



Conservation of biodiversity and ecosystem services by REDD+ project in India



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Introduction

REDD+ (Reducing Emissions from Forest Degradation, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks) provides an opportunity for adapting resilience-oriented ecosystem management, and to ensure biodiversity conservation and flow of ecosystem services for sustainable development.

India is one of 17 mega-diverse countries, as identified by Conservation International, and has four biodiversity hotspots. India contains 668 protected areas comprising of wildlife sanctuaries, national parks, tiger reserves, elephant reserves, community reserves, and conservation reserves. India is recognized as one of the eight Vavilovian centres of origin and diversity of crop plants, and possesses more than 300 wild ancestors and close relatives of cultivated plants, which are still evolving under natural conditions. India is also a vast repository of Traditional Knowledge (TK) associated with biological resources (MoEF 2009).

At the same time in India, a large population is dependent on forests for their livelihood, either fully or partially. The figures estimated for forest-dependent communities in India vary from 200 to 350 million people. This dependence is in the form of collection of a variety of non-timber forest produce for subsistence and livelihood purposes, collection of fuel and fodder for subsistence and livelihood purposes, and lifestyles such as shifting cultivation or pastoral nomadism – which are dependent on natural resources. At the same time, local communities have been continuing with diverse sets of ownerships, rights, and concessions over the use of natural resources such as forests, inland waters, coastal areas, and alpine meadows etc. Thus, the ecosystem services, as characterized by the framework of Millennium Ecosystem Assessment, form an integral part of association of local communities with the ecosystems in India.

Thus, in the context of REDD+, the scope of biodiversity is not restricted to species diversity and populations, but also encompasses the strong dependence of local communities on the ecosystem services for subsistence and livelihood purposes. As the definition of REDD+ suggests, the regime provides an opportunity for not only carbon oriented management of the natural resources but also the scope to develop biodiversity conservation as an important objective of the management of natural ecosystems.

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Issues to address

Thus, considering the complexity of the subject in terms of conservation of biodiversity, sustainability of the natural ecosystems, and the livelihood dependence of the local communities, the policy needs to address national and global issues related to carbon accumulation, biodiversity conservation, and continued flow of ecosystem services.

At the global level, the various international processes have warned about the possible faulty design of REDD+ implementation due to the carbon-centric process of financial compensation. Hence, there is a need of effective and strong safeguards.

In the Indian context, the REDD+ policy regime for biodiversity should address:

- The continued flow of ecosystem services to enhance the livelihoods of local communities
- Ensure that the conservation of elements of biodiversity in the form of ecosystems, habitats, corridors, threatened and endangered species, wild relatives of cultivated plants, traditional crop varieties, and animal breeds takes place outside the protected area system
- Effective safeguards are in place to consider carbon as one of the benefits along with other ecosystem services, so as to balance the tangible and intangible benefits from biodiversity

In order to achieve these objectives the policy regime will have to incorporate the following aspects:

Enhancement measures for biodiversity conservation and ecosystem services

Conservation of various elements of biodiversity (genes, species and ecosystems as defined by the Biological Diversity Act, 2002) outside the protected area system is governed by a variety of legislations in a sectoral manner. In this, there has been a very distinct separation of wild and domesticated biodiversity in terms of management. Most of the wild biodiversity, mainly in form of trees, are regulated through prevalent Central / State forest legislations such as the Indian Forest Act, 1927. In the overall management of forests and biodiversity, apart from the Working Plan, there is no information gathered at the sub-national level for assessing the health of forests, or to generate understanding about the functioning of an ecosystem. The conservation of habitats, corridors, and threatened and endangered species is largely governed by the provisions of the Wildlife (Protection) Act, 1972. The REDD+ regime needs to value these habitats and biodiversity outside protected areas with an ecosystem perspective, which would enhance the efficacy of biodiversity conservation efforts. The selected tangible and intangible ecosystem services provided by such areas need to be understood in terms of harvesting limits and available stocks, and enhancement observed over the period. At present, sourcing of firewood, NTFPs, and agriculture such as shifting cultivation, have been considered under various policy and legal provisions for management. Overall dependence of people on the nearby forests has

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been substantially argued by the National Forest Policy, 1988, and hence also highlighting the need of 33% forests to strengthen the livelihoods of the people.

The network of more than 668 protected areas is the largest system for the conservation of wild biodiversity in the country. National parks are managed with a perspective of ecosystems and habitats, whereas wildlife sanctuaries are managed with a species-specific perspective. For every protected area, a management plan is developed and backed by government sponsored financial mechanisms. Apart from this network of protected areas, there are softer forms of conservation measures such as Biosphere Reserves, UNESCO Heritage Sites, and Ramsar Sites; identified on the basis of international priorities. Ecologically Sensitive Areas and Biodiversity Heritage Sites, as defined by national legislations, as well as variety of community conservation efforts in form of community forests and sacred forests form the main source of enhancement of carbon stocks.

Through the processes like certification, and Criteria and Indicators (e.g. Bhopal-India process), there should be mechanisms to recognize the change due to enhancement measures undertaken for REDD+ related activities.

