

DESIRED INSTITUTIONAL AND LEGAL ENVIRONMENT FOR IMPLEMENTING PES MECHANISMS IN INDIA

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***Abstract:** Payments for Ecosystem Services (PES) is still in its formative years in India. While the creation of markets for ecosystem services has been theoretically recognized and experimented on pilot basis, the concept is still not envisaged in the institutional and legal framework in the region. Although the National Environmental Policy (2006) has recognized PES and attempts have also been made to establish PES in India; the legal and institutional frameworks to affect PES are still lacking. In this context, it is necessary to understand the requirements to create enabling institutional and legal settings under which PES can develop further. There are several issues which need to be sorted out to lay the groundwork for implementing PES in the region such as property rights, specific legal requirement for PES, and modifications in Contract Law to name a few. A detailed analysis of existing PES mechanisms can help to gain an understanding on the lacunas that exists and the problems that the stakeholders face on account of these loop-holes. The paper is an attempt to assess India's legal and institutional environment based on factors such as enabling laws and policies, property rights issues, cross-sectoral linkages and institutional system to draw lessons for providing inputs for more effective PES mechanisms in India.*

***Keywords:** Ecosystem Services; Payment for Ecosystem Services; Legal and Institutional Environment; India*

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PAYMENT FOR ECOSYSTEM SERVICES (PES)

Despite recognizing the importance of ecosystem services³ in determining human well-being, ecosystem services (ES) have largely been ignored not only in market; but also in law and policy (Landell-Mills and Porras 2002). On one hand where markets have not been able to send correct signals to encourage sustainable use of natural resources (Panayotou 1998); laws and policies in the past on the other have often not been designed to protect the ecosystems which generate valuable goods and services. In fact, many encourage degradation of these valuable ecosystems. In this context, when markets, law and policy have failed in reflecting the true worth of ‘life-supporting’ ecosystem goods and services, the concept of PES has emerged as a promising approach (Wunder 2005).

Although the literature identifies five general criteria to a successful PES (Landell-Mills and Porras 2002, Wunder 2005, Pagiola 2008) which includes (i) voluntary transactions; (ii) well-defined ES; (iii) buyer for ES; (iv) seller for ES; and (v) payment is conditional upon receiving ES; the legal and institutional context of PES is also unanimously recognized by authors as key to the success of PES (George, et al. 2009). The legal and institutional framework plays a fundamental role in supporting all aspects of PES mechanisms, particularly in countries with weak governance structures (FAO and REDLACH 2004, Mayrand and Paquin 2004, Wunder 2005, Huang and Upadhyaya 2007, Pagiola 2007).

This paper is an attempt to assess India’s legal and institutional environment to implement PES mechanisms based on important parameters such as enabling laws and policies, property rights issues, cross-sectoral linkages and institutional system.

CURRENT STATUS OF PES MECHANISMS IN INDIA

India has made significant progress in addressing deforestation and increasing forest cover through several policy and institutional mechanisms. However, it is still struggling to fight with degradation of ecosystems. Dealing with degradation and increasing forest cover is closely

³ Broadly speaking, “ecosystem or environmental services” refers to the benefits people obtain from natural ecosystems, in contrast with man-made structures. These services can be classified as provisioning services such as food, water, timber and fiber; regulating services that affect climate, floods, disease, wastes and water quality; cultural services that provide recreational, aesthetic and spiritual benefits; and supporting services such as soil formation, photosynthesis and nutrient cycling (MA 2005).

linked with enabling legal and institutional conditions which foster conservation and incentivize local community to invest in natural infrastructure.

Market-based instrument (MBI) as applied to ecosystem services, more generally termed as Payments for Ecosystem Services (PES) is a relatively new concept in Indian policy context. Although being still in its formative years, the interest in PES as a tool for natural resource management is growing, despite major setbacks.

