

Fiscal Tools for Subnational Ecosystem and Climate Action



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Governance

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Introduction

Focus on three recent payment schemes pioneered for compensating costs incurred for biodiversity and ecosystem services.

- **Payments for ecosystem services (PES):** transfers resources to private or communal landowners (even local governments in a few countries)
- **Payments for reducing emissions from deforestation and forest degradation plus conservation, sustainable management of forests, and enhancing forest carbon stocks (REDD+):** an international development tool to help low-income countries to protect forests
- **Ecological fiscal transfers (EFTs):** used as an intergovernmental transfer scheme by governments to distribute a pool of resources



Theoretical arguments: Subnational climate action

Ring and Barton (2015) identify three major instrument categories:

- Regulatory instruments (building permits, protected area regulations, conservation planning, standard setting, and area zoning and planning)
- Fiscal instruments for delivering and financing environmental services as well as pricing environmentally harmful activities.
- Informational instruments to target individuals and communities for behavioral change.

Martinez-Vazquez 2021

- The main objective of an intergovernmental transfer (IGT) system is to correct interjurisdictional spillovers—subnational governments may be unwilling to provide an efficient level of services if they believe that people who reside outside the locality will enjoy many of the resulting benefits.
- In such cases, central government transfers will help maximizing positive externalities (in case of protection of natural parks) and/or minimizing negative externalities (in case of pollution).
- However, the design of IGT for climate change purpose has a bearing on achieving climate related outcomes.

In the case of India, for example, the 14th Finance Commission used the opportunity cost argument to include forest cover in the horizontal devolution formula:

“We believe that a large forest cover provides huge ecological benefits, but there is also an **opportunity cost** in terms of area not available for other economic activities and this also serves as an important indicator of fiscal disability. We have assigned 7.5 per cent weight to the forest cover (Fourteenth Finance Commission 2014).



Payments for Ecosystem Services (PES)

“ a voluntary transaction between two parties, a payer and a payee, in which payments for well-defined environmental services are conditional on the continuous provision of the services (Wunder 2007)”



Payments for Ecosystem Services—PES

Wunder (2013: 232) suggests that “no PES deal is possible if users’ maximum willingness to accept (WTA) falls short of providers’ minimum willingness to accept (WTA) compensation....If the economics of WTP and WTA do not square, there is no basis for PES.”

Key features of PES: ⁽ⁱ⁾ a voluntary transaction in which ⁽ⁱⁱ⁾ a well-defined environmental service (or a land use likely to secure that service) ⁽ⁱⁱⁱ⁾ is bought by a (minimum of one) buyer ^(iv) from a (minimum of one) provider ^(v) if and only if the provider continuously secures the provision of the service (conditionality). In a PES scheme, the buyer and provider can be private or public entities.

In public sector PES schemes, the state uses taxpayers’ money to buy environmental services from public or private entities.



PES—Country examples

Pan *et. al.* (2017) classify the PES schemes in China into five : (i) PES for key eco-functional zones; (ii) PES for non-commercial forest; (iii) PES for grassland conservation; (iv) PES for watershed conservation; and (v) PES for restoring mining sites. These schemes are financed by fiscal transfers (from central government to subnational governments), lateral payments (co-financed by central and subnational governments from their budget) and market trade (through a central government imposed Pigouvian tax).

In Brazil, the municipality of Extrema in the State of Minas Gerais established the Water Steward Program to protect water supply in the Sao Paulo region. This municipality-initiated program makes payments to rural landowners who (i) adopt soil conservation practices in order to decrease soil erosion and sedimentation; (ii) implement wastewater and solid waste treatment; and (iii) maintain vegetal cover in areas of permanent preservation and reserves according to federal and state laws. (Greiber 2009).