Convergence of policy and legal provisions

Over the period, a variety of policy measures has been developed. Many of these measures provide opportunities for strengthening documentation and data collection; empowering local communities by recognizing responsibilities, ownerships, rights, and concessions; and creating suitable institutions. The mandates of National Forest Policy 1988 and National Environment Policy 2006 recognize the need to address the conservation of areas of biodiversity importance, increasing forest productivity, and restoring degraded areas; which are also anticipated as part of REDD+ policy regime. The legislative provisions developed as a follow-up to such national policies are listed below for cognizance to develop a policy environment conducive for REDD+.

- Indian Forest Act, 1927 (Defined concessions, Village Forests, Protected Forests, Transit of forest produce)
- Wildlife (Protection) Act, 1972 (Management of National Parks and Wildlife Sanctuaries, protection to Scheduled Species, Community and Conservation Reserves)
- Environment Protection Act, 1986 (Restoration of degraded lands, management of watersheds, Wetland management, and identification of Ecologically Sensitive Areas)
- Biological Diversity Act, 2002 (Guidance on sustainable use of biodiversity, Access and Benefit sharing of biodiversity for commercial use, identification of species of conservation importance, documentation of People's Biodiversity Registers (PBRs), declaration of Biodiversity Heritage Sites, local institutional mechanism in form of Biodiversity Management committees, and financial mechanism in form of National-State-Local Biodiversity Fund)

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Fuel wood requirements could be tackled through the installation of improved cooking stoves, biogas plants, LPG, and various other means at the village level.

- Protection of Plant Varieties and Farmer's Rights Act, 2001 (Mandate of conservation of plant genetic resources, financial mechanism in form of National-State-Local Gene Fund)
- The Scheduled tribes and Other Traditional Forest Dwellers Act, also referred as Forest Rights Act (FRA), 2006 (Defines Community Forest Resources, Critical Wildlife Habitats, provides ownership of minor forest produce to the local communities, and provides tenurial security for forest dwelling communities) The functioning of the provisions is also linked with performance of the ecosystems in terms of delivering the ecosystem services for livelihoods.
- State-level legislations pertaining to various aspects of biodiversity conservation and ecosystem services are important in understanding the local mechanisms and their efficacy. Legislations such as United Khasi-Jaintia Hills Autonomous District (Management and Control of Forests) Act, 1958 and Garo Hills Autonomous District (Management and Control of Forests) Act, 1961 recognize the traditional forest land-use systems such as *Law Lyngdoh*, *Law Kyntang*, and *Law Niam*.
- The guidelines and orders issued by the Ministry of Environment and Forests, and other central ministries, on aspects such as Joint Forest Management and Best Practices for extraction of medicinal plants are important for understanding the sustainability of implementation at the local level.
- Green India Mission has been launched; where 10 million hectares of land are targeted for improving qualitatively and quantitatively through village level institutions.

There is a need to develop a co-ordinated approach for having convergence of these numbers of provisions. To evolve this convergence there is need to understand the utility and the interconnectedness of these provisions at local, sub-national, and national levels. For example the provision of People's Biodiversity Register documentation in the Biological Diversity Act, 2002 is of importance not only in the context of documentation of traditional knowledge, but also in the preparation of JFM micro-plans, the number of requirements under FRA, and so on. Such convergence should benefit to avoid the multiplicity of the local institutions being created under various legal provisions and for short-term purposes.

The REDD+ policy regime also takes guidance from the international process for developing the mechanism for monitoring, reporting, and validation.

Developing safeguards for biodiversity conservation

The enhancement of carbon has been an important factor in REDD+ to receive the monetary benefits. It could become a driving factor to evolve the REDD+ programme into a carbon-oriented approach instead of treating carbon as one of the ecosystem services and reduce the biodiversity value. Apart from these, there could be possible undermining of rights of the local communities associated with the project landscapes. These threats have been also recognized by the Convention on Biological Diversity and United Nations Framework Convention on Climate Change (UNFCCC).

Potential risks for biodiversity of poorly designed REDD+ efforts include (UNEP/CBD/WS-REDD/1/3):

- The conversion of natural forests to plantations and other land uses of low biodiversity value; and the introduction of growing of biofuel crops;
- The displacement of deforestation and forest degradation to areas of lower carbon value and high biodiversity value;
- Increased pressure on non-forest ecosystems with high biodiversity value; and
- Afforestation in areas of high biodiversity value.

Specific risks of REDD+ for indigenous peoples and local communities include (UNEP/CBD/WS-REDD/1/3):

- Loss of traditional territories and restriction of land and natural resource rights;
- Lack of tangible livelihood benefits to indigenous peoples and local communities and lack of equitable benefit sharing.
- Exclusion from designing and implementation of policies and measures; and
- Loss of traditional ecological knowledge.

The proposed REDD+ regime provides an opportunity for sub-national actors, like States, to address the delicate issue of poverty in resource-rich regions such as forested and tribal dominated States.