Under-valuation of forest resources in India is causing immense losses to the sector and to the economic system. The present national accounting system in India under-records tangible benefits and ignores the contribution of intangible ecological services by forests. Although the role of ecosystem services in supporting livelihood and buffering against poverty is less exhibited than provisioning services, they play an important role in reducing vulnerability of the poor. Markets for ecosystem services can only be developed once the economic value of these services is estimated. Thus valuation is a pre-requisite for creating markets for ecosystem services (Verma, Kumar, et al. forthcoming). Valuation and accounting framework are needed for factoring in the intangibles from forests so to reflect the true contribution of the forestry sector to the Indian economy (Verma 2008). Such frameworks are also essential for encouraging investment in the sustainable management of natural resources through various PES mechanisms.

A number of factors influence the development of PES programs in India. Firstly, the governance structures for natural resource management in India vary from command-and-control to more decentralized, participatory approaches. Such governance structures shape the capacities of local and national-level institutions to support PES (Huang and Upadhyaya 2007). Secondly, due to high population density and low land holding per household, the transaction costs⁴ is relatively higher compared to other regions. And thirdly, much of the forest and agricultural land is state-controlled; with communities or individuals possessing weak property rights⁵. Owing to these reasons, India has been much slower in implementing PES as compared to Central American countries at a similar level of economic development, with many proposed schemes,

⁴ Transactions costs typically include the costs of information, coordination, bargaining and enforcement of contracts (Panayotou 1993).

⁵ Property rights should be: well-defined, transferable, enforceable, and secure over the long term (Ostrom and Schlager 1996).

but few mature projects (Landell-Mills and Porras 2002). Even within Asia, India has lagged behind countries like Philippines, Indonesia and Vietnam in regards to the number of PES mechanisms (Huang and Upadhyaya 2007).

DESIRED LEGAL ENVIRONMENT FOR IMPLEMENTING PES

In addition to the reasons cited, unsupportive policy frameworks - both legal and institutional - are a principal barrier to expansion of effective and efficient PES mechanisms in India. Currently, there is a lack of PES-specific supportive legal and institutional system in place. The fact that so few PES mechanisms have been implemented in India calls for a closer examination on the existing regime; and analyze how policies can be modified to support sustainable PES schemes.

AMENDING EXISTING LAWS FOR INTRODUCING PES

Private PES mechanisms do not require specific legal framework beyond basic contract law. However, scaling their positive results up through a nested approach may require a specific policy and legal framework. An effective legislative framework which regulates public PES mechanisms has the potential to stimulate the development of trustworthy markets and to ensure good governance. Introducing specific PES provisions through amendments to existing legislation requires less legal drafting and synchronization work. It would also provide an opportunity to clarify or further develop existing economic instruments.

Source: (Greiber 2009)

Owing to incomplete property rights, individuals do not bear the full costs, or receive the full benefits, of their actions (often termed negative/positive externalities). Property rights govern resource access, use and transformation (Ostrom & Schlager, 1996). Murtough, Aretina and Matysek (2002) note seven property right attributes of importance in enabling markets for ecosystem services and are shown in Table 1.

Inter-sectoral policies often create confusion over the appropriate role that a government is expected to play in the development and operation of specific types of PES mechanisms. There is an urgent need to coordinate and streamline policies and regulations in different sectors and government jurisdictions. For example, water and fertilizer policies (related to subsidy) often

have self-cancelling effects and end-up in degrading ecosystems. There have also been conflicts between the deliveries of ecosystem services as “private goods” versus “public goods;” as no legal definition of any of the ecosystem services to be purchased is available (Huang and Upadhyaya 2007).

The absence of legal and institutional support is felt while expanding a particular PES mechanism at a larger scale. Issues relating to property rights (such as who owns the land, who owns the natural resources and who owns the ecosystem services of the land) are essential to address when a successful PES model is to be replicated at a broader level. Potential PES buyers may hesitate as the legal standing for purchases and enforceability of contracts is not clear under the current legal regime.

A large number of laws, policies and programmes affect natural resource management in India. However, the paper discusses only important ones which are considered to be significant from PES perspective (Table 2).

