





Integrated Livelihood and Natural Resource Management through Rewards for Environmental Services in Singkarak, West Sumatra

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ICRAF SEA – RUPES

WORD BANK EXCHANGE VISIT TO SINGKARAK

Singkarak, 7 May 2012

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

World Agroforestry Centre
TRANSFORMING LIVES AND LANDSCAPES

IFAD
INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT

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

PRESA

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

RUPES

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)**

ASB
PARTNERSHIP FOR THE TROPICAL FOREST MARGINS

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.

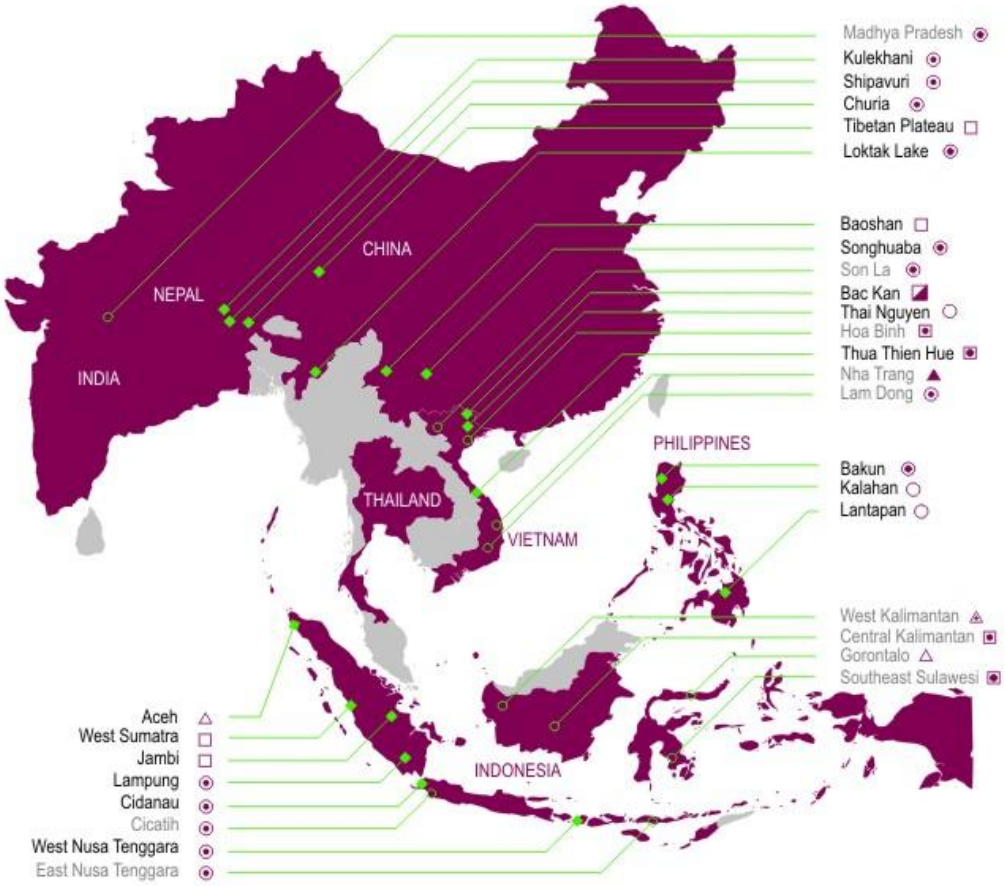
C. **Environmental service intermediaries enabled**: good practices and capacity building for intermediaries

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)

Action Research Sites (ARS) and Learning Sites (LS)



- 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

Legends:
- Carbon, Watershed, Biodiversity
- Carbon, Watershed, Landscape Beauty
- Carbon, Watershed
- Carbon, Biodiversity
- RUPES Action Research Site
- Watershed, Biodiversity
- Carbon
- Watershed
- Landscape Beauty
- RUPES Learning Site

