



Eliminate Poverty by Managing Ecosystem Services for Rural Communities

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Abstract: *Ecosystem services play a significant role in sustaining the livelihood of rural communities. The paper explicitly that the rich and poor both are dependent on resources but their purpose of usage is varied. The research has tried to comprehend the socioeconomic conditions of the households and assessed their dependency on ecosystem services available in the surroundings. The case study approach has been considered for in-depth analysis. Both primary and secondary data were collected to analyze the status of ecosystem services and their impact on people's livelihoods. The collected data were analyzed through qualitative and quantitative methods for the better illustration of the case study. The research has tried to develop an integrated framework for sustainable living in rural communities with an emphasis on the management of ecosystem services. The paper asserted that greater involvement of institutions is vital for eradicating poverty through better management of ecosystem services at a local level.*

Key Words: *Ecosystem Services, Poverty, Livelihood, Rural Communities, Institutions.*

1. INTRODUCTION:

The functioning of ecosystem services is dynamic for enlightening the standard of living of dependent people. According to the National Geographic Society 'an ecosystem is a geographic area where plants, animals and other organisms as well as weather and landscape, work together to form a bubble of life'. Ecosystems as a dynamic complex of plant, animal, and microorganism communities and their non-living environment interacting as a functional unit (1). Ecosystem services comprise a wide variety of goods and services such as food, fuel, fodder, freshwater, etc. According to the Millennium Ecosystem Assessment Report 2005, poor people in rural areas are dependent upon these natural products for their well-being. Rural populations live together in the form of a community and each person has some interaction with the surrounding environment for air, food, raw material, etc. Healthy interaction always leads to a balanced equilibrium between the population and the environment (2). According to MEA, globally 60% of all ecosystem services have been degraded or are used in an unsustainable manner affecting one or more components of the well-being of many poor people. Natural resources are getting exploited due to continuous human intervention in the ecological systems for transforming resources into products and services. At present, the availability of resources is under threat due to the excessive use of resources which puts a question mark on the sustainability of ecosystem services in a region. The way urban communities consume resources and are dependent upon natural resources leads to a serious risk for achieving balanced sustainable regional development. Sustainable Development Goals (SDGs) recognize that global development issues, including poverty and hunger, will not be solved without leadership. A dedicated goal (SDG 11) focused on cities and human settlements, calls for the leadership of local governments, yet the role of local actors extends beyond achieving SDG 11.

Degradation of ecosystem services is taking place rapidly in South Asia where most poor people are dependent on a local resource base (Dasgupta 2008). The poor state of ecosystem services and its impact on poverty is a major issue in South Asia (3). Although economic development is taking place in South Asia that can help alleviate poverty, natural resources are being used unsustainably. The condition is very critical where the mountain ecosystem is enveloped by dense urban development and haphazard growth. Such an urban model of growth swallows up the adjacent resources in the rural areas and builds income gaps among local communities. Hence, the purpose of this study is to eliminate poverty among rural communities by introducing a framework for managing ecosystem services at the local level.