The laws in many cases are either silent or ambiguous about the extent and nature of legal procedures and requirements necessary to enter into private/government and private/local community contracts, especially where the contract involves the management and use of land and its natural resources. Private contracts pertaining to natural resource management on public lands are considered a particularly risky area of Indian Contract Act.

Another potential obstacle to carbon PES is that the fact that A/R CDM⁶ Project Methodologies have still not developed significantly. The network of support organizations related to forestry can play an important role in developing methodologies for the same. Methodologies related to REDD⁷ and REDD plus⁸ mechanisms are also in their nascent stage of development and need serious efforts on the part of support organizations so to achieve dual objectives of poverty alleviation and ecological sustainability.

⁶ Afforestation and Reforestation Project activities under Clean Development Mechanism (CDM) of Kyoto Protocol.

⁷ REDD (Reducing Emissions from Deforestation and Forest Degradation) provides strategies and incentives for reducing emissions from deforestation and degradation as a key mechanism for international governments and partners to address global warming.

⁸ Refers to reducing emissions from deforestation and degradation, conservation of existing carbon stocks and enhancement of carbon stocks.

Due to the lack of legally enabling conditions, the risks associated with PES also increase as the private buyers are unsure about the political and public acceptability of their role in PES. Adding to that, unclear tenure rights for land and other natural resources defeats any attempt of ensuring long-term ecosystem service contracts.

As financial payments from PES mechanisms are often considered insignificant, non-financial benefits must be part of the explanation why communities should participate in such mechanisms. Incentives such as capacity building, strengthening of property rights and improvements in social capital are some of the major benefits that are being seen as significant (Porrás, Grieg-Gran and Neves 2008) and need strong institutional support for implementation.

From an ecosystem perspective, it would be ideal to reward good stewardship for the full spectrum of ecosystem services, rather than to focus on specific services. In the Indian context, it is proposed that four ecosystem services i.e. watershed services, biodiversity benefits, ecotourism (recreation) and carbon sequestration are focused upon owing to their scope and precision in estimating the economic value of these services compared to others. Moreover, the level of payments in most PES are not generally high enough to fully offset opportunity costs or cover transactions costs for the change in land use (Scherr, et al. 2006). It is thus essential for legal regulations to encourage bundling several ecosystem services such as carbon sequestration and adding soil organic matter or pollination and sell them together to minimize the transaction costs and make PES more efficient (Landell-Mills and Porrás 2002).

INSTITUTIONAL FRAMEWORK

India has an institutional set-up which can be used for implementing PES mechanisms with minor modifications in the role of institutions involved (Figure 1). The Ministry of Environment and Forests (MoEF) is the central institution responsible for framing laws and policies for the environment sectors. A PES Cell can be established as a central agency for ensuring inter-sectoral coordination with different Ministries for PES mechanisms. Although the functions of proposed PES Cell and existing CDM (Clean Development Mechanism) Cell in MoEF would be similar to a certain extent, the PES Cell would be concerned about all the ecosystem services and work at a much broader level while the later is only associated with carbon sequestration and energy efficiency (TERI 2009).

The PES Cell can be assisted by a network of educational and technical institutions such as Wildlife Institute of India (WII), Indian Council of Forestry Research and Education (ICFRE), National Remote Sensing Agency (NRSA), Forest Survey of India (FSI), Indian Institute of Technology (IIT), Indian Institute of Forest Management (IIFM), The Energy Research Institute (TERI), National Institute of Industrial Engineering (NITIE), and Indian Institute of Tropical Meteorology (IITM) among others by providing support in policy recommendation, PES mechanism design and monitoring, reporting and verification (MRV).

State Departments such as Forest Department, State Pollution Control Board, Environment Impact Assessment Units and other allied departments can be entrusted with the responsibility of implementing PES mechanisms in their respective regions. These departments can coordinate with other departments and non-governmental organizations for implementing PES under the guidance of national policy and legal framework. The concept of PES can also be incorporated in the departmental programmes such as Forest Working Plans and Micro-plans. These departments can be linked to the network of supporting organizations for getting technical support in order to successfully implement PES mechanisms by customizing effective and efficient PES designs according to the local context.

