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Conservation of Natural Resources for Ecological Sustainability: Implication of
MGNREGS in Forested Landscapes of Odisha

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Conservation of Natural Resources for Ecological Sustainability: Implication of MGNREGS in Forested Landscapes of Odisha

Abstract

Conservation of Natural Resources has been a major strategy for achieving ecological sustainability in the current development initiatives across the globe. The United Nations Millennium Declaration (2000) alarms that all of the humanity, especially, future generation are in threat of meeting their resource needs due to growing degradation of natural resources by growing economic activities. Also, the World Summit on Sustainable Development (2002) urges the vital role of the biodiversity in overall sustainable development, poverty reduction, human wellbeing and the livelihood and cultural integrity of people. Thus, the Millennium Ecosystem Assessment (MEA) in 2005 emphasises to establish the scientific basis for actions needed to enhance the conservation and sustainable use of ecosystems and their contributions to human well-being.

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) helps in conservation of various natural resources by implementing works on water conservation and harvesting, afforestation and plantation, soil conservation, land development, flood protection and so on. It contributes in replenishment of the depleted ecological resource bases in rural areas. Again, the implications of MGNREGS for strengthening the natural resources manifested itself to identify its linkages with other development initiatives so that their coordinated energies can be leveraged for long term benefits.

Based on available literatures and information the current paper analyses the potential contribution of MGNREGS on conservation of various natural resources (land, forest, water, etc.). The study suggests that effective and comprehensive implementation of the MGNREGS will have significant impact on ecological sustainability. This will be helpful to replenish the depleted ecological bases at local level.

(Key words: Natural Resources Conservation, Ecological Sustainability, MGNREGS)

Introduction

One of the major challenges facing human being is environmental degradation, including deforestation, desertification, pollution, and climate change – an issue of increasing concern for the international community which leads to the vulnerability of the communities and scarcity of resources. Climate change leads to an increase in the intensity and frequency of extreme weather events, such as heat waves, and long and more severe natural hazards like floods, droughts and tropical cyclones and these phenomena impact negatively on forest resources, agricultural production, water resources and coastal areas. The vulnerable section of the people who are not able to recover from environmental shocks and stresses and cope with the extreme environment due to lack of adequate resources will mostly be affected adversely due to climate change. The major global environmental problems are climate change, ozone layer depletion, global warming, loss of biodiversity, forest and agricultural degradation of land, resource depletion (water, mineral, forest, sand, rocks etc.), environmental degradation, loss of resilience in ecosystems, livelihood security for the poor and so on.

Over-extraction and over-utilization of the environmental resources would increase the food insecurity, water stress and extreme weather events which would affect adversely the livelihood security of the poor communities and increase their vulnerability. The rapid growing population and economic development is leading to a number of environmental issues in India because of the uncontrolled growth of urbanization and industrialization, expansion and massive intensification of agriculture and the destruction of forests.

Environmental sustainability through proper resources management is one of the core issues in the current development initiatives across the globe including the Millennium Development Goals. The United Nations Millennium Declaration (2000) alarms that all of the humanity, especially, future generation are in threat of meeting their resource needs due to growing degradation of natural resources by growing economic activities. The World Summit on Sustainable Development (WSSD) held at Johannesburg in 2002 emphasises the vital role of the biodiversity in overall sustainable development, poverty reduction, human wellbeing and the livelihood and cultural integrity of people. Also, the Millennium Ecosystem Assessment (MEA) was carried out by 1360 experts from 95 countries during 2005 assess the consequences of ecosystem change for human well-being and to establish the

scientific basis for actions needed to enhance the conservation and sustainable use of ecosystems and their contributions to human well-being.

The Concept of Sustainability

The concern about sustainability can be traced back to T R Malthus (1766-1834) and W S Jevons (1835-1882) and other eighteenth and nineteenth-century thinkers who were worried about resource scarcity, especially in the face of population rise (Malthus) and energy (coal) shortages (Jevons). This issue was raised in the writings of Fairfield Osborn (1953) and Samuel Ordway (1953). The concept first came into the public arena in 1980 in the context of World Conservation Strategy (WCS) of the International Union for the Conservation of Nature and Natural Resources (IUCN). However, its focus was primarily addressing environmental sustainability, as opposed to linking sustainability to wider social and economic issues (Baker, 2006).

