Plan Vivo Project Design Document

COMMUNITY FOREST ECOSYSTEM SERVICES INDONESIA

Hutan Desa Laman Satong, West Kalimantan

Intervention: Avoided Deforestation and Forest Conservation
Baseline: Planned Deforestation

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Executive Summary

The rural community of Laman Satong, a village in West Kalimantan, Indonesian Borneo, comprises about 2,400 indigenous Dayak people and migrants who settled in the 1970s. The local economy is primarily agriculture-based and the majority of inhabitants are dependent on subsistence and cash crops for their livelihoods. Upland and rain-fed rice farming and rubber-based agroforestry are the two main smallholder agricultural systems in this area, while fruit tree crops, such as durian, are also sold at local markets.

The community has a strong connection with its remaining forest area. Laman Satong and neighbouring villages rely heavily on their 1,070 ha village forest for water supply, non-timber forest products and an array of other ecosystem services that it provides. Situated between Gunung Tarak protection forest and Gunung Palung National Park, the forest is surrounded by two palm oil concessions that now occupy the vast majority of the Laman Satong administrative area. The community of Laman Satong fought hard for its right to exclude forest in the project area from the surrounding palm oil plantations, and instead to protect it under REDD+. Covering two hill-tops and surrounded by 18,000 ha of palm oil concessions, Laman Satong village forest is all that remains of a vital ecosystem which provides fresh water, erosion control and other services to local inhabitants, while also supporting a variety of threatened species.

The village forest is dominated by secondary forest, mixed trees and crops, and scrub. Once logged for timber or cleared for upland rice fields, today the forest is protected from clearing under customary rules. When a serious fire destroyed part of the forest in the early 90s, substantially decreasing water supply, the community learned that mismanagement of the area could have damaging impacts on wellbeing. Water provision is by far the most valuable service provided by the forest and one that the communities are determined to preserve. The area is also an important reservoir for biodiversity. Its secondary forests and mature agro-forests are home to many IUCN-listed species, including the Endangered Bornean white-bearded gibbon and the Critically Endangered rusty brown dipterocarp tree. The forest also contains six hornbill species, well-known indicators of good forest health, as well as great argus pheasants, Malayan box turtles and Southeast Asian soft-shell turtles.

Intense pressure for conversion to plantation agriculture has driven high deforestation rates in Kalimantan. The majority of the Laman Satong village administrative area (32,600 ha in size) has been allocated for palm oil development, triggering inevitable conflicts over land between village inhabitants and those granted concessions for palm oil production. FFI collaborated with Laman Satong village and local NGO partners to develop a REDD+ project that could prevent the critically important 1,070 ha of remaining forest from being converted to palm oil. Instead, the project aims to protect the forest as a legally-recognised village forest through a government-granted license that gives the community the right to sustainably manage and benefit from the forest area for 35 years. REDD+ finance is essential to fund the long-term community-based management of the village forest and ensure that the threat of conversion continues to be avoided.

With FFI's support, the community of Laman Satong has already secured government recognition of its village forest. The project is now working to secure the 35-year village forest management licenses from the provincial governor, a critical step in preventing future reallocation of the forest and legally recognising community rights to forest carbon. In addition to addressing the threat of forest clearance for palm oil, the project works to protect Laman Satong village forest from pressure *within* the community due to shortages of land. The project is implementing regular patrolling and monitoring by village community teams to ensure forest and biodiversity protection. It will also provide saplings of native and naturalised tree species, planting materials, and guidance on sapling husbandry to restore

logged-over areas, secondary forest and fallow fields. Enriching these areas with diverse tree species will help meet demand for firewood and timber and reduce pressure for wood extraction from the village forest and neighbouring forest blocks. With project support, the community has identified sustainable livelihood activities that improve agroforestry and agricultural productivity and increase the benefits gained from non-wood products, such as marketable fruits and vegetables. With FFI's help, the community is striving to increase and diversify crop production in existing rubber-based agroforestry gardens, upland and rain-fed rice fields, and fallows surrounding the protected forest area. Investments in diversifying livelihoods and increasing productivity will increase financial resilience, further strengthening the community's long-term commitment to its sustainable land-use plan.

Part A: Aims and objectives

A1 Describe the project's aims and objectives and the problem(s) that the project will address

Problem statement:

As part of this project the community of Laman Satong village has obtained government approval for their village forest (*hutan desa* - HD) permit and is in the process of drafting a management plan, also to be approved. The community is committed to protect their forests within the project area and to participate in livelihood activities to prevent conversion of the forest into oil palm platation and reducing other threats to the forest.

Aims and objectives: The project intervention is to avoid planned deforestation and to promote forest conservation with the objectives of:

1) Conservation of natural forest and agroforest, including old-growth rubber and other tree species
2) Sustainable timber extraction, non-timber forest products (NTFPs) exploitation and maintenance of ecosystem services, and
3) Improving the well-being of the community members, particularly of the most vulnerable and disadvantaged

Part B: Site Information

B1 Project location and boundaries

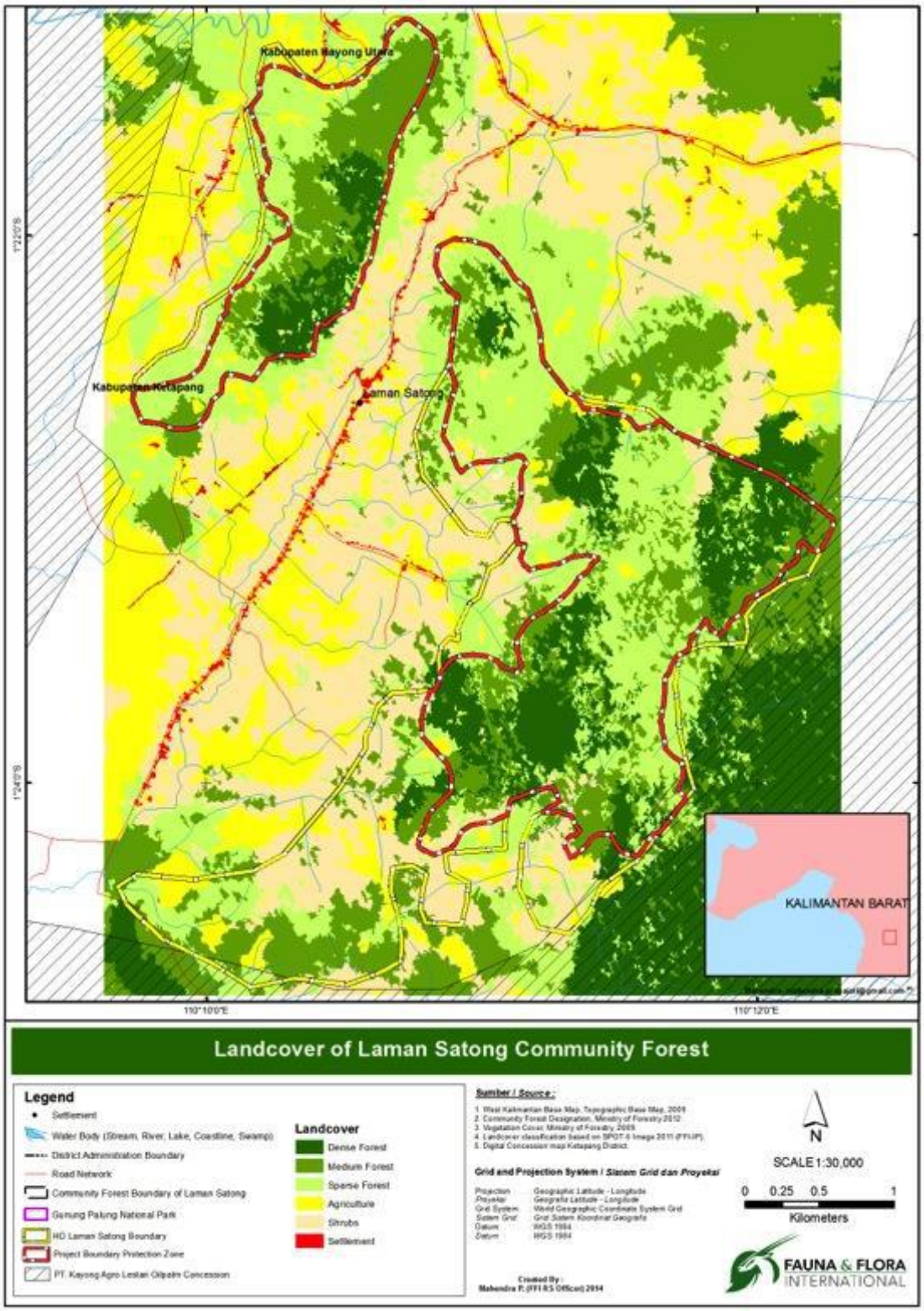
- *Maps showing overall project area and boundaries*

Three categories of boundary are referred to in this document: the village administrative boundary, the HD boundary, and the project boundary. The village administrative boundary (32,163 ha) is designated by the Ministry of the Interior. In the absence of clear village administrative boundaries, the project has facilitated participatory mapping of these boundaries by the communities and their neighbors. The HD boundary (1,070 ha) is the boundary of area granted by the Ministry of Forestry to the village community, based on recommendations from the District Head (*Bupati*).

Laman Satong community has completed land-use zonation within their HD boundary. There are two zones: protection zone and rehabilitation zone. The zoning of HD Laman Satong is shown in Figure B1. The protection zone (654 ha) is the area where no deforestation or forest degradation will occur. The protection zone was delineated on the basis of intact forest cover. This is where carbon benefits are counted and validated against Plan Vivo Standard.

The rehabilitation zone contains less forest cover and is dominated by crops, shrubs, and fallow. It also functions as a food security zone. Project activities will also be carried out in this rehabilitation zone. In the future, the plan is that carbon benefits from this rehabilitation zone will also be accounted and validated against Plan Vivo standard.

