Firms, Forest and Fiscal: Complexity of Institution of Indonesian Payment for Environmental Services Programs

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Background

- Indonesian economic growth during Soehartos’ era relied heavily in extraction of natural resources (oil/gas and forestry)
- Addiction to high economic growth jargon has led to environmental problems, including depletion of natural resources, forest degradation and deforestation
- When adjusted to natural resource depletion Indonesia’s economic growth during 1971-1984 was only 4% not 7.1% (Repetto et al, 1991)
- Forestry sector suffer the most due to unsustainable development
- Indonesia is among of the highest countries for forest degradation
- During 1990-2000, some 21 million hectares of forest covers were lost
- The rate of deforestation is around 1.8 – 3.6 million ha per year (Yeager, 2008)
Management of Natural Resources and Environment

• During Soeharto’s administration, central government had full authority over natural resource management, including forestry

• Command and control was the main instrument during this era

• Reformation brought significant change in governance including management of natural resources.

• Management of natural resources, including forestry is decentralized

• Some other mechanisms of natural resource management were applied including, community based and market-based mechanism

• PES is one of the popular mechanism for managing forestry resources and at the same time as instrument for conservation and poverty alleviation
PES in Indonesia

• PESs have been widely adopted at different scales and regions
• PES’s initiative came from different institution but mostly by private sectors, NGOs and communities.
• Government initiatives were limited due to lack in regulation
• PES is now formally recognized under the new Environmental Law number 32/2009
• Government regulation as a follow up of the law is in the drafting process.
• The government regulation on PES could triggered regional Bylaws on PES so that PES public schemes will be more available
PES taxonomy under Law 32/2009

- Economic Instrument for Environmental Management
  - Payment for Environmental Services
    - Individual/community of ES users
  - Compensation for Environmental Services
    - Individual/community of Central govt/local govt of ES Users

Other Legal basis of PES in Indonesia

- Law 17/2007 National Planning
- Law 32/2009 On Environmental management
- Law 41/1999 On Forestry
- Law 32/2004 On Decentralization
- Medium Term Planning (green economy)
- Govt Regulation of economic instruments (draft)
- Govt regulation related to forestry
- Gov Reg 38/2007

Bylaws on PES

Agreements (MOUs, etc)
Analysis of F3 (Firm, Forest, and Fiscal) of PES

Firm: A set of arrangement which governs the interaction of people and organization (Coase, 1937). Firm is an organization whose existence and attributes must be explained (Currie and Messori, 1998). Firm in PES case: organization, farmers, agencies, private sectors, etc.

Forest: An integrated ecosystem area in the form landscape containing natural resources dominated by trees (Law on Forestry 41/1999).

Fiscal: Payment mechanism, arrangement and legal aspect of PES including collecting, distributing and Allocating revenues from PES.
Framework of Institutional Analysis

The costs of establishing and maintaining property rights (Allen, 1991) 
The rights the ability to make all manner of choices (Demtesz, 1967)
PES schemes under discussion
<table>
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<tr>
<th>Location</th>
<th>PES case</th>
<th>Seller Type</th>
<th>Buyer Type</th>
<th>Programs</th>
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<td>Lombok</td>
<td>Watershed protection in upstream forest area</td>
<td>Community</td>
<td>Local government tap water/drinking company</td>
<td>Tree planting, tree seeds program</td>
<td>Water charge/bill (Flat rate)</td>
<td>First municipal PES program, govt intervention: moderate (through IMP)</td>
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<td>Lampung</td>
<td>Forest degradation, sedimentation</td>
<td>Community</td>
<td>State owned hydro power</td>
<td>Coffee-agroforestry, animal husbandry</td>
<td>CSR funding through program proposal</td>
<td>Private operation. Govt intervention through granting land rights</td>
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PES scheme in Lombok

- Water Shed Area
- Bulk Water
- PDAM/Water Bill
- Environment Service Charge
- Environment Service (Reforestation)
- Upstream Community
- Unit: Multi Stake Holders Institution
- Local Forestry Office
- Forestry Agency
PES mechanism in Sumber Jaya, Lampung

- River care community
- Contract & management
- RUPES Program
- Facilitating
- Hydro Power Utility
- Proposal
- Granting Property Rights
- Reward/Payment (tree planting, Microhydro and Husbandry)

- Forestry Agency
PES scheme and complexity of regulation

Upstream forest area

Law 41/1999
Law 32/2009
Law 7/2004

Law 26/2007
Law 4/2009

Law 17/2003
Law 32/2004
Law 9/1985

Govt Reg (PP) On cooperation
Regional Bylaws

PP 22/1997
Law 33/2004
Govt Reg (PP) 2/2008

Downstream user

Payment

Law 32/2004
Law 28/2009
Law 17/2003
Law 9/1985
Govt Reg (PP) On cooperation
Regional Bylaws

PP on regional incentives

Law 22/1997
PES schemes on
Complexity of organization
Fiscal Complexity

- Fiscal mechanism in Indonesia is highly regulated under Law 17/2003 on State Finance and Law 20/1997 on non-taxation revenues.
- Both Laws do not recognize revenues from environmental services.
- Law 28/2009 on regional taxation allows taxing natural resources, goods, and services but this is tax not PES.
- **Earmarking** under Law 28/2009 is limited to vehicle taxes, cigarette taxes, and street lighting taxes.
- Again...no earmarking for PES.
- Is it illegal then?
- Some PES schemes tried to fill this gap using other regulations such as regional collaboration, trust funds, and change in nomenclature of revenues in its regional budget.
Property Rights

- Property rights are the most problematic problems in Indonesian PES schemes
- Most PES programs are in the forest areas under state-owned forest
- Forests areas are managed by department of forestry, yet land registration under National Land Agency
- Therefore there is no such things as “pure sellers” since farmers in upstream areas do not have complete property rights
- To accommodate such a problem, Ministry of Forestry issues regulation related to short term land tenure (5 years) and can be renewed based on performances
- Therefore, every PES in forest area must involve public (government) intervention.
- This might increase transaction costs of PES schemes
Interaction of institution
Transaction Costs and incomplete Property Rights in PES Schemes

- In economic theory, market efficiency = zero transaction costs
- Yet transaction costs are ubiquitous
- Minimizing TC could be done through the choice of payment
- Yet in most PES scheme, the amount of payment is based on survey WTP or voluntary agreement
- Incomplete property rights in PES alter TC
- Consequently, it might change the benefits of PES scheme
Concluding Remarks

- Market-based approaches have been chosen as alternatives to the new order regime in managing natural resources and combating environmental externalities.
- PES is considered to be attractive and acceptable both at local and national levels.
- The instrument is now gaining strong mandate due to establishment of Law number 32/2009.
- Nevertheless, complexity in Laws and regulations as well as the problems of establishing property rights over land use and land ownership has hindered the effectiveness of these PES schemes.
- Results from analysis of two PES programs in Lombok and Lampung show that even though there are some promising progresses in solving watershed and forestry problems in the upstream areas, the programs face many challenges in terms of fiscal arrangement as well as higher transaction costs.
- An evaluation of current fiscal system to accommodate revenues from environmental services is sorely needed. Other regulations regarding regional autonomy and decentralization of natural resource management need to be streamlined so it will not become a bottleneck for PES implementation.