ROLE OF COMMUNITY INSTITUTIONS

Grass-root institutions such as Self Help Groups (SHGs), Joint Forest Management Committees (JFMCs), Watershed Users Associations (WUAs), Fisheries Cooperatives (FCs), Participatory Irrigation Management (PIM), Panchayats, and Cooperative Societies among others can undertake implementation of PES mechanisms at a local or regional level. The community institutions are ideally suited for this role as their scale of operation entails low transaction cost. These community institutions along with supporting state departments can ensure that the benefits from such mechanisms are equitably distributed among the local community.

With support from other academic and technical institutions identified earlier, capacity building programmes intended to build technical capacity and increase awareness on the importance of natural resources in local communities can be conducted.

Because PES mechanisms normally operate at a local level, Panchayats and other local-level community organizations can play a major part in implementing them in India. Panchayats also

have the most suited institutional underpinning required for PES due to financial powers of levy and taxes which makes their position critical.

CONCLUSION

Payments for Ecosystem Services (PES) is increasingly being proposed as a promising conservation approach for ensuring internalization of environmental externalities. However, PES can only work with good governance in place, comprising an effective political, legislative as well as institutional system. Implementation of very few successful PES mechanisms in India; compared to South American and other Asian countries; reveals that the legal and institutional framework in India is not very conducive for PES mechanisms. Although the paper proposes modifications in legal and institutional system, it advocates that introducing specific PES provisions through amendments in the existing legislation would be more effective than creating different PES specific legislations. An institutional set-up has also been proposed which utilizes the expertise of all the stakeholders involved so as to create better enabling conditions for fostering PES mechanisms in India. It is also proposed that community organizations undertake implementation of PES mechanisms as their scale of operation involves low transaction cost.

