

Natural Resources Management in Odisha

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Abstract

Natural Resource Management is a developing community in which each & every aspects of natural resource is conserved and manage properly to serve a public and industrial demand without affecting ecological system. Easy-to-understand presentation of data in 'Geo-environmental mapping' requires identification of Geo-environmental indicators and unit, in relation to Natural System Unit (NSU) or Terrain Mapping Unit (TMU) in evaluation procedure in different ecosystems that include marine, costal, deserts, hilly tracts, mountains etc. . In many parts of the world, usage of natural resources including forest, water, fisheries, mining and other natural resources, rights to use as dynamic & flexible form of social, economic and political changes. So that natural resource management would explore the role of multiple institutions in managing conflict and shaping negotiations, policies and adapting to changes.

PRADAN, a national level Non – Governmental Organization (NGO), has successfully intervened in natural resource based promotion through NRM in Keonjhar, Mayurbhanj districts of Orissa. The physical interventions include 30-40 model in the upland, followed by 5 per cent model in medium uplands and creation of seepage ponds and tanks and sometimes, micro Lift Irrigation (LI) facilities in lowlands. The construction of tanks and seepage ponds, coupled with better agronomic practices like High Yielding Varieties (HYV) paddy, System of Rice Intensification (SRI) in Kharif, promotion of summer paddy and vegetable cultivation in winter have been successfully promoted in this area.

Key Words - Geo nature scope, evaluation, Stimulation, Utilization, Development, Intervention forms

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Introduction

Natural resource management (NRM) refers to the management of natural resources such as land, water, soil, plants and animals, with a particular focus on how management affects the quality of life for both present and future generations . NRM deals with managing the way in which people and natural landscapes interact. It brings together land use planning, water management, biodiversity conservation, and the future sustainability of industries like agriculture, mining, tourism, fisheries and forestry. It recognises that people and their livelihoods rely on the health and productivity of our landscapes, and their actions as stewards of the land play a critical role in maintaining this health and productivity.

Natural Resource Management programmes include developing community in which each & every aspects of natural resource is conserved and manage properly to serve a public and industrial demand without affecting ecological system. In many parts of the world, usage of natural resources including forest, water, fisheries, mining and other natural resources, rights are dynamic, flexible and subject to frequent negotiations because of uncertainty due to depletion as well as due to social, economic and political changes. So that natural resource management would explore the role of multiple institutions in managing conflict and shaping negotiations, policies and adapting to changes. NRM is the taking care of natural resources such as land, water, marine and biological systems, with a particular focus on how the management affects the quality of life. Primary focus on natural resource management means taking into account the climate, soils, water, vegetation and organisms when making decisions about the land they manage. The goal is sustainability - balancing social (people and communities), economic (money and jobs) and environmental (land, water, air and living things) factors to make sure that our children and grandchildren can equally benefit from our natural resources.

Three Key Concerns

Three persistent concerns are consistently raised regarding NRM

1. Renewable resources are utilized beyond their regenerative capacity, which is especially troubling for the poor, whose resource-base tends to be narrow and less easily shifted geographically.

2. Non renewable resources are depleted with insufficient savings in man-made, human, or social capital, and with minor benefits directed specifically to the poor.

3. The “sink” capacity of the environment is overburdened by pollution, which in turn damages human health and ecosystem functions.

Objectives of the Study

◆ Natural resource management (NRM) is also congruent with the concept of sustainable development global land management & to understanding ecology and life-supporting capacity of those resources. & also similar to natural resource management

◆ NRM occur naturally form and bio diversity in various eco system, natural resource are derived from environment & many of them are essential for our survival while other are used for satisfying our wants .

◆ NRM programmes to developing soil, land, water conservation in micro watersheds, water resources in lift irrigation, canal irrigation, saving ground water for drinking water provision, biogas, saving agricultural input supply.

Methodology - Data collection Methods

Secondary Data — I propose to get the secondary data from the available sources like internet, Newspapers & Books and Magazines.

The methodological approach can be seen at various levels, for instance in the selection of research projects for select topics involving qualitative analysis methodological aspects. In their feedback, most of the participants in the programme indicate that their expectations had been exceeded, especially through the inter-disciplinarily, the networking opportunities, the international dimension of the programme, the reflective and self-evaluative competencies that they developed, and the impact these had on their re-visiting research practice.

Literature Review

The state of Orissa, on the east coast of the country, is spread over 1.55 lakh square kilometres. Out of the total 30 districts in the state, 16 have been classified as tribal districts. The state has around 22 per cent tribal population, 62 tribal groups and 13 Primitive Tribal Groups. The tribal groups in the state are found to be in different stages of transition, namely: Hunter Gatherers, Pastoralist Nomads, Rural Artisans, Shifting Cultivators and Settled Cultivators.

