहे.

संशोधनाची उद्दिष्टे:

१. 'आजकालचे सामाजिक न्यायाचे प्रश्न: एक दृष्टिक्षेप' या विषयाच्या निवडीमागे मुख्य कारण म्हणजे या विषयासंबंधी एकत्रित चर्चा व्हावी. समाजात दिसणारे प्रश्न समाजासमोर, शासन व्यवस्थेसमोर मांडण्याचा प्रयत्न आणण्याचा हा एक प्रयत्न.
२. सामाजिक न्यायाचे प्रश्न महत्वाचे असूनही कोणत्या गोष्टीमुळे अडथळे तयार होतात ते पाहणे.
३. स्वातंत्र्योत्तर काळातील मागासवर्गीय समाज व स्त्रीवर्ग यांच्या बाबतीत आजकाल दिसणारे समाजवास्तव काय दिसते त्याचा शोध घेणे.
४. सामाजिक न्यायाच्या ठळक गोष्टींचा वेध घेणे.
५. सामाजिक न्याय मिळवून देण्यासाठीचे उपाय शोधणे.
६. सामाजिक न्यायाचा समता, स्वातंत्र्य, बंधुता व राष्ट्रीय ऐक्याशी असलेला संबंध पाहणे.

संशोधन कार्यपद्धती:

सदर शोध कार्यासाठी वर्णनात्मक, तुलनात्मक, समाजशास्त्रीय अभ्यास पद्धतीचा उपयोग आवश्यक तिथे करण्यात आला आहे. स्वातंत्र्याच्या ७५ वर्षांचा काळ हा मोठा अवकाश आहे. त्यातील सामाजिक न्यायाचे प्रश्न व त्याची चिकित्सा करताना शासकीय सर्वेक्षणाचा २०१९-२०२१ चा कुटुंब अहवाल आधारासाठी घेतलेला आहे. वंचित समाजघटकांना डॉ. संदीपान श्रीमंत नवगिरे

सामाजिक न्यायापासून दूर का लोटले जाते ते या शोधपर लिखाणात पाहण्याचा प्रयत्न केला आहे.

विस्तार:

"स्वातंत्र्याच्या अनेक व्याख्या आज उपलब्ध आहेत. काही व्याख्या ह्या सामाजिक, नैतिक, अध्यात्मिक, धार्मिक दृष्टीने केलेल्या आहेत. त्यांचे दोन प्रकार सांगितले जातात, एक; नकारात्मक स्वातंत्र्य, दोन; भावात्मक स्वातंत्र्य. परस्पर विरुद्ध वाटणारे हे प्रकार परस्पर विरोधी परिस्थितीतील अनुभवावरून निघालेले असावेत!" या स्वातंत्र्य चिंतनातील भावार्थ घेऊन भारताच्या ७५ वर्षांच्या वाटचालीकडे एक नजर टाकले असता; शेती, शिक्षण, विज्ञान, या क्षेत्रामध्ये नजरेत भरणारी प्रगती दिसते आहे. याशिवाय धर्मजीवन, लोकजीवन, राष्ट्रजीवन यासारख्या समांतर व्यवस्थेतही आवश्यक तेवढे बदल झालेले आहेत. प्रगत देशाकडे बघत बघत भारत देश प्रगत होण्याकडे वाटचाल करतो आहे. १९५० पासून वरील क्षेत्रात बदलांची सक्रियता अव्याहतपणे चालू आहे. दरडोई उत्पन्नापासून ते जागतिक स्तरावर होणाऱ्या अर्थक्रांतीचा विचार करत त्या त्या काळाच्या सरकारांनी आपल्या आपल्या स्तरावर प्रयत्न केले आहेत हे वास्तव आहे. हे वास्तव समोर ठेवूनही गेल्या ७५ वर्षांच्या तुलनेत प्रगतीचा आलेख आपण एक सारखा वरचढ ठेवू शकलो नाही; हे वास्तवही नाकारता येत नाही. हरितक्रांती व उद्योगक्रांतीवर देशाची अर्थक्रांती अवलंबून आहे असते, हे धुरीन जाणकारांनी वारंवार अधोरेखित केले होते. सुदैवाने भारतातला अशी महान विचारकांची एक थोर परंपरा लाभलेली दिसते. वरील तीनही क्रांती व्यवस्था या देशात यशस्वी व्हाव्यात यासाठी दिवस-रात्र काम केले. त्यात अग्रणी होते महात्मा फुले, राजर्षी शाहू महाराज, सयाजीराव गायकवाड, डॉ. बाबासाहेब आंबेडकर, पंजाबराव देशमुख, चिंतामणराव देशमुख, पंडित जवाहरलाल नेहरू, इंदिरा गांधी, जमनालाल बजाज, जमशेदजी टाटा, रतन टाटा, शं.वा.किलोस्कर अशी काही प्रतिनिधीक नावे देता येतील. यां सर्वांच्या विचार व कृतीने भारत देशात परिवर्तने झाली. विकासाला चालना मिळाली. त्यांनी समाजाच्या शैक्षणिक, सामाजिक, सांस्कृतिक, राजकीय, नैतिक विकासासाठी अथक परिश्रमांची पराकाष्ठा केली. "ज्योतिबा फुले हे रूढी, परंपरा, अंधश्रद्धा, अज्ञान, स्त्री मुक्ती, समता, अस्पृश्यांसाठी पाण्याचा स्वतःचा हौद खुला करून देणारे शूद्रांतीशूद्रांना शिक्षण व समतेकडे नेणारे, शेतकऱ्यांचे खरे कैवरी म्हणून महाराष्ट्रातील किंबहुना भारत देशातील समाज क्रांतीचे दृष्टे नेते होते!" या समाजक्रांतीच्या वाटचालीत भारतत स्वातंत्र्य, समता, बंधुता, न्याय या तत्वांची कृतिशील मांडणी होऊन समाजात विचारवारे गतिमान झाले. मानवता हाच खरा धर्म आहे या विचाराला मध्यवर्ती स्थान मिळत गेले. या

विचारांच्या प्रभावाने १९५० साली भारताला मिळालेली राज्यघटना दिसते. डॉ. बाबासाहेब आंबेडकर आणि घटना समितीच्या नेतृत्वाखाली सर्वधर्मसमभाव, राष्ट्रीयता, सामाजिक ऐक्य यांना ठळकपणे कायद्याच्या चौकटीमध्ये अधोरेखित केले. स्वातंत्र्योत्तर काळात राज्यघटनेच्या अंमलबजावणीने जे काही बदल होत गेले त्याच्या ठळक नोंदी इथे केवळ संदर्भासाठी आपल्या या संशोधन पर लेखात आपण घेत आहोत. राज्यघटनेच्या अंमलबजावणीलाही ७५ वर्षे उलटून गेले पण अजूनही आपल्याकडे सामाजिक न्यायाच्या बाबतीत समाजात समाजामध्ये प्रचंड दरी दिसून येते. कायद्याचे राज्य असूनही पळवाटाद्वारे न्याय पळून नेण्याची प्रवृत्ती आपल्या देशामध्ये नको इतकी बोकाळलेली दिसते. स्वातंत्र्याच्या ७५ वर्षांनंतरही भारतीय समाजातील स्त्री आणि मागासवर्ग, आदिवासी वर्ग यांना जीवनात जे स्वातंत्र्य, समता, बंधुता, न्याय या तत्वांच्या आधारे बदल हवा होता तो तेवढ्या प्रमाणात दिसून येत नाही. हा एक प्रकारे सामाजिक, आर्थिक, शैक्षणिक, राजकीय पातळीवरचा अन्यायच आहे. या अन्यायापाठीमागची कारणे शोधली असता त्यात मध्ययुगीन काळात असणाऱ्या मानसिकताच अधिक प्रमाणात आजही कारणीभूत असल्याचे दिसते. ती नेमकी काय कारणे आहेत? त्याचा शोध घेता येतो तो पुढीलप्रमाणे- वर्तमान काळातील सामाजिक न्यायाचे अडथळे:

१) जातीनिहाय समाजरचना:- आज आपण २१ व्या शतकात ग्लोबल इंडियाची स्वप्न पाहत आहोत. भारताला विश्व गुरुच्या स्पर्धेत आपण उतरवलेलं आहे. डिजिटल इंडियाची स्वप्न आपण रंगवत आहोत. जगातील पहिल्या पाच अर्थसत्तेत भारताला उदृत करत आहेत. अशा काळात भारतांतर्गत असणाऱ्या जातीनिष्ठ समाज रचनेचा मोठा अडथळा आपल्यापुढे आहे. धर्म, जात, श्रेष्ठता, सत्ता यांचा खेळ स्वतंत्र भारतामध्ये आजही चालू आहे. उदाहरणार्थ; आंतरजातीय विवाहला होणारा विरोध, अँट्राँसिटी कायद्यानुसार न्यायाचे जलद न होणारे निवाडे, इनामी जमिनीवर गाव पातळीवर होणारी अतिक्रमणे, जाती श्रेष्ठत्वातून सगळ्यात जास्त नगर जिल्ह्यात घडलेले अत्याचार, जमिनीच्या वादाचे ३०-४० वर्ष चालणारे खटले, गावापासून शहरापर्यंत स्त्रियांवर होणारे अन्याय, अत्याचार, गोरगरिबांना गृहीत धरून त्यांच्या श्रमाचे घेतले जाणारे फायदे, १२ ते १४ तास कमी मोबदल्यात राबवली जाणारा कामगार समाज, आजही प्रत्येक गावागावात श्रेष्ठत्वाची जपवणूक करणारी वागणूक, मागासवर्गीय स्त्रियांवर होणारे गाव खेड्यातील बळजबरीचे प्रकरणे, कुटुंबात राजरोस होणाऱ्या स्त्रियांवरचा लैंगिक अत्याचाराच्या प्रकरणे, या सगळ्यांचा एकत्रित विचार केला असता आपण सामाजिक न्यायाच्या बाबतीत

प्रगतिशील पथावर नक्कीच नाही? हे साधार सांगता येते. आपला धर्म जातीचा उल्लेख आज गाड्या घोड्यांवर लिहून राजरोस समतेच्या मूल्यांची जी थट्टा होते आहे यातू जातीय तणावाची परिस्थिती कुठे ना कुठे उद्भवत असते. अशी परिस्थिती आज आजूबाजूला आहे. आजही देशात आरक्षणाच्या बाजूने आणि विरोधात बोलणारे लोक आहेत हे आजचे सामाजिक वास्तव आहे. सर्व समाजाची स्थिती- गती शैक्षणिक, आर्थिक, परिस्थितीची वास्तविकता जाणून घेऊन त्यावर ध्येयधोरणे राबवले पाहिजेत. पण याकडे जाणीवपूर्वक डोळे झाक केले जात आहे. या सगळ्यांमध्ये कुठेतरी विषम समाजरचना कारणीभूत आहे हे नक्की. "विषमतेवर आधारलेली जातीनिष्ठ समाज रचना व्यक्तीची इच्छा व पात्रता लक्षात न घेता तिला जन्मापासून मरणापर्यंत बांधून ठेवणारी होती!"ⁱⁱⁱ हे र.बा. मंचरकरांचे मध्ययुगीन धार्मिक समाजाविषयी काढलेले उद्गार आजच्या समाजालाही लागू होते. आपल्या भारतातील विद्यमान समाजात आजही ज्या अर्थाने बेटी व्यवहार, समता व्यवहार, मानवता व्यवहार हा सर्व पातळीवर सार्वत्रिक स्वरूपात दिसायला हवा, पण तो दिसत नाही; त्या अर्थी आजही भारतीय समाजात जातीनिष्ठ समाज रचनेच्या चौकटीत स्वतःला ठेवण्याची मानसिकता संख्यात्मक पातळीवर मोठी दिसते असे दुर्दैवाने सत्यकथन करावे लागते आहे.

२) पुरुषप्रधान रचना:- सामाजिक न्यायात आणखी एक अडथळा कोणता दिसत असेल तर तो पुरुष पुरुषप्रधान संस्कृतीचा आहे. बहुतेक भारतीय समाजाच्या सर्वस्तरीय केलेला अभ्यास असे सांगतो की, आपल्या समाजात पुरुष वर्गाकडून स्त्रियांवर होणारे लैंगिक, मानसिक, शारीरिक, आर्थिक पातळीवरच्या अत्याचारांचे प्रमाण आपल्या डोक्याला झिणझिण्या आणणारे आहे. उदाहरणार्थ. राष्ट्रीय कुटुंब आणि आरोग्य अहवाल २०१९-२१ प्रमाणे असे समोर आले आहे की, १८ ते ३९ वयोगटातील कधी न कधी लैंगिक अत्याचार झालेल्या विवाहित महिलांमधील ८२%, टक्के. महिलांवर सध्याच्या पतीकडून लैंगिक अत्याचार झाला ते १३.७% पूर्वाश्रमीच्या पतीकडून यात १.६%, अधीच्या किंवा आत्ताच्या प्रियकराकडून आणि १.०४% कुटुंबातील इतर सदस्य (वडील, भाऊ) यांच्याकडून अत्याचार झाला. यात नोंद घेण्याची आणखी एक बाब म्हणजे ०.०२% लैंगिक अत्याचार हा अपरिचित पुरुषांकडून होतो, असे समोर आले आहे. याला आपण काय म्हणणार ? आणखी एक भरीस भर म्हणून गाव अथवा शहर पातळीवर साम-दाम-दंड-भेद नीतीचा वापर करून सामाजिक, आर्थिक दृष्ट्या दुर्बल घटकांवर अन्याय चालूच आहे. मजुरांना सक्तीने राबवून घेणे, कमी मोबदला देणे, सुट्टी न देणे, चाकरी असलेल्या श्रमिक कुटुंबाला हवे तसे राबवणे, गैर कृत्यासाठी पैशाच्या जोरावर गोरगरीब तरुणांचा वापर करणे, राजकीय कामांसाठी वापर करणे, दादागिरी करणे,

मारझोड करणे, निवडणुकीत विरोधात कोणी उभा राहिला तर त्याला जबरदस्ती माघार घेऊन घ्यायला लावणे, वेळ पडल्यास मारामारी ते अगदी खुनापर्यंतची मजल जाणे, अशा काही घटना आजूबाजूला घडताना दिसतात, हे कोणी नाकारू शकत नाही, हे एक समाज वास्तव समोर आहे.

३) कायद्याचे प्रभावी अंमलबजावणी न होणे:- सामाजिक न्यायातील आणखी एक अडथळा म्हणजे कायद्याचे पालन न करणे हे एक होय. कायद्याचे वैध मार्गाने अंमलबजावणी टाळणे. भ्रष्ट मनोवृत्ती, भ्रष्टाचारी मानसिकता, राजकीय दबावाचे राजकारण आणि श्रीमंतीचा काहीना आलेला माज अशी काही ठळक कारणे सांगता येतील. आज सर्वसामान्याला न्याय मिळणे इतके खर्चिक, दुष्कर आणि वेळखाऊ झाले आहे की, समाजात 'पोलीस स्टेशन आणि कोर्टाची पायरी शहाण्या माणसाने चढू नये!' अशी एक सामाजिक म्हण अथवा विचार समाजात पसरलेला आहे. तो तसा विचार का पसरला यावर आज किती संघटना, वकील संघटना, शासन, संस्था यासाठी काम करतात हे पहिले तर याचे याचे प्रमाण केवळ अडीच टक्के आहे. ही परिस्थिती स्फोटक आणि तेवढीच गंभीर आहे.

४) सत्तेच्या खुर्चीची राजकीय व जातीय गणिते:- आपल्या देशामध्ये निकोप राजकारणाचे वातावरण शाबूत ठेवता आले नाही हे मोठ्या खेदाने म्हणावे लागते. ज्या राज्यघटनेचा हवाला देऊन भारतात गेल्या ७५ वर्षात राजकारण केले गेले त्यातील काही उल्लेखनीय टप्पे वजा केले, तर बहुतेक राजकारण हे सत्तेच्या खुर्चीभोवतीच फिरत राहिले आहे. आज राजकारण्यांची संस्थानिके, संस्थानी घराणी तयार झाली आहेत. जुन्या काळात जसे राजे रजवाडे आपल्या आपल्या क्षेत्रांमध्ये जसे राजे होते, तेथे राज करायचे तसे आज राजकीय घराणे वर्षानुवर्षे सत्तेच्या अवतीभोवती वा थेट सत्तेत सातत्याने सहभागी असतात. त्यातही माहितीचा भाग असा की, जातीपातीचे राजकारण आजही उघड पद्धतीने भारत देशामध्ये केले जाते. दुर्दैवाने मतदारांमध्ये आजही हा आमच्या धर्माचा, जातीचा असे म्हणून मत प्रदान केले जातात. काही अपवाद वगळता आपल्याला बहुतांशी राजकारणी लोकांच्यात वैचारिक, शैक्षणिक, सामाजिक व राजकीय नैतिक प्रगल्भतेचा मोठा अभाव दिसून येतो. त्यामुळे आज आपल्या देशापुढील लोकसंख्या, बेरोजगारी, भ्रष्टाचार, गुन्हेगारीकरण, नगरांचे प्रचंड होणारे नागरिकरण यासारख्या प्रखर प्रश्नांवर आज घडीला उपाययोजनांची कामगिरी करता आली नाही. परिणामी याही कारणांमुळे सामाजिक, आर्थिक, न्यायापासून सामान्य जनता कोसो दूर फेकली जात आहे. डॉ. भीमराव आंबेडकर यांनी न्यायाच्या बाबतीचे चिंतन केले होते त्यात प्रत्येकाला गुणवत्तेनुसार व प्रत्येकाला गरजेनुसार अशी विभागणी कधीच केली नव्हती पण आज डॉ. संदीपान श्रीमंत नवगिरे

ती सहज केली जाते आहे हे दुर्दैव म्हणावे लागेल. त्या मागे काही तरी राजकीय भूमिका असावी. मग आता असा प्रश्न येतो की, न्यायाच्या या प्रगतीपुढे येणारे काही ठळक अडथळे दूर करण्यासाठी आपल्याला काही उपायांची चर्चा करणेही अपेक्षित आहे. भारतासारख्या खंडप्राय देशात विचारांची इतकी विविधता आहे की ती लक्षात घेऊन जर तमाम भारतीय जनतेने मनात आणले तर आपण किमान २५ वर्षातच आपल्या सामाजिक न्याय व अन्य न्यायाचे फलित तमाम भारतीयांच्या नजरेला दिसू शकेल. त्यासाठी शासन, शासकीय कर्मचारी, लोकप्रतिनिधी व या देशाचे सर्व नागरिक यांच्या सामायिक सहभागाच्या, इच्छाशक्तीच्या कळकळीतून बदल करणे शक्य आहे ते बदल पुढील उपायांच्या मार्गाने करावे लागतील.

सामाजिक न्यायासाठीचे उपाय:-

१) लोक सहभागातील शैक्षणिक क्रांती:- सामाजिक न्याय मिळवून द्यावयाचा असेल तर लोकसभागातून होणारी शैक्षणिक क्रांती होणे गरजेचे आहे. असे शिक्षण द्यावे लागेल की, जे लोकांना सामाजिक आणि नैतिक बनवेल. कोल्हापूरचे राजर्षी शाहू महाराजांच्या भाषणाचा अहवाला देऊन बोलावयाचे झाल्यास, "समाजाची नीतिमत्ता वाढवणे हे सामाजिक सुधारण्याचे एक महत्वाचे अंग आहे. वाईट रिती, भाती व धर्मभोळेपणा याच्या योगाने आमचे मध्ये मद्यपान, बालविवाह, जुलमाचे वैधव्य, देवाला मुली वाहणे, हे असे घातक प्रकार रूढ होऊन त्यापासून शारीरिक, मानसिक व बौद्धिक अवणती झाली आहे. ही अवणती दूर करण्यास आपण उपाययोजना करावी, याबाबतीत शील बनवणे हेच मुख्य कर्तव्य आहे. शीलवान नागरिकाशिवाय राष्ट्र बनणे अगर उदयास येणे या गोष्टी शक्य नाही!"^{iv} खरे तर आज खाजगी, शासकीय, ट्रस्ट यांच्या वैयक्तिक स्तरावर खूप शाळा, कॉलेजेस निर्माण झाली आहेत, पण वरील प्रमाणे शिक्षणाचे उद्दिष्ट यातून साध्य झाले आहे का? या प्रश्नाचे उत्तर ठोस पद्धतीने "हो" असे देता येत नाही; याचे मुख्य कारण म्हणजे शिक्षण हे अर्थप्राप्तीच्या साधनाशी जोडले गेले आहे. सामाजिक परिवर्तनाच्या कारणाशी शिक्षणाचा संबंध दुर्दैवाने जोडला गेला नाही. ही चूक तशीच पिढ्यानपिढ्या आजही चालत आलेली आहे. शिक्षणाचे सामाजिक न्यायाशी नवे नाते जोडले गेले पाहिजे असे मला वाटते.

२) समतेचे स्वातंत्र्य हवेच:- समता आणि बंधुता ही दोन मूल्ये अतिशय परिणामकारी असतात. याबाबतीत आज आपल्या देशात कागदावर एक आणि प्रत्यक्षात एक अशी गोष्ट झालेली आहे. घटना आहे. घटनेत कलम आहेत, कलमांमध्ये उद्दिष्ट आहेत पण आज अंमलबजावणीचे सर्वत्रिक रूप पाहता समता व बंधुता पातळीवरची अंमलबजावणी आपल्याकडे होत नाही आणि झाली तरी त्यावरची उपयोगिता तकलादू असते हेच खरे आहे. "ज्या

समाजाकडून वास्तविक समतेच्या तत्वाचा म्हणजेच सर्व माणसांचे सारख्या प्रमाणात हित साधले पाहिजे, या स्वातंत्र्याचा स्वीकार केला पाहिजे!"^v खऱ्या अर्थाने समतेचे सामाजिक न्यायाची फलश्रुती तमाम भारतीय समाजाच्या प्रत्यक्ष जगण्यात, वर्तनात, विचारात, भाषेत दिसायला हवी.

निष्कर्ष:-

- १) वर्तमान समाजातील सामाजिक न्याय तत्वांची पुनर्बांधणी हवी.
- २) ही पुनर्बांधणी करत असताना जात, धर्म, सत्ता यांच्या बाहेर जाऊन विचार करावा लागेल.
- ३) भारतीय राज्यघटनेतील कलमांची प्रत्यक्ष बजावणी राष्ट्रनिष्ठेच्या भावनेतून झालीच पाहिजे.
- ४) जातीनिहाय समाजरचनेची सत्तेवरील पकड नष्ट करून भारतीय समाज भावनेतील सर्वधर्मसमभावाखाली समाज निर्माण व्हायला हवा.
- ५) पुरुषी वर्चस्ववादाचा प्रभाव संपुष्टात आणावा लागेल तरच 50% स्त्रीवर्ग असलेल्या समाज वर्ग न्यायाच्या समतेच्या कक्षेमध्ये येईल.
- ६) सत्तेच्या खुर्चीची जातीय व राजकीय गणिते नामशेष करावी लागतील तरच समताधिष्ठ समाज रचनेची निर्मिती शक्य होईल.

समारोप :

स्तुत शोधपर लेखनात भारतीय स्वातंत्र्याच्या ७५ वर्षांच्या इतिहासातील निवडक पण महत्त्वाच्या संदर्भांचा आधार घेऊन केलेले हे सामाजिक न्यायाच्या पाठीमागे असणारे अडथळे, गतिरोधके नेमकी कुठले आहेत? ती गतिरोधक कशी बाजूला करता येतील? याचे पद्धतशीर शोधकार्य करण्याचा प्रयत्न केला आहे. संशोधनपर लेखनाला पुराव्याचे अधिष्ठान देण्यासाठी आवश्यक तिथे थोर लोकांची वैचारिक विधाने दिलेली आहेत ती आवश्यक आणि औचित्यपूर्ण अशीच आहेत. आज भारतीय समाजातील अनेक पोटसमाज आजही वेगवेगळ्या न्यायाच्या प्रतीक्षेमध्ये आहे. सामाजिक न्याय त्याला कसा मिळवून देता येईल त्याचे चिंतन इथे यताशक्ती, यथामती केलेले आहे. यात संपूर्ण रित्या परिपूर्णता आहे असं माझा दावा नाही, इथे अपूर्णताही असू शकते. कारण वैचारिक लेखन प्रांतात शोध ही एक अखंड चालणारी संशोधनाच्या पातळीवरची प्रक्रिया आहे. अखंडपणे चालणारा शोध आहे; तो चालतच राहील असेच म्हणावे लागेल.

संदर्भ साधनांची सूची:

- i बागले, प्रभाकर : 'साहित्य आणि सांस्कृतिक संवेदन', शब्दालय प्रकाशन, श्रीरामपूर, २०१४, पृ. ४१६.

स्वातंत्र्य हे स्वहित व समाजहित म्हणजेच पर्यायाने राष्ट्रहिताकडे जाणारे असते. आजच्या भारताला याची नितांत गरज आहे असे म्हटले तर वावगे ठरणार नाही.

- ii व्यास, प्रकाशचंद्र: 'आधुनिक महाराष्ट्रातील परिवर्तनाचा इतिहास', य.च.म.मु.वि.ग्रंथ निर्मिती केंद्र, नाशिक, २००४, पृ. २९.
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हवामान बदल समस्ये संदर्भात भारताची भूमिका

प्रा. डॉ. सरवदे एम. पी.

भूगोल विभाग, जयक्रांती कला वरिष्ठ महाविद्यालय लातूर.

Corresponding Author- प्रा. डॉ. सरवदे एम. पी.

Email- sarwademaya71@gmail.com

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सारांश :-

हवामान बदल ही एक वाढती जागतिक समस्या आहे. आधुनिक काळात बदलत्या हवामानामुळे अनेक प्रश्न निर्माण झाले आहेत. हवामान हा नैसर्गिक पर्यावरणातील अत्यंत महत्वाचा घटक आहे. हवामान बदलाचे संपूर्ण सृष्टीवर जे परिणाम होतात त्यासाठी उपाययोजन करणे अत्यंत महत्वाचे आहे. भारत सरकारने कार्बन उत्सर्जन कमी करण्यासाठी आपली भूमिका स्पष्टपणे मांडली आहे. हवामान बदल समस्येवर जागतिक पातळीवर विकसीत आणि विकसनशील देश असे गट निर्माण झाले आहेत. या देशाला कार्बन उत्सर्जन कमी करण्यासाठी जागतिक पातळीवर मदत सहकार्य केले पाहिजे. इ.स. 2070 पर्यंत भारतातील कार्बन उत्सर्जनाचे प्रमाण शून्यावर आणले जाईल. भारत स्वच्छ उर्जा क्रांतीच्या पदपथावर आहे. हवामान बदलाची समस्या हा राष्ट्रीय धोरणाचा अविभाज्य घटक असून त्यानुसार परिस्थितीशी जुळवून घेण्यास भारताने प्राधान्य दिले आहे.

बिजसंज्ञा (Key Words): तापमानवाढ, कार्बन डाय-ऑक्साईड, हरितवायू, राष्ट्रीय धोरण.

प्रस्तावना :-

प्राचीन काळापासून मानव शेती व्यवसाय करत आहे. कृषीचा उगम कधी झाला याविषयी शास्त्रज्ञांमध्ये मतभेद असले तरी इ.स. 12000 च्या आसपास कृषी उगम झाला असावा असे मत आहे, मानवी बुद्धीच्या जोरावर त्यांनी आपली दिवसेंदिवस प्रगती करण्यास सुरुवात केली आणि आधुनिक काळात आधुनिक ज्ञान, तंत्र, यंत्राच्या साहाय्याने आधुनिक शेती करण्यास सुरुवात केली आधुनिक शेतीचे फायदे आणि त्याबरोबर त्याचा हवामानावर होत चालेला परिणाम पाहता हवामानाच्या बदलत्या स्वरूपाच्या संदर्भात विचार व अभ्यास करणे अत्यंत महत्वाचे ठरते. हवामान बदलाचा प्रत्यक्ष परिणाम संपूर्ण मानव जातीवर होताना दिसून येत आहे.

बदलत्या आणि वाढत्या जागतिक तापमानाचा सामना ही आज जगापुढची सर्वात मोठी समस्या आहे अनेक देशांचे अस्तित्व नकाशावरच राहणे किंवा न राहणे या समस्येच्या तीव्रतेवर अवलंबून आहे. हवामान बदलाबद्दल उद्याचा विचार केल्यास असे निदर्शनास येते की, आपण जर वेळीच सावध जर नाही झालो तर आपण पर्यावरणाचा न्हास करून, पर्यावरणाला हानी करून, पर्यावरणाचे शोषण

करून एकतर्फी विकासाच्या मार्गाने चालत राहिलो तर येणारा काळ आपल्याला माफ करणार नाही. कारण वाढलेली लोकसंख्या, औद्योगिकीकरण, नांगरीकरण, उदारीकरण, सर्व प्रकारचे प्रदूषण, निसर्गाचे होणारे शोषण, निर्वर्णीकरण, युद्ध, अणुचाचण्या, तापमानवृद्धी एकूणच सृष्टी चक्रातील बिघाड मानवाचे अस्तित्व संपूर्ण टाकल्याशिवाय राहणार नाही.

उद्देश्य :-

- 1) जागतिक हवामान बदलाचा अभ्यास
- 2) हवामान बदलाचा कारणाचा शोध
- 3) हवामान बदलाचे परिणाम
- 4) हवामान बदल थांबविण्यासाठीचे उपाय

संशोधन :-

प्रस्तुत शोधनिबंध दुय्यम माहितीस्रोताचा संदर्भग्रंथ म्हणून उपयोग करण्यात आलेला आहे विविध लेखकांची संदर्भग्रंथ, मासिके, वर्तमान पत्रे, वेबसाईट यांचा आधार घेण्यात आलेला आहे.

विषय विवेचन :-

हवामान बदलाचे अनेक चांगले-वाईट परिणाम दिसू लागले आहेत. त्यामुळे सर्वसामान्य नागरिकांपासून ते

व्यापारी, शेतकरी, नोकरदार यांच्यामध्ये हवामानबदलाविषयी जागरूकता निर्माण होत आहे. जेव्हा आपण जागतिक हवामानदिन साजरा करतो तेव्हा त्याबाबत सर्वांनी विचार करणे गरजेचे आहे.

जागतिक हवामान बदलाचा अभ्यास :-

जागतिक हवामान बदलाचा विचार केल्यानंतर असे लक्षात येते की, जगात अनादिकाळापासून हवामानात बदल होत आहेत होत राहतील, पण पुर्वीच्या काळातील बदल हे पूर्णतः नैसर्गिक होते. म्हणून याला फारसे गंभीर घेण्याची गरज नव्हती परंतु औद्योगिक क्रांतीनंतर मानवाने पर्यावरणाचे अमर्याद शोषण केल्यामुळे पर्यावरण संतुलन बिघडले परिणामी असंतुलित पर्यावरणामुळे अनेक पर्यावरणीय समस्या निर्माण झाल्या ज्यामुळे पर्यावरणाच्या अघाताने मानवी अस्तित्व धोक्यात आले. मानवाला अनेक समस्यांना समोर जावे लागले. निसर्ग-मानव संघर्षात मानवाचे जगणे असाध्य झाले कारण या विकासाच्या मार्गाने विनाश समोर आला. म्हणून अशावेळी विकासाचा गाडा पुढेपुढे नेत असताना विनाश रोखण्यासाठी जाणिवपुर्वक प्रयत्न करणे गरजेचे आहे.

हवामान बदलाची मूलभूत कारणे :-

- 1) हरितगृह वायू उत्सर्जनात वाढ 2) जंगलतोड
- 3) कृषी 4) शहरीकरण 5) औद्योगिकरण 6) सौर विकिरण
- 7) मिलन कोविच सायकल 8) प्लेट टेक्रीक्स 9) ज्वालामुखीचा उद्रेक 10) एल निनो सर्दन ऑसिपेशन 11) उल्कापाताचा प्रभाव 12) महारागरीय प्रवाहामध्ये बदल
- 13) सौर उर्जा 14) पृथ्वीचे सूर्यापासूनचे अंतर 15)

गोलीलॉक विभाग 16) ऋतूमधील परिवर्तन 17) मानवनिर्मित कारणे

19 व्या शतकाच्या तुलनेत आता जगभरातील तापमान 1.2 C वाढलेले आहे. तर वातावरणात कार्बन डायऑक्साईडचे प्रमाण 50 टक्क्यांनी वाढलेय. मानव आज भौतिक सुखाच्या शोधात पर्यावरणीय साधनसंपत्ती जलद गतीने अतिरेकी वापरत आहे. त्यामुळे हवामान बदल समस्या तीव्र वेगाने वाढत आहे. 2100 पर्यंत जागतिक तापमान वृद्धी 1.5 C पर्यंत रोखणे गरजेचे आहे. या शतकाच्या अखेरपर्यंत पृथ्वीचे तापमान 2C अंशानी वाढण्याची भीती आहे. वाढत्या हवामान बदलामुळे पृथ्वीचे तापमान 4C अंशानी वाढेल. विनाशकारी उष्णतेची लाट येईल. पृथ्वीवर सजीव सृष्टीने भरून न येणारे नुकसान होईल.

