Collaborative land use planning, sustainable institutional arrangements and environmental services

Yves Laumonier
Issues on land tenure, land use planning and environmental services in Indonesia

- Overlapping authorities (central vs. district; among sectors), ambiguous regulations/policies
- Policies and land-use driven by large scale business and political agenda
- Communities struggle between exploitation following economic opportunities vs. sustainable management based on customary law and small scale practices
- Ecosystem functions or environmental services never considered
- Tenure security lacking vs concept of PES
- Source of tenurial conflict: Status of State owned land versus Customary land; local people vs investor/concession holder;
Avoid deforestation and environmental degradation by supporting the development of sustainable institutional arrangements promoting Collaborative LUP, environmental services, policies and instruments securing land tenure and community rights.

Collaborative Land Use Planning and Sustainable Institutional Arrangements (CoLUPSIA)
To facilitate a **participatory development approach** for the empowerment of local stakeholders through new organizational arrangements.

To improve communication linkages across decision levels so that the resulting governance system can **promote policies based on collaborative and integrated resource management**.

To better understand forest and other land use type **ecological function** and test feasibility of pro-poor mechanisms for **payment for environmental services (PES)**.
Some research questions linked to services

- How can future forest land use be optimised (considering opportunities for PES) in order to increase the income generated from forest while at the same time ensuring development?
- What are the economic values of different ecosystem services provided by forest and agroforests?
- How can benefits from payments mechanisms for ecosystem services be shared between various stakeholders (including local communities, private sector, government)?
Identify ES prospects, potential buyers and sellers

Resolve institutional, legal, technical issues

Negotiate agreements

Implement and review PES agreements

CoLUPSIA’s 10 Step Field Guide to Identification & Feasibility of PES

A field guide outlining the steps to determine the options and feasibility of PES - identifying the opportunities, constraints, information and data needs, along with the next steps required to move into the Preparation Phase of establishing a PES, before negotiation and implementation.
1. Identify PES opportunities, including potential for PES bundles

2. Determine if clear, well defined geographical boundaries exist

3. Identify the potential seller – who owns the environmental service? What is the legal land status?

4. Identify the buyer & how the buyer/market accessed

5. Does clear governance and ownership of the Ecosystem/Environmental Service exist?

6. Do institutional & administrative functions/frameworks exist?

7. Define business as usual scenario & project scenario

8. Collect baseline data – bio-physical data

9. Identify monitoring, verification and reporting requirements of buyers (environmental sustainability)

10. Identify pro-poor financing/benefit sharing mechanisms (economic, social sustainability)

A. The Environmental Service (1 & 2)

B. The Actors & Market Access (3 & 4)

C. Governance & Institutional Systems (5 & 6)

D. Baseline Data (7 & 8)

E. Sustainability, Credibility & Assurance (9 & 10)
1. Research on livelihoods:
How the local people build their land use strategies in response to the evolution of their socio-ecological environment?

- Households survey (2 regencies, 40 villages, 1600 HH)
- Demography
- Socio-economic and livelihood pattern
- Cultural aspect of resource management
- Focus group discussion and Key informant interview
- Natural Resources and Land Use
- Land right and tenure
- Conflict
Livelihood survey and clustering of villages as pilot sites

PILOT 1
- lack of opportunity after logging ban
- lack of resources, conflict with NP

PILOT 2
- gold mining: opportunity vs env risks
- Highly depend on NTFP
- Concession threat (PT Toras at Mendalam watershed)

PILOT 3
- gold mining: opportunity vs env risks
- Palm oil plantations are established
- lack of opportunity, conflict among villagers related to land for palm oil allocation
- dryland converted by rubber

PILOT 4
- Palm oil plantations are established
- lack of opportunity, conflict among villagers related to land for palm oil allocation
Focus Group Discussion Findings at community level

• The communities perceive that they have quite secure access to forest but increasingly insecure tenure situation (law and forest, population etc)
• The villages still have strong and effective institutions (formal and customary) to secure access to land and manage conflict resolution
• The peaceful co-existence of various institutions (rules, norms, governance structures) is essential to ensure sustainable use of resources
• The communities expressed willingness for working together with government and other stakeholders
2. Research on governance and legal aspects

- Analysis of the relationships between the communities, government institutions and NGOs
- Participatory Prospective Analysis
- Legal framework
- Analysis of the local perception about tenure security
Participatory prospective analysis

