

Forest Transitions in the Adat Territories of *Tanah Papua*

Jarot Pandu Panji¹ and Yunus Yumte² and Agus Tafuran²

¹Environment and Forestry Research Institute, Manokwari.

²The Samdhana Institute.

Securing tenure rights for adat communities provides a foundational element of achieving low emissions development. As part of a broader initiative to support local adat communities, the Samdhana Institute worked with partner organizations to facilitate participatory mapping in seven adat territories (locations and partner organizations listed in table 1). Participatory mapping provides a key step in efforts for securing tenure rights recognition. Furthermore, mapping can also assist in providing a broader understanding about forest transition patterns. In this study, we present context on several decades of land use change in seven adat territories, which helps to provide a better understanding of the challenges and opportunities in pursuing low emission development objectives across *Tanah Papua*.

In this study, our analysis of forest cover dynamics examines loss and/or increase of forest cover, which are presented as quantified rates of deforestation and reforestation. Forest cover change analysis was conducted by comparing data from *Landsat* images over the past 30 years (1990 - 2020). These findings were then followed up through focused group discussions (FGD) with adat communities and partner organizations to identify the underlying causes of forest transitions. The results are presented below.

Table 1: Participatory mapping locations and partner organizations

	Adat territory	Regency	Partner organizations
	West Papua		
1	Marga Wabia, Suku Mpur	Tambrau	Marwas Nath
2	Marga Baasakof, Suku Abun	Tambrau	AKA WUON
3	Marga Tafii, Suku Miyah	Tambrau	AKA WUON
4	Marga Baho, Suku Maybrat	Maybrat	CDK Maybrat
5	Marga Ogoney, Suku Moskona	Teluk Bintuni	Panah Papua
	Papua		
6	Suku Hubula (19 Marga)	Jayawijaya	YBAW and KPH
7	Suku Yeinan	Merauke	SKP

