INTEGRATED LIVELIHOOD AND NATURAL RESOURCE MANAGEMENT THROUGH REWARDS FOR ENVIRONMENTAL SERVICES IN SINGKARAK, WEST SUMATRA

Beria Leimona, Rachman Pasha, Meine van Noordwijk
ICRAF SEA – RUPES

WORD BANK EXCHANGE VISIT TO SINGKARAK

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Rewards for Environmental Services (RES)
lessons, outcomes and impacts

ICRAF’s 3 major networks of action research and learning sites on RES and climate change issues:

Pro poor Rewards for Environmental Services in Africa (2006 - 2011) covering 8 sites in 5 countries (Tanzania, Kenya, Guinea, Uganda & Malawi)

Rewards for, Use of and Shared Investment in Pro-poor Environmental Services schemes in Asia (2002-2012) covering 12 sites in 8 countries (China, Vietnam, Indonesia, Philippines, Nepal, India, plus Thailand and Cambodia - upcoming)

Global partnership devoted entirely to research on the tropical forest margins with 12 benchmark sites in the Amazon, Congo Basin and Southeast Asia

Future challenges:

Greater R & D efforts needed to:

- Reduce transaction costs of RES schemes
- Enhance efficiency of RES schemes and balance it with fairness for actors involved
- Review legal and policy frameworks that create enabling environment for RES to be scaled up and out
RUPES 2 – Rewards for, Use of and Shared Investment in Pro-poor Environmental Services

**Goal:** Rewards for provision of environmental services flow to poor people in an Asian context.

A. **National policy framework:** participation by national policy makers in international fora; and development and improvement of policy frameworks for voluntary, realistic, conditional and pro-poor RES.

B. **International and national buyer and investor engagement:** ‘business case’ for investment in pro-poor environmental service schemes.

C. **Environmental service intermediaries enabled:** good practices and capacity building for intermediaries

D. **Innovations in effective, efficient and pro-poor RES mechanisms:** rural poor as ES local providers and conditions for success of established and new types of RES mechanisms.

E. **Mainstream RES into IFAD rural development initiatives:** awareness of the potential for RES in rural development.
Rewards for, Use of and Shared Investment in Pro-poor Environmental Services (RUPES 2)

- China: 3 ARS and 1 LS
- India: 1 ARS
- Indonesia: 6 ARS and 4 LS
- Nepal: 2 ARS
- Philippines: 3 ARS
- Vietnam: 1 ARS and 1 LS
China

• The development of reward for ecosystem services schemes for grass land by the China’s State Council in 2008-2010, China

• Ecological land use plan for Xishuangbanna Prefecture 2010, China

India

• The Indian National Environment Policy on the role of economic incentives for environmental conservation in 2006.

Indonesia

• The Indonesian Environmental Protection and Management focusing on economic instruments for ecosystem services: Act No. 32/2009 and regulations of the Ministry of Forestry on Reducing Emissions from Deforestation in Developing Country (REDD).
Nepal

- The Nepali Leasehold Forestry Policy in 2002: degraded forest is leased for 40 years (renewable) to groups of poor households as a resource base for their exclusive use.

Philippines

- The draft of Philippines Climate Change Act of 2008 and a final review of Sustainable Forest Management Act (SFMA) in 2008.

Vietnam

- The Vietnamese Decision No. 380/QD - TTG: ES buyers should pay ES providers
- Payment for forest environmental services (DECREE No. 99/2010/NĐ-CP)
Introduction: PES concept and its evolution

2005:
- Introduction of strict and normative definition of PES:
  - voluntary scheme
  - involving at least one ES buyer and one seller
  - with conditionality: only and if only the seller provides ES provision as stated in a contractual agreement with the buyer.
- Emphasizing in effectiveness and efficiency of PES in providing ES
- Excluding the poverty alleviation issue (because it reduces the effectiveness of the scheme)
- Monetizing ES
  - Giving monetary value to ES
  - Transferring some money from ES beneficiaries (which assumed having willingness and ability to pay) to ES providers for offsetting their full opportunity and transaction costs.

Wunder (2005)
Principles of Fairness and Efficiency
Payment, Compensation or Co-investment?

2010: case studies showing the application of strict conditionality of PES and monetization of ES not working

- Lack of money available for conservation fund
- Paying local communities undermining social norms
- Social jealousy of non-participants - no multiplier effects of the payment
- Lack of scientific skills, institutional capacities, data for ES monitoring

- Should we include fairness as an additional principle to PES efficiency?

