TENTH EXECUTIVE FOREST POLICY COURSE

REVISITING THE POVERTY REDUCTION AGENDA IN THE CONTEXT OF SDGs: OPPORTUNITIES AND CHALLENGES FOR ASIA-PACIFIC FORESTRY

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PAYMENT FOR ECOLOGICAL SERVICES: A WIN-WIN OPTION FOR POVERTY REDUCTION?

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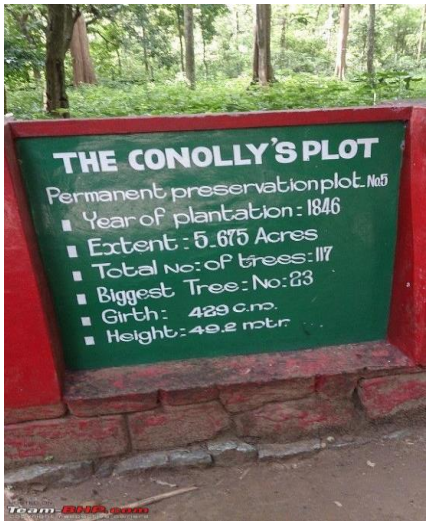
BACKGROUND

- Very few of us have been able to escape the jargon "PES" or Payment for ecological services" which has emerged as the "new kid on the block" of natural resources conservation.



- Forests are becoming more valuable for their environmental services than for their ability to produce wood and other products.

- It is in this context that we need to have a closer look at PES focusing on its effectiveness in managing land to provide ecological services and at the same time reduce poverty.

PURPOSE OF THE SESSION

- Provide an overview of the principles underlying the system of payment for environmental services (PES) .
- Discuss the experience in enhancing resources for forest management through payment for ecological services.
- Outline the opportunities and challenges for PES in contributing to sustainable forest management and poverty reduction.

SOME QUESTIONS

- What are the principles underlying the system of PES?
- How does it work?
- What is the experience of PES so far? How have PES performed as regards water shed protection, carbon sequestration, biodiversity conservation and the provision of amenity values?
- What are the challenges and opportunities in implementing PES?
- What are the conditions under which PES could become an effective mechanism for livelihood improvement.

RATIONALE OF PES

- Although many forest derived environmental services are critical to life, in the absence of a price tag, society pays little attention to conserving forests for the provision of such services.
- Land and forests have alternative uses which generate immediate and direct income.
- Most of the environmental services are externalities, not captured by the owners of resources.
- If they can be internalized through payment to resource owners by beneficiaries, there will be sufficient incentives for land owners to protect the environment.

DEVELOPMENT OF PES SYSTEM

- **Systems of PES are created through:**
  - **Policy interventions (Government directives or legislation) mandating payments.**
  - **True markets emerging through direct interaction between sellers and buyers**

- **Invariably in most cases policy interventions - in varying degrees have been responsible for creation of markets for environmental services.**

PES SUPPORTED ENVIRONMENTAL SERVICES

Environmental services for which PES systems have been attempted:

- **Watershed protection:** **Largely local / national market**
- **Carbon sequestration:** **Global/ national market**
- **Biodiversity conservation:** **Future markets**
- **Amenity values:** **Local, national or global**

There have been several PES initiatives with varying outcomes. PES tends to be relatively easy if there is a direct link between providers and users of environmental services and if the services can be quantified.

BUYERS AND SELLERS OF ECOSYSTEM SERVICES

Buyers

1. Public sector buyers (Aims to protect public goods: They could be local, regional or national governments or international organizations).
2. Private sector buyers acting under regulatory obligations.
3. Private sector buyers acting voluntarily – CSR obligations, "green brand" image.
4. Consumers of eco-certified products

Sellers

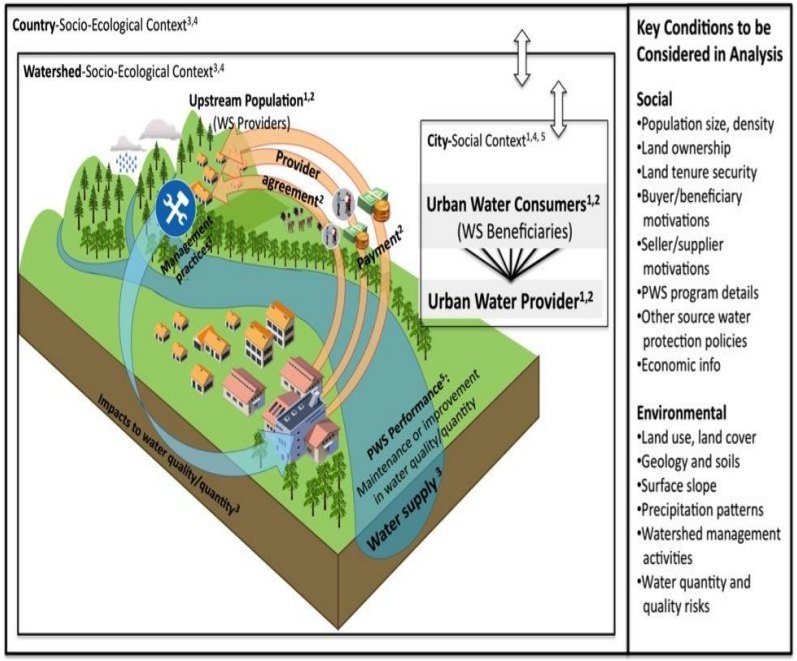
Most of the ecosystem services are derived from ecosystem processes and therefore land (or forest) ownership is a key requirement to be a provider of ecosystem service. This includes:

