

REDD-ALERT: linking global climate arrangements to local land-use behaviour



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EU-FP7 Project REDD-ALERT

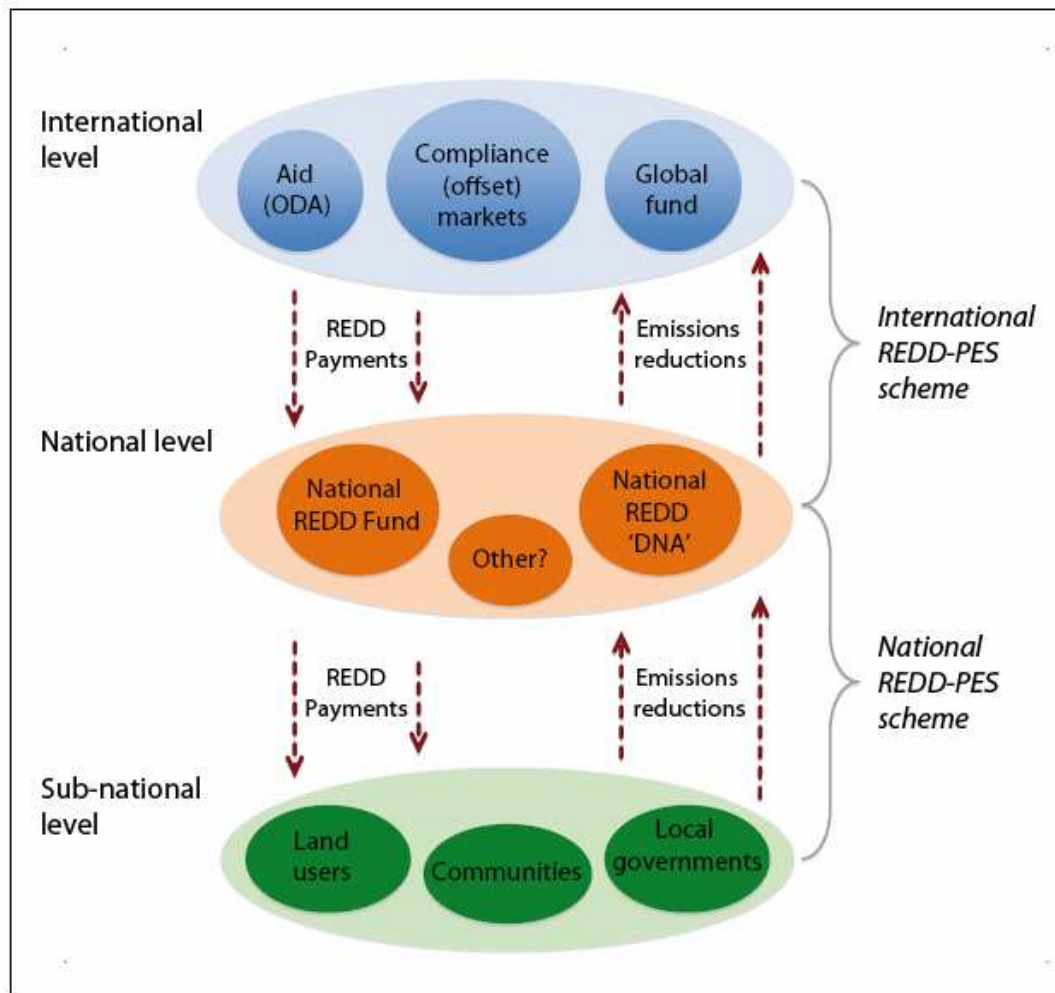
Reducing Emissions from Deforestation and Degradation through Alternative Landuses in Rainforests of the Tropics