Map of RUPES Action Research and Learning Sites

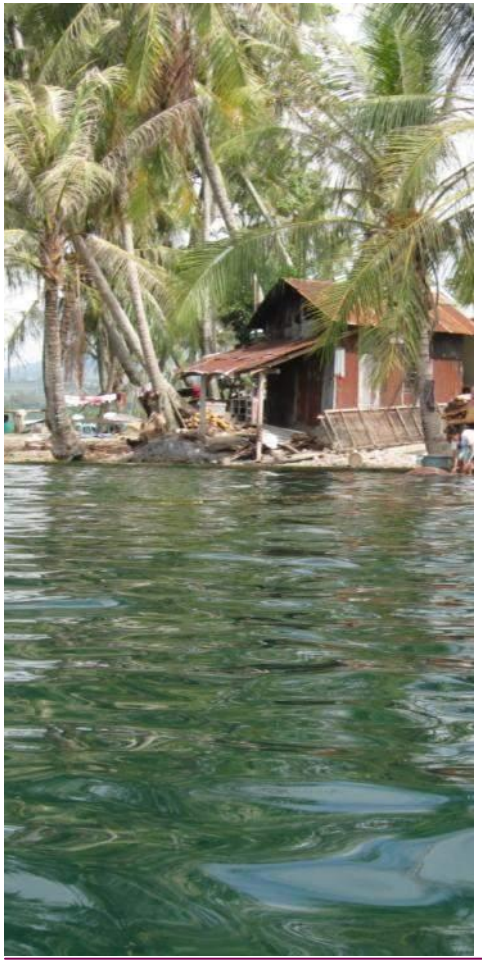
RUPES
REWARDS FOR USE OF AND SHARED INVESTMENT IN PRO-POOR ENVIRONMENTAL SERVICES

IFAD
Enabling poor rural people to overc

RUPES

REWARDS FOR, USE OF AND SHARED INVESTMENT IN PRO-POOR ENVIRONMENTAL SERVICES

National Policy Framework



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.

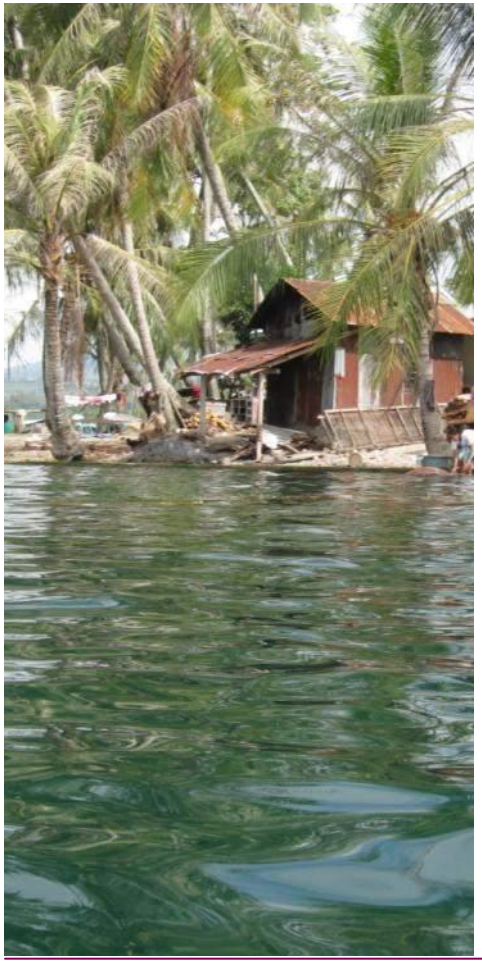
Indonesia

- 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).

RUPES

REWARDS FOR, USE OF AND SHARED INVESTMENT IN PRO-POOR ENVIRONMENTAL SERVICES

National Policy Framework



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.





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?

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?

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Van Noordwijk, M., and B. Leimona. 2010. Principles for fairness and efficiency in enhancing environmental services in Asia: payments, compensation, or co-investment? *Ecology and Society* 15(4): 17. [online] URL: http://www.ecologyandsociety.org/vol15/iss4/art17/



Research, part of a Special Feature on Compensation and Reward for Environmental Services in the Tropics