- An applied foresighting approach developed by CIRAD
- PPA group “experts”: district government, local community, customary leaders, private sector, NGOs
- Uses scenarios to reach consensus (4 scenarios of “Pembangunan Kapuas Hulu” in 2030)
- Workshop to develop action plan to be integrated with district planning
The 8 steps of PPA

1. Define the limits of the system
2. Identify the variables
3. Define the variables
4. Analyze their mutual influences
5. Identify and select the key variables
6. Define the states of the variables
7. Scenarios development
8. Implication of the scenarios and related actions
Skenario 1: Harmony

- Policies favor the community and are compiled together with the community.
- The public participates by monitoring and supervising the planning process.
- Land use is decided taking into account people’s aspirations and in synergy between customary law and national law.
- In this scenario, access to education improves and changes people’s mindset to master the appropriate, environmentally friendly technology.
Skenario 2: No wisdom

• Most policies are weak and don’t address the essential development needs of the people.
• National law is widely accepted and customary institutions and indigenous wisdom have been excluded; indigenous people have disappeared.
• Land use has no wisdom behind it, leading to environmental destruction and people’ marginalization.
Skenario 3: Conflict

- Conflicts in society escalate because stakeholders are excluded from the development process.
- Poverty and inequality also lead to public apathy in the form of people’s refusal to participate in any development project.
- Land use conflicts arise as customary institutions are weakened and Indigenous people are divided.
Research Legal Framework

✓ How does the legal framework adequately support and protect a variety of different types of forest tenure?
✓ How do laws and policies define clear responsibilities and authority for the various actors responsible for forest tenure administration?
✓ In what ways, existing laws/policies do accommodate the administrative procedures that considering governance principles in processing indigenous and local communities’ types of tenure
Research on ecosystem functioning and ecosystem services

Baseline data on ecosystem services needed for setting potential PES (including REDD+) activities at pilot sites

- Remote sensing and land cover mapping at 1:50,000 to 1:100,000-scale for regency and province spatial planning (Good quality environmental maps crucial)
- Ecosystem structure
- Biodiversity
- Land uses and erosion
- Hydrology
Classification using a multi-sensor approach
SPOT 2.5 meters of resolution, cloud cover < 30%, (2007, 2008) 3 bands (Green, Red, Nir-InfraRed)

**Radar data**: ALOS PALSAR (L-band) \(\rightarrow\) 2 wet seasons (2009-2010) 1 dry season (2009), resolution 12.5 meters
50 land cover types / operational scale up to 1:50,000
Forest and other ecosystem functioning, ecological sampling
Structure, biomass, plant diversity

Permanent forest plots

4 to 6 ha for Trees above 10 cm diameter

Functioning / ecology not production

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Land use types differ in effectiveness of ‘provisioning’ and ‘environmental’ goods and services, Mixed garden in Indonesia have huge potential for services
Soil and erosion studies on various land uses

- To what level LUCs in the watershed affect the amount of sediments transported to the Danau Sentarum NP?
  - Find simple indicators to assess soil erosion across the watershed
  - Identifying key areas ("hotspot") for the provision of "prevention of soil erosion" ES
  - Modeling future LUC to infer how it could impact erosion rate at district level

→ Network of silt fences to monitor erosion in different Land Uses
Hydrological studies
Leboyan
Embalau

Few rainfall stations

- **Install rain gauges** so as to measure daily rainfall in upstream middle stream and downstream parts of pilot site rivers.
- Organize data management with local communities

- **Water level monitoring system** *(water inflow, water out flow, volume of surface water stored in the flood plain area)*
Some conclusions…
No PES without tenure security

✓ Recognition community and indigenous tenure rights
✓ Legal support and protection of forest tenure
✓ Transparent rules governing the disposal and allocation of public forests
✓ Clear responsibilities and authority for forest tenure administration
✓ Coordination of tenure laws and policies for forestry
Huge issues in mapping and boundaries
DRAFT ALOKASI LAHAN

USULAN PERUBAHAN FUNGSI KAWASAN HUTAN

Fungsi Kawasan Hutan dan Areal Penggunaan Lain Sebelum Usulan Perubahan Fungsi

- Ht : Hutan Lindung
- HPT : Hutan Produksi Terbatas
- HP : Hutan Produksi Tetap

- Hutan Lindung
- Hutan Produksi Terbatas
- Hutan Produksi yang dapat Dikonversi

Arrows indicate areas for potential land reallocation.
• CIRAD
• CIFOR
• TELAPAK (NGO awareness)
• HUMa (NGO law)
• TOMA (NGO environment Ambon)
• UGM, Yogyakarta (PUSPEK, social economy)

THANK YOU