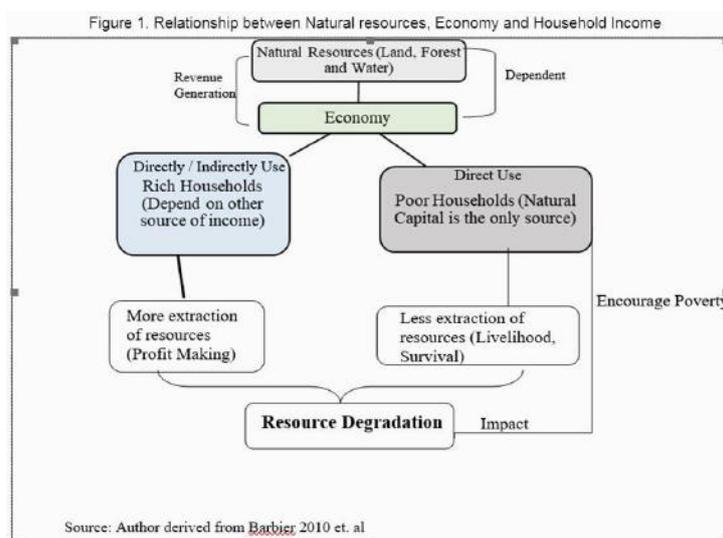


2. LITERATURE REVIEW:

The issue of poverty has always been an important matter of concern for policymakers and academic researchers. At present, around 28 percent of the population lives below the poverty line. The criteria for defining poor differ in urban and rural areas. A person falling below the poverty line in an urban area whose daily income is less than 33 rupees a day while a person earning less than 27 rupees a day in rural areas is poor. Poor people including tribal people, Dalits, farm workers, laboratory class etc. are the poorest class in India. There is a cause-and-effect relationship between poor and resource use. Poor people are forced to overuse environmental resources to survive and cause severe suffering to the poor in the form of environmental problems. Thus, the poor are more linked with the environment as their dependency is more on resources, and are less able to escape from environmental destruction. According to the United Nations Development Program annual report, in 2016 environmental damage almost always hits those living in poverty.

Poor suffer from environmental shock, as they are less capable of coping with the negative impacts. This is mainly because the poor are not in a condition to make rational use of natural resources. The poor are affected by the environment in two ways. On one hand, environmental conditions impact the health of the poor. On the other, natural resources affect the livelihood of the poor. Apart from livelihood and health, the third environmental dimension affecting the poor is the form of vulnerability. It is because poor people live in ecologically vulnerable areas such as dry lands, steep slope areas, etc. Poverty is generally associated with vulnerability and vulnerability is depicted by the position of the individual in society rather than dependency on the physical nature of resources (4). There are several viewpoints regarding poverty and environmental degradation in various studies. With the help of survey data collected from 550 households in 60 villages of the Jhabua district, concluded that poor households use fewer resources than rich households (5). 47 percent of the population is living below the poverty line and is dependent upon natural resources for their survival such as fuel wood, dung, fodder, construction wood, seeds, tendu leaves etc. The study has proved that poor households use resources in a very limited amount as compared to rich households that emphasized resource use increases with income.

A few studies (6) stated that poor people extract more resources which leads to resource degradation. According to the studies conducted by (7), poor people are more attached to common resources and try to conserve them to develop sustainable development strategies. In contrary to this, it is argued that poor people depend on resources but they are not in the position to use them sustainably. However, this process of resource exploitation weakens the poor people more than the rich in terms of survival. It is also noted that rural households are aware of sustainable resource management practices. These people have the knowledge to live in a harsh environment situation. There has been a direct link between resource management and traditional societies with the continuous interaction and dependency of communities on natural resources (8). Thus, it is understood that there is a close relationship between rural communities and ecosystem services. Poor people always think about their present needs rather than achieving future security in resources. They are directly dependent on natural resources to fulfil their short-term needs but lack other types of assets and skills (Figure 1).



While the rich people already loaded with wealth require resources just for the sake of economic benefits and income generation. Poor families are large in number and put their increasing demand on ecosystem services. Besides, poor



people have no other choice, so it is necessary to look at the factors that have led the poor into a situation and develop plans to increase their livelihood options. Thus, the worsening relationship between poverty and resource dependency became an undesirable challenge for natural resource management.

Natural resources are directly or indirectly used by poor and rich households. The richer households extract resources for profit making and an additional source of income while for poor households it is the only source of subsistence living and does comparatively less extraction of resources. This type of scenario assists in occurring the stage of imbalance which further results in resource degradation. Poor households are the main sufferer of this degradation which encourage poverty among them. Poor people are most affected and noted a profound relationship with the environment. Natural Resources are productive sources of income not just for the poor but also for the rich. The relationship between poverty and the environment can be measured through various quantitative indicators. Here, there are several indicators of poverty and environment have been identified and composed from different case studies. For instance, for measuring the livelihood of the poor the indicator will be the percentage of households using fuel wood as a source of energy and access to water. Similarly, to assess the indicators like headcount poverty index, deforestation, Water pollution etc. scatter plot analysis and correlation between maps of the distribution of pollutants can be employed.

