



**IMPACT OF WAKURDE IRRIGATION PROJECT ON
AGRICULTURE: A GEOGRAPHICAL ANALYSIS**

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Abstract:

Agriculture is backbone of Indian economy. It provides livelihood, employment and agrarian raw material to agro base industries. Indian agricultural sector totally depends upon monsoon, which is uneven because of that gamble with the monsoon. Irrigation facilities enhance the productivity of agricultural sector and change in cropping pattern. The present paper is intends to focus on the Wakurde irrigation project which made changes in agricultural sector in southern Karad Tahsil, and also attempt to study the agricultural land use pattern and change in cropping pattern in pre and post period of Wakurde irrigation scheme in the sawade gana in southern Karad Tahsil. The present study also focused on development of agricultural sector.

Key Words: Agriculture, Land Use, Pattern, Productivity, Irrigation

Introduction:

Due to the worldwide accepted belief that water is the most important strategic resource twenty one century, the management of water resources and management systems for water use and protection is gaining importance. Advantages of irrigation are the more rational use of natural resources, first of all the use of soil; reduced or eliminated risk from droughts; relation soil-water-plant in accordance at higher rate; higher income per capacity unit; production is economically more efficient; reaching

better living standard and higher income of the employees.

However, it basic use is to apply water to the land aiming to achieve optimal growth and development of cultivated plants when during vegetation there is not sufficient amount of water.

Agricultural production and efficiency largely depend upon the inputs applied and methods adopted. In India while population grows the land surface is fixed and of this only a certain proportion is available for cultivation. Further scope for bringing extra land under the plough is limited .If more is to be got out of existing

area. This can be done by applying inputs in a more

Intensive way and by adopting modern methods of improved technology. These technological factors comprise Irrigation, Improve seed, Fertilizer, Rural electrification, etc. Agriculture has dominant position in the country's Economy, but this major occupation is rendered hazardous by scanty rainfall in large area and by erratic monsoon elsewhere. so irrigation is necessary for the maximum production.

The southern part of Karad Tahsil. Sawade gana including village Undale, Talgaon, Ghogaon. This villages use the irrigation scheme of Wakurde. These regions selected for the study of analysis of change in agricultural land use .This paper analyze the impact of Wakurde irrigation project on agricultural sector in southern Karad Tahsil.

Significance of Research Work:

Present research work focus on the agricultural development due to the Wakurde irrigation project .This work useful for impact of this irrigation project in sawade gana. This work helpful to analysis of positive and negative effect on study region.

Study Region:

The selected study region for the present research work is Karad Tahsil (Satara dist. Maharashtra). Karad Tahsil is one of the important Tahsil in Satara district. It is situated on confluence of Krishna and Koyana River. The Tahsil extends between 17°18' north to 17°38' north latitude and 73°52' east to 74°16' east longitude. According to 2011 census there are 217 villages in the Karad Tahsil. It covers an area about of 405.8 sq. km. which is 10.2 percent of Satara district. North– south length of Karad Tahsil is 55km. and East-West length is 36 km. Karad is famous place for its good location in Maharashtra. Total population of study region is 16,30,272 out of these 8,31,465 male and 7,98,807 female.

Out of total villages only, Undale, Talgaon, Ghogaon villages selected for present paper to analyze agricultural development due to Wakurde irrigation scheme. These villages situated on bank of Dashin Mand River.



Study Region (Karad Tahsil)

Objective:

1. To Study the agricultural land use.
2. To analyze the change in land use pattern.

Methodology and Data Collection:

The Present study work based on the secondary source data, secondary data obtain from censuses of India, socio-economic abstract of Satara district (2011), Annual publish Report, Research papers, collected data are processed and represented by various methods.

Limitation:

Data is not available for the research work about the Dashin Mand catchment area. Available data is limited

in nature. Acquire data use for the implementation of the research objective.

Southern Karad:

Warana Irrigation Project:

The Warana is a major irrigation project under construction across river Warana in Krishna basin near village Chandoli in Shirala Tahsil of Sangli District of Maharashtra. The project is planned to provide irrigation to 1,20,467 hectare of land in 289 villages in Sangli, Satara and Kolhapur districts of Maharashtra. Ultimate irrigation potential of the project is 1,60,445 hectare. The major components are as under:

1. Composite dam with 837.0 meter long and 77 meter high earthen section and 686 meter long NOF masonry section having 974.19 MCM of gross storage and 779.35 MCM of live storage.
2. 57 meter long gated spillways with 4 radial gates of size 12 x 8 meter to pass the design flood discharge of 2920.30 cumec.
3. Left bank canal of 70 km length.
4. 117 km. long Right Bank Canal taking off from LBC at km 27.
5. Provision of Mini RBC of 33.50 km length taking off from the main dam
6. A dam toe power house of 16 MW (2x8)

7. Wakurde Lift Irrigation scheme (LIS) on Warna left bank canal at km 24 and 68.

The project was techno-economically approved by the TAC in August 1988 for an estimated cost of Rs 337.81 crore (1987-88 price level) subjects to clearance from environmental and forest angle. The construction of the project was started in the year 1976 and the dam is completed in the year 1998. The latest estimated cost of the project is Rs 1845.89 crore (2007-08) and without Wakurde lift irrigation it is Rs 1304.89 crore up to March 2011, expenditure on the project is Rs 566.14 crore and the potential created is 10,900 hectare and the project is scheduled for completion by March 2015. The state Government has now revised the proposal and the Wakurde lift irrigation project is separated from this project. With this the CCA of the project is 1,09,700 ha and potential is 1,21,920 hact.