Figure 1. Forest cover changes Wabia

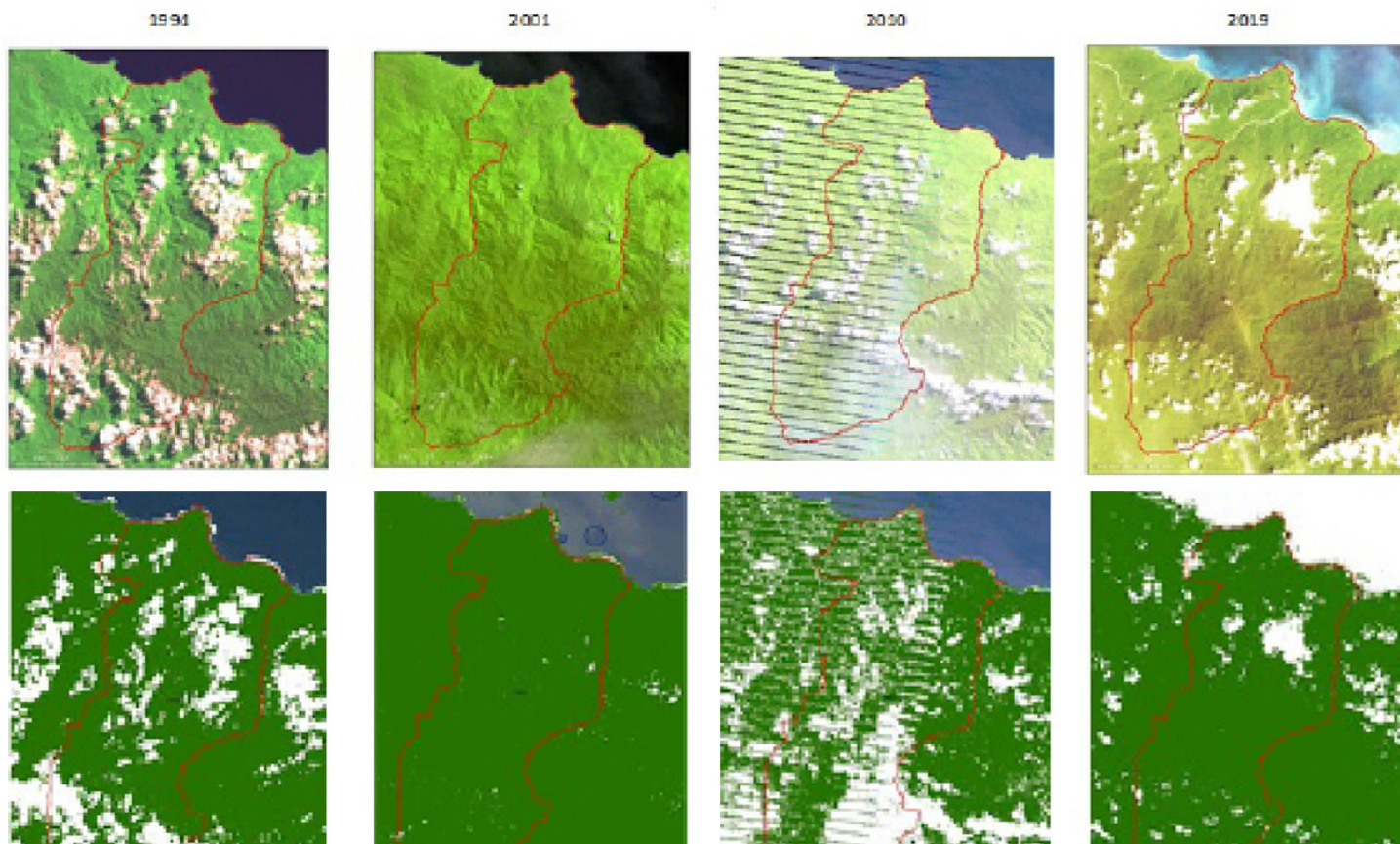


Figure 2. Forest cover change Baasakof

