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Implementation of Village Forest (Hutan Desa) in Sembuan and Intu Lingau Villages, West Kutai Regency, East Kalimantan Province, Indonesia

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Abstract:

One of the ways used by the Indonesian government so that people living in and around the forest can participate in managing the forest while getting economic and environmental benefits is through Social Forestry (Perhutanan Sosial) with five schemes offered according to the characteristics of the community. One of the schemes implemented by the people of Intu Lingau and Sembuan Villages is the Village Forest (the so-called Hutan Desa-HD). The Village Forest is still in the initial stages of implementation; of course, it is interesting to study how the community manages the village forest, what the benefits are, what problems they face and how they are resolved. The aim of this research was to examine the implementation of Village Forests, the problems or conflicts that arise and the mechanisms for resolving the problems.

This research was carried out in Intu Lingau and Sembuan Villages, East Kalimantan Province, Indonesia, from 2023 to 2024 with a focus on Village Forest management, which is operationally carried out by the Village Forest Management Board (so-called LPHD-Lembaga Pengelola Hutan Desa). Data was collected using direct field surveys, focus group discussions (FGD) with LPHD and in-depth interviews with key respondents. The information and data collected were analyzed using the descriptive qualitative method. The Sustainability principles of Ostrom and Successful Principles of Agrawal were also used for validation of the implementation of Village Forest.

The results of the research showed that the implementation of the Village Forest that has been carried out by the LPHD includes taking steps to secure the Village Forest area by making boundary marks around the area, carrying out area patrols, and operationally managing the Village Forest through five Social Forestry Business Groups (so-called Kelompok Usaha Perhutanan Sosial-KUPS) in Intu Lingau and seven KUPS in Sembuan. In the implementation of Forest Village, there were several internal and external conflicts. The conflict resolution mechanism used is negotiation and consensus because it depends on the intensity and who was involved in the conflict. It is recommended that the management board strongly support KUPS in running the Program for the benefit of the community.

Keywords: *Intu lingua, sembuan, village forest, hutan desa, negotiation, consensus, KPHP*

1. Introduction

Forests are natural resources that can be renewed. Various flora and fauna live and interact with each other in and around the forest. Forests can function economically, ecologically and socio-culturally. The definition of forest in Law no. 41/1999 concerning Forestry is a unified ecosystem in the form of an expanse of land containing biological natural resources dominated by trees in a natural environment, one of which cannot be separated from the other.

The existence of forests cannot be separated from the existence of people who live in and around the forests. Some people earn a living and depend on forest products taken directly from the forest, both wood and non-wood. The forest management system, which mandates that forests are controlled by the state and their management is given to entrepreneurs (HGU = *hak guna usaha*), seeks to ensure that communities in and around the forests only de facto control and utilize the forests while de jure communities do not have legal access to utilize the forests directly.

This condition causes tenure conflicts between communities in and around the forest and permit holders who obtain valid permits from the government. This is one of the backgrounds for the Social Forestry program launched by the

Government through the issuance of Decree P.83/MenLHK/2016 concerning Social Forestry, which was subsequently replaced by Minister of Environment and Forestry Regulation Number 9 of 2021 concerning Social Forestry Management. With this legal umbrella, communities in and around forest areas have the opportunity to gain legal access to forest area management with the term Social Forestry, which provides 5 alternative management schemes, one of which is Village Forest (HD).

By reflecting to the importance of forests for society, Indonesian President Joko Widodo on the world leaders summit explained that the Social Forestry program was created so that forest conservation is accompanied by the creation of livelihoods for local communities. This is important because 34% of the villages in Indonesia are located on the border or within forest areas. Millions of Indonesian people depend on the forestry sector for their livelihoods. Sustainable forest management policies must combine environmental with economic and social considerations.