1. Government agencies
2. Farmers and other private land owners.
3. Communities owning land
4. Corporate players

Linking the sellers and buyers there are several intermediaries who perform a multitude of functions, including buying and selling, verification, assessment, certification.

PES FOR WATERSHED PROTECTION

- PES for watershed protection has received the most attention.
- The emphasis is to pay land owners in the uplands to ensure the land use practices does not cause any adverse impacts on the quantity and quality of water.
- Several countries are implementing PES for watershed protection at different scales. Most of the payment is mediated by public or private utility companies dealing with electricity and drinking water supply.
- However most of the watershed protection PES are lump-sum payments, not linked to the actual environmental services provided.



AN OVERVIEW OF WATERSHED PROTECTION PROGRAMMES (2015)

Description	Asia	Latin America & Caribbean	Oceania	World
Operational programmes	169	47	6	419
Value (USD)	14.2 Billion	65.9 Million	52.3 Million	24.6 Billion
Land area managed (Ha)	426.6 million ha	2.8 million ha	26,000 ha	486.7 million ha

Source: Forest Trend's Ecosystem Market Place 2016

AN OVERVIEW OF WATERSHED PROTECTION PROGRAMMES (2015)

- In 2015 governments, water utilities, companies and communities spent about USD 24.60 billion for green infrastructure to improve water supply.
- A total of 419 programmes in 62 countries invested in the natural ability of forests, wetlands and other ecosystems to ensure clean and reliable water supplies.
- This covered about 487 million ha globally.
- Land A total of USD 15.8 billion was paid as subsidy to land holders for good stewardship and another USD 7.6 billion was spent on the protection of public lands.

Source: **Forest Trend's Ecosystem Market Place 2016**

AN OVERVIEW OF WATERSHED PROTECTION PROGRAMMES (2015)

Mechanisms to protect watersheds				
	Public subsidies for watershed protection	User-driven watershed investments	Water quality trading	Environmental water markets
Count of operational programmes	**139**	**197**	**22**	**20**
Value in 2015 (in USD)	**23.7 billion**	**656.7 million**	**31.1 million**	**93.3 million**
Area in 2015 (ha)	**426.7 million**	**11.0 million**	**48,000**	**n/a**
Source: Ecosystems Market Place 2016				

AN OVERVIEW OF WATERSHED PROTECTION PROGRAMMES

- Globally China dominates the system of payment for watershed services. Public support for watershed improvement amounted to USD 13.5 billion in 2015.

- Vietnam's PFES is another most important system for watershed protection. Some 355000 rural households received payments to improve watersheds through water utility providers.

- Mexico is another leader in compensating land owners for watershed services accounting for about USD 60 million or about 70 percent of the watershed PES in Latin America and the Caribbean.

- In 2014 Peru has passed a law – Payments for Ecosystem Services Law – which provides the legal framework between land managers and beneficiaries of ecosystem services.

PES FOR CARBON SEQUESTRATION

- Payment for carbon sequestration is primarily an outcome of UNFCCC and the various policy regulations to limit emissions, especially the cap and trade arrangements.

- This has encouraged the emergence of a global carbon market, trading carbon credits to those who have to off-set their emissions. Two broad types of carbon markets exist:
  - Regulated compliance market; and
  - Voluntary carbon market

- Initiatives like CDM and REDD+ are very much dependent on carbon markets.

- Many challenges exist in the development of carbon sequestration PES

The largest emission trading system, EU-ETS does not permit the use of forestry carbon credits

PES FOR CARBON SEQUESTRATION

Top Asian Countries by Carbon Finance Value, 2007-2014

	VALUE	VOLUME
India	$205 M	56 $MtCO_2e$
China	$154 M	45 $MtCO_2e$
Cambodia	$40 M	4.3 $MtCO_2e$
Indonesia	$36 M	13 $MtCO_2e$
Malaysia	$31 M	2.6 $MtCO_2e$

CARBON MARKET CHALLENGES

- Market volatility. Carbon prices have declined over the last few years undermining the reliability of market mechanism to reduce emissions.