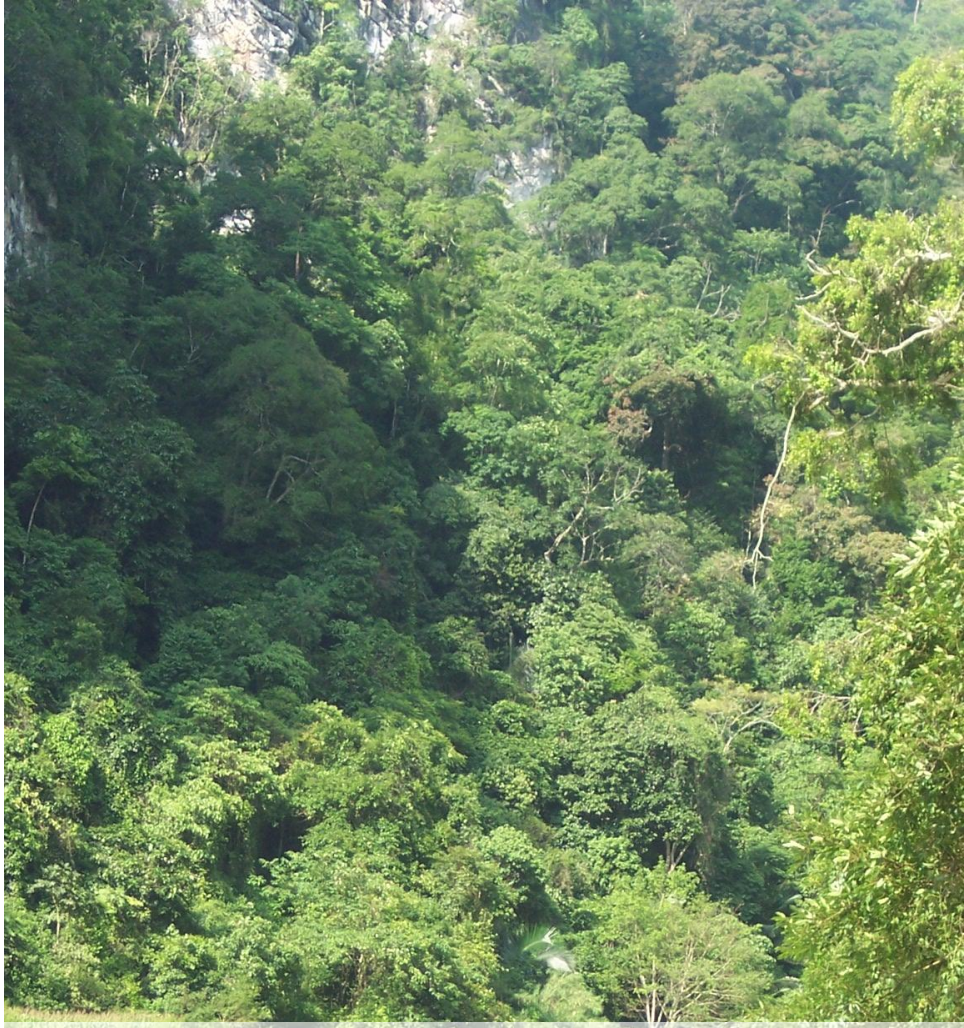
Principles for Fairness and Efficiency in Enhancing Environmental Services in Asia: Payments, Compensation, or Co-Investment?

Meine van Noordwijk[1] *and Beria Leimona*[1,2]

ABSTRACT. The term payments for environmental services (PES) has rapidly gained popularity, with its focus on market-based mechanisms for enhancing environmental services (ES). Current use of the term, however, covers a broad spectrum of interactions between ES suppliers and beneficiaries. A broader class of mechanisms pursues ES enhancement through compensation or rewards. Such mechanisms can be analyzed on the basis of how they meet four conditions: realistic, conditional, voluntary, and pro-poor. Based on our action research in Asia in the Rewarding Upland Poor for Environmental Services (RUPES) program since 2002, we examine three paradigms: commoditized ES (CES), compensation for opportunities skipped (COS), and co-investment in (environmental) stewardship (CIS). Among the RUPES action research sites, there are several examples of CIS with a focus on assets (natural + human + social capital) that can be expected to provide future flows of ES. CES, equivalent to a strict definition of PES, may represent an abstraction rather than a current reality. COS is a challenge when the legality of opportunities to reduce ES is contested. The primary difference between CES, COS, and CIS is the way in which conditionality is achieved, with additional variation in the scale (individual, household, or community) at which the voluntary principle takes shape. CIS approaches have the greatest opportunity to be pro-poor, as both CES and COS presuppose property rights that the rural poor often do not have. CIS requires and reinforces trust building after initial conflicts over the consequences of resource use on ES have been clarified and a realistic joint appraisal is obtained. CIS will often be part of a multiscale approach to the regeneration and survival of natural capital, alongside respect and appreciation for the guardians and stewards of landscapes.