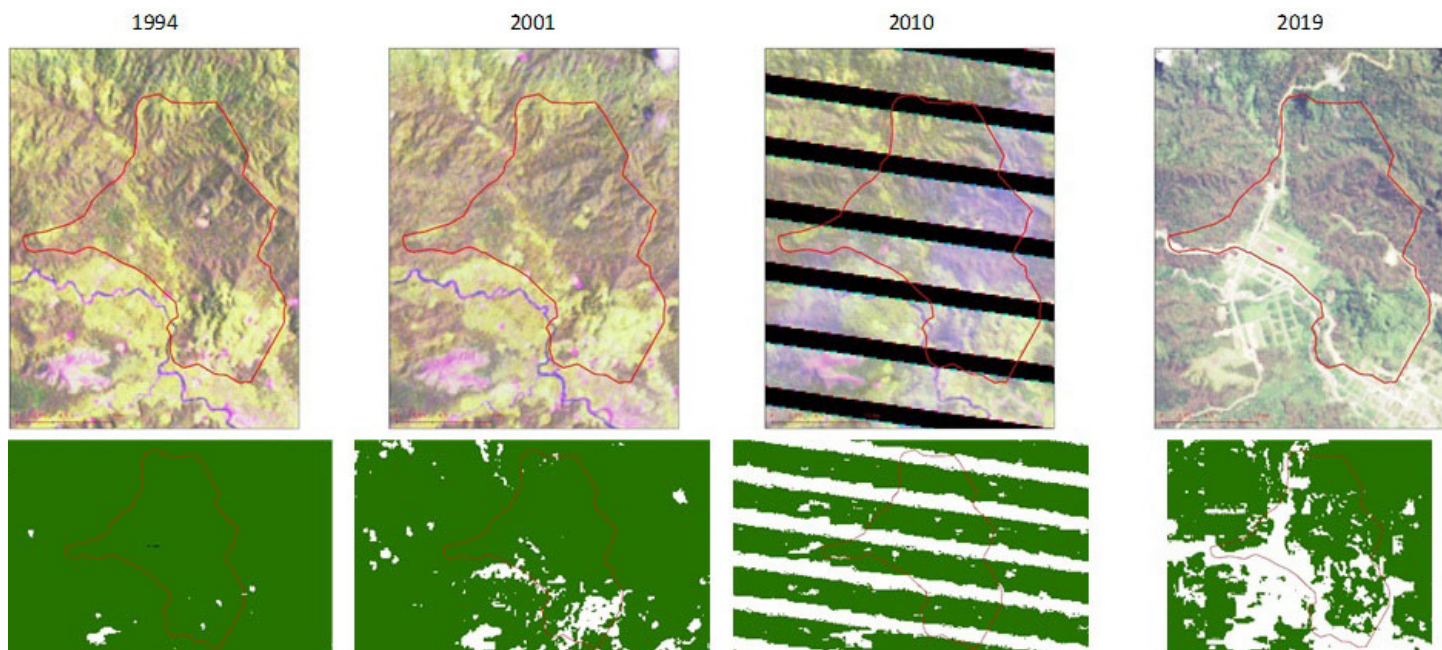


Figure 3. Forest cover change Tafi

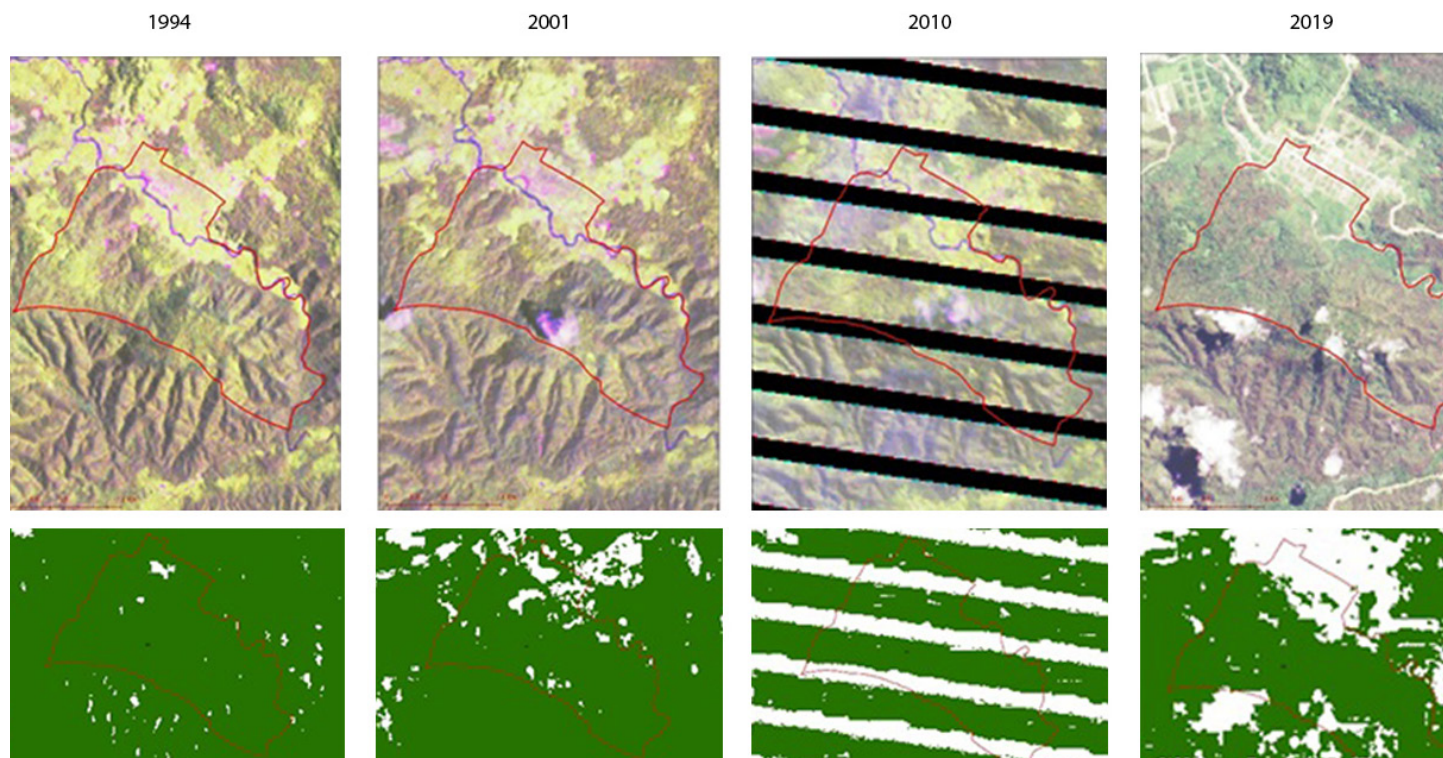


Figure 4. forest cover change Baho