- Very high transaction costs: This significantly affects the market participation of small producers.

- High potential for fraud and malpractices. The Interpol has identified carbon trade as highly susceptible for fraud, money-laundering and illegality.

"Unlike traditional commodities, which at some time during the course of their market exchange must be physically delivered to someone, carbon credits do not represent a physical commodity, but instead have been described as a "legal fiction" that is poorly understood by many sellers, buyers and traders. This lack of understanding makes carbon trading particularly vulnerable to fraud and other illegal activities"

BIODIVERSITY CONSERVATION

BIODIVERSITY CONTRIBUTES TO:

- **PRODUCTIVITY: More diverse plant systems tend to be more productive.**
- **RESILIENCE: Diversity promotes stability as they are more resilient to external disturbances**
- **INSURANCE: Diversity provides insurance against catastrophic events**
- **KNOWLEDGE: Biodiversity can be used as a source of knowledge to develop new products in the biotechnology industry or pharmaceuticals.**

PES FOR BIODIVERSITY CONSERVATION

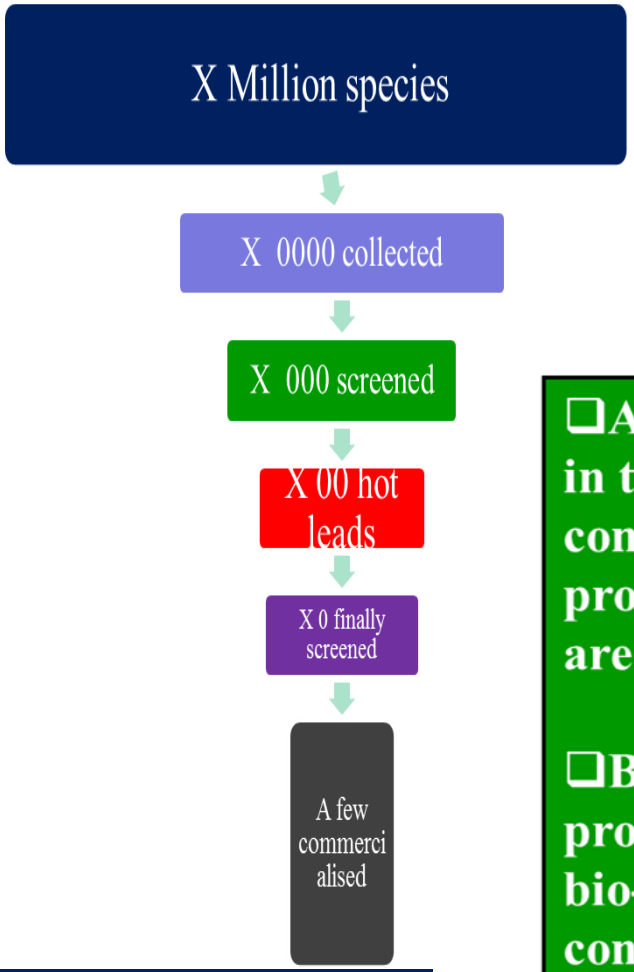
- Development of PES for biodiversity conservation is much more challenging, considering that the beneficiaries of conservation are invariably future generations.

- Biodiversity generates two types of values:
  - Values for the present generation by way of various products
  - Values for future generations
- In general values accruing to present generations are amenable to assessment.
- Estimating the values accruing to future generations is however, extremely challenging.
- Considerable difficulties exist in identifying beneficiaries among future generations and the precise nature of benefits they derive.