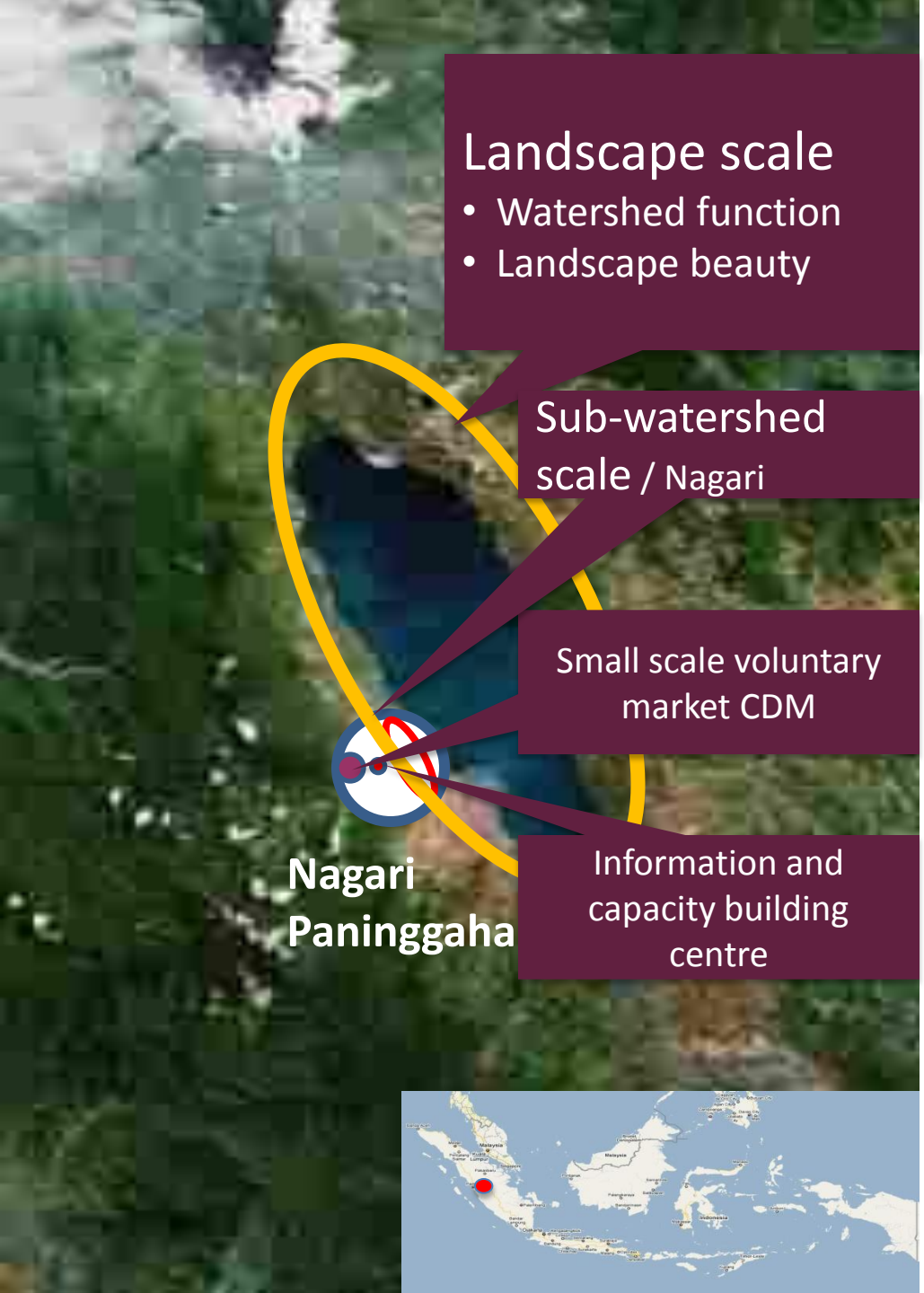
Key Words: *Asia; boundary organizations; criteria and indicators; livelihood; payment for environmental services; RUPES*

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:

