

# CHALLENGES OF ECOSYSTEM-BASED PLANNING AND MANAGEMENT: LESSONS LEARNT FROM INDONESIA

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Participatory Development  
Program

# COLUP / ECOSYSTEM-BASED APPROACH (CBD, 2000), ECOSYSTEM SERVICES into LUP decision making processes

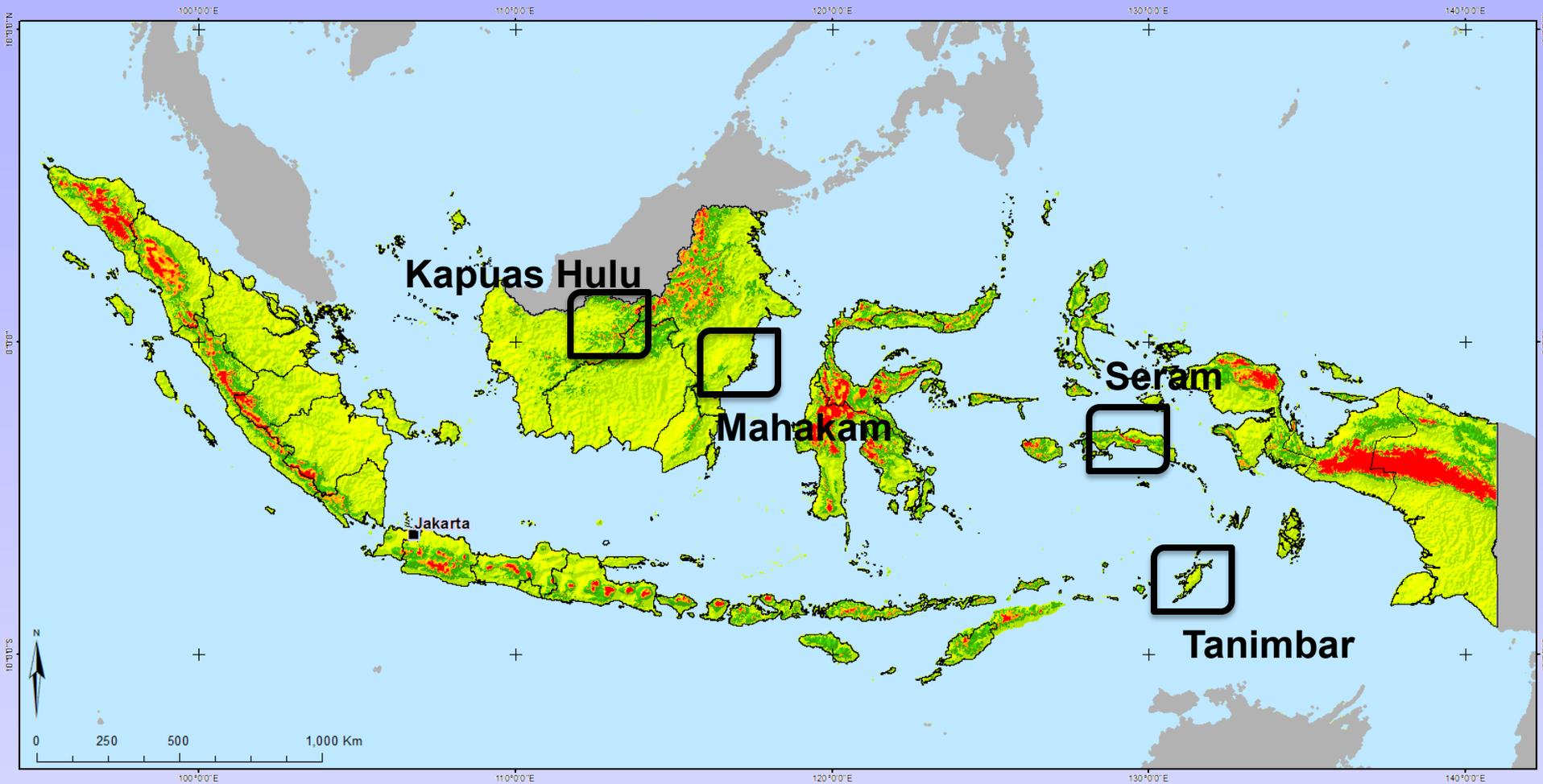
Reconciling ecology and the pressure of economic forces into appropriate policy and management strategies

Facilitation of a participatory development approach for the empowerment of local stakeholders in land use and resource management planning

A good understanding of community views and perceptions of landscape, documented in a format that is readily accessible to planners and developers

Deep analysis of social-ecological systems at landscape level (Ecosystem functions or environmental services never considered)

# Why is the ecological dimension always hanging back in tropical forest landscape management?



Four study sites representing a gradient of pressure of the population on their environment

