

## C08

### Collective decision making and land allocation at the village level

Miriam Vorlaufer, Marcel Gatto

Meike Wollni, Marcela Ibanez, Bambang Juanda (IPB Bogor), Zaki Fathoni (UNJA Jambi)



Fig. 1: Land transformation in Jambi

#### Background and objectives

Intensively managed rubber and oil palm plantations have expanded rapidly in Indonesia, often replacing more complex land use systems like jungle rubber that provide important ecosystem functions. Our objective is to study *land allocation decisions at the village level* and to evaluate *potential incentive mechanisms* for more sustainable land uses. We focus on the role of social capital and institutions for village-level land allocation and compare the effectiveness of different compensation mechanisms.

#### Land allocation at the village level

##### Aim:

- Analyze the effects of village characteristics and institutions on the land allocation to different land-use systems (oil palm, rubber, forest) at the village level

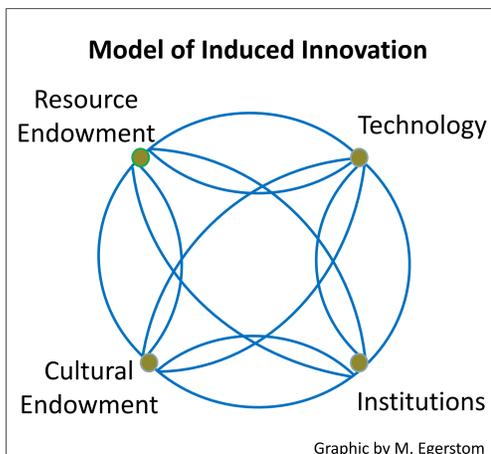


Fig. 2: Model of Induced Innovation

##### Focus on

- Socio-economic and agro-ecological village conditions
- Institutions and social capital including trust
- Transmigrant program policy
- Contractual arrangements between palm oil companies and villages

##### Methods:

###### Data collection

- Village-level survey of 98 randomly selected villages
- Sampling framework jointly developed with C07 Qaim/Schwarze
- Structured questionnaires administered to village leaders and other key informants
- Trust games to obtain a measure for trust among villagers



Fig. 3: Village surveys

###### Econometric analysis

- Joint estimation of the land cultivated with oil palm, rubber and forest at the village level
- Two-stage model to estimate the factors determining contractual outcome between villages and oil palm companies conditional on contract formation



#### Policy instruments to promote conservation

##### Aim:

- Test the effects of different compensation mechanisms on land allocation, cost-effectiveness and equity considerations under endowment and productivity heterogeneity

##### Focus on

- Endowment heterogeneity; productivity heterogeneity
- Egalitarian vs. Pro-poor compensation
- Egalitarian vs. Threshold egalitarian compensation
- Cost-effectiveness and equity considerations



Fig. 4: workshop (public good experiment)

##### Methods:

###### Public good game

- Assess participants' willingness to accept compensation for allocating land to jungle rubber as opposed to oil palm
- Participants play in groups, consisting of 3 participants
- Endowment heterogeneity (2 participants receive 5 ha, respectively, 1 participant receives 10ha)
- Return from oil palm is higher than return from jungle rubber
- Productivity heterogeneity (participants with 5 ha face a relative profit of jungle rubber of 0.5, farmers with 10 ha of 0.6)
- Jungle rubber generates positive externalities
- Treatments take different compensation schemes and compensation levels into account

Tab. 1: Depiction of Egalitarian and Pro-Poor compensation mechanism

Compensation mechanism	Egalitarian		Pro-Poor		
	5	10	5	10	
Endowment heterogeneity (ha)	5	10	5	10	
Productivity heterogeneity (relative profit of jungle rubber)	0.5	0.6	0.5	0.6	
Comp. scheme (relative compensation per ha jungle rubber Between subject design Pij (i=1,2) Within subject design Pij (j=1,2))	P11	0.05	0.05	0.10	0
	P12	0.25	0.25	0.30	0.20
	P21	0.10	0.10	0.15	0.05
	P22	0.30	0.30	0.35	0.25

Further treatments account for productivity homogeneity; framing effects and threshold compensation mechanism

**Cooperation:** *With project groups A and B:* exchange of data and results for analysis of ecological-economic trade-offs, biodiversity indicators for village-level analysis, coordination of survey design and plot selection, collaboration with SP Experiment on the economics of biodiversity enrichment. *Within project group C:* Joint sampling framework, joint design of economic experiments, joint analysis of quantitative and qualitative data on institutions.