

# Conservation Policy, Indigeneity, and Changing Traditional Hunting Practices in West Papua

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## ABSTRACT

Regional governments are increasingly developing conservation policy initiatives that are framed alongside the empowerment of Indigenous Peoples. This paper examines the case of Tambrauw, West Papua, that set out to establish one of the first ever Conservation Regencies in Indonesia. To understand the implications of conservation policy developments, we explored from an environmental justice perspective the ways that one of the most important forest-based activities of local communities – hunting – has changed in recent years. Data was collected using qualitative methods of participatory observation and interviews between 2015–2018 across three Tambrauw districts. The study shows how policy changes are increasing clashes between local hunters and conservation officials. This has implications for broader issues of conservation policy and local livelihoods, and sheds light on the more recent trend of foregrounding Indigenous identity in forest management. Although on the face of it the emergence of conservation regencies represents a trend in downscaling authority to empower local communities, findings show that place-based and more locally responsive policies need to be established to address emerging conflicts that can also meet broader conservation outcomes.

## KEYWORDS

Hunting; Conservation policy; Environmental justice; Tambrauw; Southwest Papua.

## 1. INTRODUCTION

It was drizzling when Petrus walked home to Kampung Meis from his hunt. He was leaving the forest—a place where he regularly hunted wild animals and gathered forest products—carrying a deer on his shoulder when he met two government officials. One worked for the Forestry Office of Tambrauw, and the other for the Natural Resource Conservation Agency of Papua Barat<sup>1</sup>. They were both assigned to the Kebar region, tasked with monitoring areas designated as state forests.

The rangers make periodic visits, setting up signposts and providing information to locals on hunting prohibitions or illegal encroachment in state forests. On this occasion, the two rangers were also observing the implementation of partnership agreements on the prohibitions of illegal hunting that had been signed between the Tambrauw regency government, Natural Resource Conservation Agency (henceforth, BBKSDA)<sup>2</sup>, the police, and the military. The rangers were actively observing hunting incidents, checking on whether hunting practices violated existing and newly instated regulations.

<sup>1</sup> Since November 2022, the administrative area of West Papua Province has expanded, resulting in the establishment of Southwest Papua Province. Due to this expansion, Tambrauw Regency has been incorporated into Southwest Papua Province.

<sup>2</sup> BBKSDA is *Balai Besar Konservasi Sumber Daya Alam*.

As the two men approached Petrus to question him, an argument ensued over the types and numbers of animals Petrus usually hunted, and specifically over his hunting methods. Petrus explained that animals such as deer, cassowary, and cuscus were his common targets. He used dogs or snares for his hunts and used other traditional traps. In response, one of the officers expressed strong disapproval, saying, “*Bapak Petrus, from now on, you must stop hunting wild animals because the animals are becoming endangered and may go extinct.*” Petrus responded, “*I hunt only for my household needs, not for sale.*” The officer then threatened him, saying, “*Bapak Petrus, if you don’t stop hunting, we will report you to the forestry police, and they will apprehend you.*” Petrus then spontaneously replied, “*If I’m not allowed to hunt wild animals, [then] I will hunt you both.*” The officers then left.

This exchange highlights a classic division between overall issues of community access and state claims of natural resources (Brechin et al., 2012). The scene specifically shows how the government has proceeded with its mandates from afar without engaging Indigenous communities on longstanding utilization of living resources, especially with respect to human interactions with wild animals. The government is continuing to extend and exert its formal legitimacy into remote areas it had little access or interaction with in the past, but which quickly views local actors like Petrus as illegitimate and in violation of state policy. This is a longstanding tension between state enclosures in conservation areas, whereby a site may have been one way for many generations, and overnight is designated into new forms of management, with new interests and regulatory functions (Hecht & Cockburn, 2010; Peluso, 1992; Batiran et al., 2023). When state and local interests come to a head, it is likely that locals have a lot to lose. Nevertheless, conditions unfolding in the district of Tamberau underpin a unique development in conservation policy, in which formal authorities outwardly express strong values of participation and recognition of Indigenous rights. Such language only became possible since recent developments in special autonomy laws that acknowledge local forms of authority and development of Indigenous Peoples.

This article engages on the dynamics of authority over conservation area management and local communities. By examining changing local hunting<sup>3</sup> conditions and the formulation, application, and enforcement of hunting laws, we foreground the intersection of rapidly changing lives and livelihoods in forest-adjacent and forest-dwelling communities with increasing attention to forest conservation at different governing scales. Applying a lens of environmental justice to analyze the extent to which hunting activities serve as the life support of the Indigenous communities in Tamberau, this article centers its analysis around three key questions:

- 1) What is the profile of hunting activities in and around the conservation districts in Tamberau and how has the hunting experience changed over time?
- 2) What are the perspectives, policies, and practices among state conservation officials in addressing hunting?
- 3) In what ways do these issues overlap and clash, and how might more nuanced policies be pursued going forward?

## **2. ENVIRONMENTAL JUSTICE AND WILDLIFE HUNTING IN EMERGING CONSERVATION CONTEXTS**

Theories of environmental foster for a more complete understanding of socio-economic and cultural dimensions for evaluating the implications of environmental policies (Hoang et al., 2019; Schlosberg & Carruthers, 2010; Sikor & Stahl, 2012). The idea of

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<sup>3</sup> By hunting, we refer to both the killing of animals and trapping.

justice is a key element to understanding claims of access to resources, which usually becomes the trigger and source of conflicts in conservation and protected area management (Dawson et al., 2018). Frameworks on environmental justice generally cover three inter-related dimensions, namely, distribution, procedure, and recognition (Martin et al., 2016). The distribution dimension is closely connected to benefit sharing of actors; the procedural dimension refers to how actors participate in decision-making and how they are reflected in the final outcome; and, the recognition dimensions are rooted in the appreciation and recognition of socio-cultural values and identities of relevant actors.

The emergence of regional policies to at once designate territories for conservation and secure Indigenous rights is a new phenomenon, but builds on longstanding research on conservation and protective area management (Agrawal & Redford, 2009; Neumann, 1998), the political economy of wildlife policy and poaching (Gibson, 1999; Robinson & Bennett, 2000), and social movements for Indigenous land rights and forest tenure (Niezen, 2003). There is a growing call to explicitly recognize community rights in protected area management (Brockington, 2004; Martin et al., 2016; Sikor et al., 2014; Phatthanaphraivan et al., 2022). The emergence of regional initiatives to accommodate conservation and Indigeneity highlight new tensions in protected area management and environmental justice (Nursey-Bray et al., 2010; Syawal et al., 2023). These policies are framed around the ability to afford new forms of participation and local authority in ways that support local and Indigenous stewardship and empower local rights and livelihoods (Awang, 2003; Fisher et al., 2019).