पृथ्वीवर होत असलेल्या हवामान बदलाचे परिणाम भारतात जाणवू लागले आहेत. तूफान, चक्रीवादळे, महापूर, अतिप्रमाणात दुष्काळ यासारखे हवामान बदलाचे गंभीर परिणामही देशात वारंवार दिसू लागले आहेत. 130 कोटी लोकसंख्या असलेल्या खंडप्राय देशावर हवामान बदलाच्या घोंगावणाऱ्या संकटाने खूप काही बदलणार आहे. त्याची तयारी देशातील प्रत्येकाने घेतली पाहिजे. त्यासाठी बदल हा कसा असेल हे समजून घेणे आणि त्यानुसार आपल्या जीवनशैली बदल करणे सर्वांसाठी गरजेचे आहे. 2018 मध्ये भारताला तीव्र झटका बसला. तीव्र हवामानामुळे 2100 जणांचे बळी गेले. 38 अब्ज डॉलरचे नुकसान झाले. जागतिक तुलनेत भारतावर हवामान बदलाचे अत्यंत वाईट परिणाम होतील.

अ.क्र.	देश	जोखीम निर्देशांक
1	जपान	5.5
2	जर्मनी	...
3	फिलिपीन्स	11.17
4	मादागास्कर	15.83
5	भारत	18.17
6	श्रीलंका	19
7	केनिया	19.67
8	रवंडा	21.17
9	कॅनडा	21.83
10	फिजी	22.5

1901 ते 2018 या कालावधीत भारतातील 0.7 Cg ने वाढ झाली आहे. उत्सर्जनाचे प्रमाण झपाट्याने वाढले. 1986 ते 2015 पर्यंतचा 29 वर्षांच्या कालावधीत भारताने हवामान बदलाची अनेक रूपे अनुभवली आहे. उदा : उष्ण दिवस आणि रात्र यांच्या संख्येतील वाढ, घातकी स्वरूपाची चक्रीवादळे इ. सरकारी आकडेवारीनुसार 2001 ते 2020 या कालावधीत 77.8 दशलक्ष हेक्टर पीकक्षेत्राचे नुकसान झाले आहे. 2011 ते 2021 या कालावधीत जास्त तीव्रता होती. ज्या हवामान बदलामुळे खालील देशांना मोठ्या प्रमाणात जोखीम पत्करावी लागेल. हवामान बदलामुळे ध्रुवावरील बर्फ आणि हिमनद्या वेगाने वितळत आहेत. त्यामुळे समुद्राची पातळी वाढत चाललेली आहे. किनारी भागात पुराचा धोका तीव्र गतीने वाढला आहे. जंगलात आगी लागण्याचे प्रमाण वाढत चाललेले आहे. उष्णतेच्या लाटा मोठ्या प्रमाणावर तीव्र गतीने वाढत आहेत. मानवी घडामोडीमुळे हवामान बदल मोठ्या प्रमाणात तीव्र गतीने वाढत आहे. गेल्या 20 वर्षांत कार्बन डायऑक्साईड प्रमाण 12 टक्क्यांनी वाढले आहे. जगभरात हवामान बदलाचे परिणाम तीव्र गतीने वाढत आहेत.

हवामान बदलाचे परिणाम :-

1. बर्फ वितळणे आणि समुद्र पातळीत वाढ, किनारी प्रदेश विस्थापन
2. महासागराच्या तापमानात वाढ, मानवी आरोग्याची जोखीम
3. भूक वाढणे, आर्थिक प्रभाव, वन्यजीवावर विपरित परिणाम
4. पर्जन्यावर होणारा परिणाम, शेतीवरील परिणाम
5. जैव विविधतेवरील परिणाम, नैसर्गिक आपत्तीत वाढ
6. परिसंस्थेवर होणारा परिणाम, मानवी जीवनावरील परिणाम
7. शहरीकरणावरील परिणाम, आर्थिक परिणाम
8. सामाजिक परिणाम, सांस्कृतिक परिणाम, राजकीय परिणाम

हवामान बदल समस्येत भारताची भूमिका :-

'नासा'च्या म्हणण्यानुसार हवामान बदल ही प्रामुख्याने जीवशम इंद्रिये जाळून निर्माण केलेल्या जागतिक घटकांची एक विस्तृत श्रेणी आहे. त्यामुळे पृथ्वीच्या वातावरणात उष्णता जाळणारे वायू जोडले जातात. जागतिक पातळीवर हवामान बदल समस्येबाबत विविध

प्रा. डॉ. सरवदे एम. पी.

जागतिक संघटना कार्यरत आहेत. पृथ्वीच्या इतिहासात अनेक हवामान बदल झाले आहेत. मनुष्याने केलेले हे सर्वात तीव्र बदल आहेत. आपल्या औद्योगिक, शेती, वाहतूक उपक्रम इत्यादींद्वारे वातावरणात सोडल्या जाणाऱ्या ग्रीनहाऊसने उत्सर्जन हे त्याचे मुख्य कारण आहे. तथापि हवामान बदल सर्व देशांवर तितकाच परिणाम होत नाही. कारण ते परिसंस्थेची वैशिष्ट्ये आणि प्रत्येक हरितगृह वायूची उष्णता धारण करण्याची क्षमता यावर अवलंबून असते. भारताकडून COP27 परिषदेमध्ये हवामान बदल समस्येवर विचार मांडण्यात आले. जगामध्ये कार्बन उत्सर्जनाचे प्रमाण मोठ्या प्रमाणावर वाढत आहे. भारत हा अमेरिका आणि चीननंतर तिसऱ्या क्रमांकाचा देश आहे. 2005 च्या तुलनेत 2030 पर्यंत 33-35 टक्क्यांनी घटवण्याचा भारताचा प्रयत्न आहे.

भारत सरकारने कार्बन उत्सर्जन कमी करण्यासाठी आपली भूमिका स्पष्टपणे मांडलेली नाही परंतु हवामान बदलाचा परिणाम भारतालाही सोसावा लागणार आहे. कोविड-19 च्या काळात उलट इंधनाचे प्रमाण वाढविण्यात आलेले आहे. त्याची दखल भारतीय नागरिक, स्थानिक संघटना, राज्य सरकार, भारत सरकारनी गांभीर्याने घेतली पाहिजे. हवामान बदल समस्येवर जागतिक पातळीवर विकसित आणि विकसनशील देश असे गट निर्माण झालेले आहेत. त्यामध्ये विकसित देश विकसनशील देशावर आपला प्रभाव पाडत आहेत. विकसित देशांनी अविकसित आणि विकसनशील देशाला कार्बन उत्सर्जन कमी करण्यासाठी जागतिक पातळीवर मदत सहकार्य केले पाहिजे. उदा : ऊर्जा साधनांचा उपयोग कमी करणे, सौर ऊर्जेचा उपयोग अधिक करणे, वृक्षलागवड आणि संगोपन करणे, जनसिंचन क्षेत्र वाढविणे, जंगलाखालील क्षेत्र वाढविणे, प्लास्टिकचा वापर कमी करणे, कार्बन उत्सर्जन करणाऱ्या वाहनांचा वापर कमी करून सायकलचा उपयोग करणे इ. 2070 पर्यंत भारतातील कार्बन उत्सर्जनाचे प्रमाण शून्यावर आणले जाईल. ग्लासगो येथे झालेल्या परिषदेत स्पष्ट सांगितले आहे. सप्टेंबर 2021 पर्यंत भारताने 100 GW इतकाच टप्पा चांगला आहे. भारत सरकारने केलेल्या सर्व्हेक्षणानुसार 2001 ते 2019 दरम्यान देशातल्या जंगलामध्ये 5.2 टक्के वाढ झालेली आहे. 2030 पर्यंत होणाऱ्या अतिरिक्त 2.5 ते 3 अब्ज टन कार्बन उत्सर्जनावर उतारा म्हणून पुरेशी झाडे लावण्याचा भारताचा निर्धार आहे.

भारत स्वच्छ ऊर्जा क्रांतीच्या पदपथावर आहे. पॅरिस हवामान करारातील उद्दिष्टे साध्य करण्यासाठी महत्वपूर्ण कामगिरी पार पाडत आहे. संयुक्त राष्ट्रांच्या पर्यावरण कार्यक्रमाच्या माहितीनुसार राष्ट्रीय हवामान बदलाचे उद्दिष्ट्य भारत निर्धारित टक्क्यांनी गाठणार आहे. उत्सर्जन कमी करण्यासाठीच्या धोरणामध्ये भारताने मोठ्या प्रमाणावर अक्षय ऊर्जा कार्यक्रमावर भर दिला आहे. 2030 सालापर्यंत 175 गिगावॅट अक्षय ऊर्जा निर्मिती करण्याचे भारताचे ध्येय आहे. त्यापैकी 83 गिगावॅट ऊर्जानिर्मिती भारताने साध्य केली आहे. जागतिक स्तरावर पवन ऊर्जेत चौथ्या क्रमांकावर आणि अक्षय ऊर्जा निर्मिती क्षमतेत पाचव्या क्रमांकावर आहे. हवामान बदलाची समस्या हा राष्ट्रीय धोरणाचा अविभाज्य घटक असून त्यानुसार परिस्थितीशी जुळवून घेण्यास भारताने प्राधान्य दिले आहे. आंतरराष्ट्रीय आपत्ती निवारण विषयक उद्दिष्ट्यांसाठी चर्चेला प्राधान्य देणे आवश्यक आहे. कार्बन उत्सर्जनाची मर्यादा पाळून जास्तीत जास्त विकास साध्य करण्यासाठी विकसनशील देशांवरील हवामान निर्बंध कमी असावेत असा ठाम युक्तीवाद भारताने मांडला आहे.

निष्कर्ष :-

हवामान बदल ही जागतिक समस्या बनली आहे. हवामान ठेवण्यासाठी अनुकूल पृथ्वीच्या पृष्ठभागावर मानवाने गांभीर्याने पर्यावरणाचे संवर्धन केले पाहिजे. बदल

हा निसर्गाचा नियम आहे. हवामान हे सतत बदलत असते. दिनमानानुसार, रात्रीमानानुसार हवामानामध्ये बदल होतो. कृषी लागवड ही मोठ्या प्रमाणात करून वृक्षांचे संगोपन करणे आवश्यक आहे. इंधनाचा उपयोग काळजीपूर्वक केला पाहिजे. हवामान प्रदूषण ही समस्या वाढत आहे. त्याचा परिणाम सजीवसृष्टीवर विपरीत होत आहे. सजीवाचे अस्तित्व धोक्यात आहे. औद्योगिकीकरणामध्ये कार्बन उत्सर्जनाचे प्रमाण शून्य ठेवून औद्योगिकीकरण केले पाहिजे. जमीन, हवा, पाणी यांचा उपयोग काळजीपूर्वक आणि पर्यावरण संवर्धनपूरक केला पाहिजे.

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- 8) केंद्रीय कृषी व सहकार विभाग, कृषी भवन नवी दिल्ली.
- 9) भूगोलशास्त्र संशोधन-शौर्य पब्लिकेशन्स-लातूर



विकासाच्या संदर्भात सामाजिक सांस्कृतिक-शाश्वततेच्या प्रश्न-एक विश्लेषण

प्रा. डॉ. प्रफुल ई. ढोके

मातोश्री, अंजनाबाई मुंदाफळे समाजकार्य महाविद्यालय, नरखेड

Corresponding Author- प्रा. डॉ. प्रफुल ई. ढोके

Email- prafuldhoke1@gmail.com

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सारांश-

कोणताही विकास हा जर शाश्वत, चिरंजीव असायला हवा असेल तर वापराच वेग हा उत्पादनाच्या वेगापेक्षा कमी हवा. दिलीप कुळकर्णी या संदर्भात आपल्या श्मयक विकास पुस्तकात लिहितात की, समजा एक हौद आहे. त्यात एका तोटीतून पाणी भरलं जातयं, नि दुसरीतून बाहेर पडतयं. जर बाहेर पडणार पाणी आत पडणार्या पाण्यापेक्षा कमी असेल तरच हौद भरलेला राहिल. जर बाहेर पडणार पाणी अधिक असेल तर हौद हळूहळू रिकामा होत जाईल. पहिल्या प्रकारची विकासाची प्रक्रिया ही शाश्वत विकासाची (सस्टेनेबल डेव्हलपमेंटची) आहे. असा विकास चिरकाल, शाश्वतपणे, अखंड चालू राहू शकतो. उलट दुसरा प्रकार अशाश्वत विकासाचा, विनाशक विकासाचा आहे. विकासाच सद्याचं प्रतिमान हे अशा त-हेच्या अशाश्वत विकासाचं प्रतिमान आहे. त्याच्यात अंतर्गत विरोध आहे. जेवढा अधिक विकास होईल तेवढा तो अधिक अशाश्वत होतो. जेवढा अमर्याद तो करू पाहावा तेवढा तो अधिक मर्यादित होतो. जेवढ्या अधिक वेगानं तो करू पाहावा तेवढ्या अधिक लवकर संपुष्टात येतो. जेवढ्या लवकर वेगानं आपण निसर्गाची मर्यादा ओलांडू, तेवढा अधिक लवकर आपला विनाश होईल. म्हणून, भौतिक विकासाला एक निश्चित मर्यादा आहे हे आपण सदैव ध्यानात ठेवले पाहिजे.

बीज शब्द- विकास, अशाश्वत विकासाचं प्रतिमान, शाश्वततेच्या प्रश्न

प्रस्तावना -

आज एका बाजूला जीडीपी रेखीव पद्धतिने वाढत आहे आणि दुसऱ्या बाजूला असंख्य समस्यांही तशाच रेखीव पद्धतीत वाढत आहे. दरडोई उत्पादन, उपभोग किंवा लछव ह्या बरोबरच हिंसाचार, स्वैराचार, अत्याचार, एडस, आत्महत्या, अपघात, घटस्फोट, संसाधनांचा क्षय, प्रदूषण हे सर्व देखील रेखीव पद्धति वाढत आहे. व्यष्टी, समष्टी आणि सृष्टी ह्या तीनही पातळीवर अनेक प्रकारच्या समस्यांना तोंड द्यावे लागत आहे. अगदी वरवर दृष्टीक्षेप टाकला तरी आपल्याला एवढ्या समस्या दिसतात. तर मग इतक्या असंख्य समस्या आपल्या आत, बाहेर, भोवताली दिसत असतानाही, आपला विकास होत आहे, असे कसे म्हणता येईल ? सतत वाढणाऱ्या तणावाचं काय ? वाढत्या व्यसनाधिनतेचं काय ? वाढत्या हिंसाचाराचं काय ? वाढत्या घटस्फोटाचं काय ? वाढत्या च्या लैंगिक स्वैराचार अत्याचाराचं काय ? खंणणाऱ्या निसर्गाचं काय ? वाढत्या प्रदूषणाचं काय ? वेगाने कमी होणाऱ्या जैव वैविध्याचं काय ? असे असंख्य प्रश्न आपल्यापुढे आहेत.

अध्ययन पद्धती-

प्रस्तुत अध्ययन कार्यात दुय्यम तथ्य संकलित करण्यासाठी पुस्तके व इंटरनेट या माध्यमांचा उपयोग करण्यात आला.

विषय-

विकासाचं सध्याचं प्रतिमान जागतिक होण्यासाठी उपयोगी पडलेली एक महत्वाची गोष्ट म्हणजे संपर्क - साधनं. पण ह्या सुधारणांचा लाभ सध्याची व्यवस्था बळकट करण्यासाठी होणार का ? दूर

चित्रवाणीचं उदाहरण लगेच डोळ्यांपुढे येतं. अत्यंत प्रभावी, आकर्षक असं हे माध्यम आहे. पण सध्याच्या व्यवस्थेचे पाईक त्याच्या ह्या सामर्थ्याचा उपयोग लोकांची मानसिकता विशिष्ट त-हेने घडविण्यासाठी करून घेतांना दिसतात. प्रचंड प्रमाणातील जाहीरातीतून, पुरस्कृत आणि प्रायोजित कार्यक्रमातून उपभोगवाद वाढीला लागतांना दिसतो. तेथील दृश्याचं अनुकरण करण्याच्या प्रवृत्तीमुळे समाजात लैंगिकता, हिंसाचार, व्यसनाधिनता वाढताना दिसते. तिथल्या गुंडगिरीच्या, दहशतीच्या कल्पनांचा वापर प्रत्यक्षात होतांना दिसतो. अधिकृत प्रसारातील अशा कार्यक्रमाचं प्रमाण मूळात खूप आहेच. पण जणू ते कमी वाटून त्या प्रकारचे अधिक कार्यक्रम व्हिडीओ किंवा केबल चित्रवाणीवर पाहिले जातात. संगणकावरच्या इंटरनेटसारख्या प्रकारातही सायबर पोर्न चा धोका आहेच.

ह्या माध्यमांचा असाच उपयोग होण्याची संभाव्यता जास्त असेल तर ह्या माध्यमांचा विकास म्हणजे अधःपतनाला हातभार, असंच समीकरण तयार होतं, सर्वच बाबतीत घडत आहे त्याप्रमाणे संपर्क साधनांचा विकास देखील मानवी स्खलनशीलतेचं भांडवल करून वैयक्तिक, सामाजिक जीवनाला गती आली आहे आणि त्यासाठी ही साधनं आवश्यक आहे असं एक मत प्रतिपादन केला जातं. पण आलेली गती योग्य आहे काय ? आपल्याला ती पेलावते का ? हाच तर मूळ प्रश्न आहे. अनेक मानसिक समस्यांचं मूळ ह्या गतीत, धावपळीतच आहे आणि इतकी संपर्क-साधनं असूनही माणूस माणसापासून दुरावतोच आहे. असे व्यवहारात दिसते. कोणत्याही समाजात जसे सज्जन असताच तसे दुर्जनही असतात. त्यामुळे अशा दुर्जनांकडून होणारी

गुन्हेगारी स्वरूपाची कृत्यं ही सर्वच काळातील समाजांना सोसावी लागतात. प्रचलित प्रतिमानात गुन्हाचं प्रमाण बरचं वाढत आहे. सर्वच व्यवस्था चोरीवर आधारलेली झाल्याने ह्या व्यवस्थेचा भाग असणं म्हणजे गुन्हेगार असणचं आहे. आपण उपभोग अतिरेकी प्रमाणात वाढवतो तेव्हा निसर्गातली संसाधने लुबाडतच असतो. चोर्या, दरोडे, मारामार्या, खून त्यांचे प्रमाण खूपच वाढल्याचं आपण अनुभवत आहोत. समाजातली वाढलेली विषमता, अतिरेकी संग्रहाची वृत्ती, आपल्याच पोळीवर तूप ओढून घेण्याची प्रवृत्ती, येनकेन प्रकारे जास्तीत जास्त पैसा मिळविण्याची प्रवृत्ती, ह्यातून गुन्हेगारी प्रवृत्तीला खतपाणी मिळतं. विकसीत देशात तर गुन्हेगारी हा संघटित व्यवसाय झाला आहे. वस्तूंचा अवैध व्यापार हा गुन्हेगारीचा नवाच प्रकार गेल्या काही दशकांत प्रकट झाला आहे. अंमली पदार्थांचा व्यापार हा तर कळस झाला आहे. माफिया साम्राज्य वाढत आहे.

सध्याच्या विकासपद्धतीचा परिणाम म्हणून मानसिक ताण—तणाव अशा प्रकार वाढत आहेत, हे आपण पाहतोच आहे. ह्या तणावापासून मुक्ती मिळवायची, तर जीवनपद्धतं मूलभूत परिवर्तन व्हायला हवं. दूरचित्रवाणी, चित्रपट ह्यासारख्या माध्यमांनी ही व्यसनाधिनता वाढण्यास फार मोठी मदत केली आहे. दूरचित्रवाणीवरचे विविध कार्यक्रम आणि जाहिराती यातून एकूणच उपभोगवाद, श्रीमंत राहणी, चंगळवाद ह्याचं प्रसारण होत असतं. सध्या चंगळवाद वाढीला लागत आहे. सध्या व्यसनाधिनतेचे सामाजिक दुष्परिणामही अत्यंत गंभीर आहेत. मदयासारख्या द्रव्यांचा एक परिणाम असा सांगतात की त्यामुळे देहाचा विसर पडून एक उन्मनी अवस्था प्राप्त होते. ह्या अवस्थेत एका अवर्णनी आनंदाची प्राप्ती होते. अर्थात ह्याचा थोडाथोडा दुष्परिणाम शरीरावर होत राहून मज्जासंस्थ मात्र बधीर बनते. आज सर्वत्र लैंगिकता बोकाळली आहे. स्त्री देहाचं दर्शन वर्णन अनेक माध्यमातून सतत चालू असतं. वृत्तपत्र, नियतकालिक ह्यातल्या कथा, , प्रकाशचित्र ते घडवतात किंवा नाटकं, चित्रपट ह्यांसारख्या माध्यमातून ते होतं. दूरचित्रवाणी, व्हीडीओ ह्यात तंत्रज्ञानामुळे ते घराघरात होऊ लागलं आहे. सौंदर्यस्पर्धा, फॅशन शो त्यात छुपेपणानं तर, नग्ननृत्य, ब्ल्यू फिल्म, पोर्नोग्राफीक नियतकालिक त्यांतून उघडपणे स्त्री देहाच उघड प्रदर्शन होतं. स्त्रियांनाही त्या उपभोगाची लालसा असतेच. त्यामुळे बऱ्याच जणी स्वतःहून असं प्रदर्शन करताना व्यवहारातही दिसतात. अशा लैंगिकतेतून वाईट गोष्टी घडतात. बलात्काराच्या घटना घडतात. तृप्ती, शांती, समाधान संपत आहे व हाव— लालसा वाढत जाते.

मारहाण, बलात्कार, अपहरण, खून, लूटपाट, मुलांना गुदमरून ठार मारणं हिंसेच्या अशा प्रकारांची यादी ही आणखीनही वाढविता येईल. हे प्रकार म्हणजे केवळ चित्रपटात अनेक दाखविलेली काल्पनिक दृश्ये नाहीत. ती वास्तवता आहे. अमेरिका ह्या विकसीत देशातली असे गुन्हे गुडांनी, मनोविकृत लोकांनी किंवा मादक द्रव्यांच्या व्यापार्यांनी केलेली नाहीत तर घद्द ते घद्द ह्या वयोगटातल्या मुलांनी केलेले आहेत. हे सर्व होत आहे. घरी होणारे संस्कार देणे थांबले आहेत, म्हणून अतिरेकी व्यक्तिस्वातंत्र्यामुळे घटस्फोटाचं प्रमाण वाढलं आहे. मिडियाच्या माध्यमातून हिंसाचाराला

आवश्यक ते खतपाणी मिळतं. सोळ—सतरा वर्षांचा होईपर्यंत एका अमेरिकन मुलानं हिंसाचाराचे सरासरी विस दस लक्ष प्रसंग पाहिलेले असतात. ह्या सर्वांतून माणसातला हिंस्र पशू जागवला जातो — चेतवला जातो. ह्या सगळ्यांच्या जोडीला शाळांचाही मुलांवर संस्कार करण्याकडे होणारं दुर्लक्ष, धर्माचा नगण्य प्रभाव, दारिद्र्य, बेकारी अशी अन्य कारणेही आहेत. विकासाच्या नावाखाली विनाशाची बिजे पेरल्यावर त्याला ह्याशिवाय अन्य कसली फळ लागणार आहेत .

सध्याच्या विकासपद्धतीचा परिणाम म्हणून मानसिक ताण—तणाव

वाढत आहेत. हे आपण पाहतोच आहे. ह्या तणावापासून मुक्ती मिळवायची, तर मूलभूत परिवर्तन व्हायला हवं.

एखादं कुटुंब किती विकसीत आहे हे मोजताना त्याच्याकडच्या उपलब्ध सुख—साधनांची जीवनपद्धतिची गणना केली जाते. ह्यातल्या किती सुख—साधनांमुळे खरोखरच सुखात वाढ होते ह्याची शंकाच आहे. अशी सुख साधनं माणसाला आळशी बनवतात. आपण जेव्हा मोठय प्रमाणावर सुखसाधनं वापरतो ,तेव्हा आपल्याला तात्कालिक सुख मिळतं खर ,परन्तु सुख आणि शाश्वतता ह्यांच्यातला सुवर्णमध्य गाठण्याचे धोरण असायला पाहिजे. सध्याच्या शिक्षणाचा उद्देश श्माहितीश विद्यार्थ्याच्या मेंदूत भरणे हा आहे. पोटासाठी काही तरी का अवर्णनी व्यवसाय करता यावा म्हणून ही माहिती वापरायची. शिक्षण याचा अर्थ ज्ञान आतून प्रगटावं ह्यासाठी केलेले प्रयत्न . ती श्साधनाश आहे. ज्ञान हे ज्ञानासाठीच असतं. ते साधन नाही साध्य आहे. शिक्षणाचा हा अर्थ आज लोप पावला आहे. सध्याचं प्रतिमान शोषणावर आधारलेलं आहे . अतिरेकी व्यक्तीस्वातंत्र्याच्या कल्पनेपायी स्त्री आणि पुरुष दोघेही त्याला बळी पडत आहेत. अतिरेकी उपभोगामुळेपैसा अपुरा पडू लागतो , तेव्हा कौटुंबिक जीवनावर त्याचा फार मोठा परिणाम होतो. आई—वडील दोघेही नौकर्या करू लागतात. त्यामुळे मुलांकडे दुर्लक्ष होऊ लागतं. म्हातारी माणसंही अडगळ ठरू लागते. वृद्ध निराधार होतात.

निष्कर्ष—

शाश्वत प्रतिमानात सर्वसमावेशक हितावह बदल अपेक्षित आहेत. भौतिक जीवन मयदित ठेवून जाणिवेच्या विकासाला महत्त्व दिलेलं आहे . निव्वळ साक्षरतेला किंवा माहितीच्या संग्रहाला नव्हे. शाश्वत प्रतिमान आचरणात आणायला सांगत आहेत. साधी राहणी ठेवा, गरजा कमीत कमी असू द्या, धावपळ, दगदग ह्याविना जीवन जगा. उपभोगापेक्षा समाधानास महत्त्व द्या. इतरांच्या दुःखात, आनंदात सहभागी व्हा. सम्यक किंवा शाश्वत (चिरंजीवी) प्रतिमानात महत्त्व आहे ते माणसाच्या मनाच्या मोठेपणाला घराच्या नव्हे. घर मोठ असल किंवा छोट असलं, त्याला महत्त्व नाही. घर. बाह्यांग बनतं त्यातल्या माणसांनी, ती माणुस जितकी तत्त्वनिष्ठ, सुसंस्कारीत, कर्तव्यपरायण, सहृदय, ता ह्याचे परहिततत्पर, समाजहितैषी, पर्यावरण संरक्षक अशी असतील, तितकं ते घर मोठ असत. आंतरिक घराची उंची म्हणजे त्यातल्या माणसांची उंची. घराचा मोठेपणा म्हणजे त्यातल्या माणसांच्या मनाचा मोठेपणा. शाश्वत विकासात घरांच्या या विकासाला महत्त्व आहे.

आपल्याला जर विकृती टाळावयाची असेल, तर विकासाची व्याख्याच बदलावी लागेल. शाश्वत विकासात ज्या त-हेचा विकास अभिप्रेत आहे त्याचीच कास धरावी लागणार आहे.

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सुधारित पीक पद्धतीचे दुष्काळी भागातील शेती अर्थव्यवस्थेमध्ये महत्व एक अध्ययन

डॉ. वैशाली बिजवे

सहाय्यक प्राध्यापक, भारतीय महाविद्यालय, अमरावती

Corresponding Author- डॉ. वैशाली बिजवे

Email- vaishaligulhane24@gmail.com

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सारांश:-

महाराष्ट्रातील दुष्काळी शेतीचा अभ्यास करून प्रतिकूल नैसर्गिक परिस्थितीबाबत कायमस्वरूपी उपाय सुचवण्याची व त्याचा अवलंब करण्याची खऱ्या अर्थाने गरज आहे. उपलब्ध असलेले जमीन व पाणी यांचे समान वाटप करून आधुनिक पद्धती बाबत विवेचन करणे हा या शोधनिबंधाचा प्रमुख हेतू आहे. बुलढाणा जिल्ह्यातील वान नदी काठावरील वान प्रकल्पाचे संशोधनात्मक अध्ययन व निरीक्षण करण्यात येऊन तेथील ग्रामस्थांकडून माहिती मिळवण्यात आली. तसेच त्याकरिता काही ग्रामस्थांच्या मुलाखती सुद्धा घेण्यात आल्या उपलब्ध पाण्यावर विविध पिकांची लागवड करण्याबाबत पीक प्रतिमान सुचवण्यात आले. आणि त्यातून होणारा फायदा व त्याबाबतची त्यांना आवश्यक असणारी माहिती पुरविण्यात आली. काही शेतकरी आपले मत बदल करायला तयार नसतात तेव्हा त्यांना पटवून देण्यासाठी त्यांना वेगवेगळ्या प्रकारे मार्गदर्शन करावे लागते ते सुद्धा करण्यात आले. म्हणजे त्यातून त्यांना काही फायदा होऊन त्यांचे आर्थिक परिस्थिती तसेच त्यांचे पुढील आयुष्य हे व्यवस्थित जगण्याकरिता त्यांना मदत होईल. शेतकरी वर्ग हा सध्यातरी स्वयंपूर्ण झालेला नसून त्यांच्या उत्पादित शेतमालाला योग्य किमतीचा आधार प्राप्त झाल्याशिवाय इतर विकसित वर्गांच्या तुलनेत यथायोग्य जीवन जगणे शक्य त्यांना होत नाही याचा विचार करून या दुष्काळग्रस्त परिस्थितीमध्ये त्यांना कशी मदत करता येईल याचा विचार करण्यात आला. कृषी हा राष्ट्राचा आधारस्तंभ असून त्याच्या विकासात आपण काय मोलाचे योगदान करू शकतो किंवा सहयोग करू शकतो या दृष्टिकोनातून कार्य करून या अहवालाचे सादरीकरण करण्याचा प्रयत्न करण्यात आलेला आहे. म्हणजेच एकंदरीत सुधारित पीक पद्धतीमुळे दुष्काळग्रस्त भागातील शेती अर्थव्यवस्थेत मध्ये त्याचा कशाप्रकारे फायदा होऊ शकतो हे सुद्धा पटवून देण्याचा मानस आहे. पिके अन्नासाठी तसेच बाजारपेठेसाठी पिकांच्या विविधतेची लागवड करण्यासाठी किंवा वाढवण्यासाठी विशिष्ट आहे तर शेतीमध्ये केवळ पिकेच उगवत नाही तर कुक्कुटपालन मेंढ्या आणि शेळीपालन पशुधन दुग्ध व्यवसाय मधमाशीपालन यासारखे इतर उद्योग घेणे देखील समाविष्ट आहे. याचा सुद्धा थोड्याफार प्रमाणांमध्ये विचार करण्यात आलेला आहे. पीक पद्धती ही नमुने किंवा शेतात घेतलेल्या पिकांचे प्रकार आणि क्रम यांचा संदर्भ देतात शाश्वत शेतीमध्ये ते महत्वाचे आहेत कारण ते जमिनीची सुपीकता टिकवून ठेवण्यास मदत करतात कीटक आणि रोगांना प्रतिबंध करतात आणि पाणी आणि पोषक यासारख्या संसाधनांचा कार्यक्रम वापर सुरक्षित करतात म्हणून याची मदत सुद्धा घेतली जाते. सुधारित पीक पद्धतीमध्ये विचार केल्यास जमिनीची सुपीकता सुधारण्यासाठी फायदेशीर असे उपाय केले करणे गरजेचे आहे, ज्यामुळे पिकाचे उत्पादन वाढते हे पीक संरक्षण आणि पिकांना पोषक तत्वाची उपलब्धता सुनिश्चित करतात. दुष्काळ निवारण्यासाठी शाश्वत उपायांची आखणी जेव्हा केली जाते तेव्हा जलसाक्षरता पाण्याचा नियमित ताळेबंद सुयोग्य पीक पद्धतीचा अवलंब समन्यायी पाणी वाटपाच्या तत्वाचा स्वीकार करणे गरजेचे आहे. आणि याचा देखील सुधारित पीक पद्धतीमध्ये विचार केल्यास फायद्याचे ठरेल.