The concept of sustainability basically implies a characteristic of a system, a programme or a resource to last intact forever. In common parlance, sustainability connotes self-sufficiency and an implicit ideology of long-term self-reliance (Chambers and Conway, 1991). In his 1986 book, 'World Enough and Time', Robert Repetto mentioned that "the core idea of sustainability is that current decision should not impair the prospects for maintaining or improving future living standards. This implies that our economic system should be managed so that we can live off the dividends of our resources" (Rogers et al, 2006)

A sustainability issue arises whenever a valued system, object, process or attribute is under threat. The existence of the valued system, object, process or attribute could be threatened or its quality could be threatened with serious decline. In other words there is a sustainability issue whenever there is something that is valued that faces the risk of not being maintained. Whenever there is a strong sense of urgency, there is always a sustainability issue involved. This urgency could relate to something that already exists or to an understood potential. For example biodiversity might be threatened with extinction or the chance to realise the potential of a human being might be threatened, for example, if they remain in poverty or their lives are threatened by violence or disease. (The latter would usually be thought of as being social sustainability issues.)

There are two distinct concepts of sustainability. One, the Economist's worldview of sustainability is concerned about the long-run constancy of economic output, income or

consumption. Two, the environmentalist's concept of sustainability relates to long-run preservation of biosphere, that is, the sustenance of human populations and biodiversity conservation in a given geographical area/region, endowed with limited natural resources. The former, that is, the economic sustainability is production and consumption oriented, and the latter, that is, the ecological sustainability has sustenance of people and biodiversity conservation as its focal points. Environmental sustainability can be defined in terms of compliance with the carrying capacity limit of natural systems. Carrying capacity usually measured the number of people a natural system/area can sustain indefinitely or for a specific period of time, at a particular standard of living.

In the context of sustainability, two questions are important:

1. How long will our natural resources last, given the current consumption pattern?
2. How should we manage our natural resources and environment so that the future generations have access to at least the same quality of life as the present generation?

The first question of research longevity is really one of prediction and accounting; how do technology, taste, population and natural regeneration influence the stock of environmental goods that will be available from one time period to the next? Thus, the ethical motives behind sustainability are derived from a concern for the future, and the fear that the current trend in production and consumption are threatening the well-being of future generation.

The second question of sustainability "how should we manage our resources" requires that we have some management targets for the way in which resources are distributed across generations. The concept of Pareto optimality, useful in the analysis of welfare within a generation, is not applicable when we don't know the taste, preference or technologies of the future generation. Consumers, particularly the poor, tend to attached higher preference to consumption today than tomorrow. Should we ignore this tendency when thinking of sustainability, or should we include the society's time preference by discounting the value of future consumption when we decide how to manage for sustainability?

Related to the term sustainability, there are two notions - 'weak sustainability' and 'strong sustainability'. The former is defined as the maintenance of the value of aggregate stock of capital. It implies that we can substitute human-made capital for natural capital in

production and consumption, such that economic growth can be associated with improvements in environmental quality. By contrast, 'strong sustainability' posits that natural and human-made capitals are complements and can't be substituted for each other in either production or consumption. Consequently, economic growth that uses natural resources and generates waste must increase environmental degradation.

Defining 'sustainable development'

The last two decades have witnessed growing concern that the pattern of economic growth in many countries is not sustainable because of the depletion in stocks of many natural resources and the deterioration in the quality of various environmental services. These concerns have helped spawn a growing literature on "sustainable development." This emerging literature expands traditional growth-accounting approaches by giving considerable attention to natural resource stocks and environmental quality (Arrow et al, 2010).

In a landmark report, the Brundtland Commission (World Commission on Environment and Development, 1987: p.70) in its publication "Our Common Future" defined sustainable development as "... development that meets the needs of the present without compromising the ability of future generations to meet their own needs". In the Commission's view, sustainable development requires that future generations have no less of the means to meet their needs than we do currently; it requires nothing more. As needs are the austere component of well-being, economic development could be sustainable in the Commission's sense without having much to show for it.