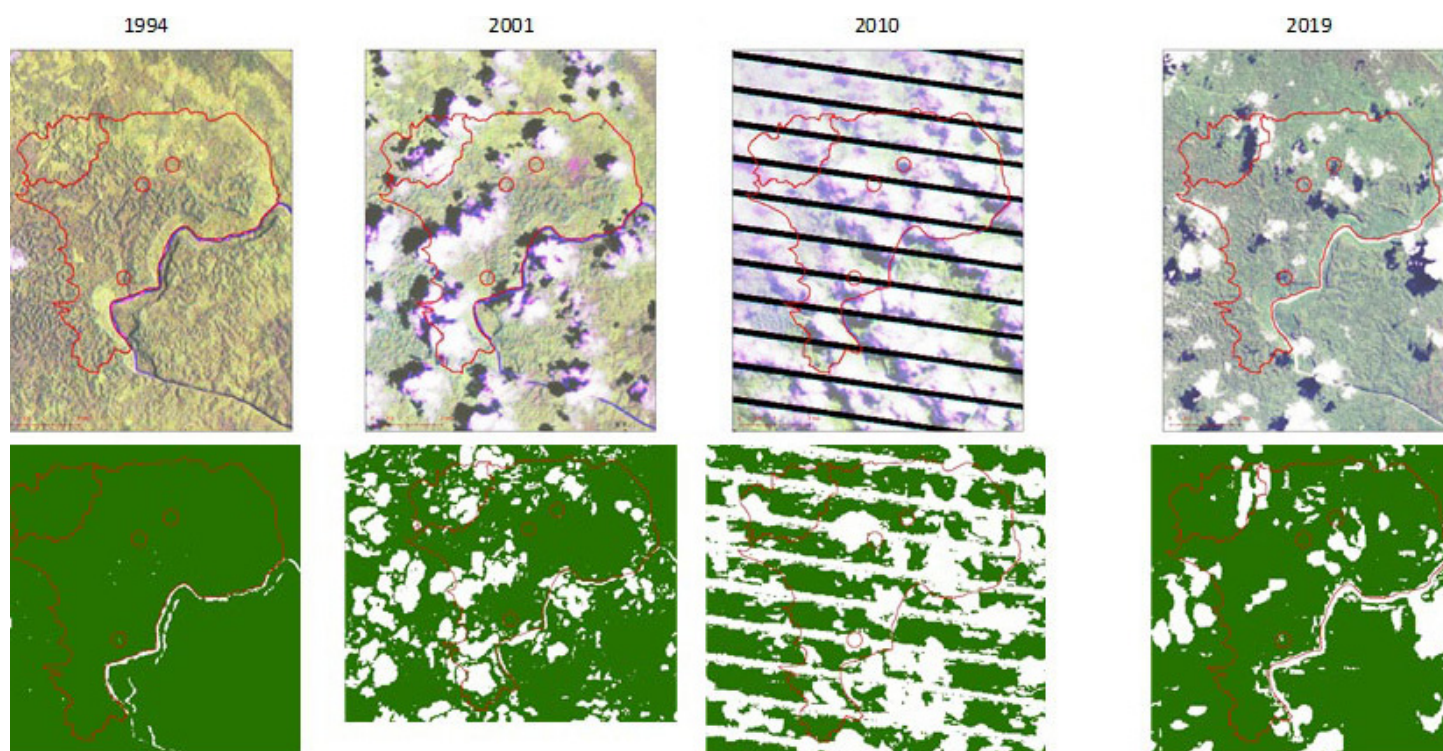


Figure 5. Forest cover change Ogoney

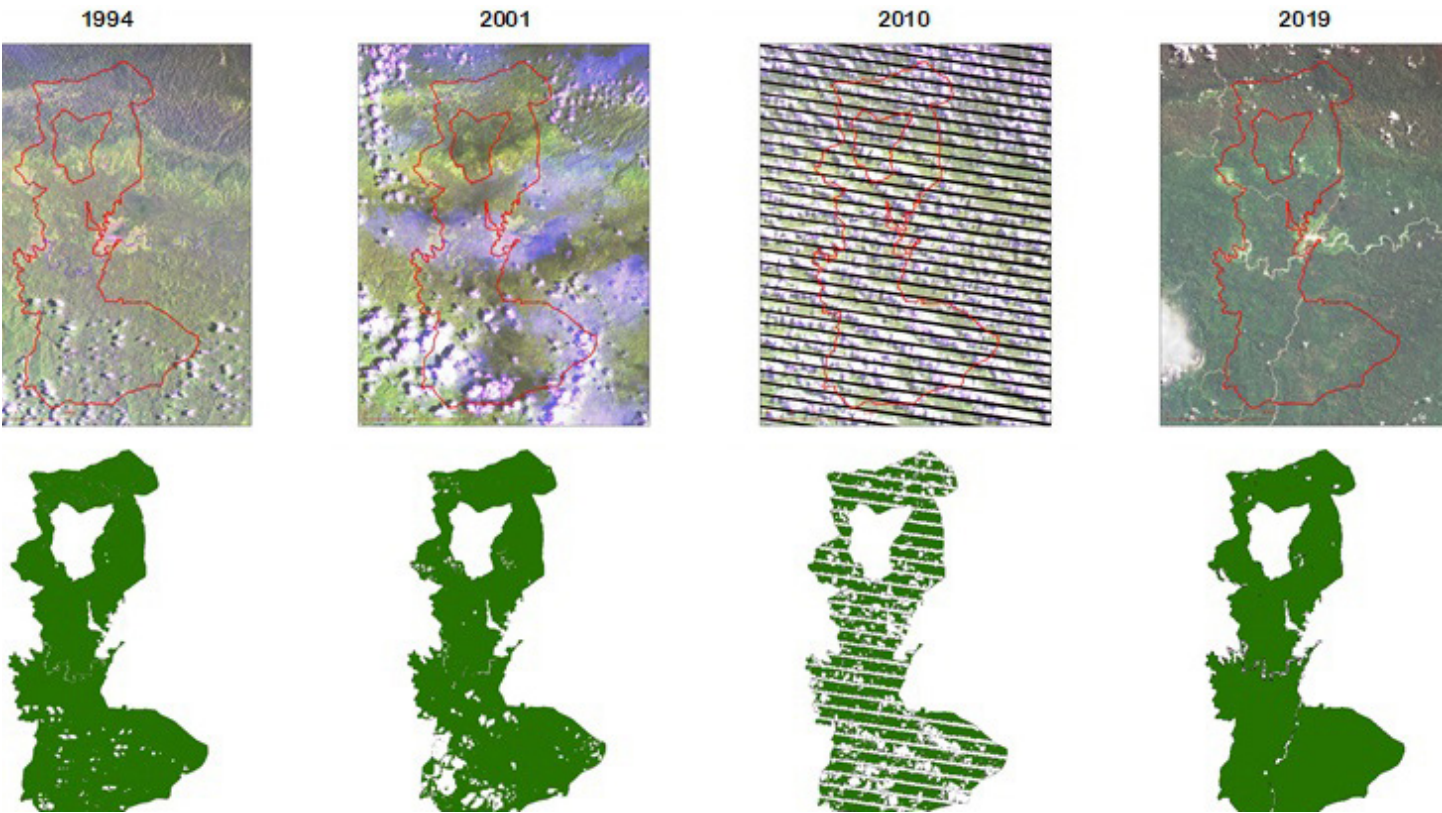