प्रस्तावना:-

शेती हा भारताच्या अर्थव्यवस्थेचा कणा आहे हे आपणास माहित आहे. भारताचा मोठा लोकसंख्येचा भाग शेती या प्राथमिक उद्योगावर अवलंबून आहे. व त्या शेतकऱ्यांचे एक उदरनिर्वाहाचे साधन शेती आहे असे म्हणावयास हरकत नाही. त्यातूनच त्यांच्या नेहमीच्या गरजा, शिक्षण, व इतर गरजा या पूर्ण होत असतात. परंतु भारताच्या काही राज्यांमध्ये दुष्काळामुळे आपल्याला चित्र बदललेले दिसून येते. महाराष्ट्र राज्यातच काही जिल्हे असे आहेत की ज्या भागांमध्ये नेहमी दुष्काळग्रस्त परिस्थिती असते. म्हणूनच येथे महाराष्ट्र राज्याचा विचार करावयाचा आहे कारण महाराष्ट्र राज्यातील बुलढाणा हा जिल्हा

त्यातील तालुका अभ्यासासाठी निवडलेला आहे. महाराष्ट्र शेती बाबत एक प्रगतशील राज्य आहे. ग्रामीण अर्थव्यवस्थेचा शेती हाच मुख्य पाया आहे. ग्रामीण भागात आजही जनता मोठ्या प्रमाणात शेतीवर अवलंबून आहे. शेती हे त्यांच्या उदरनिर्वाहाचे प्रमुख साधन आहे. परंतु महाराष्ट्रातील ठराविक भागांमध्ये शेती प्रगत झालेली आहे, तर काही भाग अजूनही अविकसित आहे. महाराष्ट्रातील शेती समस्या ही दुहेरी स्वरूपाची आहे. एक म्हणजे शेती विकासामध्ये काही नैसर्गिक आपत्ती आहेत आणि दुसरी म्हणजे त्या आपत्तीवर कायमस्वरूपी उपाय करता येतील अशा योजनांचा अभाव आहे. या दोन मुख्य कारणामुळे आज काही भागांमध्ये आपल्याला शेतीवर त्याचा खूप मोठा

परिणाम झालेला दिसून येतो. दुष्काळ ही नैसर्गिक आपत्ती असून तिचा शेतीशी प्रत्यक्ष संबंध येतो. दुष्काळाचा पहिला बळी हा नेहमी शेतकरी ठरतो. जवळजवळ 30 टक्के क्षेत्र हे दुष्काळीप्रवण समजले गेले आहे. परिणामी शेतीचे दारिद्र्य, उपासमार, बेरोजगारी, मानवी समस्या ह्या समस्या निर्माण झाल्या आहेत. यावर काही उपाययोजने गरजेचे असून ते कायमस्वरूपी असले पाहिजेत असे अभ्यासावरून निदर्शनास येते आणि ते खऱ्या अर्थाने गरजेचे आहे. सुधारित पीक पद्धतीमुळे शेतकऱ्यांना त्याचा कशाप्रकारे फायदा होऊ शकतो व त्यांचे आर्थिक जीवन विस्कळीत न होता त्याचा त्यांच्या भविष्याला हातभार लागून त्यातून त्यांना काहीतरी साध्य होऊ शकते या शोधनिबंधाला हात लावलेला आहे. व काही महत्त्वपूर्ण गोष्टीकडे विशेष लक्ष देऊन त्यातील बारकावे पटवून देण्याचा प्रयत्न सुद्धा केलेला आहे.

अभ्यास क्षेत्र व संशोधन पद्धती:-

शोध निबंधामध्ये दुष्काळी शेतीचे पीक रचनेनुसार चित्र बदलता येते, यावर विवेचन केले असून त्यासाठी महाराष्ट्रातील बुलढाणा जिल्ह्यातील संग्रामपूर तालुक्यामधील वान नदी खोऱ्याचे क्षेत्र अभ्यासाकरिता निवडले आहे. मौजे सो गोडा येथील ग्रामस्थांनी दुष्काळी परिस्थितीवर उपाय शोधण्यासाठी पिक पद्धती विचारात घेतली आहे. त्याचा वर्षभर अभ्यास करून लेखकाने त्याच्याशी सलग माहिती निरीक्षण व ग्रामस्थांच्या मुलाखती घेतल्या.

भौगोलिक पार्श्वभूमी :-

1. बुलढाणा जिल्ह्याच्या पूर्व आणि उत्तर क्षेत्रात नेहमी दुष्काळ पडतो. आणि या दुष्काळामुळे तेथील जनजीवन विस्कळीत होते. संग्रामपूर तालुका जिल्ह्याच्या उत्तर परिसरामध्ये विखुरला असून त्यामधून वान ही प्रमुख नदी वाहते. संग्रामपूर तालुक्याची समुद्रसपाटीपासून सरासरी उंची 273 मीटर आहे.

2. वान नदीचा उगम हा सातपुडा पर्वतरांगा मधील गाविलगड टेकड्यांमध्ये झालेला आहे. वान नदी ही संग्रामपूर तालुक्यातून दक्षिणेकडे वाहत जाऊन पूर्णा नदीला मिळते. वान नदी केवळ पावसाळी हंगामामध्ये वाहते अन्य हंगामात ती कोरडी असते. संग्रामपूर तालुक्यातील वान नदीच्या किनारी किमान नऊ ते दहा गावे आढळून येतात. या ठिकाणी नदी खोऱ्यातील परिसरात सतत पडणाऱ्या दुष्काळावर नदीचे उपलब्ध असलेले पाणी उपयोगात आणल्याशिवाय दुसरा पर्याय नाही.

3. रामपूर तालुका क्षेत्रामध्ये जून ते सप्टेंबर या काळात मान्सून पर्जन्यवृष्टी होते. 600 ते 650 मिलिमीटर पर्यंत आहे. तसेच पर्जन्याचा अनिश्चितपणा कोरडे हवामान दुष्काळ ही वैशिष्ट्ये दिसून येतात. त्यामुळे या भागात जिरायती शेती केली जाते. ज्वारी गहू हरभरा सोयाबीन तूर ही पिके घेतली जातात. येथील शेतीला जर पाण्याचे सोय उपलब्ध केली तर शेती बागायती होऊन शेतकऱ्यांच्या वार्षिक उत्पन्नात वाढ होईल.

विषयाचे विवेचन :-

खऱ्या अर्थाने किमान पाणीपुरवठ्यावर शेतीचे चित्र बदलविता येईल का याचा विचार करून प्रात्यक्षिकांमधून निष्कर्ष काढण्यात आले. त्यासाठी संग्रामपूर तालुक्यातील वारी येथील वान प्रकल्पाच्या अभ्यास केला गेला. या प्रकल्पातून प्रत्येक कुटुंबाला समान पाणी वाटप केले जात आहे.

अभ्यासाकरिता निवडलेल्या क्षेत्रामध्ये तसेच अभ्यासामध्ये खालील उद्दिष्टे अभिप्रेत आहेत.

1. प्रत्येक कुटुंबाकडे एक हेक्टर शेत जमीन आहे असे गृहीत धरले आहे
2. एका कुटुंबामध्ये पाच व्यक्तींचा समावेश असेल.
3. कौटुंबिक गरजा भागवण्यासाठी पिकांचे उत्पादन वर्षभर घेतले जाईल.
4. पती-पत्नीला वर्षभर शेतात काम उपलब्ध होईल.
5. स्वयंपूर्ण गावाची उभारणी करून ग्रामीण जनतेचे शहराकडे होत असलेले स्थलांतर थांबवता येऊ शकेल.

दुष्काळी भागातील शेती विकास व स्थितीबाबत दोन उपाय उपलब्ध करता येऊ शकतात.

1. उपलब्ध पाण्याचा वापर जास्तीत जास्त काटकरीने व शास्त्रीय पद्धतीने करणे.
2. किमान पाण्यावर जास्तीत जास्त उत्पादन देणाऱ्या पिकांची लागवड करणे. पारंपारिक पद्धतीने पाणी देण्याच्या पद्धतीपेक्षा तुषार ठिंबक या पद्धतीचा वापर करावा. जेणेकरून पिकांना कमीत कमी पाण्याचे आवश्यकता भासेल.

सामान्यपणे एका कुटुंबाच्या सर्व गरजा भागवण्यास किमान एक हेक्टर बागायती शेत आवश्यक असू शकते. या क्षेत्रामध्ये खालील पिकांची लागवड केली तर कुटुंबाला किती निवड उत्पन्न मिळू शकते याचा दोन वर्षांमध्ये चाचणी सिद्ध करण्यात आलेले आहे. त्याचे स्वरूप खालील प्रमाणे :

खालील सारणी मध्ये बुलढाणा जिल्ह्यातील 2021- 22 या आकडेवारीचा विचार केल्या गेला आहे.

पिकाची लागवड आणि उत्पन्न

Sr .No.	Crop & area	Production	Price	Income
1.	Cotton-1arce	1200 kg	7000	84000
2.	Soyabean- ½arce	500 kg	4000	20000
3.	Vegitable-½arce	Per month	3000	36000
4.	Wheat- ½arce	700 kg	1800-2100	14000

प्रस्तुत सारणी मध्ये पिकाची लागवड आणि उत्पन्न माहिती प्रदर्शित करण्यात आलेली आहे जे लागवडीखालील क्षेत्र आणि पिकाचे उत्पादन किंमत आणि त्यातून मिळणारा नफा याचा अभ्यास करण्यात आलेला आहे सारणी मध्ये कापसाचे एक एकर मधील उत्पादन हे बारा क्विंटल इतके आहे त्याची किंमत 7000 असून 84000 हे इन्कम त्यातून मिळणारे आहे त्यानंतर सोयाबीन भाजीपाला आणि गहू या पिकाचे उत्पादन किलोग्राम मध्ये दाखविलेले असून अर्धा एकर मध्ये दाखविलेले आहे परंतु असे निदर्शनास येते की सर्व पिकांमध्ये कापसाचे उत्पादन हेच शेतकऱ्याला घेण्याकरिता मोलाचे ठरते जेवढ्या क्षेत्रामध्ये ते उत्पादन घेतल्या जाते व जेवढा खर्च लावला जातो त्यापेक्षा नफा हा नक्कीच जास्त मिळतो तसेच खालोखाल आताची परिस्थिती बघितली तर खरीप हंगामामध्ये खरीप हंगामामध्ये सोयाबीन व रब्बी हंगामामध्ये गहू हे पीक घेणे फायद्याचे ठरते.

तक्त्यामध्ये यशस्वी पिक प्रतिमानानुसार घेण्यात येणाऱ्या पिकांचे निवड उत्पन्न आहे, यांचा उत्पादन खर्च भांडवली खर्च १५ टक्के घसारा अपेक्षित असून तो सर्व खर्च वगळण्यात आला आहे. शिवाय शेतमालाचा बाजारभाव मंदीच्या काळातील गृहीत धरून उत्पादनाचे मूल्य काढले आहे. भांडवली खर्चामध्ये जलसिंचन, शेती करण्याचा खर्च, मशागत, कीटकनाशक, इत्यादींचा खर्च गृहीत धरला आहे.

निष्कर्ष :-

दुष्काळी भागातील शेतकऱ्यांच्या आर्थिक प्रगतीसाठी वाहन प्रकल्प निश्चितपणे योग्य होईल व एक हेक्टर शेत जमीन मध्ये वरील पीक पद्धत कार्यान्वित झाल्यास एक कुटुंब स्वावलंबी बनू शकते हे या प्रकल्पामधून सिद्ध होते. तसेच या प्रकल्पामधून काही गोष्टी सिद्ध होतात

1. पती-पत्नी दोघांना वर्षभर काम मिळाल्यामुळे रोजगारासाठी स्थलांतर करण्याची गरज नाही, त्यामुळे शहरात होणाऱ्या स्थलांतराला आळा सुद्धा बसू शकतो.
2. कुटुंबाचा वार्षिक घर खर्च सदर शेतीतून भागवता येईल. शिवाय त्यातून कौटुंबिक कपडा लगता शिक्षण औषध आणि या गोष्टीसाठी दरवर्षी एक लाख रुपये खर्च करण्याचे सामर्थ्य प्राप्त होईल आणि उर्वरित रक्कम भविष्यासाठी शिल्लक ठेवू शकेल.
3. विविधता ही पीक पद्धतीमध्ये करण्याचे खरे कारण की, फळझाडे ही प्रतिकूल हवामानात व सर्व प्रकारच्या जमिनीमध्ये वाढू शकतात. त्यांचा फळे देण्याचा काळ वेगवेगळ्या असतो. शेतकरी वर्षभर फळांचे विक्री करू शकतो.
4. रासायनिक खतापेक्षा जर सेंद्रिय खत शेतीसाठी वापरले तर ते पिकांना अधिक उपयुक्त होऊ शकते. ते शेतातील झाडपाल्यापासून जनावरांच्या शेण खतापासून उपलब्ध होऊ शकते.
5. एका शेतकरी कुटुंबाला जे प्राणी जसे गाय शेळी बकरी म्हैस पाळणे शक्य आहे त्यांनी ती पाळावीत.

एकंदरीत अशी ग्रामीण कुटुंबे जी बऱ्याच पिढ्यांपासून या विळख्यात सापडलेली आहेत ती कुटुंबे वरील पीक पद्धतीमुळे विकसित होऊ शकतील. दुष्काळी भागात शासनाच्या कार्यान्वित होणाऱ्या रोजगार हमी योजना दुष्काळी कर्ज, अर्थसाहाय्य अशा उपाययोजना शेतकरी कुटुंबांना स्वावलंबी बनवण्याच्या मार्ग म्हणून वरील प्रकल्पाप्रमाणे पीक पद्धती प्रतिमान उपयुक्त व्हावे हा प्रमुख उद्देश आहे.

संदर्भ ग्रंथ सूची :-

1. बुलढाणा जिल्हा आर्थिक व सामाजिक समालोचन
2. कृषी भूगोल डॉ. सुरेश फुले
3. कृषी भूगोल डॉ. खतीब
4. बुलढाणा जिल्हा पुस्तिका
5. ऑनलाईन इन्फॉर्मेशन

समकालीन साहित्य में दलित विमर्श: 'नरककुंड में बास' उपन्यास के संदर्भ में

डॉ. जी. वसंती

एसोसिएट प्रोफेसर, हिंदी विभाग-सविता विदेशी भाषा केंद्र, सविता स्कूल ऑफ इंजीनियरिंग, सविता इंस्टीट्यूट ऑफ मेडिकल एंड टेक्निकल साइंसेज, एस.आई.एम्.ए.टी.एस., सविता विश्वविद्यालय, चेन्नई, तमिलनाडु, भारत।

Corresponding Author- डॉ. जी. वसंती

Email: gvasanthi77@gmail.com

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शोध-सार:

इस शोध पत्र में जगदीश चंद्र कृत 'नरककुंड में बास' उपन्यास में चित्रित दलित चेतना का विभिन्न परिप्रेक्ष्य में गहन विश्लेषण किया गया है। 'नरककुंड में बास' में जगदीश चंद्र ने जिस उपन्यास त्रयी की रचना की है, वह हिन्दी उपन्यास व समूचे भारतीय साहित्य में लम्बे समय तक सार्थक रचना के रूप में जानी जाती रहेगी। इस कथा त्रयी में जगदीश चंद्र ने भारतीय समाज के उस उपेक्षित वर्ग का अत्यंत यथार्थ चित्र प्रस्तुत किया है, जो इस समय राजनैतिक क्षेत्र में भी चर्चित है व साहित्य में भी। उसे दलित साहित्य के अंतर्गत नये ढंग से परिभाषित किया जा रहा है। इन चर्चाओं से भारतीय समाज के इस सर्वाधिक उत्पीड़ित वर्ग की जीवन परिस्थितियाँ तो भले ही अभी बहुत अधिक न बदली हों, लेकिन साहित्य व अन्य माध्यमों से उनके जीवन पर समाज का ध्यान केंद्रित करने के जो प्रयास आरंभ हुए हैं, उसमें आने वाले दशकों में उनके उत्पीड़न की मौजूदा क्रूरता को जारी रख पाना उनके उत्पीड़कों के लिए मुश्किल अवश्य हो जाएगा। जगदीश चंद्र जी का 'नरककुंड में बास' उपन्यास 1994 में प्रकाशित हुआ। उनके अब तक कुल सात उपन्यास प्रकाशित हो चुके थे। लेखक काली के जीवन को पूर्णता देने के प्रयास में उसे याद करते रहे। 'धरती धन न अपना' में काली गाँव से शहर भाग गया। शहर जा कर वह कहाँ रहा ? कौन सा काम करता रहा ? लेखक ने इन सवालों से परेशान होकर काली के जीवन को विस्तार देना आरंभ किया। 'नरककुंड में बास' काली के अतीत के जीवन की अगली कड़ी है। 'नरककुंड में बास' उपन्यास में स्वतंत्रता के बाद के नागरी जीवन का चित्रण मिलता है। औद्योगिकीकरण शहरों की ओर पलायन करते ग्रामीण लोग, बेरोज़गारी, गरीबी, दरिद्रता, अशिक्षा, शोषण, शोषण के खिलाफ विद्रोह, दलित चेतना आदि का चित्रण इस उपन्यास में मिलता है।

बीज शब्द: दलित चेतना, सामाजिक परिप्रेक्ष्य, आर्थिक परिप्रेक्ष्य, राजनीतिक परिप्रेक्ष्य, धार्मिक परिप्रेक्ष्य

परिचय:

जगदीश चंद्र के उपन्यासों की यह एक बहुत बड़ी सफलता है कि उनकी कला कहीं भी उतार पर नहीं आती है। उपन्यास के क्षेत्र में प्रायः ऐसा हुआ है कि एकाध या कुछ ही अच्छी कृतियाँ देकर उपन्यासकार की प्रतिष्ठा चुक जाती है, किंतु जगदीश चंद्र निरंतर अच्छे उपन्यास लिख रहे हैं, उनका प्रकाशित 'नरककुंड में बास' (1994 ई.) उपन्यास यही प्रतीति देता है। 'नरककुंड में बास' में जगदीश चंद्र एक बिल्कुल अछूता कथ्य अपनाते हैं। रेड़ा चलानेवाले मज़दूरों तथा मुख्यतः पशुओं की कच्ची खाल को साफ करने का काम करने वाले, चमड़ा कमाने वाले मज़दूरों की जिंदगी की तकलीफों को उजागर करना इस उपन्यास का कथ्य है। दोनों ही रूपों में पशुवत जिंदगी को जी रहे दलित वर्ग, चमारों के टोले का अत्यंत सूक्ष्म, प्रामाणिक और गहरी संवेदनशीलता से चित्रण करता हुआ लेखक हिन्दी में कथा की एक नई

जमीन तोड़ता है। इस रूप में जगदीश चंद्र को हिन्दी के श्रेष्ठ दलित उपन्यासकार माना जा सकता है।

'नरककुंड में बास' में अभिव्यंजित दलित चित्रण के विविध परिप्रेक्ष्य :

सामाजिक परिप्रेक्ष्य में दलित चित्रण : 'नरककुंड में बास' का शहर आज से तकरीबन 30-35 सालों पहले का शहर है, पर सच यह है कि आधुनिक बड़े उद्योगों के मुट्ठी भर संगठित मज़दूरों और 'लेबर अरिस्टोक्रेसी' के एक छोटे-से हिस्से के अतिरिक्त शहर के बहुसंख्यक असंगठित मज़दूरों, कुलियों, पल्लेदारों, रेहड़े-खोमचेवालों, क्लीनरों-खलासियों आदि के लिए भारत का हर नगर-महानगर आज भी वैसा ही नरककुंड है। फर्क सिर्फ यह पड़ा है कि पहले गाँव से शहर की ओर भागने वाली आबादी का बहुलांश बेघर-बेबस भूमिहीन दलितों का हुआ करता था और फिर जमींदारी प्रथा के क्षेत्रों में जमींदारों द्वारा उजाड़ दिए गए या सूखे व अकाल से त्रस्त काश्तकार किसानों का, जो प्रायः मध्य जातियों तक के हुआ करते थे।

आज कृषि के पूंजीवादीकरण के कारण किसान आबादी के बढ़ते विमंदीकरण और भारी ग्रामीण आबादी के सर्वहाराकरण के साथ ही अपनी जगह-जमीन से उजड़कर पहले के मध्यम किसानों तक की एक बड़ी आबादी नए-पुराने औद्योगिक केन्द्रों की ओर भाग रही है और वहाँ के नरक में भटकते हुए काली जैसा ही अभिष्ट जीवन बिता रही है।

यूरोप, अमेरिका और रूस के 19 वीं सदी के महान बुजुर्ग यथार्थवादी लेखकों से लेकर अप्टन सिंकलेयर और मैक्सिम गोर्की तक कृतियों में प्रारंभिक पूंजीवाद के निर्मम लूटमार का जो इतिहास सामने आया है और छोटे-छोटे कारखानों में हाड़ गलाने वाले असंगठित मज़दूर तबके का जो नारकीय जीवन निरूपित हुआ है, वह भारतीय समाज में आज भी नए-पुराने औद्योगिक केन्द्रों में दिखाई देता है, जहाँ बड़े उद्योगों के इर्द-गिर्द तमाम छोटे-छोटे वर्कशापों-कारखानों में असंगठित मज़दूर नितांत अमानवीय और असुरक्षित परिस्थितियों में आज भी 15-15, 18-18 घंटे काम करते हैं।

‘नरककुंड में बास’ कुलियों, खलासियों, पल्लेदारों, पांडियां, रेडेवालों और चमड़े के कारखाने के मज़ूरों के जिंदगी का आधिकारिक और सूक्ष्मग्राह्य चित्रण हिंदी उपन्यासों में बहुत कम आया है, जिसके बारे में मार्क्स-एंगेल्स का कहना आज भी सही लगता है कि “इस वर्ग में ‘सभी मानवीय चीज़ों से, मानवीय चीज़ों के आभास तक से पृथक्करण लगभग पूरा हो चुका है।”¹ उपन्यास के नायक काली को अपनी इस स्थिति का आभास भी है। यही वह फूटती हुई वर्ग सचेतनता है जो उसे अपनी जीवन-स्थितियों के विरुद्ध विद्रोह के लिए विवश करती रहती है।

यह उपन्यास सामाजिक परिप्रेक्ष्य में काली सरीखे दलितों-उत्पीड़ितों की नियति का लोमहर्षक बयान है। असहायता और आक्रोश का द्वाद्वा इस उपन्यास में भी बहुत जगह घेरता है। ‘गरीब आदमी के लिए तो बेहतर जिंदगी का स्वप्न देखना भी पाप होता है’-यह सच उपन्यास के अंतिम अंश में काली के कटु अनुभवों से छनकर आया है। इस भयावह सच के आधारभूत कारणों और तत्वों की तलाश का क्रम आज़ादी और उस पर हावी भ्रष्ट जनविरोधी व्यवस्था के पास ही रुकता और ठिठकता है -‘कहते हैं कि देश आज़ाद हो गया है। लेकिन लगता है आज़ादी सेठों, अफसरों और बड़े-बड़े चौधरियों की कोठियों और हवेलियों में फूसकर रह गई है। उसे छोटी-छोटी गलियों और कच्चे मकानों का रास्ता नहीं मिला। साले, कितना बड़ा धोखा है।’²

‘नरककुंड में बास’ के अधिकतर चरित्र गाँव और शहर के बीच झूल रहे त्रिशंकु हैं। ये बहुत विवशता में गाँव से उखड़े हैं। छिबू का यह कहना ‘अगर मेरे पास गाँव में एक खेत भी होता तो मैं कभी शहर में रेडा न खींचता’³ इन सबकी मानसिकता का द्योतक है। लेकिन गाँव में उत्पादन के साधनों पर वर्ग विशेष के एकाधिकार और उसके तहत उत्पीड़न शोषण ने मेहनतकशों से गाँव छुड़ा दिया है और

अब बरकत जैसे लोग शहर में ही बस जाने की सोचने लगे हैं।

जगदीश चंद्र ने गाँव के स्तर पर शोषण के चक्र को बिना किसी बयानबाजी के बहुत सहज भाव से रेखांकित कर दिया है। उपन्यास में परिवेश की प्रामाणिकता को उभारने के लिए वे अतिरिक्त व्यौरों या अलग से चिपकाए गए विचार सूत्रों का सहारा नहीं लेते। नगर में व्याप्त शोषण चक्र अपेक्षाकृत जटिल और सूक्ष्म है, लेकिन उपन्यासकार ने अत्यंत कलात्मक ढंग से इसे परत-दर-परत अनावृत किया है।

आर्थिक परिप्रेक्ष्य में दलित चित्रण : ‘नरक कुण्ड में बास’ के शहरी दलित रोज़ी-रोटी की तलाश में गाँव से शहर की ओर आए हैं, जो तन-तोड़ मेहनत करने के बाद भी आर्थिक बदहाली में अपना जीवन-यापन करते हैं। शहर काम की कमी नहीं है, किंतु मेहनत के हिसाब से मज़दूरी नहीं मिलती -“बारह घण्टे काम के बाद अच्छे सधे हुए कारीगर को रुपए सवा-डेढ़ मिलते हैं। -नौसिखिये को तो रुपए-बारह आने से ज़्यादा नहीं मिलेगा। क्या खाएगा और क्या इलाज पर लगाएगा।”⁴

अपनी आर्थिक बदहाली और बेरोज़गारी के चलते ही काली एवं उसके अन्य दलित साथी अनाज गोदामों में रेडा खींचने, बस अड्डों पर हमाली करने या चमड़े के कारखानों में दूषित और घातक वातावरण में चमड़ा धोने जैसे कठोर परिश्रमाश्रित और गंदे कार्य करने के लिए विवश हैं -“लेकिन जब उसे याद आया कि इस काम के लिए उसे रोज़ाना सवा-डेढ़ रुपए मिलेंगे और काम सीख लेने पूरे दो रुपए तो उसने खालों की ओर यों देखा जैसे वे सुगंधित फूलों का ढेर है।”⁵

राजनैतिक परिप्रेक्ष्य में दलित चित्रण : आज़ादी के बाद गाँधी जी के सपनों के भारत और रवींद्रनाथ के जागृत भारत की रचना बेबुनियाद हो गई। अधूरी राष्ट्रीय क्रांति और अधूरे मुक्ति संघर्ष ने समाज को उतना बदला नहीं। स्वप्न भंग, मोह भंग हमें पराएपन की तरफ ले गया। ‘नरककुंड में बास’ का नाथी कहता है कि “इंस्पेक्टर को सेठ के दफ्तर और कोठी के आगे का रास्ता याद कहीं रहा होगा। मालिक से मामला तय हो गया होगा। किताबों में ट्यूबवेल भी लग गया होगा। किताब का पेट भरा होना चाहिए बाकी सब अल्ला अल्ला - खैर सल्ला है।”⁶

राजनीति के प्रदूषण दायित्वहीनता और फूहड़पन ने यह जमाव पैदा की है जहाँ कल्याण की योजनाएँ कागज़ी होकर रह जाती हैं। जिन लोगों का पैसा ही सबसे बड़ा ईमान है, ऐसे नक्कारा, बेजमीन, मानवीयता रहित दलाल लोगों की फौज जो आज़ाद हिन्दुस्तान में पैदा हुई है, योजना और अमल के बीच सॉप बन कर बैठी हुई है जिसकी वजह से विकास कार्य के लिए निकला हुआ रुपया पन्द्रह पैसे के रूप में भी नहीं पहुँच पाता।

मेहनत की दुनिया की मुसीबतों के पीछे जनतांत्रिक व्यवस्था की जनविरोधी नीतियाँ तो हैं ही, मेहनतकशों के असंगठित रह जाने और विद्रोह न कर पाने के बहुत से कारणों में एक

उनका रूढ़ संस्कार भी है जो मालिक को रब के बराबर समझता है। यह समझ शोषण वर्ग द्वारा उन्हें बार-बार बलात सौंपी गई है कि - 'जिस तरह रब सारे जगजहानका अन्नदाता है, उसी तरह लाला हमारा पालनहार है।'7 हालांकि वे यह जान गए हैं कि भिखारी बने रहकर अधिकारों की लड़ाई नहीं लड़ी जा सकती, फिर भी अभी शोषण शक्तियों के लिए वे संगठित और गंभीर चुनौती नहीं बन पाए हैं। गुस्से का भाव उनमें बार-बार जगता है, लेकिन अधिकतर आत्मघाती मुद्रा तक सीमित रह जाता है। नाथी ने 'सिरदर्द का सबसे बड़ा इलाज है कि सर फोड़ दो। न रहे बाँस न बजे बाँसुरी' के माध्यम से जो समाधान प्रस्तुत किया है, वह भावावेश की उपज है और उपन्यासकार ने इसे श्रमजीवियों के अंतर्विरोध के रूप में रेखांकित किया है। शोषित-दलित के संघर्ष के प्रति उसकी एप्रोच आलोचनात्मक यथार्थवादी है, लेकिन कहीं भी विचारधारा का अनावश्यक और अतिरिक्त आरोप वह नहीं करता। यह संयम जगदीश चंद्र को अन्य मुखर जनवादियों से अलग प्रतिष्ठा देता है।

धार्मिक परिप्रेक्ष्य में दलित चित्रण :

'नरक कुण्ड में वास' में शहरी दलित मजदूरों की व्यथा-कथा का निरूपण केंद्र में है अतः यहाँ धार्मिक कर्मकांड या पाखंड का व्यापक चित्रण तो नहीं मिलता है, किंतु स्वयं दलित जाति के तथाकथित धनाढ्य तबके के लोग-नेता ही दलित मजदूरों का धर्म के नाम पर शोषण करते हैं। चमड़ा मजदूरों के लिए सबसे बड़ी ज़रूरी चीज़ है-नहाने और पीने के लिए शुद्ध पानी के ठूबवेल् की जबकि कारखाने के मालिक मजदूरों को सहूलियतें देने के बजाय मंदिर बनवाने में दिलचस्पी रखते हैं। चमड़ा मजदूरों के लिए पानी की सहूलियत जीवन-मरण का प्रश्न है, वही इन दलित नेताओं के लिए यह प्रश्न छोटी-मोटी नगण्य बात है -“आप लोग छोटी-छोटी बातों में मत पड़ो। बड़ी बातों की ओर ध्यान दो।”8 यहाँ तक तो ठीक है, लेकिन मंदिर निर्माण के लिए धर्म की आड़ में दलित मजदूरों से भी एक-एक दिन की तनखाह दान में वसूली जाती है।

निष्कर्ष:

इस प्रकार कहा जा सकता है कि जगदीश चंद्र के उपन्यास 'नरककुण्ड में बास' में दलितों और मजदूरों की अनेक समस्याएँ अपने यथार्थ रूप में उभर कर आयी हैं। इस बात की पुष्टि भी हुई है कि शहरों में रोजगार की तलाश में आने वाले व्यक्तियों को निराशा ही हाथ लगती है। इस बेरोजगारी और मजबूरी कर लाभ पूँजीपति वर्ग अधिक से अधिक उठाता है। शहर में इसी बेरोजगारी के कारण उन्हें पशु की जगह काम करना पड़ता है जो निस्संदेह मानव जीवन के लिए हमारी व्यवस्था के लिए घातक है।

कारखानों में तो मजदूरों की स्थिति और अधिक बदतर है। इन कारखानों में सड़ी-गली पशुओं की खाल को उन्हें हाथों से रगड़-रगड़ कर धोना पड़ता है जिससे वे अक्सर घातक बीमारियों का शिकार हो जाते हैं जो उन्हें सीधे मौत के मुँह में ले जाते हैं। मजदूर सब कुछ जानकर भी इन कारखानों में

डॉ. जी. वसंती

काम मजदूरी पर काम करते हैं। ये उनकी विवशता है जो उन्हें इस बीभत्स वातावरण में कार्य करने के लिए मजबूर करती है।

पूँजीपति वर्ग अपने व्यक्तिगत स्वार्थों के लिए इस दलित-पीड़ित श्रमिक वर्ग का उपयोग करता है। यह श्रमिक वर्ग जो कि तमाम समस्याओं से ग्रस्त है अपने अधिकारों को नहीं माँग सकता, क्योंकि या तो उसके अधिकार पूँजीपतियों के पास गिरवी हैं या विपरीत परिस्थितियों के शिकार। इससे छुटकारे का कोई उपाय नहीं है। आवश्यकता है मुक्ति और पहचान के लिए छटपटाहट और गहरी इच्छाशक्ति की। यही इच्छाशक्ति चेतना का पुंज बनकर नया मार्ग प्रशस्त करेगी।

सन्दर्भ:

1. सं. चमन लाल , जगदीश चंद्र दलित जीवन के उपन्यासकार , पृ.सं. 109
2. जगदीश चंद्र , नरक कुण्ड में वास , पृ.सं. 132
3. जगदीश चंद्र , नरक कुण्ड में वास , पृ.सं. 143
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7. जगदीश चंद्र , नरक कुण्ड में वास , पृ.सं. 122
8. जगदीश चंद्र , नरक कुण्ड में वास , पृ.सं. 23

औरंगाबाद (छ.संभाजी नगर) जिल्ह्यातील कृषी भूमीउपयोजन**डॉ. शोभा भानुदासराव दुधाटे**

सहाय्यक प्राध्यापक, भूगोल विभाग कै.बाबुराव पाटील महाविद्यालय, हिंगोली

Corresponding Author- डॉ. शोभा भानुदासराव दुधाटे**DOI- 10.5281/zenodo.13867947****प्रस्तावना :-**

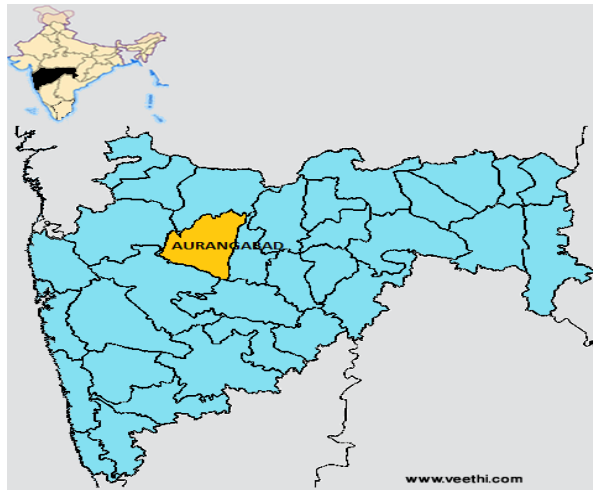
भूमी हा नैसर्गिक संसाधना पैकी महत्वाचा घटक असून भूतलावरील जैविक व अजैविक घटकासोबत त्याचा प्रत्यक्ष-अप्रत्यक्ष संबंध आढळतो. पृथ्वी वरील एकूण भूभागापैकी केवळ 29 टक्के भूभाग शीलावरण व्याप्त आहे. त्यातही सर्वच शीलावरणाचा भाग जीवावरणांशी किंवा सजीव सृष्टीशी अनुकूल आढळत नाही. म्हणून भूमीचा योग्य वापर होणे महत्वाचे आहे. दिवसेंदिवस वाढत्या लोकसंख्येनुसार उपलब्ध भूमीवर ताण वाढत असल्याने भूमी उपयोजन ही संकल्पना वैश्वीक स्तरावर महत्वापूर्ण ठरत आहे. जगामध्ये एकूण भूमी उपयोजनाचे स्वरूप भीन्न-भीन्न असले तरी प्रत्येक देशाला कृषी भूमी उपयोजन मात्र नियोजनबद्ध करावे लागते. म्हणून भूमी उपयोजनाचे स्वरूप अभ्यासणे क्रमप्राप्त ठरते.