In 2015, West Papua Province leadership designated its territory as a conservation province, while also foregrounding the importance of local Indigenous values in conservation management (Cámara-Leret et al., 2019), a policy initiative that was subsequently followed by the Tamberau District (Fatem et al., 2020). Hunting activities by Indigenous communities throughout the western part of New Guinea are conducted for food security, but recent years have seen an uptick in trapping and killing for commercial purposes, especially around the sale of exotic species (Pangau-Adam et al., 2012; Pattiselanno & Lubis, 2014). In accommodating conservation interests and Indigenous land rights, the question of regulating excessive hunting remains a trigger point to enacting and enforcing policy. This paper thus examines the tensions between conservation policy and hunting practices amid local government interests to enact conservation in ways that promote greater local Indigenous representation.

## **2.1 Conservation policies in Indonesia**

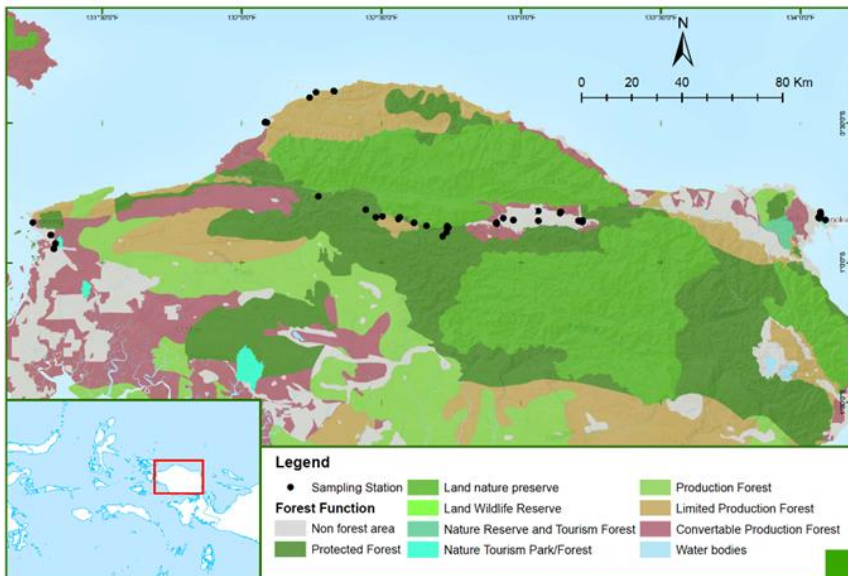
Conservation policies are changing in their approach and scope. The classical conservation model built around colonial notions of identifying species biodiversity and unique landscapes, shaped around narratives of separation of environment and society that require particular human interventions (Cronon, 2009; Hecht & Cockburn, 2010). In Indonesia, manifestations of the environment were driven by European ideals of the enlightenment and institutionalized in the early foundations of policy and research (Cribb, 2007; Goss, 2011). The New Order era (1965-1998) pursued aggressive expansion of national parks and conservation areas that occurred through enclosures and relocation (Bettinger, 2014). The legacy of that today is a total of 54 national parks and over 57 million hectares of protection and conservation forests (MOEF Data and Information Centre, 2014).

More recent years have seen a shift in conservation approaches, namely through market based and voluntary mechanisms. Land-based ecosystem service schemes began in earnest through the popular REDD+ schemes in 2007, shifting the focus off forests to carbon (Luttrell et al., 2014). The rise of Essential Ecosystem Area policy has

also used the language of corridors and habitat areas to extend beyond classical spatial jurisdictions of conservation, bringing in new actors and politics to the field of conservation in Indonesia (Sahide et al., 2020). This has aimed to reduce the control of the conservation bureaucracy, while also introducing new players into the field of conservation (Wood et al., 2014). Meanwhile, growing interests are calling for the protection of rural and forest dwelling communities, to address land conflict through rapid land use change and dispossession unfolding across Indonesia. The recognition of local and Indigenous People’s rights in the form of national and implementing regulations were passed to designate adat forests, social forestry permits of limited tenure agreements for rural communities, and agrarian reform policies, that together combined at formal commitments of over 25 million hectares (Fisher et al., 2019).

The Tambrauw Regency has taken a unique approach to instituting conservation planning. The Governor’s Climate and Forest Taskforce meeting, which took place in Aceh in May 2010 included the attendance of the late governor of West Papua Abraham Atururi, who expressed his commitment to establish West Papua as a Conservation Province. In the same year, international conservation organizations joined with the province to design a blueprint for a conservation province. In the ensuing years, West Papua province coordinated all 13 regencies to sign the *Aspirasi Teminabuan* (AT)<sup>4</sup> on April 30<sup>th</sup> 2019, a commitment to protecting 70% of West Papua. Including key provisions of participation and protections for the Indigeneity of West Papuans the Province designated itself as the first Indonesian sustainable development province by issuing a regional regulation (Perdasus No.10/2019). Nevertheless, as this paper will show, conservation efforts put more attention on the preparation of formal regulations and institutional support rather than responding to the substantial concerns and interests of Indigenous communities undergoing rapid and unsettling changes.

### 3. METHODS



**Figure 1.** Map of Research Locations

<sup>4</sup> Teminabuan Aspirations, Joint Commitment of West Papua Province Regents at the Working Meeting of West Papua Province Regents on April 29-30, 2019, in Teminabuan, South Sorong Regency.

Data were collected from community engagement across three of the five Indigenous communities in Tambrauw. These communities are distinguished by language groups, namely the Mpur (Kampung Atai), Abun (Kampung Syukwes), and Miyah (Kampung Hobiah). Data collection was facilitated by the lead author being invited to serve as a resource person by the regency government in partnership with the regional conservation management agency (henceforth, BBKSDA following the Indonesian agency acronym). This provided the research team with unique insights into policymaking, which consisted of a team that could draw on on longstanding engagements in Indonesian conservation and forest and land rights policy and practice from across the region. The research also involved targeted interactions with several levels of local government working units in Tambrauw. Data were collected over different periods of time and include engagement with communities in 2012, 2013, 2015, and specifically involved more intensive research in 2017-2018 as detailed below. Research locations are presented in the following map, and the subsequent table describes participant observation activities.

**Table 1.** Study sites and data collection activities

Study location	Distance	Visiting frequency	Content of activities
Village of Atai, District of Kebar	20 minutes by car from the central town of Kebar district.	3 times a month, 4 times a year (2017-2018), 3-5 days per visit	Discussions in formal and informal settings with villagers on economic development and conservation policy
Village of Hobiah, Distrik of Miyah	4 hours walk from the central town of Miyah district.	3 times a month, 4 times a year (2017-2018), 3-5 days per visit	Discussions in formal and informal settings with villagers on economic development and conservation policy, especially the development of bird watching ecotourism  (in Miyah language)
Village of Syukwes	6 hours walk from the central town of Kwoor district.	3 times a month, 4 times a year (2017-2018), 3-5 days per visit	Discussions and monitoring of implementation effectiveness of regulations on deforestation, game hunting with traditional system “Syukfo” (a term referring to customary forest conservation practices of the Abun people in the village of Syukwes)  (in local language, the district head served as an interpreter)

### 3.1 Engaging with local hunting communities and policy actors

Overall, throughout the research period, the lead researchers visited communities every three months. During these visits, the research focused on the impacts of conservation and forest management policies. We explored numerous themes, where local communities would often question regulations about opening up lands for cultivation or the rules being imposed upon them about hunting. The communities are also very different from one another, some geographically isolated and more challenging to access. The area in white in Map 1 is the district of Kebar, an area shifting towards more

“modern” cultivation practices, whereas the Miyah and Abun are remote communities that use traditional forms of cultivation, foraging, and hunting.