Figure 6. Forest cover change Hubula

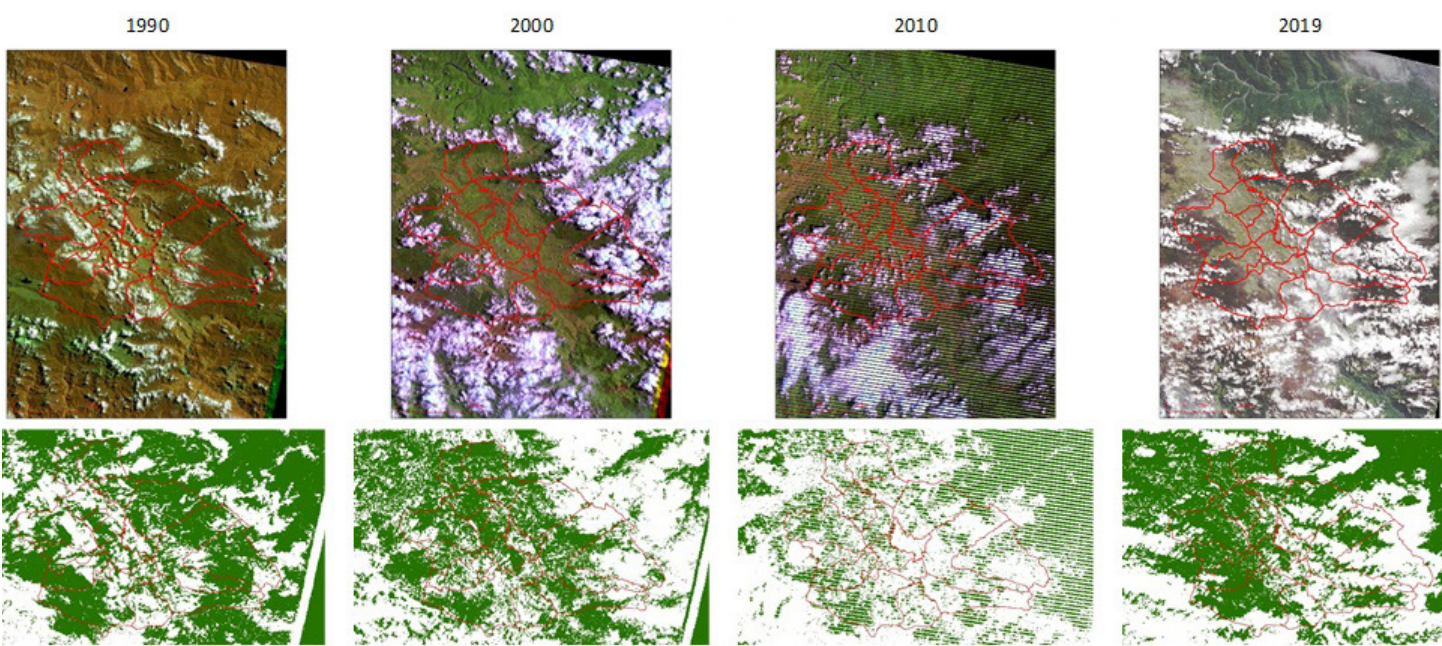
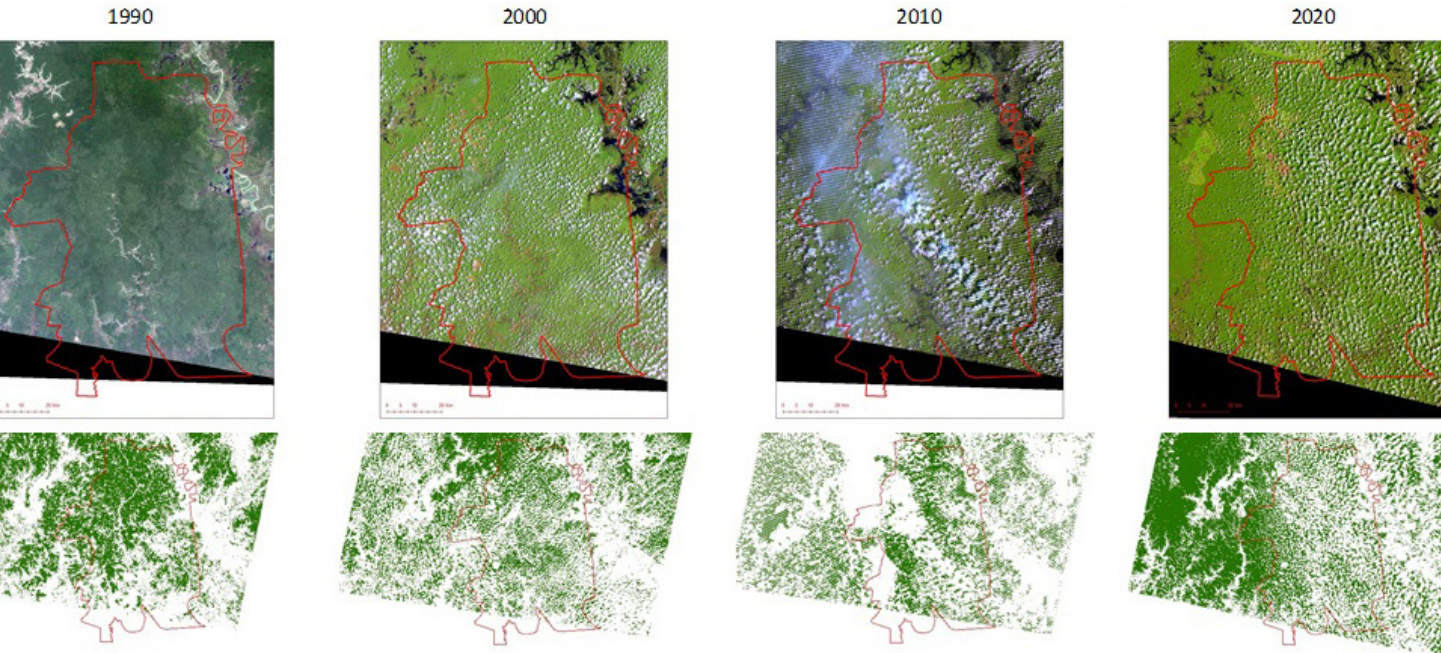