3. METHOD:

The literature on poverty and resource dependency has been reviewed from various journals and books to get a strong theoretical base and empirical understanding. The content analysis has been done to find out the relationship between household income and various determinants of resource dependency with the help of case studies. The case study-based approach has been used to relate poverty with resource dependency and find out the relationship between the degradation of resources and dependent communities. The paper has also attempted to explain factors that contribute to increasing poor household income from resources with the help of a case study.

4. DISCUSSION:

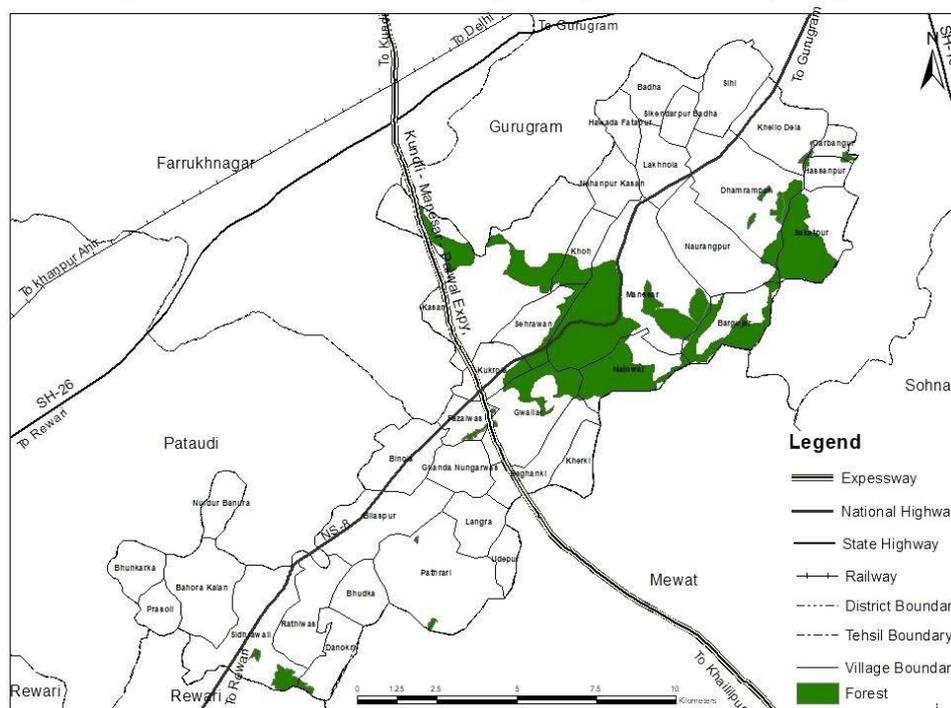
The relationship between Poverty and resource dependency is complex in nature. Poor people are dependent on resources for their survival. The poor economic conditions of households restrain them from getting basic facilities such as electricity, Liquid Petroleum Gas (LPG), expensive dry fodder available in the market, etc. The poor households work on the farm the whole day but the earnings from farm activities are too low to feed all family members. Thus, the fuelwood, fodder, fruits, and other ecosystem services are gifts and largely rely on them for their basic needs. The present case study deals with the poor households of Sakatpur village and their dependency on adjacent resources. The study has tried to identify socio-economic factors which contribute to increasing poor household income from resources. The Sakatpur is in Manesar tehsil of Gurugram district in Haryana. The nearest city to Sakatpur village is Gurugram city which is around 18 km away (Figure 2).

