Natural Resource Management Policies in the uplands of Indonesia

A case study of Community Forestry (HKm)

Sustainable Upland Production Landscape Seminar
Bandung, 26 January 2023

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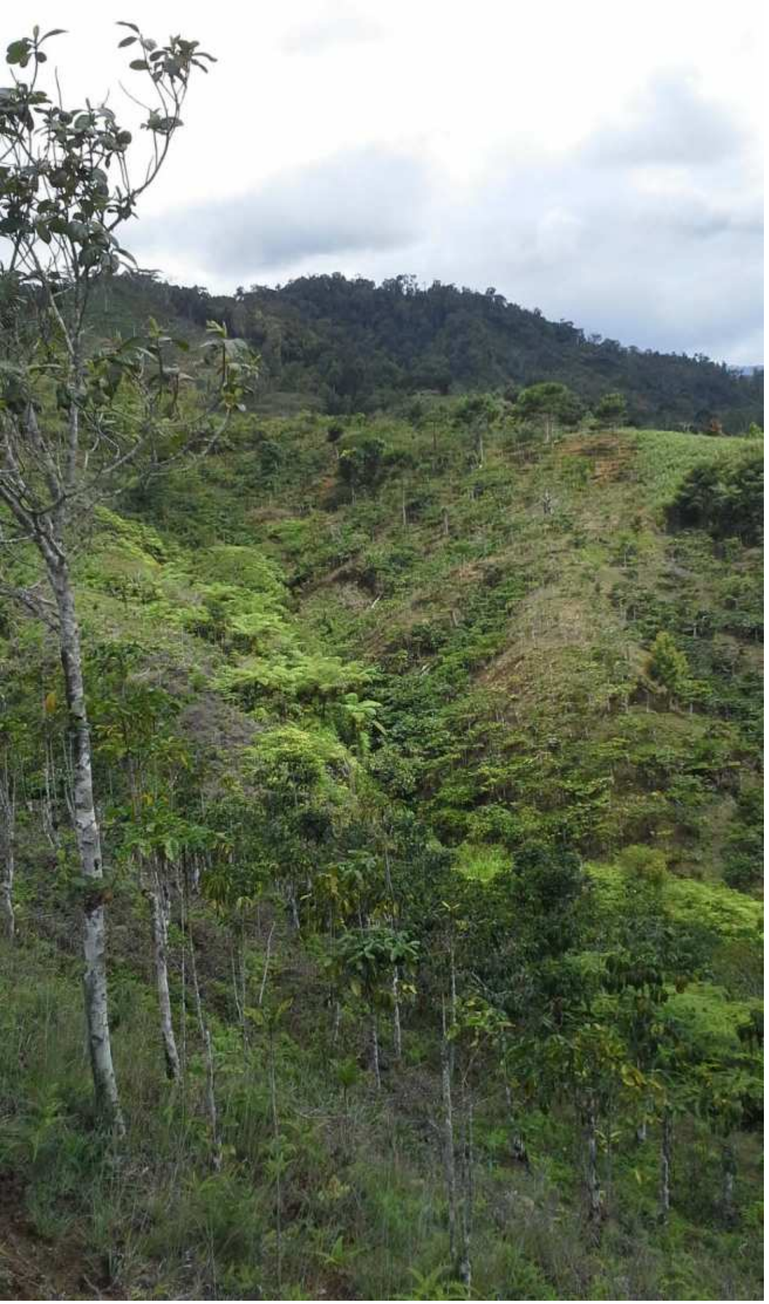

Background

- Natural resource management policies for growth and conservation agendas
- Risks from large-scale natural resource management policies
  - Lack of nuanced understanding of the diverse local contexts
  - Panacea solutions could undermine sustainability
- A nuanced understanding of local socio-ecological systems is critical to ensure effective policy

The Upland Areas of Indonesia, A unique socio-ecological system

- 40% of the terrestrial area are hilly and mountainous forest-margin area
- 25% of population live in the rural-agricultural upland, incl. smallholders
- 80% of population benefits from the ecosystem services
- High environmental threats and diminishing ecosystem services

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Pagar Alam, South Sumatra, Indonesia

