SECURING WATER, PROTECTING FOREST: LESSONS LEARNED FROM THE MANAGEMENT OF A WEST SUMATRAN VILLAGE FOREST

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BACKGROUND

- Social forestry (SF) has received increasing attention given its lofty goal: **balancing local economic development** with **environmental sustainability.**
- Land-use in SF locations is intended to support **local economic development** via management of timber and non-timber forest products.
- In Hutan Nagari (HN) or Village Forest Simancuang, West Sumatra, **community dependence on forest-based income is low** as most people cultivate paddy for sustenance and as main source of income.
- Although households in Simancuang have low dependency on forest-based income, they still hold **conservation behavior** to protect forest.

Despite the low dependency on forest-based income, why have Simancuang communities been able to protect forests?

METHODS

- **Random sampling** to 113 households (50% of population).
- **Focus Group Discussion** with 6 HN management team (LPHN) member.
- **In-depth interview** with 10 SF stakeholders

We employ **Ordinal Logistic Regression** to understand the probability of one having an **improved environmental behavior** based on HN Simancuang's **environmental functions.**

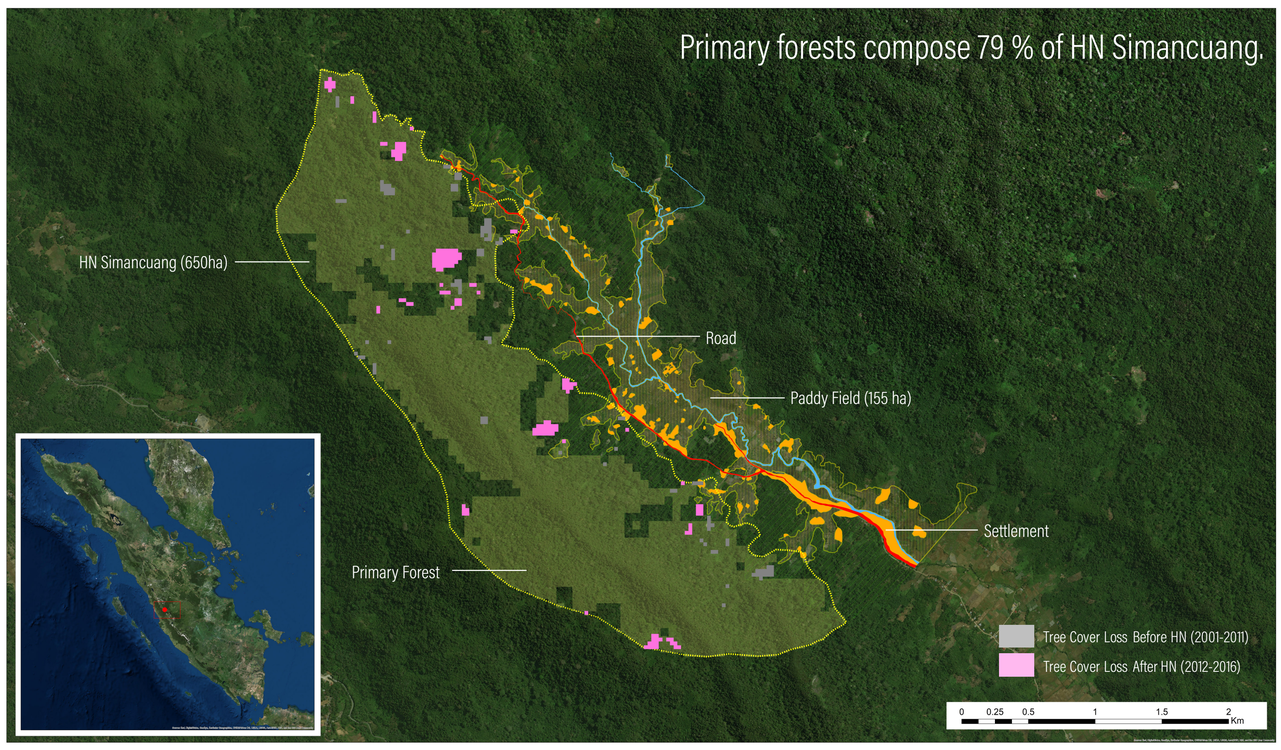



ENVIRONMENTAL FUNCTION

- Regulation functions (flood and landslide prevention), production functions (water supply) and carrier functions (agricultural production) (Groot, 1994).
- We tested the probability of these environmental functions to influence conservation behavior, i.e. community's understanding about the restriction to cut down the trees and the needs to plant high canopy trees.