By referring to Indonesian Law no. 41/1999 concerning Forestry in Article 5 paragraph (1), Village Forest is a forest managed by a community that is bound by history, traditions and the origins of their life to the forest. Village Forest is a State forest that is managed by the village and used for the welfare of the village. Furthermore, in Ministry regulation Permenhut P.49/2008 which discusses operational regulations, Village Forest is defined as State forest that has not been burdened with permits which is managed by the Village and used for the welfare of the Village.

In its implementation, this Village Forest has a positive impact as well as causing conflict. According to Supratman and Sahide (2010), the positive impact of village forests is that the community gets the right to manage forest areas legally, manages forest areas in a planned and sustainable manner, and gains greater benefits for the welfare of farmer households and village welfare.

Granting forest management rights to communities, especially indigenous communities, does not necessarily solve forestry problems. Likewise, the aim of community forest management is to improve the community's economic level. This is because granting permits to the community can trigger the emergence of various conflicts, including conflicts between the community and other permit holders that have been granted in and around the area, for example, coal mines, palm oil plantation permits, HPH permits and so on. In fact, there is also the possibility that internal conflicts will arise between the community and the Village Forest Management Institution (LPHD) or even between the communities themselves.

Therefore, this research aims:

- To examine the implementation and benefits of Village Forests and
- To identify and study conflicts and conflict resolution mechanisms in the implementation of village forests.

2. Method

2.1. Study Site and Time

This research was carried out from November 2023 to March 2024 in two villages: Intu Lingau Village and Sembuan Village, in West Kutai Regency, East Kalimantan Province. Both villages are inhabited by the indigenous ethnic people, the Benuaq ethnic group. The two Village Forests received permission from the Indonesian government to manage Village Forests in 2018.

The main livelihoods of the people in the village are farming, cocoa and rubber plantations, vegetable gardens and horticulture such as eggplant, tomatoes, and cassava. Apart from that, the community also collects non-timber forest products, such as catching fish in the Nyuatan River, hunting pigs and deer, and collecting forest products. These two villages are also durian (*Durio zibethinus*) producers, so during the durian season, every 1-2 years, it becomes a source of quite large cash.

2.2. Respondent and Sampling

The respondents in this research were all Village Forest Management Bodies (LPHD) consisting of 27 members in Intu Lingau Village and 31 members in Sembuan Village. Other respondents were the Village Head (*Petinggi*) and Customary Head (*Kepala Adat*) of the two villages.

2.3. Data Collection

Primary data and information were collected through Focus Group Discussion (FGD) and in-depth interviews. Focus group discussions were used when collecting data from the management body (LPHD), while in-depth interviews were carried out for interviews with Village Heads (*Petinggi*) and Customary Heads (*Kepala Adat*).

2.4. Data Analysis

The data analysis used in this social research is qualitative descriptive by describing populations, conditions or events systematically and accurately to answer questions such as what, where, when and how (Rukajat, 2018; Suwendra, 2018; Batubara, 2011). The steps taken with this method are data reduction by selecting information data that suits the research objectives, displaying the data in the form of a table or matrix or scheme, and drawing conclusions. To validate Village Forest management, two principles are used: Ostrom's Sustainability Principles and Agrawal's Success Principles.

3. Results and Discussion

3.1. Organization, Legality and Management of Village Forest

A brief history of the establishment of the Village Forest in Intu Lingau Village and Sembuan Village has the same background, originating from the Village Protected Forest and based on the aspirations of the community. The reason is that the community considers that community activities in the Protected Forest are limited, which causes reduced economic benefits, so the community in the two villages agreed to change the status from Protected Forest to Village Forest. With the status of a Village Forest, the community can participate in managing the forest while also receiving economic and environmental benefits from the forest in the Protection Zone and Utilization Zone.