- Upstream area of Musi Watershed
- About 26,000 ha (38%) protected forest
- 70 % population work in agriculture (Agri GDP~23%)
- Main commodities:
  - *Perennial:* Tea (PTPN VII), Coffee Agroforest, Rubber, Clove, (newly established) (smallholders)
  - *Horticulture:* Cabbage, Potato, Chili, Tomato, Carrot, Leek, Eggplant, Bean, Strawberry, Pepino (smallholders)
  - Rice field (smallholders)

Livelihood Strategy

- The major livelihood strategies are predominantly coffee farming, gradually replaced by seasonal crops
- Land availability limits diversification strategies
- Farming activities within the state-forest is a common practice
- Forestry-sector has less contribution to income

Environmental issues

- Forest tenurial conflict between farmers and authority
- Coffee and horticulture crops are cultivated in the protected forest area
- The *Hutan Kemasyarakatan (HKm) scheme* is implemented to address this situation

Indonesia's Social Forestry Context

Hutan Kemasyarakatan (HKm Scheme) in Pagar Alam

Community Forestry HKm Scheme in Pagar Alam.

- The local forest farmer groups (Kelompok Tani Hutan) would be provided with usage rights to manage specifically designated areas within the protected forest (Hutan Lindung) for a 35-year period.
- This community access is limited to extracting non-timber forest products and ecosystem services within the protected forest (MoEF, 2016).

- The updated Forestry Law (law 41/1999) formally acknowledge social forestry as a policy approach
- Since 2015, the central government has set the target of distributing 12.7 million hectares of social forestry by 2024 **(part of the agrarian reform)**
- The MoEF enacted the Decree on Social Forestry (PERMEN LHK 83/2016) that simplified simplified permit application and detailed the extent of rights for five social forestry schemes.
- Between 2015 and 2021, more than 4 million hectares of forest land have been distributed to approximately 7,200 social forestry groups
- **Three core objectives:**
  - Livelihood improvement,
  - Social equity,
  - Forest conservation

Social Forestry Schemes

source: Amaruzaman et al (Under Review)

Social Forestry Schemes	Hutan Desa (HD)	Hutan Kemasyarakatan (HKm)	Hutan Tanaman Rakyat (HTR)	Kemitraan Kehutanan	Hutan Adat (HA)
English name	Village Forests	Community Forestry	Community Plantation Forests	Forestry Partnerships	Customary Forests
Main entities	Village institutions; village farmers group	Farmers groups; local cooperatives	Individual farmers; farmers groups; local cooperatives	Farmers' group	The indigenous community
Forest tenure	State forest				Non-state forests (hutan hak)
Allocated State-Forest	Production and protection forests		Production forests	Production; protection; conservation forests	
Contract duration	35 years maximum, with evaluation every 5 years			35 years; 5 years in conservation forests	n.a.
Management practices	Collecting non-timber forest products; timber extraction (in production forest); tree-based agroforestry; forest environmental services use				