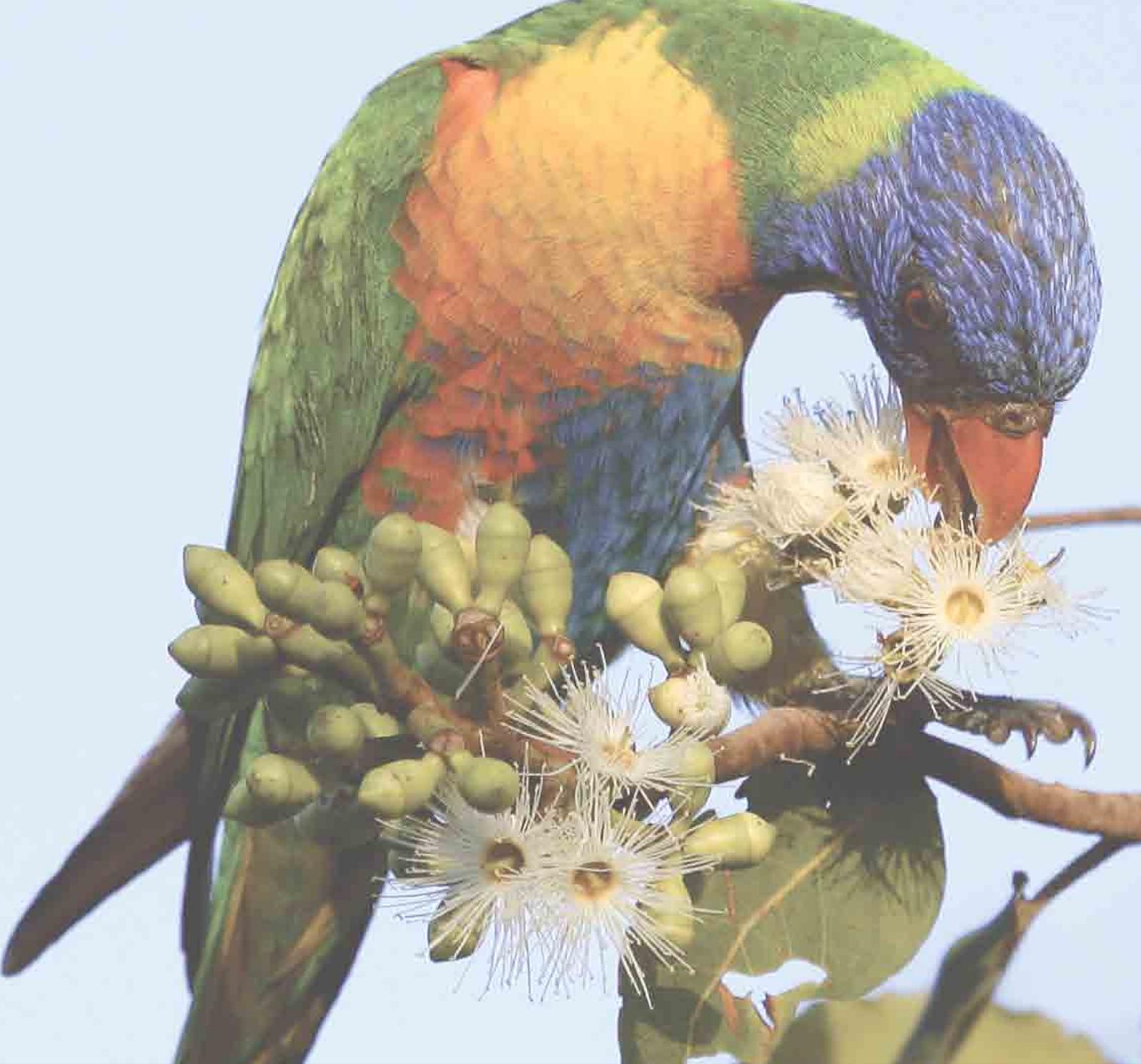
These risks can be mitigated (i) through appropriate implementation and monitoring of the application of safeguards as outlined in UNFCCC COP decision 1/CP.16, including by ensuring that conversion of natural forests is avoided, and by ensuring full and effective participation of indigenous peoples and local communities based on the United Nations Declaration on the Rights of Indigenous Peoples; (ii) by ensuring that REDD+ follows a comprehensive approach to forest-based carbon storage; (iii) by setting appropriate baselines and reference scenarios; and (iv) by monitoring biodiversity impacts of REDD-plus efforts, for example, in the context of reporting under CBD.

Conclusion

In conclusion, the REDD+ regime has to enhance the carbon and other ecosystem services, it should strengthen the efforts of biodiversity conservation, and help secure the livelihoods of the ecosystem dependent local communities in India. The proposed REDD+ regime provides an opportunity for sub-national actors, like States, to address the delicate issue of poverty in resource-rich regions such as forested and tribal dominated States. Such a regime also gives an opportunity for developing a much-needed integrated approach for implementation of developmental programs and enforcing biodiversity conservation at the local level. The state-level regime could assign a statutory role for facilitating the integrated approach to an identified agency like REDD+ Cell.

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