Interviews were conducted with local hunters, local farmers, heads of villages and sub districts. Between January – December 2016, August – December 2017, we interviewed officials of different government agencies in Tambrau, and NGOs (The Samdhana Institute, Epistema Institute, Paradisea Foundation, Akawuon Foundation, WWF Papua-site Sausapor) (see appendix 1 for a complete list). We collected data by participant observation and focus group discussions and informal discussions between 2016 to 2017. The first author was also involved as a consultant in the process of the establishment of the Tambrau conservation reGENCY, which included formulating regulations for wild animals and plants in Tambrau. This position enabled direct involvement and observations of the drafting process and provided close proximity to ongoing discussions and dynamics around hunting regulations, meanwhile also developing a deep understanding about actors’ attitudes, interests, and expectations.

We emphasized the importance of sitting among people during meetings to observe attitudes and responses on overall development topics. We provided some ‘contact materials’ such as betel nuts to share for rapport building to initiate informal gatherings or meetings. We carried out focused group discussions with people to collect their ideas, suggestions, and concerns over basic development programs such as infrastructure, economic, social and governance issues, as well collecting various opinions on hunting regulations in Tambrau. Authors also visited marketplaces, ports, and attended social gatherings to observe daily activities and collect data on local development programs in the communities. The research team provided policy suggestions and critique from various vantage points about development and conservation policy in Tambrau. We also observed conservation NGOs during seminars and workshop activities that involved the district government, Indigenous Peoples representation, and universities. Data on observations are presented in Appendix 1.

We explored the mechanisms and applications of formal conservation policy. We engaged directly with policy makers and field staff on the ways that policies were enacted. Through this process of evaluation of national and subnational government policies, and the reactions from different governing scales from international to the village we were able to pinpoint discourses of right and wrong among local communities and policymakers, helping us to draw out broader conclusions on environmental justice in conservation area policy formulation, implementation, and enforcement through a concerted case study on hunting.

## **4. RESULTS**

### **4.1 The hunting profile of Tambrau District**

In Tambrau hunting is undertaken to meet the needs of daily life (Table 2). The pattern of wildlife utilization is closely related to local customs and culture. Hunting practices of the five Tambrau tribes differ slightly, although equipment and ecologies vary in distinct ways. This relates to historical contexts, and continued interaction between the five tribes and their customary practices. These interactions underpin the place-based dynamics and regional dispersion of customary and cultural values, particularly those related to hunting, gathering forest products, and protecting forests. Animal hunting in Tambrau as in many tropical regions is crucial for local diets and slightly differs from those in temperate regions (Robinson & Bodmer, 1999). It also forms a critical element of local livelihoods in terms of identity and income.

**Table 2.** Hunter populations, methods, and target species according to study sites

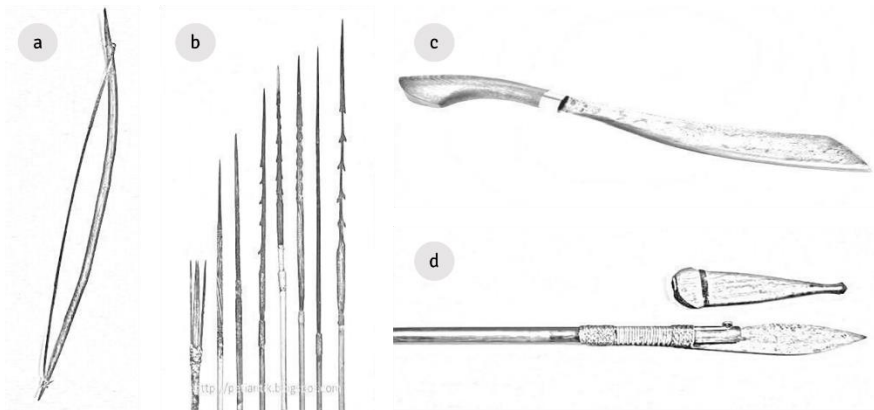
Syukwes	Of 17 families, 15 involved in traditional hunting	traditional trapping, snares, arrow and spears	Deer ( <i>L. Cervus timorensis</i> ; I. Rusa); Wild boar ( <i>L. Sus papuensis</i> ; Babi hutan; Mp. Douw; Mi. Fane); Cassowary ( <i>L. Casuaris sp</i> ; I. Kasuari; Mi. Pesakof; Mp. Bapirokir) Cuscus ( <i>L. Spilocuscus sp</i> ; I. Kuskus; Mi. Krauw)
Atai	Of 32 families, only 8 are regularly hunting	firearms, air guns, modified weapons and traditional trapping	Deer ( <i>L. Cervus timorensis</i> ; I. Rusa), Bird of Paradise ( <i>L. Paradisea sp</i> ; Matiaf); Palm cockatoo ( <i>L. Probosciger atterimus</i> ; I. Kakatua; A. Waf; Mi. Oraf) Blyth's hornbill ( <i>L. Rhyticeros plicatus</i> ; I. Julang Papua; Mi. Wamoh; A. Nawam)
Hobiyah	All 15 families are involved in traditional hunting	Visual hunting, dog hunting, traditional trapping, snares, arrow and spears	Deer ( <i>L. Cervus timorensis</i> ; I. Rusa); Wild boar ( <i>L. Sus papuensis</i> ; I. Babi hutan; Mi. Fane; Mp. Douw); Cassowary ( <i>L. Casuaris sp</i> ; I. Kasuari; Mi. Pesakof; Mp. Bapirokir) Cuscus ( <i>L. Spilocuscus sp</i> ; I. Kuskus; Mi. Kakh)

Note: Language codes: L. denotes Latin; I. denotes Bahasa Indonesia; Mp. Denotes Mpur; Mi. denotes Miyah; A. denotes Abun

4.1.1 Hunting activities

Villagers in Syukwes, Atai, Hobiyah (Informants 7-10,12,14,15,34,35,38) hunt for household needs, sell the meat and other products, and are involved in live wildlife trade. Certain types of animals are hunted for household consumption. Game meat is important for protein. Products sold include feathers of the cassowary, birds of paradise, and deer horns, while cockatoos are primarily sold as pets.