Research Objectives and Methods

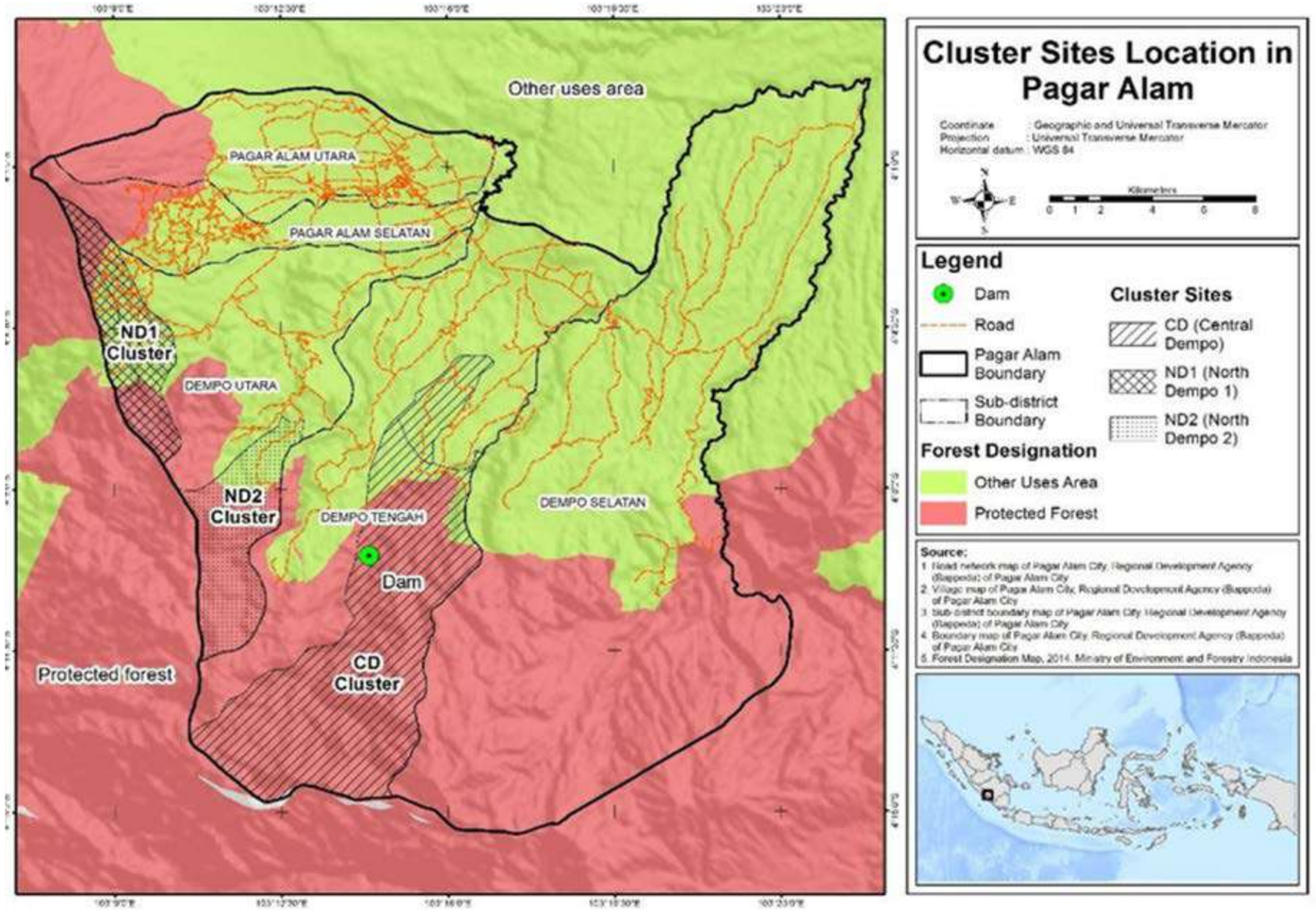
1 To identify the local perception regarding risks and opportunities from the community forestry policy (HKm) in Pagar Alam

Research framework: *Narrative approach, Reflexive Modernity*
Data collection: *In-depth interviews, Observation, FGD in the forest border clusters*

2 To analyse the potential outcomes of the HKm towards upland people and landscape

Research framework: *Social Forestry Core objectives (Livelihood, Conservation, and Social Equity)*
Data collection: *Household Survey and FGD in the village forest clusters*

Data Collection: A nested landscape approach



Landscape (Sub-watersheds)

Sub District

Household Survey Villages

FGD Clusters

Selangis → **North Dempo** → **9 villages (163 HHs)** → **2 Clusters (4 HKm groups)**

Lematang → **Central Dempo** → **8 villages (126 HHs)** → **1 Cluster (2 HKm groups)**

RESULTS

Objective 1: Perceived Risks and opportunities

Agriculture and Human Values
https://doi.org/10.1007/s10460-021-10281-3

Reflexive policies and the complex socio-ecological systems of the upland landscapes in Indonesia

Sacha Amaruzaman[1] · Douglas K. Bardsley[2] · Randy Stringer[1]

