

Scoping Payments for Forest Environmental Services in India

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Introduction

Forest ecosystem services play a significant role in India's economic development, and a World Bank study into India's forest sector has recognised the huge potential to develop markets for forest products and services (World Bank, 2007). Forestry is the second largest land use in India next to agriculture. The recorded forest area of the country is 76.52 million hectares, which is divided into reserved, protected and unclassified forests. The extent of forest cover ¹ in the country is 67.71 million ha (20.60 per cent of total geographical area) as per the State of Forest Report-2005 of the Forest Survey of India. In India, about 90 per cent of the forests are under government ownership.

The nation is aiming to achieve 33% of area under forest/tree cover by 2012 in order to fulfill the objectives of the National Forest Policy. In order to achieve this, the national forestry action plan (NFAP) prepared in 1999 envisages an investment of Rs. 6700 crores per year over a period of 20 years. This is five to six times higher than the present total annual budget allocation to the Ministry of Environment and Forests. In one of the Judgements, the Supreme Court of India noticed :

"...felling of the trees is far in excess of what would be justified with reference to regeneration, and the main cause is non-availability of sufficient funds. It also notices that even with regard to the felling of trees as per working plans in the last three years, the corresponding prescription for regeneration has not been implemented."

(Supreme Court of India Judgment dated 26 September 2005, Case No. Writ Petition(Civil) 202 of 1995).

Governments play a critical role as the principal buyers of many ecosystem services and as catalysts for many private-sector direct-payment schemes (Kumar, 2005)². The potential benefits of introduction of PES schemes to support forest conservation in India have not been well endorsed by the Ministry of Environment and Forests, Govt. of India. This is due to the lack of evidence and knowledge on the

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¹ The forest cover comprises all lands more than one hectare in area, with a tree canopy density of more than 10 per cent, irrespective of land use and ownership

² Kumar, P. (2005), Market for Ecosystem Services, IISD, Canada

feasibility of PES in the Indian context. The preference is more towards a budgetary approach to pay the concerned states for successfully managing forest areas and providing ecosystem services³.

PES Models

WWF- India initiated a project in 2008 to examine the potential PES models for selected forest ecosystem services in Gangtok (Sikkim), Shimla (Himachal Pradesh) and Munnar (Kerala) in collaboration with the Institute of Economic Growth and supported by the World Bank (WWF, 2008). The summary of these models and key findings are presented below.

PES models for Gangtok (Sikkim)

The mountain state of Sikkim in north-eastern India is rich in biodiversity and landscape beauty, offering excellent opportunities for wildlife tourism as well as for trekking and mountaineering. While the State Forest Department is the primary custodian of almost 80 per cent of the land area of the state, including the network of 11 protected areas, only 46 percent of the state is under forest cover.

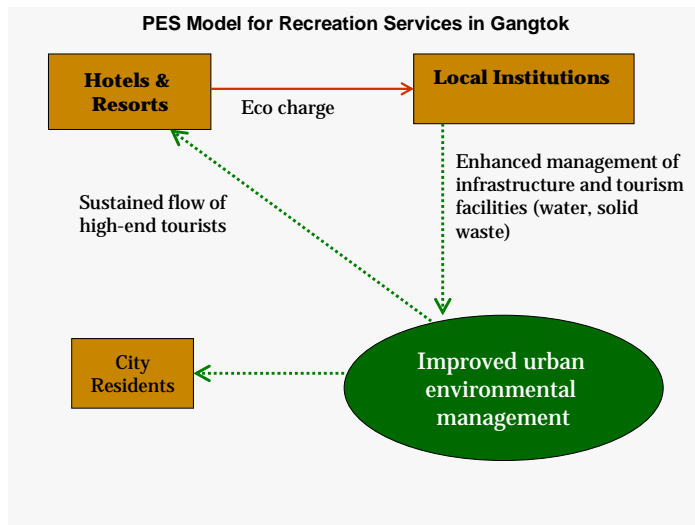
The population density of Sikkim is low, but people are concentrated in a few pockets in every district. Forests surrounding these areas are under severe biotic pressure due to pressures for land use change for meeting the housing and agriculture requirements of the growing population, and since about 85 percent of the state's energy requirements are met through fuel wood from the forests (Lama, 2001). Payments for environmental services have been proposed as a possible instrument for addressing some of the forest conservation issues in the state, including the strengthening of community based conservation initiatives.