Table 1 – Property Rights Attributes for Enabling PES

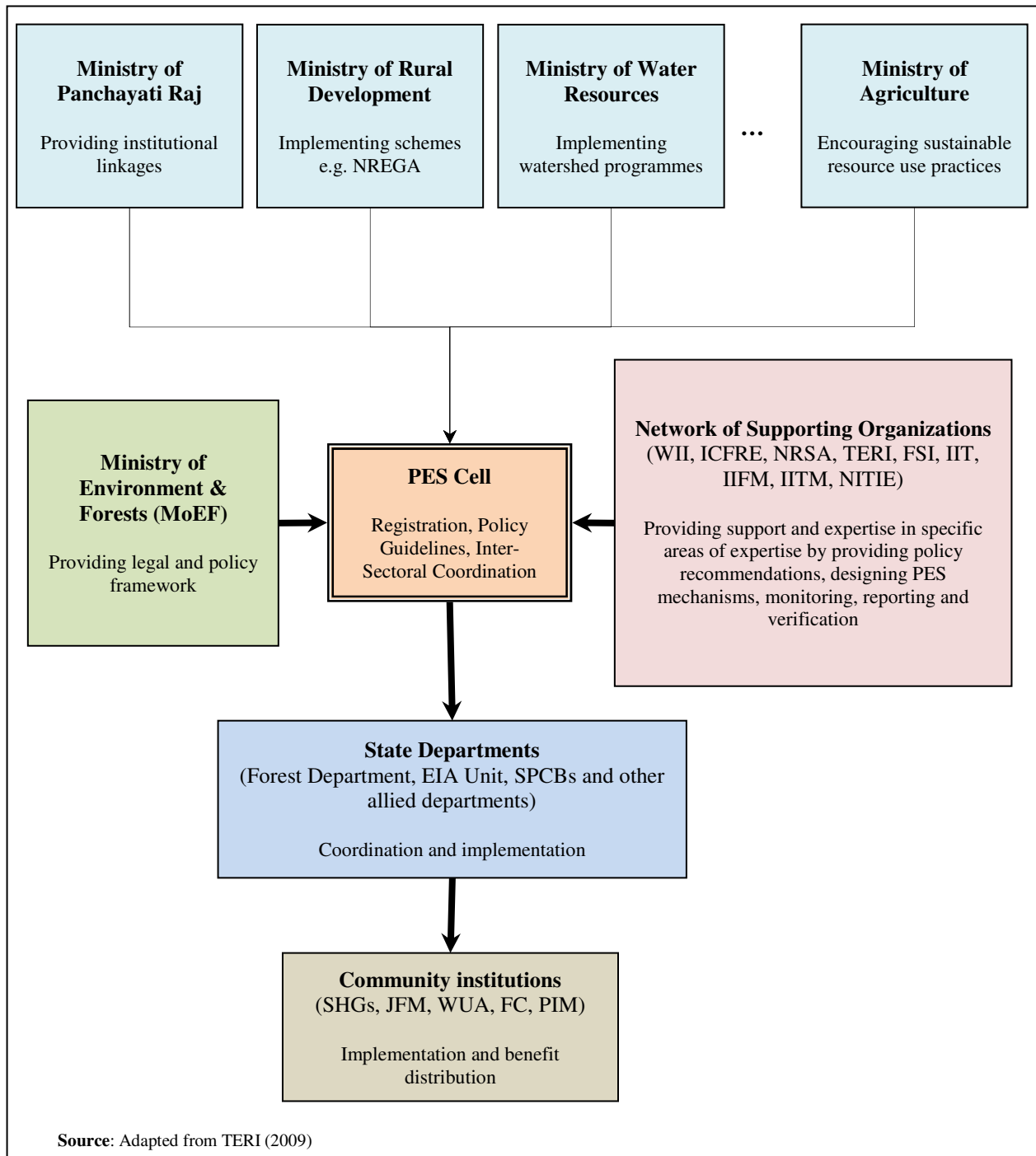
Property right characteristic	Description
Clearly defined	Nature and extent of the property right is unambiguous.
Verifiable	Use of the property right can be measured at reasonable cost.
Enforceable	Ownership of the property right can be enforced at reasonable cost.
Valuable	There are parties who are willing to purchase the property right.
Transferable	Ownership of the property right can be transferred to another party at reasonable cost.
Low scientific uncertainty	Use of the property right has a clear relationship with ecosystem services.
Low sovereign risk	Future government decisions are unlikely to significantly reduce the property right's value.
Source: (Murtough, Aretino, & Matysek, 2002)	

Table 2 – Existing laws, policies and programmes

Laws, Policies and Programmes	Key Points related to implementation of PES in India
Indian Forest Act, 1927	<ul style="list-style-type: none"> + First comprehensive act for forest management; still used – Does not support local community participation
Forest (Conservation) Act, 1980	<ul style="list-style-type: none"> + Aimed to halt deforestation + Compensatory afforestation amount (Net Present Value) has already been calculated and put into practice
National Forest Policy, 1988	<ul style="list-style-type: none"> + Has laid foundation for participatory forest management + Shift from revenue-oriented to conservation-centric forest management
Joint Forest Management (JFM) Guidelines, 1990	<ul style="list-style-type: none"> + Involvement of local communities in forest management put into practice + More than 100,000 FPCs managing 28% of country's forest area (MoEF & WII 2005, 41). These committees can provide the institutional support required for implementing PES. + Income generation through conservation has been demonstrated to the local community – Unaddressed issues: tenurial security, external influence in decision making, dominance of a particular caste or class within the committees, and financial sustainability (TERI 2009, 7)
National Environmental Policy, 2006	<ul style="list-style-type: none"> + Advocates recognition of traditional rights of natural resources to communities + For the first time recognizes the concept of ecosystem services and advocates PES
Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006	<ul style="list-style-type: none"> + Provision of tenure and other rights to individuals and local communities + Could assist in implementation of and equitable incentive distribution from PES if implemented in a satisfactory manner – Controversial act still struggling to differentiate between justified and unjustified claims