4.1.2 Equipment



**Figure 3.** Traditional hunting equipment [Images credit: Yafed Rumayomi]

Hunting equipment varies depending on the type of target. Traditional hunting materials use forest products, such as wood, ropes, and bamboo to make snares, bows/arrows, and build traps as hunting tools. Forest plant species are selected based on indigenous knowledge. For example, different wood types make bows and snares, and plant saps selected for its stickiness.<sup>5</sup> In general, machetes (3c), arrows (3a dan 3b)

<sup>5</sup> Some widely used plant species include *Ficus* sp, *Aglai* sp, *Phragmites carca*, *Bambusa* sp, *Callamus* sp, *Lansium domesticum* (Awak et al., 2016; Robinson & Bennett, 2000).

and spears (3d) are the main hunting tools. Machetes in Mpur are called '*Jet*,' Abun '*Nyom*,' Miyah '*Tofot*,' while snares in Mpur are called '*Nitum*' and in Abun '*Buss*.' Deer and boar are the most common animals hunted, using arrows, spears, and snares. Machetes also help cut up game after capture for boar, deer, and cassowary. Hunting tools are constructed from materials quickly harvested from the forest or surrounding environment. The method and purpose of the use of hunting tools varies depending on the type of animal being hunted, the technique, and location.

The community hunting method, including the traditional hunting tools mentioned above, are gradually evolving. In the more isolated villages of Syukwes and Hobiyah, hunters still follow traditional hunting methods, but in Atai, there is increasing use of firearms, air guns, and other modified weapons. Changes in Atai began to occur due to the opening up of access from national road development, which connected the region to urban centers in Sorong and Manokwari. Outsiders interested in hunting would arrive in four-wheeled vehicles bringing modern hunting weapons. These outsiders would provide basic goods as barter, such as rice, cigarettes, oil, cash, and dried foods, related to basic daily goods. This exchange would then allow the hunters access to the region, and local hunters would also direct them to the prime hunting locations. In Atai, because of the relationships with outsiders, the community would more commonly offer up their areas for hunting, and the communities would also be trained to use the weapons for hunting. With a good hunt, the hunters and the outsiders would split the benefits, but mostly the animals were sold to the outsiders who began to collect and sell according to market demands in regional centers (Faan, 2006).

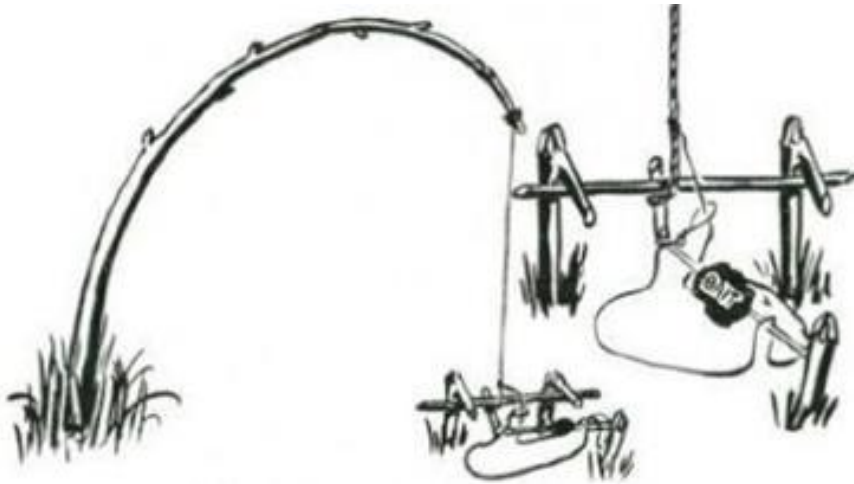
#### 4.1.3 Hunting methods

Generally, traditional hunting methods of the Abun, Mpur and Miyah tribes are divided into three techniques, namely trapping pits (hole) (see Figure 4.), visual hunting (eye assistance) and dog hunting. This is in line with the finding of Syufi & Arwam (2014), who argued that in general, Tambrauw people hunt with dogs for what is locally known as *untu pier* (Mpur), *pimsiah* (Miyah), *mesiroc mec* (Irereres), *farndic* (Abun). Hunters use their senses of sight, smell and hearing which in local language are called *ibisabar* (Mpur), *su po* (Miyah), and *esbur* (Abun), and are connected to the types of traps / snares used to catch prey. The findings showed that most people combined the three hunting methods. In hunting, local people are allowed to use only traditional hunting tools, such as spears and arrows, and in certain areas they are strictly forbidden from hunting with firearms. There are also areas off-limits to hunting, which correlate with sites of local ritual and sites with specific types of species habitats. These include endemic habitats that local communities themselves have placed off limits to certain types of hunting activities. For example, in Hobiyah, "*fim*" is a term used to describe gathering points of key species of birds, mammals, and reptiles that are culturally protected by local communities.

Trapping pits are placed in areas commonly traversed by animal tracks or follow footprints. If evidence is found of the target animals, the area will be used as a place for snares. The snares are installed during the day and are built in a forest around the garden or the primary forest. Trapping pits are most often chosen because they are more practical to make, as the material used is easily obtained from the surrounding forest.

*Visual hunting.* Hunting visually means to follow signs. This hunt is carried out day and night and is known to every member of the Indigenous Tribe. The hunter has experience in the identification of animal species, natural events, seasons, and knowledge of animal feeding behaviors in the forest, tracks, and hiding areas, as well as how to capture and kill animals quickly and easily. Hunters are usually accompanied by dogs.





**Figure 4.** Traditional hunting traps [Images credit: Yafed Rumayomi]

*Hunting with the help of a dog.* Pet dogs are trained and physically prepared for hunting in advance. Dogs are called 'dah' (Miyah language), 'pier' (Mpur), 'da' (Abun). Hunting activities take place from morning to evening, evening to night, and night to morning in the forest, in former gardens and natural forests. Field observations and interviews (informant number 24,25,39,40,41,42) reveal that hunters give the dogs 'potions' in the village of Syukwes and Hobiah.<sup>6</sup> There are two types of potions known by the community in these two villages, namely: the *tali hutan* (*Meremia peltate*) and red ginger (*Zingiber officinale*). The part of the *tali hutan* used is the trunk and is usually used by blowing the potion on the dog's nose, dog's mouth and beating on the dog's stomach. To make the potion, shredded red ginger is soaked in saltwater for about five minutes and the resulting juice is filtered and rubbed or administered on the dog's nose.

The purpose of this herb is to stimulate the release of bloody mucus from the nose in such a way that the dog's scent is clear and warm when in cold areas or when hunting during the rainy season and in the morning. Hunting with these dogs have been trained and practiced from generation to generation. The common concoction above in is called 'Murunpier' in Mpur 'Tutuordah' in Abun, and 'Bofit' in Miyah.

*The hunting teams.* Generally, hunters prepare based on the intent of hunting. If hunting is undertaken for high yield to provide food for major religious events or traditional parties, the number of hunters can exceed 10 people. This has an influence on the hunting approach, and focuses on stalking, capturing, and carrying, as well as encouraging friends to carry out stalking activities. Hunting practices may include many participants if the venue is very far away from heavily hunted grounds. Often, the participants of this hunt are based on a family relationship or close friendship. Conversely, if hunting is only done for household use, the hunting team is between 2 and 3 individuals. The goal for hunting in this scenario is also modest for household consumption.