FIGURE B1. LAND COVER MAP OF HD LAMAN SATONG WITH PROTECTION (THE TWO AREAS WITHIN RED LINES) AND REHABILITATION ZONES (THE AREAS BETWEEN THE YELLOW AND RED LINES)



B2 Description of the project area (PV requirement 5.1.1)

- *Geophysical description (climate, ecological conditions, soils, topography etc.)*
- *Presence of endangered species and habitats*
- *Other critical factors affecting project management e.g. roads, infrastructure, climate hazards*

HD Laman Satong (1,070 ha) lies between Gunung Palung National Park and Gunung Tarak (watershed) protection forest to the northwest and palm plantation and mining concessions to the southeast. The landform is classified as non-sedimentary mountain ridge systems, hillocky acid igneous/metamorphic plains and coalescent estuarine/riverine plains (RePPProT, 1988-1990); it is on longitude 101.9º-101.8º E and latitude 2.2º-2.3ºS, with the altitude from 1-400 m asl. Most of the project area lies on slopes between 0.5-30% with a small portion of forest on very steep slopes (40-53%). The area is categorised as a B1 agro-climatic zone (Oldeman, Las, & Muladi, 1980). The WorldClim precipitation data indicates that Laman Satong experiences a long-term average of ten 'wet' months, 2 'medium' months (between 100 and 200mm rainfall per month) and no dry months per year. Estimated annual rainfall is between 3,000 and 3,500mm per year. There are several small streams within forest area, some of which flow north into the Siduk River and others flow south, to the Kuala Satong River. The Siduk and Kuala Satong watersheds are part of the Pawan River Region.

Th HD area containts HCV (high conservation value) species. Of a total of 48 tree species recorded, one Dipterocarpaceae species, *Hopea ferruginea* is listed as critically endangered and one Lauraceae, *Eusideroxylon zwageri* is listed as vulnerable on the IUCN Red List. A total of 14 mammals species was recorded and 8 species were identified as HCV; one species listed as endangered (EN), *Hylobates albibabris*, two species listed as vulnerable (VU), one species listed on appendix I, four species listed on appendix II, four species protected by Indonesian law, and three species are Bornean endemics. A total of 158 birds species were recorded, 68 species were identified as HCV, including four species (*Spizaetus nannus, Alcedo euryzona, Centropus rectunguis,* and *Pitta baudii)* listed as vulnerable (VU), one species listed on appendix I, twenty one species listed on appendix II, thirty four species protected by Indonesian law, four Bornean endemics, and two migratory species. A total of 24 herpetofauna species was recorded. Ten species were identified as HCV, including two reptiles, *Cuora amboinensis kamaroma*, and *Amyda cartilaginea* listed as vulnerable (VU), one reptile, *Gonocephalus doriae* protected by Indonesian law, three reptiles and two amphibian Bornean endemics, four reptile species listed on appendix II, and one reptile species listed on appendix III. In addition, one reptile species, *Cyrtodactylus sp* is thought to be a new species.

Situated in a lowland hilly area (elevation below 100m asl), the village forest is part of the catchment area for the Satong and Tolak rivers flowing south to the nearby peat swamp areas and the coast. Springs in these forests are the main sources of running water for the villagers. Some spots in the forest are sacred groves, where religious rituals are performed. The village forest area comprises of two hills, Bukit Tatas and Bukit Kaderon, divided by Manjau sub-village housing settlement along a gravelled road.

B3 Recent changes in land use and environment conditions

- *Describe current land-use practices and their effects*

A study by Adhikerana et al. (2010) of land use change in Ketapang District landscape indicated that some 50.2% forest area was converted to agriculture during the period between 2000 and 2005. The primary driver of deforestation and forest degradation in Ketapang is planned conversion to oil palm plantation. Land use change in the forest area surrounding Laman Satong village reflects this change. Following logging operations in the mid-2000s, Laman Satong village land was designated by the Ministry of Forestry as convertible production forest (*Hutan Produksi Konversi, HPK*) i.e. logged-over forest which is made available for conversion to other/non-forestry uses. In the more recent spatial plan, the area was no longer designated as a forest zone, but as other land use (*Areal Penggunaan Lain, APL*). Both designations are highly favourable for forest conversion to oil palm plantation.

B4 Drivers of degradation

- *Describe the causes of land & ecosystem degradation and/or deforestation and loss of ecosystem services*

To the southeast of Laman Satong village forest are two palm oil plantation concessions (Golden Yolk and Kayong Agro Lestari). The majority of the village administrative area (32,600 ha in size) has been allocated for this oil palm development, with associated conflicts over land between village inhabitants and the concessions.

After the district government issued location permits for oil palm development, the Ministry of Forestry released 17,986.9 ha of HPK into an oil palm concession under the company PT KAL in 2009. This was then followed with large scale forest conversion. In the absence of a community forestry initiative, land clearing for oil palm plantation development would have taken place in Laman Satong. In 2010, the village community agreed to pursue PES/REDD+ project development of their forest and submitted request to the district government and the Ministry of Forestry for the granting of Hutan Desa permit. The area approval from the Ministry of Forestry was awarded in August 2011. The last step is to obtain the HD management license from the provincial governor. This is expected to complete during the initial years of the project period.

The granting of Hutan Desa approval and license alone, however, does not provide 100% guarantee prevention of conversion to oil palm plantation. Failure to protect the remaining forest and/or to rehabilitate degraded forest/land would lead to cancellation of the HD permit. If this happens, the plan for conversion into oil palm plantation will be difficult to prevent.

Part C: Community and Livelihoods Information

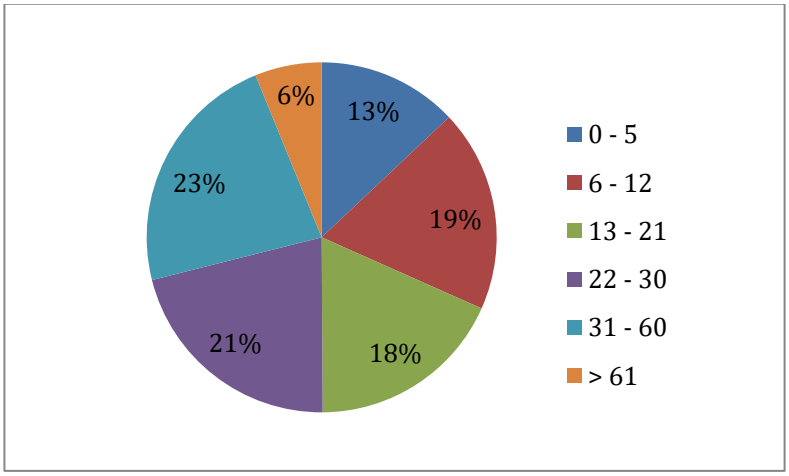
C1 Describe the participating communities/groups (PV requirements 1.1, 7.2.1, 7.2.7 & 7.2.8)

- *Populations*
- *Cultural, ethnic and social groups*
- *Gender and age equity*

The Laman Satong village forest is managed by the community of Manjau hamlet or sub-village (*dusun*). Their settlement are sub-divided administratively into 6 (six) neighbourhood groups (*RT: rukun tetangga*) along the main road. In the past, individual houses were scattered accross the landscape, close to rice fields. Since the early 1980s, government and chuch missionaries supported the re-settlement programme in Manjau. Houses were built close to each other along the main road and immigration was promoted. The people in Manjau are mainly Dayak and Melayu. A portion of the hamlet population are migrants coming from Java and other islands. The indigenous upland Dayak people are predominantly christian, while the coastal Melayu are muslim. Inter-faith and inter-ethnic marriage is not prohibited.

The Manjau hamlet has 290 households with 1,234 inhabitants, consisting of 653 male (53%) and 581 female (47%). Age composition is presented in Figure C1. The average household size is 4 or 5 family members. Illiteracy is relatively high (25%), particularly among elders. The level of education is relatively low. Less than half of the population (46%) have elementary school education. A smaller portion of the population went to junior high school (9%), high school (7%), and university (2%). The village only has government elementary and junior high schools.

FIGURE C1. AGE COMPOSITION



C2 Outline the Socio-economic context (PV requirements 7.2.2-7.2.5)

- *Livelihoods activities including access to land and natural resources and energy*
- *Cultural and religious context*
- *Assets and Incomes/poverty status*

Figure C2-1 shows various types of household sources for income generation. Farming/agriculture is the main source of income. On average, each family has 2.11 ha of land under cultivation per household. Half of the households (51%) have additional fallow lands, at the average of 1.8 ha per household. A quarter (25%) of the population, however, have no farming land. Over 70% of the population are involved

in upland and wet rice field cultivation and agroforestry (e.g. rubber, durian, and other fruits/NTFPs). In addition to livestock husbandry (chicken, pig, cow), many families also cultivate cash crops (cassava, maize, banana) and vegetables in their farms and homegardens. A significant portion of the population also engage in various off-farm and non-farm activities. Palm oil plantation development (land clearing, nurseries, planting), timber extraction from palm oil plantation's forest clearing, and stone quarry for road improvement provide new temporary employment. These opportunities have replaced opportunities in logging activities more common in the 80s and 90s.