- Macaulay Land Use Research Institute, **United Kingdom**
- Université Catholique de Louvain, **Belgium**
- Vrije Universiteit Amsterdam, **Netherlands**
- Georg August University of Göttingen, **Germany**
- World Agroforestry Centre, **Kenya**
- Centre for International Forestry Research, **Indonesia**
- International Institute of Tropical Agriculture, **Nigeria**
- Centro Internacional de Agricultura Tropical, **Columbia**
- Indonesian Soils Research Institute, **Indonesia**
- Research Centre for Forest Ecology and Environment, **Vietnam**
- Institut de Recherche Agricole pour le Développement, **Cameroon**
- Instituto Nacional de Investigacion y Extension Agraria, **Peru**

Linking global agreements to local action



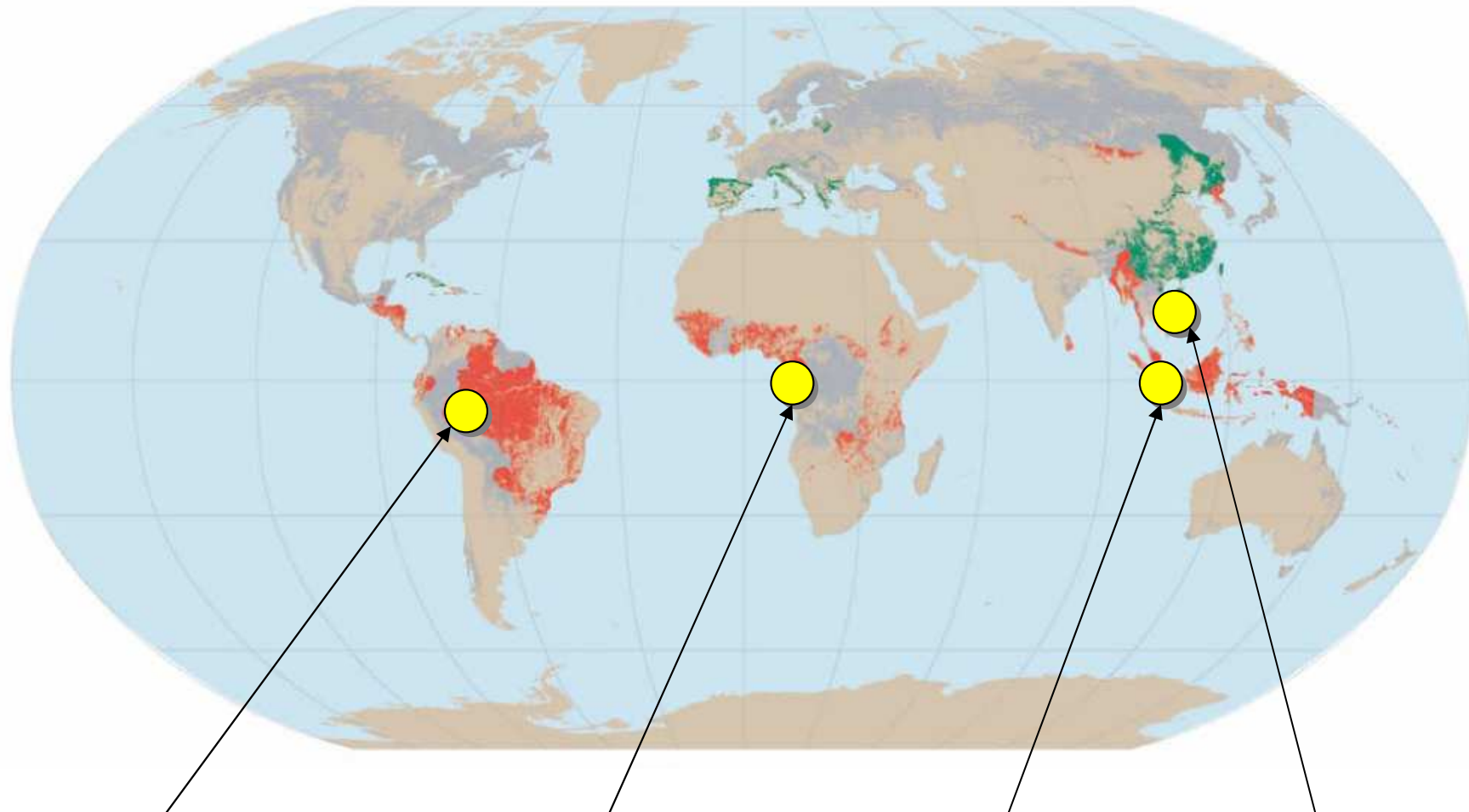
REDD mechanisms: challenges



(Angelsen & Wertz-Kanounnikoff, 2008)