The Status of Village Forests in Indonesia is published by the Ministry of Environment and Forestry (*KemenLHK*) of the Republic of Indonesia after an in-depth study of proposals from village communities. Technically and operationally in the field, Village Forests are managed by the Village Forest Management Board (LPHD = *Lembaga Pengelola Hutan Desa*), which has 26-31 members. LPHD administrators are appointed through the Village Head's Decree in each village. According to the Decree from the Ministry of Forestry, the Sembuan Village Forest covers an area of 2,810 ha, while the Intu Lingau Village Forest covers a larger area of 8,532 ha. The village forest area is based on community proposals, which are then verified by the Forestry Service through KPHP (*Kesatuan Pemangkuan Hutan Produksi*).

3.2. Village Forest Protection

Securing Village Forest Areas is very important because good security will provide benefits in accordance with community expectations for village forests. Several forms of security carried out by LPHD in Village Forest Areas are as follows:

- Determining boundaries and making area boundary signs: Determination of Village Forest Area boundaries is carried out jointly between the Forestry Service through KPHP together with the community. Once the boundaries of the area are clear and agreed upon by all parties, KPHP, together with the community, will install stakes on the boundaries of the area so that the community knows the boundaries of the area, and the Management Body can take action if anyone violates these boundaries. The area boundaries used are ironwood stakes every 100 m in Sembuan Village and paralon pipes in Intu Lingau Village. The installation of area boundary markers in Sembuan has been completed, while in Intu Lingau Village, it has reached 4 km.
- Patrol: One of the important tasks for the Management Body to prevent encroachment on Village Forest Areas is to carry out routine patrols. In Intu Lingau Village, patrols are carried out using 4 motorbikes for land patrols and 2 boats for river patrols. In Sembuan Village, patrols are carried out only by land patrol using 4 motorbikes because the Village Forest is located far from the Nyuatan River.
- Socialization to the community: The Village Forest management body (LPHD) always carries out outreach to the community because it is considered that the biggest threat to the Village Forest is precisely from the community themselves, who carry out their daily activities around the Village Forest. Community activities around the Village Forest include farming, gardening, hunting, fishing, looking for wood to build houses, and collecting non-timber forest products.

4. Implementation of Village Forest

The management of Village Forests in Intu Lingau and Sembuan is almost the same in accordance with the directions for Social Forestry management, specifically Village Forests. Management includes structuring and marking area boundaries, securing the area, and utilizing the area. The utilization of Village Forest areas is carried out through the formation of several Social Forestry Business Groups (KUPS), where the type and number of KUPS depend on the potential available in each village. Later, when KUPS is in production, the profit distribution percentage will be determined between KUPS as the program operator and LPHD as the owner. In general, Village Forest management is presented in a matrix as shown in table 1 below.

Type of Implementation	Village Forest of Intu Lingau	Village Forest of Desa Sembuan
1. Determining the area of HD	Install Village Forest boundary signs by making signs from paralon pipes of 130 cm high with a distance between the stakes every 100 m. Boundary planning has been underway for 4 km and will continue until completion.	Install boundary stakes around the Village Forest area using ironwood poles every 100 m. This activity has been completed.
2. Area protection	Carrying out routine patrols using motorbikes, on foot, and riverboats (getting). Handy talky is also used for communication among team members.	Carrying out routine patrols using motorbikes, walking or on foot). Handy talky is also used for communication among team members.