भूमी उपयोजनाच्या वर्गिकरणावर अनेक घटक प्रभावकारी ठरतात. हवामान विषयक पर्जन्य, हवामान, प्राकृतिक घटक, मृदा, जमिनीचा उतार, नदी प्रणाली, क्षरण कार्य इत्यादी. कोणत्याही भागातील जमिनीची धारण क्षमता त्या भागातील प्राकृतिक घटकावर अवलंबून असते अर्थात ती एक दीर्घकालिन पक्कीया आहे. (स्टॅम्प-1968) वेगवेगळ्या देशामध्ये वेगवेगळ्या तज्ञांनी वेगवेगळे भूमी उपयोजन वर्गिकरण केले आहे. स्टॅम्प यांनी ब्रिटनमध्ये " द लॅन्ड ऑफ ब्रिटन इटटस युज ॲन्डमिस युज" या शोधनिबंधात भूमी चे सहा विभागात विभाजन केले आहे. अंतरराष्ट्रीय भूमी उपयोजन वर्गिकरण या शाखेने नऊ विभागात विभाजन केले आहे. तर यु.एस.ए ने तिन विभागात विभाजन केले. तसेच यु.एस.ए मध्ये मृदा संधारण खात्याने चार विभागात वर्गिकरण केले आहे. तर यु.एस.एस.आर यांनी सहा विभागात विभाजन केले. त्याच बरोबर प्रिंरॉर यांनी सन 1951 मध्ये भारतीय कृषी खात्याला आखून दिलेले भूमी उपयोजन सहा विभागात सांगितले. 1.एकूण भौगोलिक क्षेत्र, 2.जंगलव्याप्त भाग, 3.लागवडी लायक नसलेली जमिन, 4.पडीक जमिन, 5.पडीक जमिनी व्यतीतीक लागवड न केलेली जमिन, 6.निव्वळ लागवडी खालिल क्षेत्र.

अभ्यास क्षेत्र :-

औरंगाबाद(छ.संभाजी नगर)जिल्ह्याचा अक्षावृत्तीय विस्तार 19°18" उत्तर 20°40" उत्तर आणि रेखावृत्तीयविस्तार 74°34" पुर्व ते 76°40" असा विस्तारलेला असून महाराष्ट्राच्या मध्यावर त्याचे स्थान येते.

जिल्ह्याच्या पुर्वेस बुलढाणा आणि जालना जिल्हा आहे. पश्चिमेस नाशीक आणि अहमदनगर जिल्हे आहेत. उत्तरेस जळगाव जिल्हा असून पुन्हा जालना व बुलढाणा जिल्ह्याचा भाग येतो.



उद्दीष्टे :- औरंगाबाद(छ.संभाजी नगर)जिल्ह्यातील प्राकृतिक व सामाजीक रचना अभ्यासणे.

1. औरंगाबाद(छ.संभाजी नगर)जिल्ह्यातील कृषी भूमी उपयोजन अभ्यासणे.

शोधनिबंधाच्या मर्यादा:- उपलब्ध तथ्य संकलनावरच

आलेले निष्कर्ष अवलंबून आहेत.

विश्लेषण :-

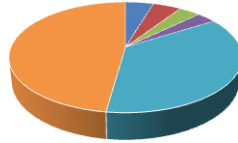
अ.क्र	भूमी उपयोजनविभाग	क्षेत्रफळ हे.मध्ये	एकूण भौगोलिक क्षेत्रफळाशी टक्केवारी
1	जंगल व्याप्त भाग	7900	4.62
2	लागवडी लायक नसलेली जमिन	7990	4.67
3	पडीक जमिनी व्यतीरीक्त लागवड न केलेली जमिन	6040	3.53
4	पडीक जमिन	5480	3.20
5	निव्वळ लागवडी खालिल क्षेत्र	61720	36.14
6	एकूण लागवडी खालिल क्षेत्र	81610	47.79

स्त्रोत :- आर्थिक व सामाजिक समालोचन, औरंगाबाद इ.स.2010/2011

वरिल तक्त्यामध्ये अभ्यासक्षेत्रातील कृषी भूमी उपयोजनाची सरासरी दर्शविली आहे. तसेच कृषी भूमी उपयोजनाच्या प्रमुख श्रेणीची एकूण भौगोलिक क्षेत्रफळाशी टक्केवारी दर्शविली आहे. अभ्यास क्षेत्रामध्ये सर्वात जास्त 81610 हेक्टर क्षेत्र लागवडीखाली असून एकूण क्षेत्रफळाच्या 47.79 टक्के भूभाग आढळतो. त्यापाठोपाठ निव्वळ लागवडी खालिल क्षेत्राचे प्रमाण 61720 हेक्टर क्षेत्र लागवडी खाली असून एकूण क्षेत्रफळाच्या 36.14 टक्के भूभाग आढळतो. त्या नंतर लागवडी लायक नसलेले क्षेत्राचे

प्रमाण क्षेत्रफळाच्या 4.67 टक्के भूभाग आढळतो, जंगलाचे प्रमाण एकूण भौगोलिक क्षेत्रफळाच्या 7900 हेक्टर क्षेत्र लागवडी खाली असून एकूण क्षेत्रफळाच्या 4.62 टक्के भूभाग आढळतो. तर पडीक जमिनी व्यतीरीक्त लागवड न केलेली जमिनीचे प्रमाण भौगोलिक क्षेत्रफळाच्या 6040 हेक्टर क्षेत्र लागवडी खाली असून क्षेत्रफळाच्या 3.52 टक्के भूभाग आढळतो. सर्वात कमी प्रमाण एकूण भौगोलिक क्षेत्रफळाच्या 5480 हेक्टर क्षेत्र लागवडी खाली असून एकूण क्षेत्रफळाच्या 3.20 टक्के भूभाग आढळतो.

औरंगाबाद जिल्ह्यातील कृषी भूमी उपयोजन



- जंगल व्याप्त भाग
- लागवडी लायक नसलेली जमिन
- पडीक जमिनी व्यतीरीक्त लागवड न केलेली जमिन
- पडीक जमिन
- निव्वळ लागवडी खालिल क्षेत्र
- एकूण लागवडी खालिल क्षेत्र

इ.स.2018 ते 2022 च्या दरम्यानचे भूमी उपयोजनाचे टक्केवारी पुढील प्रमाणात आढळते.

1. कृषी खालिल जमिन

2018-53.4%, 2020- 52.1%, 2022-51.5%

2. जंगल व्याप्त जमिन

2018-12.1%, 2020- 12.3%, 2022-12.5%

3. पडीक जमिन

2018-10.3%, 2020- 9.8%, 2022-9.2%

भारतीय वनविभागाने 2019 ला सादर केलेल्या अहवालानुसार औरंगाबाद(छ.संभाजी नगर)जिल्ह्यातील एकूण भौगोलिक क्षेत्राच्या 12.2 टक्के क्षेत्रफळ जंगल व्याप्त आहे.

डॉ. शोभा भानुदासराव दुधाटे

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राष्ट्रीय शिक्षा नीति-2020 के परिप्रेक्ष्य में माध्यमिक विद्यालय के शिक्षकों को तकनीकी उपयोग में आने वाली समस्याओं तथा उनके सम्भावित समाधान का अध्ययन

सुरेन्द्र कुमार पटेल¹, प्रो. सुधीर कुमार वर्मा²

¹शोध छात्र, बी. एड./एम. एड. विभाग, महात्मा ज्योतिबा फुले रुहेलखंड विश्वविद्यालय बरेली

²शोध निर्देशक, बी. एड./एम. एड. विभाग, महात्मा ज्योतिबा फुले रुहेलखंड विश्वविद्यालय बरेली

Corresponding Author- सुरेन्द्र कुमार पटेल

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सारांश:

शिक्षा सभ्य मानव समाज के निर्माण की आधार सिला होती है क्योंकि मनुष्य को समाज में रहने एवं सामाजिक दायित्व का निर्वाहन करना सिखाने का कार्य शिक्षा द्वारा ही किया जाता है शिक्षा व्यक्ति के जन्म से प्रारम्भ होती है और जीवन पर्यन्त चलने वाली प्रक्रिया है।

बात यदि राष्ट्रीय शिक्षा नीति-2020 के परिप्रेक्ष्य की बात की जाय तो हम कह सकते हैं कि राष्ट्रीय शिक्षा नीति में तकनीकी उपयोग की बात जोरो से की गयी है क्योंकि वर्तमान समया में शिक्षा में काफी परिवर्तन देखने को मिल रहे हैं या यूँ कहें कि कोरोना के कारण शिक्षा व्यवस्था को सुचारु रूप से चलाने हेतु तकनीकी का उपयोग शिक्षा में बढ़ा था, उसके बाद ही आम जन मानस को उसके फायदे नजर आने लगे जिसके चलते NEP 2020 में तकनीकी उपयोग पर जोर दिया गया, बात यदि माध्यमिक विद्यालय के शिक्षकों की किया जाय तो यह कह सकते हैं कि आज की माध्यमिक शिक्षा में तकनीकी उपयोग की अनेक चुनौतियाँ हैं, खास कर शासन द्वारा पोषित शिक्षा व्यवस्था एवं शिक्षकों में जबकी तुलनात्मक रूप से निजी विद्यालय के शिक्षक तकनीकी उपयोग में उनकी तुलना में ज्यादा बेहतर है इसके अनेक कारण हैं, जिन्हे चुनौतियों के रूप में इस प्रकार समझा जा सकता है, शिक्षकों में तकनीकी उपयोग के प्रति रुचि का अभाव, सेवारत शिक्षकों के प्रशिक्षण का अभाव, छात्रों में जागरूकता का अभाव, पर्याप्त संसाधनों का अभाव, आधुनिक कक्षाओं का अभाव, मानसिक तैयारी का अभाव, प्रशिक्षण का अभाव, आर्थिक समस्याएँ।

यदि सम्भावित समाधान के विषय में चर्चा की जाय तो कहा जा सकता है कि अनेक सम्भावित समाधान हो सकते हैं, यदि जो चुनौतियाँ हैं उनको दूर कर दिया जाए तो तकनीकी उपयोग रुचिकर, सरल, सहज एवं उपयोगी हो जाएगा। इसीलिए इस बात पर विशेष जोर दिया जाता है कि तकनीकी उपयोग को सम्भव बनाने एवं शिक्षकों में इसके प्रति रुचि उत्पन्न करने के लिए उनको इसके उपयोग के ज्यादा से ज्यादा अवसर दिये जाए तथा आवश्यकता के अनुरूप उनको प्रशिक्षित किया जाए साथ ही सेवा पूर्व एवं सेवारत शिक्षकों को तकनीकी उपयोग में निपुण बनाने के लिए पूर्व से ही प्रशिक्षण की योजना निर्धारित की जाए। जो राष्ट्रीय शिक्षा नीति-2020 को आगे बढ़ाने एवं उसके अनुरूप कार्य क्षमता का विकास करने में मदद करेगा।

प्रस्तावना-

शिक्षा एक ऐसा संसाधन है जो मानव को जीवन जीने की कला का ज्ञान कराती है। इसीलिए समाज यह मानता है कि मनुष्य के जीवन के लिये शिक्षा एक आवश्यक एवं अनिवार्य कारक है। क्योंकि यदि मनुष्य के पास कुछ भी न हो केवल शिक्षा हो तब भी वह अपना जीवन यापन भली भाँति कर सकता है क्योंकि शिक्षा मनुष्य को समाज में किस प्रकार बर्ताब करना है, किस प्रकार सम्बन्धों में मजबूती लानी है किस प्रकार जीवन में आने वाली कठिनाइयों से बचना है आदि के विषय में बताने का काम करती है। अनेक शिक्षाविदों ने शिक्षा को परिभाषित करते हुये कहा है कि

महात्मा गाँधी “शिक्षा से मेरा अभिप्राय बालक एवं मनुष्य के शरीर, मस्तिष्क एवं आत्मा के सर्वोत्तम की अभिव्यक्ति है।”

राधा कृष्णन “शिक्षा को मनुष्य और समाज का निर्माण करना चाहिए। इस कार्य के किये बिना शिक्षा अनुर्वर और अपूर्ण है।”

स्वामी विवेकानन्द “मनुष्य की अन्तःनिहित पूर्णता को अभिव्यक्त करना ही शिक्षा है।”

हरबर्ट स्पेसर “शिक्षा का अर्थ अन्तःशक्तियों का बाह्य जीवन में समन्वय स्थापित करना है।”

सोचने वाली बात यह है कि कोरोना जैसी महामारी में शिक्षा व्यवस्था को कैसे सुचारु रूप से चलाया जा सकता है तो बात आती है कि तकनीकी के माध्यम से एक ऐसी शिक्षा व्यवस्था का खाका तैयार किया जा सकता है जो प्रकृतिक आपदाओं कोरोना जैसी महामारियों में भी शिक्षा को व्यवस्थित रूप से संचालित करने में मदद करेगी। क्योंकि वर्तमान समय के मनावों ने कोरोना की भयावह त्रासदी को देखा है, जब गलियाँ सूनी थी मौत का ताण्डव चल

रहा था। सभी अपने, पराये हो गये थे लोग घर से निकलना नहीं चाहते थे। उन परिस्थितियों

में भी शिक्षा व्यवस्था को जिन्दा रखने का काम किसी ने किया तो वह तकनीकी ही थी। इसीलिये अब भविष्य में समस्याओं से निपटने के लिए तकनीकी के सहयोग से शिक्षा की वैकल्पिक व्यवस्था को तैयार करना आवश्यक हो गया है।

तकनीकी—

जब शिक्षक अपने शिक्षण को प्रभावशाली बनाने के लिए विभिन्न तकनीकी संसाधनों की मदद लेता है जिससे शिक्षण और अधिगम दोनों प्रभावित होता है उसे तकनीकी कहते हैं। तकनीकी एक ऐसा विज्ञान है जो मानव जीवन के दैनिक प्रयोग में लाई जाने वाली विधियों का उपयोग करता है जिसका तात्पर्य यह है कि तकनीकी आम जीवन में उपयोग होने वाली विधियों का वैज्ञानिक रूप है।

इस सम्बन्ध में शिक्षाविदों ने अपने विचार निम्न रूप से प्रस्तुत किये हैं—

जकोटा ब्लूमर के अनुसार “वैज्ञानिक अवस्थाओं तथा प्रविधियों का प्रयोगात्मक रूप ही तकनीकी विज्ञान है।”

अतः शोधकर्ता इसी विषय पर शोध कार्य करना चाहता है। क्योंकि 2020 की राष्ट्रीय शिक्षा नीति में इस विषय पर स्पष्ट कहा गया है। शिक्षा में तकनीकी का ज्यादा से ज्यादा उपयोग किया जाये। जिससे शिक्षा सस्ती और सर्व सुलभ हो सके।

वैसे इससे पहले भी कई शिक्षा नीतियां आयीं जो समय और आवश्यकता के अनुसार शिक्षा में परिवर्तन करने में सफल रही चाहे वह शिक्षा नीति 1968 हो, 1979 हो या फिर 1986 (संशोधित 1992) सब ने अपने समय और आवश्यकता के अनुरूप शिक्षा व्यवस्था में आवश्यक परिवर्तन करके बेहतर बनाने का काम किया इसी क्रम में निम्न शिक्षा नीतियां भारत में आयीं।

शिक्षा नीति—

शिक्षा नीति से तात्पर्य ऐसी नियमावली से है जो शिक्षा व्यवस्था को एक व्यवस्थित रूप से संचालित करने का प्रावधान करे तथा उसका ढांचा सुनिश्चित करते हुये आगे बढ़ाने का काम करें।

दूसरे शब्दों में शिक्षा नीति से तात्पर्य ऐसे नियमों की श्रृंखला से है जो शिक्षा व्यवस्था को ढांचागत रूप प्रदान करते हुये विकास के पथ पर आगे ले जायें।

राष्ट्रीय शिक्षा नीति 2020

राष्ट्रीय शिक्षा नीति 2020 का विजन भारतीय मूल्यों से विकसित शिक्षा प्रणाली है। जो सभी को उच्च गुणवत्ता शिक्षा उपलब्ध कराके भारत को वैश्विक ज्ञान महाशक्ति बनाने का प्रयास करेगी इस शिक्षा नीति ने बदलते परिवेश एवं आवश्यकताओं के साथ शैक्षिक ढांचे में भी परिवर्तन करने का काम किया है। अब पूर्व की शिक्षा संरचना 10+2+3 के स्थान पर 5+3+3+4 लागू किया गया है।

तकनीकी उपयोग में आने वाली चुनौतियाँ—

बात यदि माध्यमिक विद्यालय के शिक्षकों की, किया जाय तो यह कह सकते हैं कि आज की माध्यमिक शिक्षा में तकनीकी उपयोग की अनेक चुनौतियाँ हैं, खास कर शासन द्वारा पोषित शिक्षा व्यवस्था एवं शिक्षकों में जबकी तुलनात्मक रूप से निजी विद्यालय के शिक्षक तकनीकी उपयोग में उनकी तुलना में ज्यादा बेहतर है इसके अनेक कारण हैं, जिन्हें चुनौतियों के रूप में इस प्रकार समझा जा सकता है।

शिक्षकों में तकनीकी उपयोग के प्रति रुचि का अभाव—

वर्तमान समय में शिक्षा में तकनीकी के भरपूर उपयोग का समय है क्योंकि वर्तमान समय में तकनीकी आधारित शिक्षा को बढ़ावा दिया जा रहा है परन्तु यदि हम शिक्षकों की रुचि के विषय में कहे तो यह सच है कि जो शिक्षक वर्तमान समय में नयी नियुक्ति पाये है वह तो तकनीकी का भरपूर उपयोग कर रहे है परन्तु जो शिक्षक काफी पहले से काम कर रहे है उनके पास तकनीकी ज्ञान के अभाव के कारण तकनीकी उपयोग में रुचि की भी कमी है जो पूर्ण रूप से तकनीकी उपयोग में चुनौती के रूप में दिखायी देती है।

सेवारत शिक्षकों के प्रशिक्षण का अभाव—

वैसे तो तकनीकी का उपयोग तो बहुत पहले से शिक्षा में होता रहा है परन्तु केवल नाम मात्र का उपयोग ही होता रहा है वर्तमान समय में कोरोना के बाद से शिक्षा में तकनीकी के उपयोग को बढ़ावा मिला है परन्तु उसके सापेक्ष शिक्षकों को तकनीकी रूप से दक्ष बनाने के लिए सेवारत शिक्षकों के प्रशिक्षण की आवश्यकता है परन्तु इसमें कमी के चलते तकनीकी उपयोग में यह चुनौती के रूप में दिखायी देता है।

छात्रों में जागरूकता का अभाव—

वर्तमान समय में शहरी क्षेत्र के छात्र तो तकनीकी उपयोग में जागरूक एवं सक्षम दिखायी देते है परन्तु ग्रामीण क्षेत्रों में आज भी इस हेतु जागरूकता का अभाव देखा जा सकता है जिसके चलते शिक्षा में तकनीकी के उपयोग को पूर्ण रूप से लागू नहीं किया जा पा रहा है।

पर्याप्त संसाधनों का अभाव—

शिक्षा में तकनीकी उपयोग में आने वाली चुनौतियों की बात करें तो हम कह सकते हैं कि पर्याप्त संसाधनों का अभाव शिक्षा में तकनीकीकरण की सबसे बड़ी चुनौती है।

आधुनिक कक्षाओं का अभाव—

वर्तमान समय में शिक्षा में तकनीकी का यदि भरपूर उपयोग करना है तो यह पहली आवश्यकता है कि सभी स्कूलों में आधुनिक कक्षाओं की उपलब्धता सुनिश्चित की जाय अन्यथा तकनीकी उपयोग में यह भी एक बड़ी चुनौती के रूप में दिखायी देती है।

मानसिक तैयारी का अभाव—

यह एक बड़ी चुनौती है कि किसी कार्य को करने से पहले व्यक्ति को मानसिक रूप से उस कार्य को करने के लिए तैयार होना होता है परन्तु स्कूली शिक्षा के शिक्षकों में इसकी कमी दिखायी देती है जिसके चलते शिक्षा में तकनीकी के उपयोग में यह भी एक बड़ी बाधा है।

प्रशिक्षण का अभाव—

तकनीकी उपयोग हेतु सेवारत एवं सेवापूर्व सभी शिक्षकों को तकनीकी शिक्षा का क्रियात्मक एवं व्यवहारिक प्रशिक्षण दिया जाना चाहिए परन्तु वर्तमान समय में ऐसा ना होने के कारण यह एक बड़ी समस्या या चुनौती बन गयी है।

आर्थिक समस्यायें—

आर्थिक समस्याओं की बात करें तो हम कह सकते हैं कि बिना अर्थ के तो तकनीकी उपयोग की कल्पना करना भी बेइमानी होगा क्योंकि अर्थ के आभाव में न संसाधन होंगे और न ही प्रशिक्षण होगा। आज वर्तमान समय में सरकारें थोड़ा सा विचार इस ओर करने लगी है परन्तु अर्थ के आभाव में अनेक क्रियाकलाप अधूरे हैं जिनको एक चुनौती के रूप में देखा जा सकता है।

सम्भावित समाधान—

यदि सम्भावित समाधान के विषय में चर्चा की जाय तो कहा जा सकता है कि अनेक सम्भावित समाधान हो सकते हैं, यदि जो चुनौतियाँ हैं उनको दूर कर दिया जाए तो तकनीकी उपयोग रुचिकर, सरल, सहज एवं उपयोगी हो जाएगा। इसीलिए इस बात पर विशेष जोर दिया जाता है कि तकनीकी उपयोग को सम्भव बनाने एवं शिक्षकों में इसके प्रति रुचि उत्पन्न करने के लिए उनको इसके उपयोग के ज्यादा से ज्यादा अवसर दिये जाए तथा आवश्यकता के अनुरूप उनको प्रशिक्षित किया जाए साथ ही सेवा पूर्व एवं सेवारत शिक्षकों को तकनीकी उपयोग में निपुण बनाने के लिए पूर्व से ही प्रशिक्षण की योजना निर्धारित की

जाए। जो राष्ट्रीय शिक्षा नीति-2020 को आगे बढ़ाने एवं उसके अनुरूप कार्य क्षमता का विकास करने में मदद करेगा।

सन्दर्भ ग्रन्थ सूची

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2. मिश्रा नन्दलाल (2018), सामान्य एवं दिव्यांग विद्यालयों के शिक्षकों में शैक्षिक तकनीकी के प्रति दृष्टिकोण का अध्ययन।
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7. सिंह अरुण कुमार (2015), मनोविज्ञान, समाजशास्त्र तथा शिक्षा में शोध विधियाँ।
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10. गुप्ता एस0पी0 (2014), उच्चतर शिक्षा मनोविज्ञान।
11. खत्री सकुन्तला (2014), शिक्षक प्रशिक्षक महाविद्यालयों में शैक्षिक तकनीकी प्रयोग के प्रति व्याख्याताओं की अभिवृत्ति का अध्ययन।
12. लाल बिहारी रमन (2013), भारतीय शिक्षा का विकास एवं उसकी समस्यायें।
13. लाल बिहारी रमन (2011), शिक्षा के दार्शनिक एवं समाजशास्त्रीय सिद्धान्त।
14. पाठक पी0डी0 (2008), शिक्षा मनोविज्ञान

‘अमरावती जिल्ह्यातील कोरकू जमातीच्या रोजगार विषयक समस्यांचे कोरकूंच्या जीवनावर होणारे परिणाम’

शिवाजी राजाराम तुपेकर

सहाय्यक प्राध्यापक, समाजकार्य महाविद्यालय, बडनेरा, अमरावती

Corresponding Author- शिवाजी राजाराम तुपेकर

Email: shivaji.tuppekar@gmail.com

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गोष्टवारा (Abstract) :

महाराष्ट्रातील अमरावती जिल्ह्यातील मेळघाट क्षेत्रात सातपुडा पर्वत रांगांमध्ये वास्तव्य करणारी कोरकू ही जमात असून ही जमात भौगोलिक रचनेच्या दृष्टीने दुर्गम असल्यामुळे आतापर्यंत दुर्लक्षित राहिली आहे. अतीदुर्गम भागात रस्ते, वाहतुकीच्या सोयी, उपजीवीकेची साधने, शासकीय सोयी सुविधांचा अभाव इत्यादी कारणांमुळे या भागात अनारोग्य, निरक्षरता आणि कूपोषण इत्यादी समस्यांनी उग्र रूप धारण केलेले आहे. या सर्व समस्यांच्या मुळाशी कोरकू समुदायाच्या सक्षम व शास्वत उपजीविका संसाधने व रोजगाराची अनुपलब्धता आहे. परंपरागत शेती, निसर्ग, जंगल आणि नानाविध प्रकारचे जोड व्यवसाय करणाऱ्या कोरकू समुदायाच्या उपजीविका संसाधनांच्या विविध समस्या आधुनिक काळात निर्माण झाल्या आहेत. त्यामुळे स्वयंसेवी संस्था व शासनाने एकत्रितरित्या कोरकू जमातीची रोजगार विषयक साधने सक्षम करणे, स्थानिक ठिकाणी रोजगाराच्या संधी उपलब्ध करणे, रोजगारात्मक आधुनिक क्षमता विकसित करणे व विविध योजनांची योग्य अंमलबजावणी गरजेचे आहे.

मुख्य शब्द: उपजीविका, रोजगार साधने, स्थलांतर

प्रस्तावना:

महाराष्ट्रात कोरकू जमात अमरावती जिल्ह्यातील धारणी, चिखलदरा व अचलपुर तालुक्यात वास्तव्य करते तसेच बुलढाणा व अकोला जिल्ह्यातील जळगाव जामोद, संग्रामपुर तसेच तेल्हारा, अकोट या विभागातही कोरकू आढळून येते. कोरकू अत्यंत परंपरागत पद्धतीने जीवन जगतात. दुर्गम, घनदाट जंगलांनी वेढलेले व डोंगराच्या पायथ्याशी वसलेल्या खेड्यात ते वास्तव्य करतात. प्रत्येक ऋतूत त्यांना विविध अडचणींना सामोरे जावे लागते. अशा वातावरणात उदरनिर्वाह करताना त्यांना कसरत करावी लागते. अज्ञान, शिक्षणा बाबत अनास्था यामुळे त्यांचे नोकरी व आधुनिक रोजगार क्षेत्रात प्रमाण अत्यल्प दिसून येते. शासनाच्या विविध योजनांद्वारे त्यांच्या उदरनिर्वाहाची समस्या थोडीफार कमी झालेली असल्याचे दिसते. सार्वजनिक वितरण प्रणालीद्वारे मिळणारे अन्नधान्य, मनरेगाद्वारे मिळणारी मजुरीची कामे, शेतीसाठी अनुदान व कर्ज योजना, अंगणवाड्या, शासकीय आरोग्य सेवा, आश्रमशाळा इ. सुविधांद्वारे त्यांचे जीवनमान सुकर करण्याचे शासनाचे प्रयत्न सुरु आहेत. शासनासोबतच ऐच्छिक संस्थासुद्धा कोरकूंच्या विकासात महत्वाची भूमिका बजावत आहेत. चरीतार्थ चालविण्यासाठी, जीवन जगण्यासाठी कोरकू समुदाय पूर्वी पासून नैसर्गिक साधन संपत्तीशी संबंधित रोजगार करत आलेला आहे. परंतु स्वातंत्र्योत्तर काळात इतर समुदायाशी त्यांचा संपर्क

आल्याने आणि स्थानिक स्तरावर रोजगाराचे प्रश्न निर्माण झाल्याने ते अनेक व्यवसाय करू लागले आहेत. पण सक्षम रोजगाराच्या अभावी कोरकू समुदायाच्या सामाजिक-आर्थिक जीवनावर परिणाम होत असून त्यांना अनेक समस्यांना सामोरे जावे लागत असल्याचे विविध वृत्तपत्र बातम्या व शासनाच्या अहवालातून आढळले आहे. त्यामुळे प्रत्यक्ष मेळघाट क्षेत्रात याबाबतचे अध्ययन करणे महत्वाचे होते. त्या करिता ‘अमरावती जिल्ह्यातील कोरकू जमातीच्या रोजगार विषयक समस्यांचे कोरकूंच्या जीवनावर होणारे परिणाम’ हा विषय अध्ययना करिता निवडण्यात आला व त्यासाठी खालील उद्दिष्ट्ये व अध्ययन पद्धती निश्चित करण्यात आली.

अध्ययनाचे उद्देश:

- 1) मेळघाटातील कोरकू आदिवासींच्या उपजीविका संसाधनांचे अध्ययन
- 2) कोरकू जमातीच्या रोजगार विषयक समस्यांचे कोरकूंच्या सामाजिक जीवनावर होणारे परिणाम अभ्यासाने
- 3) कोरकू जमातीच्या रोजगार विषयक समस्यांचे कोरकूंच्या आर्थिक जीवनावर होणारे परिणाम अभ्यासाने
- 4) कोरकूंच्या उपजीविका संसाधनांच्या सक्षमीकरणासाठी उपाययोजना सुचविणे

संशोधन पद्धती:

सदर संशोधनासाठी प्राथमिक तथ्यांचा आधार घेण्यात आला. त्याकरिता अमरावती जिल्ह्यातील मेळघाट क्षेत्रातील धारणी व चिखलदरा या दोन कोरकू बहुल तालुक्यातील प्रत्येकी ५ कोरकूस्थित गावांमधून प्रत्येकी ५ कोरकू कुटुंबप्रमुखांची उत्तरदाते म्हणून गैरसंभाव्यता नमुना निवड पद्धती मधील सहेतुक नमुना निवड पद्धतीच्या साहाय्याने ५० कोरकू उत्तरदात्यांची निवड करण्यात आली. संशोधनाशी संबंधित तथ्यांचे संकलन मुलाखत अनुसूचीद्वारे करण्यात आले. तसेच संकलित तथ्यांचे विश्लेषण करण्यासाठी दुय्यम तथ्यांचा आधार घेण्यात आला. त्यात पुस्तके, संशोधन लेख, शासकीय अहवाल, आकडेवारी, वेबसाईट इत्यादींचा समावेश आहे.