Intergovernmental aspect of PES

In an intergovernmental context, a PES scheme can be designed in 2 different ways:

- 1) Central governments as buyers of climate action (payer) and subnational governments as providers (payee). The potential applications of such a PES scheme include:
 - **Carbon sequestration and storage:** central government can use PES schemes to pay local governments for carbon sequestration activities such as planting additional trees and maintaining them, soil conservation and wetland protection.
 - **Biodiversity protection:** central government can use PES to compensate local governments for creating set-aside areas for biological corridors and other protected areas.
 - **Watershed protection:** upstream local governments can be compensated for adopting programs that limit soil erosion and flooding risks.
 - **Protection of landscape beauty:** local governments, especially in touristic areas, can be compensated for the protection of landscape beauty.
- 2) Central and subnational governments as joint buyers of climate action (payers) from public and private entities as providers (payees).



Challenges in implementing PES in an intergovernmental context—1

There are 2 potential implementation challenges with PES schemes (Pattanayak *et. al.* 2010): hidden information (adverse selection) and hidden action (moral hazard).

- Hidden information problem arises when environmental service providers have more information about the circumstances than buyers. In an intergovernmental context, this means local governments have more information about local conditions than a central government (classical proximity argument). Hidden information makes it difficult for central governments to design PES schemes and allocate an appropriate amount of budgetary resources.
- In case of hidden action, buyer or provider may find financially or politically costly to enforce the contract.

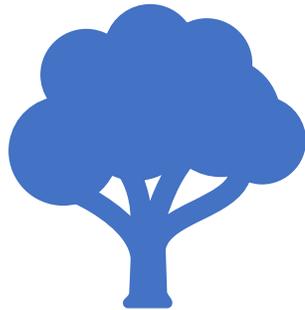


Challenges in implementing PES in an intergovernmental context—2

Monitoring the impact is at the heart of PES schemes: 3 important issues - conditionality, additionality and leakage. In a public PES scheme, the buyer (central government) should be well equipped to monitor conditionality, additionality and leakage of PES schemes.

- In terms of conditionality, the resource transfers to subnational governments (providers) should be based on strict monitoring of outcomes.
- In terms of additionality, changes on the ground should be directly linked to the PES interventions rather than for reasons other than interventions supported by a PES.
- The third issue of leakage happens when a PES intervention gives negative incentives to neighboring jurisdictions.

Last but not the least, institutional issues of trust, transaction costs and property rights (ownership of natural resources) are equally important.



Payments for reducing emissions from deforestation and forest degradation—REDD+

Reducing emissions from deforestation and forest degradation (REDD+), an incentive-based scheme that aims to reduce greenhouse gas emissions by protecting tropical forests, was initially proposed as a 'Payments for Environmental Services' system that would make payments by the international donors to domestic forest users.

Payments for reducing emissions from deforestation and forest degradation—REDD+



- REDD+ represents a group of international programs and projects to reward landowners, communities and countries in tropical regions for eliminating deforestation and forest degradation to stabilize the climate.
- It was envisioned as a catalyst for transformational change towards sustainable climate mitigation in the forestry and land use sectors (Brockhaus and Angelsen, 2012, Di Gregorio et al., 2015, Angelsen et al., 2018).
- The design of REDD+ programs incorporate lessons-learned from PES and payments are only made if there are improvements in deforestation baseline (Angelsen *et. al.* 2009).
- Challenges that have mounted in implementing REDD+ are both realistic and political – from how to measure and monitor the carbon emissions that have been avoided by leaving a forest standing, to deciding who should get the money generated by REDD+, to achieving coordination between local, regional, national and international levels of governance.

Payments for reducing emissions from deforestation and forest degradation—REDD+

- Some 600 REDD+ projects have been initiated to date (with approx. 400 still active), mostly implemented by socio environmental NGOs or for-profit project developers and financed by more than \$10 billion in donor funds in more than 65 countries.
- While REDD has taken on many forms over the years — ranging from voluntary and project-based approaches to national and jurisdictional-level schemes under the UNFCCC — the overarching framework continues to utilize incentives (often financial payments) to reward reductions in deforestation of tropical rainforests.
- The implementation of REDD+ activities is voluntary and depends on the national circumstances, capacities and capabilities of each developing country and the level of support received.