The village is surrounded by Aravalli ranges enriched with 30 percent tree cover, 40 percent shrub cover, and grass cover respectively. The village has 295 households with a total population of 1657 among them around 47 percent are female (9). Around 22 percent are total workers engaged in different types of economic activities such as cultivators, agricultural laborers, etc (9). Nearly 35 percent of households in the total village depend directly or indirectly on ecosystem services such as fuelwood, fodder, wild fruits, medicinal plants, etc. provided by the Aravalli ranges causing environmental degradation.

According to the survey more than 50 percent population is dominated by the Muslim community and constitutes a large family size. The most important factor that determines resource dependency is the size of the household which refers to the number of household members. The average household size in the village is 6.4 which is the highest as compared to the 5.4 persons per household in rural Haryana (Primary Survey 2018). The large size of the family usually visits the hilly and spends around six hours (3 hours in the morning and evening) per day collecting fuelwood and fodder. Thus, it has a direct link with forests because the collection of firewood requires more labor force. Population growth, poverty, and local natural resources are interrelated because households that depend on local resources may have more children to help them collect the wood from other resources (10). Thus, the larger household would have more dependency as compared to the smaller household.

Another important factor proved was time allocation decisions (time spent in collecting resources as a share of total work time) made by the household considered an important measure to understand the relationship between poverty and resource dependency (11). In a poor and large size family, each member usually spends their time collecting fuelwood as it assists in their daily lives.

Figure 2. Forest area and location of Sakatpur Village in Manesar Tehsil, Gurugram



Source: Forest Department Haryana and Town and Country Planning Department Haryana, 2021

The second determinant is the income of a household which states that increases in wealth also improve education and awareness which may reduce the collection of natural resources. Out of the 35 percent dependent population around 24 percent are living below the poverty line and the income from the forest is the only source of their livelihood (Primary Survey 2018) Apart from the forest, the rest 11 percent population have an additional source of income by engaging in different economic activities such as construction work, agricultural labourer etc. Similarly, economic growth also brings exit opportunities for labor (migration) which consequent a reduction in resource dependence.

5. FINDINGS:

The natural resource base degrades in both situations if the income is low then there is a possibility to increase the resource use to survive but higher income also affects the resource base to draw out the benefits. For instance, poor people have a limited number of animals as they cannot afford large herd sizes while in this case, higher income will create greater stress on the environment because of large herd sizes. Besides, the location of the household also affects the dependency level on resources. Those households that are closer to the forest or other resources likely to more dependent. Similarly, villages far away from the market are also likely to be dependent on common resources because of the lack of another alternative source of livelihood. The reason behind the higher dependency on resources is the location of the village. The Sakatpur village lies in the foothills of the Aravalli ranges and those households that are residing in the vicinity of the forest are likely to more dependent.

Natural resources are sometimes the only asset to which poor people have access. Access to resources is one of the important criteria that assure sustainable rural livelihoods. At present, the entry of villagers is restricted to those parts of Aravalli which are acquired by private developers for constructing their resorts and farmhouses. In this regard, the hearing of such cases is going on and the Supreme Court has ordered the State government to demarcate the entire hill region and declared it a conservation zone. Access to resources determines whether poor men and women will be able to make the most of the opportunities they have to enhance their livelihoods. Access is also affected by social and political factors in the form of the distribution of power in communities like gender, conflict etc. Apart from this, there are market forces and environmental forces like the distribution of wealth and the influence of human activities which affect access to resources. Access is also determined by formal and informal rules and institutions that govern who can use natural assets when, where, how, and for what purpose. The role of formal institutions plays an important role in the conservation of resources and building capacities among the local communities. The main reasons behind the failure of institutions are the breakdown of communication norms, insecure property rights, increasing population,