संशोधनाचे प्रमुख शोध:

- १) अध्ययनाकरीता निवडलेल्या एकूण ५० उत्तरदात्यांपैकी बहुतांश (२९) कोरकू उत्तरदात्यांचे राहते घर कच्चे म्हणजेच मातीचे/ कुडाचे/ कुडामातीचे असल्याचे अध्ययनात आढळून आले.
- २) अध्ययना करिता निवडलेल्या एकूण ५० उत्तरदात्यांपैकी बहुतांश (३३) कोरकू उत्तरदात्यांकडे शेती आहे तर १६ उत्तरदाते शेतमजुरी आणि इतर मजुरी करतात. शेती करणाऱ्या उत्तरदात्यांपैकी बहुतांश (१८) कोरकू उत्तरदाते अल्पभूधारक शेतकरी आहेत. तसेच बहुतांश (१९) कोरकू उत्तरदात्यांकडे कोरडवाहू शेती असल्याचे आढळून आले.
- ३) ५० पैकी बहुतांश (४४) उत्तरदात्यांना पशुपालन, वनोपज संकलन, रोजगार हमी, मजुरी इत्यादी इतर व्यवसाय करून कुटुंबाचे पालन पोषण करावे लागते.
- ४) ५० पैकी बहुतांश (४१) उत्तरदात्यांच्या मते स्थानिक ठिकाणी बारा महिने रोजगार उपलब्ध होत नाही त्यामुळे त्यांना रोजगाराच्या शोधात स्थलांतर करावे लागते.
- ५) ५० पैकी बहुतांश (२८) उत्तरदात्यांचे वार्षिक उत्पन्न ३५००० व त्यापेक्षा कमी असल्याचे आढळून आले.
- ६) ५० पैकी बहुतांश (४१) उत्तरदात्यांच्या वार्षिक उत्पन्नातून त्यांच्या सकस निवारा, आहार, कपडे-लत्ते या गरजा समाधानकारकरीत्या पूर्ण होतात.
- ७) ५० पैकी बहुतांश (३२) उत्तरदात्यांच्या वार्षिक उत्पन्नातून त्यांच्या आरोग्य, शिक्षण व मनोरंजन, सण, समारंभ या गरजा अंशतः पूर्ण होतात.
- ८) ५० पैकी बहुतांश (२८) उत्तरदात्यांच्या मते अडचणीच्या वेळी त्यांना उसनवारी किंवा कर्ज घ्यावे लागते.
- ९) ५० पैकी बहुतांश (३५) उत्तरदात्यांच्या मते रोजगाराच्या अभावी त्यांना तडजोड करावी लागते.
- १०) ५० पैकी बहुतांश (४६) उत्तरदात्यांच्या मते स्थानिक ठिकाणी सक्षम व बारमाही रोजगाराची व्यवस्था शासनाने करावी अशी त्यांना अपेक्षा आहे.

प्रमुख शोधाचे विश्लेषण:

प्रस्तुत अध्ययनात अमरावती जिल्ह्यातील कोरकू जमातीच्या रोजगार विषयक समस्यांचे कोरकूंच्या जीवनावर होणारे परिणाम अभ्यासण्यात आले. त्यात असे आढळून आले कि बहुतांश कोरकू हे शेती या प्रमुख व्यवसायावर आपली उपजीविका भागवतात. त्याच बरोबर शेतमजुरी आणि इतर मजुरी देखील काही कोरकू करतात. शेती करणारे बहुतांश कोरकू अल्पभूधारक शेतकरी असून त्यांच्याकडे कोरडवाहू शेती असल्याचे आढळून आले. शेती व शेतीशी संबंधित इतर व्यवसाय जसे कि पशुपालन, शेतमजुरी हे निसर्गावर अवलंबून असून पर्यावरण बदलामुळे त्यांना अनेक अडचणी येतात. बहुतांश कोरकू उत्तरदात्यांचे राहते घर कच्चे म्हणजेच मातीचे/ कुडाचे/ कुडामातीचे असल्याचे अध्ययनात आढळून आले यावरून त्यांची कौटुंबिक व आर्थिक स्थिती साधारण असल्याचे दिसून येते. प्रस्तुत अध्ययनात बहुतांश कोरकू कुटुंबाचे वार्षिक उत्पन्न ३५००० किंवा त्यापेक्षा कमी असल्याचे आढळून आले आहे. उत्पन्नाच्या तुलनेने कोरकू कुटुंबात सदस्य संख्या जास्त असते. त्यामुळे मिळणारे उत्पन्नातून गरजांच्या पूर्ततेवर परिणाम होतो. अध्ययनात याबाबत जाणून घेतले असता असे आढळून आले आहे कि बहुतांश उत्तरदात्यांच्या वार्षिक उत्पन्नातून त्यांच्या सकस निवारा, आहार, कपडे-लत्ते या गरजा समाधानकारकरीत्या पूर्ण होतात पण बहुतांश उत्तरदात्यांच्या वार्षिक उत्पन्नातून त्यांच्या आरोग्य, शिक्षण व मनोरंजन, सण, समारंभ या गरजा अंशतः पूर्ण होतात. त्यामुळे बहुतांश उत्तरदात्यांच्या मते अडचणीच्या वेळी त्यांना उसनवारी किंवा कर्ज घ्यावे लागते तसेच तडजोड करावी लागते. कोरकू आदिवासींचा प्रमुख व्यवसाय हा शेती असला तरी कोरकू बहुविध व्यवसाय करणारी जमात आहे. त्यांच्या अंगी विविध कलागुण सुध्दा असतात. मुख्य व्यवसाया व्यतिरिक्त जोडधंदा सुध्दा ते करतात कारण वर्षभर त्यांना मुख्य व्यवसाय उपलब्ध होत नाही. त्यामुळे जंगल आणि इतर नैसर्गिक संसाधनांच्या सहाय्याने ते आपले आयुष्य जगतात. कोरकू वनउपज गोळा करणे, पशुपालन, बांबू काम करणे, मद्य बनविणे, लाकुड गोळा करणे, औषधी वनस्पती गोळा करणे इत्यादी अनेक प्रकारचे जोडव्यवसाय करतात. कोरकूंचा प्रमुख व्यवसाय हा शेती व शेतमजुरी आहे परंतु शेतमजुरी बारा महिने मिळत नाही त्यामुळे पर्यायाने उदरनिर्वाहाकरीता या लोकांना अस्थायी स्थलांतर करावे लागते. कोरकू आदिवासी हे हरहुन्नरी असतात, बाल वयापासूनच विविध कला-कुसर, गुण ते आपल्या वडीलधारी मंडळीकडून शिकून घेतात व पुढे या कला गुणांच्या साहाय्याने ते स्वतःचे मनोरंजन करतात. कोरकुंना नृत्य, वादन, गायन असे विविध प्रकारचे छंद जोपासायला आवडतात पण आज या जमातीत अनेक परिवर्तन होत असून या कौशल्यांना आजच्या आधुनिक जगात स्थान नाही आणि नवीन पिढीद्वारे हे कलागुण जोपासण्याचे कार्य केले जाताना दिसत नाही. स्वातंत्र्यानंतर आधुनिकीकरणात,

शासनाच्या मदतीने कोरकू समुदायाच्या वस्त्यामध्ये आधुनिक परिवर्तनही होत आहे. आधुनिक काळात विविध नवीन उपकरणांचा उपयोग होऊ लागला आहे त्यामुळे त्यासाठी लागणाऱ्या कौशल्यासाठी शासनाद्वारे विविध प्रशिक्षण कार्यक्रम आणि संस्था उभारल्या गेल्या आहेत. अशा संस्थामध्ये प्रशिक्षण घेवून प्रगत समाजातील लोकांप्रमाणे कौशल्य प्रदान करून त्यांच्या उदरनिर्वाहाचे माध्यम सक्षम व्हावे यासाठी प्रयत्न केले जात आहेत. परंतु कोरकूपर्यंत आधुनिक कौशल्य पोहचत नाहीत आणि ज्यांना हे कौशल्य अवगत झाले त्यांना भांडवलाअभावी कोणताही उदयोग व्यवसाय सुरू करता येत नाही. त्यामुळे बहुतांश कोरकूंना अकुशलतेमुळे तात्पुरत्या, अंशधर्मीत व अकुशल रोजगारांच्या सहाय्याने आपले आयुष्य जगावे लागते. ही अकुशल कामे बहुतांश तर शेतीशी संबंधित जसे कि शेतमजुरी व तत्सम असतात. कोरकूंना शेतीशी संबंधित अनेक समस्या येतात त्यात असमतल व कमी प्रतीची जमीन, पर्यावरणाच्या समस्या, जलस्रोतांची कमतरता, तंत्रज्ञानाचा अभाव या विविध समस्यांमुळे शेती बारमाही केली जात नाही. स्थानीक पातळीवर उपजीविका भागात नसल्याने कोरकू कुटुंबांना स्थलांतर करून मजुरी करून कुटुंबाचे पालन पोषण करावे लागते. एकंदरीत कोरकूंच्या रोजगारांचे प्रश्न गंभीर असल्याचे आढळून येते. आदिवासी समुदाय आपली उपजीविका जंगलातून मिळणाऱ्या वनउपजांवर भागवतो त्यात कोरकू सुद्धा अपवाद नाही. कोरकू आदिवासी संक्रमण होवूनही अजून निसर्ग व जंगलाशी जोडलेला असून आपल्या उपजीविकेसाठी तो आजही जंगलावर अवलंबून आहे व वनउपज गोळा करून आपल्या गरजा भागवतो. पण आज जंगलातील जंगलतोड, विविध जंगल विषयक कायद्यांच्या मर्यादा यामुळे वनउपज गोळा करण्यात अनेक अडचणींना सामोरे जावे लागते. बहुतांश कोरकूंना जंगलविषयक कायद्याबद्दल माहिती नाही. त्याचबरोबर त्याचा संरक्षण व वापर कायद्याबद्दल माहिती नाही त्यामुळे वनोपज संकलनाचे प्रमाण कमी झाले आहे. कोरकू आदिवासींची अर्थव्यवस्था पूर्वीपासून उपजीविका भागविणे यावरच केंद्रित झालेली आहे. त्यांची बचत ही पूर्वीपासून अन्नधान्य व तत्सम बाबींची बचत करण्यापुरतीच मर्यादीत होती. परंतु आधुनिक काळात इतर समाजाशी संपर्क आल्याने अर्थव्यवस्थेत पैशाचा विनीयोग वाढल्याने अनेक कारणांसाठी आज कोरकू आदिवासींना पैशांची आवश्यकता भासते. स्थानिक ठिकाणी रोजगाराच्या अभावी पैशांची अडचण येते त्यामुळे कोरकूंना रोजगाराच्या शोधात स्थलांतर करावे लागत असल्याचे अध्ययनात आढळून आले आहे.

शेतीचा हंगाम संपल्यानंतर रोजगार हमी योजनेचे ज्यांच्याकडे जाँबकार्ड आहे, अशा कोरकूंना शासनातर्फे मागणी केल्यास काम देण्यात येते. त्यात मजुरी शासनाने निश्चित केलेली आहे. रोजगार हमी योजनेमधून किमान 100 दिवसाचे काम, कामाची मागणी करणाऱ्या जाँबकार्ड धारकांना मिळण्याची तरतूद आहे. परंतु या

कामाची नियमितता, वेळेवर काम मिळणे, कामाचे स्वरूप याबाबत अनेक प्रश्न असल्याचे दिसून येते. रोजगार हमी योजनेत मागणी केल्याबरोबर काम उपलब्ध होत नाहीत, काम मागण्याची प्रक्रिया क्लिष्ट आहे. रोहयोमधून दिले जाणारी कामे सुद्धा कठीण आहेत आणि केलेल्या कामाचा मोबदला विलंबाने मिळतो. त्यामुळे अनेक कोरकूंना अर्थार्जनासाठी स्थलांतर करून पोट भरण्याशिवाय पर्याय उरत नाही. मनरेगाच्या कामावर कोरकू लोक जाण्यास उत्सुक नसतात. त्यापेक्षा ते स्थलांतरण करणे पसंत करतात असे आढळून येते. कोरकू आदिवासी नोव्हेबर ते मार्च आणि एप्रिल ते जून या कालखंडामध्ये मोठ्या प्रमाणात मजुरीकरीता स्थानांतरण करतात असे आढळून आले. यामध्ये कुटुंबातील वृद्ध व्यक्ती व शालेय मुले यांना सोडून प्रौढ, तरुण जोडपे उपजीविकेच्या साधनांच्या शोधात स्थलांतरण करतात. स्थलांतर करून ते अमरावती व नागपुर जिल्ह्यातील ग्रामिण भागातील शेतीमधील हंगामी कामे, शहरातील बांधकाम, खोदकाम, अकुशल कामे, विटांचे कारखाने या ठिकाणी अकुशल कामे करतात. या सोबत काही कोरकू इंदोर, बैतुल, बुज्हाणपुर, खांडवा, सुरत, पूणे, मुंबई येथे देखील हंगामी स्थलांतर करून अकुशल मजुरीची कामे करतात व आपली उपजीविका भागवण्यासाठी धडपड करतात. स्थलांतर केल्यामुळे त्यांचे गावाकडे, घराकडे व शेतीकडे दुर्लक्ष होते. कुटुंबातील लहान मुले सोबत स्थलांतरण केल्यास त्यांची शाळा बुडते तसेच अंगणवाडी व्दारा मिळणाऱ्या सेवा सुविधांपासून ते वंचित राहतात व कुपोषणासारखी गंभीर समस्या निर्माण होते. मोहफुलाद्वारे मद्य तयार करणारे कोरकूचा शहरात गेल्यावर व्यसनावर होणारा खर्च वाढतो व शारिरीक दुष्परिणाम सुद्धा होतात. आदिवासी भागात आरोग्याच्या संदर्भात मोफत सेवा पुरविल्या जातात. पण स्थानांतरीत ठिकाणी त्यांना आरोग्यसेवा करिता बरीच रक्कम खर्च करावी लागते. अज्ञानामुळे स्थलांतरित ठिकाणी त्यांचे ठेकेदाराकडून शोषण देखील होते (म्हाला जी.जे. २०१५). सदर अध्ययनात बहुतांश कोरकूंनी स्थानिक ठिकाणी सक्षम व बारमाही रोजगाराची व्यवस्था शासनाने करावी अशी अपेक्षा त्यांनी व्यक्त केली.

निष्कर्ष:

प्रस्तुत संशोधनातील वरील प्रमुख निष्कर्ष असे सूचित करतात की, कोरकूंना त्यांच्या मुख्य उपजीविकेच्या साधनसंपत्तीशी संबंधित विविध समस्यांना तोंड द्यावे लागत आहे. शेती, जंगलातील वनोपजाचे संकलन हे आजही त्यांची उपजीविकेच्या दृष्टीने आधारभूत यंत्रणा आहे. मेळघाट परिसरात रोजगार हमी योजना राबविण्यात येत आहे पण त्यात नियमितता आणणे, योग्य अंमलबजावणी करणे गरजेचे आहे, तेंव्हाच स्थलांतरा सारख्या समस्येला थांबवता येईल. महाराष्ट्रातील मेळघाट भागातील कोरकू जमातीचे जीवनमान बळकट करण्यासाठी त्यांच्याकरिता कर्जव्यवस्था, शेळीपालन, दुग्धव्यवसाय, सहकारी व्यवसाय, लघुउद्योग यासारख्या इतर योजना सरकारने राबवाव्यात.

याशिवाय आधुनिक तंत्रज्ञान व कौशल्ये कोरकू आदिवासिना प्रदान करणे, त्यासाठी आवश्यक ते सहकार्य करणे महत्वाचे संदर्भः

असून यासाठी स्वयंसेवी संस्था व शासनाने एकत्र येऊन कार्य करणे आवश्यक आहे.

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ಡಾ. ಸುನೀತಾ ಮಹೇಶ್ವರಿ

ಕನ್ನಡ ಅತಿಥಿ ಪ್ರಾಧ್ಯಾಪಕರು ಜ್ಞಾನ ಕಾರಂಜಿ
ಬೀದರ ವಿಶ್ವವಿದ್ಯಾಲಯ, ಬೀದರ
ಮೊ.

Corresponding Author- ಡಾ. ಸುನೀತಾ ಮಹೇಶ್ವರಿ

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ಛಾಂಟಿಚಿಛಿಣ:

ಮಹಾರಾಷ್ಟ್ರದ ಔರಂಗಾಬಾದ್ ಮೂಲದವರಾದ ಬಿ.ಶ್ಯಾಮಸುಂದರ ಅವರು ಹುಟ್ಟಿದ್ದು ಡಿಸೆಂಬರ್ 21, 1908 ರಲ್ಲಿ ಅವರ ತಂದೆ ಬದುಲಾ ಮಾಣಿಕ್ಕಂ, ತಾಯಿ ಸುಧಾಬಾಯಿ ಮಧ್ಯಮ ವರ್ಗದವರಾಗಿದ್ದು, ಅಸ್ಪೃಶ್ಯರೆನಿಸಿದ 'ಮಾಲಾ' ಜಾತಿಗೆ ಸೇರಿರುವವರಾಗಿದ್ದರು ಬಿ.ಶ್ಯಾಮಸುಂದರ ಅವರು ತಮ್ಮ ಪ್ರಾಥಮಿಕ ಶಿಕ್ಷಣವನ್ನು ಕ್ರೈಸ್ತ ಮಿಷನರಿಯ ಸೆವೆನ್ ಪ್ರವರ್ನ್ ಶಾಲೆಯಲ್ಲಿ ಮಾಧ್ಯಮಿಕ ಶಿಕ್ಷಣವನ್ನು ಮುಸ್ಲಿಮ ಶಾಲೆಗಳಲ್ಲಿ ಪೂರ್ಣಗೊಳಿಸಿದರು ಹೆಚ್ಚಿನ ವಿದ್ಯಾಭ್ಯಾಸ ಮಾಡಿ ಒಳ್ಳೆಯ ಅಧ್ಯಾಪಕನಾಗಬೇಕೆಂಬ ಮಹತ್ವಾಕಾಂಕ್ಷೆ ಅವರದಾಗಿತ್ತು ಆ ಮೂಲಕ ಆತ್ಮಗೌರವವನ್ನು ಸಂಪಾದಿಸಿಕೊಳ್ಳಬೇಕೆಂಬ ಹೆಬ್ಬಯಕೆಯಿಂದ ಹೆಚ್ಚು ಶಿಕ್ಷಣಶೀಲರಾಗಲು ಚಿಕ್ಕಂದಿನಿಂದಲೇ ಪ್ರಯತ್ನಮಾಡಿದರು ಅವರ ಎಳೆಯ ವಯಸ್ಸಿನಲ್ಲಿ ಆಂಕುರಿಸಿದ ಈ ಭಾವನೆಗೆ ನೀರೆರೆದವರು ಕ್ರೈಸ್ತ ಮಿಷನರಿ ಹಾಗೂ ಮುಸ್ಲಿಮ್ ಶಾಲೆಗಳು ಹಿಂದೂ ಶಿಕ್ಷಣ ಸಂಸ್ಥೆಗಳಾವವು ಇವರಿಗೆ ಓದಲು ಅವಕಾಶ ನೀಡಲಿಲ್ಲ ಅವರ ತಂದೆ ಕೇಂದ್ರ ಸರಕಾರದ ರೈಲ್ವೆ ಇಲಾಖೆಯಲ್ಲಿ ಸೇವೆಯಲ್ಲಿದ್ದುದರಿಂದ ಔರಂಗಾಬಾದಿನಿಂದ ಹೈದ್ರಾಬಾದಿಗೆ ವರ್ಗಾವಣೆಗೊಂಡರು ತಂದೆಯೊಂದಿಗೆ ಹೈದ್ರಾಬಾದಿಗೆ ಬಂದು ತಮ್ಮ ಉನ್ನತ ವ್ಯಾಸಂಗವನ್ನು ಮುಂದುವರೆಸಿದರು ಬಿ.ಶ್ಯಾಮಸುಂದರ ಪ್ರತಿಭಾವಂತ ವಿದ್ಯಾರ್ಥಿಯಾಗಿದ್ದು, ಉಸ್ತಾನಿಯಾ ವಿಶ್ವವಿದ್ಯಾಲಯದಿಂದ ಅರ್ಥಶಾಸ್ತ್ರ ವಿಷಯದಲ್ಲಿ ಬಿ.ಎ. ಪದವಿಯನ್ನು ರ್ಯಾಂಕ್ ಸಮೇತ ಪಾಸಾದರು (1924) ಖುಸ್ತು-ಎ-ದಕ್ಖನ್ ಎಂಬ ಬಿರುದು ಮತ್ತು ಬಂಗಾರದ ಪದಕವನ್ನು ಪಡೆದರು ತರುವಾಯ ಅವರು ಕಾನೂನು ಪದವಿಯನ್ನು ಕೂಡಾ ಪೂರ್ಣಗೊಳಿಸಿದರು.

ಬಿ.ಶ್ಯಾಮಸುಂದರರು ತಮ್ಮ ಪ್ರೌಢಾವಸ್ಥೆಯಲ್ಲಿಯೇ ನಾಯಕತ್ವದ ಎಲ್ಲ ಲಕ್ಷಣಗಳನ್ನು ಹೊಂದಿದ್ದರು. 1936ರಲ್ಲಿ ಸರೋಜಿನಿ ನಾಯ್ಡು ಅವರ ಅಧ್ಯಕ್ಷತೆಯಲ್ಲಿ ಹೈದ್ರಾಬಾದಿನಲ್ಲಿ ಜರುಗಿದ ಪದವೀಧರರ ಸಮಾವೇಶದ ಕಾರ್ಯದರ್ಶಿಗಳಾಗಿ ಅವರು ದುಡಿದರು ಇದೇ ವೇಳೆಗೆ ಅಂದರೆ 1944 ರಲ್ಲಿ ಉಸ್ತಾನಿಯಾ ವಿಶ್ವವಿದ್ಯಾಲಯದ ಸೆನೆಟ್ ಸದಸ್ಯರಾಗಿ ನೇಮಕಗೊಂಡು ಬಹುಕಾಲ ಸೇವೆ ಸಲ್ಲಿಸಿದ್ದಾರೆ 1946ರಲ್ಲಿ ಒಂದಷ್ಟು ಕಾಲ ನಿಜಾಮ್ ಸ್ಟೇಟ್ ರೈಲ್ವೆ ನೌಕರ ಸಂಘದ ಅಧ್ಯಕ್ಷರಾಗಿ ಕೆಲಸಮಾಡಿದ್ದಾರೆ ಜನಪರ ಧೋರಣೆಗಳಿಂದ ಕೂಡಿದ ಅವರನ್ನು ಹಲವು ಜವಾಬ್ದಾರಿಗಳು ಹುಡುಕಿಕೊಂಡು ಬಂದವು ಹೈದ್ರಾಬಾದ್ ನಿಜಾಮನು ಸ್ಥಾಪಿಸಿದ ಶಿಕ್ಷಣ ಕ್ಷೇತ್ರದ ಶಾಸನಾಧಿಕಾರಿಗಳ ಸಮಿತಿಯ ಅಧ್ಯಕ್ಷರಾಗಿಯೂ ಸೇವೆ ಸಲ್ಲಿಸಿದರು ಆ ಸಂದರ್ಭದಲ್ಲಿ ಸಂಸ್ಥಾನದ ಎಲ್ಲ ಜಿಲ್ಲೆಗಳಲ್ಲಿ ಯವಕರ ಸಮಾವೇಶಗಳನ್ನು ನಡೆಸಿ ದಾಸ್ಯದ ಶೃಂಖಲೆಗಳನ್ನು ಕಿತ್ತೊಗೆಯಲು ಪ್ರೇರೇಪಿಸಿದರು.

ಈ ಎಲ್ಲ ಕಾರಣಗಳಿಂದ ಸಾಮಾಜಿಕ ಸೇವೆಗೆ ತಮ್ಮನ್ನು ತಾವು ತೊಡಗಿಸಿಕೊಂಡ ಬಿ.ಶ್ಯಾಮಸುಂದರ ಅವರು ತಮ್ಮ ಜನರಿಗಾಗುತ್ತಿರುವ ಅನ್ಯಾಯ, ಅಸಮಾನತೆಯ ವಿರುದ್ಧ ವೈಚಾರಿ ವೈಜ್ಞಾನಿಕವಾದ ನೆಲೆಯಲ್ಲಿ ಪ್ರತಿಭಟಿಸಿದರು ದೀನ-ದಲಿತರ ಹಿಂದುಳಿದವರ, ಅಲ್ಪಸಂಖ್ಯಾತರ ಏಳಿಗೆಗಾಗಿ ತಮ್ಮ ಸರ್ವಸ್ವವನ್ನು ತ್ಯಾಗಮಾಡಿದರು ಅಸ್ಪೃಶ್ಯತೆ, ಅವಮಾನ, ಶೋಷಣೆ ಇವುಗಳನ್ನು ಬಾಲ್ಯದಿಂದಲೇ ಸ್ವತಃ ಅನುಭವಿಸಿದ ಶ್ಯಾಮಸುಂದರರಿಗೆ ಅವು ಅವರನ್ನು ಗಟ್ಟಿಗೊಳಿಸಿದರು.

ಹೈದ್ರಾಬಾದ್ ಉಸ್ತಾನಿಯಾ ವಿಶ್ವವಿದ್ಯಾಲಯದಲ್ಲಿ ಕಾನೂನು ಪದವಿಯನ್ನು ಪಡೆದ ಬಿ.ಶ್ಯಾಮಸುಂದರ ಅತ್ಯುನ್ನತವಾದ ಸಾಮಾಜಿಕ ಚಿಂತನೆಯಲ್ಲಿ ತೊಡಗಿಕೊಂಡು ವಕೀಲ ವೃತ್ತಿಯನ್ನು ಸಹ ತ್ಯಜಿಸಿದರು ಅಪ್ರತಿಮ ಮೇಧಾವಿಯಾಗಿದ್ದ ಶ್ಯಾಮಸುಂದರ ಅವರು ಮನಸ್ಸು ಮಾಡಿದ್ದರೆ ಉನ್ನತ ದರ್ಜೆಯ ಅಧಿಕಾರಿಯಾಗಬಹುದಿತ್ತು. ಹಾಗೆ ಮಾಡದೆ ಸರಕಾರಿ ನೌಕರಿಯೆಂಬ ಜೀತ ತೊರೆದು ತನ್ನ ಜನಾಂಗದ ಜೀತವಿಮೋಚನೆಗಾಗಿ ತಮ್ಮನ್ನು ತಾವೇ ಸಮರ್ಪಿಸಿಕೊಂಡರು.

ಅಂದು, ಶಿಕ್ಷಣ ಉಳ್ಳವರ ಸೊತ್ತಾಗಿತ್ತು ವಿಶೇಷವಾಗಿ ಮಡಿವಂತ ಹಿಂದೂಗಳ ಹಿಡಿತದಲ್ಲಿತ್ತು ಅದನ್ನು ಮನಗಂಡು ಸುಶಿಕ್ಷಿತರಾದ ಶ್ಯಾಮಸುಂದರ ನಿಜಾಮ ಸಂಸ್ಥಾನದಲ್ಲಿರುವ 40 ಲಕ್ಷಕ್ಕೂ ಹೆಚ್ಚಿರುವ ಅಸ್ಪೃಶ್ಯರನ್ನು ವಿಮೋಚನೆಗೊಳಿಸಲು ಅನೇಕ ಮೌಲಿಕವಾದ ಕಾರ್ಯಕ್ರಮಗಳನ್ನು ರೂಪಿಸುವಲ್ಲಿ ಸಂಸ್ಥಾನದ ದೊರೆ ನಿಜಾಮನನ್ನು ಪ್ರೇರೇಪಿಸಿದರು ನಿಜಾಮ ಸರಕಾರವು ಬಿ.ಶ್ಯಾಮಸುಂದರ ಮತ್ತು ಅವರ ಜೊತೆಗಾರರ ಹೋರಾಟ ಚಿಂತನೆಗಳನ್ನು ಗಮನಿಸಿ, ಅವರ ಬೇಡಿಕೆಗಳನ್ನು ಅರಿತುಕೊಂಡು ಸಂಸ್ಥಾನದಲ್ಲಿರುವ ಅಸ್ಪೃಶ್ಯರ ಸರ್ವತೋಮುಖ ಅಭಿವೃದ್ಧಿಗಾಗಿ ಬೇಕಾದರೆ ಶಿಕ್ಷಣವೆಂಬ ಬಂಗಾರದ ಕೀಲಿ ಕೈಯನ್ನು ಅವರಿಗೆ ಕೊಡುವುದು ಸೂಕ್ತವೆಂದು ಭಾವಿಸಿ ಒಂದು ಕೋಟಿ ರೂಪಾಯಿಯ ನಿಧಿಯನ್ನು ಸ್ಥಾಪಿಸಿದರು ಅದಕ್ಕೊಂದು ಟ್ರಸ್ಟ್ ಮಾಡಿ ಆ ಟ್ರಸ್ಟಿನ ಅಧ್ಯಕ್ಷರನ್ನಾಗಿ ಬಿ.ಶ್ಯಾಮಸುಂದರ ಅವರನ್ನು ನೇಮಕ ಮಾಡಿದರು.

1947 ರಲ್ಲಿ ಸ್ಥಾಪಿಸಿದ ನಿಧಿಯಿಂದ ನಿಜಾಮ ಸಂಸ್ಥಾನದ ವ್ಯಾಪ್ತಿಯಲ್ಲಿ ಸುಮಾರು 28 ವಸತಿ ಶಾಲೆಗಳನ್ನು ಪ್ರಾರಂಭಿಸಿದರು ನಿಜಾಮ ಸಂಸ್ಥಾನದ ವ್ಯಾಪ್ತಿಯಲ್ಲಿ ಸುಮಾರು 28 ವಸತಿ ಶಾಲೆಗಳನ್ನು ಪ್ರಾರಂಭಿಸಿದರು ಔರಂಗಾಬಾದಿನಲ್ಲಿ ಡಾ.ಬಿ.ಆರ್.ಅಂಬೇಡ್ಕರ್ ಅವರು ಸ್ಥಾಪಿಸಿದ ಜನತಾ ಶಿಕ್ಷಣ ಸಂಸ್ಥೆಗೆ ಸಮಿತಿಗೆ 12 ಲಕ್ಷ ರೂಪಾಯಿಗಳನ್ನು ಧನ ಸಹಾಯ ರೂಪದಲ್ಲಿ ನೀಡಿತು. ಅಸ್ಪೃಶ್ಯ ಮಕ್ಕಳಿಗೆ ಸಲುವಾಗಿ ವಸತಿ ಶಾಲೆಗಳನ್ನು ಸಹ ಪ್ರಾರಂಭಿಸಿದರು. ವಾರ್ಷಿಕವಾಗಿ 4,6 ಹಾಗೂ 8 ರೂಪಾಯಿಗಳಂತೆ ಆಯಾ ತರಗತಿಗಳಿಗೆ ವಿದ್ಯಾರ್ಥಿವೇತನ ನಿಗದಿಗೊಳಿಸಿ ಮಂಜೂರು ಮಾಡಲಾಯಿತು ನಿಜಾಮ ಸಂಸ್ಥಾನವು ಇಂತಹ ಜನಪರ ಕಾರ್ಯಕ್ರಮಗಳನ್ನು ರೂಪಿಸಬೇಕಾದರೆ ಬಿ.ಶ್ಯಾಮಸುಂದರ ಹಾಗೂ ಅವರ ಒಡನಾಡಿಗಳೇ ಇದಕ್ಕೆಲ್ಲ ಮುಖ್ಯ ಕಾರಣರಾಗಿದ್ದಾರೆ.