- Benefits to different actors at different levels
- Tradeoffs between delivering emission reductions, livelihoods, other ecosystem services
- Avoiding leakage
- Ensuring additionality, permanence

Site locations



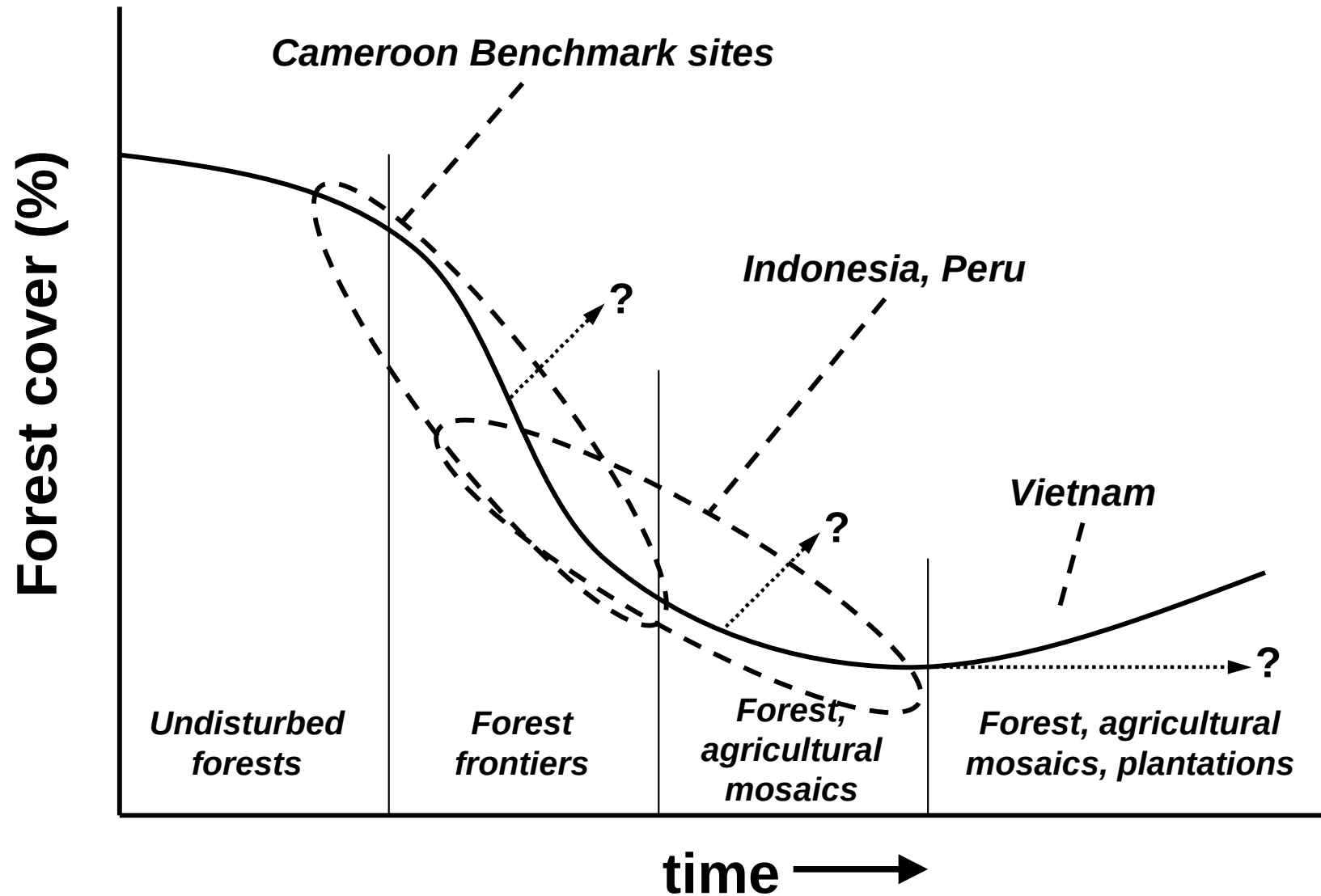
Ucayali, Peru

Southern Cameroon

Indonesia

Vietnam

Forest transitions



Drivers of deforestation

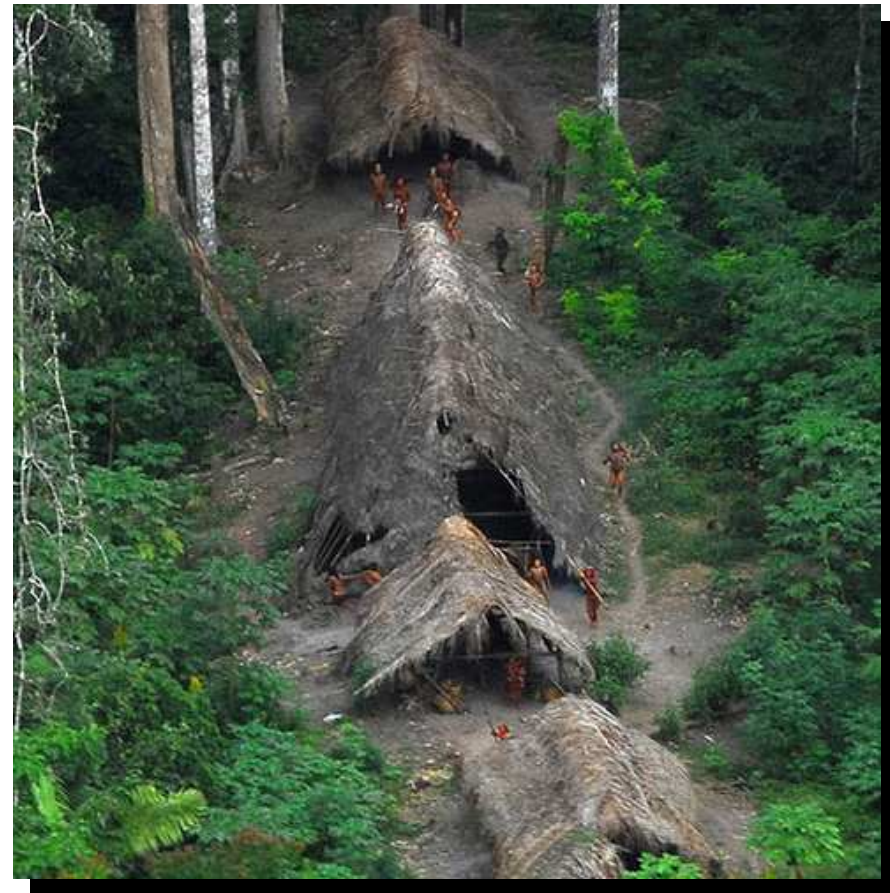
- **Southeast Asia**
 - timber concessions, plantations (paper, palm oil)
 - slash-and-burn agriculture
- **Latin America**
 - road building followed by migrant settlers practising slash-and-burn
 - pasture creation for cattle
- **Africa (Congo Basin)**
 - smallholder agriculture
 - commercial logging
 - fuelwood

(Geist & Lambin, 2002)



Who are the stakeholders?