Accepted: 22 October 2021
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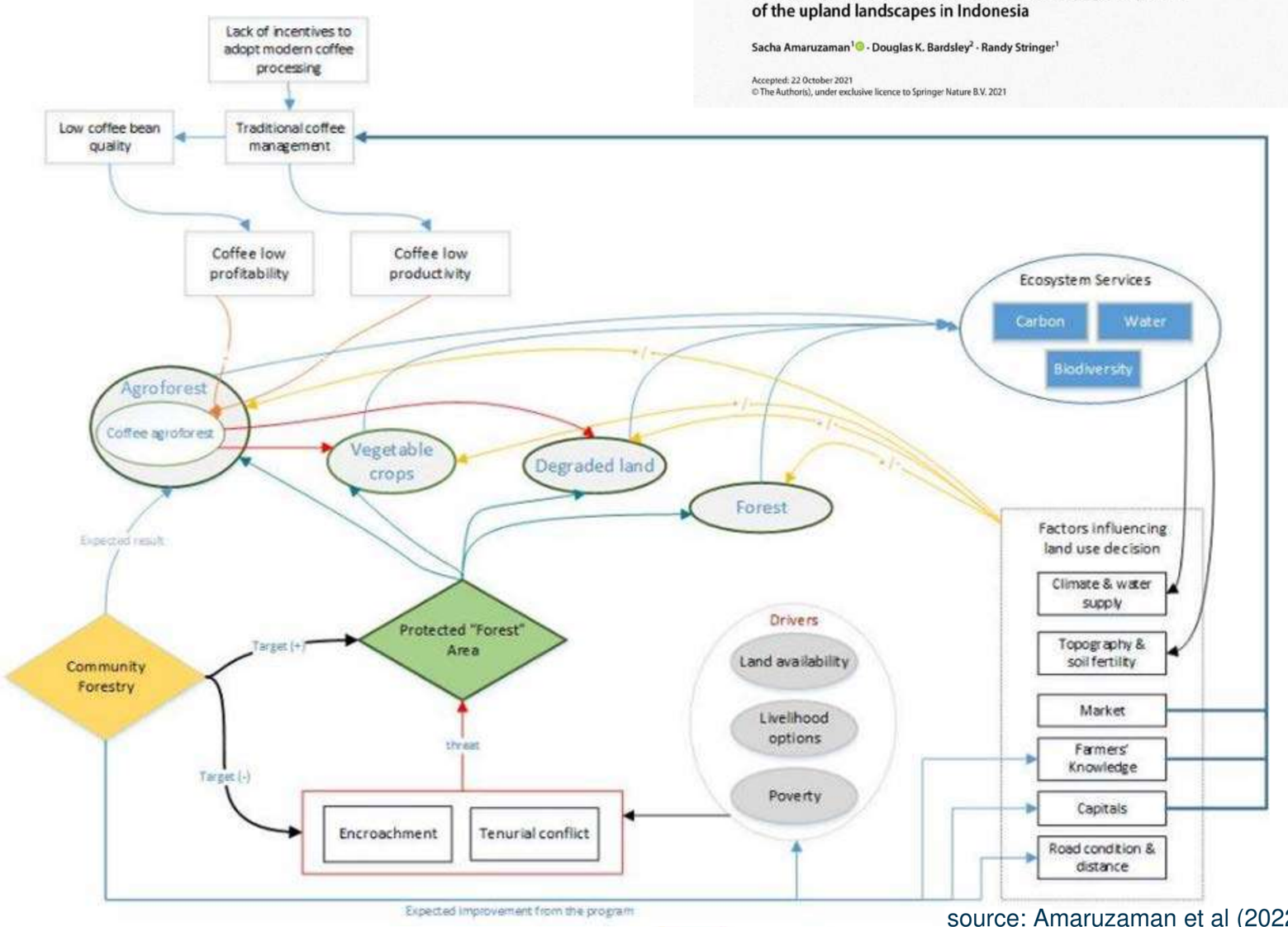
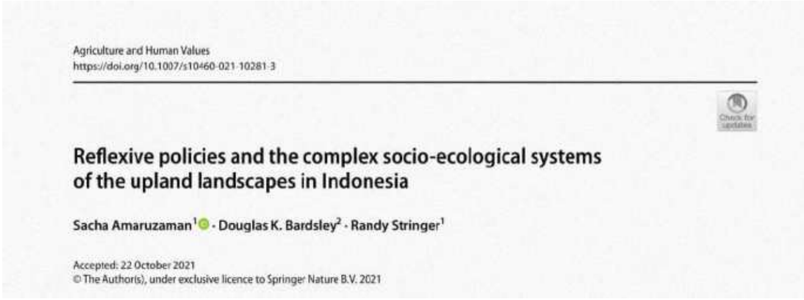
HKm in Pagar Alam: Three Main Narratives