Laws, Policies and Programmes	Key Points related to implementation of PES in India
National Action Plan on Climate Change, 2008	<ul style="list-style-type: none"> + Advocates afforestation of wastelands and degraded forest areas + Recognizes the need for biodiversity conservation both within and outside Protected Areas – Guidelines still awaited – Money collected under CAMPA fund still unutilized
Biological Diversity Act, 2002	<ul style="list-style-type: none"> + Acknowledges the need to respect and protect knowledge of local communities related to biodiversity + Advocates sharing of benefits with local people as conservers of biological resources and holder of knowledge and information + Advocates involvement of self-government institutions for implementation of the Act through committees
The Water (Prevention and Control of Pollution) Cess Act, 1977	<ul style="list-style-type: none"> + The purpose of this Act is to levy cess on water consumed by certain categories of industry + This money, presently used by SPCBs can be used to finance PES mechanisms in the region

Figure 1 – Proposed Institutional Model for Implementing PES in India



References

- FAO and REDLACH. *Electronic Forum on payment schemes for environmental services in watersheds*. Santiago, Chile: FAO, 2004.
- George, A, A Pierret, A Boonsaner, C Valentin, D Orange, and O Planchon. "Potential and Limitations of Payments for Environmental Services (PES) as a means to manage watershed services in mainland Southeast Asia." *International Journal of the Commons* 3, no. 1 (2009).
- Greiber, Thomas, ed. *Payments for Ecosystem Services. Legal and Institutional Frameworks*. Gland, Switzerland: IUCN, 2009.
- Huang, M, and S Upadhyaya. *Watershed-based payment for environmental services in Asia*. Winrock International Working Paper No. 06-07, OIRED, 2007.
- Landell-Mills, Natasha, and Ina T Porras. *Silver Bullet or Fools' Gold: A global review of markets for forest environmental services and their impact on the poor*. London: International Institute for Environment and Development (IIED), 2002.
- MA. *Millenium Ecosystem Assessment*. Island Press, 2005.
- Mayrand, K, and M Paquin. *Payments for Environmental Services: A survey and assessment of current schemes*. URL: http://www.cec.org/files/PDF/ECONOMY/PES-Unisfera_en.pdf, Montreal: Unisfera, 2004.
- MoEF & WII. "Proceedings of National Consultative Workshop on Joint Forest Management." New Delhi, 2005.
- Murtough, G, B Aretino, and A Matysek. *Creating markets for ecosystem services*. Productivity Commission Staff Research Paper, Canberra: Ausinfo, 2002.
- Ostrom, E, and E Schlager. *The Formation of Property Rights*. Washington DC: Island Press, 1996.
- Pagiola, S. "Payments for environmental services in Costa Rica." *Ecological Economics* 65 (2008): 712-724.
- . "Payments for environmental services: from theory to practice." *Paper presented at the Global Workshop on Payment for Environmental Services*. Mataram, Indonesia, 2007.
- Panayotou, Theodore. *Developments of change: motivating and financing sustainable development*. London: Earthscan Publications Ltd, 1998.
- . *Green Markets: The Economics of Sustainable Development*. International Center for Economic Growth and the Harvard Institute for International Development, 1993.
- Porras, I, M Grieg-Gran, and N Neves. *All that glitters: a review of payments for watershed services in developing countries*. Natural Resource Issues No. 11, London, UK: IIED, 2008.
- TERI. *Is India ready to implement REDD plus? A preliminary assessment*. New Delhi: TERI, 2009.
- Upadhyay, Sanjay
- Verma, Madhu. "Framework for forest resource accounting: factoring in the intangibles." *International Forestry Review* X, no. 2 (June 2008): 362-375.
- Verma, Madhu, Pushpam Kumar, Mike Wood, and Dhaval Negandhi. "Does internalizing the regulating services alter the poverty-ecosystem dynamics: evidences from South Asia." forthcoming.
- Wunder, S. *Payments for Environmental Services: Some nuts and bolts*. CIFOR, 2005.