- National governments
- Local government
- Companies: Logging, oil palm, biofuels
- Commercial ranchers
- Local communities
- Subsistence farmers
- Indigenous peoples
 - Rights to land and ecosystem services
 - Rights to information
 - Participation in national decision-making processes
 - Share of financial benefits
 - 'Free Prior and Informed Consent'



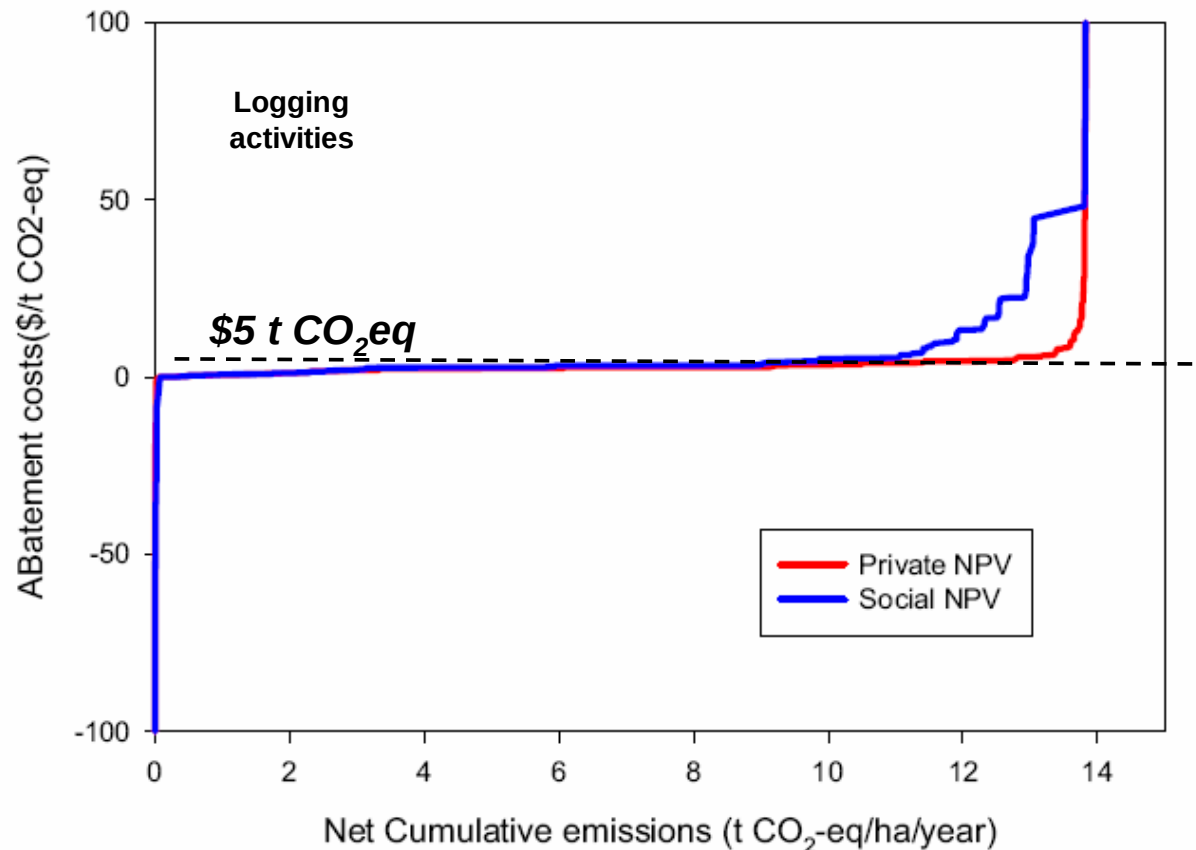
Potential mechanisms

- Taxes
- Incentives
- Regulations – protected areas
- Agricultural intensification – reduce pressure on forests
- Alternative livelihood opportunities
- Establishment of new markets
- Use of idle land
- Land tenure reform
- Sustainable forest management practices