Type of Implementation	Village Forest of Intu Lingau	Village Forest of Desa Sembuan
3. Utilization of area /Program LPHD through KUPS (<i>Kelompok Usaha Perhutanan Sosial</i>)	<ol style="list-style-type: none"> 1. KUPS minuman jahe: make beverage products from ginger. Around 8 tonnes of ginger has been produced per harvest within a period of 8 months. 2. KUPS mineral water: for bottled water in gallons, installation is still in progress. 3. KUPS Gula aren: makes palm sugar products from palm trees that grow naturally. Still in the initial stages 4. KUPS durian: The activity is to enrich and rejuvenate existing durian orchards/orchards in and around the Village Forest because durian is a superior product of Intu Lingua. 5. KUPS Beraut Dai: It produces flour from tubers, which will later become the raw material for corn noodles, which are still in the preparation stage. 	<ol style="list-style-type: none"> 1. KUPS Madu: To maintain Kelulud honey, which is managed by LPHD. Initially, it was quite successful, but it ran into a big problem due to attacks from large stinging insects, so it failed. We are still looking for a solution to deal with this sting. 2. Swallow KUPS burung walet: Making a swallow's nest made of wood. The swallow's nest has been completed, but there are no results yet because it is still in the initial stage. 3. KUPS Karya Sarana Haq: The development of rattan crafts is important because the potential for rattan is quite abundant in the Sembuan Village area. This program is already running in its initial stages. 4. KUPS Lolang Odei: functions to sell or market all production results from all KUPS in the Sembuan Village Forest. 5. KUPS durian unggul dan buah-buahan: functions to grow local fruit and superior durian. Now, the preparation stage includes preparing superior durian seeds, which will later be planted in the Sembuan Village area (not necessarily in the Village Forest area). 6. KUPS coffee: to plant coffee in the village area, but until now there are no coffee seeds 7. KUPS Ecotourism: functions to manage ecotourism objects in the Village area, including those in the HD area. This program is still in the preparation stage.
4. Guidance, monitoring and evaluation	Monitoring and evaluation is carried out routinely according to the direction of the Forestry Service and the Ministry of Environment and Forestry	Monitoring and evaluation is carried out routinely according to the direction of the Forestry Service and the Ministry of Environment and Forestry

Table 1: Matrix of Village Forest Implementation

Source: Primary Data (2023/2024)

The data and information in the matrix above show that the implementation of Village Forests is carried out through several stages and activities, such as creating area boundaries by KPHP and the community, securing the area through routine patrols using motorbikes, patrols via rivers using motorized boats (*ketinting*), foot patrols, sharing information via radio (handy talky) and socialization to the community to participate in maintaining the Village Forest. Several activities carried out by LPHD, such as the implementation of Village Forests, are carried out in the form of several KUPS (*Kelompok Usaha Perhutanan Sosial* or *Social*) Forestry Business Groups.

5. Benefits of the Village Forest for People

Village Forests are divided into several zones, such as Protection Zones and Utilization Zones. Below are the benefits of the village forest for the people.

Types of Utilization	Hutan Desa Intu Lingau	Hutan Desa Sembuan
Village forest area	The village forest area of 8,531 ha is used by residents for various types of activities, including hunting, farming and gardening. Specifically, the 2,002 ha Utilization Zone is used by the community for horticultural food farming and gardens such as rubber, coffee and cocoa.	The Village Forest area covering an area of 2,810 ha is sometimes used for hunting because the location is quite far, around 45 km from the village, so there are no agricultural and garden activities in this location..
Forest fruits (in local names)	Durian (<i>Duri zibethinus</i>) is a forest fruit which has been a source of income for residents for a long time. This durian can bear fruit in various ways, namely 3 times a year or once a year, sometimes once every two years, depending on the season. One durian tree in this forest can produce around 1,000 durians. Other potential fruits are forest rambutan, lai, durian lekung, kerantungan, lai leko (best with yellow content), forest kapul (ruwi), ridtn, keramo, etc.	Kapul (<i>Baccaurea macrocarpa</i>), cempedak (<i>Artocarpus integer</i> (Thunb.) Merr., kerantungan, durian panjang duri (<i>Duri zibethinus</i>), etc.
Food and horticulture, gardens	The utilization zone (around 2,002 ha) is used by residents for farming, vegetable gardening, and horticulture. This zone had been used by residents long before the status of Village Forest was issued. Gardens in this zone include cocoa, rubber, and durian.	None, because it is still old primary and secondary forest
Potential of wood (<i>prohibited to cut</i>)	meranti, bengkirai, keruing, ulin, tengkawang, bangeris, jelemuq	Meranti dan bangkirai, kapur, ulin, banggeris and some other non-commercial trees.
Non-timber forest products and animals	pulut rattan, honey, resin, forest durian, sarang walet (swallow's nest). Non-timber forest products are only used at certain times, for example, during the honey season or when people need rattan or rattan shoots.	Pigs, deer, brackish, monkeys of various species, clouded leopards, otters. There are no regulations prohibiting the hunting of these animals.
Medicinal plants (in local name)	Nulakng (bekai), mengkelogit/red bajakah or yellow bajakah, tuba (tuweq) medicine for fever, ketikong/yellow root for medicine for hepatitis and blood sugar, muungk wood for medicine for wounds and stomach aches, sengkeruput kamikng for medicine for wounds, pasak bumi/meriyai for medicine to prevent malaria, ginseng (sengkeropek) from increasing men's stamina, seluang bilem root (wayuk suli) as a stamina medicine - with a characteristic leaf shape similar to cassava leaves and thorny and slightly black in color and the base of the black wood looks like it has been stained with black paint.	Yellow root (<i>akar kuning/ketikongk</i>), pasak bumi (sentana riyui), bajakah blue black and red, kerbo kakangk for internal medicine, kertek boruk for female fertility medicine, selluang beluq (wayuk suli) for poisoning medicine and male stamina medicine.