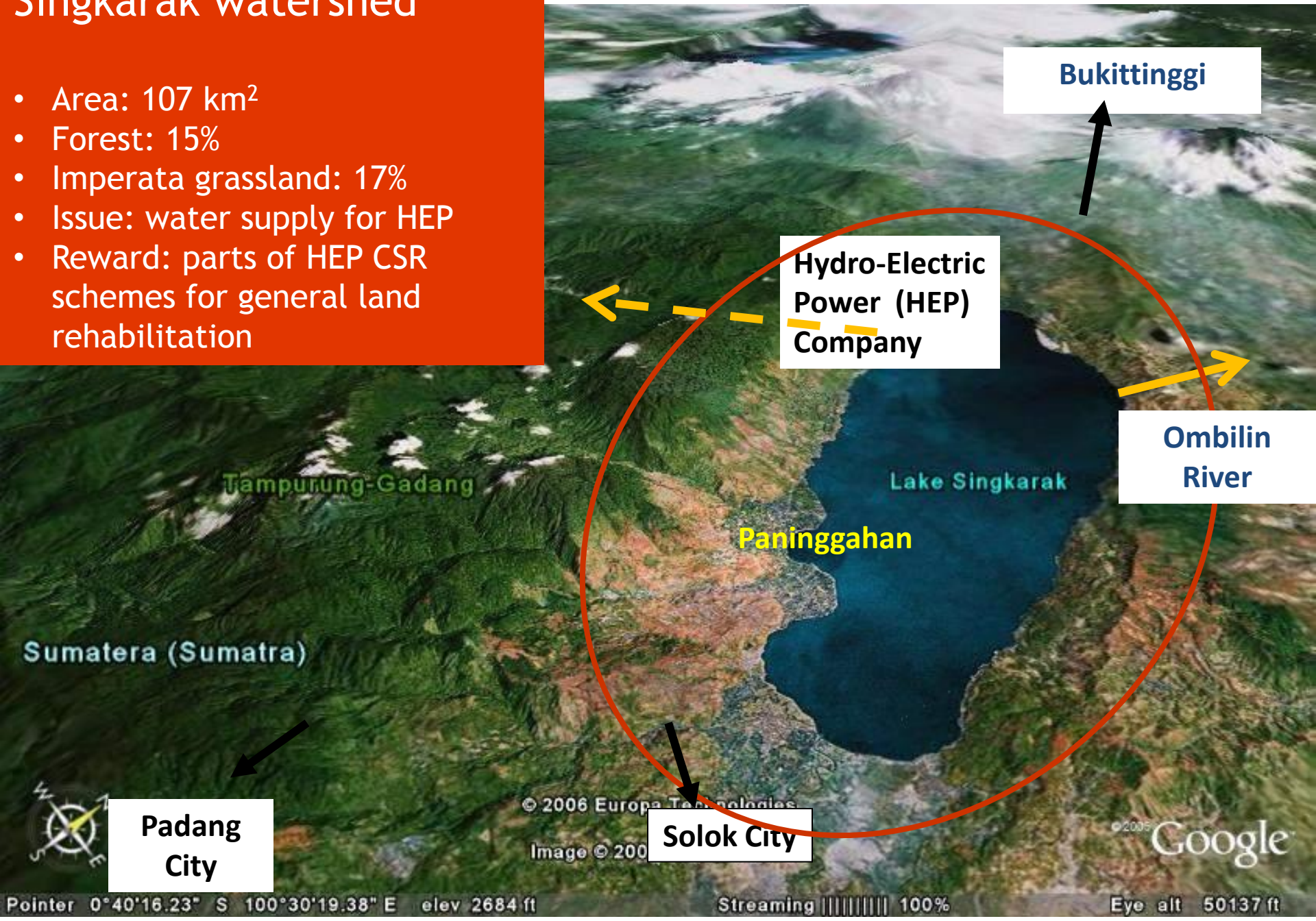
1. Watershed functions of the overall Singkarak catchment
   Commitment of 12 Nagaris surrounding the lake to conserve the environment
2. Landscape beauty: potential ecotourism of Lake Singkarak

Nagari level:

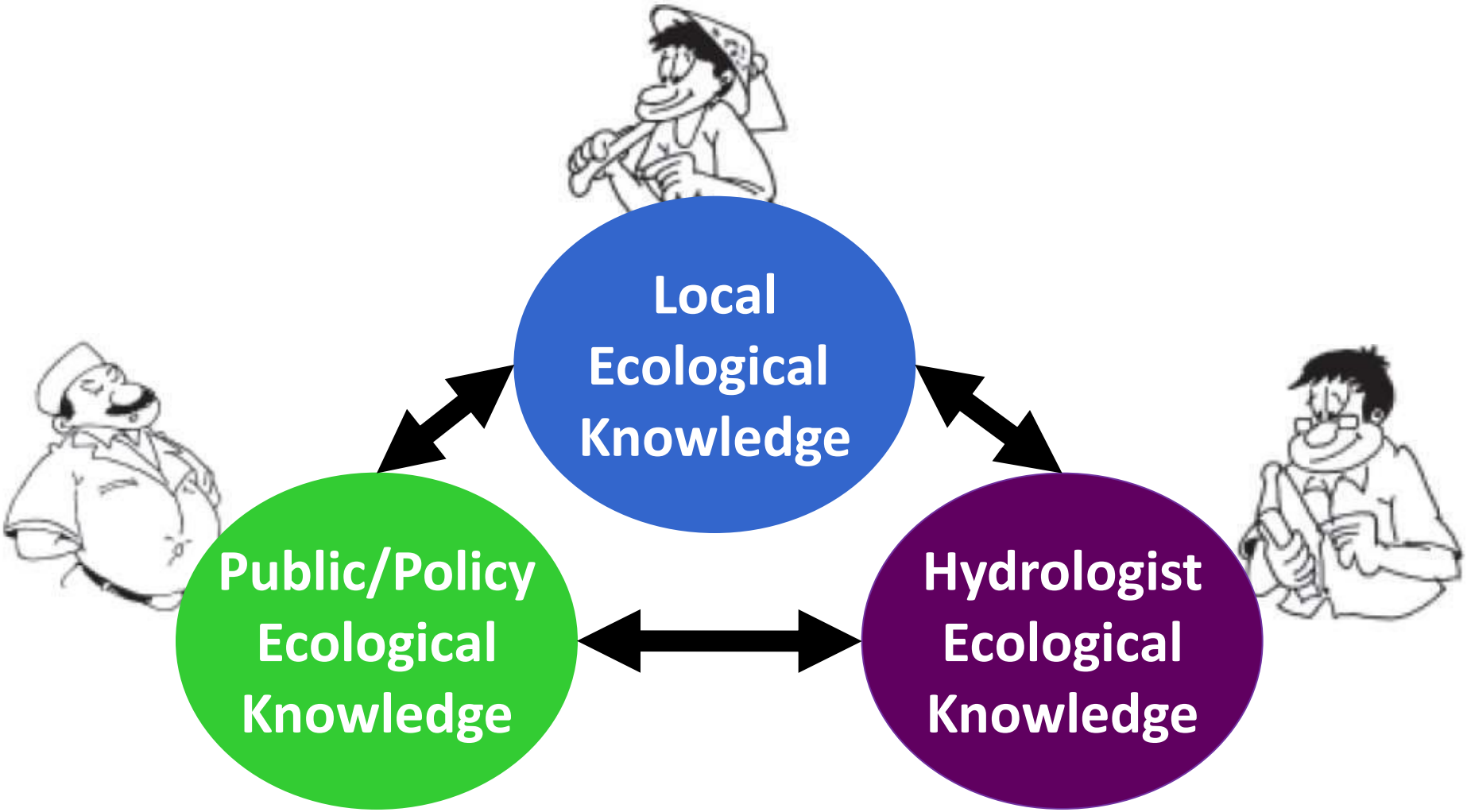
1. Kopi Ulu organic market
2. Small scale voluntary market CDM
3. Information and capacity building centre