Marginal abatement cost curves

East Kalimantan



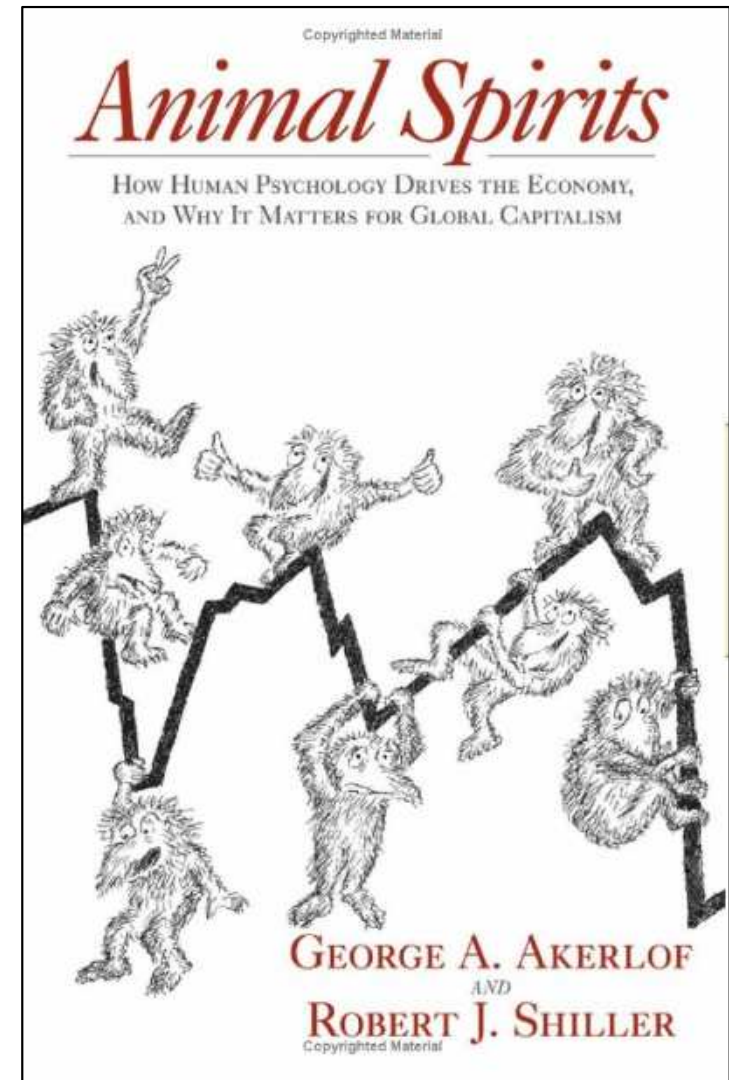
(Swallow et al, 2007)

- Low returns, high emissions
 - high transportation costs
 - low market access
 - low population density
 - lack of economic opportunities
- Higher returns, high emissions
 - Forest to mixed agriculture
 - Forest to agroforest
 - Agroforestry to sugar cane
 - Agroforest to banana
- Other costs
 - Transaction, investment

What influences people's decisions?

- Incentives
 - self enhancing, rewards, fines
- Identity
 - Belonging, social networks, reputation, sense of community
- Information
 - Understanding impact of actions on environment
 - Local information more effective
- Institutions
 - Common rules, trust, fairness