Types of Utilization	Hutan Desa Intu Lingau	Hutan Desa Sembuan
Ecotourism/natural beauty view	Trabas route for trail motorbike tourism passing through bat caves; camping ground Mount Batu Tunga; Sengkerokng waterfall, Kuya waterfall.	Mount Murai with beautiful views, an ancient <i>Berahan</i> site in the form of an old hut made of ironwood,
Ritual ceremony and religy	Even though almost all residents are Christians, at certain events, they still look for traditional event needs in the village forest in the form of plants for traditional event needs.	Even though almost all residents are Christians, at certain events, they still look for traditional event needs in the village forest in the form of plants for traditional event needs.
Utilization of river flow	Natural river rafting tourism has begun to be developed using motorized boats/boats while enjoying HD natural beauty	There are no river tours in this HD because the location is far from the Nyuatan River watershed.
Protection of biodiversity and sites	<ol style="list-style-type: none"> 1. The biodiversity of flora and fauna is very rich in this area so that through the HD scheme a protection zone can be secured. 2. There are still many former villages and sites where old people lived in the past, which tell stories about how old people used to live and try to earn a living. 	<ol style="list-style-type: none"> 1. Even though it is quite remote, the very rich biodiversity of flora and fauna in this area needs to be preserved through the Village Forest scheme. Protection zones can be secured. 2. There are still many ancient parents' birth sites in this area that tell how and how ancient parents lived and tried to earn a living.

Table 2: Benefits of the Village Forest (HD)

Source: Primary Data (2023/2024)

5.1. Validation of the Implementation of Village Forests with Ostrom's Sustainability Principles and Agrawal's Success Principles

This validation is a combination of the Ostrom Sustainability Principles and the Agrawal Success Principles, namely by discussing several principles that are appropriate to the Village Forest context at the research location.