In making the links between the economy, society and the environment, the Brundtland report puts development, a traditional economic and social goal, and 'sustainability' an ecological goal, together to devise a new development model, that of sustainable development. Sustainable development is a model of social change that, in addition to traditional development objectives, has the objectives of maintaining ecological sustainability (Baker, 2006). There are three approaches of sustainable development:

- Economic – maximizing income while maintaining a constant stock of capital
- Ecological – maintaining resilience and robustness of biological and physical system
- Socio-cultural – maintaining stability of social and cultural system

The Context of MGNREGS

The Government of India enacted the National Rural Employment Guarantee Act (NREGA) in 2005, which provides a legal guarantee for at least 100 days of wage employment in a financial year to each rural household whose adult members are volunteers to do manual unskilled labour. To translate this ‘right to work’ into reality, the Government of India launched the “National Rural Employment Guarantee Scheme” (NREGS) on 2nd February 2006 which was renamed as “Mahatma Gandhi National Rural Employment Guarantee Scheme” (MGNREGS) on 2nd October 2009. Initially it was being implemented in 200 identified backward districts in the country in 2006-07. Later on, it was extended to another 130 districts during 2007-08 and finally it covered all rural districts in the country in the financial year 2008-09.

Through MGNREGS, there has been created 6458953483 mandays of wage employment in the country since 2007-08 financial year to 2011-12 (up to Aug. 2011) benefiting 277882287 persons from 169695222 rural households out of which 10307422 households have completed 100 days of wage employment (www.nrega.nic.in, 2011).

However, the National Rural Employment Guarantee Act (NREGA) is a legal entitlement (and not merely a scheme like earlier WEPs). Accordingly, the National Rural Employment Guarantee Scheme (NREGS), renamed as Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) provides the legal guarantee of 100 days of wage employment to the rural labour households in a financial year. The primary objective of the Act is to enhance rural livelihoods by providing wage employment to the rural workers. Its auxiliary objective is to strengthen natural resources through works that address causes of chronic poverty, like drought, and so encourage sustainable development.

Environmental Dividends Generated through MGNREGS

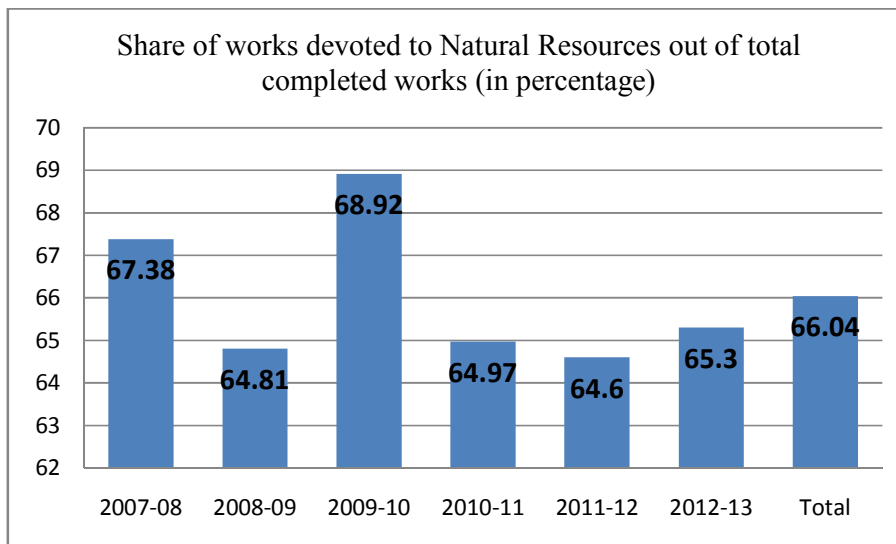
There are nine permissible heads where works can be undertaken through MGNREGS such as;

- i. Water conservation and water harvesting
- ii. Drought proofing, including afforestation and trees plantation
- iii. Irrigation canals, including micro and minor irrigation works
- iv. Irrigation facilities to SC/ST/BPL households and AIY beneficiaries
- v. Renovation of traditional water bodies, including de-silting of tanks

- vi. Land development
- vii. Flood-control and protection works
- viii. Rural connectivity
- ix. Any other notified works

Out of these nine heads, at least first six are related to conservation and development of natural resources such as; water, forest and land. The percentage of completed works/projects devoted to the conservation and development of Natural Resources to the total number of completed works under taken through MGNREGS in India since 2007-08 to 2011-12 is 66.06. Again, there is some year wise variation in this figure having the highest 68.92 in the year 2009-10 and lowest 64.81 in the year 2008-09. (figure - 1)

Figure – 1



Source – Compiled from Data given by MoRD, Government of India in (www.nrega.nic.in)

In the state level, Maharashtra, Andhara Pradesh and Madhya Pradesh are in the top three places having this figure at 93.94%, 88.93%, 85.43% respectively. Whereas Assam, Mizoram and Bihar are in the bottom three places with 26.99%, 30.72% and 31.78% of total MGNREGS works devoted to Natural Resources.

