

Impact Assessment of Science and Technology over Hilly Rural Areas



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Abstract

Science and Technology (S&T) has changed the whole spectrum of modern life. The use of S&T is a crucial determinant for the realisation of the objectives of rural development in hilly areas both, the economic development of the people and greater social transformation. It is evident that science and technology has to be adopted to increase efficiency in production, productivity and marketing phases of hilly rural sector. The revolutions in agriculture, health and education witnessed during the last century were mostly the products of public research supported by government and philanthropic institutions. There have been developments in the rural areas but much more awareness and thoughtfulness is required for the further development of the rural areas.

Keywords: Science and Technology, Rural Development, Hilly areas, Productivity.

Introduction

Science and technology has helped loosen this cultural rigidity, helped in the field of agriculture in cultivating generic crop at fast rate with more to diseases and pests, fast transportation has impacted hilly rural social life in many ways and much more. Developing countries are facing the challenges of improving living standards of rural people for their sustainable livelihoods. The Science & Technology (S&T) policies for hilly rural development need to take into account the nature of the local environment to effectively deliver the benefits of S&T to the rural society. It is evident that science and technology has to be adopted to increase efficiency in production, productivity and marketing phases of rural sector. In science and technology development, technology choice has a critical impact on many aspects of hilly areas development, especially the way we choose it, the way we design it, the way we deliver it to the masses. Technology is carefully chosen to enable the local people to imbibe knowledge appropriate to their needs and environment.

Aims of the Study

- The aim of this study work is to assess the impact of science and technology in the hilly rural areas mainly emphasis on Uttarakhand Himalayas.
- To find the areas of intervention in which S&T can be applied for its development.
- To make the strategy for the implementation of S&T for the rural development of the hilly areas.

Importance of Science & Technology in Rural Areas

Several reasons are there for focusing S&T for the benefit of the rural poor in India. S&T is the most important means for empowering the poor. It is now essential for the governments to invest science and technologies to narrow the gap between the urban and the rural areas. S&T is the instrument for transforming natural resources into useful goods. Science and Technology has left no field untouched including, education, agriculture, social status, transportation and other areas where it contributed in raising quality of life of hilly rural natives. The IT industry has played an important role in uplifting the status of hilly rural residents. S&T resulted in production of improved generic crop at fast rate. The old cultural rigidity has been loosened by science & technology as the daily use of television, internet, newspaper has made hilly people more liberal. Women empowerment has been boosted a lot with the help of S&T. Print and electronic media has inspired women for taking participation in sports, literature, driving etc.

The application of S&T can help in making improvements in land and water resources and also in starting agro-industries, and thus create additional jobs for the unemployed and underemployed persons. Farm

mechanisation has enhanced productivity and due to modern technology farming got commercialised. The use of electricity has revolutionized farming. Better means of transportation and communication have shown deep impact on the socio-economic life of the rural people. The achievement of the objective to generate employment is possible by drawing up scientific strategies for rural development based on a comprehensive survey of resources, their planned utilization and management based on technological appropriateness to the local environment and mass mobilization of people through education, and equitable sharing of the benefits of development.

Interference areas for S&T in Hilly Areas

Following are the areas in hilly areas in which proper actions can be taken:

Farming

Sustainable Agriculture and Bio-farming in the hilly rural areas like Uttarakhand must be given priority. Organic farming should be boosted in these areas. Techniques like off-season vegetable production, seed conservation and micro-irrigation techniques must be adopt.

Forest Conservation

To regenerate micro-ecosystems and biodiversity S&T based integrated approach have to be implemented.

Animal husbandry

Animal husbandry is inevitable in the hilly rural areas. Cows for milk, buffaloes and goat rearing have a very high scope

Water Resource Management

For harnessing and conserving renewable energy, there is need for sustainable technology. Spring recharge and purification of water resources must be done. Along with the dams, traditional water mills and hullers should also be taken.

Disaster Management

Mountain Risk Engineering and Pre & Post Disaster Management will take control over landsliding in hilly areas.

Women Uplifting

Through S&T interventions women related farm activities can be reduced and their health and nutritional care can be taken.

Rural Engineering

Through innovative training programme and adaptive R&D better earning to traditional artisans such as blacksmiths, carpenter etc. can be provided.

Strategy for the Application of S&T for Rural Development

The potential of technology in improving the quality of life of the masses remains largely untapped. The task of effecting technological change in the rural areas is extremely complex. It requires a multidisciplinary approach, which is sensitive to the actual needs of the rural community and attends to the reality of the rural scene. Also, development and transfer of scientific and technological solutions should be based on an objective assessment of the actual needs of the people. For the successful diffusion and adoption of a technology, active

participation of the target population is not only necessary but also crucial.

Instruments that capture the interest and imagination of the general public are usually effective in popularising sciences and the simple application of technology. Such programmes should seek to:

1. Encourage creativity and innovation in everyday scientific and technological activities, and provide incentives for participation in them.
2. Provide opportunities to general public, especially the youth and women, to appreciate S&T and participate in their development.
3. Demonstrate the linkages between the basic and applied sciences and show their role in rural development.
4. Increase the visibility of successful projects that have an impact on society's progress and rural development.
5. Honour and recognize scientists and technologists who make significant contributions in their fields.

Impact of Technology on Societies

When a technology is introduced into a society, it forces other parts of society to give way. In fact, a new technology can reshape an entire society. There are five ways that technology changes society.

Replacing the old technologies

The first impact is felt by the technology that is being displaced. For example: the rotary dial telephone is an exhibit in many instances.

Changes in social organization

Technology also changes social organization. Machine technology gave birth to the factory.

Technology also changes ideology.

Transformation of values

Just as ideology follows technology, so do values. If technology is limited to clubbing animals, then strength and cunning are valued.

Transformation of social relationships

Technology also changes social relationships. As men were drawn out of their homes to work in factories, relationships changed.

Conclusion

The use of S&T is a crucial determinant for the realisation of the objectives of rural development in hilly areas. Thus, S&T must be integrated effectively into our strategies related to rural development programmes. Unless appropriate indigenous technologies are developed, diffused and adopted, the contribution of S&T towards rural development cannot be significant. The requirement of technology is assessed by the Science and Technology based institutions and NGOs. Technology should upgrade the skills and capabilities, reduce drudgery, minimize fatigue, capable of easy assimilation, generate added value to the existing methods of operation, generate employment, low in capital investment, low in cost of production, be capable of replication and adoption and should blend harmoniously with existing eco-systems leading to tangible improvements in the living conditions and development of the people of the hilly areas. There is a need to introduce appropriate technologies in the hilly

areas particularly in disadvantaged groups. There is a need of institutional linkages and active participation of voluntary organisations, Science and Technology based institutions, Research and Development institutions, financial agencies and most importantly people who are the primary stakeholders. Success of these technologies lies on participatory systems with a systematically approach for effective dissemination of technology. There should be proper mechanism in development and transfer of effective technologies in the hilly areas.

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