#### 4.1.4 Hunting location

In general, the people of Tembrauw hunt in primary forests, secondary forests, along rivers and other wildlife habitats. Tribes also hunt by paying attention to the territories

<sup>6</sup> Potion is traditional medicine that helps the dogs to hunt. The hunters will blow them into the faces of the dogs, which will then have improved capacity to track for the hunt.

of its clans, relatives, and neighbors. Areas considered to have specific cultural value are avoided for hunting. During the observations and involvement of the first author interacting with social activities with the Miyah, we learned about the division of their customary territories. The Miyah in Tambrauw District classifies land use into three parts: (1) Hunting Spots or *Ramen* (animal crossings), *Rmoy* (bird's playing ground), and *Fim* (sites where all animals come to drink water and look for food) and limited hunting territory; (2) Cultural sites: the Miyah tribe recognize cultural rites at certain locations, among others *Sorwon*, *Totor*, *Arbouw*, *Etkunyah*, and *emos*, which are sacred areas that must be protected; (3) *Wiam mase* (forest), *Sre* (a type of peat forest in hilly areas but this area is quite flat and wide), *ruf* (very flat and wide area), *Etiam* (former old gardens), *Tein* (former recent gardens), and *Ora* (new plantation area) are spatial arrangements based on Miyah traditional values and inheritance.

Each clan and tribe have important places in the form of mountains, woods, rivers, and trees. Dove et al. (2011) explains that sacred forests have a variety of important functions, one of which regulates limited use, particularly over hunting. Tambrauw clans assert the limits of its customary territories through a customary (*adat*) meeting, performed and followed through personal and group interactions with the forest. Hunting is therefore deeply embedded and regulated in the cultural values of a place. The Abun tribe knows several important regions and cultural sites, including 1) *Sukma*, *Bufu*, *Sukblek*, *Sukmas*, *Yasymson*, *Simbu*, *Awon*, *Somkwau* and *Donbu*, which are important ancestral and cultural territories; 2) *Desmoah*, *Sijut*, *Sukas*, *Bofnai*, are sacred protected areas for the Abun; 3) *Salim*, is an economic territory, and serves every clan in conducting various activities.

#### 4.1.5 Hunting frequency and schedule

The frequency of hunting in Tambrauw varies considerably. For example, people in the villages of Waibem and Saukorem, Abun sub-district, typically hunt twice a week. It is the same as the people in the village of Ayapokiar, Miyah sub-district, who say that hunting takes place about two times a week. People in the villages of Arfu Mubrani and Atai Kebar shared that hunting was only conducted once a week. The disparity is due to the fact that around 70% of Abun, Saukorem and Miyah people choose hunting as their main activity, while around 60% of Atai Kebar people only do it as additional activities to complement farming activities as their main livelihood.

Hunting times are not precisely known and depend on the type of animal and goal of hunting. For example, communities in the villages of Waibem and Saukorem usually hunt long beaked echidna (*Zaglossus bruijnii*) (called *nokjak* in Abun and *krouw gie* in Miyah) at night from 20.00-24.00 and at dawn until morning at 03.00-08.00. Though people in Ayapokiar and Atai Kebar claim they hunt pigs (*Sus papuensis*) (called *fane* in Miyah, *douw* in Mpur and *nok* in Abun), Casuary (*Casuaris* sp) (known as *Pesakof* in Miyah, *Bapirokir* in Mpur and *Mawis* in Abun) generally during the daytime. Types of animals such as Bird of Paradise (*Paradisea minor*) (known as *amdaru* in Abun, *mafiaf* in Miyah, and *arie* in Mpur) are usually hunted in the morning at 05.00-08.00. Other types of birds such as the King's cockatoo (*Cacatua galerita*), yellow crested cockatoo (*Probosciger atterimus*), and taon-taon (*Rhyncoterus plicatus*) are usually hunted with firearms in the afternoon and evening. Groups catch juvenile animals from the bottom of the wood that are used as mother's nests. They climb and catch crooked beak chicks. Deer is hunted during the day or night.

#### 4.1.6 The price of prey

Game markets vary in some villages and districts and take place in areas that are accessible by road. Usually, the sale price of hunted items depends on contact between

sellers and purchasers. Hunting animals, such as 2-4 horned deer hunted by the group will fetch between Rp. 700,000 and Rp. 1,000,000; wild boars weighing 15 kg, range from Rp. 1,000,000 to Rp. 1,500,000. Birds of Paradise range between Rp. 2,000,000 to Rp. 3,000,000. Bottle cuscus range from Rp. 300,000 to Rp. 500,000; King cockatoo (immature) range from Rp. 300,000 to Rp. 500,000; Black-headed parrots range from Rp. 200,000 to Rp. 300,000. The prices of the types of animals traded above are usually fairly small and, when these hunted products are sold by collectors in Manokwari to be sent out of Papua, the prices are considerably higher than the above prices.

#### 4.2 Shifting hunting practices

Hunting systems of local Indigenous communities have changed in various ways in recent years, particularly due to new hunting equipment, arrival and involvement of new actors, and the purpose and frequency for which hunting is taking place. This situation is changing due to market preferences, infrastructure development, new players on the scene, and shifting priorities locally.

The people of Tambrauw used to hunt mainly for food. However, changes that stem from more open access to information, road networks, and other means of interaction, shift these patterns and now collect more commercial forest products. Hunting locations, for example, are now further apart than they were a few years ago; additionally, the use of arrows and spears has given way to the use of firearms. The ability to transfer knowledge on interacting with nature from parents to children or other family members, including hunting knowledge, is one of the challenges facing the preservation of traditional values in Papua and especially in Tambrauw. In the Abun, Mpur, and Miyah communities, the transfer of hunting knowledge is decreasing because of the arrival of firearms.

This research found that in Abun, Miyah, and Mpur, on average each hunter could set 100-200 typical snares, which will be reset in a period of 2-3 days. On average, within this period, each hunter can catch 7-10 different combinations, including deer (*Cervus timorensis*), pig (*Sus* sp), forest wallaby (*Dorcopsis* sp) and Cassowary (*Casuarius* sp). But testing the snares and traps depend on environmental conditions. In the rainy season this can take a week, and the trap will not be regulated. As a result, game animals trapped in a snare will die. If it is believed that every week about 10 animals die in the group of hunted animals such as deer, pigs, adult female kangaroos, it can be inferred that the mortality rate of hunting animals are resulting in decreasing populations of these animals. This is one of the drawbacks of hunting with conventional snares in large quantities, which was reported by a number of village hunters (informant no. 1,2,6,16,17.) The narrative of the negative impacts of traditional hunting above is also known as the empty forest phenomenon articulated by (Redford & Robinson, 1987).

In line with the findings of Suryadi et al., (2004), other animal meat products are commonly marketed on a small scale, such as deer meat and crooked beak and cuscuses, which are sold alive. As found in other studies, one of the causes of over-utilization of wildlife is the increased market demand for meat products from animals (Robinson & Bodmer, 1999).