The Lake Conservation Committee for *Tsomo Lake*, for instance, charges a fee from each tourist who visits the site. In return, the committee manages facilities such as solid waste management, garbage disposal and overall maintenance of the lake. The money that is collected is deposited into an account managed jointly by the *Panchayat*⁴ and the Committee. Similarly, in the Kancgchendzonga National Park, local people have organized themselves into the Kancgchendzonga Conservation Committee that is working toward mitigating adverse impacts of tourism through activities supported by a part of the fee paid by visitors to the National Park.

³ The Ministry of Environment and Forests, Govt of India responses to various forums on PES and related topics.

⁴ Institution of local self governance.

The focus of studies on PES models for Gangtok (Sikkim) was on (i) landscape beauty services (ii) recreational services and (ii) water supply services.



Source: WWF (2008)

The PES model for landscape beauty in Sikkim proposes a mechanism between local communities and their institutions, and trekking and tour service providers. The latter are expected to make a payment to the former for the maintenance of trekking trails and the management of natural areas. The model assumes that high levels of visitor satisfaction will result in a sustained flow of high end tourists. Naturally, such a flow will benefit the buyers of the service, that is, the trekking and tour operators. Spin off benefits are likely to accrue to the State Forest Department since some existing maintenance tasks will be offloaded from the Department to the local communities. The Tourism Department too will indirectly benefit from the increased tourist flow in the state

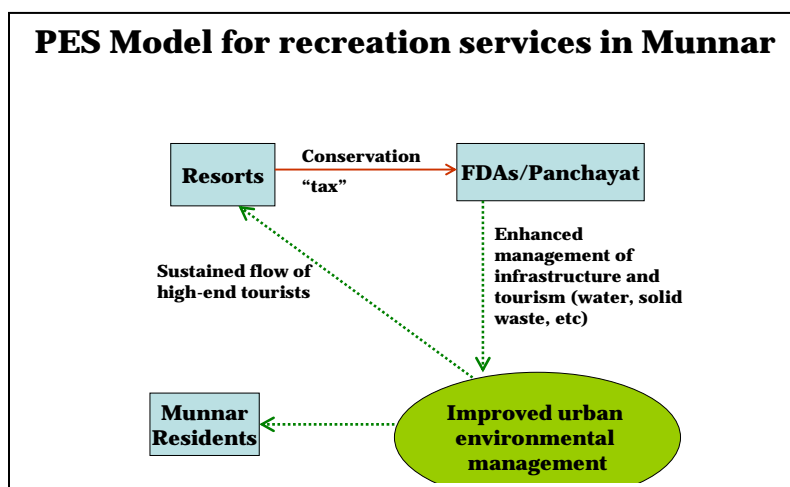
The PES model for recreation services provided by forests in Gangtok suggests that hotels and resorts in Gangtok town pay an 'eco-charge' or environment charge to local institutions that will be responsible for the management of facilities, including solid waste management and water supply.

The third PES model in the Sikkim context looks at the water supply services provided by forest ecosystems. Sikkim has a potential of 8000 mega watts of hydroelectric power, of which only 0.2 per cent has been harnessed. To maximize this potential, the Sikkim Hydro Electric Power Corporation and the National Hydro Electric Power Corporation have been developing projects to tap the power generation potential of the state. The uninterrupted generation of power in a hydel power project requires sustained water flows and low silt levels.

The model proposes that the hydro power corporations, as buyers of the water regulatory services, should make a payment for ecosystem services to the upstream land owners and managers who, as sellers of the service, will have to carry out agreed resource management practices likely to reduce siltation and sustain water flows. As a result, the power corporation will be able to provide adequate and uninterrupted electricity supply to consumers. In return, for high quality services, consumers will be required to pay rationalized electricity tariffs. For the model to be sustainable, the increase in revenue from the rationalized charges must be more than the payment made by the corporation to the land managers and owners. This incremental revenue will be the primary incentive for their participation in the mechanism.

PES models for Munnar

PES models in Munnar, located in the southern western ghats, focused on (i) recreational services and (ii) water regulatory services provided by forest ecosystems in the region.