Singkarak watershed

- Area: 107 km^2
- 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



Perceived watershed issues and their solutions

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 euthrophication will also influence the performance of PLTA



Perceived watershed issues and their solutions

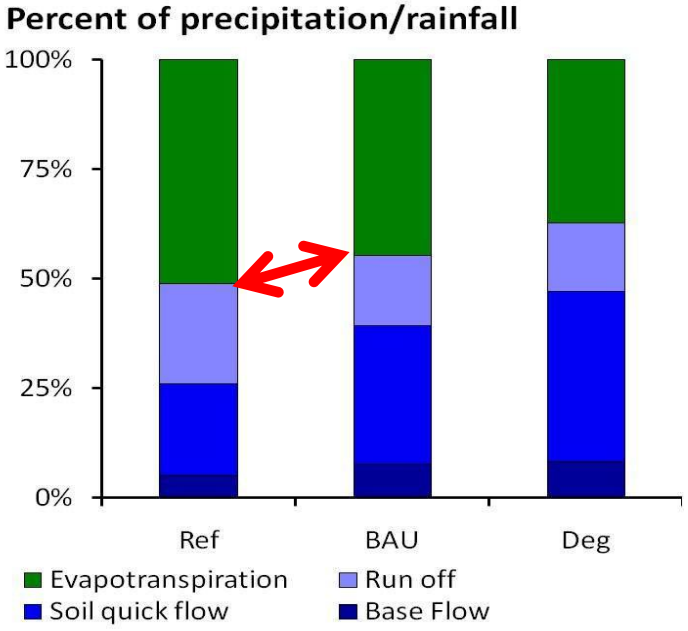
2 Deforestation and intensive agriculture

Causing flood destructing 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

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)