ಇತ್ತೀಚಿನವರೆಗೂ ಭಾರತದ ಹಳ್ಳಿಗಳಲ್ಲಿ ಅಸ್ಪೃಶ್ಯರು ಹೊಸ ಬಟ್ಟೆ ಧರಿಸುವಂತಿರಲಿಲ್ಲ ಮೀಸೆ ಬೆಳೆಸುವಂತಿರಲಿಲ್ಲ ಕಾಲಲ್ಲಿ ಚಪ್ಪಲಿ (ಚಡಾವು) ಕೂಡಾ ಧರಿಸುವಂತಿರಲಿಲ್ಲ ಕೈಯಲ್ಲಿ ಬಡಿಗೆ ಹಿಡಿಯಬಾರದು ಎಂಬ ನಿಯಮಗಳನ್ನು ಮನಸ್ಸುತಿ ಆಧಾರಿತ ಹಿಂದೂಧರ್ಮ ಪಾಲಿಸಿಕೊಂಡು ಬಂದಿತ್ತು ಈ ಕಾರಣಗಳಿಂದಾಗಿ ಅಸ್ಪೃಶ್ಯರು ತೀರ ಅವಮಾನಕ್ಕೆ ತುತ್ತಾಗಿದ್ದರು ಇಂತಹ ಅನಾಗರಿಕ ಪದ್ಧತಿಗಳನ್ನು ವಿರೋಧಿಸುತ್ತಿದ್ದ ಬಿ.ಶ್ಯಾಮಸುಂದರ 1946ರಲ್ಲಿ ಮಹಾರಾಷ್ಟ್ರದ ನಾಂದೇಡದಲ್ಲಿ ಸಮ್ಮೇಳನವೊಂದನ್ನು ನಡೆಸಿದರು ದಲಿತ ಯುವಕರಿಗೆ ತಮ್ಮ ಇತಿಮಿತಿ ಮತ್ತು ಪೂರ್ವಾಪರ ಇತಿಹಾಸದ ಅರಿವು ಮೂಡಿಸುವ ಉದ್ದೇಶದಿಂದ ಈ ಬೃಹತ್ ಸಮ್ಮೇಳನ ಜರುಗಿತು. ನಾಂದೇಡದಲ್ಲಿ ನಡೆದ ಈ ಸಮ್ಮೇಳನದ ಅಧ್ಯಕ್ಷತೆಯನ್ನು ಬಿ.ಶ್ಯಾಮಸುಂದರ ವಹಿಸಿದ್ದರು ಈ ಸಮ್ಮೇಳನಕ್ಕೆ ಬರುವ ದಲಿತ ಯುವಕರು ಮುಖ್ಯವಾಗಿ ಮೂರು ನಿಯಮಗಳನ್ನು ಪಾಲಿಸಬೇಕಾಗಿತ್ತು ಮುಖದ ಮೇಲೆ ಮೀಸೆ ಬೆಳೆಸಿರಬೇಕು ಕಾಲಲ್ಲಿ ಚಪ್ಪಲಿ (ಚಡಾವು) ಧರಿಸಿರಬೇಕು ಹೊಸ ಬಟ್ಟೆ ಉಟ್ಟಿರುವವರು ಮಾತ್ರ ಆ ಸಮ್ಮೇಳನದಲ್ಲಿ ಭಾಗವಹಿಸಬಹುದಾಗಿತ್ತು. ಹೀಗೆ ದಲಿತರನ್ನು ಬದಲಾವಣೆಯ ಕಾರ್ಯದಲ್ಲಿ ಶ್ಯಾಮಸುಂದರ ತೊಡಗಿಸಿದ ರೀತಿ ವಿನೂತನವಾದುದಾಗಿತ್ತು. ಅದೇ ರೀತಿ ಅನೇಕ ಕಡೆಗಳಲ್ಲಿ ಈ ತರಹದ ಸಮಾರಂಭಗಳನ್ನು ಹಮ್ಮಿಕೊಂಡು ದಲಿತರಲ್ಲಿ ಸ್ವಾಭಿಮಾನದ ಅರಿವನ್ನು ಮೂಡಿಸಿದ ಶ್ಯಾಮಸುಂದರ ಅವರ ಹೋರಾಟವನ್ನು ಮರೆಯುವಂತಿಲ್ಲ.

ನಿಜಾಮ ಸಂಸ್ಥಾನದಲ್ಲಿದ್ದ ಅಸ್ಪೃಶ್ಯರು ಉದ್ಧಾರವಾಗಬೇಕಾದರೆ ಶಿಕ್ಷಣದಷ್ಟೇ ಮಹತ್ವ ಭೂ ಒಡೆತನವೂ ಒಂದಾಗಿದೆ. ಸಾಮಾಜಿಕವಾಗಿ ಹಾಗೂ ಆರ್ಥಿಕವಾಗಿ ಬೆಳವಣಿಗೆಯಾಗಬೇಕಾದರೆ ಭೂಮಿ ಹಂಚಿಕೆಯಾಗಬೇಕೆಂಬುದು ಬಿ.ಶ್ಯಾಮಸುಂದರ ಅಂತ ನಿಲುವಾಗಿತ್ತು ಪ್ರಬಲ ಜಾತಿಯ ಭೂ ಒಡೆಯರ ಜೀತಪದ್ಧತಿಯನ್ನು ತೊರೆ ಸ್ವತಂತ್ರ ಜೀವನ ನಡೆಸುವಂತಾಗಲು, ವಿಶೇಷ ಕಾನೂನೊಂದನ್ನು ಜಾರಿಗೆ ತರುವ ಬಿ.ಶ್ಯಾಮಸುಂದರ ಸಫಲರಾದರು. ಈ ಕಾನೂನಿನ ಪ್ರಕಾರ 'ಉಳುವವನೇ ಭೂಮಿಯ ಒಡೆಯ' ಎಂದು ಘೋಷಿಸಲಾಯಿತು. ಅಲ್ಲದೆ ಆ ಕೂಡಲೆ ಜಾರಿಗೆ ಬರುವಂತ ಕಟ್ಟಾಚ್ಛೆ ಮಾಡಿಸಿದರು. ಸರಕಾರದ ಯಾವುದೇ ಅನಾಮತ್ತಾದ ಜಮೀನಿದ್ದರೂ ಅದನ್ನು ಭೂಹೀನರಿಗೆ ಹಂಚುವ ಕಾರ್ಯಕ್ರಮವನ್ನು ರೂಪಿಸಿ ನಿಜಾಮ ಸರಕಾರದ ಅನುಮತಿಯನ್ನು ಕೊಡಿಸಿದರು. ಇಂತಹ ಗೈರಾಣಿ ಭೂಮಿಗಳಿಗೆ ಸಾವಿರಾರು ಅಸ್ಪೃಶ್ಯರನ್ನು ಭೂ-ಒಡೆಯರಾಗಿ ಮಾಡಿದ ಕೀರ್ತಿ ಬಿ.ಶ್ಯಾಮಸುಂದರ ಅವರಿಗೆ ಸಲ್ಲುತ್ತದೆ ಇದರ

ಜೊತೆಗೆ ಅವರು ಹಳ್ಳಿ ಹಳ್ಳಿಗಳಿಗೆ ತಿರುಗಿ ಜನತಾ ಸಭೆಗಳನ್ನು ನಡೆಸಿ, ಬೇನಾವಿ ಜಮೀನಿದ್ದರೆ ಅಂತಹದಲ್ಲವನ್ನು ಆಕ್ರಮಿಸಿ ಉಳುಮೆ ಮಾಡಿಕೊಳ್ಳಲು ಬಹಿರಂಗವಾಗಿ ಕರೆ ನೀಡಿದರು ಇಂತಹ ಹತ್ತಾರು ಜನಪರ ಕಾರ್ಯಕ್ರಮಗಳನ್ನು ರೂಪಿಸುವುದೇ ಮೂಲಕ ಬಿ.ಶ್ಯಾಮಸುಂದರ ಅವರು ಈ ಭಾಗದ ಅಸ್ಪೃಶ್ಯರಲ್ಲಿ ಸ್ವಾಭಿಮಾನದ ಅರಿವನ್ನು ಬೆಳೆಸುವಲ್ಲಿ ತುಂಬ ಶ್ರಮಿಸಿದ್ದಾರೆ.

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वसुंधरा बचाओ

डॉ. पुष्पा गोविंद गायकवाड

वै. धुंडा महाराज देगलुरकर, महाविद्यालय, देगलूर

Corresponding Author- डॉ. पुष्पा गोविंद गायकवाड

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सारांश:

धरती माता की कोख में जो अमूल्य निधियाँ भरी हैं। जिनके कारण वह वसुंधरा कहलाती है। दिनरात बहनेवाली नदियों ने पहाड़ों को पीस पीसकर अगणित प्रकार की मिट्टियों से पृथ्वी की देह को सजाया। वृक्ष ही जल है जल ही रोटी है और रोटी ही जीवन है। यह नग्न सत्य है। आजसभी भारतीय हृदयों में असंतोष भरा है। क्योंकि हमारे पास खाने को अन्न कहा से आता है। अर्थात् जमीन से यदि सम्पूर्ण जमीन ईट सिमेंट के भवन में बनने लगे तो हमारी वसुंधरा जीवित नहीं रहेगी। नदी किनारे गाँव पिपल बरगद जामून इमली, आम नीम के वृक्षों की घनी छाया। मवेशी तेज धूप में इन वृक्षों के नीचे बैठकर रोटी खाते थे। ये वसुंधरा कितनी सुंदर मनमोहक लगती थी। चारों ओर हरियाली वृक्ष लताएँ, पशुओं का चरणा, पक्षियों का कलरव चिड़ियों का चहकना मोर का थिरकना हिरणों का झूड़ बंदरों का एक पेड़ से दूसरे पेड़ पर चढ़ना और लटकना ये सभी जीव उन्मुक्त रूप से इस धरती पर रहने लगे थे।

शब्दसंज्ञा : वसुंधरा, जल, धरती, पौधारोपण, संस्कृति ई.

प्रस्तावना:

धरती माता की कोख में जो अमूल्य निधियाँ भरी हैं। जिनके कारण वह वसुंधरा कहलाती है। दिनरात बहनेवाली नदियों ने पहाड़ों को पीस पीसकर अगणित प्रकार की मिट्टियों से पृथ्वी की देह को सजाया।

वृक्ष ही जल है जल ही रोटी है और रोटी ही जीवन है। यह नग्न सत्य है। आजसभी भारतीय हृदयों में असंतोष भरा है। क्योंकि हमारे पास खाने को अन्न कहा से आता है। अर्थात् जमीन से यदि सम्पूर्ण जमीन ईट सिमेंट के भवन में बनने लगे तो हमारी वसुंधरा जीवित नहीं रहेगी।

नदी किनारे गाँव पिपल बरगद जामून इमली, आम नीम के वृक्षों की घनी छाया। मवेशी तेज धूप में इन वृक्षों के नीचे बैठकर रोटी खाते थे। ये वसुंधरा कितनी सुंदर मनमोहक लगती थी। चारों ओर हरियाली वृक्ष लताएँ, पशुओं का चरणा, पक्षियों का कलरव चिड़ियों का चहकना मोर का थिरकना हिरणों का झूड़ बंदरों का एक पेड़ से दूसरे पेड़ पर चढ़ना और लटकना ये सभी जीव उन्मुक्त रूप से इस धरती पर रहने लगे थे।

प्रकृति ने मनुष्य जीवन के लिए कितने अद्वितीय उपहार दिये हैं। वृक्ष राहगीर और पशुओं के लिए छाया, फूल, फल देते हैं। फलों को प्रकृति ने छिलके के साथ दिया है। ताकी कोई बीमार न पड़ सके ये वृक्ष उन्मुक्त रूप से दूसरों के हित काम आते हैं। ये कभी भेदभाव नहीं करते। प्रकृति हमें समादृष्टि का पाठ पठाती है। हम ज्ञानी मनुष्य प्रकृति का दोहन कर रहे हैं। यह एक चिंता का विषय है।

भारतीय संस्कृति वन प्रधान रही है। वनों की छाया में हमने जन्म लिया वृक्षों के पत्तों पर प्रभात कालीन

जल कण का जलपान किया। समीर में डोलती हुई पत्रावलि में से आती हुई चंद्र किरण के साथ नृत्य कला के प्रथम पाठ पढ़े हैं।

आज गंगा गोदावरी कयादू हसना जमना, जमना, नर्मदा लेंडी ये नदियाँ दुषित हुई हैं। ऐसी पावन वसुंधरा का जीवन आज खतरे में है उसे बचाना अति आवश्यक है।

मनुष्य मछलियों की तरह समंदर में तैरना सिख गया है। पक्षियों की तरह पंख लगाकर आकाश में उड़ने लगा है पर वह जमीन से जूझना नहीं सिख पाया।

सस्ता खून महंगा पानी यह कहावत तो हम सभीने सुनी है वे दिन दूर नहीं जहाँ पानी के लिए युद्ध करना पड़ेगा। समय रहते हमें वसुंधरा को बचाना होगा। औद्योगिक क्रांति ने हमारे जीवन को ही पूरी तरह बदल डाला है। बड़ी बड़ी कंपनियों ने मनुष्य जीवन को ऐसे चौराहे पर लाकर खड़ा किया है। जहाँ हम शुद्ध हवा के बजाय कूलर AC का प्रयोग कर रहे हैं। हमारी वन प्रधान संस्कृति अब घने जंगलों की बजाय विरान ईट सिमेंट का नया जंगल उग आया है। इस ईट सिमेंट की वादियों में पशु और मनुष्य का दम घुट रहा है।

2006 से पानी की समस्या दिन ब दिन बढ़ रही है। तापमान का क्षेत्र भी दूगना चौगूना बढ़ रहा है। वर्षारानी भी रुठने लगी है। बारिश का समय असमय पर बरसना सबसे बड़ी खतरे की घंटी है।

ऋतू चक्र का निरंतर बदलता हुआ स्वरूप पृथ्वी तल पर जलचर, पशु, मनुष्य और वनों के लिए घातक शिध्द हो रहा है।

वृक्ष है तो जल है, जल है तो रोटी और मनुष्य जीवन है। यह एक चिंतन का विषय है। जिस पर विचार विमर्श होना आवश्यक है।

लोकसंख्या की दृष्टि से हम बहुत विशाल बन गये। पर हमारी सोच संकुचित रही है। हमारे पास अन्न नहीं है क्यों कि पानी संग्रह करने की पुरानी पद्धति हम हस्तगत नहीं कर सके। हमारे पास पानी नहीं है। वर्षा अनिश्चित है क्यों कि हम तरु महिमा भूल गए हैं। हम नये से बन गये, तरु महिमा की हमको परवाह नहीं रही। वृक्षों को हम काटने लगे। वृक्षारोपण आज एक फैशन बन गया है।

हमारी भारतीय संस्कृति वन प्रधान है मनुस्मृति में वृक्ष विच्छेदक को बड़ा पापी माना गया है उसके लिए दण्ड का विधान किया है।

मत्स्यपुराण में कहा गया है जो आदमी वृक्षों को नष्ट करता है। उसे दण्ड दिया जाय। तालाबों सड़को या सीमा के पास के वृक्षों को काटना बड़ा गुरुत्तर अपराध माना जाता था।

जो वृक्षारोपण करता है वह तीस हजार पितरों का उद्धार करता है। अग्निपुराण में भी वृक्ष पूजा पर बल दिया है वृक्षों का रोपण स्नेहपूर्वक और उनका परिपालन पूत्रवत् करना चाहिए। ऋषि मुनियों की तरह हमें वृक्षों की पूजा करनी चाहिए। क्योंकि वृक्ष तो द्वेष वर्जित है। जो वृक्षों को छेदन करते हैं वृक्ष उन्हें भी छाया, पुष्प और फल देते हैं।

समस्त इतिहास में हमें राजाओं द्वारा वृक्षारोपण कराए जाने के कई उदाहरण मिलते हैं।

महान सम्राट अशोक ने कहा है रास्ते पर मैंने वट वृक्ष रोप दिए हैं जिनमें मानवों पशुओं को छाया मिल सकती है। आम्र वृक्षों के समूह भी लगा दिये हैं। हम यह संदेश भूल गये हैं। सम्राट अशोक की तरह वृक्षारोपण करना नहीं सिख पाये।

हमारी संस्कृति में जो सुन्दरता और सर्वश्रेष्ठ है उसका उद्भव सरस्वती के तट के वनों में हुआ है।

नैमिषारण्य के वन में शौन मुनि ने हमको महाभारत की कथा सुनाई। हमारे जीवन का उल्लास वृन्दावन के साथ लिपटा हुआ है। वृन्दावन को हम कैसे भूल सकते हैं। विकास के आने से धरती का सुंदर रूप नष्ट हुआ। हराभरा गाँव उजड़ गया। नदी का साफ सूतरा जल मैला हो गया। नांदेड की गोदावरी का कितनी मैली हो गई है। जल है तो जीवन है। गुरु गोविंदसिंह की गोदावरी अज जल दुषित हुआ है। हमने अपने स्वार्थ के लिए वनों को काट डाला है। प्रकृति ने हमें मुफ्त में दान दिया था। आज हमें वृक्ष लगाओ पानी बचाओ की घोषणा करनी पड़ रही है। वृक्ष पूजा का हमारे जीवन में कोई स्थान नहीं है। हमारी स्त्रियों में से शकुंतला की आत्मा चली गई। शकुंतला वृक्षों को पानी दिए बिना पानी ग्रहण नहीं करती थी। आभूषण प्रिय होते हुए भी वह यह सोचकर पल्लवों को नहीं तोड़ती थी। इससे वृक्षों को दूख होगा।

पार्वती ने देवदारु को पूत्र के समान समझकर माँ के दूध के समान पानी पिलाकर बढ़ाया था।

अग्निपुराण में वृक्षों की पूजा का महत्व बताया गया है। जो मनुष्य लोगों के हित के लिए वृक्ष लगाता है वह मोक्ष पद प्राप्त करता है। वृक्ष लगानेवाला मनुष्य अपने 30,000 भूत और भावी पितरों को मोक्ष दिलाने में सहाय्यक होता है। अग्नि पुराण में कहा गया है दस कुएँ बनवाना एक तालाब बनवाने के समान है। दस तालाबों का निर्माण एक झील के निर्माण के बराबर है। दस झील बनाना एक सुपुत्र प्राप्त करने के समान पुण्यकारक है किन्तु दस सुपुत्रों का पुण्य केवल एक वृक्ष के लगाने से प्राप्त होता है। महात्मा गौतम बुद्ध को वट वृक्ष के नीचे ज्ञान प्राप्त हुआ था। भारत के विशाल वट वृक्षों को देखकर सिकंदर ने आश्चर्य व्यक्त किया था। औद्योगीकरण का विकास सब पर भारी हो गया जिससे वृक्षों की बली चढ़ गई। विकास के आने से जलप्रदूषण हवा दूषित, जमीन प्रदूषण का खतरा दिन ब दिन बढ़ रहा है।

विकास के महाराक्षसने हमारी हरीभरी वसुंधरा को तहेस नहेस कर दिया हरी भरी वसुंधरा अब विधवा हो गई है।

वसुंधरा को समय रहते बचाना होगा वसुंधरा मानव जाति के लिए कितना बड़ा योगदान देती है। यहाँ कवि रहीम क दोहा उद्धृत करना आवश्यक लगता है।

तरुवर फल नहीं खात है
सरवर पिय हीन पान
कहि रहीम पर काज हित
संपति संचहि सूजान

ये प्रकृति सदा से ही दसरोँ के हित निस्वार्थ भाव से कार्य करती है। सृष्टि की उत्पत्ति जल से हुई है जल में अमृत है जल में औषधियाँ हैं जिनके व्यवहार से हम दीर्घायु होते हैं। अतः मानव, पशु-पक्षी एवं वृक्ष लताओं आदि सभी के लिए जल की अनिवार्यता स्वतः सिद्ध है जल के बिना जीना दूभर हो जाता है।

निष्कर्ष :

प्रकृति के पावन मन्दिर में किसी का प्रवेश निषिद्ध नहीं है। सर्वसहा पृथ्वी हमारे पर्वत चारित्रिक दृढ़ता एवं निर्भीकता का संदेश देते हैं। सरिता और वृक्ष परोपकार अन्मुक्त दान और समृष्टि का पाठ पढ़ाते हैं। पवन अनवरत सेवा सेवावृत्ति की और प्रकृत करता है खिले हुए फूल काँटों की चुभन सहकार भी दुःख संघारों को हँसते हुए सहने की प्रेरणा देते हैं। इसी प्रकार निर्झरा का जलदान पक्षियोंका कलरव कोयल की पंचमतन उषा संध्या के मधुमय संदेश नीर-क्षीर विवेकी हंस का न्याय, चातक मीन का एकनिष्ठ आदर्श प्रेम मानव को अनेक नीतिमय उपदेश देते हैं। आओ हम सब मिलकर एक प्रण करें फिर से वसुंधरा। को हराभरा कर दें।

संदर्भ ग्रंथ :

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पर्यावरण संरक्षण कायदा - एक आढावा

प्रा. डॉ. रंजीता डी. जाधव

गोदावरी महाविद्यालय अंबड, ता. अंबड जि. जालना

Corresponding Author- प्रा. डॉ. रंजीता डी. जाधव

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गोष्टवारा:

पर्यावरण संरक्षणाची कल्पना ही प्राचीन काळापासून भारतीय सांस्कृतिक तसेच आचार विचारांमध्ये रुजलेली आढळते. नैसर्गिक संसाधनांच्या संवर्धनासाठी सध्याच्या कायदेशीर तरतुदी समजून घेणे आवश्यक आहे. 1972 च्या स्टॉक होम घोषणाने भारत सरकारचे लक्ष पर्यावरण संरक्षणाच्या व्यापक दृष्टिकोनाकडे वळले व त्यातून 1986 मध्ये पर्यावरण संरक्षण कायदा संमत करण्यात आला. या कायद्यानुसार पर्यावरणाचे संवर्धन करून, नागरिकांना प्रदूषण मुक्त पर्यावरण देणे हे महत्वाचे आहे. हा कायदा पर्यावरणाचे संरक्षण आणि सुधारणा प्रदान करण्याच्या उद्देशाने लागू करण्यात आला. हा कायदा आपल्या कायद्यापैकी सगळ्यात महत्वाचा. हा कायदा पर्यावरणीय प्रदूषण रोखण्यासाठी आणि देशाच्या विविध भागांमध्ये असलेल्या विशिष्ट पर्यावरणीय समस्यांना सामोरे जाण्यासाठी केंद्र सरकारला प्राधिकरण स्थापन करण्याचा अधिकार देते. हा कायदा पर्यावरणाचे संरक्षण आणि सुधारणेसाठी असलेला सर्वात व्यापक कायदा आहे. या कायद्यामुळे प्रदूषण करणाऱ्या कारखान्याला व व्यक्तीला दंडात्मक व कायदेशीर कारवाईला सामोरे जावे लागते, यात कायद्याचे उल्लंघन करणाऱ्या व्यक्ती व संस्थावर प्रदूषण मंडळ द्वारे कारवाई करण्यात येते.

शब्दसंच: प्रदूषण, अनुबंधित, पार्श्वभूमी, पर्यावरण विश्व, शिक्षा व दंड.

प्रस्तावना:

सजीव प्राण्याची या पृथ्वीतलावर निर्मिती झाली, तेव्हापासून ते आजतागायत सजीव प्राण्यांच्या सभोवतालची परिस्थिती म्हणजे पर्यावरण असा पर्यावरणाचा अर्थ घेतल्या जातो. अनादी कालापासून मानव आणि पर्यावरण यांचा परस्पर संबंध आहे. भौगोलिक आपत्तीमुळे निसर्गातील पर्यावरणात वेळोवेळी असंतुलन निर्माण झाले, परंतु या असंतुलित पर्यावरणीय घटकाला संतुलित ठेवण्याची क्षमता निसर्गात निसर्गतः असल्याने पर्यावरणाचे संतुलन राखले गेले. मानवी जीवन सुसह्य राहण्यासाठी निकोप आणि सुंदर पर्यावरणाची नितांत आवश्यकता आहे हे आता सर्वज्ञात आहे.

पर्यावरण हे मानव, प्राणी आणि सजीवांना वाढण्यास आणि विकसित होण्यास मदत करते. मानव हा देखील पर्यावरणाचा एक महत्वाचा भाग आहे. पर्यावरणाचा घटक असल्याने मानवाने पर्यावरणाचे संवर्धन केले पाहिजे. आपले हे जीवन सुखकर करण्यासाठी व ते टिकविण्यासाठी आपल्याला पर्यावरणाचे वास्तव जपावे लागेल. थोडक्यात, पर्यावरण व मानव यांचे अतूट नाते आहे. मानवाबरोबरच सर्व सजीव सृष्टी पर्यावरणाशी यानात्या नात्याने अनुबंधित झालेली आहे. निसर्गातील हवा, पाणी, वृक्ष, वनस्पती, जमीन, पशुपक्षी आणि मानव प्राणी

यांच्या पारस्परिक नात्यात जेव्हा नैसर्गिक समतोल असतो तेव्हा पर्यावरण संतुलित आहे असे म्हणतात.

कोणताही प्रदेशातील पर्यावरण हा सजीवांसाठी साधनसामग्रीचा अनमोल ठेवा असतो, या ठेव्याचा वारसाहक्क व जतन ही सर्वस्वी मानवी पिढ्यांची अनुषंगिक जबाबदारी आहे. आजच्या युगात पर्यावरण प्रदूषण झपाट्याने वाढत आहे, वाढत्या पर्यावरणाचा त्रास हा मानवी जीवनासाठी घातक आहे, त्यामुळे पर्यावरणाचे संरक्षण करणे अत्यंत आवश्यक आहे व ती जबाबदारी केवळ कायद्याने घेतली जाणार नाही, तर प्रत्येकाने पर्यावरणाच्या विश्वात राहूनच कार्य केले पाहिजे, तरच पर्यावरणाचे संरक्षण होईल व त्यासंदर्भात 1986 मध्ये पर्यावरण संरक्षण कायदा संमत करण्यात आला.

उद्दिष्टे:

- 1 पर्यावरण संरक्षण कायद्याचे स्वरूप व उद्दिष्टे स्पष्ट करणे.
- 2 केंद्रीय पर्यावरण संरक्षण मंडळाची रचना व कार्याचे ज्ञान मिळविणे.
- 3 संरक्षण कायद्यातील शिक्षा व दंड इत्यादी तरतुदीचा आढावा घेणे.
- 4 पर्यावरण संरक्षण कायद्याचे महत्त्व प्रतिपादन करणे.

संशोधन पद्धती:

सदरील शोधनिबंध हा दुय्यम साधनसामग्री वर आधारित असून यामध्ये शासनाचे विविध अहवाल, पर्यावरण व व्यवस्थापन संवर्धन इत्यादी वरील ग्रंथ, विविध वर्तमानपत्रातील लेख इत्यादीचा आधार स्वरूपाचे विश्लेषण केले आहे.

विषय मांडणी:

लोकसंख्या वाढ ही पर्यावरण प्रदूषण वाढण्यास कारणीभूत आहे. आपली पृथ्वी मानवाच्या गरजा भागू शकते, परंतु मानवाचा हवाच मात्र पुरवू शकत नाही. मानव हा इतर प्राण्यांपेक्षा वेगळा ठरतो तो त्याच्या बुद्धीमुळे, परंतु मानवाने बुद्धीचा उपयोग करण्यापेक्षा दुरुपयोग जास्त केल्यामुळे निसर्गाचे चक्र बिघडण्यास मानव हाच कारणीभूत आहे. निसर्गचक्र बिघडण्याचा फटका सर्व प्राणी, जीवमात्रांना बसतो आहे.

मानवाने वेळीच दखल घेतली तर मानवाबरोबरच, इतर प्राणी, पक्षी, वनस्पती जिवंत राहू शकतील नसता, पृथ्वीवर सजीव आढळणार नाही, याकरिता पर्यावरण प्रदूषण रोखणे अत्यंत आवश्यक आहे आणि त्यासाठी 1986 पर्यावरण संरक्षण कायदा अंमलात आणला गेला, जेणेकरून पर्यावरण प्रदूषण रोखण्यास मदत होईल. भारत सरकारद्वारे पर्यावरण प्रदूषण नियंत्रण कायदा 1986 साली अंमलात आणला, या कायद्याद्वारे पर्यावरणाचे संरक्षण व संवर्धन यावर भर दिलेला आहे, या कायद्यामध्ये पर्यावरणाचे संरक्षण करणे, त्याचा दर्जा सुधारणे व पर्यावरण प्रदूषणास प्रतिबंध करणे, त्याचे नियंत्रण करणे यावर भर दिला आहे.

पर्यावरण संरक्षण कायद्याचे स्वरूप:

1986 साली भारतात आलेला पर्यावरण संरक्षण कायदा वेगवेगळ्या तरतुदीद्वारे बळकट करण्यात आला. मानवी कृतीमुळे पर्यावरणाची घटलेली गुणवत्ता वाढविणे व पर्यावरणाची स्थिती सुधारणे हा उद्देश समोर ठेवून हा कायदा करण्यात आला आहे. पर्यावरण संरक्षण अधिनियम कायदा 23 मे 1986 ला संमत करण्यात आला, व 19 नोव्हेंबर 1986 पासून लागू करण्यात आला. मानव जंगले इत्यादीचे पर्यावरणीय संरक्षण आणि संकटापासून रक्षण करण्याच्या हेतूने कायदेशीर तरतुदी करण्यासाठी आणि पर्यावरण संरक्षण प्राधिकरण निर्मिती आणि त्यांच्या कार्यात समन्वय निर्माण करण्याच्या उद्देशाने हा कायदा संमत करण्यात आला. हा कायदा एकूण चार विभागात आणि 26 कलमांमध्ये विशद केलेला आहे. या कायद्याच्या पाठीमागे फार मोठी पार्श्वभूमी आहे. 5 जून 1972 रोजी संयुक्त राष्ट्र संघटनेने स्टॉकहोम येथे मानव पर्यावरण परिषद आयोजित केली होती, या परिषदेत भारताने देखील भाग घेतला होता.

प्रा. डॉ. रंजीता डी जाधव

या परिषदे ने पर्यावरण संरक्षणाबद्दल कार्य करण्यासाठी सदस्य राष्ट्रांनी पावले उचलावीत असे आवाहन केले होते. या परिषदेच्या प्रभावाने भारत सरकारने हा कायदा केला. घटनेच्या 48(A)नुसार राज्य पर्यावरणाचे संरक्षण आणि सुधारणा तसेच देशातील जंगले आणि वन्यजीवांचे संरक्षण करण्यासाठी प्रयत्न करेल.

हा कायदा एकूण चार विभाग आणि 26 कलमांमध्ये विशद केलेला आहे. कलम 51 (A) नुसार प्रत्येक नागरिक पर्यावरणाचे रक्षण करेल. घटनेतील वरील कायदेशीर तरतुदीमुळे पर्यावरण संरक्षण कायदा संमत करण्याच्या प्रक्रियेला बळ मिळाले.

पर्यावरण संरक्षण कायद्यातील तरतुदी:

- कलम 1 नुसार हा कायदा संपूर्ण भारतासाठी लागू असेल.
- कलम 2 मध्ये पर्यावरण, पर्यावरणीय प्रदूषण, घातक वस्तू, व्यापार इत्यादीच्या व्याख्या दिल्या आहे.
- कलम 3 मध्ये पर्यावरण प्रदूषण, पर्यावरणीय सुधारणा व कृती कार्यक्रमाचे अंमलबजावणी करण्याचा आणि पर्यावरणीय गुणवत्ता टिकविण्यासाठी मापदंड निश्चित करण्याचा अधिकार सरकारला दिलेला आहे. - कलम 4 ते 6 मध्ये पर्यावरण संरक्षणासाठी नेमलेल्या अधिकार्यांचे अधिकार व जबाबदारी यांचे वर्णन आहे.
- कलम 8 ते 17 मध्ये पर्यावरण प्रदूषण प्रतिबंध, नियंत्रण आणि सुधारणा विषयक तरतुदी आहेत.
- कलम 18 ते 26 मध्ये पर्यावरणाच्या संबंधातील गुन्हा दाखल करण्यासंबंधी तरतुदी दिलेल्या आहे.