Many activities under MGNREGS have the potential to provide environmental services, and conserve and enhance natural resources (soil, water, grass and forest resources) (Tiwari et al, 2011). These activities bring benefits at the private or individual level

(land leveling and development) as well as the community level (irrigation tank desilting and grazing land development).

Inter-sectoral Convergence of MGNREGS

MGNREGS by encouraging works on afforestation and plantation, water harvesting, soil conservation, flood protection, helps to insulate local community from adverse effects of climate change. The potential of MGNREGS for strengthening the livelihood resource base is, thus manifesting itself and there is a need to identify its linkages with other development initiatives so that their coordinated energies can be leveraged for sustainable development. Thus, the inter-sectoral convergence of MGNREGS with the ongoing schemes of other ministries has emerged.

Convergence between two or more schemes/programmes is a mutual beneficial proposition with certain guidelines. It is a process of coordination and integration of the scheme with the local/regional economic development process. The objective of convergence is to optimize public investments made under existing schemes through suggested ways of linking and steering them towards a common/shared recipient end, both physical (area, infrastructure, natural resource) and human (person, group, agency). Convergence is expected to create value addition through resources and activity synergies as well as infusion of professional quality in planning and implementation.

Parameters of MGNREGS Convergence

Works identified under MGNREGS convergence will be planned and executed within the parameters of MGNREGS including:

- a) The cost of material component of projects including the wages of the skilled and semi-skilled workers under the scheme shall not exceed forty percent of the total project cost
- b) As far as practicable, a task funded under the scheme shall be performed by using manual labour and not machines
- c) There is complete ban on contractors involving in the works

Modalities for Convergence

In operational terms, convergence activities with MGNREGS will require coordination between programmes at the levels of Management, Planning and Works.

a) Management:

The District Programme Coordinator (Collector/CEO) will constitute a District Resource Group (DRG) at the district level with representatives from the concerned department with which convergence is being considered and the department of Rural Development and Panchayati Raj and a similar resource group at the Block level with the Block Resource Group (BRG).

b) Planning:

Guidelines of MGNREGS stipulate the formulation of the Perspective Plan to facilitate advance and long term development planning for the district. The aim is to identify the types of MGNREGS works that should be encouraged in the district and the potential linkages between these works, long-term employment generation and sustained development. The MGNREGS perspective plans identify the needs and gaps in the district in all sectors, not just related to works permissible under MGNREGS. Thus, the planning of the departmental projects is a necessary factor in the MGNREGS perspective plan. Multiyear planning of these departmental projects can be dovetailed in the MGNREGS Perspective Plan.

c) Works under MGNREGS may be at four levels such as, works approved in the current Shelf of Projects but not yet started, ongoing works, works completed, works yet to be selected for the next financial year (as part of the annual planning process).

The line departments with whom convergence can be initiated include the Ministry of Forest and Environment (MoEF), Ministry of Water Resource Department (WRD), Ministry of Land Resource Department and Horticulture Department, Fisheries Department and Indian Council of Agriculture research, Ministry of Agriculture, etc. in any of the schemes of either of these departments, with the works / activities under the purview of MGNREGS (MoRD, GOI, 2009). Actual convergence happens at the programme level like there is convergence of MGNREGS with National afforestation Programme (NAP) of MoEF, National Horticultural Mission (NHM) and Ksishi Vikash Kendra (KVK) of MoA, Accelerated Irrigation Benefits

Programme (AIBP) of MoWR, Desert development Programme (DDP) initiated by Department of Land Resource of Development.

All these programmes being converged with MGNREGS enrich the Common Pool Resources (CPRs) such as; water, forest, land etc. which are the pretty basic for the agriculture and other production systems in the rural areas and safeguard these resources from adverse effects of natural hazards like climate change and thus reduce the production vulnerability in the rural areas. Moreover, the convergence approach highly contributes to the productivity of these resources through labour intensive value added works. Hence promote livelihood opportunities of the rural communities.