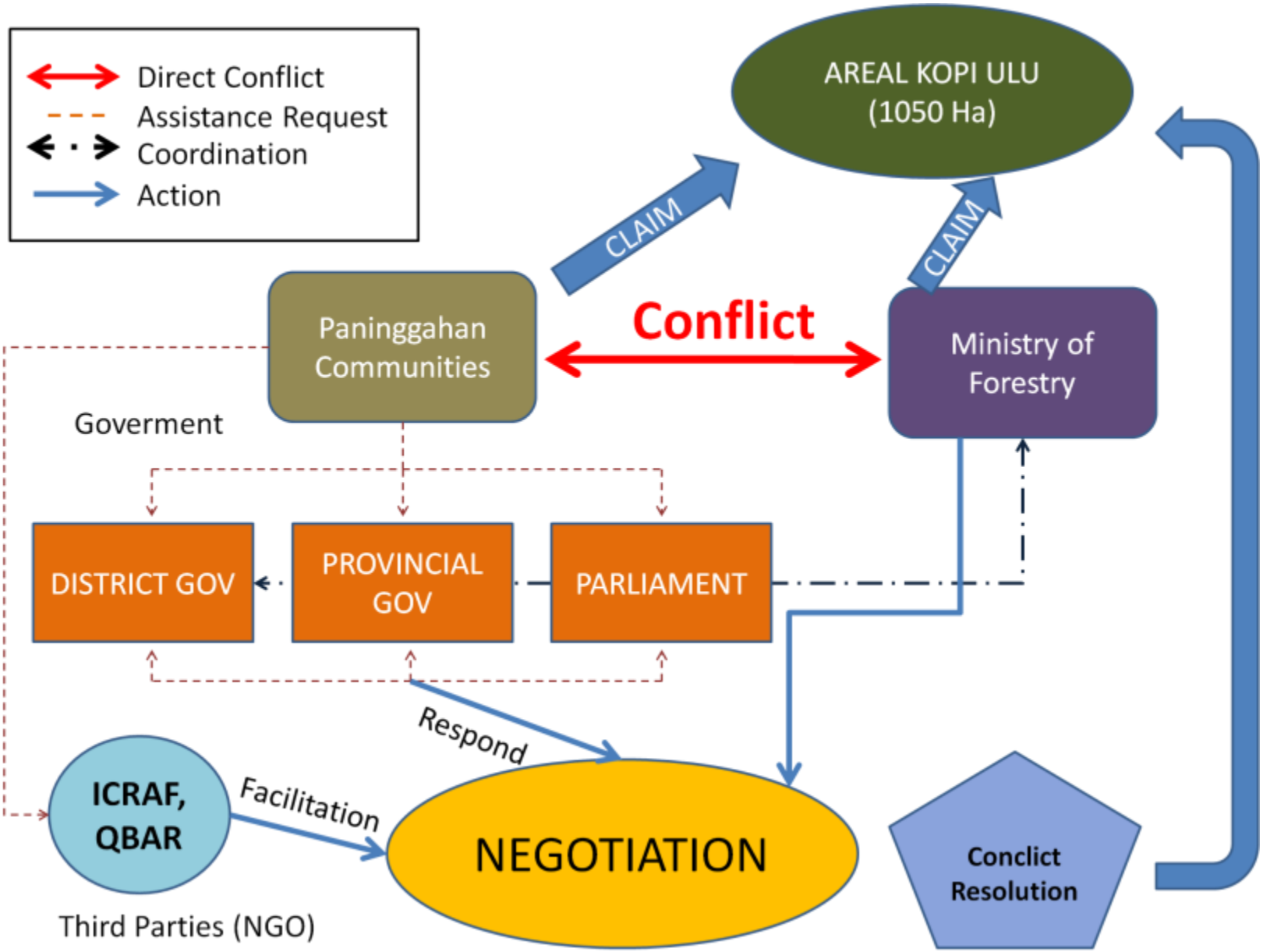
Kopi Ulu Scheme

- 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



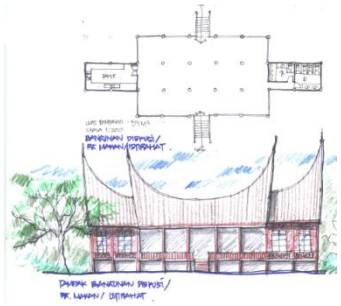
Information and capacity building centre



LEGENDA:
1. ENTRANCE UTAMA
2. PARKIR LOTS
3. KANTOR PENGELOLA
4. BANGUNAN DISKUSI
5. MUSHOLLA
6. GUEST HOUSE
7. VIEWING DECK
8. JEMBATAN PENGHUBUNG ZONA
9. SPORT GROUND
10. KANTOR R. ISTIRAHAT/GAMES
11. BANGUNAN PELATIHAN/PENELITIAN
12. ASRAMA
13. NURSERI
14. LATH HOUSE
15. OUTDOOR CLASS
16. CAMPING GROUND
17. ORGANIC FARMING
18. AGROFOREST
19. OPEN FIELD
20. NATURE TRACK HIKING
21. GAZEBO
22. FOOTPATH
23. EKSI
24. PERC
25. EKSI