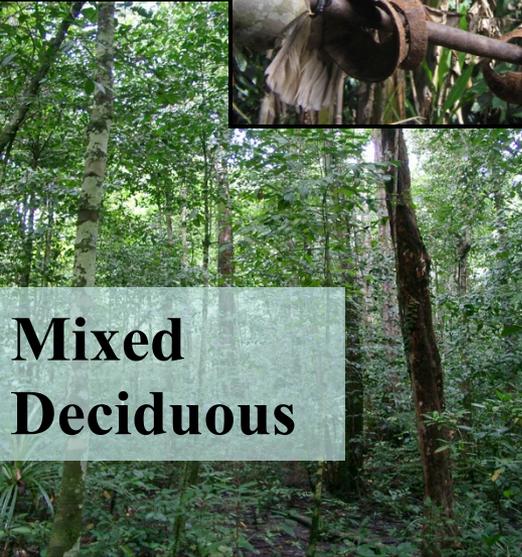
METHODS and DATA for PARTICIPATORY DEVELOPMENT		
<b>Stakeholder identification</b>	<p>Common interview grid</p> <p>Participatory stakeholders expert meetings</p>	<p>Individual interviews of key respondents</p> <p>Discussion of a pre-set series of issues through expert meetings with selected and knowledgeable participants.</p> <p>In-depth interviews of respondents representative of the main types of stakeholders</p>
<b>Biophysical</b>	<p>Ecological surveys land use types (Structure, biodiversity, soil, hydrology), Remote sensing, GIS analysis</p>	<p><b>Primary ecological data together with indigenous knowledge on landscape and environment (TEK)</b></p> <p><b>Participatory mapping</b></p>
<b>Socio-cultural and governance</b>	<p>Focus Group Discussion</p> <p>Participatory Rural Analysis</p> <p>Socio-economic survey of households</p> <p>Commodity chain analysis</p> <p>Valuation technics</p> <p>Legal framework</p>	<p><b>Cultural aspects of resource management</b></p> <p><b>Focus Group Discussion (Perception of environment and issues of LUP, land right and tenure)</b></p> <p>Interviews of key informant</p> <p>Socio-economic and livelihood pattern</p>
<b>Stakeholder involvement</b>	<p>Participatory Prospective Analysis</p> <p>Workshops and meetings with stakeholders based on the discussion of technical findings</p> <p>Awareness campaign (ES concept)</p> <p>Workshops, diffusion of results</p>	<p>Back and forth process of interaction between the study team and the stakeholder</p> <p>Establishment of a progressive dialogue among stakeholders along with the progress of the research</p>