Wakurde Lift Irrigation Scheme (WLIS):

Warna and Krishna rivers are major rivers of Maharashtra which are linked together by Wakurde Lift Irrigation Scheme in Tal-Shirala, Dist -Sangli. This may be the India's 1st river linking project which is commissioned on 30th DEC 2011 executed under the Maharashtra Krishna Valley Development

Corporation, Pune. Warna and Krishna river are linked together by Wakurde Lift irrigation Scheme, tal-shirala, Dist-Sangli. This project is having two parts out of which execution of first part is started .

Parts 1 of this project consist of three stages:

Stage I: Warna River is lifted at about 45m head from Warna left bank canal km.24 near village Khiravadetherafter by link canal of 3050 m water goes in Hattegaon P.T. From this Tank water is lifted by pump house.

Stage II: At about 60 m head and placed in Wakurde M.I.Tank through 2400 m canal which includes Badewadi-Biur Tunnel of 1660 m.

Stage III: Wakurde M.I.Tank water of warna river flows through Yenpe Tunnel and goes in DaxinMand river, Tal-Karad, Dist.-Satara which is tributary of Krishna River. On 30th Dec 2011 commissioning of stage I and stage II takes place and dream of the first River Linking Project comes true. There is lot of river linking project will come in future but Warna and Krishna is the first project in india linked by tributary of river. Warana Krishna river linkage through Daxin Mand River. In Catchment area of this tributary may increase the irrigated area due to this irrigation scheme.

Wakurde scheme complete for Karad Tahsil in 2011. from yenape to

wather farmer change the cropping pattern, cash crop may increase in southern part of Karad Tahsil. From Wakurde scheme 15 to 20 M.C.F.T. water discharge in daxinMand River per month. total area under this scheme 5500 hect. On daxinmand river chain type small dam constructed, this scheme supply water for these dams for agriculture sector and increase ground water level. Warana river link through the daxinmand to Krishna River near wathar village.

This project very helpful to increase the agricultural productivity, change in cropping pattern, and very important role in development of southern side of Karad Tahsil. for present paper only undale, these village selected for data collection for present research work.

Due to this irrigation project potential irrigation area is very high, But after the completion of this project potential estimate area not under the irrigation. Because topography of that region is hilly. Expenditure is very high to carry water for the agricultural sector. Small land holder farmer not able to use this water for its own farm because it is very costly. Small land holder is large in amount, so these projects have not a grand success in the term of development. But these schemes increase the area under irrigation as compare to previous year when project is not complete. Increase the

irrigation area analyzes undale, Talgaon, Ghogaon,

Concept of Agriculture Land Use:

Agricultural land use means land under net sown area, fallow land and uncultivable land excluding fallow land. The cultivated area is known as net sown area, which is also known as agriculture land. In short agriculture land use means a cropping pattern means the proportion of area under various crops at a point of time or yearly sequence and spatial arrangement of crops and fallow on a given area. Cropping pattern is dynamic concept as it changes over space and time. The cropping patterns of a region are closely influenced by the geo climatic, socio- cultural, economic, historical and political factors. The agriculture land use is the result of the direct application of efforts applied is related to decisions made by farmer regarding the actual use of land. These decisions are based on his appreciation of the available land resources, his responses as conditioned by the knowledge passed from generation to generation and his appreciation of demand for various agriculture commodities in the market.

Table: Agriculture Land Use

Sr. No.	Village	Total Geographical Area (in Hect.)	Net sown Area (in hect.)	Irrigated Area	Non Irrigated Area
1.	Ghogaon	983	723	93	630
2.	Talgaon	605	562	100	460
3.	Undale	468	448	371	78

Above table show the land use in study region. Total cultivable area, irrigated area, on-irrigated area. According to geographical area Ghogaon is very big, area under different crops is very high but only 12 % area under irrigation. Very large area under irrigation in undale village 82 % area under irrigation.

Conclusion:

It is concluded that the analysis in this study shows that development of agricultural sector in southern part of Karad Tahsil which was belonging hilly and remote area. From the completion of this project total agricultural land use increase for sown, pattern of land use also change due to this scheme because irrigation increase as compare to past condition of that region. Farmer takes cash crops from agricultural sector. So development may start but progress is very slow, because it has some difficulties for utilization of water. Need to give special attention for agricultural sector.

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References:

1. Talekar, P. R., & Chavan, T. V. (2018). Landuse and Landuse Efficiency in Satara District: a Geographical Analysis. *Aayushi International Interdisciplinary Research Journal*.
2. Rajhans Snehal Makrand, Impact of Irrigation Scheme on Agricultural Development: A Case Study of Krishna Sugar Factory Irrigation Scheme, Rethare Bk. Satara dist. Maharashtra.
3. K. C. Jayram, The Krishna River system Bio-resources Study, Zoological survey of India- 1995
4. Ministry of MSME, Govt. of India, Brief Industrial Profile of Satara District.
5. District Census Handbook 2011, Directorate of census operations, Maharashtra.