FIGURE C2-1. SOURCES OF HOUSEHOLD INCOME

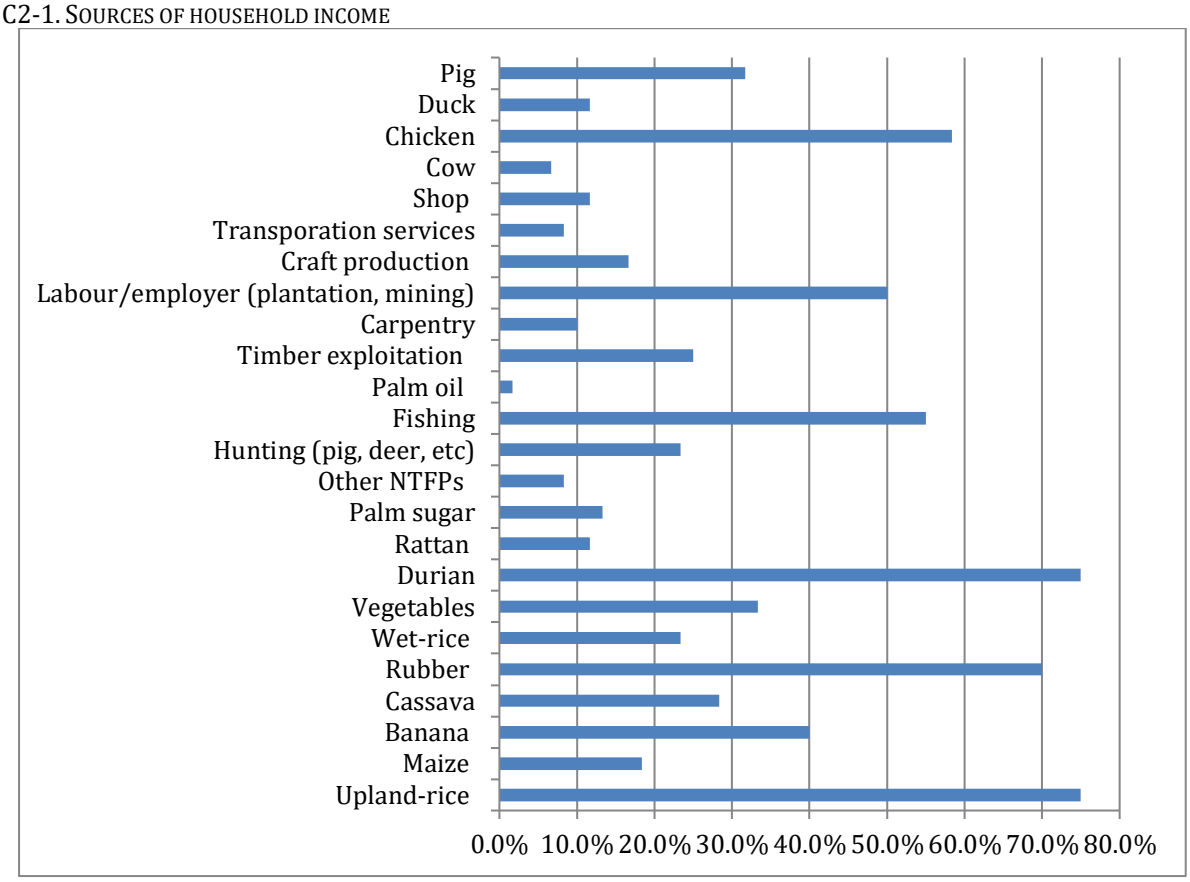


Figure C2-2 describes households posession of tools and goods. Most households got access to electricity from the national grid network (PLN). Over half of the population possess basic modern goods: motorbike, TV, DVD player, and handphone. The number of households using firewood stove was high, but a higher number was using gas stoves as government-subsidized bottled gas was recently made available in village shops. Only 20% of housholds were able to build their 'ideal home' with a zink roof, cement wall, and ceramic floor (see Figure C2-3). Cash received by some villagers from land compensation provided by the oil palm plantation company allowed the constuction of more 'ideal homes'.

FIGURE C2-2. HOUSEHOLD GOODS

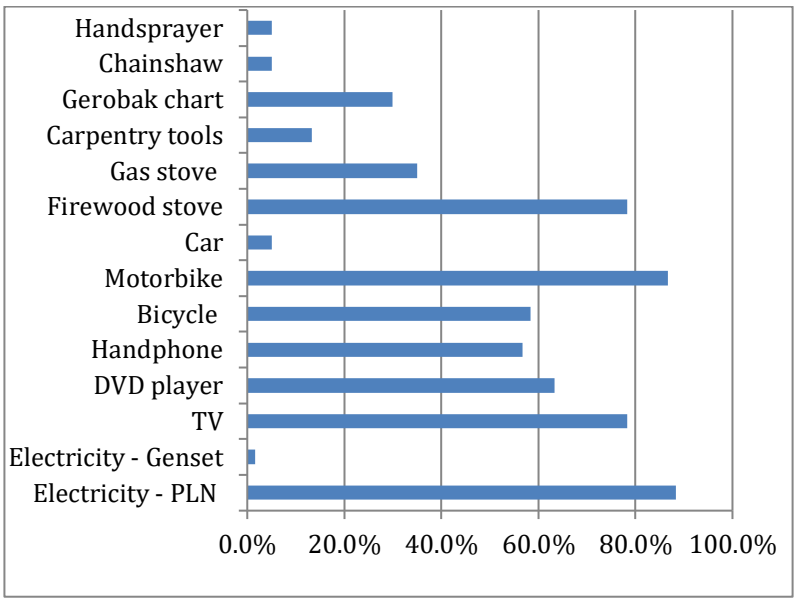
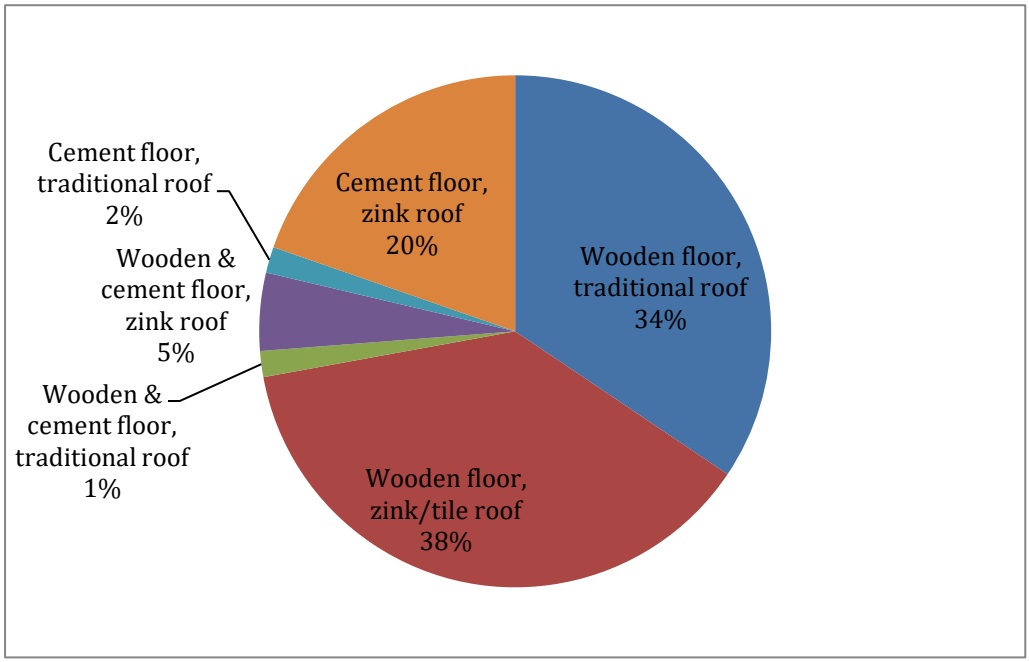
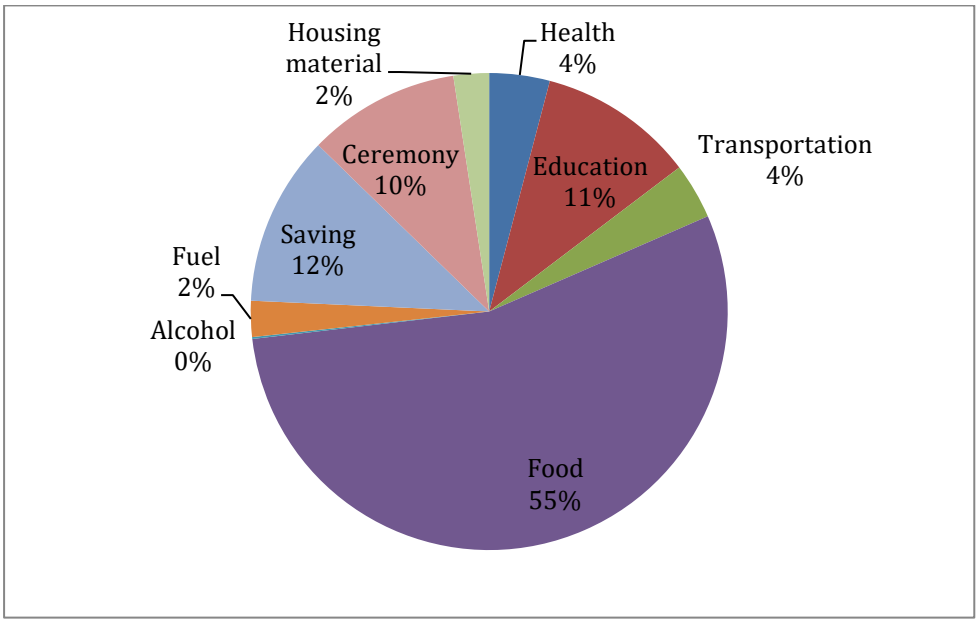


FIGURE C2-3. TYPES OF HOUSING CONSTRUCTION



The household surveys conducted in 2012 reveals an average household spending at IDR 16.8 million (USD 1400) per annum or IDR 1.4 million (USD 116.7) per month. Over half of household income (55%) was spent for food. Other important spending items included family savings (12%), children education (11%), and religius and customary ceremonies (10%). Detailed information on household spending is presented Figure C2-4 below.

FIGURE C2-4. HOUSEHOLD EXPENDITURE



C3 Describe land tenure & ownership of carbon rights

- *For smallholders and for community land (PV requirement 1.1)*
- *For other land included in the project (PV requirement 1.2)*

The project area is inside the government-designated state forest zone and falls under the jurisdiction of the Ministry of Forestry (MoF), which has authority to award forest area and management rights either to the private sector or local communities. Some of the MoF's authority has been devolved to local government as a result of a decentralisation process started in the late 1990s. Forest management and commercial utilisation plans are subject to MoF approval and periodic compliance monitoring determines whether management rights/ licences are revoked or continued.

In the project area the HD area licences have already been awarded, and approval of the community forest management licence is a priority activity of this project. The HD area license is a license awarded by the Ministry of Forestry that results in formal designation of the forest area as the HD of that community. The LDPHD (or village-level forest management body) must be established before the area license is approved. The HD management license is awarded by the Provincial Governor and awards management authority and rights for sustainable utilisation of forest resources to the community. Development of the HD management plan and HD forest protection activities can start as soon as the area license is approved.

Similar to biomass (wood), carbon is considered government 'property', and commercial utilisation of this 'commodity' by the private sector and community requires government approval. This license will be secured for each HD as part of project activities. Long-term approval for the licence is contingent on the results of monitoring. Government regulations on benefit-sharing must also be followed, as payment of government levies ('vertical' benefit-sharing) is regulated.

At the local level, while agroforests, agricultural fields and secondary forest/fallow

areas are individually owned, forest is considered as either common property or as an open access area.

Part D: Project Interventions & Activities

D1 Summarise the project interventions

Describe the types of intervention that are included in the project (PV requirements 2.1.1-2.1.4) e.g:

- *Ecosystem restoration*
- *Ecosystem rehabilitation*
- *Prevention of ecosystem conversion or degradation (includes REDD+)*
- *Improved land management*

The type of intervention in this project falls under avoided deforestation. This REDD+ project is expected to avoid the plan for conversion of the protection zone (654 ha) within the village forest are (1,070 ha) for oil palm plantation development. There is a plan in the future to undertake ecosystem rehabilitation intervention (agroforestry) in the rehablitation zone. In a first instance however, the project is only focussing on preventing ecosystem conversion of the protection zone (654 ha).

