

# Forest Policies for the 21st Century

## Sixth Executive Forest Policy Course

27 May - 6 June 2013, Thimphu, Bhutan

# *VALUATION AND PAYMENT FOR ENVIRONMENTAL SERVICES*

## **CTS Nair**

Organized by: Asia-Pacific Forest Policy Think Tank

- **Increased awareness about forest derived ecological services like watershed protection, carbon sequestration, biodiversity conservation, combating desertification.**
- **A shift away from wood production – logging bans in response to environmental catastrophes. Large extent of forests have been shifted out of wood production.**
- **Forest policies giving priority to environmental protection.**
- **Yet society and governments are not able to give adequate attention to managing forests for provision of ecological services.**
- **How do we ensure that society pays increased attention to the role of forests in the provision of ecological services:**
  - **Assess the value of ecological services provided by forests**
- **How do we mobilise more resources for forest management for the provision of ecological services**
  - **Develop systems for payment for environmental services so that forest owners have incentives to manage forests for environmental services**

# PURPOSE OF THIS SESSION

- **Outline the issues relating to the valuation of ecological services and their implications and relevance in forest policies**
- **Discuss the experience in enhancing resources for forest management through payment for ecological services.**
- **Assess the experience hitherto of carbon markets, REDD+ and other mechanisms in contributing to sustainable forest management.**
- **Discuss what may happen in the future as regards the provision of environmental services in the future and its implications.**

Valuation of ecological services



Payment for environmental services



Carbon markets, CDM and REDD+

# CONTRIBUTION OF FORESTS TO GDP

- As such the contribution of forestry to GDP is very low. Overall the share of forestry in GDP in the Asia-Pacific countries in 2006 was about 1.0 percent.

- Although absolute value of the contribution of forestry has registered an increase, as a proportion of GDP there is a decline - as is the case of agriculture and primary sectors – at the global, regional and national levels.

- There are only a few countries in Asia where forestry's contribution to GDP exceeds 2.5 percent (examples Bhutan, Laos, Malaysia, Indonesia, Nepal)

Country	Share of forestry in GDP (%)		
	1990	2000	2006
Bangladesh	2.2	2.0	1.7
Bhutan	13.8	8.8	6.9
India	1.8	1.3	0.9
Maldives*	-	-	-
Nepal	3.7	5.0	4.3
Pakistan	1.2	0.8	0.4
Sri Lanka	1.6	1.0	1.0
South Asia			0.9
Asia and the Pacific			1.0
World	1.4	1.2	1.0

# CONTRIBUTION OF FORESTS TO GDP

- **The reported low contribution of forestry is largely due to:**
  - ❑ **preponderance of informal sector, the transactions of which are not captured in the national income accounts,**
  - ❑ **misclassification of some of the products and services.**
  - ❑ **Exclusion of the environmental services from GDP estimates.**
- **It is argued that if we set right the problem of assigning the correct value to forests, many of the problems stemming from undervaluation will be resolved.**

# PUTTING A VALUE TO NATURE

- Two opposing schools as regards putting a price tag to nature (including forests).
  - Those who argue that if we don't put a price tag, society will not understand the importance of nature (including forests) and therefore there will be no commitment to conserve and protect nature.
  - Those who argue that putting a price tag is unethical and nature being a creation of god, assigning a value is immoral.
- Ongoing efforts towards natural capital accounting – The most recent being in Washington on 18 April when a Ministerial meeting involving 25 countries emphasized the importance of natural capital accounting.

*"Countries recognize that they cannot make difficult choices on development or achieve green and inclusive growth without the data to show how economic growth depends on natural assets. Natural capital accounting provides the data needed at every Cabinet table to make these choices. Since Rio+20 last year, we have seen momentum building. Whether it is water, forests or minerals, countries are coming forward to say they want to use natural capital accounting to manage these resources better."*



# BENEFITS FROM FORESTS

Goods and services		Beneficiaries
Direct benefits	Wood	Local and national
	Firewood and charcoal	Predominantly local, and to a limited extent national
	Poles	Local and national
	Non-wood products	Local, national and global
	Fodder	Local, national
	Recreational uses (Visitor days)	National, global
Ecological services	Watershed protection	Local, national and global (in the case of international rivers)
	Biodiversity conservation	Local, national and global – Mainly future generations
	Carbon sequestration	Global
	Arresting desertification and land degradation	Local, national and global
	Amenity values	Local, national
	Cultural values	Local and national

# VALUING FORESTS

	Use values		Non-use values		
Functions	Direct use value	Indirect use value	Option values	Bequest values	Existence values
	Timber	Watershed protection	Future direct and indirect use values	Future direct and indirect use values	Biodiversity, culture and heritage Benefits to stakeholders from the very fact of knowing their existence without actually using them
	Woodfuel	Carbon sequestration			
	Non-wood products (including fodder, honey, medicinal plants, etc.)	Arresting land degradation and desertification			
	Recreational and cultural use	Control of air pollution			
	Human habitat	Improved micro-climate			
Tools used to assess the values					
	Market analysis	Restoration costs	Contingent valuation	Contingent valuation	Contingent valuation
	Related goods approach	Preventive expenditure			
	Travel cost	Production function approach			
	Contingent valuation Method	Replacement costs			
	Hedonic pricing				

# STEPS IN VALUING FORESTS

two important steps in assessing the contribution of forests:

- Estimation of the quantity of products and services obtained/ obtainable from forests; and
- Assessment of their value to society.