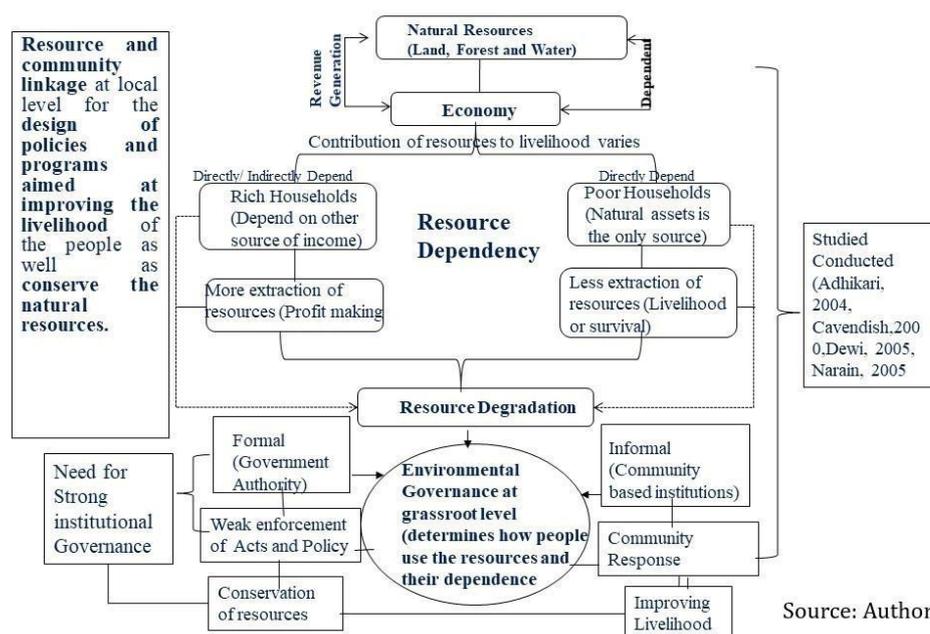
ineffective public policies etc. Thus, the resource dependency in Sakatpur village is shaped by important determinants such as the income of households, location of households, large family size and access to the forest etc, and creating pressure on the existing natural resources.

6. RECOMMENDATIONS:

Natural resource management has been strongly influenced by economic interest leading to the exploitation of resources at the cost of the environment. It is observed that high population growth and high population density put increasing pressure on the natural base and cause environmental degradation. Similarly, poor families are large in number and put their increasing demand on ecosystem services. Poor people always think about their present needs rather than achieving future security in resources. They are more dependent on natural resources to fulfil their short-term needs but lack other types of assets and skills. While the well-off are already embraced with wealth require resources just for the sake of economic benefits and income generation.

Thus, the worsening relationship between poverty and resource dependency became an undesirable challenge for natural resource management. In this direction, the role of formal institutions plays an important role in the conservation of resources and building capacities among the local communities. The main reasons behind the failure of institutions are a breakdown of communication norms, insecure property rights, increasing population, ineffective public policies etc. In practice, it has been observed that the decentralization of environmental governance is very weak at the grassroots level. Hence, there is a need for strong institutional governance with strong implementation of Acts, policies, and involvement of community participation to strengthen the livelihood of the rural poor (Figure 3).

Figure 3. An integrated approach for resolving issue of poverty resource dependency



Source: Author

There is an urgent need to empower the institutions at grass root level which will determine how people use the resources and their dependence. The issue of resource exploitation may be resolved with the identification of the traditional rights of poor and other marginalized groups on forest and land and the implementation of a proper model of community-based management of resources. Besides, there is a need to adopt an integrated approach that reinforces the issue of poverty-resource dependency into the mainstream planning process involving national development plans while reviewing already formulated poverty reduction strategies for smooth implementation at all levels. Similarly, the role of institutions is effective only when there is a devolution of power at the local level. Not only this, the management of resources becomes sustainable only when the power is distributed equitably among all relevant social actors. As a result, all local actors can make informed decisions that define the future of poor people for the sustainable management of natural resources. Alternative options for livelihood such as vegetable cultivation, floriculture, and mushroom cultivation should be created for the poor while reducing their reliance on natural resources. Furthermore, new livelihood strategies will assist resource-dependent communities in achieving economic stability and attaining



balanced use of resources. The increasing income of households will encourage the use of cooking gas rather than firewood resulting in a reduction of the pressure on forests by cutting trees for firewood.