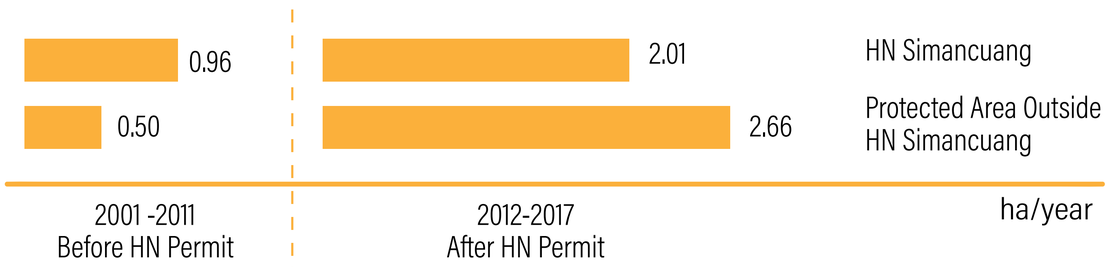
HN SIMANCUANG TIMELINE

Pre 1974	■ Poor non-land owning farmers sought land for paddy field out of poverty. ■ Simancuang people found a valley suitable for paddy field just down the hill.
1974–2009	■ Farmers of Durian Tigo Capang Group cleared the valley for paddy field. ■ Settlements started to develop, Jorong (sub-village) Simancuang was established.
2009–Present	■ LPHN was established and participatory mapping was conducted. ■ HN permit was granted in 2014 and working plan is being developed.



TREE COVER LOSS IN SIMANCUANG

Global tree cover change data (Hansen, et. al., 2013) and Indonesian primary forest map (Margono, et. al., 2014) were used to measure tree cover loss in HN Simancuang and a nearby protected forest as a comparison between 2001 - 2017.



Within that period, HN Simancuang lost 3% of its tree cover, lower than the tree cover loss figure of the nearby protected forest (4.5%). Further, tree cover loss rate in HN Simancuang has decreased after the permit while the nearby primary forest has a higher rate.

RESULTS

Disaster Risk Reduction

Half of the respondents have experienced floods (49%) and/or landslides (22%) at least once.

Those who have experienced **floods*** ** and/or **landslides*** ** were more likely to have an increased conservation behavior.

Water

Communities in HN Simancuang are highly dependent on surface water (80%) and groundwater (20%) for consumption and irrigation.

82% perceive that they could easily access clean water.

Those with easy access to clean **water** ** would have increased conservation behavior.

Wellbeing

Paddy field contributed to approx. 81% of total income in HN Simancuang; 51% of harvested paddy was consumed locally.

Individuals with higher **perceived wellbeing** ** are found to have more increased conservation behavior.

Confounding Variables

Those who benefited from **facilitation** ** and had **conservation motivation*** would have an increased conservation behavior.

In addition, **education*** ** level did not necessarily guarantee that a person would have an increased conservation behavior.

* Significant at 10% alpha level | ** Significant at 5% alpha level | *** Significant at 1% alpha level

CONCLUSION

HN Simancuang case shows that in addition to timber and non-timber forest products extraction, **forest environmental functions** could also become the driving factor to conserve forest through SF scheme.

Finding a common ground among local communities on the role of forest for their lives may improve their **motivation to protect forest.**

Strengthening locally-devised **forest protection rules** endorsed through **customary system** could help protect forest from deforestation threats.

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Illustrations source: www. freepik.com and www.flaticon.com