Payments for reducing emissions from deforestation and forest degradation—REDD+



- As of January 2020, a total of 50 developing countries have submitted a REDD+ forest reference level or forest reference emission level for technical assessment to the UNFCCC, covering more than 70% of the total forest area in developing countries.
 - 15 countries have submitted a summary of information on how safeguards are being addressed and respected,
 - 12 countries have submitted a national strategy or action plan.
 - 6 countries are listed in the Lima Information Hub for REDD+, having all elements in place to be eligible to seek and obtain results-based finance for REDD+.
 - In total, the REDD+ activities listed in the Lima Information Hub for REDD+ resulted in emission reductions of 6.3 billion t CO₂ eq
- Studies have shown that the Asia and Pacific region offers huge potential to benefit from REDD+ because its forests and peat lands are significant carbon sinks and are also currently important sources of carbon dioxide emissions.
- There are 10 countries in the region that have both high to moderate forest cover and are also experiencing high deforestation rates. These 10 countries alone could generate around \$2.8 billion in REDD+ revenues from even a modest forest carbon market, if their historical deforestation rates were reduced by half.

Multi-level Governance and Intergovernmental aspect of REDD+



- The predominantly global nature of climate change mitigation and local nature of climate change impacts and adaptation also pose specific multi-level governance (MLG) challenges for climate policy integration.
- In order to address the complexity of long-term environmental challenges, such as loss of biodiversity and climate change, and to overcome the limits of both central leadership and locally fragmented decentralization, Underdal (2010) suggests a multi-level system of governance combining sufficiently decentralized adaptive governance for local initiatives to grow, but also fostering networks for the diffusion of best practice and enhance collective action across scales.

Multi-level Governance and Intergovernmental aspect of REDD+



- Started as a global initiative with the focus on the global REDD+ architecture and how REDD+ can be included in a post-2012 climate agreement. But the debates and the focus of actions have now increasingly moved to national and local levels. More than 40 countries are developing national REDD+ strategies and policies, and hundreds of REDD+ projects have been initiated across the tropics.
- Multiple finance mechanisms for REDD+ are in operation/development—bilateral and trilateral agreements, multilateral facilities such as the Forest Carbon Partnership Facility and the Green Climate Fund, and private voluntary carbon markets outside the auspices of the UNFCCC).
- **The premise that performance-payments motivate governments to conserve forests has yet to be evaluated quantitatively.**

Multi-level Governance and Intergovernmental aspect of REDD+



- REDD+ can be used at the subnational level effectively as it will help setting up spatially specific deforestation targets. Countries should seek ways to incorporate results from local level monitoring into their national reporting systems, since overall REDD+ impact depends on land use decisions on the ground.
- REDD+ at the national level can be assessed through the lens of four inter-related themes: (i) institutions and processes to build the REDD+ framework; (ii) broad policy reforms to enable REDD+ implementation; (iii) sectoral policies to change incentives; (iv) and demonstration activities to test and learn from different approaches.

Challenges in implementing REDD+ in an intergovernmental context



- The complexity and multi-level nature of climate change requires governance systems able to manage and resolve conflicts of interests across multiple scales and among diverse policy actors.
- Effective implementation of REDD+ therefore calls for a broader set of policies. These include
 - institutional reforms in the areas of governance,
 - tenure,
 - decentralization, and
 - community forest management (CFM).
- Evaluating the impact of agreements that offer governments performance-based payments for REDD+

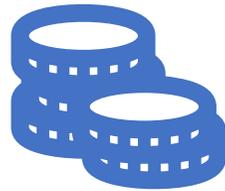
Challenges in implementing REDD+ in an intergovernmental context



- Improved integration of mitigation, adaptation and development objectives can help to reduce the divergence of interests of actors positioned at different levels of governance with respect to climate change responses.
- Efforts to overcome mismatches between governance structures organized around jurisdictions with the broader scale of climate change as an environmental problem requires tailored solutions exploiting existing and developing new institutions with explicit cross-level functions.

Ecological fiscal transfers—EFT

Ecological Fiscal Transfers (EFTs) distribute a share of intergovernmental fiscal transfers and/or national revenues according to ecological indicators such as protected areas or watershed management areas. These conservation areas thus become a source of income for the receiving governments. EFT is an instrument for financing subnational climate action alongside PES and REDD+.