The consequences of the prohibition of hunting in Tambrauw have shown that there is no limitation on hunting equipment for both firearms and tube guns or other conventional weapons. In certain sites, people seldom use traditional hunting methods, such as hunting dogs, snares, or even visual hunting. The community are more likely to hunt with firearms by building relationships secretly with security forces to coordinate and transfer the expertise of firearm usage. This approach is known to be easier as it gains more results in a fairly short period. Field observations show that the use of firearms and tube guns is putting pressure on wildlife movements and habitats, driving

them into protected areas. Many animals are also shot but unable to be captured as they flee, dying along the challenging terrain and resulting in more casualties. People who disagree with the actions of the security forces and those who hunt with guns feel anxious, restless, and sometimes physically resist. Their anxieties stem from concern around the loss of a food source, the cacophony of noise that these weapons create, and actions of unjustified killing for sport undertaken by those that claim to uphold the law. In 2015, the Miyah damaged the Miyah District Police Station in retaliation to police who shot wild animals such as deer (*Cervus timorensis*) and hornbills (*Cacatua galerita*). This incident was verified by interviews with informants 4, 5, 19, 21, 36 and 38.

### 4.3 Conservation Regulations and Applications

#### 4.3.1 *The emergence of the Tambrauw Conservation Regency*

Approximately 80% of Tambrauw regency is designated as a protection zone,<sup>7</sup> under the designation of protected and conservation forest. However, local communities also consider these territories as their cultural landscapes, with land management practices tied to deep traditional ties and cultural rites for natural sacred features. This formal state designation and local cultural distinctions can pose a challenging task, particularly when balancing the increasing policy interests in regional development, while maintaining conservation objectives. The conservation regency initiative recently became one political option from the regions, and has received support as a national mission. This national scope materialized through the support of regional initiatives in the form of legal drafting and revising the Tambrauw Medium-Term Development Plan (RPJMD) 2011-2016 and 2017-2022, which was thereafter complemented by a conservation district regulation, as well as a regulation on the recognition and protection of the Indigenous Peoples of Tambrauw. The peak of political commitment occurred on October 29, 2018, when the regency declared Tambrauw as a Conservation and Indigenous People's Regency.

The declaration has contributed to the legitimacy of the Tambrauw Regency government in utilizing conservation areas as an area for development activities. The political idea of a conservation regency is portrayed as a compromise between interests of conservation actors, Indigenous Peoples, and the state. For local governments, the conservation regency designation serves as an effort to find forms of integrated natural resources management that are sustainable and beneficial for Indigenous Peoples. Regency authorities have hence sought to establish alliances with various local, national, and international parties to gain further legitimacy and support. Following the designation of Tambrauw as a conservation regency, and West Papua as a conservation province, the local government aligned their ongoing development plans with conservation policies. In November 2019, the central government approved special regional regulation No. 10/2019 on West Papua as a Sustainable Province, issued by the West Papuan Provincial Government. The outcome initiated a review of the West Papua Spatial Plan, and sparked conflict among political elites in each regency as they were bound to relinquish part of their territory as protected areas to achieve the provincial target of 70% protected area in the West Papua Spatial Plan. To meet this goal, Tambrauw had to reassign some of its forested areas outside of those previously assigned as protected areas. The new protected areas were described as “The crown

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<sup>7</sup> In accordance with the Map of Forestry and Aquatic Areas of the Irian Jaya Province (Decree of the Minister of Forestry No. 891/Kpts-II/1999; Bappeda Tambrauw. 2011) and revised by Decree of the Minister of Forestry of the Republic of Indonesia No. 783 of 2014 concerning the Map of Forest and Aquatic Areas of West Papua Province, Indonesia.

jewel of *Tanah* [the land of] Papua". One of the points of contention is that not all regencies were willing to hand over land to achieve targets, unconvinced that compensation would take place through ecological fiscal transfers distributed to each regency in the province. The gap in contributions drove some regency heads to resist the provincial conservation policy.

Until 2020, many regional elites and bureaucrats in West Papua revealed that the sustainable development policy is only understood by a handful of managers in certain sectoral offices, while junior staff and the broader public remained unaware of the policy. This key gap created multiple interpretations and translated into a lack of support in the implementation of the policy. In addition, a lack of concrete and meaningful actions based on sustainable development and conservation policies remained largely absent in West Papua.

Before the establishment of the conservation regency, Tambrauw proposed releasing part of the regency area assigned as protected areas. The proposal to review the Tambrauw Regency Spatial Plan included the release of part of the regency area assigned as protected areas, from 78% down to 60% of the total regency area. This proposal was based on estimates of development for the next 50 years, and the fact that 16 districts and 68 villages in Tambrauw have already been assigned as protected areas. Regency government leadership also argued that people need development, pointing to the importance of investment priorities in economic, education, social, and environment sectors, which they stated can only be effective if the basic facilities such as roads, bridges, and telecommunication networks are available. The usage of protected areas for such requirements has become described as the basic needs for local government to realize development goals. The regency head of Tambrauw at that time, Gabriel Asem, counter argued that the conservation regency initiative does not mean creating an obstacle for people to benefit from development. On the contrary, he posited that the policies can translate as a means for the protection of Indigenous People and support natural resource conservation outcomes, which can be implemented alongside the delivery of improved basic services for the people of Tambrauw.

Meanwhile, at the province there is a growing sense that Tambrauw has not supported conservation initiatives to increase the number of protected areas. The provincial policy for Spatial Plan revisions requires the increase of protected areas, which includes areas in Tambrauw. However, the regency government continued to insist in decreasing the size of total protected areas. Consequently, the proposal for revision of the Tambrauw Spatial Plan has since of the time of writing been put on hold by the provincial government since 2019.

These developments show how provincial policy has created a stand-off among different interests at the regency level. One of the implementing resolutions of the conservation policy in Tambrauw is the establishment of tourism as the leading sector of regency development. Therefore, the development of tourism villages based on bird watching has begun to operate in several villages such as Ayapokir, Selempai, Syurgar and Asem. To improve the quality of ecotourism destinations, the regency government has forged cooperation agreements with the army, police, and BBKSDA to establish a technical implementation unit. This is one area where the implementation of conservation policy interacts directly with hunting enforcement. Cooperation agreements, formally established through a signing of hunting restrictions, sets out to combat the illegal trade of wild plants and animals, and includes provisions for combating deforestation.

One major issue in the establishment of a conservation regency was the lack of corresponding support from state forestry agencies, other than those related to enforcement. There have been no supporting funds for conservation activities, and funds are only directed to the Tambrauw government through a Task Force of the Conservation and Indigenous People Regency, and only for short-term and small allocations. The Tambrauw government only allocates funds for activities related to raising awareness that hunting is only allowed for subsistence, and hunting for commercial purposes can be done provided that hunters acquire a permit letter. In order to obtain a permit, however, hunters need to develop a proposal and be eligible for certain conditions set by BBKSDA. With BBKSDA allocating little to no funds, only one activity has been carried out, namely the establishment of an initiative entitled "Wildfire Aware Communities" (*Masyarakat Peduli Api*). Implementation took place only once in 2018 in the District of Sausapor. The lack of funding renders the conservation areas as something that is being neglected and provides no direct benefit for local government and people. As a result, the way forestry agencies show their commitment is through hunting enforcement initiatives.