1. The government's perspective: HKm will generate a solution for tenurial problems in the protected forest area, particularly through **tree-based agroforestry** and **ecotourism**
2. Various endogenous factors might influence farmers' decisions to adopt sustainable forest management, including market, incentives and capacity building
3. Farmers' increasing preferences for replacing coffee agroforestry areas with more profitable vegetable crops.



source: Amaruzaman et al (2022)

Objective 1: Perceived Risks and opportunities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Risks and Opportunities from HKm

Opportunities

- Secure land access within the protected forest
- Additional income from agroforestry and ecotourism
- Opportunity to gain development assistance (i.e road access to farm plots in the forest, seedling distribution and training)

Risk and challenges

- Uncertainty regarding government commitment to providing access to the forest
- Lack of awareness and knowledge regarding the rights and obligations under CF
- Inflexible policy emphasises agroforestry, although productive areas are limited and a lack of property rights means land cannot be used as collateral
- Limited involvement of community members

source: Amaruzaman et al (2022)

Objective 2: Potential outcomes of HKm

Figure 4.5. Forest Frontier situation in the Three Clusters

- Different type of forest frontier landscapes between clusters
  - **Cluster ND1:** a well-established productive landscape, predominantly sloping land; more integrated to the market; better opportunities for ecotourism
  - **Cluster ND2 and Cluster CD:** steep land; less integrated to the market; big challenge for ecotourism

"Many of the cultivated forests are farmed with vegetables, and the locals also work as vegetable labourers for their daily income. We hope that the new program (HKm) would not completely replace our vegetable crops (in the forest border) because it is now becoming our main source of income" (Women Group, Cluster ND1).

Source: Amaruzaman et al (under review)

Objective 2: Potential outcomes of HKm

FGD findings

- Outmigration of the local farmers → Social forestry as an agrarian reform includes the non-forest farmers as the member of HKm group

  Most of the (previous) forest farmer families do not live here anymore. After a while, many of them now work on other things, such as in trading or doing bureaucracy works. Some of them already migrated to Palembang (provincial capital city) and Java (Women group, Cluster ND2).

- Less preferable designated HKm area (for new farmers)

  We will have to plant fruit trees in the upland forest, but these trees are less productive at such elevation. (Men Group, Cluster ND1).

- Lack of involvement and understanding about the program from the HKm group members

  You should ask the men because we don't know about HKm—(we) just hear it occasionally from their conversation. It's useless (to ask us about it) because we don't understand (Men group, Cluster CD).

  We were only asked to provide the copies of our ID because we have plots in the protected forest. Only the leaders meet the government facilitator (Men Group, Cluster ND2).

Objective 2: Potential outcomes of HKm

Farmers' Socio-economic characteristics

No	Respondent characteristics	Mean		
		Total (N=289)	North Dempo (N=163)	Central Dempo (N=126)
1	Farm plots: N plots (hectare)	2.2 (0.78)	2.1 (0.74)	2.3 (0.81)
	Forest farmers	2.6 (0.82)	2.5 (0.85)	2.6 (0.81)
	Non-Forest Farmers	2.1 (0.76)	2 (0.73)	2.2 (0.82)
2	Total Income (Million IDR)	23.1	21.0	25.7
	% Coffee income	57%	58%	56%
	% Seasonal crops income	10%	16%	4%
	% Others (Non-Farm) income	33%	26%	40%
	Forest Farmers	22.1	19.9	23.0
	Non-Forest Farmers	23.3	21.1	26.9

- Forest Farmers manage more farm plots but have less income than non-forest farmers
- A gradual shift from coffee to seasonal crop (vegetable) farmers in North Dempo