D2 Summarise the project activities for each intervention

- *Complete Table D2 using a new row for each activity e.g.:*

TABLE D2. DESCRIPTION OF ACTIVITIES

Intervention type	Project Activity	Description	Target group	Ecosystem services contracted (yes/no)
REDD+	Forest protection	Regular community patrolling in forest area	Community group	Yes
	Forest regeneration	Enrichment planting and protection of natural regeneration of native species	Community group, smallholders	Not yet
	Forest replanting	Tree planting, agroforestry improvement	Smallholders, community groups	Not yet
	Forest governance strengthening	Monthly meetings to discuss progress of forest patrolling activities and any other issues regarding the forest management	Community groups	No
	Monitoring	A series of monitoring activities (including biodiversity, social and water monitoring) as listed in the Monitoring Plan (Table 5)	Community group and FFI	No
	Capacity building	Patrolling, High Conservation Value/biodiversity and carbon surveys	Community group	No

	Sustainable livelihoods*	Establishment of a sustainable enterprises focusing on vegetable gardens and palm oil seeds and sapling production	Community group	No

* This project is taking a participatory and adaptive approach to supporting community-based sustainable livelihood strategies. While Laman Satong villagers have expressed an interest to piloting vegetable gardens and oil palm seed production, the monitoring framework (Table 5) is allowing them to take stock of the relative contributions of these businesses in increasing their wellbeing. The project coordinator facilitates the continuous assessment of how well businesses are performing and encourages the community to expand enterprises which are performing particularly well and providing significant socio-economic impacts. In addition, preliminary comments provided by Plan Vivo on prioritising livelihood activities which increase the cohesiveness of the community have been taken onboard. The field team will endeavour to facilitate livelihoods that strengthen the community as a more resilient unit against outside risks.

D3 Effects of activities on biodiversity and the environment

- *Describe how the activities will affect biodiversity (PV requirement 2.2 & 2.4)*
- *Describe how the activities will affect the environment (soil, water etc.) (PV requirement 2.3)*

No negative impact on biodiversity and on the environment is expected from this project. Forest patrolling will increase protection of species and habitats, as well as preventing deforestation and forest degradation. Forest regeneration and tree planting carried out by the community will help improve the forest cover. As a result, improved forest cover will help maintain watershed functions, such as water supply stability, water quality, and stream flow regulation (preventing flood and drought). Table F3 outlines expected biodiversity and environmental impacts of the project.

Part E: Community participation

E1 Participatory project design

- *Describe the participatory planning process (PV requirement 4.1)*
- *Describe the identified target group(s) and their involvement in design (PV requirement 4.4)*
- *Describe how the community group is governed (PV requirement 4.4)*
- *Describe how any barriers to participation will be addressed e.g. involvement of women, socially excluded communities etc. (PV requirement 4.2 & 4.3)*

Since 2009, Yayasan Palung and FFI have assited the Laman Satong village community in submiting request for hutan desa application to the district head and Minister of Forestry. The Minister of Forestry area approval was finally granted in 2011. All requirements have been completed for the last stage of the process of provincial governor village forest management licence. These include establishment of forest management structure and 35 years forest management plans (protection, rehabilitation, and utilisation), followed with verification by provincial Forestry Office. The project is now

After the Minister of Forestry approval for the area licence, the following step was village forest boundary delineation and marking. From 2012 a series of intensive community consultations were conducted to delineate outer boundaries and zoning of

the village forest area. Within the village forest area, the village community has agreed to have protection and rehabilitation zones. The protection zone, dominated with natural secondary forest and agroforest covers, no new forest clearing is expected to take place and harvest of wood/timber will be limited. The rehabilitation zone is the area for upland-rice cultivation, ensuring food security. It is dominated with non-forest cover, fallow, shrub and agriculture crops.

Since the beginning of *hutan desa* facilitation, the idea of REDD+ project as a international mechanism to support forest conservation has been introduced to Laman Satong village government and community. Their response was positive. In 2010-2011 an etnographic study was conducted by a team from the Department of Anthropology, University of Indonesia. The result of the study suggests that the community is strongly in favour of avoiding conversion of village forest into palm oil plantation.

In 2012 REDD+ awareness event in Laman Satong was undertaken by a team from Rimbawan Muda Indonesia (RMI). The workshop introduced key concepts in REDD+ (climate change, carbon trading, international and national policies, Free Prior and Informed Consent (FPIC) processes) and basic steps in project development (identification of drivers, project activity, benefi sharing distribution). Also in 2012, PRCF (People Resource Conservation Foundation) assisted in completing household surveys, focussing on household assets, income, and spending.

Community consultation and planning for a PES Plan Vivo project was intensified in 2012-2013. In the process, the community members were facilitated to assess ecosystem services provided by the village forest, threats/drivers of deforestation and forest degradation, activities to mitigate threats/drivers, and benefit sharing distribution. Initial meetings were conducted with village government officials, customary leaders, and members of the village forest institution (LDPHD). Subsequent meetings were organised at each of 6 (six) neighbourhood groups (RT). The back-to-back process was completed with LDPHD presenting the results in a villlage meeting, followed by the development of a detailed workplan of project activities. The processes provided an opportunity to remove barriers for greater participation of younger generations, women, and the most marginalised and vulnerable.

The *hutan desa* facilitation and and the PES design have also resulted in improved clarity on governance structure at the community level. The village forest insitution (LDPHD) with a treasury, a secretary, thematic sections takes the overall responsibility. Village government and customary leaders provide advice, political support and oversight/supervision. Activity groups (e.g. forest patrol, farmers group, women enterprise, social benefit) undertake specific project activities. Leaders and members of 6 (six) neighbourhood groups (RT) represent the interest of the whole village community.

E2 Community-led implementation

- *Describe the preparation and registration requirements for plan vivos of management plan (PV requirement 4.5, 4.6 & 4.7)*
- *Describe the assessment system for plan vivos (i.e. for technical, and other criteria) (PV requirement 4.7)*
- *Describe the mapping, recording and storage of plan vivos/management plans (PV requirement 4.8 & 4.9)*
- *Provide GIS version of plan vivo (only if applicable) (PV requirement 4.11)*

The village forest zoning into protection and rehabilitation/food security zones forms

the basis of the *plan vivo* for Laman Satong Village Forest. After community consultation, LDPHD conducted field boundary delineation and marking. The outer village forest boundary was marked with poles painted with yellow stripes at 50-100 meter distance. The inner protection zone was marked with red striped poles. Community members with agroforest, fallow, and agriculture lands in the village forest area were carefully consulted. Only lands that will not be used for upland- rice fields were included in the protection zone. Lands under rotational upland-rice cultivation were placed in the rehabilitation/food security zone. This will ensure that the zoning is not in conflict with the villagers' livelihood need for food. The results of village forest zoning boundary delineation and marking were presented in printed as well as 3-dimensional maps and placed in the village hall.

A customary village forest regulation/law has also been promulgated through community consultation. It outlines prohibition of forest clearing, tree felling, and fire. It stipulates that sanctions based on customary practices will be enforced for those violating the law/regulation. It gives mandate to LDPHD to carry out forest monitoring and patrolling.

The LDPHD members have received basic training in forest patrolling and monitoring. They were also involved in HCV/biodiversity and carbon surveys. Since 2013, LDPHD team has been conducting regular patrolling and monitoring of the village forest.

The LDPHD has been trained on tree propagation techniques. They have also started to establish tree nursery consisting of native high economic and/or high conservation values species. The seedlings will be made available to support community members to carry out forest enrichment in the protection zone and tree planting (agroforestry establishment) in rehabilitation zone.

Additional activities that have been coordinated by LPHD include various types of enterprise developement for women. Trainings on e.g. chicken and vegetable farming were conducted in 2013. The future plan is to provide support for livestock husbandry, vegetable cultivation, and NTFP.

E3 Community-level project governance

- *Describe how communities will be involved in decision-making and project management (in coordination with the Project Coordinator) (PV requirement 4.12)*
- *Describe the community-based grievance and grievance recording system for the project (PV requirement 4.13 & 4.14)*

The key approach to project designing and implementation is through community-wide participation. LDPHD takes a leading role, with customary/adat chiefs and village government officials providing oversight and support. Each section of the LDPHD and the activity groups (women enterprises, farmer groups, patrol team, social benefit) undertake project activities. With full participation of women and young generations, the regular community meetings at village, hamlet, and neighbourhood group (RT) level conducted during the designing phase of the project will be insitutionalised and will continue to take place throughout the project implementation phase. Project decision-making and management will be fully based on this participatory processes.

The LDPHD has also developed a grievance mechanism. Every member in the community is free to express complaints, which can then be communicated directly to LDPHD members orally, in writing, or by SMS to a designated cellphone number.

The LPHD will assign a unit to record and provide a response in 30 days at the latest. Matters related to the enforcement of village customary laws and regulations will be taken over by the adat (customary) chief and village officials.

Complaints to the project coordinator (FFI/CFES) will be received by designated project staff members, through oral communication, written notices, or SMS. FFI/CFES staff will record the complaint and, as necessary, consult LDPHD to coordinate a response and a solution.

Part F: Ecosystem Services & Other Project Benefits

F1 Carbon benefits

- *Complete Table F1 to summarise the carbon benefits per ha for each intervention over the project crediting period e.g:*

TABLE F1 – CARBON BENEFITS

This table summarises carbon benefits over the whole project area (column 2), for the risk buffer and for the whole project minus after the risk buffer is deducted (net carbon benefit) measured in CO_2e and per hectare.