- Van Vugt, 2009



Hutan Desa: Lubuk Beringin

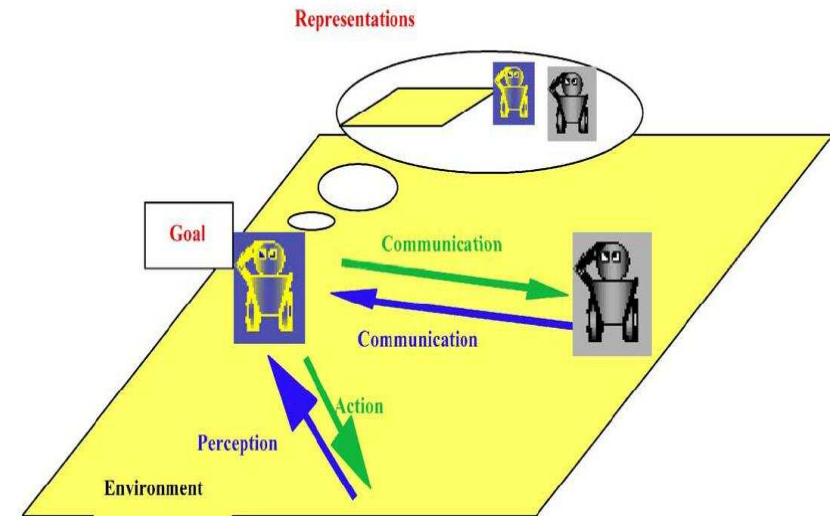
- *Hutan Desa* = Forest Village
- Community-based forest management
- Village Conservation Treaty rules
 - to preserve protected forest - Batang Buat River catchment
 - to preserve rubber agroforestry areas
 - not to cultivate on steep or sloping plots
 - for efficient use of natural water
- Incentives, identity, information, institutions
- REDD benefits need to be ‘translated’ into something that local people understand



Agent-based modelling

ABM: a number of ‘intelligent’ virtual agents which:

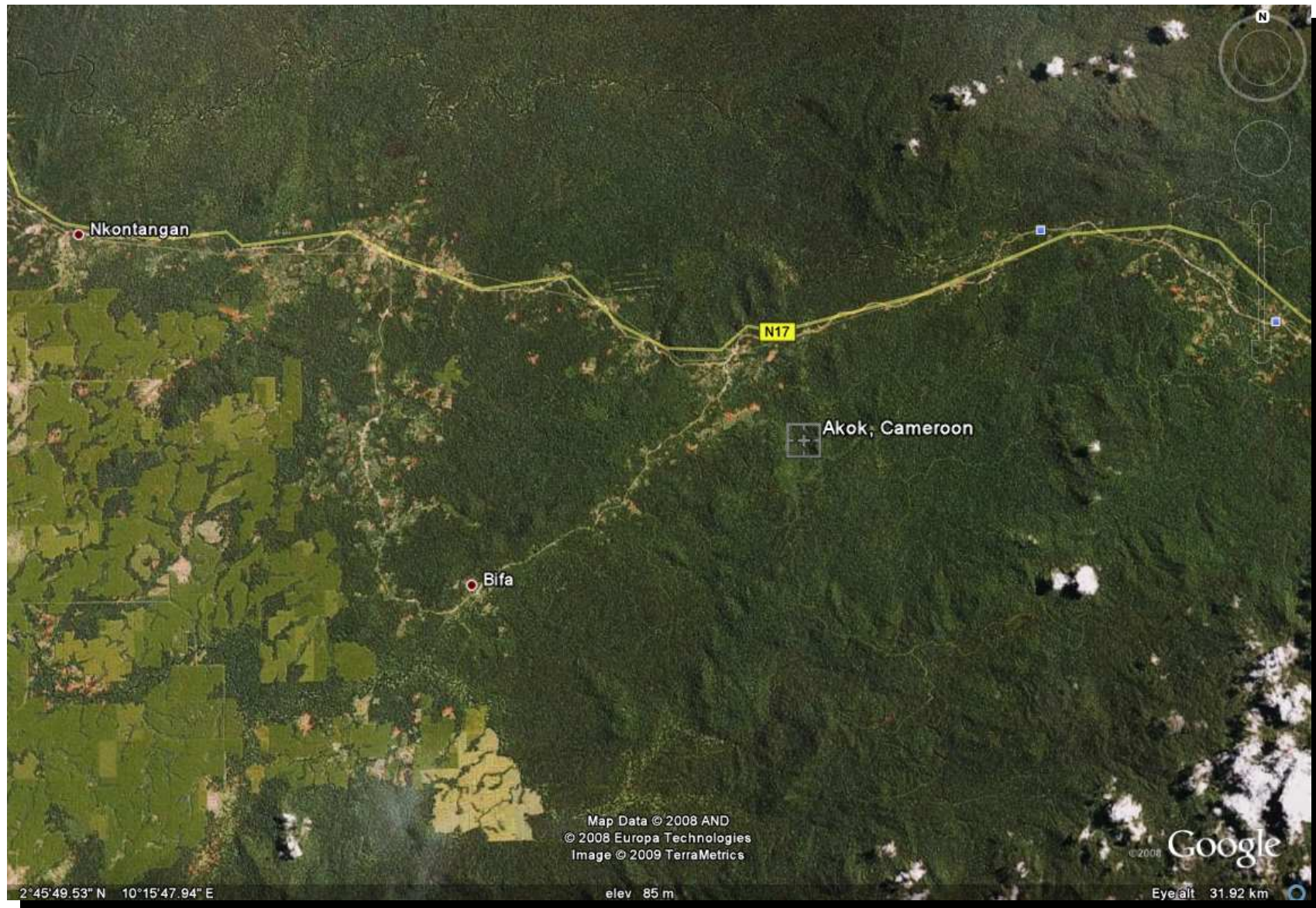
- have the ability to communicate and exchange information with each other
- can interact with their environment
- have the ability to change their actions as a result of these interaction
- have only partial knowledge of the system as a whole (bounded rationality)