7. CONCLUSION:

Natural resources are significant for rural livelihood as they depend on them to meet their economic and socio-cultural needs. Though there is no harm in using the nearby resources, the question arises when there is a state of threat occurs due to the excessive and irrational use of the resources. Hence, the conflict between rich and poor households came into the picture in terms of consumption of natural resources. Various studies identified that the usage of natural resources is vital for rural communities and helps them to evacuate from the vicious cycle of poverty. Contrary to this, other case studies revealed that rural communities' dependency exploits natural resources and suggested minimal dependency on resources is substantial for resource conservation. The Sakatpur Village which is in the foothills of the Aravalli ranges of Manesar tehsil characterised by dense forest. The local people of this village are highly dependent on the services provided by the nearby forest ecosystem. Over the past few decades, the private sector has been intervening in the ecosystem by establishing farmhouses and associated activities. Such unceasing practices have opened the aspirations of other developers too resulting in to degradation of the forest ecosystem as well as an increased threat to the livelihood of local people. As a result, people are becoming poor due to the limited access to the forest and its services. The worsening relationship between poverty and resource dependency became an undesirable challenge for natural resource management. Thus, there is an urgent need to empower the institutions at grassroot level which will determine how people use the resources and their dependence

REFERENCES:

1. Millennium Ecosystem Assessment. *Ecosystems and Human Well-Being: Synthesis*. Washington, DC: Island Press. 2005.
2. Dawson N. & Martin A. (2015) "Assessing the contribution of ecosystem services to human wellbeing: A disaggregated study in western Rwanda" *Ecological Economics*, 117, 62-72.
3. Yaro J. (2010) "Poverty and Land Degradation Linkages in the Developing World, Ghana Journal of Geography, Volume 2, University of Ghana.
4. Ellis, F. (2000). The determinants of rural livelihood diversification in developing countries. *Journal of Agricultural Economics*, 51(2), 289-302.
5. Chopra N. Singh S. et al. (2007) "Who Collect Resources in Degraded Environment? A Case Study from Jhabua District, India" South Asian Network for Development and Environmental Economics, Working Paper 23-07, Kathmandu, Nepal.
6. Etongo D., Djenontin I. & Kanninen M. (2016) "Poverty and Environmental Degradation in Southern Burkina Faso: An assessment based on Participatory Methods" *Land*, Volume 5, Issue 3, <https://doi.org/10.3390/land5030020>.
7. Lee R. D. and Neves B. (2009) "Rural Poverty n Natural Resources; Improving access and Sustainable Management" Agriculture Development Economics Division, FAO, United Nations.
8. Mehta S. (2017) "Role of Traditional Practices in Conserving Environment: A Case of Manesar Village, Gurgaon" *IOSR Journal of Humanities and Social Science (IOSR-JHSS)* Volume 22, Issue 11, Ver. 10, PP 10-16.
9. Census of India (2011) "National Population Register & Socio-Economic and Caste Census, Registrar General and Census Commissioner of India, Government of India.
10. Berkes, E.B. (2010) 'Poverty, Development, and Environment', *Environment and Development Economics* volume 15, issue 06, pp- 635-660.
11. Adhikari, B. et al. (2004) 'Household characteristics and forest dependency: Evidence from common property forest management in Nepal' *Ecological Economics* 48, pp- 245-257.
12. Cavendish, W. 2000. Empirical Regularities in the Poverty-Environment Relationship of Rural Households: Evidence from Zimbabwe, *World Development* Vol. 28, No. 11, pp. 1979-2003.
13. Dewi, S., Belcher, B., & Puntodewo, A. (2010). Village economic opportunity, forest dependence, and rural livelihoods in East Kalimantan, Indonesia. *World development*, 33(9), 1419-1434.
14. Narain, U. and Gupta D. (2008) "Poverty and Resource Dependence in Rural India" *Ecological Economics*", Vol. 66, No. 1, pp.161-176, U.K.