The two gentlemen who came across Petrus in the opening vignette are from forestry agencies (BBKSDA and a Tambrauw District Officer) tasked to carry out monitoring patrols. Both carried out monitoring duties in the District of Ileres, which is a site intersected by the provincial road (trans-Papua Barat) from Manokwari to Sorong.

#### *4.3.2 Efforts to prohibit illegal hunting*

One attempt by the Regency to restrict and minimize hunting is through a joint declaration on deforestation and the prohibition of hunting of hunting and collection of wild plants in Tambrauw. The Regency invites parties to work together and commit to the protection of wild animals and plants in Tambrauw. The Phase I declaration was made between West Papua natural resources agency (KSDA), the Tambrauw Regency Head, Sorong Military Commander 1802 and Sorong Police Chief in Sorong City on 3 September 2018; Phase II on 24 June 2019, signed by West Papua KSDA, Tambrauw Regency Head, Military Commander of Manokwari and Manokwari Police Chief and Head of Regency Environmental Agency. The text was titled "Declaration on the Prevention and Eradication of Illegal Trade in Plants and Animals and Forest Damage in the Tambrauw Regency Legal Area", which specifies 5 points, ranging from awareness raising initiatives, coordination efforts of illegal trade and habitat destruction, and pursuing legal actions. The regency government anticipated that the signed document would push each party to regulate the rights and obligations and to communicate with each other on ways to uphold the declaration, as expressed by informants 1, 3 and 4.

However, after the signing, Indigenous Peoples groups voiced complaints and disagreement for the restrictions in the Declaration. Their statements expressed that hunting wild animals and clearing land for cultivation are customary rights that also support livelihood sources, and are activities they carry out within customary lands. Local informants wondered why government agencies failed to consult them on the policies and restrictions, which had an immediate effect on how they benefit from forest products. Government agencies setting the rules on their own terms also called into question the legitimacy of their actions, and consequently, local informants firmly stated their plans to ignore and disobey the rules.

Informants from the Miyah and Mpur revealed that the decimation of wild animals was carried out by army and police officers entering their customary lands. The effect of the presence of security forces on wildlife in Tambrauw is very important. According to informants 43, 44, 47 hunting by security forces is mostly conducted in secret, taking place during by night, and use firearms. For local people, the rules should apply only to

outside violators, not the Indigenous Peoples. In addition, the cooperation agreements have not improved the enforcement of illegal activities conducted by outside interests. To date, hunting operations continue to be carried out by individual security forces using firearms, which involved local people. This suggests that internalization of hunting restrictions embedded in Regulation No 5 of 2018 on the conservation regency is still very weak and lack appropriate measures to pursue conservation outcomes.

One of the explanations is the fact that hunting practices in the conservation regency have not been regulated in detail by the legislation. Meanwhile, hunting and gathering forest products is the main practice supporting the subsistence lifestyle of the Indigenous Peoples in TAMBRAUW. The regency regulations on the protection of Indigenous Peoples did not directly and clearly control the hunting, does not appropriately target pressures on the use of forest products, has not included provisions on environmental services, and others. For example, Article 22 of the conservation regency regulation only mentions the utilization of wild animals by Indigenous peoples, but details of the number/quota of use or types of hunted animals are not further clarified. This regulation has therefore created tensions between Indigenous Peoples and the government, as well as initiating disputes between the district government and other state bodies, such as BBKSDA who is responsible for the conservation of wildlife.

Another important effect is that some local people expressed doubts on the importance of the conservation district for them. This doubt is expressed by informants no. 22, 23, 24, 26, 27, 32, 33, 41, 42, 43, and 45 who stated that Indigenous communities support the policy to establish TAMBRAUW as a conservation district as long as the government integrates and legalizes existing traditional conservation practices in TAMBRAUW. If conservation policies and activities developed by the local and central governments mean that the Indigenous communities are not allowed to benefit from their traditional natural resources, then the communities will continue to ignore, disobey, and resist.

## 5. DISCUSSION

Our findings show that on the one hand TAMBRAUW's conservation district policy serves as a regional government strategy to decentralize central government authority, which proponents claim provide for greater downward accountability to local interests and Indigenous People. On the other hand, the TAMBRAUW regency has not followed up with instrumental commitments for doing so, due in part to a lack of resource allocations, and from a classical top-down approach to administering conservation areas. Critiques of decentralization in natural resource management are well trodden in the literature, whereby Ribot & Larson (2013) have argued for paying closer attention to the overall power structures, institutional processes, and accountability dimensions. Indeed, decentralization policies can also serve as grounds for recentralization outcomes, when local governments are perceived by centralized authorities as lacking the capabilities to carry out mandates (Ribot et al., 2006; Sahide et al., 2016). This can also take place in the transfer of formal governing authority and recognition to Indigenous Peoples, which in some cases further undermine local cultural institutions (Fisher & van der Muur, 2020; van der Muur et al., 2019). Though similar outcomes in TAMBRAUW are by no means automatic, we show that one of the leading edges of discourse and policy application on conservation and Indigenous Peoples is clearly playing out through the enforcement and disciplining of hunting activities. The way hunting policy is being implemented, and the enforcement directed towards the traditional customary practices, will determine the buy-in and eventual success of conservation regency designations.

The findings in this article are first rooted in the traditional hunting practices of three of the five main Tamberau tribal groups. We show that hunting remains a critical livelihood and cultural practice of traditional communities by teasing out the particularities of its practice, which are complex and handed down over many generations. Hunting is deeply embedded within local cultural systems and relations between families and communities, and in local community relations with wildlife. Even with provisions for protecting Indigenous hunting practices in regency policies, the hardening of protected area boundaries through regency conservation policies slowly contributes to the exclusion of local authority governing their historical territorial domains. Meanwhile, hunting practices are also changing with the arrival of new roads, in-migrant settlements, and changing markets for wildlife. New weapons, new networks of hunting communities, and emergent power relations between locals and intermediaries are reshaping the way hunting is being carried out. Informants throughout the research also indicated an increasing incidence of local powerful authorities among security forces enacting hunting practices that conservation authorities would find difficulty in policing. Indeed, it is easy to target local traditional practices for enforcement to prove that conservation policies are carried out, but this serves to undermine the longer term legitimacy and buy-in for the ideas of, and policies supporting conservation.

From an environmental justice perspective, there are procedural gains for regional authority in decentralizing authority and in the discursive implications for policies supporting the recognition of Indigenous Peoples. However, these procedural benefits have not come with the distribution of resources to stated beneficiaries. The recognition of Indigenous Peoples in formal policy commitments at the highest level can have profound benefits and implications for future decision-making authority. In its current form, however, such protections, authority, or empowerment has not yet extended to Indigenous communities who live in and around conservation zones, particularly among those that continue to hunt using traditional approaches. Worse still, the conservation elements of the policies are being translated and enforced in ways that further exclude and marginalize the Indigenous Peoples of Tamberau.