Ecological fiscal transfers—EFT



- EFT can be incorporated into the existing intergovernmental fiscal transfer (IGFT) system easily without going through the process of approval of new, additional or annual outlays.
- EFT may transfer revenue ‘vertically’ from higher-level to lower-level governments or ‘horizontally’ between governments at the same level.
- EFT may be ‘general-purpose’ transfers to subnational government budgets that can be spent on any priority of recipient jurisdictions, whether ecological or non-ecological. Or they may be ‘specific-purpose’ transfers earmarked for a particular ecological use, for example, reforestation or water treatment.”
- EFT is an innovative approach to finance subnational climate action. It “...can compensate subnational governments for the management costs of conserving ecosystems and the opportunity costs of forgone tax receipts from revenue-generating activities” (Busch et. al. 2021: 756).
- In theory, EFT will incentivize subnational governments to take climate action thereby contributing to global efforts to fight climate change.

Challenges in implementing EFT



- The practice of EFT doesn't necessarily incentivize climate action—the integration of EFT as an indicator into general purpose transfers with the flexibility to spend resources on any priority, ecological or non-ecological, doesn't provide enough incentives for climate action related use.
- For EFTs to be effective their use needs to be earmarked for the management of conserving ecosystems or compensating for the opportunity cost of forgone revenues. In that sense, conditional transfers seem to be the most appropriate tool for addressing spatial externalities and incentivizing subnational governments for climate action.
- The goal of EFTs should not be limited to only one aspect of climate change challenge, the design of EFT should incentivize subnational governments to take climate action in multiple areas such as reforestation, water treatment etc.
- Results based conditional grant system requires high capacity at the center in monitoring the outcomes of subnational climate interventions.

Challenges in implementing EFT



- Monitoring capacity at the central level is essential for an effective conditional grant system. Improved monitoring capacity at the central level would facilitate better use of conditional grant resources; thus, achieving results on the ground.
- Together with the improvements in monitoring and evaluation capacity at the central level, the design of conditional grant system should address technical and managerial capacity at the subnational level for the design and implementation of climate interventions.
- As part of conditional grants, there needs to be special-purpose grants for training and capacity building of subnational governments.



Conclusion

Ring (2008) highlights the spatial characteristics of ecosystem services which rely on actions by multiple levels of government, ranging from local and regional to the national level. The fact that climate action benefits accrue to a larger spatial scale than a single subnational jurisdiction requires thinking about new funding instruments. PES, REDD+ and EFT can potentially play a role in reconciling local costs and global benefits of subnational climate action



Payments for ecosystem services (PES)

- Are used in addressing market failures to provide adequate level of ecosystem services.
- Offers opportunities to be used in a multi-level governance context (especially as practiced in China)
- Two design options: (i) central governments can be buyers of climate action (payer) from subnational governments (payee); and (ii) central and subnational governments as joint buyers of climate action (payers) from public and private entities as providers (payees).
- Intergovernmental systems, especially monitoring systems, need to be established to address hidden information and hidden action issues.

Reducing emissions from deforestation and forest degradation (REDD+)

- An incentive-based scheme for reducing greenhouse gas emissions by protecting tropical forests.
- Can be used in a multi-level governance context by setting up spatially specific deforestation targets.
- Effective implementation of REDD+ in subnational jurisdictions require defining land tenure and carbon rights.
- Forest carbon must be monitored at the local level and intergovernmental institutional structures must be established to manage payments.

Ecological Fiscal Transfers (EFTs)

- An innovative approach to compensate subnational governments for climate action.
- Unconditional design of ETF doesn't necessarily guarantee climate action.
- The integration of EFT into general purpose transfer system with the flexibility to spend resources on ecological or non-ecological priorities doesn't provide enough incentives for subnational climate action.
- The design of an EFT scheme should consider earmarking the use of transfer resources on various dimensions of subnational climate action including reforestation, building green infrastructure, and promoting regulations to reduce carbon emissions.

Thank you!