Wunder (2005)
RUPES Synthesis: Fairness and Efficiency
Payment, Compensation or Co-investment?

- Is the strict definition of PES still relevant?

- A ‘PES-like’ term in existence

- How to respond it positively?
Reducing discrepancies and improving synergies of ecological knowledge of all actors in PES balance efficiency and fairness of a PES scheme.

**Method:**
- Applying Rapid Hydrological Assessment of ICRAF SEA and
- Analyzing its implication to PES schemes at each site
Bundle ES at different scale of the Singkarak

Landscape level:
1. Watershed functions of the overall Singkarak catchment
   Commitment of 12 Nagaris surrounding the lake to conserve the environment
2. Landscape beauty: potential ecotourism of Lake Singkarak

Nagari level:
1. Kopi Ulu organic market
2. Small scale voluntary market CDM
3. Information and capacity building centre
Singkarak watershed

- Area: 107 km²
- Forest: 15%
- Imperata grassland: 17%
- Issue: water supply for HEP
- Reward: parts of HEP CSR schemes for general land rehabilitation
Effective and sustainable RWS scheme requires integration of stakeholders’ knowledge & perspectives during planning and implementation.
1 Sedimentation and erosion

Declining water quality for daily needs
Reducing ‘ikan bilih’ as a source of income

Threatening the electricity production of Hydroelectric power Company

Correct, water quality reduces ‘ikan bilih’ but overfishing contributes more

Reduction of water quality caused by eutrophication will also influence the performance of PLTA
Perceived watershed issues and their solutions

2 Deforestation and intensive agriculture

Causing flood destroying paddy fields along the river

Reducing water quantity of the lake and... inefficiency electricity production

Flood may be caused by the diversion of natural flow of the rivers due to HEP construction

Reforestation of critical land will not be enough to increase water yield & may actually reduce water yield due to increase in evapotranspiration

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Percent of precipitation/rainfall

- Ref
- BAU
- Deg

- Evapotranspiration
- Run off
- Soil quick flow
- Base Flow
Management implication from local perspectives

• Reforestation uses trees with low evapotranspiration.

• Local wisdom maintains clean water stream in the upstream and conserving native *ikan bilih*.

Management implication for watershed management and RWS

• Upstream village level: maintaining current intact environment, i.e. biodiversity conservation such as organic coffee, bundled VCM and watershed services.

• Villages surrounding the Lake: improving water quality of the Lake and connecting river.
Voluntary Carbon Market

- Transaction between the CO2BV Netherlands with Paninggahan community
- 10 year contractual agreement
- Contract value USD 1000/Ha
- Planting fruit & wood trees minimum 1000 trees/ha
- Targeted carbon for 10 years: 4090 ton
- Type of trees: Clove, Durian, Cocoa, other fruit and timber trees
- 42 farmers with total area 28ha (plus additional 21 ha for 2nd phase)
Kopi Ulu Scheme

- A landscape with 185 year - mixed robusta coffee-plantation
  - 1050 ha surrounded by 133 266 ha protected area
  - Low productivity 100-300 kg per ha yearly
- Biodiversity-rich area with high pressures for land-use change
- Upstream of Lake Singkarak
- High resistance to disease
- 2004: local communities to revitalize the production of this coffee plantation

Problems:
- Conflicting land-use
- Relatively low quality and productivity
- Access to (organic) market
Conflicting land-use and interests
Sumber: Nurisyah et al, 2009
Beyond RUPES-2

- Underlying concepts of climate change, rural livelihoods and multifunctionality of landscapes, the specific roles of trees and farmers as providers of environmental services in agricultural landscapes.

- RES in multifunctional landscapes, which provide incentives for maintaining or restoring multifunctionality → a likely reduction in vulnerability to climate change.

- Rewards may well be an efficient and fair way of investing international funds in climate-change adaptation.

- The voluntary, conditional and pro-poor aspects of RES help to bring the voice of grassroots stakeholders into international and national decision-making processes how to deal with climate change problems.
Thank You

More information about RUPES

RUPES Program
Beria Leimona (LBeria@cgiar.org)

C/o World Agroforestry Centre
PO Box 161, Bogor, 16001, INDONESIA
Tel: +62 251 8625415
FAX: +62 251 8625416
Email: RUPES@cgiar.org

http://www.worldagroforestrycentre.org/sea/Networks/RUPES