- The boundaries of customary forests must be clear, namely the physical boundaries of the forest and the membership boundaries of its Management (clearly defined boundaries, in terms of resource unit and membership): Analysis of boundaries (boundaries) also uses variables proposed by Ciriacy-Wantrup and Bishop (1975), namely: who is permitted to take advantage of the Village Forest, and whether it uses the characteristics of "common property" or "open access" (the presence of boundaries concerning who is allowed to appropriately from a CPR has been used as a characteristic of "common property" as contrasted with "open access"). In Intu Lingau Village and Sembuan Village, the area and boundaries of the Customary Forest are clear because stakes have been installed as boundary markers along the Village Forest boundaries. Community access to the area is free to take non-timber forest products or for hunting, but they are not allowed to kill protected animals such as tigers, hornbills, etc. The members of the Management Body have been appointed through the Decree of the respective Village Heads who are tasked with managing the Village Forest.
- Village Forest management arrangements are based on collective-choice arrangements: all Village Forest management regulations are made and approved by all Members of the Management Body.
- Monitoring by assessing the physical conditions and management of the Village Forest (monitoring by actively auditing the common conditions): As mentioned above, monitoring and patrols have been carried out using dirt bikes, boats, and foot. The means of communication used is radio (handy talky-HT).
- Providing graduated sanctions/fines to those who violate the rules (graduated sanctions): The fines rules have been made in writing in Sembuan Village, while in Intu Lingau Village, they are still in verbal form. For example, if a company has brought heavy equipment into the area, a fine value has been set, and if it has damaged land, the fine value is also different.
- Characteristics of the Management Group: not too many, all Group members understand the boundaries of the Customary Forest, there is mutual trust among group members (group characteristics: small size, clearly defined boundaries, interdependence among group members): The number of members of the Management Body is not too many, namely 27 people in Intu Lingau Village and 32 people in Sembuan Village. Members of the management body also consist of all ethnic groups in the village, namely Benuaq, Dayak Kenyah, Javanese and Batak.

- Recognition from the central government and regional/regency governments (External environment: central government should not undermine local authority): In the case of the Sembuan Village Forest, the East Kalimantan Provincial Government, in this case, the Decree of the Head of the Regional Licensing and Investment Agency No. 503/2014/HPHD/BPPMD-PTSP/X/2016 concerning Village Forest Management covering an area of 2,810 ha
- There is a conflict resolution mechanism. The conflict resolution mechanism used by the Management Body is the following mechanism:
 - ✓ Discussing conflicts that occur internally within the Customary Forest Management Body, and if they can be resolved internally, then the conflict is considered resolved.
 - ✓ If the conflict cannot be resolved within the Management Body, it will continue by involving the Village Head and Traditional Head to find a resolution to the conflict;
 - ✓ The mechanism most widely used in resolving problems or conflicts that arise is negotiation and consensus, while mediation is rarely used.

6. Conclusion and Implication

6.1. Conclusion

The Intu Lingau and Sembuan Village Forests (HD) are still in the early stages of implementation because they have only been running effectively for around 3 years since 2018/2019 and were less active during COVID-19. Implementation of Customary Forest management includes:

- Securing the area by making perimeter markings and patrolling the area.
- The perimeter marking of the Intu Lingau HD has reached a length of 4 km, while the Sembuan HD has complete perimeter marking.
- The HD management program is implemented in the form of a Social Forestry Business Group (KUPS) of 5 KUPS in Intu Lingau and 7 KUPS in Sembuan.

These types of business are swallow's nest KUPS, ginger KUPS, superior durian (*Durio zibethinus*) fruit KUPS, robusta coffee KUPS, kelulut honey KUPS, KUPS Ecotourism, KUPS Karya Sarana Haq for marketing rattan products, etc.

The direct benefits of the Village Forest for the community are as a place to hunt pigs and deer, catch fish in the Nyuatan River, collect fruit, especially durian and other forest fruit, and rattan shoots of various types of plants for traditional ceremonies. In the Utilization Zone, people have taken produce from durian, rubber, cocoa and horticulture gardens. The benefits of environmental services include natural tourist attractions in the form of rocky mountains with bat caves, water tourist attractions, and natural scenery, which are still in the preparation stage for access and supporting facilities.

A conflict resolution mechanism has been created by the Management Body, both written and unwritten. In principle, conflict resolution always begins with the internal resolution of the Management Body (LPHD). If the problem is extensive and difficult to resolve, the Village Head and Traditional Head are involved in resolving the conflict.

6.2. Recommendation and Implication

The Management Body encourages KUPS to be more active in running its business so that the community can experience the benefits of Customary Forests. The Management Body also needs to be more active in seeking support from the government, private sector and NGOs to support KUPS business performance.

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