## 6. CONCLUSION

This paper has shown an empirical case of the growing interest in policy frameworks to decentralize conservation policies to regional governing authorities. It has also proceeded with the explicit recognition of Indigenous Peoples, which has gained particular interest in social movements around land rights and the environment. The Tamberau conservation regency is a unique policy case that brings together conservation and rights commitments. Although there has certainly been a transfer of discursive authority from central to regional governments, the type of resource allocations to carry out conservation commitments are limited, and worse, counterproductive. There are some initiatives to support ecotourism initiatives with local cultural institutions, but overwhelmingly, politics in Papua are playing out in spatial and development planning processes (Fatem et al., 2018). This includes determinants over the citing and contracting of large development initiatives such as roadbuilding and other infrastructural allocations.

Although the conservation province of West Papua and the conservation regency of Tamberau explicitly claims to center priorities on a conservation development model, the actual initiatives to carry out such commitments are limited. In this paper, we focused on the most prominent way that conservation policies are being carried out, namely through hunting practices. Hunting enforcement is an especially stark example



of how Indigenous Peoples claims to the forest are further undermined and marginalized. Albeit this conservation policy is supposedly built around supporting Indigeneity, but its actions do not include the type of participation and consultation of local cultural institutions and interests that aims to build accountability and legitimacy. Refocusing towards rooting out illicit activities and supporting local coalitions supportive of local forest management practices and livelihoods would yield a very different outcome. Nevertheless, the way conservation mandates are being translated serve to further undermine and exclude local interests.

In this context, although the policy suggests an Indigenous approach to conservation, the policy frameworks and mechanisms applied, remain skewed towards top-down, poorly resourced, and most significantly, seem illegitimate from below. As a result, it is not only unsurprising that forestry officials are actively targeting hunters like Petrus, it is also unsurprising the increasing desperation that traditional hunters are experiencing given their dependence on hunting for protein and livelihood. Environmental justice highlights the importance of procedure and recognition, and the formal mandates could still one day serve Indigenous communities to be at the center of conservation policy and practice, but the approaches, practices, and support mechanisms must also bolster the discursive and stated policy interests.

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## APPENDIX

### 1. List of research Informants

No.	Name	Occupation	Position	Address
1.	Maksi Yesnat	Private organisation	Community	Syukwes Village – Tamberau
2.	Iknasius Baru	Private organisation	Head of Miyah Etnich	Hobiyah Village, Miyah sub distric
3.	Raffles Yewen	Private organisation	Head of Abun Etnich	Kwoor sub distric
4.	Hofni Ajoy	Farmer	Head of Mpur Etnich	Kebar Sub Distric
5.	Stevanus Syufi	Farmer	HEad of Ireres Etnich	Miyah sub Distric
6.	Petrus Mafiti	Farmer	Secretary of Meinad village	Hobiyah Village, Miyah sub distric
7.	Anton Airai	Farmer	Community	Hobiyah Village, Miyah sub distric
8.	Petrus Sasior	Farmer	Community	Meis Village, Miyah sub distric
9.	Moses Fatemasah	Farmer	Head of Meis Village	Hobiyah Village, Miyah sub distric

No.	Name	Occupation	Position	Address
10.	Obet Fatemasa	Farmer	Community	Hobiyah Village, Miyah sub distric
11.	Nikodemus Ariks	Farmer	Village Apparatus	Atai Village, Kebar sub distric
12.	Hein Ajo	Farmer	Village Apparatus	Atai Village, Kebar sub distric
13.	Anike A Sentawi	Pastor	Community	Atai Village, Kebar sub distric
14.	Nikodemus Majiwi	Farmer	Community	Atai Village, Kebar sub distric
15.	Yohanes Esa	Farmer	Community	Atai Village, Kebar sub distric
16.	Hernita Baru	Farmer	Community	Hobiyah Village, Miyah sub distric
17.	Yakob Yekwam	Village Apparatus	Head of Syukwes village	Syukwes village, Sub Distric of Kwoor
18.	Lambertus Ajami	Village Apparatus	HEad of Atai Vilage	Atai Village, Kebar sub distric
19.	Thonni Anari	Farmer	Community	Atai Village, Kebar sub distric
20.	Kundrat Yeudi	Civil servant	Community	Atai Village, Kebar sub distric
21.	Yoni Jengrun	Farmer	Community	Syukwes village, Sub Distric of Kwoor
22.	Metu Yesnath	Farmer	Community	Syukwes village, Sub Distric of Kwoor
23.	Magdalena Kinho	Farmer	Community	Syukwes village, Sub Distric of Kwoor
24.	Ruben Syufi	Farmer	Community	Syukwes village, Sub Distric of Kwoor
25.	Yunita Hae	Farmer	Community	Syukwes village, Sub Distric of Kwoor
26.	Benilus Momo	Farmer	Community	Syukwes village, Sub Distric of Kwoor
27.	Roni Kaimu	Farmer	Community	Syukwes village, Sub Distric of Kwoor
28.	Daniel Amboap	Farmer	Community	Syukwes village, Sub Distric of Kwoor
29.	Manfret Sedik	Farmer	Community	Syukwes village, Sub Distric of Kwoor
30.	Frans Wabia	Farmer	Community	Syukwes village, Sub Distric of Kwoor
31.	Lambertus Ajami	Farmer	Community	Atai Village, Kebar sub distric
32.	Yolens Nubuab	Farmer	Community	Syukwes village, Sub Distric of Kwoor
33.	Vito Wabia	Farmer	Community	Syukwes village, Sub Distric of Kwoor
34.	Yohanes Yesnat	Farmer	Community	Syukwes village, Sub Distric of Kwoor
35.	Silas Yekwam	Farmer	Community	Syukwes village, Sub Distric of Kwoor
36.	Nores Yengrin	Farmer	Community	Syukwes village, Sub Distric of Kwoor
37.	Silas Yokser	Farmer	Community	Syukwes village, Sub Distric of Kwoor
38.	Raffles Yesnat	Farmer	Community	Syukwes village, Sub Distric of Kwoor
39.	Tina Yembra	Farmer	Community	Syukwes village, Sub Distric of Kwoor
40.	Salomina Yembra	Farmer	Community	Syukwes village, Sub Distric of Kwoor
41.	Thomas Yeudi	Farmer	Community	Syukwes village, Sub Distric of Kwoor
42.	Septer Yeudi	Farmer	Community	Syukwes village, Sub Distric of Kwoor
43.	Yunus Yumte	NGO	The Samdhana Program Coordinator	Sausapor

No.	Name	Occupation	Position	Address
44.	Hadi Fernandus	NGO	WWF Sausapor Foundation	Sausapor
45.	Soter Hae	NGO	Akawuon foundation	Sausapor
46.	Forly	NGO	Paradisea foundation	Manokwari
47.	Malik	NGO	Epistema Foundation	Sorong/Jakarta

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