	1	2	3	4	2-(1+3+4)
Intervention type (technical specification)	**Baseline carbon uptake i.e. without project (t CO_2e/ha)**	**Carbon uptake/emissions reductions with project (t CO_2e/ha)**	**Expected losses from leakage (t CO_2e/ha)**	**Deduction of risk buffer (t CO_2e/ha)**	**Net carbon benefit (t CO_2e/ha)**
Avoided Deforestation and Forest Conservation	0	49.76	0	9.95	39.81

- Note that the underlying calculations in this table come from the technical specifications described in Part G
- Normally there will be a technical specification for each intervention (in the case of REDD+ a group of activities implemented together is treated as single intervention)

F2 Livelihoods benefits

- *Complete Table F2 to describe how the project will affect different livelihoods aspects of each main social group (use a separate table for each group if necessary) (PV requirement 7.3)*
- *Clearly identify any livelihoods aspects that may be negatively affected as well as those that will be positive (PV requirement 7.5)*
- *Where any possible negative impacts are identified describe mitigation measures to address them (PV requirement 7.5)*

TABLE F2. LIVELIHOODS BENEFITS

Food and agricultural production	**Financial assets and incomes**	**Environmental services (water soil etc)**	**Energy**	**Timber & non-timber forest products (incl. forest food)**	**Land & tenure security**	**Use-rights to natural resources**	**Social and cultural assets**
Source of water for rice field irrigation	Additional income from sale forest products	Water sources for drinking and cleaning	Firewood from planted and dead trees	Source wood for building, furniture, craft	Secure 35-year HD license, renewable	Access to wood products	Religious/ spriritual site
Source of water for livestock and vegetables	Additional income from livelihood activities	Micro-climate: cooler air temperatures		Harvest of fruits and vegetables	Preventing planned conversion	Access to NTFPs	Recreational site, landscape beauty
Pollination	Increased	Prevention of		Harvest of		Secure land	Educational

	savings	disasters (fire, landslide, flood, drought)		NTFP's		rights for agriculture	site
Source of protein (e.g. fish, wild boar)				Herbs and medicines			Social cohesion

F3 Ecosystem & biodiversity benefits

- *Complete Table F3 to describe the ecosystem impacts of each project intervention (PV requirement 5.13)*

TABLE F3. ECOSYSTEM IMPACTS

Intervention type (technical specification)	**Biodiversity impacts**	**Water/watershed impacts**	**Soil productivity/conservation impacts**	**Other impacts**
REDD+	Protection of species	Water supply stability	Prevention of erosion/soil conservation	Micro-climate regulation
	Habitat protection	Water quality improvement	Natural nutrient cycles maintain soil fertility	Pollination
		Prevention of flood and drought	Land cover improvement	Cultural (landscape beauty, religious sites)

Part G: Technical Specifications

G1 Project activities

- *Describe all the project activities showing how they are applicable to local geophysical conditions (PV requirement 5.1.1 & 5.2.2)*

The community in HD Laman Satong has been supported by FFI in the process of obtaining government approval for their HD permit. FFI are working with local NGOs to provide management skills and livelihoods activities to assist community in managing their forest sustainably. The community is committed to protecting their forests within the project area and to participate in livelihood activities in reducing threats to the forest.

The project intervention for HD Laman Satong is Avoided Deforestation and Forest Conservation with three specific objectives:

1) Conservation of natural forest, including old old-growth rubber, and other tree species
2) Sustainable timber extraction, non-timber forest products (NTFPs) exploitation and maintenance of ecosystem services, and
3) Improving the well-being of the communities

The following three sections cover the main threat-reducing activities:

- **Secure Community Forest Management Rights**

The granting of legal user rights is a pre-requisite to a community PES project; such rights strengthen local ownership over the forest and foster participation by communities in the conservation of forest. The process of *Hutan Desa* (HD) designation includes applications to the district government, to the Ministry of Forestry (MoF), and to provincial governments with subsequent issuance of HD license.

The first phase from the HD license issuance sequence is acquiring the District Head's (*Bupati*) recommendation on the participatory maps made by the community. Secondly, the issuance is proposed to the Ministry of Forestry for their approval of the working area, based on the *Bupati*'s recommendation. In this phase, the same area cannot be allocated to another applicant such as logging or oil palm companies. The third phase is the acquisition of the Provincial Governor permit for the HD license, which is valid for 35 years. The CFES project is in this last phase of acquiring the HD license in Laman Satong.

The process of securing community forest management rights through *Hutan Desa* requires the community to:

a) Establish an HD management unit (LDPHD, *Lembaga Desa Pengelola Hutan Desa*),
b) Delineate a clear HD boundary,
c) Formulate HD management plans for protection and utilisation of forest resources, and
d) Develop official village-level laws (PERDES, *Peraturan Desa*) pertaining to the governance and management of the *Hutan Desa.*

Formal verifications by the MoF and local government officials are required prior to the approval of the management rights. The granting of management rights by the government to the community for 35 years bestows a measure of security and permanence, with scope for renewal after 35 years.

HD Laman Satong has secured the HD area approval, and is in the process of applying for HD management rights. It is anticipated that the HD management permit in Laman Satong will be granted within the first year of the project period.

- **Forest Protection**

Aside from the threat of planned conversion to oil palm, which this project is mitigating, the internal pressure from the community represents additional threats to the forest. The lack of land left available for the community, following oil palm conversion in other parts of the village area, results in potential forest encroachment to the project area. Efficient use of existing land,

revitalizing degraded land into productive land, and patrolling the forest are key elements in protecting HD forest in Laman Satong.

Regular forest patrols will provide checks on illegal logging, encroachment, fire, and biodiversity monitoring. These patrols, where appropriate, will comprise joint government's forest ranger and village community teams. The patrol teams will be trained in how to patrol and to monitor deforestation and forest degradation. Team membership will be rotated among community members to ensure broad community participation in the project.

- **Sustainable Livelihood Activities**

In addition to forest patrolling, it will be important to implement supporting actions that provide livelihood activities. Whilst integral to the project they are not factored into the carbon benefit calculations, but they will be discussed in more detail in parts C, D, E, F and I of this document.

G2 Additionality and Environmental Integrity

- *Describe the relevant laws and regulations for forest and land management demonstrating how project interventions exceed these requirements (PV requirement 5.4.1)*
- *Demonstrate how financial, social, technical or cultural barriers prevent the project interventions from taking place (without the project) (PV requirement 5.4.2)*
- *Provide evidence to show that the project area has not been negatively altered prior to the start of the project (for the purposes of claiming payments from ecosystem services) (PV requirement 5.8)*
- *Give details of other projects or initiatives in the project area and any agreements that are in place to avoid double counting (PV requirement 5.14)*

Project activities are additional, in that they are not the product of a legislative decree. However, while *Hutan Desa* designation and the management license are linked to government legislation, *Hutan Desa* designation by itself does not guarantee protection to forest and community rights.

Application of VCS Additionality Tool VT0001 Hutan Desa Laman Satong, Ketapang District

Step 1. Identification of alternative land use scenarios to the proposed VCS AFOLU project activity

Step 1a: Identification of credible alternative land use scenarios to the proposed VCS AFOLU project activity

There are six alternative land use scenarios identified for the proposed project area, including:

1. **Hutan Desa (HD):** Hutan Desa with legal permit timber harvesting (up to $50m^3$ per year)
2. **Hutan Desa (HD) + Degradation:** Hutan Desa with small scale timber harvesting (legally, up to $50m^3$ per year) and illegal logging, primarily for local use.
3. **Oil Palm Plantation:** Forest conversion into oil palm plantation
4. **Timber Plantation:** Forest conversion into timber plantation
5. **Government Conservation Area:** The government takes over the forest area declaring it a conservation area.
6. **Company Conservation Area:** The proposed forest area is part of the company concession and is designated as the company's conservation area.

Sub-step 1b: Consistency of credible land use scenarios with enforced mandatory applicable laws and regulations

Among the six identified land use scenarios for the proposed project area, five were considered to be consistent with applicable laws and regulations; only one (HD + Degradation) identified scenario that was not consistent with applicable laws and regulations, albeit possible land use scenario based on historical conditions of the powerless law enforcement.

1. **Hutan Desa (HD):** The forest area in Laman Satong village is consistent with Ministry of Forestry regulation, P.49/Menhut-II/2008 on Village Forest (Hutan Desa) and has received the Hutan Desa designation in 2011 (SK 493/Menhut-II/2011) with a 50m^3 timber harvest quota per year.
2. **Hutan Desa + Degradation:** Forest degradation caused by illegal logging is not consistent with any regulations on the management of a state forest. However, the weak law enforcement makes this scenario plausible for land use changes.
3. **Oil Palm Plantation:** Although the land status is Convertible Production Forest (Hutan Produksi Konversi, HPK), it is possible for any oil palm company to put forward a plan for oil palm concession within the project area. This has happened in the surrounding area of the proposed project site.
4. **Timber Plantation:** Similar to the oil palm plantation scenario, a timber plantation concession represents a plausible scenario for the proposed project area. Although there has not been any timber plantation near the project area yet, it is possible by law to propose a timber plantation permit in the project area.
5. **Government Conservation Area:** Based on UU No 26 year 2007 on district strategic area, it is possible for the district government to change the land status of an area into a strategic area, in this case a conservation area. Thus, this scenario is a credible land-use alternative for the proposed project area.
6. **Company Conservation Area:** This scenario emphasizes more the conservation area rather than company's concession. Oil palm or timber plantation companies might have received a permit for the proposed project area, but they maintain the land as a conservation area. This is possible and has been done in several companies within the West Kalimantan district in the framework of High Conservation Value (HCV) area.

Step 2: Investment Analysis

Not applied as Barrier Analysis (Step 3, below) most appropriate to project context.

Step 3: Barrier Analysis

Sub-step 3a: Identify barriers that would prevent the implementation of the type of proposed project activity

The following matrix identifies barriers to the proposed Activity (HD-REDD+):

No	Barrier Type	Barrier Detail	Hutan Desa	Oil Palm	Notes
1	Investment Barriers	If there is no investment from carbon financing, then the project cannot be implemented. Thus, other alternative land use scenarios will be implemented because they have no investment barriers	3	0	High upfront project development costs not available without REDD+ project development finance
2	Institutional barriers	The procedures to obtain the *Hutan Desa* permit is difficult if not impossible for communities without considerable external support (technical and financial). Moreover, the management plan time limit is only two years, or the permit will be revoke	3	0	Very weak law enforcement. Enforcement action is uncommon. If enforcement does occur it is either unsuccessful or impact is short-lived
3	Technological barriers	Technical expertise to implement activity	0	0	
4	Local tradition	Local wisdom, traditional equipment and technology	0	2	
5	Prevailing practice	"first of kind"	3	0	Verified community-based REDD+ currently has no precedent in Indonesia
6	Ecological conditions	Degraded soil, catastrophic events, etc	3	1	Fire, droughts, and unfavourable course of ecological succession are common
7	Social conditions	Social conflict, lack of skilled labour, etc	3	0	Illegal encroachment, logging, forest clearance are active threats. Local capacity for sustainable forest management limited
8	Lack of organization of local communities		3	0	Community governance systems are inadequate to ensure sustainable forest management

9	Land Tenure, ownership, inheritance, and property rights	Communal land ownership, lack of suitable land tenure legislation and regulations, absence of clearly defined and regulated property rights, etc	3	0	Natural resource management rights and carbon property rights require additional licensing procedures. Uncertain market price for carbon makes prediction of returns from carbon financing challenging

*Scale: 0 = No Barrier; 1 = Barrier, low; 2 = Barrier, medium; 3 = Barrier, high

The barriers identified above are deemed to provide sufficient grounds to demonstrate additionality. This is because, in the absence of the expectation that the project can be registered as a VCS AFOLU project, those barriers will prevent implementation of the proposed project activities, including the generation of sufficient incentives to change planned deforestation and thus reduce associated GHG emissions.