**Results Eastern Indonesian sites:  
the Moluccas**

# Diversity of ecosystem

**Dry Deciduous**



**Mixed Deciduous**



**Evergreen Rain Forest**

**Fragile environment**

**Geology, geomorphology / steep slopes/ soil prone to erosion**

**Thin soil easily eroded once forest cover removed**

**Water shortage, seasonal climate in the SE part of the region**

**Unique situation of forest cover (up to 70%), unique forest types and biodiversity combination**

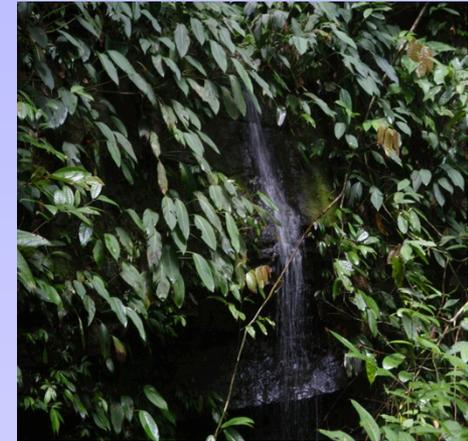


**Communities mostly confined to coast, depend on forested water catchments inland; Sago palm instead of rice padi**

**Clear understanding of the spatial allocation of rights of uses and access**

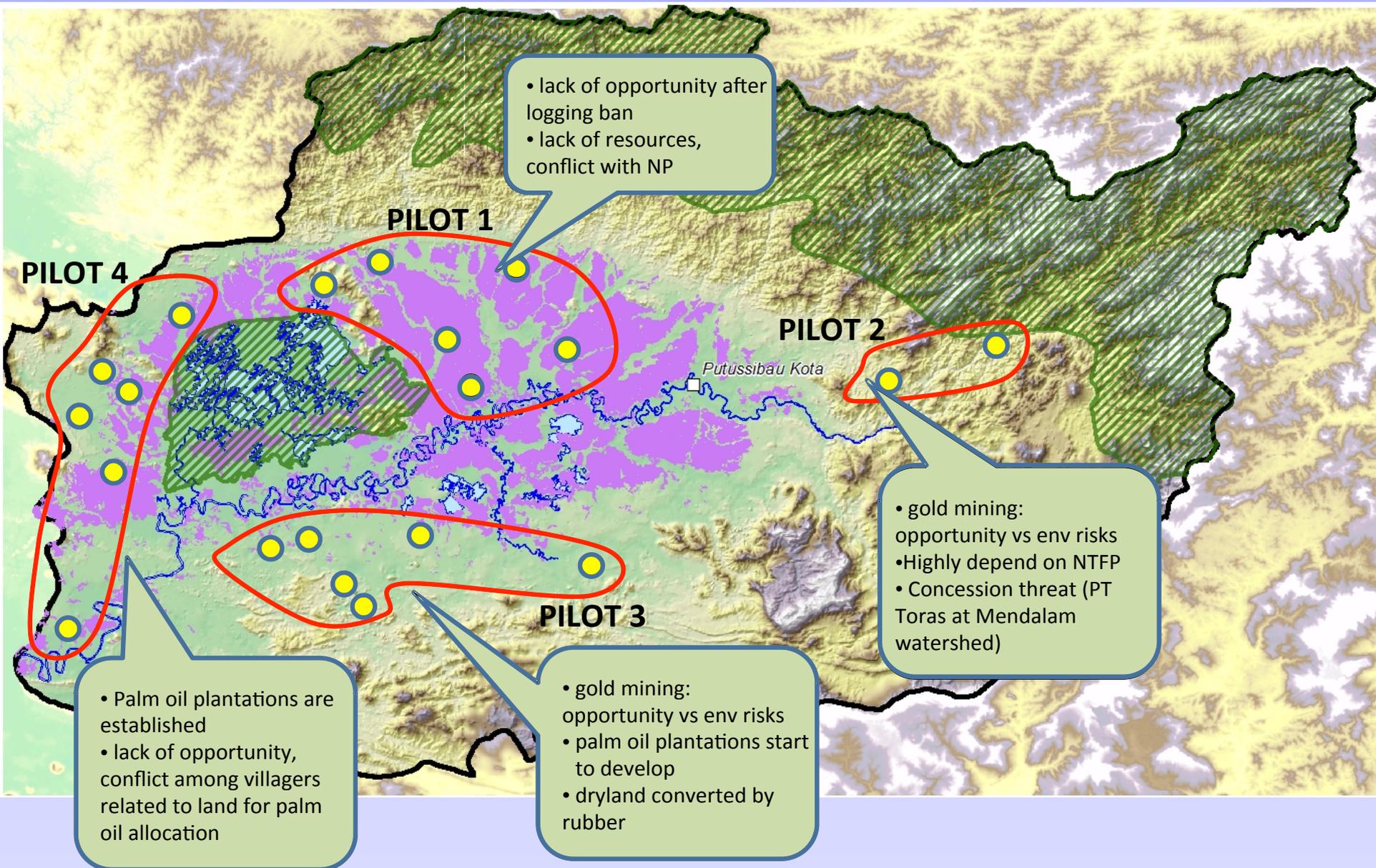
- **Landscape management of ‘Petuanan’ (clan territory)**
- **Traditional system for the management of natural resources “SASI”**
- **Knowledge of local biological resources still used in daily life**





## Results Kalimantan sites: Kapuas Hulu

# Kapuas Hulu “conservation district”



# Kalimantan site: Mahakam delta



# Ponds erosion and destruction, sea water intrusion



Breach



Production dropped together with growing environmental issues. Conflicts start to develop between stakeholders local traders, fishers, cold storage companies, oil companies

▪ **Tanimbar archipelago, Moluccas:**

Still relatively little pressure on environment from local society / customary rules efficient / Growing pressure from outsiders to exploit natural resources / Resistance from locals / Ecological principles maintained by indigenous society / Excellent commitment by communities, local government

▪ **Seram island, Moluccas:** Higher pressure on natural resources due to demography, some migrants and new plantation schemes, customary rules questioned in some places, but still highly respected / impacts of agricultural practices introduced by migrants. Ecological principles often respected but unable to cope with overall pressure on agricultural land. Potential conflict in few places.

▪ **Kapuas Hulu regency, West Kalimantan:** Higher pressure on natural resources due to the development of large agribusiness projects, customary rules still respected especially related to land use, but challenged by companies, impacts of gold mining on environment. Ecological principles rarely respected, unable to cope with pressure on environment. Potential conflict high.

▪ **Mahakam Delta, East Kalimantan:**

Extreme pressure on natural resources in a remote, inhospitable environment increasingly exploited by migrants, no customary rules. Ecological principles not considered until almost too late. Going from commitment to actions very difficult

# Conclusion

- Ecological dimension remains weakly addressed and difficult to integrate into development actions. Three factors identified:
  - Disdain for traditional ecological knowledge and practices
  - Antagonism between ecology and economy
  - Mismatch between traditional and modern governance systems
- The degree of exposure to external pressure of the traditional RM system and its degree of cohesion combine to explain how fast ecological principles weaken in face of economic interests
- Communities are open to change, especially if this means economic opportunities.
- Profitability rather than sustainability guided local resource use, resulting in a lack of long-term local commitment.
- Going from commitment to actions is difficult even with a strong momentum and consensus.

# Recommendations (Ecology and Governance)

- Develop Integrated Ecological Assessment techniques rooted in ecological, social and economic sciences to better integrate ecological principles into NRM/E-B planning decision.
- Focus ecological research on **ecological function** of forest and other land use types **linked to the ES/PES** concept
- Support integration of the traditional system into official resource use system.
- Design new form of institution to build agreements among stakeholders.
- Research on tenure security: no PES without tenure security

# Thank you