PRADAN, a national level Non – Governmental Organization (NGO), has successfully intervened in natural resource based promotion through NRM in Keonjhar, Mayurbhanj districts of Orissa. PRADAN has been able to promote agriculture and horticulture among 1,600 households spread over 20 villages. The erosion from the uplands are reduced through 30-40 model and the 5 per cent model in the medium uplands increases the soil moisture, thereby providing critical protective irrigation in Kharif in case of monsoon failure. The construction of tanks and seepage ponds, coupled with better agronomic practices like High Yielding Varieties (HYV) paddy, System of Rice Intensification (SRI) in Kharif, promotion of summer paddy and vegetable cultivation in winter have been successfully promoted in this area. The state, on an average, receives 1,495 mm of rainfall and is traversed with 11 major rivers, of which Subarnarekha, Mahanadi and Brahmani-Baitarani are prominent. The groundwater potential in the state is about 23.279 lakh hectares, out of which, only 7.7 per cent is currently being utilized. For the purpose of devising focused zone specific livelihood strategies, the state was divided into four zones based on three parameters –

- proportion of agriculture land in total landholding
- irrigation coverage
- population density

Research Design

A Research design is specific methods & procedures for conducting a particular study on different department that how Natural resource management to be understand & what is the better utility in availability Source & Resource.

Quantitative and qualitative evidence, gathered of the program, indicated that the TQE Initiative has achieved many of the intermediate and long-term outcomes programs for services all over the country like rural health , sustained economic growth and challenges for major problems like poverty, illiteracy, malnutrition etc. Natural Resource Management programmes include developing community in which each & every aspects of natural resource is conserved and manage properly to serve a public and industrial demand without affecting ecological system.

Diversion based water control strategy

In Odisha, the **Zone-A** is characterized by agricultural land, with reasonably high irrigation coverage and areas in command of large irrigation projects for intensification of agriculture through superior water control strategies and agricultural diversification towards high value crops. Horticulture plantation in the upland with in situ water management through creation of farm ponds, will steady cash income to farmers and also increase the cultivable area which provide critical supplemental irrigation to the paddy, resulting in yield enhancement and stabilization of paddy crop in Kharif season.

This **Zone-B** is characterized by agriculture land & cultivation practices in this zone, with low irrigation coverage, result in low yield. Thus, agriculture stabilization through Integrated Natural Resource Management (INRM) can contribute to the agriculture based livelihoods of the region. The uplands, which creation of low seepage farm tanks, in line with 30-40 Model, already piloted by some Civil Society Organizations, and fruit trees inter cropped with vegetables. The medium uplands, which largely depend on monsoons for paddy cultivation, can be treated through creation of farm ponds, shallow wells and group wells. This would enable stabilization of paddy cultivation during Kharif, followed by a second crop during Rabi season, thereby contributing to income enhancement of the household..

The **Zone-C** region depends on both, agriculture and forest resources, for livelihood. Intensive cultivation on homestead land and medium uplands, through superior on farm water control strategies and diversion of numerous hill streams through lined / unlined canal systems, can provide a livelihood fillip in this region. Since forests play an important role in the livelihood portfolio, initiatives towards value addition of Non Timber Forest Produce (NTFP) through processing and packaging can have important implications on the livelihoods in the region

The **Zone -D** typically falls within the mineral extraction areas, where the livelihood is cantered on mining activity. Villages in close proximity to mining areas are totally 42 % dependent on mining, while the interior villages 58% depend primarily on agriculture as the source of livelihood this zone will depend on the nature of the economy in the area. The villages are dependent on agriculture lack proper water control strategies So, development of horticulture in the uplands, through provision of irrigation by constructing tanks and small ponds, can be crucial for bolstering rural livelihoods. The paddy cultivation in the medium uplands can be stabilized through creation of dug wells, which would provide critical supplemental irrigation in case of monsoon failure.

Odisha Zoning based on Agricultural land, Irrigation coverage and Population density

Criteria	Agricultural land > 50% ZONE-B	Agricultural land < 50% ZONE-C & ZONE-D	Population Density
Irrigation coverage < 20%	ZONE B Sundergarh Mayurbhanj Kendujhar Bolangir Nuapada Kalahandi 74 Blocks <ul style="list-style-type: none"> • Predominantly Upland landholding • Low productivity • Rainfed agriculture • High distress migration 	ZONE C Gajapati Kandhamal Malkangiri Rayagada 61 blocks <ul style="list-style-type: none"> • Forest area more than 50% • Subsistence agriculture 	Population Density < 200
		ZONE-D Koraput Mayurbhanj Nabarangpur 19 Blocks <ul style="list-style-type: none"> • Livelihoods around mining • Horticulture in patches 	Population Density > 200
Irrigation coverage > 20%	ZONE A Bargarh Kalahandi Mayurbhanj 25 blocks <ul style="list-style-type: none"> • Well drained agricultural tract • Falls under various irrigation projects 		Population Density < 200

Research Study Analysis

Government of Orissa has been pursuing various development plan for initiatives to improve the quality of lives. To Ensuring social being one of the major foundation of development, and try to always proactively tries to make sure people's participation in development process. In spite of Government's intention to bring development to the people, development interventions do at times create undesirable consequences. The present policy draws its strength from experiences from the implementation of past policies.