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SKALA
0 50 100 200 m





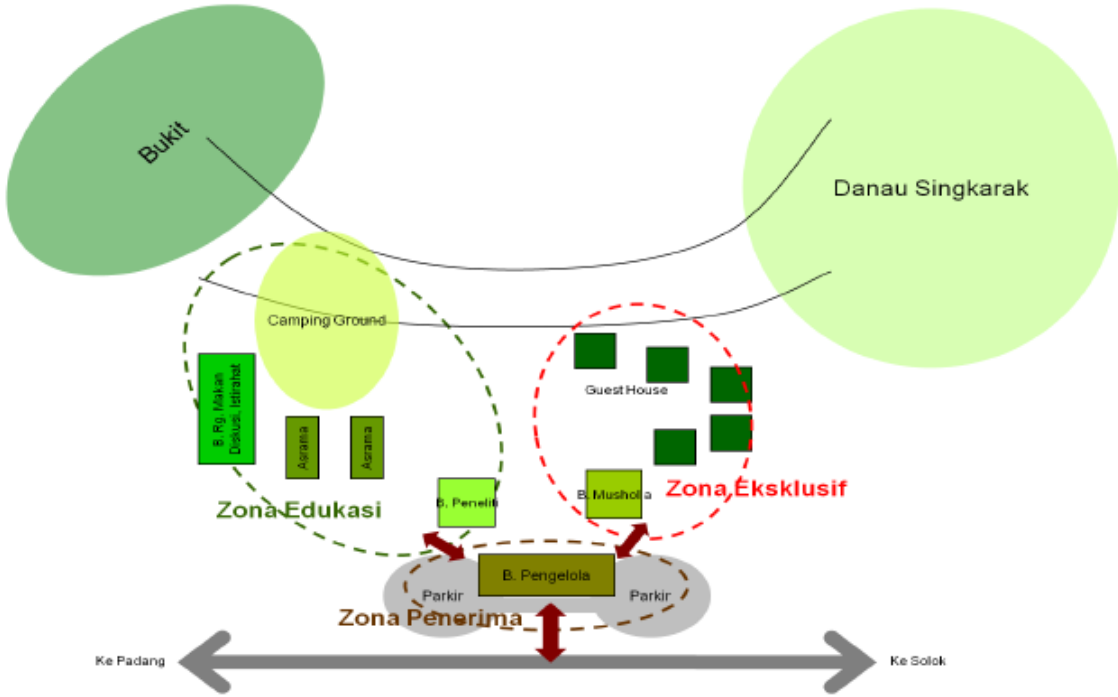




FOTO 1



FOTO 2



FOTO 3



FOTO 4

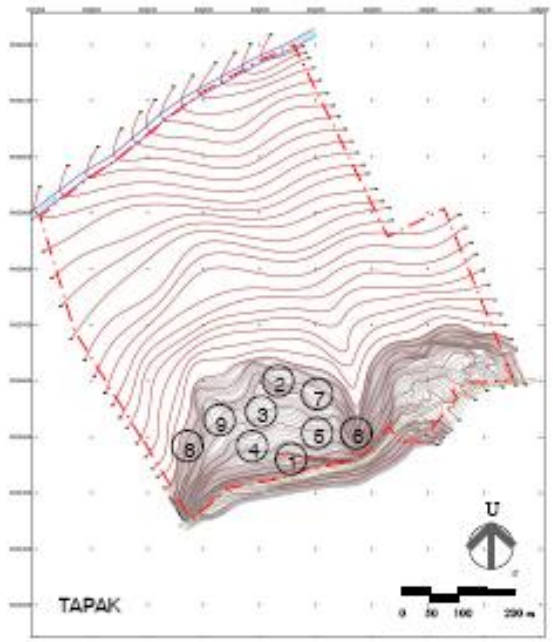




FOTO 5



FOTO 6



FOTO 7



FOTO 9



FOTO 8

Sumber: Nurisyah et al, 2009



FOTO 11



FOTO 10



FOTO 9



FOTO 8



FOTO 7



FOTO 6



FOTO 5



FOTO 4



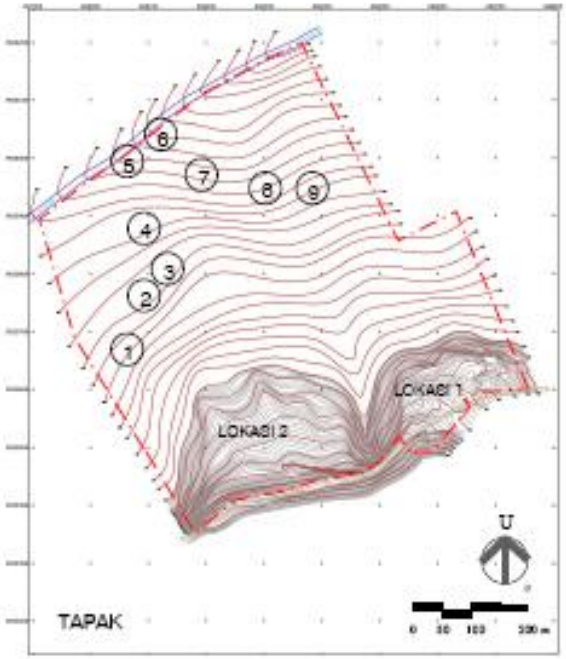
FOTO 3



FOTO 2



FOTO 1



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

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