Rational of Convergence Approach

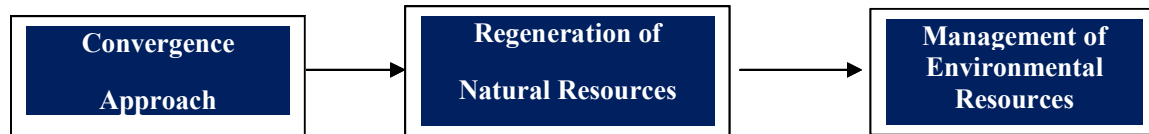
The inter-sectoral approach envisaged for implementation of MGNREGS brings with itself huge opportunities for convergences and for optimal use of resources as well as improving the quality of works. Such convergence leads to long run benefits and sustainable development (Khan and Kaur, 2010). And to lead sustainable development, multiple inputs from other schemes and programmes of government need to be converged with MGNREGS works. A convergence initiative covering forest and its adjoining areas including village common lands, community lands, revenue waste lands and private lands, under the watershed approach presents rich possibilities.

At local level the convergence approach of MGNREGS benefits to the communities by reducing their vulnerabilities. It also contribute to the national and global well-being by regenerating the degraded natural assets which shield the environment from the natural hazards such as climate change, global warming, greenhouse effects, acid rain, depletion of ozone layer and so on.

There is a value addition to the MGNREGS works which are converged with other schemes of line departments like MoWR, MoA, MoEF and so on due to increase in the quality of the works (Figure - 2). As one DRDA official of Sundargarh District in Odisha was explaining that, the local forest administration was not able invest to dig the pits up to the prescribed depth for plantation in a particular area due to shortage of fund. But, after financial convergence the forest department with MGNREGS, they could able to do so. Similarly, the MGNREGS can be implemented in those areas coming under the control of depart of forest

by convergence with the forest department. Also, the technical convergence will increase the value of the project by utilizing the technology from the line departments.

Figure- 2



(Value added to (Environmental Replenishment) (Ecological Sustainability)

MGNREGS works)

Due to these enormous potentialities, attempts have been made to expand the convergence initiatives and to cover a larger extent of works for NRM. Mr. Deep Joshi, Convener of the Working Group on NRM of National Advisory Council (NAC) recommended for two-thirds investment in natural resources management and the setting up of mechanisms for convergence with schemes for utilisation of productive assets. Also, it will focus on the development of land and water resources to increase their productivity and incomes to the poor; no other work will be taken up in a gram panchayat under the MGNREGS until the NRM works proposed by the gram panchayat (the Hindu, 2011).

Over a period of time, convergence initiatives were also foreseen as a tool for ecological replenishment through works undertaken for the conservation and development of the natural resources. Environmental restoration of the project areas made by the convergence initiatives provides indirect synergy with efforts for adoption to climate change and development of carbon sinks which significantly contribute to the environmental sustainability.

Conclusion

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) by undertaking works on conservation and development of natural resources in the form of water conservation and harvesting, afforestation and plantation, soil conservation, flood protection and so on helps in environmental resources management. In addition to the direct benefits from employment and income generation for the rural labour households, it helps to generate the crucial environmental services and act as a shield for local communities from various

natural hazards and reduce their production and other vulnerabilities. Hence, this programme presents enormous potentialities for environmental resources management through its inter-sectoral convergence with other line departments.

The convergence would help provide right guidance and direction while implementing projects through MGNREGA. This would help in the successful implementation of the projects for regeneration of natural livelihood base and the real purpose would be served over a period of time. The financial, technical and across-schemes convergences contribute value addition to the MGNREGS works/projects. Proper implementation of this scheme in conjunction with Forest Right Act 2006, will lead to land, forest and watershed development in rural areas (Sarap et al, 20013). Works for Natural Resources Management under MGNREGS should be taken up as a package, facilitating the provision of water lifting, micro irrigation, plantation material etc. in convergence with other schemes like National Horticulture Mission (Kareemulla, 2010). The multi-dimensional impacts of MGNREGS support a strong case for convergence of the schemes with the programmes of the line departments. The convergence initiative is an approach where all the stakeholders involved, including the local communities and two ministries/departments are gaining, as it tends to achieve a better management of the environmental resources over a period of time.

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