Figure 7. Forest cover change Yei



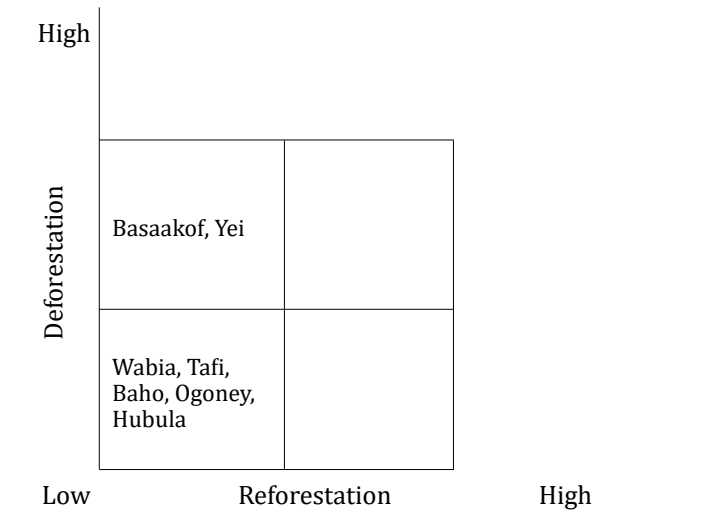
Of the seven adat areas, five have low historical rates of deforestation over the past three decades. These are marga Wabia and Tafi in Tambraw, marga Ogoney in Teluk Bintuni, marga Baho in Maybrat, and the 19 marga of suku Hubula in Jayawijaya. Meanwhile, two of the study areas (Yei in Merauke and Baasakof in Tambraw) have experienced high

rates of deforestation over the same period. See table 2 and Figure 1, below, which describe the annual rates of deforestation and the overall patterns of forest transition for each of the seven adat areas.