This conclusion is supported by all legal documents describing the district's spatial plans for oil palm expansion, which highlight historical evidence of land encroachment and illegal logging by smallholders, coupled with very weak law enforcement. In the context of these drivers, deforestation and degradation trends within *Hutan Desa* cannot be reduced or reversed in the project area without addressing the need for incentives to ease the financial burden by creating alternative income and paying for the opportunity cost of not converting forest to other land uses (i.e. oil palm plantation).

Sub-step 3b: Assess whether barriers identified to proposed VCS AFOLU Activity also apply to the alternative land use scenarios

The following matrix illustrates which of the identified barriers to the proposed VCS AFOLU Activities apply to the respective alternative land use scenario. For the five proposed alternative land use scenarios identified by this analysis (HD+D, OP, TP, GCA, CCA), if one or more of the barriers were considered too strong to prevent a specific alternative land use, then this alternative land use was eliminated from the baseline scenario. All the strong barriers that allowed for the elimination of these alternative land use scenarios are showed ranging from 0 to 3. Therefore, the potential 'without project' baseline scenario is Oil Palm (OP) plantation because it is deemed to have the weakest set of barriers to implementation.

No	Barrier Type	HD + D	OP	TP	GCA	CCA
1	Investment Barriers	3	0	0	0	0
2	Institutional barriers	3	0	0	0	0
3	Technological barriers	0	0	0	0	0
4	Local tradition	0	2	2	0	0
5	Prevailing practice	0	0	0	0	0
6	Ecological conditions	1	1	1	3	3
7	Social conditions	0	0	0	3	0
8	Lack of organization of local communities	0	0	0	0	0
9	Land Tenure, ownership, inheritance, and property rights	0	0	1	0	1

*HD+D = Hutan Desa + Degradation; OP = Oil Palm; TP = Timber Plantation; GCA = Government Conservation Area; CCA = Company Conservation Area

*Scale: 0 = No Barrier; 1 = Barrier, low; 2 = Barrier, medium; 3 = Barrier, high

Step 4: Common Practice Analysis:

Carbon financing for forest conservation purposes has never been used at the district or even at provincial level before. Although the mechanism has been explored at the national level, its successful completion has not been achieved yet. Thus, this mechanism, particularly in *Hutan Desa* schemes, is not common practice.

Activities that are similar to the proposed VCS AFOLU project and that are implemented in a comparable environment have been identified below:

1. **Ecosystem Restoration Concession (IUPHHK-RE)**
    - PT. Wana Hijau Nusantara in Kapuas Hulu district, West Kalimantan province
    - 38,478 ha managed for habitat restoration and protection under same Provincial jurisdiction as Project Area.
2. **Hutan Desa *without* REDD+ proposal**
    - Hutan Desa Riam Berasap in Kayung Utara district (formerly Ketapang district), West Kalimantan province
    - Around 700 ha (out of 7500 ha) is designated for conservation
3. **Repatriation to National Park**
    - Gunung Palung National Park, Kayung Utara and Ketapang districts, West Kalimantan province
    - 60,000 ha forest is added to Gunung Palung in 1981 and earned National Park status in 1990.
    - Danau Sentarum National Park, Kapuas Hulu distric, West Kalimantan
    - 52,000 ha forest is restored to National Park status in 1999

Essential distinctions between the similar activities above and proposed VCS AFOLU project activity:

1. **Ecosystem Restoration Concession**
    a. High cost private sector investment is a barrier to replication of this approach in the proposed project area;
    b. Area comprises already degraded forest habitat managed for restoration, rather than existing natural forest managed for avoided deforestation and degradation – i.e. forest condition is not comparable;
    c. Social barriers exist to the replication of this similar activity in the project area, where focus is on community-led forest management rather than third party / private sector, and where local NGO stigma towards ERC model exists.
2. **Hutan Desa *without* carbon financing proposal**

Hutan Desa without carbon financing proposal: Weak (quantified) economic incentive structure for long-term sustainable forest management – unlikely to be able to avoid deforestation and degradation due to barriers identified in section 3b above.

3. **Repatriation to National Park**
    a. The regulatory framework for governance of national park forest is not comparable with that in the proposed project area. National park forests have a higher level of protection in national legislation than *Hutan Desa* and are managed by the central government rather than local government and communities.
    b. Barriers exist to the replication of this similar activity in the proposed project area including: a) *Hutan Desa* licenses have already been awarded to local communities; b) the repatriation or the inclusion of additional forest areas to the national park are no longer likely to be socially, politically or economically acceptable because the prevailing policy now emphasises a low-carbon development that promotes the reduction of GHG emissions from land use change combined with achieving local economic development.

Overall Conclusions of VCS Additionality Assessment for Proposed VCS AFOLU Project Activity:

Based on the assessment for alternative land use scenarios, barrier and common practice analyses (step 1, 3, and 4 detailed above), the following conclusions regarding additionality and project baseline can be drawn below:

1. The proposed VCS AFOLU project activity (*Hutan Desa*) **IS** additional;
2. The baseline scenario (the alternative land use scenario facing the lowest barriers) is **Oil Palm Plantation** due to land designation and the proposed project area size;
3. The baseline scenario for deforestation and degradation is therefore one of '**Planned**

Deforestation'.

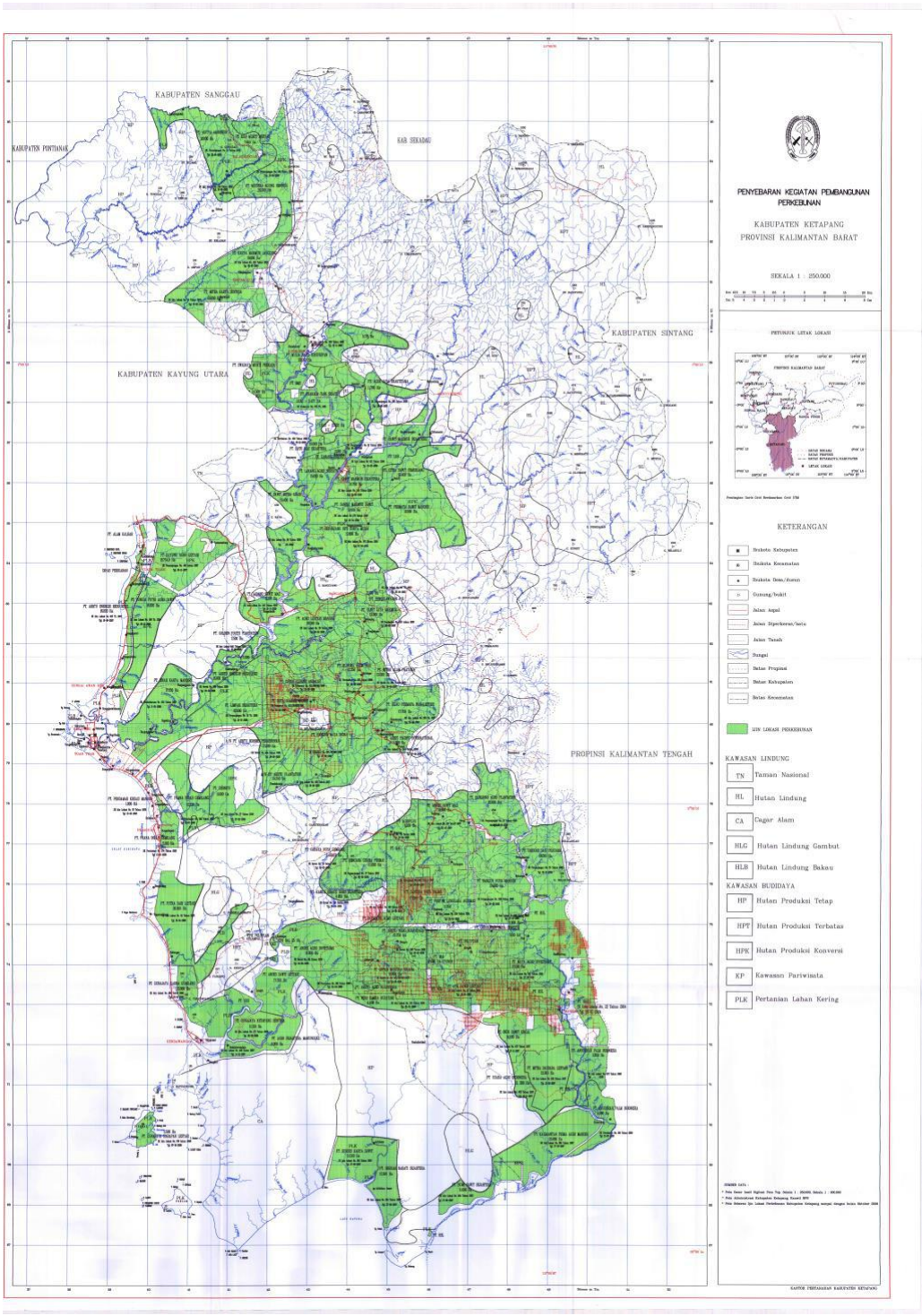


FIGURE G2-1. THE OIL PALM CONCESSION PERMIT DISTRIBUTIONS IN KETAPANG DISTRICT BASED ON DISTRICT LAND USE SPATIAL PLANNING.

G3 Project Period

- *State the period of time over which the climate benefits will be quantified (PV requirements 5.5, 5.6 & 5.17)*

The license period for *Hutan Desa* is 35 years, yet the timeframe for the implementation of REDD is a maximum of 30 years; both can be extended (Ministry of Forestry, 2009). Thus, a 10 years project period is aimed for HD Laman Satong for the initial step. This period is subdivided into two 5-years phases with annual payments. Every five years, monitoring will be conducted by the project proponents, local government, and the Ministry of Forestry to evaluate the carbon accounting and the further phases of the project plan (Ministry of Forestry, 2009), as well as to update this technical specification as per Plan Vivo Standard requirements. With this strategy, a link between the payments and forest protection activities will be maintained over sufficient time.

The *Hutan Desa* area allocation was approved thanks to the support provided by this project in August 2011. *Hutan Desa* project activities under Plan Vivo framework started in December 2012 while the crediting period started in January 2013. The funding needed for the first three years (2013-2016) of the first phase (2013-2018) has been secured. Further funding is needed to carry the project into the next phase (2018-2042) to ensure the REDD objectives are achieved.