पर्यावरण संरक्षण कायद्याची वैशिष्ट्ये:

- या कायद्याने केंद्र सरकारला पर्यावरण संरक्षण व सुधारणा करण्याच्या हेतूने आवश्यक उपाययोजना करण्याच्या अधिकार दिलेला आहे.
- पर्यावरण प्रदूषण, प्रतिबंध आणि नियंत्रणाबाबत देशव्यापी कार्यक्रमाची अंमलबजावणी करण्याचा अधिकार केंद्र सरकारला दिलेला आहे.
- पर्यावरण संरक्षण आणि व्यवस्थापना साठी केंद्रीय पातळीवर रचनात्मक यंत्रणेची उभारणी करण्याचा अधिकार केंद्राला दिलेला आहे.
- पर्यावरण संरक्षणासाठी नियमावली तयार करण्याचा अधिकार केंद्र सरकारला दिलेला आहे.
- पर्यावरण संरक्षणाशी संबंधित नियम व कायद्याचे उल्लंघन करणाऱ्या व्यक्ती किंवा संस्थेस शिक्षा देण्याचा अधिकार शासनाला दिलेला आहे.
- पर्यावरणासाठी धोकेदायक ठरणाऱ्या उद्योगांचे परीक्षण करण्याचा अधिकार शासनाला दिलेला आहे.
- पर्यावरणीय प्रदूषणाबाबत मानके निश्चित करण्याचा अधिकार सरकारला या कायद्याने दिला आहे.

-पर्यावरणीय प्रयोगशाळा उभारणे,पर्यावरण सुधारण्यासाठी संशोधनाची जबाबदारी प्रयोगशाळेकडे सोपविण्यात आली आहे.

- पर्यावरणा संदर्भातील माहिती जमा करण्याची जबाबदारी त्यांच्याकडे सोपवण्यात आली आहे.

-सजीव प्राणी, वनस्पती आणि इतर साधन संपत्ती रक्षणासाठीच्या तरतुदी करण्याचा अधिकार शासनाला दिलेला आहे.

रचना:

या कायद्यातील तरतुदीनुसार केंद्र व राज्य पर्यावरण प्रदूषण नियंत्रण मंडळे निर्माण करण्यात आली आहे. यानुसार पर्यावरण संवर्धनात व संरक्षणास स्थानिक यंत्रणेच्या व जनतेच्या जनसहभागाचे महत्त्व लक्षात घेऊन केंद्रीय पर्यावरण मंत्रालयाने देशातील प्रत्येक राज्यात प्रदूषण नियंत्रण मंडळा व्यतिरिक्त जिल्हा पातळीवर जिल्हा पर्यावरण समिती गठित करण्याबाबत निर्देश त्यांच्या 30. 12 .1988 च्या पत्राद्वारे दिलेले आहे, ही समिती कठीत करण्यामागील केंद्र शासनाचा मुख्य हेतू हा, जिल्ह्यातील पर्यावरणाचे संरक्षण करणे असा आहे. ही समिती स्थानिक पर्यावरणाशी संबंधित बाबीवर लक्ष केंद्रित करते. जनसहभागाने स्थानिक पर्यावरणाशी संबंधित बाबीवर लक्ष केंद्रित करते, जनसहभागाने स्थानिक पर्यावरणाच्या समस्या जाणून घेऊन त्यावर उपाययोजना सुचविते, जनजागृती करते, जिल्ह्यातील विविध नैसर्गिक संसाधन संवर्धनासाठी शासनाकडे शिफारशी करते, तसेच शासनाला सल्ला देणे अशी पर्यावरण संवर्धनासाठी कार्य देखील करते.

कार्य

केंद्रीय पर्यावरण संरक्षण मंडळाचे कार्य दोन पातळीवर आधारित आहे, . केंद्रीय पर्यावरण संरक्षण मंडळाचे राष्ट्रीय पातळीवरील कार्य, राज्य मंडळाचे राज्य पातळीवर व केंद्रशासित प्रदेशाचे प्रदेश पातळीवर कार्य.

- मार्गदर्शन - सरकारला पर्यावरण प्रदूषण नियंत्रण आणि पर्यावरण गुणवत्तेची काळजी घेण्यासंदर्भात मार्गदर्शन करणे.- राज्य व केंद्रशासित प्रदेशांमधील वाद तंटा मिटविणे त्यांना तांत्रिक सहाय्य करणे. लोकशिक्षण व प्रशिक्षण पर्यावरणीय प्रदूषण नियंत्रणासाठी व्यक्तींना प्रशिक्षण देणे, पर्यावरण संरक्षण संदर्भात जागृती करणे.

संशोधन व सर्वेक्षण पर्यावरणीय संदर्भात संशोधन करून पर्यावरण संरक्षण करणे.- प्रदूषण करणाऱ्या उद्योगधंद्यांचे अथवा कारखान्याची वेळीच दखल घेणे त्यातून बाहेर पडणाऱ्या पाण्याचे व विद्राव्य पदार्थांचे तसेच विषारी वायूचे नमुने गोळा करणे.पर्यावरण प्रदूषण नियंत्रणा संदर्भात प्रमाणित कक्षा ठरविणे.

- जलसाठ्यामध्ये दूषित पाणी अथवा विषारी घटक सोडण्यास प्रतिबंध करणे.

- जल प्रदूषण व वायू प्रदूषण करणाऱ्या कारखान्यावर दंडात्मक कारवाई करणे.

राज्य अथवा केंद्रशासित प्रदेशातील केंद्र अथवा इतर राज्यांना सुसंगत होतील अशी कार्ये करणे आवश्यक आहे, यामध्ये स्थानिक लोकांना मार्गदर्शन करणे, जनजागृती घडून आणणे देखील आवश्यक आहे.

पर्यावरण संरक्षण कायदा 1986 नुसार करण्यात येणारी कायदेशीर कारवाई:

या कायद्यामुळे प्रदूषण करणाऱ्या कारखान्याला दंडात्मक व कायदेशीर कारवाईला सामोरे जावे लागते. यात कायद्याचे उल्लंघन करणाऱ्या व्यक्ती व संस्थावर राज्य प्रदूषण मंडळाद्वारे कारवाई करण्यात येते. दोषी संस्था अथवा व्यक्तींना तीन महिने कारावास व दहा हजार रुपयापर्यंत दंड अशी शिक्षा दिल्या जाऊ शकते, जर गुन्ह्याची पुनरावृत्ती झाल्यास दर दिवशी 5000 रुपये दंडाचे शिक्षा होऊ शकते, तर गुन्हा करणारी व्यक्ती परत आढळल्यास परत गुन्हा करण्याच्या आरोपाखाली दोन ते सात वर्षे तुरुंगवास व दंड अशी शिक्षा सुनावली जाऊ शकते.

पर्यावरण संरक्षण कायदा 1986 व त्या अंतर्गत पारित करण्यात आलेल्या विविध नियमांचे, जारी करण्यात आलेल्या आदेशांचे उल्लंघन करीत असेल तर त्यास सदर कायद्याच्या कलम 15 अन्वये मे. मुख्य न्यायदंडाधिकारी व मे. न्यायदंडाधिकारी प्रथम वर्ग 5 वर्षांपर्यंतचा कारावास व दंड जो रुपये पाच लाखापर्यंत वाढवू शकतात किंवा दोन्ही आकारू शकतात.

समारोप:

पर्यावरण संरक्षण कायद्याचे महत्त्व

पर्यावरणाचे संरक्षण करण्यासाठी हा कायदा महत्वपूर्ण आहे, या कायद्याद्वारे पर्यावरणाचा दर्जा राखला जात आहे. प्रदूषण नियंत्रणा द्वारे पर्यावरणाच्या गुणवत्तेचे रक्षण होत आहे. हा कायदा प्रदूषण रोखण्याबरोबरच ते होऊ नये अशी दुहेरी भूमिका बजावत आहे, तसेच या कायद्याने पर्यावरण आणि प्रदूषणाची निगडित संकल्पनेची परिभाषा दिल्यामुळे त्याचा अर्थ लावणे सोयीस्कर झालेले आहे. या कायद्यामुळे प्रदूषण कायद्याचे उल्लंघन करणाऱ्यांसाठी कठोर शिक्षेची तरतूद करण्यात आली आहे. प्रदूषणकारी उद्योग बंद करण्याचा अधिकार सरकारला मिळाला आहे. या कायद्याद्वारे पर्यावरणीय गुणवत्ता सुधारण्यासाठी योग्य ती पावले उचलली जात आहे.

तसेच, या पर्यावरण संरक्षण कायद्यामध्ये काही उणीवा किंवा दोष देखील आहेत, जसे की हा कायदा पर्यावरण संरक्षणाबद्दल केंद्र सरकारला व्यापक अधिकार देतो आणि राज्याच्या अधिकाऱ्याकडे दुर्लक्ष करतो. उद्योग

स्थापन करण्यापूर्वी पर्यावरणीय प्रभावांचे मूल्यांकन करण्याची तरतूद कायद्यात नाही. एकंदरीत पर्यावरण संरक्षणासाठी हा कायदा महत्त्वपूर्ण वाटतो. मात्र अंमलबजावणीच्या बाबतीत म्हणावा तसा परिणामकारक आढळत नाही. आजही प्रत्यक्ष-अप्रत्यक्ष कारणामुळे व्यक्ती व समाज पर्यावरण प्रदूषणासाठी कारणीभूत आहे व त्यासाठी कायद्याच्या कडक अंमलबजावणी बरोबरच लोकशिक्षण व जनजागृतीची नितांत आवश्यकता आहे.

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“कंधार व लोहा तालुक्यातील साक्षरतेचा भौगोलिक अभ्यास”

प्रा. शेते सिद्धेश्वर बाबुराव¹, डॉ. आर. बी. कोटलवार²

¹ सह शिक्षक, भीमाशंकर माध्य. व उच्च माध्यमिक विद्यालय, शिराढोण, ता. कंधार, जि. नांदेड

² संशोधन मार्गदर्शक व भूगोल विभाग प्रमुख, राजीव गांधी महाविद्यालय
मुदखेड, जि. नांदेड

Corresponding Author- प्रा. शेते सिद्धेश्वर बाबुराव

Email- shetesidhu@rediffmail.com

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सारांश:

विसाव्या शतकामध्ये मानवी भूगोलामधील ज्ञानात मोठ्या प्रमाणात वाढ होत गेल्याने त्यातूनच लोकसंख्या भूगोल ही मानवी भूगोलाची शाखा विकसीत झाली. या शाखेत लोकसंख्येच्या प्रादेशिक विक्षेपणावर जास्त भर दिलेला असतो. लोकसंख्या किंवा मानवी समूह हा पृथ्वीच्या पृष्ठभागावरील सर्वात महत्वाचा घटक आहे. मानव हा बुद्धीमान प्राणी म्हणून ओळखला जातो. मानवाकडे असलेली बौद्धिक क्षमता, कल्पकता, दूरदृष्टी, श्रम करण्याची प्रवृत्ती, शास्त्रीय व तांत्रिक ज्ञान इ. गुणामुळे तो विविध साधनांची निर्मिती करतो व आपले जीवन सुखी व समृद्ध करण्याचा प्रयत्न करतो म्हणून मानवास एक प्रमुख भौगोलिक अभिकर्ता म्हणून संबोधले जाते.

शिक्षण हे समाज परिवर्तनाचे एक प्रकारे अपत्य असते. तर दुसऱ्या अर्थाने समाज परिवर्तनाचा निर्माता होय. यामुळे शिक्षण हे सामाजिक बदल आणि संस्कृती संक्रमणाचे प्रभावी साधन होय (Brookover, 1955). आधुनिकीकरणाचा एक विशेष म्हणजे सार्वत्रिक शिक्षण व शिक्षणाच्या सुविधा वाढविणे, शास्त्रीय व तांत्रिक ज्ञानाचा अधिक उपयोग झाल्याने आधुनिकीकरणाला वेग येतो. शिक्षण सुधारते, उच्च दर्जाचे उत्पादन होते, परिणामी जीवनमान व राहणीमानाचा दर्जा उंचावतो. आधुनिकीकरण ही एक निरंतर प्रक्रिया आहे व ती दीर्घकालिन असते. आधुनिकीकरण ही एक गतिमान संकल्पना (Dynamic Concept) आहे. तिच्यामध्ये सामाजिक बदलाचा व आधुनिक काळाशी मिळते जुळते घेण्याचा अर्थ अभिप्रेत आहे. आधुनिकीकरण म्हणजे शास्त्रीय व तांत्रिक युगात पदार्पण, हे सुलभ होण्यासाठी शिक्षण व शैक्षणिक सुविधा वाढ व्हावयास हवी. म्हणून सदरील विषयाची संशोधनासाठी निवड करण्यात आली आहे.

बीज शब्द: साक्षरता, भौगोलिक घटक.

प्रस्तावना:

‘भूगोल’ हा प्राचीन विषय आहे. अगदी प्रारंभिक अवस्थेत ‘भूगोल’ म्हणजे पृथ्वीचे वर्णन करणारे शास्त्र अशी व्याख्या केली गेली होती. पृथ्वीवर ज्या ज्या गोष्टी मानवाला आढळल्या त्या सर्वांचे निरीक्षण करून मानवाने त्यांच्या नोंदी केल्या व तेथूनच भूगोलाची सुरुवात झाली. ‘लोकसंख्या भूगोल’ ही मानवी भूगोलाचीच नव्याने उदयास आलेली एक उपशाखा आहे. लोकसंख्या किंवा मानवी समूह हा पृथ्वीच्या पृष्ठभागावरील सर्वात महत्वाचा घटक आहे. मानवाकडे असलेली बौद्धिक क्षमता, कल्पकता, दूरदृष्टी, श्रम करण्याची प्रवृत्ती, शास्त्रीय व तांत्रिक ज्ञान इ. गुणांमुळे तो विविध साधनांची निर्मिती करतो व आपले जीवन सुखी व

समृद्ध करण्याचा प्रयत्न करतो म्हणून मानवास एक प्रमुख भौगोलिक अभिकर्ता संबोधले जाते^१.

इ. स. १९५३ मध्ये जी. टी. त्रिवार्था यांनी अमेरिकन भूगोल तज्ञांच्या परिषदेमध्ये लोकसंख्या भूगोलास मानवी भूगोलाची एक स्वतंत्र शाखा म्हणून मान्यता देण्यासंबंधी भूगोल तज्ञांना अवाहन केले. लोकसंख्या भूगोलास भूगोलाची एक महत्वपूर्ण शाखा म्हणून विकसित करण्याचे कार्य सर्वप्रथम जी. टी. त्रिवार्थानी केलेले असल्यामुळे त्यांना ‘लोकसंख्या भूगोलाचे जनक’ या नावाने संबोधले जाते^२.

लोकसंख्या भूगोलात प्रामुख्याने पृथ्वीवरील लोकसंख्या या घटकाचा अभ्यास केला जातो. लोकसंख्येच्या वितरणावर विविध घटक परिणाम करतात. त्यामध्ये

जन्मदर, मृत्युदर व साक्षरता या घटकाचा समावेश होतो. साक्षरता हे सांस्कृतिक विकासाचे एकमेव पूर्वाभिमुख साधन असून तो सामाजिक व आर्थिक विकासावर प्रभावकारी ठरणारा महत्वपूर्ण घटक आहे. त्यामुळे वर्तणूक, नैतिकता आणि सामाजिक जाणीव वृद्धिंगत होते. साक्षरतेमुळे आंतरराष्ट्रीय संबंध हे मैत्रीपूर्ण व शांततामय राहतात. साक्षरता एखाद्या प्रदेशाच्या विकासाचे प्रतिबिंब असते. कारण साक्षरतेमुळे परस्परांतील सामाजिक संबंध वृद्धिंगत होतात. त्यामुळे आर्थिक, सामाजिक व राहणीमानाचा दर्जा वाढतो. तसेच दरिद्रता घटवण्याचे उत्तम साधन आहे. साक्षरतेमुळे आंतरराष्ट्रीय संबंध हे मैत्रीपूर्ण व शांततामय राहतात. तसेच एखाद्या समाजात किंवा प्रदेशात साक्षरतेचे प्रमाण जास्त असेल तर जन्मदर कमी आढळून येतो. साक्षरतेमुळे अंधसृद्धा व गरीबी दूर होण्याची शक्यता जास्त असते. विश्वबंधुत्वाची भावना वाढीस लागण्यास मदत होते. मानवाद्वारे केल्या जाणाऱ्या आर्थिक क्रियेस 'व्यवसाय' असे म्हणतात. व्यावसायिक रचना ही श्रमजीवी लोकांच्या दृष्टिने अतिशय महत्वाची असते. व्यावसायिक रचनेच्या अभ्यासामुळे व्यापार, धंदा व इतर आर्थिक कामात किती व्यक्ती गुंतल्या आहेत याबद्दल माहिती मिळते. लोकसंख्या भूगोलात व्यावसायिक रचनेचा अभ्यास हा महत्वपूर्ण आहे. व्यवसायाचे सर्वसाधारणपणे पाच प्रकारात वर्गीकरण केले जाते. यामध्ये प्राथमिक व्यवसाय, द्वितीयक व्यवसाय, तृतीयक व्यवसाय, चतुर्थक व्यवसाय आणि पंचम व्यवसायाचा समावेश होतो.

कंधार व लोहा तालुक्यातील साक्षरता व व्यावसायिक रचनेचा अभ्यास करताना इ.स. २००१ ते २०२१ असा जवळपास ३० वर्षांचा कालावधी घेण्यात आला आहे.

अभ्यास क्षेत्राची निवड:

संशोधन अभ्यासाकरिता मानवी भूगोल या ज्ञान शाखेतील साक्षरता व व्यावसायिक रचना या संदर्भातील अभ्यासक्षेत्र हे निवडले आहे. नांदेड जिल्ह्यातील कंधार व लोहा तालुक्यातील साक्षरता व व्यावसायिक रचनेचा भौगोलिक अभ्यास यांचा तुलनात्मक अभ्यास या संशोधन विषयावर हे संशोधन कार्य करणार आहे. सदरील विषयाचा अभ्यास करताना दोन्ही तालुक्यातील साक्षरता व व्यावसायिक रचना यांचा अभ्यास करण्यात येणार आहे. सदरील संशोधन कार्य महाराष्ट्रातील मराठवाडा विभागातील आठ जिल्हापैकी नांदेड जिल्ह्यातील कंधार व लोहा तालुका अंतर्गत असून नांदेड जिल्हा महाराष्ट्र राज्याच्या दक्षिण - पूर्व सीमेला दक्षिणोत्तर पसरलेला आहे.

प्रा. शेते सिद्धेश्वर बाबुराव, डॉ. आर. बी. कोटलवार

हा संशोधन विषय मागील काळामध्ये कोणीही संशोधित केला नाही व माझे कार्यक्षेत्र कंधार तालुक्यात असल्याकारणाने मला माहिती मिळवत असताना कसलीही अडचण होणार नाही यामुळे सदर संशोधन कार्य क्षेत्राची निवड मी केली आहे.

शिक्षणावरून लोकसंख्येचे वर्गीकरण करता येते. लोकसंख्येच्या विविध पैलूंपैकी शिक्षण हा एक महत्वाचा पैलू आहे. शिक्षणामुळे माणसाची स्वतंत्रपणे निर्णय घेण्याची बुद्धी विकसित होते. तसेच उत्कृष्ट आणि निकृष्ट ओळखण्याची क्षमता प्राप्त होते. शिक्षणाच्या अभावाने समाजाचा विकास खोळंबतो. समाजाचा विकास हा वर्तमान काळामध्ये किती खर्च करतात ह्यावर अवलंबून असतो. तसेच औपचारिक शिक्षणावर किती वर्षे खर्च होतात ह्यावर व्यक्तीचा शैक्षणिक दर्जा अवलंबून असतो. अविकसित देशात शिक्षणावर होणाऱ्या खर्चाचे प्रमाण फार कमी असते. दुय्यम आणि तृतीय (माध्यमिक व उच्च शिक्षणाकरिता लागणारा खर्च, उत्पादन क्षमता असलेल्या उद्योगांपासून मिळविता येतो. अविकसित देशांमध्ये उच्च शिक्षणाचे प्रमाण हे प्राथमिक आणि माध्यमिक शिक्षणाच्या प्रमाणापेक्षा कमी असते. अशादेशांमध्ये एकूण विद्यार्थ्यांच्या तुलनेत केवळ ३४ विद्यार्थी उच्चशिक्षण घेतात. तर उच्चशिक्षणातील शिक्षकांचे प्रमाण एकूण शिक्षकांमध्ये ८% आढळते.

शिक्षण हे समाज परिवर्तनाचे एक प्रकारे अपत्य असते. तर दुसऱ्या अर्थाने समाज परिवर्तनाचा निर्माता होय. यामुळे शिक्षण हे सामाजिक बदल आणि संस्कृती संक्रमणाचे प्रभावी साधन होय (Brookover, 1955). आधुनिकीकरणाचा एक विशेष म्हणजे सार्वत्रिक शिक्षण व शिक्षणाच्या सुविधावाढविणे, शास्त्रीय व तांत्रिक ज्ञानाचा अधिक उपयोग झाल्याने आधुनिकीकरणाला वेग येतो. शिक्षण सुधारते, उच्च दर्जाचे उत्पादन होते, परिणामी जीवनमान व राहणीमानाचा दर्जा उंचावतो. आधुनिकीकरण ही एक निरंतर प्रक्रिया आहे व ती दीर्घकालिन असते. आधुनिकीकरण ही एक गतिमान संकल्पना (Dynamic Concept) आहे. तिच्यामध्ये सामाजिक बदलाचा व आधुनिक काळाशी मिळते जुळते घेण्याचा अर्थ अभिप्रेत आहे. आधुनिकीकरण म्हणजे शास्त्रीय व तांत्रिक युगात पदार्पण, हे सुलभ होण्यासाठी शिक्षण व शैक्षणिक सुविधात वाढ व्हावयास हवी. म्हणून सदरील विषयाची संशोधनासाठी निवड करण्यात आली आहे.

नांदेड जिल्ह्याच्या उत्तरेस यवतमाळ जिल्हा, दक्षिणेस परभणी जिल्हा, पश्चिमेस लातूर जिल्हा आहे. जिल्ह्याच्या दक्षिण - पूर्व बाजूला तेलंगणा राज्याची सीमा आहे. तर दक्षिणेस कर्नाटक राज्याची सीमा आहे. नांदेड

जिल्ह्याचे एकूण क्षेत्रफळ १०,५२८ चौ. कि.मी. असून ते महाराष्ट्र राज्याच्या ३.४१ टक्के आहे. प्रशासकीय सोईसाठी नांदेड जिल्ह्याचे १६ तालुके निर्माण केले असून त्यापैकी कंधार व लोहा या दोन तालुक्याची निवड सदरील संशोधन कार्यासाठी करण्यात आलेली आहे.

कंधार तालुक्याचा अक्षवृत्तीय विस्तार १८° ५४' उत्तर ते १८° ५७' उत्तर अक्षवृत्त आहे तर रेखावृत्तीय विस्तार ७७° ११' पूर्व ते ७७° १९' पूर्व रेखावृत्त दरम्यान आहे. २०११ च्या जनगणनेनुसार कंधार महसूल अंतर्गत १२७ महसूल गावाचा समावेश आहे. कंधार तालुक्याची एकूण लोकसंख्या ६,३४,०३१ इतकी आहे. यात पुरुषाचे प्रमाण ५३ टक्के तर स्त्रियांचे प्रमाण ४७ टक्के आहे. तालुक्याचे एकूण भौगोलिक क्षेत्रफळ सुमारे ८४४.१८ चौ.कि.मी. इतके आहे. कंधार तालुक्याच्या पूर्वेस देगलूर तालुका, उत्तरेस नांदेड जिल्हा, दक्षिणेस लोहा तालुक्याच्या सीमा आहेत. प्रशासकीय सोईसाठी या तालुक्याचे पाच मंडळ करण्यात आले आहेत. त्यात कंधार, उस्माननगर, बारुळ, पेठवडज व कुरुळा यांचा समावेश होतो.

नांदेड जिल्ह्यातील लोहा तालुक्याचा अक्षवृत्तीय विस्तार १८° ५७' उत्तर ते १८° ९६' उत्तर अक्षवृत्त असून रेखावृत्तीय विस्तार ७७° ७' पूर्व ते ७७° १३' पूर्व रेखावृत्त या दरम्यान आहे. या तालुक्याचे एकूण क्षेत्रफळ ८३५.५२ चौ.कि.मी. इतके असून २०११ च्या जनगणनेनुसार एकूण लोकसंख्या २,४१,८८५ इतकी आहे. यात पुरुषाचे प्रमाण ५२ टक्के तर स्त्रियांचे प्रमाण ४८ टक्के आहे. लोहा तालुक्याच्या पूर्वेस मुदखेड व नायगाव तालुका, पश्चिमेस पालम तालुका, उत्तरेस नांदेड तालुका तर दक्षिणेस मुखेड तालुक्याच्या सीमा आहेत. प्रशासकीय सोईसाठी या तालुक्याचे चार मंडळ पाडण्यात आली आहेत. त्यात सोनखेड, कापसी, लोहा व माळाकोळी यांचा समावेश होतो.

अभ्यास क्षेत्राची व्याप्ती व मर्यादा :

कोणतेही संशोधन कार्य करत असताना विषयाची व्याप्ती व मर्यादा स्पष्ट कराव्या लागतात सदर संशोधन कार्याची मर्यादा नांदेड जिल्ह्यातील कंधार व लोहा तालुक्यापर्यंत मर्यादित असून या दोन्ही तालुक्यातील गावाचा समावेश यात आहे. या मर्यादीत क्षेत्रातील साक्षरता व व्यवसायिक रचना संबंधित घटकाचे अध्ययन करण्यात येणार आहे. प्रस्तुत संशोधन कार्यात व्यवसायाचे वर्गीकरण तीन भागात करण्यात आलेले आहे. जनगणना अहवाल १९९१ मध्ये व्यावसायिक रचना ९ गटात विभागली आहे. तीच रचना २००१ च्या जनगणना अहवालात ५ गटात प्रा. शेते सिद्धेश्वर बाबुराव, डॉ. आर. बी. कोटलवार

विभागली आहे. तर २०११ मधील जनगणना अहवालात फक्त लोकसंख्या संदर्भात आकडेवारी दिली आहे. आणखी ही परिपूर्ण अहवाल प्रकाशित झाला नाही तसेच २०२१ जनगणना अहवाल आणखी प्रत्यक्षात आला नाही परंतु माझे संशोधन अंतिम टप्प्यात येई पर्यंत अहवाल प्रकाशित होईल या दृष्टीने २००१ ते २०२१ हा एकूण ३० वर्षांचा संशोधन कार्यकाल येथे घेतला आहे. त्यामुळे व्यावसायिक रचना संदर्भात सर्व माहिती जिल्हा सामाजिक व आर्थिक समालोचन यातील तृतीयक, चतुर्थक व पंचम आशा व्यवसायाची माहिती मिळवली जाणार आहे. दोन तालुक्याच्या अभ्यास क्षेत्राचा विस्तार लक्षात घेता दुय्यम श्रेणीवर अधिक भर देण्यात येणार आहे.

साक्षरता व व्यावसायिक रचना संदर्भात द्वितीयक माहिती स्रोतांचा वापर जिल्हा सामाजिक व आर्थिक समालोचन अहवाल, जनगणना अहवाल, विविध संशोधन पत्रिका, संदर्भ ग्रंथ, इंटरनेट व शेवटी प्रत्यक्ष मुलाखती घेऊन माहिती गोळा केली जाणार आहे. प्राथमिक माहिती मिळवत असताना सर्व माहिती बरोबरच मिळेल असे नाही त्यामुळे संशोधन कार्यावर मर्यादा पडतात.

संशोधनाची उद्दिष्टे:

प्रस्तुत संशोधन पूर्ण करण्यासाठी संशोधकाने खालील उद्दिष्टे निश्चित केली आहेत.

१. कंधार व लोहा तालुक्यातील भौगोलिक घटकांचा अभ्यास करणे.
२. कंधार व लोहा तालुक्यातील साक्षरतेचे महत्व जाणून घेणे.

संशोधन पद्धती:

प्रस्तुत शोध प्रबंधात शास्त्रीय पद्धतीचा (Positivism) अवलंब केला जाणार आहे. यानुसार क्रम, नियमितता गृहितके व सिद्धांत यांचा उपयोग करून स्पष्टीकरण देण्याचा प्रयत्न करण्यात येणार आहे. शास्त्रीय पद्धतीचा अवलंब केल्याने प्रतिमान व प्रणाली (Models and Systems) पद्धतींचा समन्वय आवश्यक झाला आहे. शास्त्रीय पद्धती मुळे अनुभवाधिष्ठित भौगोलिक तथ्ये व त्यांच्या मांडणीत तर्कशुद्धता पाळण्याचा प्रयत्न होतो. ही पद्धती अभिक्षेत्रीय स्वरूपाच्या संशोधनात उपकारक ठरणार आहे. प्रस्तुत शोध निबंधात समंकाचे रूपांतरण विविध निर्देशांकात करून त्याद्वारे नकाशे तयार केले आहेत. सादरीकरणात सारणींचा वापर चांगला होत असल्याने त्यांचा सर्वत्र उपयोग करण्यात आला आहे. साक्षरता संख्याशास्त्रीय व प्रतिमानाद्वारे स्पष्ट करण्याचा प्रयत्न केला आहे. समंकाचे संकलन, रूपांतरण, सारणीकरण,

सादरीकरण करण्यासोबतच त्यांचे स्पष्टीकरण व निदानात्मक मीमांसा देण्याचा प्रयत्न केला आहे. सदरील संशोधन कार्यासाठी प्राथमिक व दुय्यम स्वरूपाची माहिती वापरण्यात येणार असून प्राथमिक स्वरूपाच्या माहितीसाठी तालुक्यातील नमुना निवड पद्धतीने सर्वेक्षण करून प्रत्यक्ष मुलाखत तंत्राचा अवलंब केले आहे. संशोधन कार्य करताना प्रत्यक्ष गावाना भेटी देऊन निवडक माहिती संकलित केले आहे.

प्रस्तुत संशोधनासाठी वापरण्यात आलेली आधार सामुग्री ही प्राथमिक व दुय्यम स्वरूपाची असून त्यामध्ये प्राथमिक माहिती संकलनासाठी साक्षरता व व्यावसायिक रचना क्षेत्र अभ्यास केला आहे. तसेच प्रश्नावली व मुलाखत तंत्राचा उपयोग देखील केला आहे. तर दुय्यम स्वरूपाची माहिती प्राप्त करण्यासाठी नांदेड जिल्ह्याचा जनगणना अहवाल २००१, २०११ आणि २०२१ (प्रकाशित झाला नाही) जिल्हा सामाजिक व आर्थिक समालोचन २००१ ते २०२३, नांदेड जिल्हा गॅझेटिअर, भूजल सर्वेक्षण आणि विकास यंत्रणा, कृषी अहवाल, संदर्भग्रंथ, संशोधन पत्रिका, भारतीय स्थलदर्शक नकाशे, मासिके, प्रकाशित-अप्रकाशित शोधप्रबंध, गुगलअर्थ सॉफ्टवेअर, संबंधित वेबसाईट इत्यादी माहिती स्रोतांचा वापर केला आहे. माहितीचे विश्लेषण नकाशाच्या साहाय्याने करणार असून हे नकाशेतयार

करण्यासाठी भौगोलिक माहिती प्रणालीचा (GIS) वापर केला आहे.

साक्षरता :

साक्षरतेची निश्चित व्याख्या करणे अत्यंत कठीण आहे. कारण वेगवेगळ्या देशातसाक्षरता ठरवण्यासाठी वेगवेगळे निकर्ष वापरले जातात. भारतात १९५१ च्या जनगणनेनुसार त्यालासाक्षर म्हटले जाईल. ज्याचे वय ४ वर्षांपेक्षा जास्त असून त्याला कमीत कमी पत्र वाचता येऊ शकते.सदरील लेखात अभ्यास क्षेत्रातील कंधार व लोहा तहसील मधील साक्षरतेचा अभ्यास १९९१, २००१, २०११ च्या जनगणनेनुसार करण्यात आला आहे.

तक्ता क्र. १.१ (अ) मध्ये दर्शवल्याप्रमाणे २००१ साली कंधार तहसीलची एकूण साक्षरता ४४ टक्के होती म्हणजे एकूण लोकसंख्येच्या ४४ टक्के लोक साक्षर होते. तहसील मधील पेठवडज मंडळात साक्षरतेचे प्रमाण सर्वात जास्त मधील पेठवडज मंडळात साक्षरतेचे प्रमाण सर्वात जास्तम्हणजे ४८ टक्के होते. तर कंधार मंडळात साक्षरतेचे प्रमाण सर्वात कमी म्हणजे ४२ टक्के होते.२००१ च्या जनगणनेनुसार उर्वरित उल्हास नगर बारुळ व कुरुळा मंडळात साक्षरतेचे प्रमाण अनुक्रमे ४३, ४६, ४३ टक्के इतके होते.