Farmers' Perceptions of Forest Landscape

No	Attitudes	Mean		Z-value	P-value*
		NF	F		
1	Forest maintains environmental function, such as climate and disaster prevention	4.39	4.09	3.649	0.0002*
2	Forest is the source of clean water for our community	4.52	4.26	3.244	0.0013*
3	Forest must be conserved, not cultivated by community	3.85	2.96	5.192	0.0001*
4	Forest is state-owned land	4.12	3.86	2.837	0.0038*
5	Forest requires more protection from the government	4.45	4.05	4.558	0.0001*
6	Forest provides a farmland-bank for the community	3.05	4.07	-6.048	0.0001*
7	Forest can be sustainably managed by the local community	3.15	4.24	-7.201	0.0001*
8	Forest provides my major source of income	2.34	3.24	-5.585	0.0001*

F= Forest Farmers (N=53), NF= Non-Forest Farmers (N=236). *=Significant at P<0.05

Forest Farmers perceive protected forest as a production landscape, while non-forest farmers prefer to protect forest

Source: Amaruzaman et al (under review)

Objective 2: Potential outcomes of HKm

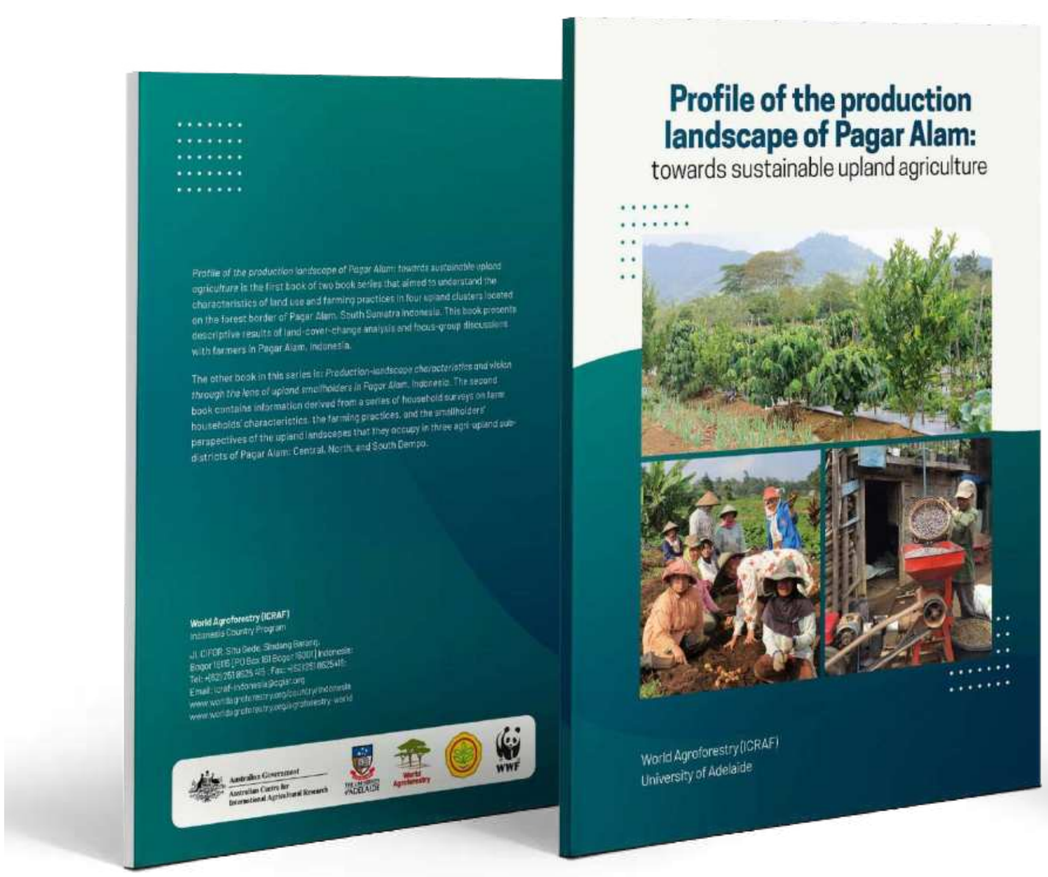
- **Livelihood**
  - Tree-based agroforestry aligns with the existing coffee farming;
  - Productivity challenges, not all HKm designated area suitable for agroforestry