Source: WWF (2008)

The PES model for recreation services seeks to address the problem of town planning and waste management in Munnar. The model assumes that unsustainable waste management and sewage disposal, as well as unregulated construction in Munnar adversely impacts forest ecosystems in the area. Any degradation of the “green component” of the area is likely to adversely impact tourist inflow into the area. The model proposes a market mechanism between potential buyers including domestic visitors, international tourists, traders/tour operators and potential sellers including the Forest Department, Plantation Companies, Private Land Owners, the Munnar *Gram Panchayat* or the local authority wherein the buyers make a payment to the sellers for maintenance of the town environment, particularly for

management of tourism infrastructure. The model assumes that such a mechanism will also benefit Munnar residents by providing them with cleaner environs and better livelihood opportunities.

The PES model on the water regulatory services envisages a payment mechanism between the above-mentioned buyers and sellers based on the condition that the sellers will carry out agreed upstream land management practices, which will result in reduced siltation and sustained water flows. The model suggest that the potential buyer, i.e. Kerala State Electricity Board (KSEB) will be able to supply adequate and uninterrupted power. The model assumes that satisfied electricity consumers will be willing to allow rationalization of electricity charges. While the details of the mechanism need to be worked out, it is acknowledged that the model may work only when the increase in the electricity charges is more than the payment for the ecosystem service.

PES models for Shimla

PES models discussed for Shimla are on (i) recreational services and (ii) water supply services provided by forest ecosystems.

Shimla, the capital of Himachal Pradesh, is a popular tourist destination recording the highest tourist inflow in the state. The Vision document for Shimla⁵ aims to increase high-end tourist inflow in the city from 60,000 in 2006 to 2,460,000 in 2021, with a corresponding increase in the average duration of stay from 1.35 days to 3.5 days. The Shimla Municipal Corporation (SMC) is the primary body responsible for city development. Hence the PES model for recreational services proposes that stakeholders dependent on tourism, like for example, the hotels and tour operators in Shimla make a conservation payment to the SMC, and local institutions for effective management of infrastructure and tourism facilities as well as the conservation of green cover. Since the Shimla forests are under the management control of the State Forest Department, the Department is also a potential 'seller' of the ecosystem service. The payments thus made will be invested in effective management of the environment, with the ultimate objective of ensuring a sustained flow of more satisfied and high-end tourists. The model recognises that the PES will work only if the additional revenue generated through increased tourist inflow is more than or equal to the conservation "tax" or "user fee" paid to the sellers of the service.

The PES model for water supply services in Shimla is based on the assumption that the availability of quality water is directly impacted by the land use and land management practices in the catchment of the water sources for Shimla. The model has been conceptualized in the context of the present water scenario in the state and the vision for water in 2021.

⁵ Municipal Corporation of Shimla (nd) Vision for Shimla. Shimla.

The SMC envisages addressing the water problems by 2021 to achieve sufficiency in availability of safe drinking water for all. Towards this aim, the SMC has adopted a multi-pronged approach including regulatory measures to manage demand and supply, tariff revisions to address lifestyle practices contributing to wasteful consumption, conservation measures including rain water harvesting and finally reducing losses through plugging leakages. The possible role of PES can be in supplementing these measures particularly through conservation of catchments for Shimla Water Supply for maintaining/enhancing quality and quantity of water flow.

Key Recommendations of WWF-India study are:

- (i) A mix of regulatory and market based approaches are suitable for introduction of economic instruments for forest management in India. There is a need to undertake pilot PES or “PES- like” projects that can work within the policy framework of the Government of India.
- (ii) PES on recreation or landscape beauty services can be successfully implemented within the policy context at a local level. Therefore, the State Governments should provide support to relevant NGOs and civil society groups to facilitate and build partnerships between potential “buyers” and “sellers” and facilitate PES initiatives at local level.
- (iii) PES projects on water supply services require wider consultation due to the sensitivity around privatisation of water services. Therefore, more feasibility studies need to be undertaken prior to implementation of such projects. These studies should be carried out with the active participation of non governmental organizations and other key stakeholders
- (iv) The PES models developed for the three sites need further validation through empirical research and the institutional arrangements and pricing need to be worked out

Conclusion

There is potential to introduce PES for forest ecosystem services in India. In order to secure active involvement and support from Govt of India for large scale projects, more studies need to be undertaken on relevant PES models.

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