ABM offers a way to couple social, economic, and ecological models:

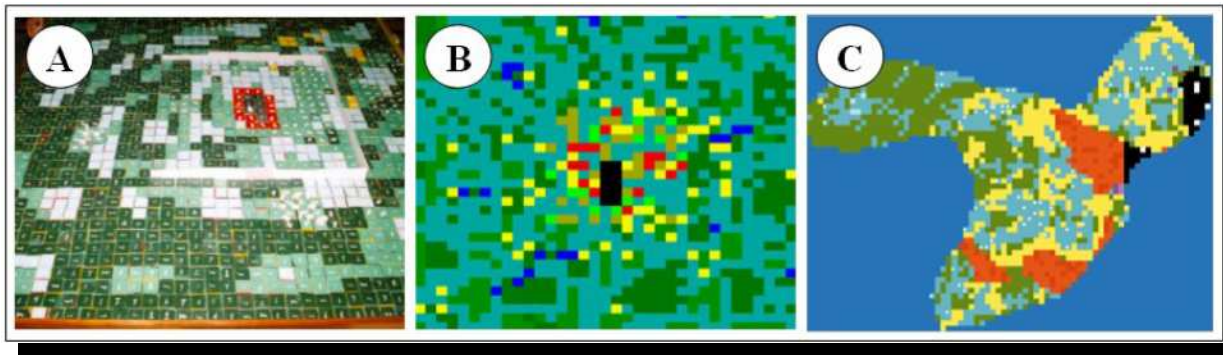
- social interaction
- micro-level decision-making
- multiple-scale level decision-making
- population level adaptation
- co-evolution between agents and their environment

ASB site: Akok, Cameroon



Stakeholder engagement

- **Challenge:** translating national level targets into **land use change** by the people at the 'coal face'
- Understand peoples' **perceptions, fears, ambitions & expectations**
- **Role-playing games** to explore benefit-sharing mechanisms
- **Negotiation Support System (NSS)** approach rather than Decision Support System (DSS)



(Castella et al., 2005)

Future challenges

- REDD is just for forests
 - definition of a 'forest'?
 - leakage to other land uses
- Need to consider all land uses – credit for C storage in
 - agroforestry
 - agriculture
 - forestry
- Move towards AFOLU – Agriculture, Forestry, Other Land Uses



Rice forest in Thailand

Further information at www.redd-alert.eu