- **Social equity**
  - Lack of participation of the HKm group members
  - Inclusion of outmigrated farmers (non-forest farmers) would require intensive facilitation

- **Forest Conservation**
  - Enforcing tree-based agroforestry potentially diminish the well-established forest border landscapes with potential sustainability pathways (i.e. in Cluster ND1)

Conclusion & Recommendation

- Social forestry design in Pagar Alam still limitedly consider specific social and ecological characteristics in the targeted area
- Understanding policy trade-offs through a more reflexive approach is necessary to generate positive outcomes across three core objectives:
  - *Look from diverse perspectives (i.e. socio-cultural, ecological)*
  - *Acknowledge multiple sustainability pathways*
  - *Identify exogenous factors that drives landscape transition (i.e. market, innovation, etc*


Profile of the production landscape of Pagar Alam:
towards sustainable upland agriculture
World Agroforestry (ICRAF)
University of Adelaide

Production-landscape characteristics and vision through the lens of upland smallholders in Pagar Alam, Indonesia
World Agroforestry (ICRAF)
University of Adelaide

JOURNAL PUBLICATIONS

Citation:
Amaruzaman, S. Bardsley, D.K. Stringer, R. in press. Reflexive Policies and the Complex Socio-Ecological System of the Upland Landscapes in Indonesia. Agriculture and Human Values

Link:
https://agroforestri.id/jurnal-indogreen

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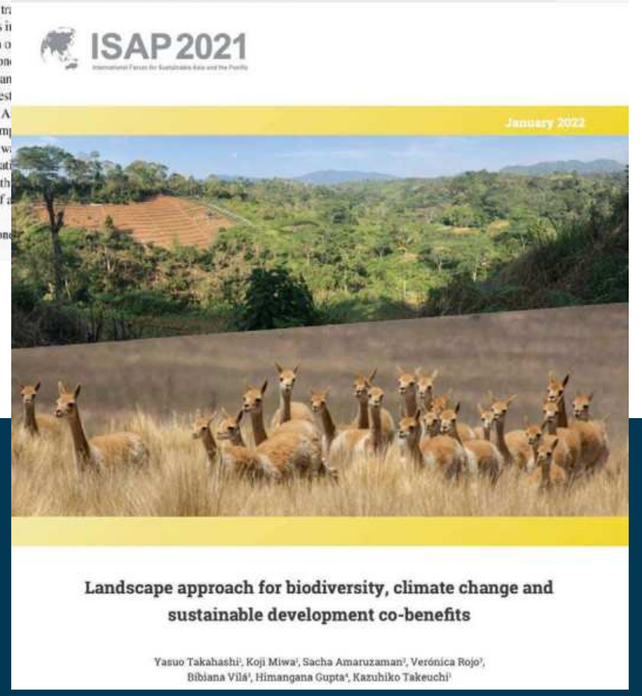
Abstract
Well-intended natural resource policies that ignore the complexity of socio-ecological systems too often threaten local values and opportunities for sustainable development. Upland areas throughout Indonesia provide examples of complex socio-ecological systems experiencing rapid socio-economic and environmental tr
between development policies and local agendas. Broad natural resource policies i
ferent ways. In some cases, there are converging national and local goals, while in o
with local aspirations. This study identifies how broadscale policies could respon
areas to optimise development outcomes and avoid unintended risks for people an
modernity is utilised to illustrate how two national policies, the Community Forest
program, largely discount the complexity of local values in the uplands of Pagar A
aspirations through an analysis of development narratives and relate how they are im
ings indicate that dominant development goals and associated sustainability pathw
farmer values and aspirations. We suggest that policymakers take more considerat
local ecological traits; local values and institutions; the multiple development path
affect local development, to promote sustainability and increase the likelihood of a

Keywords Natural resource policy · Reflexive · Uplands · Socio-ecological · Indon



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