G4 Baseline scenario

- *Describe current conditions and trends in the project area (PV requirement 5.12)*
- *Carbon Pools. List the carbon pools and emissions sources that will be accounted for and justify why any other sources have been excluded. (PV requirement 5.15)*
- *Baseline methodology. Quantify the initial carbon stock for each carbon pool and describe how this was assessed (PV requirement 5.18)*
- *Baseline Emissions. Estimate the changes in carbon stocks for each carbon pool under baseline (i.e. without project) conditions. Refer to any approved approaches that you have used for this. (PV requirement 5.18)*
- *Data Sources. Give details of all data sources, methodologies, default factors and assumptions used and give justifications for their use (PV requirement 5.2)*

In order to determine the appropriate baseline, the first step consisted of choosing relevant and measurable carbon pools within the project boundary. The above-ground biomass and below-ground woody biomass were selected as the most significant carbon pools for the project areas (Table 1). Carbon pools were excluded if the cost and/or effort required for assessment or monitoring were likely to be disproportionate to the potential carbon benefits. The biomass estimations were calculated from a forest survey, which provided land cover and ecosystem classifications. The vegetation parameters collected were; number of trees in each DBH class, tree species, Diameter at Breast Height (DBH), and tree height.

TABLE 1. CARBON POOLS INCLUDED AND EXCLUDED IN THE CALCULATION OF CARBON STOCKS FOR THE HD LAMAN SATONG.

Because many of the available carbon pools were not included the resulting carbon stocks represent a highly conservative estimate

Carbon Pool	Included (yes or no)	Justification
Above-ground biomass (stems, branch wood and leaves)	Yes	Major carbon pool subject to the project activity. Calculated by measuring trees in sample plots through non-destructive sampling and the use of local allometric equations that best fit HD Laman Satong conditions (i.e. ecosystem type, forest condition, etc)
Above-ground non-tree biomass	No	Above-ground non-tree biomass is virtually absent from the site, and is not a significant carbon pool.
Below-ground biomass (roots)	Yes	Root biomass can be estimated using a model based on aboveground biomass estimates (Cairns, Brown, Helmer, & Baumgardner, 1997).
Dead wood (standing and fallen)	No	Conservative approach.
Litter	No	Unlikely to be a significant carbon pool. Temporal variations in litter fall make quantification time-consuming and expensive, and unknown permanence of this carbon pool.
Soil organic carbon	No	The project site is on mineral soil that has insignificant carbon stock change. Soil is complex and heterogeneous and high costs makes measuring this carbon pool impractical.
Wood product	No	Calculated, and proven to be insignificant (<5% of emissions reductions).

Data Sources and Assumptions

- **Above Ground Biomass**

Several steps were incorporated in estimating the above ground biomass in HD Laman Satong:

1) Determine the tree dimensions and characteristics (DBH, total height, and wood density). The plot sizes are described in
Table . The wood density was derived from the Wood Density Database (ICRAF, 2012). A 0.66 gr/cm^3 wood density was used for species that was not listed in the database, based on research by ICRAF (GOFC-GOLD, 2010; van Noordwijk, 2007). Where a range rather than a mean wood density value was reported, the range was assumed to be the 90% confidence interval. IPCC states carbon to be 47% of its biomass and CO_2 to be 3.67 of its carbon (molecular weight). Statistical analyses were conducted using SPSS 20 (IBM® SPSS® Statistic 20.0).

TABLE 2. PLOT AND SUB-PLOT SIZES AND TREE CATEGORIES (AVERY & BURKHART, 1994)

Plot Size	DBH	Categories	Class
10 m x 10 m	5 - 15 cm	Pole Trees	C

20 m x 20 m	15 - 30 cm	Small Trees	B
20 m x 125 m	> 30 cm	Large Trees	A

2) Select an appropriate and validated allometric equation.
   A non-destructive forest biomass sampling method was carried out and the allometric equation used follows Kenzo (2009):

$$AGB = (0.1525)\ D^{2.34}$$

   where AGB is the above ground biomass (kg); D is DBH between 1 cm to 44.1 cm; N= 30, R^2 0.99; site study in 20 years-logged-over tropical rainforest, lowland dipterocarp, Sarawak-Malaysia.

   Based on the Indonesian National Standards (SNI7724, 2011a; SNI7725, 2011b), the allometric equations used should be based on the highest r^2 correlation value between DBH and tree biomass (>0.5, *p*-value significant at 95% confidence level), the largest and smallest DBH trees falling within the DBH range of the trees within the project areas (which were used to derive the allometric equation), and the closest geographic locations and ecosystem type.
3) Estimate the AGB for each tree by using the allometric equation.
4) Estimate the AGB for each subplot by totalling the AGB for each tree in each subplot in the same plot.
5) Estimate the AGB for each plot and AGB of each forest stratum by following these equations (modified from SNI7724, 2011a and Manuri, et al., 2011):

$$AGB_{plot} = \left(AGB_{sub\ A} * \frac{10}{A_{sub\ A}}\right) + \left(AGB_{sub\ B} * \frac{10}{A_{sub\ B}}\right) + \left(AGB_{sub\ C} * \frac{10}{A_{sub\ C}}\right)$$

$$Biomass_{stratum} = \frac{\sum AGB_{plot} + \sum BGB_{plot}}{N_{stratum}}$$

   where AGB_{plot} is mean AGB for each plot (ton/ha); AGB_{sub} is AGB in each subplot (kg); A_{sub} is subplot size (m^2); $Biomass_{stratum}$ is mean biomass on each forest stratum (ton/ha); $N_{stratum}$ is number of plots on each forest stratum.

The following list of variables was necessary to complete carbon calculations. A brief description of how values for each variable were obtained is provided below:

- **Below Ground Biomass**

Below ground carbon includes roots (Eggleston, Buendia, Miwa, Ngara, & Tanabe, 2006). Root to shoot ratio from the Indonesian National Standard (SNI7724, 2011a), 0.37, was used to obtain below ground carbon. The standard deviation follows the above ground carbon data.

- **Tree Density**

Tree density was derived from forest carbon inventory data within the project area by dividing number of trees (tree>30 cm DBH) with plot size (hectare). The estimated tree density is 71.6 trees per hectare with 38 trees as the lower-bound 95% confidence interval. To be conservative, the tree density used for carbon accounting is 38 trees per hectare.

- **Annual Allowable Cut**

By law, each Hutan Desa is entitled to a maximum Annual Allowable Cut (AAC) of $50m^3$ (Ministry of Forestry Regulation P.49/2008 *juncto* P.14/2010). Although harvesting AAC is not formally part of management plan in HD Laman Satong, due to this legal quota, law enforcement mechanisms that are being applied to deter illegal logging from outsiders cannot

be applied to dis-incentivize this source of potential forest cover loss and emissions in the project scenario. Therefore ex-ante emissions from timber harvesting have been estimated and been included in the carbon benefit calculation. The tree-volume formula followed that of a common cylinder

$$V = \frac{(\pi)}{(4)} * (D^2) * L$$

where V is volume (m^3) and D is DBH tree diameter (m), and L is the tree-stand length (m)

By assuming the harvested tree DBH-diameter is 30cm with 20m height, as much as 35 trees can be harvested every year.

- **Forest loss from AAC**

Forest loss from AAC was estimated by dividing AAC with tree density. As much as 0.92 ha of forest loss is estimated from harvesting AAC. This area is multiplied by the forest carbon stock to estimate average annual emissions of AAC. This AAC emission has been included in the ex-ante carbon benefit calculations and will be monitored ex-post through forest patrol.

- **Oil Palm Biomass**

The allometric equation for oil palm growth (above and below ground) follows Dewi *et al.* (2009):

$$y = 5.0141x + 15.947$$

where y is the biomass (tonnes d.m./ha) and x is the age of the oil palm.

The study used to model oil palm biomass as a function of plantation age (Dewi, Khasanah, Rahayu, Ekadinata, & Noordwijk, 2009) did not develop an estimate of oil palm biomass at the time of planting. Therefore, to model the mean biomass of full oil palm cycle, it is assumed that at 'age 0' (time of planting) the oil palm biomass is not significant, and so is 0 tonnes C/ha. Thus, the oil palm growth will be calculated one year after the planting. The growth of oil palm is used in the emissions reduction calculation.

BASELINE SCENARIO

- **Carbon Stock**

The Kenzo (2009) allometric was used in estimating carbon stock in HD Laman Satong. The forest definition and classification follow the Indonesian National Standard (SNI7645, 2010). The SNI 7645 (2010) forest classification is based on canopy density where 10-40% of canopy coverage is classified as sparse forest, 41-70% as medium forest, and >70% as dense forest. We interpret the canopy density as carbon stock distribution and so classify dense forest as forest cover with carbon stock 102 tonnes C/ha, medium with 69.46 tonnes C/ha, and sparse with 51.98 tonnes C/ha (Table). We found that the carbon stock data was not normally distributed (skewed left). This makes it unlikely for forest strata to be statistically significantly different.

However, we implement WinRock International (2006) tool which was based on Avery & Burkhart (1994) approach on estimating number of sampling units by using actual field data (mean and standard deviation), desired confidence interval, and allowable error. As a result, the number of plots that we surveyed in each forest stratum are more numerous than the minimum required to satisfy the 95% confidence level and 10% allowable error. Consequently, the data from these plots will give us a representative picture of the total forest.

The mean above ground carbon stocks are presented in Table 3. The protection zone (654 ha) in

HD Laman Satong (1,070ha) that forms the carbon accounting area in this site is classified as: Dense Forest (181 ha), Medium Forest (201 ha), and Sparse Forest (271 ha).

TABLE 3. FOREST CARBON STOCK IN *HUTAN DESA* LAMAN SATONG
The table includes carbon stocks calculated for the three kinds of existing vegetation in *Hutan Desa Laman Satong*, classed based on tree density.

Land Cover Classes	Above Ground (tonnes/ha)		Below Ground (tonnes/ha)	
	Mean	Std Deviation	Mean	Std Deviation
Dense Forest	102.79	12.68	38.03	4.69
Medium Forest	69.46	12.04	25.70	4.45
Sparse Forest	51.98	0.11	19.23	0.04

- **Baseline Emissions**

Most of the village administrative area (32,600 ha) has been allocated for oil palm plantation and there are ongoing conflicts over land between villagers and the concessionaires. The baseline scenario for HD Laman Satong is planned deforestation, more specifically oil palm plantation. The area directly adjacent to HD Laman Satong has now been converted to palm oil.

The whole HD area (1,070 ha) would have been converted into oil palm plantation within the first year of company's operation (Figure), which includes the rehabilitation (416 ha) and protection zones (654 ha). We have assumed that an estimated 5% of above ground biomass has been left after land clearance for oil palm planting. This is from a visual assessment of land cleared for this purpose in surrounding areas and in reference to publications (Carlson, Curran, Asner, Pittman, Trigg, & Adeney, 2012). The conversion rate for oil palm clearing was derived from FFI-IP data that was taken from field surveys and oil palm company's official documents. Thus, the estimated forest cover loss over 10 years is 654 ha (all in year one), and the total carbon loss in year one is 60,779.23 tonnes (Table , Figure).