Table 2. Annual deforestation rate (ha, %)

			1990-2000	2001-2010	2011-2020
1	Wabia	Ha	0.59	169,25	-104.04
		%	0.00	0.44	-0.28
2	Baasakof	Ha	14.51	-6.94	32.00
		%	1.64	-0.89	3.79
3	Tafi	Ha	8.96	-3.02	15.11
		%	0.96	-0.35	1.68
4	Baho	Ha	16.62	-3.15	13.60
		%	0.57	-0.11	0.48
5	Ogoney	Ha	22.25	84.57	-55.72
		%	0.10	0.40	-0.27
6	Hubula	Ha	2401.54	1835.65	613.23
		%	1.58	1.43	0.56
7	Yei	Ha	-15821.87	-7799.86	1552.15
		%	-5.34	-1.72	0.29

Figure 8. Forest transition patterns



Drivers of forest transitions

All of the adat territories included in this study have diverse geographic features. These range from the adat territory of marga Wabia situated on the northern coast, to the suku Yei, occupying the Merauke plains in the south. Area, scale, topography, population density, land use and customary system are different from one adat territory to the next, which should provide broader context about the forest transitions unfolding at each site.

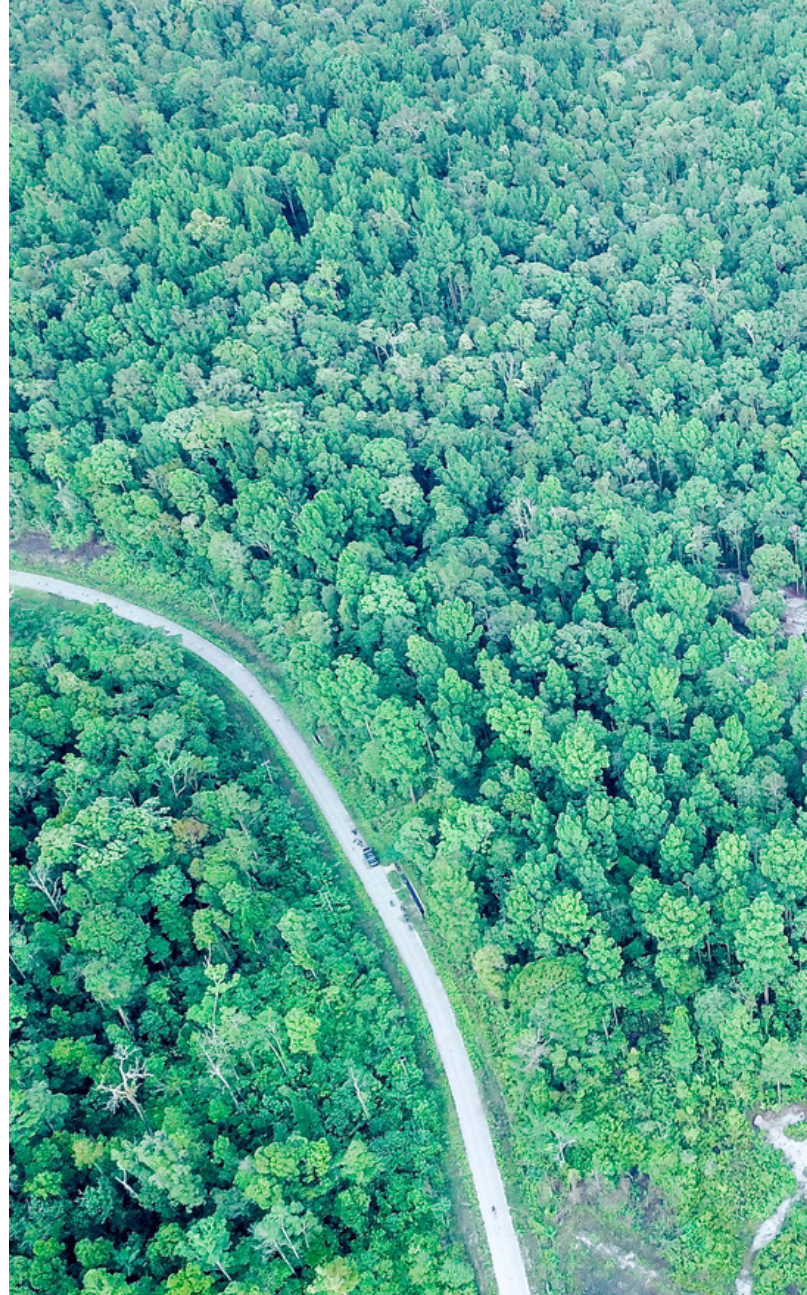
Nevertheless, this study highlighted some common driving factors of deforestation and reforestation taking place across the study sites. Although the resource persons from each adat community have distinct perspectives, group discussions with six of the adat communities (marga Wabia, marga Baho, marga Ogoney, suku Yei, marga Tafi and marga Baasakof) highlighted similar commonalities regarding the overall contributing factors of forest cover changes. These commonalities are outlined as follows:

Deforestation drivers:

- *Government policy has encouraged the proliferation (pemekaran) of village, district and regency administrations.* These administrative divisions typically ensued with clearing of lands for establishing road access, followed by the construction of other corresponding infrastructure and public facilities. Taken together, the expansion of these development trends has led to an increase in land clearings.
- *The construction of new roads for government-sponsored re-settlement or transmigration programs.* Alongside development driven by jurisdictional changes, road building has also triggered waves of spontaneous in-migration that has resulted in increased forest clearings.
- *Allocation of forest land for land-based investment e.g., for plantation and logging.* Government policies to establish industrial scale operations trigger forest clearing for more intensive land uses.
- *Changes in community value systems due to economic pressures and weakening customary institutional structures that have triggered a high incidence of land sales.* Jurisdictional changes and development initiatives have resulted in the formation of land markets for a variety of reasons, including for the development of public service infrastructure and facilities (such as roads, bridges, and offices), individual migrant housing, and facilities and land uses for companies with plantation permits, especially for palm oil operations.
- Other minor, less significant factors include natural disasters, such as wildland fires and landslides.

Barriers to deforestation:

- *The strength of customary structures and value systems and clarity of zoning of the adat territories.* Among adat communities, land tends to be subdivided into areas for productive uses or settlement areas, protected areas, and sacred areas. This overall zoning system is well recog-



nized by members of the community and is also respected by neighboring communities.

- *Low population density, which implies a relatively low need for opening of new settlements or intensive cultivation.* Subdivisions of villages and districts did occur, but in certain population with small numbers dispersed across rural villages, forest clearing for new settlements was less significant.
- *Isolation and inaccessibility of adat areas due to factors such as topography.* Villages that are situated far from cities and regional administration centers with hilly profiles are not easily accessed.
- *Deep understanding and awareness among indigenous peoples about ecological functions and conservation benefits of the forest helped prevent forest clearings.* Concern about environmental disasters caused by forest clearing has had an important influence among communities. Some have actively reached out to environmental NGOs and Forestry Agencies, in ways that work to improve ecological understanding and develop the concept of nature conservation.



can be planted to reforest/rehabilitate lands. These communities have practices of cultivating wild tree seedlings from forests. There was no reported tree planting program in the study areas, per se, but there are likely to be a complex understanding of the dynamics of forest ecological regeneration.

Forest transitions and ways forward

Opening up access through the construction of roads is a double-edged sword. On the one hand, roads help to increase indigenous peoples' access to information, education, and other development benefits. On the other hand, road access is also the most closely linked indicator driving deforestation in adat territories. Since most adat territories coincide with district government administrative boundaries, it is necessary to have spatial plans at the district level that anticipate the effects of public infrastructure development. This district spatial plan needs to incorporate the maintenance of existing forest cover in adat territories on which road and other infrastructures are planned and constructed. Regulations should include prevention of forest clearing, mitigation for excessive wood cutting, and protections against the sale of customary communal lands. Adat institutions need to be supported and consulted so they can better represent community interests in development planning.

Support for recognition of adat rights, empowering local institutions, protecting the value and clarity of traditional territorial zoning could be an effective way to curb deforestation. Formal recognition is important as it provides clarity and legal protection to adat rights and strengthens community cohesion. Zoning of adat territories into utilization areas (for community economic development and settlements), protection areas and sacred zones, and other locally-determined features would enable community control over their land, forests, and water sources. This zoning system needs adequate facilitation so that decisions are recognized by all community members and respected by neighboring communities.

Furthermore, steps need to be taken to provide information about seedling and planting initiatives of valuable tree crops. Such initiatives need to be based on local indigenous knowledge in ways that are appropriate for local ecological and livelihood contexts. Programs also need to be made in ways that are more accessible to adat communities. Greater information on the access of tree planting initiatives would also encourage increased knowledge, skills, and participation in forest and land rehabilitation. The planting of tree crops in agroforestry systems should also be supported to improve economic and environmental benefits. Support from external groups, such as government institutions, the private sector, and NGOs must work together to establish the right approaches based on the principles listed above.

The spatial analysis also found that none of the studied areas has had a significant increase in forest cover over the last three decades. All of the study areas have had low reforestation rates. Based on the FGD results, the following reasons were explained as factors influencing reforestation:

- *A perception that forests will regenerate naturally, without human intervention.* This perception among indigenous peoples arises from local cultural understandings of nature, in which for generations, forests have naturally regenerated. Even in cases of natural disasters that resulted in forest losses, reforestation was not undertaken because of local beliefs that natural recovery will ensue.
- *A different concept in re-planting or re-greening of open areas.* In general, communities planted lands with annual/seasonal crops in their gardens. Only small amounts of perennial tree crops and fruit trees were planted in fallow fields, which made any reforestation initiative appear less visible to satellite imagery as the cleared and replanted lands tended to look the same.
- *Indigenous peoples do not have access to tree nurseries and information on valuable tree species that*