Though this may appear to be simple several challenges exist in both the steps:

1. Estimating the quantity of wood and other products that could be obtained sustainably.
2. Measurement of environmental services – watershed protection, biodiversity conservation, carbon sequestration, prevention of land degradation, amenity provision –
3. Identifying mutually exclusive goods and services.
4. Putting a value to services which have no market prices.

# PAYMENT FOR ECOSYSTEM SERVICES

- **More forests are being excluded from wood production and set aside for the provision of environmental services.**
- **Decline in the income from forests and its potential negative impact on management.**
- **Creating markets for environmental services and ensuring that those who benefit from environmental services pay for such services.**
- **Payment for environmental services an appealing “two birds in one shot” proposition addressing the social and environmental dimensions:**
  - ❑ **Enhancing resource availability for sustainable forest management**
  - ❑ **Poverty alleviation.**

# KEY ECOSYSTEM SERVICES

## Key forest ecosystem services

- **Watershed protection.**
- **Biodiversity conservation.**
- **Carbon sequestration.**
- **Arresting land degradation and desertification.**
- **Amenity values: eco-tourism, urban forestry.**

**Will the development of markets for these services will help in enhancing resources available for sustainable forest management and whether PES will help alleviate poverty?**

# CHALLENGES IN THE DEVELOPMENT OF PES

- **Development of ecosystem services markets are related to the overall social and economic development.**
- **Even in many industrial and post-industrial societies PES markets have not been developed.**
- **So can we expect the development of PES in developing countries, enhancing resources for SFM and alleviating poverty?**
- **Challenges in the development of PES:**
  - **Policy, legal and institutional issues**
  - **Technical problems**
  - **Economic issues – Will PES generate income commensurate with the transaction costs.**
  - **Potential for aggravating poverty, when environmental services are brought under the purview of markets.**
  - **Potential of PES to accentuate forest related conflicts.**

# KYOTO PROTOCOL AND CDM

- **Reducing carbon emission and improving sequestration a global public good.**
- **Thrust of climate change mitigation to develop a globally acceptable framework to encourage significant reduction in emissions.**
- **Kyoto Protocol was adopted in 1997 and entered into force in 2005.**
- **First commitment period: 2008 – 2012 – Reduce emission by 5% of the 1990 level emission and to reduce it by 18% during the second commitment period 2012 – 2020 .**
- **Key emitters have not signed the Kyoto Protocol**
- **Mechanisms for implementation of Kyoto Protocol:**
  - **Emission trading**
  - **Clean Development mechanism**
  - **Joint implementation**

# FORESTRY UNDER KYOTO PROTOCOL

- **Annex I countries who are bound to reduce emissions could offset a certain part of their emissions through investment in carbon sequestration or substitution projects in non-Annex I (developing ) countries and acquire tradable carbon credits.**
- **Afforestation and reforestation as one category of projects supported under CDM.**
- **Challenges in getting afforestation/ reforestation projects approved**
- **As of today there are only 45 afforestation and reforestation projects of a total of 6912 CDM projects.**
- **Overall CDM has not been of any help to forestry.**

# CARBON MARKETS AND REDD+

- **REDD and REDD+ has originated on the premises that deforestation and forest degradation accounts for close to one-fifth of the CO<sub>2</sub> emission and afforestation/ reforestation projects under CDM have not made any impact on the forestry situation**
- **Bali action plan - 2007.**
- **Initially the thrust was on REDD and later it expanded as REDD+ recognizing the role of sustainable forest management in reducing CO<sub>2</sub> emissions.**
- **ADB in a study estimates that REDD+ could generate an annual resource flow of USD 2.8 billion to 7 countries, if deforestation rate is halved.**

# REDD+ AND SUSTAINABLE FOREST MANAGEMENT

- REDD+ is intended to enhance resource flows to sustainable forest management.
- Hitherto most of the thrust has been on enhancing REDD readiness primarily focusing on MRV (Monitoring Reporting and Verification).
- Is REDD+ is taking us to the “Tail wagging the dog” situation?
- Future scenarios as regards carbon markets and their implications.



# ISSUES FOR DISCUSSION

- **Do we have to put a price tag to nature to conserve it? Many communities protect forests and woodlands without putting a price tag.**
- **Will a price tag convince decision makers to enhance budget allocation to forestry?**
- **Are there any indications that PES could become a major source of income to forest owners, including governments, communities, farmers and other forest owners.**
- **Will REDD+ credits undermine carbon markets by way of creating a glut in the market and thus undermine genuine emission reductions?**
- **What does the vagaries in carbon markets indicate? Can we rely on carbon markets?**
- **What will happen to carbon markets in the event of governments pursuing the carbon taxing option?**

*Thank You*