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Development of Infrastructure and Resource in the context of the Sustainable Use of Natural Resources: Issues, Challenges and Approaches

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Abstract:

The development of infrastructure and resources plays important role in economic growth, social well-being and national development. Volant and unplanned infrastructure enlargement has lead to intemperate takeing advantages of natural resources. Result is environmental damage, loss of biodiversity, climate change and resource consumption. This research paper present the development of Infrastructure and Resource in the context of the sustainable use of the natural resources. Highlights point of issues, challenges and approaches to ensure long term sustainability. The research focus the need for to get more complete understanding or better results and balanced approach that give support to infrastructure development with conservation of environment.

Keywords: Sustainable Development, Natural Resources, Approach.

Introduction:

Since the publication of the Brundtland in 1987 and the Earth Summit in Rio de Janerio in 1992, sustainable development has become globally used slogan.But it is not clearly that, What a sustainable development and how it can be achieved.What is mean by sustainable use of natural resources? What exactly are natural resources?

Major issues discussed such as over use of resources, deforestation, insufficiency of water, pollution and loss of biodiversity caused by unsustainable infrastructure development. The study highlights challenges such as rising consumption, unware, technological and financial constraints, failure to implement of policies. This paper explores different approaches for further the progress of sustainable development as well as adoption of renewable energy sources, green infrastructure, effective policy framework, sustainable construction practices and community participation.

Sustainable planning and responsible resource management are uppermost to convince long term economic growth while preserving natural resources for upcoming generation.

Concept of sustainable use of natural resources:

The sustainable use of natural resources is a monumetal concept in achieving balanced economic development while secure environmental protection. Land, water, forests, minerals are natural resources. Natural resources is staple of human survival and infrastructure development, resources extraction and regeneration, these sustainable resources use maintaining balance between them. renewable resources and non-renewable resources are take important role in natural resources. Forest, water

and solar energy is a renewable resources and minerals, fossils fuels are non-renewable resources. It should be conserved through limited use, recycling, unsustainable miss use of natural resources, cause is environmental degradation, loss of biodiversity, land degradation, drought, pollution which impact on economic stability and human well-being.

In the context of infrastructure development sustainable use of natural resources be in needs of amalgamate deliberation in to planning, design, constructions and operation process. The concept of sustainability best part of a intergenerational impartiality, make a certain that development benefits are share just without an excessive burden on future generation. Participation of community essential components of Sustainable resources management, sustainable approaches, economic growth of societies, protection of environment, social development, at that same time making the sustainable use of natural resources key pillar of modern infrastructure development.

Development of Infrastructure and Resource use:

Economic growth and social development are most important aspect of are closely linked with development of infrastructure and resource use. Natural resources play the important role in infrastructure like roads ,energy system ,buildings and water supply. Which is depend on natural resources such as a water, energy, land , minerals. These resources supports improved living standards ,used for industrialization, urbanization ,increasing infrastructure development is affected on environmental damage and over use of natural resources. Sustainable infrastructure development focuses on eco-friendly technology balanced infrastructure development in important thing as well as assure economic development. While natural resources are protecting for upcoming generation.

Issues in sustainable infrastructure development:

Several critical issues faces in sustainable infrastructure development because of human being nature. That the tough task the balanced use of natural resources. Over use of water ,forests ,mineral ,land because of expeditious urbanization and industrial growth. Excessive major issues is the over use of renewable sources or nonrenewable sources leads to use of water, forest, minerals and energy sources. Long term planning of infrastructure project result is loss of biodiversity, erosion and stripping .environmental pollution is also big issues. Increasing pollution due to rapid growth of industrialization ,constructions activities disturbing the ecological balance. Green infrastructure discourage sustainable practices because of financial constraints in developing country. Public awareness and insufficient community and other factor of reduce the sustainable development .Must need is environmental protection while meeting infrastructure and developments.

Challenges in sustainable resource management:

Over use of natural resources, population growth ,climate change ,pollution and inefficient resources use challenges faces the sustainable resources management. Absence of assistance related to technical issues, limited financial resources, less public awareness, delay effective conservation and long term sustainability of natural resources.

Approaches for sustainable development:

Sustainable development can be achieved through the balance to use of natural resources while ensuring economic growth and social well-

being .Important approach is further renewable energy sources such as a solar, wind and hydropower to reduce dependence on fossil fuels. Well organized resources management including conservation of water, waste recycling, sustainable agriculture helps hydropower . Eco-friendly technologies should be integrated into development planning. Effective governance are essential to enforce.

Approaches to sustainable development social equity, economic viability, renewable energy ,efficient resources use and technological innovation, integrated solutions while government policies, education and empact assessments guide. Systemic change towards long term balance. Awareness of public education and community participation Play important role in encouraging responsible consumption. These approaches support long term development while protecting the environment for upcoming generation. Key approaches include using renewable energy, conserving natural resources, promoting recycling, adopting green technologies and encourage sustainable agriculture.

Conclusion:

Sustainable development is of the essence for meeting present needs without harming future generation by using natural resources adopting eco -friendly technologies, societies can achieve long term economic growth and environmental protection. Pooling skills from governments, communities and individuals are crucial for building a sustainable future. Sustainable development make certain balanced growth by conserving resources, protecting the environment and future needs responsibly. A need to overhaul existing economic and political structures so that all human beings will be able to conserve natural resources and use them sustainability.

References:

1. Daly, Herman E. Ecological Economics and Sustainable Development. Edward Elgar Publishing, 2007.
2. Sachs, Jeffrey D. The Age of Sustainable Development. Columbia University Press, 2015.
3. United Nations. Transforming Our World: The 2030 Agenda for Sustainable Development. United Nations, 2015.
4. World Commission on Environment and Development. Our Common Future. Oxford University Press, 1987.