Need for Sustainable Natural resource management

The environmental and climatic conditions of the area called for interventions in the field of natural resource management. Different governmental and non-governmental organizations have become engaged in the area. The program implements different projects such as agricultural development, soil and water conservation, agro-forestry and social development. The soil and water conservation and agro forestry projects are in charge of natural resource management with the objective to restore soil fertility, reduce soil erosion and combat desertification. The work is presented here as best practice in the field of sustainable natural resource management and combating desertification.

During the evaluation of the program, the evaluation team was surprised to find a well developed forest adjacent to the asphalt highway. It was characterized by indigenous as well as exotic trees and bushes and well established grasses. Climate change and population growth increase conflict potentials and threaten development efforts. The main effects of climate change—

- ✓ Declining food and water security in vulnerable areas agricultural region
- ✓ Threatened biodiversity
- ✓ Desertification and soil degradation
- ✓ Cutting trees
- ✓ Increasing migration and refugees
- ✓ Industrialization

Resource Utilization Natural resources in Globalization forms

Land and Soils :

Feeding an additional 80 million people a year requires about 26 million tons of additional grain annually. Soil fertility is the result of natural processes in healthy ecosystems, which include maintaining forests, vegetative cover, and soil biodiversity. 1990 global assessment of soil degradation found that 1.2 billion hectares almost 11 percent of the earth's vegetated surface have been significantly degraded by human activity over the past 45 years. Soil degradation affects more than 900 million people in 100 countries, some of them among the least developed nations.

Forests :

Grasslands, wetlands, and forests provide resources directly to billions of poor people living in rural areas, including timber, fuel wood, fiber, medicine, and food. In East Asia deforestation rates per annum range up to a high of 4 percent alone loses about 0.9 million hectares of forest every year (Crooks and others 1999). Similar patterns can be seen worldwide.

Water :

Water is one of the most important natural resources, and is at the same time becoming an increasingly scarce commodity in many parts of the world. In 1990, 28 countries with a total population of about 335 million experienced "water stress." This figure is expected to grow, according to some predictions, to around 50 countries, affecting some 3 billion people, by 2025. Countries affected by "water scarcity" numbered 20 in 1990; this number is expected to grow to 25 by 2025. The affected population could increase from 131 million in 1990 to between 800 million and 1.1 billion people by 2025.

In addition to water scarcity, the problem of access to safe water supplies and sanitation is also intensifying. Currently, one-fifth of the Earth's population does not have access to safe drinking water, and about one-third lacks adequate sanitation. Between 1990 and 2000 it has been estimated that an additional 900 million people will be born in regions without access to safe water and sanitation (Engelman and LeRoy 1993). In WTO report to estimates that more than 5 million people die each year from diseases caused by unsafe drinking water and lack of water for sanitation and hygiene (Watson and others 1998).

Air :

Rates of urbanization and per-capita energy consumption are rising rapidly in developing regions. Without aggressive abatement policies, air pollution will intensify in the coming years of 2025. The World Development Report 1992 estimated that 1.3 billion people were exposed to unsafe conditions by soot and smoke. Globally, estimates on outdoor air pollution about 0.6 % to 1.2 % of total annual deaths. In developing countries some 3.5 billion people continue to rely on traditional fuels for cooking and heating (WRI 1998). Finally, on a global scale, concerns are mounting over the release of greenhouse gases that threaten to upset climatic balances, with wide-ranging impacts.

Biodiversity :

The conservation and sustainable use of biodiversity is fundamental to achieving sustainable livelihoods & provide both goods for consumption and ecological services to maintain healthy environments and economies. The poorest rural people are most dependent on biodiversity and natural resources for their livelihoods, and it is they who suffer first and most severely when those habitats are simplified, degraded, or otherwise impoverished. Biodiversity, however, provides two special challenges for NRM most of its benefits continue to be considered as economic externalities, and benefits tend to accrue over the long term. Biodiversity is often regarded as a global issue; its widespread decline has cumulative impacts and consequences at the global level.

Findings :

The multiple legal frameworks also facilitate considerable flexibility for people to makeover in their use of natural resources, thus helping to cope with uncertainty. In many parts of the world, usage of natural resources including forest, water, fisheries, mining and other natural resources, rights are dynamic, flexible and subject to frequent negotiations because of uncertainty due to depletion as well as due to social, economic and political changes. In this context “natural resource management” would explore the role of multiple institutions in managing conflict and shaping negotiations, policies and adapting to changes.

Conclusion

This conclusion is supported by different data sources in about Natural resource management that how utilization in proper form. In survey report to know that how enhance rural Livelihood project in Odisha to use Natural Resource & naturally form and bio diversity in various eco system, natural resource are derived from environment & to developing soil, land, water conservation in micro watersheds ,water resources in lift irrigation , canal irrigation ,saving ground water for drinking water provision ,biogas, saving agricultural input supply and helps by Govt of Odisha in different Zones. Natural resources (NR) provides the fundamental life support, in the form of both consumptive and public-good services. Ecological processes maintain soil productivity, nutrient recycling, the cleansing of air and water, and climatic cycles. Natural resources foundation is coming under increasing pressure from both increasing population and higher levels of per-capita economic activity. During the period 1990 to 2030 the world's population is likely to grow by 3.7 billion.

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