तक्ता क्रमांक १.१ (अ): कंधार तालूका मंडळनिहाय साक्षरता प्रमाण २००१

अनु.क्र.	मंडळ	लोकसंख्या	साक्षर व्यक्ती	प्रमाण
१	कंधार	४३८३३	१८५२३	४२
२	उस्माननगर	३७७९५	१६५४५	४३
३	बारुळ	३३५७२	१५६२९	४६
४	पेठवडज	३६३६१	१७६२२	४८
५	कुरुळा	३८९८४	१६९८५	४३
एकूण तहसील		१९०५७५	८५३०४	४४

स्रोत: भारतीय जनगणना अहवाल, २००१.

तक्ता क्रमांक १.१ (ब): कंधार तालूका मंडळनिहाय साक्षरता प्रमाण २०११

अनु.क्र.	मंडळ	लोकसंख्या	साक्षर व्यक्ती	प्रमाण
१	कंधार	५२४४८	३१४२८	६५
२	उस्माननगर	४१६६२	२६८७४	६२.९९
३	बारुळ	३७६२०	२३५००	६२.४६
४	पेठवडज	४३०१९	२६३१४	६१
५	कुरुळा	४८२७८	३००७५	६२
एकूण तहसील		२२४०२७	१४०८९१	६२.८९

स्रोत: भारतीय जनगणना अहवाल, २०११.

२०११ च्या जनगणनेनुसार कंधार तहसील मध्ये साक्षरतेचे प्रमाणे ६२.८९ टक्के इतके दिसून येते. या तहसीलमधील उस्माननगर मंडळात साक्षरता ६२.९९ टक्के इतकी उच्च दिसून येते तर पेठवडज मंडळात साक्षरता कमी

म्हणजे ६१ टक्के असल्याचे आढळून येत तर तहसील मधील कंधार मंडळ ६५ टक्के, बारुळ ६२.४६ टक्के, तर कुरुळा मंडळात साक्षरतेचे प्रमाण ६२ टक्के आढळून येते.

तक्ता क्रमांक १.२ (अ): लोहा तालूका मंडळनिहाय साक्षरता प्रमाण २००१

अनु.क्र.	मंडळ	लोकसंख्या	साक्षर व्यक्ती	प्रमाण
१	सोनखेड	३७०८३	१६३११	४४
२	कळवर (बु.)	४३०३५	१८७९०	४३
३	कापसी	३३४७८	१५८८५	४७
४	लोहा	३२३२८	१४४०२	४४.७५
५	माळाकोळी	४१२३४	१८४५३	४४.७५

स्रोत: भारतीय जनगणना अहवाल, २००१.

तक्ता क्र. १.२ (अ) वरून असे स्पष्ट होते की, २००१ च्या जनगणनेनुसार लोहा, तहसील चीसाक्षरता ४४.७५ टक्के इतकी होती. या तहसील मधील मंडळनिहाय साक्षरता प्रमाणाचा अभ्यास केल्यास सर्वात जास्त साक्षरता प्रमाण कापसी मंडळात असून हे साक्षरता प्रमाण ४७ टक्के

इतके आहे. तर कळवर पिके मंडळाचे साक्षरता प्रमाण सर्वात कमी ४३ टक्के आहे. तहसील मधील उर्वरित मंडळात साक्षरता प्रमाण सोनखेड ४४ टक्के, लोहा ४४.७५ टक्के तर माळाकोळी मंडळात ४४.७५ टक्के इतके आहे.

तक्ता क्रमांक १.२ (ब): लोहा तालूका मंडळनिहाय साक्षरता प्रमाण २०११

अनु.क्र.	मंडळ	लोकसंख्या	साक्षर व्यक्ती	प्रमाण
१	सोनखेड	४२६८४	२६९८८	६३.२२
२	कलंबर (बु.)	४८१७६	३०५३३	६३.३७
३	कापसी	३८९०३	२३९०७	६१.४५
४	लोहा	३९०५९	२४१५७	६१.८४
५	माळाकोळी	४८९३८	२९६५९	६०.६०
एकूण तहसील		२१७७६०	१३५२४४	६२.१०

स्रोत: भारतीय जनगणना अहवाल, २०११.

तक्ता क्र. १.२ (ब) वरून असे दिसून येते की २०११ च्या जनगणनेनुसार लोहा तहसील मध्ये साक्षरता प्रमाण ६२.१० टक्के इतके आढळून येते. तर या तहसील मध्ये कलंबर वी.के. मंडळात साक्षरता प्रमाण सर्वात जास्त ६३.३७ टक्के आहे. तर माळाकोळी मंडळात साक्षरता प्रमाण सर्वात कमी ६०.६० टक्के इतके पहावयास मिळते. तर सोनखेड मंडळ ६२.२२ टक्के कापसी मंडळ ६१.४५ टक्के तर लोहा मंडळात साक्षरता प्रमाण ६१.८४ टक्के आहे.

निष्कर्ष:

कंधार व लोहा तहसील मध्ये ग्रामीण लोकसंख्या अधिक प्रमाणात आढळते. या ग्रामीण लोकसंखेत शेतकरी व मजूर वर्ग अधिक प्रमाणात आहेत. यामुळे साक्षरता कमी आढळते. कंधार व लोहा तहसील मध्ये भौगोलिक घटकांचा प्रभाव लोकसंख्येवर झालेला दिसून येतो. २००१ च्या तुलनेत २०११ मध्ये साक्षरतेचे प्रमाण वाढलेले आढळते. कारण शिक्षणाचे प्रमाण शेतकरी व मजूर वर्गातील वाढलेले आहे. नवनवीन योजना शिक्षण क्षेत्रात आल्याने ही साक्षरता वाढली आहे. सध्या स्थितीत कंधार आणि लोहा तालुक्यात शिक्षणाच्या अनेक सुविधा उपलब्ध झाल्या आहेत. त्यामुळे आज ही साक्षरता मागील काळापेक्षा १५ टक्यांनी वाढलेले आढळते.

संदर्भ:

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॥ पर्यावरण की भारतीय अवधारणा ॥

Dr. Tejaswini Ganpatrao Kulkarni

Vai. Dhunda Maharaj Degloor College, Degloor

Corresponding Author- Dr. Tejaswini Ganpatrao Kulkarni

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प्रस्तावना :-

"छायामन्यस्य कुर्वन्ति तिष्ठन्ति स्वयमातपे ।

फलान्यपि परार्थाय वृक्षाः सत्पुरुषा इव ॥ (१)"

पर्यावरण का अर्थ सरल रूप से बताने जाये तो प्रकृति का आवरण स्वरूप कहना होगा ।

'परितः आवरणं पर्यावरणम् ।'

अर्थात् प्राणी जगत को चारों ओर से ढकने वाला प्रकृति तत्त्व जिनका हम प्रत्यक्षतः एवं अप्रत्यक्षतः , जाने या अंजाने रूप में उपभोग करते हैं । पर्यावरण मुख्य रूप से भौतिक , जैविक एवं सांस्कृतिक कहा गया है । क्षिति , जल , पावक , गगन और समीर ये पंचमहाभूत भौतिक एवं जैविक पर्यावरण की निर्मिति कराते हैं । तथा मानवकृत संस्कृति का निर्माण मानव मन , बुद्धि एवं अहं से होता है । इसलिये गीता में भगवान श्रीकृष्णाने प्रकृति के पांच तत्व के स्थानों पर आठ तत्वों का उल्लेख किया हुआ दिखाई देता है ।

भूमिरापोनलो वायुः खं मनो बुद्धिरेव च ।

अहंकार इतीयं मे भिन्ना प्रकृतिरष्टधा ॥ (२)

पर्यावरण शब्द संस्कृत भाषा के ' परी 'उपसर्ग (चारों ओर) ' आवरण ' से मिलकर बना है जिसका अर्थ है - ऐसी चीजों का समुच्चय जो किसी व्यक्ति या जीवधारी को चारों ओर से आवृत किये हुए है । परिस्थितिकी और भूगोल में यह शब्द अंग्रेजी में environment के पर्याय के रूप में इस्तमाल होता है । वेदों में पर्यावरण संबंधी आदि को ऋचाये प्राप्त होती है । ऋग्वेद और यजुर्वेद में पर्यावरण संबंधी अनेक विचारधाराओं को अंकित किया है । अथर्ववेद में सभी पंचमहाभूतों की प्राकृतिक विशेषताओं और उनकी क्रियाशीलता का विशेष रूप से वर्णन किया है । वेदों में प्राकृतिक तत्वों से छेड़छाड़ करने पर आने वाले दुष्परिणाम का संकेत दिया है ।

तथा मानव को सीख भी दी गई है कि पर्यावरण संतुलन को नष्ट करने के दुष्परिणाम समस्त सृष्टि के लिये हानिकारक है । यजुर्वेद में पृथ्वी को ऊर्जा देने वाली

तप्तयनी तथा धन-संपदा देने वाली वित्तायनी कहकर प्रार्थना की गई है कि वह हमें साधनहीनता / दिनता की व्यथा और पीडा से बचाये -

" तप्तयनी मेसिवित्तायनी मेस्यनतान्मा नाथितः ऽदवतान्मा व्यतितात । " (३)

भारतीय चिंतन में जब पर्यावरण की कल्पना किसी भौतिक निर्जीव तत्व के रूप में नहीं की गई है यह एक जीवित संसार है और मानव उस बहुत से जीवित प्राणियों में से एक है । भारतीय दर्शन जब हम देखते हैं तो उनमें पर्यावरण सुरक्षा तथा उपायों का चिंतन किया हुआ दिखाई देता है । कहा जाता है ये ब्रह्मांड नौ तत्व से बना है जैसे - पृथ्वी , जल , वायु , अग्नि , आकाश , समय , दिशा मस्तिष्क और मृदा और इन पे काही ना काही पर्यावरण का प्रत्यक्ष या अप्रत्यक्ष रूप में परिणाम होता हुआ दिखाई देता है ।

मनुष्य शेष भौतिक विश्व के समान ऐसे तत्व का बना हुआ है जो मृत्यु के पश्चात विघटित होकर प्रकृति में विलीन हो

जाता है। हम भारतीय पर्यावरण में स्थित पृथ्वी को माता मानते हैं, वृक्ष के पूजा करते हैं, इनके प्रति ऋण व्यक्त करते हैं और हर इंसान को ऋण व्यक्त करना बहुत जरूरी होता है। इंसान पशु, पक्षी, नदी, पर्वत, पेड़ ये सब एक श्रृंखला है और सब एक दुसरे पर निर्भर है। पर्यावरण अगर अच्छा स्वच्छ सुंदर रहे तो हमारा जीवन भी सुखद और सरल सहेदमय बन जायेगा।

भारतीय संस्कृति की एक अवधारण है - जो जैसा बोयेगा उसे उसतरह का फल प्राप्त होगा। इस तरह जैसे हम कर्म के प्रति सजगता रखते हैं वैसे ही हम जिस जगह जन्म में वहा के पर्यावरण प्रति उसी तरह जागृत रहना सजग रहना आवश्यक होता है। जल जीवन का प्रमुख तत्व है इसलिये वेदों में अनेक संदर्भों में उसके महत्व पर पर्याप्त प्रकाश डाला गया है। ऋग्वेद में -

अप्सु अन्तः अमृतं, अप्सु भेषजं। (४)

जल का वैशिष्ट्य बताते हुए कहा है - जल में अमृत है, जल में औषधी - गुण विद्यमान रहते हैं इसलिये जल की शुद्धता एवं स्वच्छता बनावे यांना जरूरी है। तथा अथर्ववेद के पृथ्वी सूक्त में जल तत्व पर विचार करते मुल कसा है -

"शुद्धा न आपस्तन्वे क्षरन्तु।" (५)

ऋग्वेद में कहा गया है -

"पृथ्वीः पूः उर्वशी भव।" (६)

अर्थात् - समग्र पृथ्वी संपूर्ण परिवेश परिशुद्ध रहे, नदी, पर्वत, वन, उपवन सब स्वच्छ रहे, गांव नगर सबको विस्तृत और उत्तम परिसर प्राप्त हो तभी जीवन का सम्यक विकास हो सकेगा। वर्तमान गुण में प्रकृति के साथ सामाजिक अन्तः क्रिया इतनी व्यापक है की पर्यावरणीय समस्यायें विकराल रूप धारण कर चुकी है। मुख्यतः बढ़ती हुई गरीबी एवं बढ़ती आबादी तीव्र औद्योगीकरण शहरीक्षेत्र का विस्तार, शिक्षा की कमी, परंपरागत ऊर्जा आदि कारण पर्यावरण हास हेतु उत्तरदायी है। यद्यपी प्राचीन काल से ही मानव पर्यावरण के महत्व से परिचित है। पहले प्रातः उठते ही सब लोग सूर्यनमस्कार से अपने दिनचर्या प्रारंभ करते थे। पर्यावरण को संरक्षित रखने के लिए हमारे वैदिक मंत्र में कहा गया है -

"ॐ पूर्णमदः पूर्णमदं पूर्णात्पूर्णमुच्यते।

पूर्ण सत्य पूर्णमादाय पुर्णमेवावशिष्यते ॥" (७)

अर्थात् मानव अपनी इच्छाओं को वश में रख कर प्रकृति से उतनाही ग्रहण करे की उसकी पूर्णता को क्षति नहीं पहुंचे पर्यावरण एवं मानव शरीरके समन्वय को स्पष्ट करते हुए तुलसीदासजी ने रामचरितमानस के किस्किंदा कांड में लिखा है -

क्षिती - जल पावक गगन समीरा

पंचरचित अति अधम सरीरा। (८)

सिद्धार्थने बोधि वृक्ष के नीचे बैठकर तपस्या कर भगवान बुद्ध बन गये तथा पंचवटी भगवान श्रीराम की तपस्या स्थल बन गई थी। जेठ माहा में वटवृक्ष के नीचे ही सावित्री ने अपने मृतपति को जीवित पाया था। पीपल का पेड़ सबसे महत्वपूर्ण पेड़ है हमारे पर्यावरण के ऑक्सिजन को संतुलित रखने का महत्वपूर्ण कार्य करता है। पीपल का पेड़ एक सर्वश्रेष्ठ वृक्ष है। एक घंटे में १७२२किलो ऑक्सिजन देता है और २२५२ किलो अशुद्ध हवा अर्थात् कार्बन डाई ऑक्साईड पचात है। इसीलिए यह पूजनीय है।

भारतीय तुलसी के पेड़ को पुजते हैं। ये हमें भारी मात्रा में शुद्ध हवा प्रदान करती है तथा इसे औषधी वनस्पति के रूप में भी जाना जाता है। तथा पुरे सावन के महीने में बेल पत्तों से शिव की उपासना फलदायी मान जाती है। प्रकृति और आदिवासी तो एक दुसरे के पर्याय हैं।

पौराणिक युग से भारतीय महिलाओं के प्रकृति प्रेम का एक अनोखा इतिहास रहा है शकुंतला, प्रियावंदा और अनुसया छोटी छोटी गागरिया लिये पेड़ों को पानी से सींचा करती थीं भारत में पौधों का लोक महत्व भी है इस कारण भी पर्यावरण संरक्षण की भावना रही है। अंत में बस यही कहना चाहती हूँ -

पर्यावरणनाशन, नश्यन्ति सर्वजन्तवः।

पवनः दुष्टतां याति प्रकृतीविकृतायते ॥ (९)

अर्थात् - पर्यावरण के प्रदूषित होने से सभी प्राणी नष्ट हो जाते हैं। हवा दुष्टता को प्राप्त हो जाती है और यह प्रकृति विकृत हो जाती है।

निष्कर्ष :-

' वृक्षो रक्षती रक्षतः । 'अर्थात् ये पंचमहाभूत अर्थात् प्रकृति के प्रतिनिधि ' वृक्ष ' की आप रक्षा करोगे तो वृक्ष आपकी रक्षा करेंगे पर्यावरण का सबसे महत्वपूर्ण हिस्सा वृक्ष है इसकी हानी होने से भूमि का बंजर होना , बारिश की कमी , जल का भाव इन सभी समस्याओं का सामना हमें करना पड़ेगा ।

पर्यावरण की हानी होने से बन का नष्ट हो जाना जंगली प्राणियों का नष्ट होना कारण बन रहा है । ओझोन का घटता स्तर इसके कारण गर्मी का बढ़ना तथा ऑक्सिजन की कमी बहुत सारी समस्या को उत्पन्न हो रही है । अगर हमें वेदकाल से चली आई धारणाओं को स्वीकार कर पर्यावरण में संमेलन हिंसो प्रति प्रेमभाव रखे , उनका जतन करे तो हमें एक सुंदर शांतिमय आयु निश्चित रूप से प्रदान होगी ।

वृक्षेण धार्यते पृथ्वी । वृक्षेण धार्यते जलम् ।

वृक्षेण धार्यते वायुः । वृक्षो रक्षति रक्षितः ।

संदर्भ सूची :-

- १) सुभाषित साहित्यम् ।
- २) भगवद्गीता अध्याय ७/४
- ३) यजुर्वेद ५/९
- ४) ऋग्वेद १/२३/२४८
- ५) अथर्ववेद १२/१/३०
- ६) ऋग्वेद
- ७) बृहदारण्यक उपनिषद् अध्याय ५ , ईशावास्योपनिषद् शांतीपाठ .
- ८) रामचरितमानस किष्किंधा काण्ड .
- ९) संस्कृत सुभाषित विचार .

लातूर जिल्ह्यातील पाळीव प्राण्यांचे वर्गीकरण :- एक भौगोलिक अभ्यास

प्रा. डॉ. नामदेव एस. गौड

सहाय्यक प्राध्यापक, भाई. किशनराव देशमुख महाविद्यालय चाकूर, जि. लातूर

Corresponding Author- प्रा. डॉ. नामदेव एस. गौड

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सारांश :

मानवी भूगोल ही भूगोल शास्त्राची अतिशय महत्वपूर्ण शाखा आहे. मानवाच्या कर्तृत्वाला अनुसरून तसे मानवाची जीवनपद्धती व मानव जगण्यासाठी जी विविध कार्य करतो त्याला अनुसरून मानवी भूगोलाच्या कांही उपशाखा निर्माण झाल्या. व्यापार हा मानवाचा तृतीय श्रेणीचा व्यवसाय आहे. बाजारकेंद्र हे बाजारपेठ भूगोलाचे छत समजले जाते. बाजार हा शब्द इंग्रजीतील Market व लॅटीन भाषेतील Mercatus या शब्दापासून तयार झाला आहे. बाजार म्हणजे ग्राहक व विक्रेता यांच्या भेटीचे ठिकाण होय. “बाजारहाट” हा शब्द मराठीत दोन शब्दांच्या संयोगातून तयार झाला आहे. बाजार म्हणजे आठवड्याचे विक्री होण्याचे ठिकाण तर हाट म्हणजे विशीष्ट कालावधीनंतर भरणारे. पाळीव प्राण्यांचे बाजारकेंद्र म्हणजे “बैल बाजार” या ठिकाणी गाय आणि बैल दोन्ही प्रकारच्या प्राण्यांचा समावेश होतो.

बीज संज्ञा :- गोधन जाती

प्रस्तावना :-

भारत हा शेतीप्रधान देश आहे. आपल्या देशाच्या अर्थव्यवस्थेचा मुख्य आधार शेती व पशुपालन होय. पशुधन राष्ट्राची अनमोल संपदा आहे. शेतीशी निगडित असलेला एक जोडधंदा म्हणजे पशुसंवर्धन होय. लातूर जिल्ह्यातील पाळीव प्राण्यांचे वर्गीकरण आणि पशुचे महत्त्व अभ्यासले आहे.

पशुधन अर्थ :

पशुधन हा शब्द पशु व धन असा विभागला जातो. संयुक्तपणे पशु हा शब्द पुल्लिङ्गी असून त्याचा अर्थ जनावर निर्बुद्ध किंवा द्रव असा होतो. थोडक्यात पशुधन हा नैसर्गिक साधनसंपत्ती असून तिचा मानवाला विविध माध्यमातून उपयोग होतो. पशुगणना ही मोजणी दर पाच वर्षांना केली जाते.

पशुसंवर्धन व्याख्या :

पाळीव जनावरे (उदा. गाय, म्हैस, शेळी, मेंढी, उंट, घोडा इ.) जोपासना करून त्यांच्यापासून दूध व इतर उत्पादने मिळवणे म्हणजे पशुसंवर्धन होय.

थोडक्यात उपयुक्त अशा पशुंची जोपासना करणे म्हणजे पशुसंवर्धन होय.

उद्दिष्टे:- लातूर जिल्ह्यातील पाळीव प्राण्यांचे स्वरूप व महत्त्व अभ्यासणे.

अभ्यास क्षेत्र:

लातूर हा महाराष्ट्रातील 36 जिल्यांपैकी एक असून त्याचे अक्षवृत्तीय स्थान $17^{\circ} 51'$ ते $18^{\circ} 50'$ उत्तर असून $76^{\circ} 12'$ ते $77^{\circ} 18'$ पूर्व रेखावृत्ताच्या दरम्यान आहे. जिल्ह्याची पूर्व पश्चिम लांबी 106 कि.मी, उत्तर - दक्षिण लांबी 109 कि.मी. आहे. जिल्याच्या पूर्वेस नांदेड, उत्तरेस परभणी, पश्चिमेस उस्मानाबाद, दक्षिणेस उस्मानाबाद जिल्हा व कर्नाटक राज्याची सिमा आहे. जिल्ह्याचे भौगोलीक क्षेत्रफळ 7157 चौ. कि.मी. असून क्षेत्रफळानुसार जिल्ह्याचा राज्यात 26 वा क्रमांक लागतो. 2001 च्या जनगणनेनुसार जिल्ह्याची लोकसंख्या 20,80,285 होती. लातूर जिल्ह्याला नैसर्गिक सिमा फारश्या लाभल्या नाहीत.

लातूर जिल्ह्यात पाळीव प्राण्यांच्या महत्वाच्या अशा बाजारपेठा आहेत. प्रसिद्ध अशा बैलांच्या जाती आहेत. हंडरगुळी, देवणी, नळेगाव, मुरुड ही महत्वाची बाजारपेठा आहेत. जिल्ह्यातील 13 महत्वाच्या बाजारपेठांचा अभ्यास प्रस्तुत संशोधनात केला आहे.

माहिती स्रोत व संशोधन पद्धती :- प्राथमिक व द्वितीयक स्रोतांद्वारे मिळवलेली माहिती अभ्यासासाठी घेतलेली आहे,

जिल्हा सामाजिक आर्थिक समालोचन, शासकीय कार्यालय, प्रश्नावली माहिती विश्लेषणासाठी अनुभवजन्य पद्धती, सैध्दांतिक पद्धतीचा अवलंब करण्यात आला आहे.

विषयविवेचन :-

लातूर जिल्ह्यातील गोधन :-

भारतात गोवंशाच्या एकूण 27 जाती आहेत. देशातील वेगवेगळ्या राज्यात त्याचे मूळ स्थान आहे. अभ्यासक्षेत्रासाठी आपण लातूर जिल्ह्याची निवड केली आहे. त्यामुळे लातूर जिल्ह्यात पुढील गोधन जातीचा समावेश होतो. 1) खिलारी, 2) देवणी, 3) लालकंधारी, 4) डांगी , 5) हालस्टिन, 6) जर्सी इ. लातूर जिल्ह्यातील महत्त्वाच्या जाती पुढीलप्रमाणे :

खिलारी :

मुळस्थान : महाराष्ट्रातील सांगली, सोलापूर, सातारा, कोल्हापूर व लातूर जिल्ह्यात प्रामुख्याने आढळतात. म्हसवड खिलार, तापी खिलार, जातीमध्ये आटपाडी खिलार (द.महाराष्ट्र) व नकली खिलार या पोटजाती आढळतात.

शारीरिक वैशिष्ट्ये :

अत्यंत चपळ व शक्तीमान, शेताच्या कामासाठी बैल अत्यंत उपयुक्त, शर्यतीसाठी बैल प्रसिद्ध, रंग शुभ्र पांढरा किंवा राखाडी, डोळे बारीक व रागीट, कपाळ फुगीर चेहरा लांबट व अरुंद, शिंगे टोकदार व सरळ उभी असतात, मान आखूड व शिंड मोठी असते. कान लहान व टोकदार जमिनीस समांतर असतात.

भौगोलिक परिस्थिती :

खिलार ही जनावरांची जात ज्या भागात आढळते तो भाग अर्धशुष्क आहे. या भागात 40 ते 70 सेमी पाऊस पडतो. येथील उन्हाळे उष्ण असतात. येथील जमिन हलकी आणि साधारण काळसर आहे.

लातूर जिल्ह्यात मांजरा नदीच्या खो-यात काळी गाळाची जमिन आढळते. येथे ज्वारी, कापूस पिके घेतात, येथील जनावरे गवत व कडव्यावर जगतात.

शेतीच्या कामासाठी खिलार जातीचे बैल नावाजनेले असतात. तसेच शर्यतीसाठी अत्यंत वेगाने धावण्यासाठी प्रसिद्ध आहेत. खिलार ही महाराष्ट्रातील गुरांची जात असल्यामुळे ती महाराष्ट्रात वातावरणात निकोप वाढते व खिलार वळूला बाजारात भरपूर किंमत मिळते.

प्रा. डॉ. नामदेव एस. गौड

गायीचे जनन व दूध क्षमता :

खिलार जातीच्या कालवडी 3 वर्षांनंतर वयात येतात. त्यांचे प्रथम विण्याचे सरासरी वय 4 वर्ष आहे. या जातीच्या गायीचे दूध वासरांनाच पुरते. या रोज 1 ते 1.5 लिटर दूध देतात. या गायी साधारणतः 8 महिने दूध देतात.

देवणी : लातूर व उस्मानाबाद जिल्ह्यात ही जात आढळते. अहमदपूर , निलंगा , उदगीर , उस्मानाबाद , उमरगा इत्यादी.

मुळस्थान : मराठवाडा व कर्नाटक सीमा, आंध्रप्रदेश.

शारीरिक वैशिष्ट्ये :

रंग पांढरट व वानराच्या रंगासारखा म्हणून वानरी म्हणतात, शरीर ऐटदार, सवाई चाल, कान लांब व खाली मागे वळलेली शिंगे आखूड बाजूस मागे वळलेले असतात. पाय जाड, बेंबी मोठी, शेपटी लांबा चाबकासारखी असते तिचा गोंडा काळसर, या जातीच्या गायीचे वजन 300 व बैलाचे 500 कि.ग्रॅ. असते.

भौगोलिक परिस्थिती :

देवणी जनावरे जेथे आढळतात तो भाग जरा डोंगराळ आहे. या भागात पावसाचे प्रमाण 80 ते 100 सेमी आहे. उन्हाळे जास्त उष्ण असतात. या भागात कापूस, ज्वारी, बाजरी, भूईमुग ही पिके घेतात. तसेच थोड्या प्रमाणात गवत वाढते. तेथील जनावरे कडवा व गवतावर जगतात.

देवणी जातीचे बैल अतिशय चपळ व मजबूत असल्याने ओढकामासाठी, शेती व वाहतुकीसाठी उपयुक्त असतात.

गायीचे जनन व दूध क्षमता : देवणी जातीच्या कालवडी साधारणपणे 3.5 ते 4 वर्षांच्या झाल्यावर प्रथम वितात. या गायी एका वेतात 900 कि.ग्रॅ. दूध देतात.

लालकंधारी :

मुळस्थान : मराठवाडा, कर्नाटक सीमा, लातूर, नांदेड जिल्ह्यातील कंधार, देगलूर, बिलोली व मुखेड तालुके लातूर जिल्ह्यामध्ये लातूर, अहमदपूर , उदगीर इत्यादी.

शारीरिक वैशिष्ट्ये :

कंधारी जातीच्या जनावरांचा रंग फिका व ते गडद लाल असतो. म्हणून या जनावरांना लालकंधारी म्हणतात, ही जनावरे मध्यम आकाराची असून यांचे कपाळ रूंद व फुगीर असते. त्यांची शिंगे प्रथम बाहेर आणि नंतर आत

वळलेली आणि मध्यम आकाराची असतात, कान लांब दोन्ही बाजूस झुकलेले असतात. त्यांचे शरीर व शेपूट लांब असते. खुरे कठीण असतात, या जातीच्या गाईचे वजन 300 व बैलाचे 500 कि.ग्रॅ. असते.

भौगोलिक परिस्थिती :

ही जात जेथे आढळते तेथे पावसाचे प्रमाण कमी व तापमान जास्त असते. येथे उन्हाळे 40 ते 500 असते. एकूण तेथील हवामान अर्धशुष्क आहे. या भागात साधारण व चांगली दोन्ही प्रकारच्या मृदा आढळतात. येथील जनावरे कडवा व गवतावर वाढतात.

लालकंधारी जातीचे बैल काटक, मजबूत व चपळ असतात. या बैलांचा शेती व वाहतुकीसाठी उपयोग होतो.

गायीचे जनन व दूध क्षमता :

देवणी जातीच्या कालवडचे प्रथम पिण्याचे वय 3.5 ते 4.5 वर्ष असते. या जातीच्या गायी दूधास कमी असतात.

डांगी :

मुळस्थान : गुजरातमधील डांग जिल्हा हे या जातीचे मुळस्थान आहे.

प्रदेश : महाराष्ट्रात डांग जातीची जनावरे नाशिक जिल्हा इगतपुरी व घोटी, अहमदनगर जिल्हा, अकोला तालुका, रायगड, कर्जत, ठाणे, शहापूर, जव्हार माखाडे, डहाणू, लातूर, नांदेड, उस्मानाबाद या भागात आढळतात.

शारीरिक वैशिष्ट्ये :

डांगी जनावरांचा रंग काळा असतो. त्यांच्या शरीरावर पांढरे डाग असतात. यांच्या शरीराची कातडी तेलकट व मऊ असते, डोळे लहान व कपाळ रुंद असतात. या जातीच्या बैलाचा खांदा रुंद असतो, या जातीचे जनावरे काटक व पावसाळा सहन करणारी असून शक्तीशाली असतात, या जातीच्या गाईचे वजन 300 व बैलाचे 450 कि.ग्रॅम. असते.

भौगोलिक परिस्थिती :

हे पशु जेथे आढळतात, त्या प्रदेशाची उंची 500 ते 600 मी. असते. येथील जमीन काळी आणि उतारावर लालसर आहे. या भागात 150 ते 225 सेमी पाऊस पडतो. येथे भात, नाचणी, ज्वारी ही पिके येतात. या जनावराबरोबरच व मारवेल व गवत प्रमुख खाद्य असते. डांगी जातीचे वळू 3 ते 3.5 वर्षांनंतर पैदाशीसाठी

वापरतात. बैल शेती वाहतुकीसाठी उपयोगी पडतात. मात्र त्यांची गती कमी असते.

गायीचे जनन व दूध क्षमता :

डांगी गाईच्या कालवडी 4 ते 4.5 वर्षांच्या वयात प्रथम वितात. या जातीच्या गाई एका वेतात 550 ते 680 कि.ग्रॅ. दूध देतात.

समस्या :-

1. जिल्ह्यात हालक्या व मध्यम प्रतीच्या मृदेचे प्रमाण जास्त आहे.
2. देवणी जातीच्या गायी व वळू यांची संख्या कमी होत आहे.

उपाय :-

1. जिल्ह्यातील मृदेचे परिक्षण करून खताचा योग्य वापर करून विविध पिके चारा व कडवा यांचे प्रमाण वाढवणे जेणेकरून पशुसंख्यात वाढ होईल.
2. गायी व बैल यांचे महत्व पटवून देण्यासाठी लोकामध्ये जनजागृती व प्रोत्साहन म्हणून बक्षीस ठेवण्यात यावीत.
3. आधिक्य दुध देणा-या गायीचे पैदास करणे गरजेचे आहे. त्यासाठी संशोधन करून नवीन जातीची निर्मिती करावी
4. जिल्ह्यातील लोंकाचा मुख्य व्यावसाय शेती व पशुपालन असल्याने शेतीचा योग्य विकास करण्यासाठी शेतक-याना मार्गदर्शन शिबीर आयोजित करावे.

निष्कर्ष :-

1. देवणी लाल कंधारी डांगी या जनावरासाठी जिल्ह्यात पोषक वातावरण आहे. हि जनावरी 51 वेळा राष्ट्रीय पुरस्काराने गौरविले आहेत.
2. खिलारी जात अत्यंत नावजलेली असतात व शर्यतीसाठी अत्यंत वेगाने धावण्यासाठी प्रसिद्ध आहेत.
3. प्राण्याच्या किमती त्यांचा रंग, वय, जात, प्रकार व रुबाबदारपणा इत्यादी बाबी वरून ठरतात.

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