PES FOR BIODIVERSITY CONSERVATION

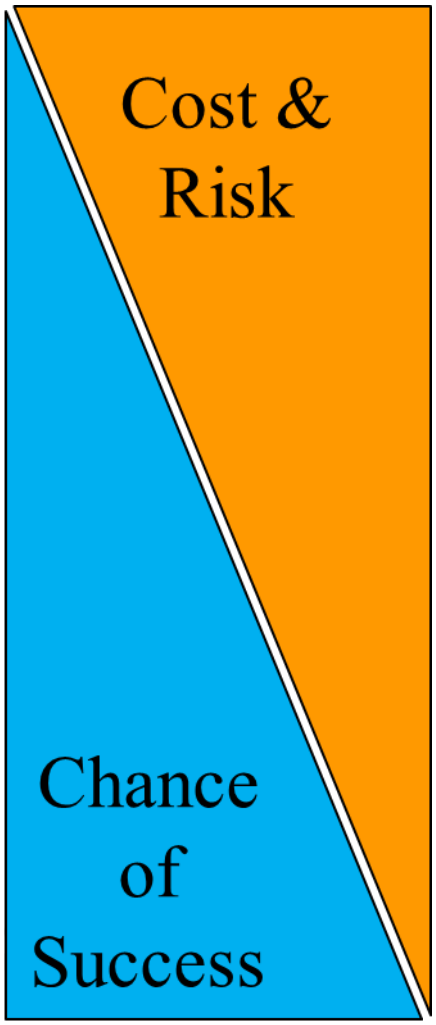
- **Different approaches have been adopted to encourage biodiversity conservation through rewarding/ compensating those conserving biodiversity. These include:**
  - **Payment for bioprospecting rights.**
  - **Private protected areas.**
  - **Conservation easements; and**
  - **Biodiversity offsets**
- **Globally the Nagoya Protocol of the CBD provides the framework for accessing and equitable sharing of benefits from biodiversity.**
- **However, many challenges – mostly in the realm of governance – persists in making biodiversity conservation economically viable and more importantly to enhance its contribution to rural livelihoods**

COSTS AND BENEFITS OF BIOPROSPECTING



Source: Evans-Illidge & Murphy https://www.cbd.int/financial/bens**haring**/australia-marine.pdf

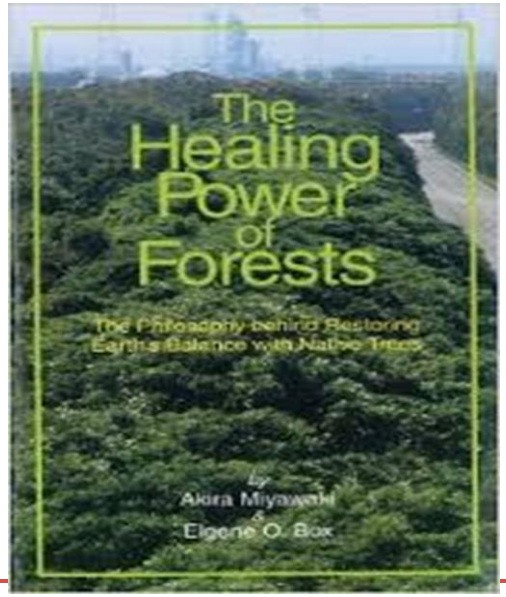
- A series of steps are involved in the production of commercially important products and at each stage there are multiple risks.
- Both those undertaking bio-prospecting and those allowing bio-prospecting face considerable uncertainties.



PES FOR AMENITY VALUES

- Amenity values is one of the fastest growing segment of the PES and there are many examples where use of forests to provide amenity values have significantly helped to improve the livelihood of rural communities.

- Growing demand for out-door experience from among a rapidly growing urban population have created new income opportunities.



- The challenges:
  - Ensuring sustainability and preventing the degradation of the site
  - Equitable sharing of benefits

MAKING PES TO WORK FOR POVERTY REDUCTION

Livelihood improvement through PES has to deal with multiple challenges – Economic, social, institutional and technical. It has to satisfy a number of necessary conditions including:

- ❑ **Effective regulatory framework.**
- ❑ **Favourable land and resource tenure.**
- ❑ **Industry and consumer preference.**
- ❑ **Public sector support.**
- ❑ **Effective local institutions.**
- ❑ **Knowledge and knowledge sharing arrangements**

MAKING PES TO WORK FOR POVERTY REDUCTION

Without proactive efforts to shape ecosystem payment systems and markets, there is no reason to believe that low-income land-stewards will receive more than a small share of the spending"

Milder J C *et al* 2010

TAKE HOME MESSAGES

- **Whether the full potential of PES to contribute to livelihood improvement will be realized or not depends:**
  - **The larger socio-political, economic and institutional environment;**
  - **The socio-economic conditions of the households.**
- **Ownership of land and forests is a key issue as regards realizing PES benefits by rural communities. Tenure reform is hence most critical.**
- **Need to consider the opportunity costs of provision of ecological services. Income from PES may not be commensurate with the income from foregone opportunities.**
- **PES is highly context specific: "One size fits all" approach is bound to fail.**

TAKE HOME MESSAGES

- **Developing a PES system in itself is an extremely challenging task. It requires a wide array of policy, institutional and technical interventions to work in unison.**

- **Enhancement of livelihood through PES makes it much more complex.**

- **Bundling of the different environmental services and adoption of a landscape approach could help to address some of the economic challenges in enhancing the livelihood role of PES**

The much touted win-win option of PES enabling conservation and poverty reduction will continue to be challenging and much depends on fundamental changes in the governance system.