Because oil palm plantations are a rotational crop, the baseline carbon stock of oil palm was calculated as the mean carbon stock over a 26 year cycle, with a 25 year growth cycle and a 1 year period for harvesting and re-planting of oil palms. By applying the long-term cycle average biomass of oil palm, the emissions reductions calculations assume that at the time of forest conversion in the baseline, the baseline carbon stocks immediately reduce to the carbon stock of the cycle-average biomass the oil palm plantation. This assumption can be justified based on evidence in the literature on average plantation cycle times for oil palm, and that numerous cycles of oil palm plantation on one land area are common practice in Indonesia (i.e. oil palm plantations are not normally abandoned after 1 cycle, but are usually replanted and harvested more than once).

Using this approach avoids complexities in carbon accounting that would otherwise occur if the baseline oil palm growth and harvest were modelled on an annual basis. If an annual modelling approach was used for modelling baseline oil palm biomass, the project would receive emissions reductions as a result of forest conversion in the baseline in one year, but would then have to 'pay back' a portion of these emissions reductions over the subsequent 25 years as the oil palm plantation 'grows' (hypothetically) and sequesters carbon in the baseline scenario. Thus, by using the approach, it is estimated that the annual oil palm biomass growth is 23,966 tonnes C/ha.

TABLE 4. CUMULATIVE CARBON STOCK UNDER THE BASELINE SCENARIO
This table describes carbon stocks calculated under the baseline scenario, where the *Hutan Desa* is deforested and the original carbon stock of 64,978 tonnes C is reduced to an estimated 3,199 tonnes C. This represents the remaining biomass after deforestation, assumed to be about 5% of original. The average carbon stock accumulated by growing palm trees over 25 years (23,966 tonnes C) is then added to the biomass remaining after logging to give an average value for the baseline carbon stock (the without project scenario).

Project	Cumulative Carbon Stock (tonnes C)		
Year	Forest	Palm Oil	Baseline
0	63,978		63,978
1	3,199		3,199
2	3,199	23,966	27,165
3	3,199	23,966	27,165
4	3,199	23,966	27,165
5	3,199	23,966	27,165
6	3,199	23,966	27,165
7	3,199	23,966	27,165
8	3,199	23,966	27,165
9	3,199	23,966	27,165
10	3,199	23,966	27,165

Long Term Wood Products

The estimated quantity of timber that may be harvested at the time of oil palm development and that does not therefore add to c-emissions in the first year was calculated using forest inventory plot data and parameters derived from published literature (Winjum, Brown, & Schlamadinger, 1998).

The calculated estimated of carbon sequestered in long-term wood products is considered insignificant (less than 5% of total forecast project emissions reductions) and was therefore excluded from the final estimate of emissions reductions over from the project (1,146 tonnes C).

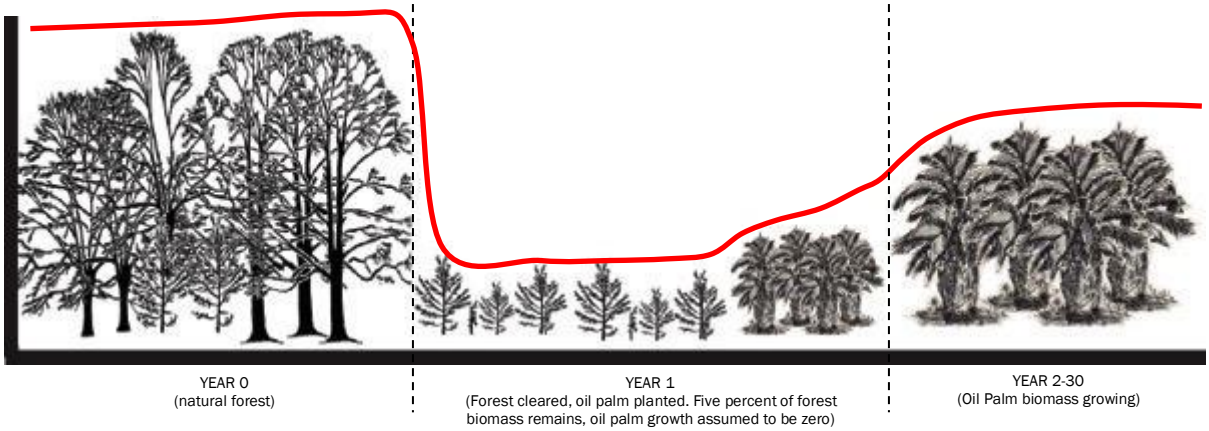


FIGURE 1. LAND COVER CHANGE UNDER THE BASELINE SCENARIO IN THE PROJECT AREA

PROJECT SCENARIO

- **Allowable Timber Harvesting**

In HD Laman Satong, 50m^3 trees with DBH of 30cm in dense forest are equal to 130 tonnes of carbon. Based on the tree density data from the biomass sample plots, 38 trees (with DBH of 30cm or more) in HD Laman Satong are equivalent to one hectare of forest. Thus, the 50m^3 allowable timber harvesting is equal to 35 trees allowable quota and is equivalent to 0.93 ha of forest. The potential emissions from allowable timber harvesting have been accounted for in the project scenario calculations.

- **Potential Emissions Reduction**

The project scenario for HD Laman Satong is protection of natural forest. Based on the

community planning and consultations, it is estimated that as much as 90% of carbon stock in natural forest can be protected in 30 years or 0.3% of forest carbon will be lost each year. This is a realistic and conservative estimate as the project area is designated as protection zone with no land clearing, and the availability of lands for food security outside this protection zone. Thus, as much as 60,593 tonnes of carbon can be protected in 20 years of the project period.

TABLE 5. CUMULATIVE CARBON STOCK UNDER THE PROJECT SCENARIO
This table illustrates project carbon stocks as a result of project activities leading to avoided deforestation (Project Scenario column) with carbon stocks decreasing by a maximum of 0.3% per annum.

Project	Cumulative Carbon Stock (tonnes C)	
Year	**Baseline**	**Project Scenario**
0	63,978	63,978
1	3,199	63,635
2	27,165	63,292
3	27,165	62,951
4	27,165	62,611
5	27,165	62,272
6	27,165	61,934
7	27,165	61,597
8	27,165	61,262
9	27,165	60,927
10	27,165	60,594

G6 Ecosystem service benefits

- *Climate benefits methodology. For each carbon pool, describe how the expected climate benefits (i.e. with project) were quantified. Refer to any approved approaches used. (PV requirement 5.7)*
- *Expected climate benefits. Estimate the climate benefits (carbon benefits) for each carbon pool showing how these were calculated relative to the baseline (In G4) (PV requirement 5.1.3, 5.16 & 5.18)*
- *Summary. Calculate the total benefits for all carbon pools combined. Present figures as tCO2 per year. Include these figures in Table F1. (PV Requirement 5.16 & 5.18)*

Project benefits are calculated by subtracting baseline emissions from project scenario, and deducting the risk buffer. It is important to include the risk buffer because the greenhouse gas emissions reduction is linked to wider project activities. Using the VCS Non-Permanence Risk Tool v.3 (2012), three risk factors to quantify the risk buffer have been identified within the project scenario (provided in PV Technical Specification LS v8.xls spreadsheet):

1. Internal risk:

Internal risk includes the project management capacity, mitigation plans, adaptive management plans, and project longevity.

2. External risk:
   External risk stems from the community and external factor. This factor mainly deals with the land and resource tenure and community engagement issues, and also the political context such as government policies and the country's international governance ratings.
3. Natural risk
   Natural risk is the potential risk to the project from natural disasters, such as drought, fire, pest and disease outbreaks, geological events, etc.

As much as 20% of non-permanence risk has been estimated in HD Laman Satong. This risk buffer proportion has been built into the project benefit calculations (Table 4). Thus, 4,258.58 tonnes of CO_2 emissions per annum can be avoided by implementing project activities in HD Laman Satong.

As the project benefit for potential emissions reduction (ER) unit is in gas form, the baseline and project scenario carbon were converted into CO_2 by multiplying them with the molecular weight of CO_2 3.67. The formulae used to derive forest carbon in year zero and year t of the projects are as reported below:

$$C_{forest,0} = \sum_{i=1}^{m} (Biomass_{stratum,i} * A_{stratum,i} * CF)$$

$$C_{forest,t} = C_{forest,0} * Biomass_{left} * t$$

The formula used to derive the time-average of palm oil growth is as reported below and is based on Dewi *et al* (2009):

$$\Delta C_{PO} = \left(\sum_{t=1}^{lc} ((5.0141 * t) + 15.947) \right) * \frac{1}{lc} * A_{PO} * CF$$

The baseline calculation was carried out following the below formula:

$$\Delta C_{BSL,t} = \sum_{t=1}^{25} C_{forest,t} + \sum_{t=1}^{25} \Delta C_{PO,t}$$

While the calculation to project scenario is as follows:

$$\Delta C_{PROJ,t} = C_{forest,t-1} - \left(C_{forest,t-1} * DefRate_{PROJ} \right) - C_{50}$$

The calculation for emissions reduction (ER) is as follow:

$$\Delta ER_{Annual,t} = (\sum_{t=1}^{20} (\Delta C_{PROJ,t} - \Delta C_{BSL,t}) - C_{wp,20}) * \frac{1}{20} * CO2_{fraction}$$

Where:

$C_{forest,0}$ = Forest carbon stock on year zero of the project (tonnes C)

$Biomass_{stratum}$ = Mean biomass on each forest stratum (ton/ha)

$A_{stratum}$ = Area size of stratum m (ha)

m = Land classification on stratum m

CF = Carbon fraction (0.47)

$C_{forest,t}$ = Forest carbon stock of year t of the project (tonnes C)

$Biomass_{left}$ = Percentage of assumed biomass left after forest clearing

t = time of year

ΔC_{PO} = Time average palm oil carbon stock (tonnes C)

lc = life cycle palm oil (25 years)

A_{PO} = Area size of palm oil planted (ha)

$\Delta C_{BSL,t}$ = Baseline carbon stock in year t (tonnes C)

$\Delta C_{PROJ,t}$ = Project scenario carbon stock in year t (tonnes C)

$DefRate_{PROJ}$ = Deforestation rate under project scenario (%)

C_{50} = Carbon stock from 50m3 allowable timber harvesting

$\Delta ER_{Annual,t}$ = Annual emissions reduction (ER)

$C_{wp,20}$ = Carbon stock from wood product in 20 years (tonnes C)

$CO2_{fraction}$ = Fraction from carbon to CO2 equivalent (3.67)

TABLE 6. PROJECT BENEFIT ESTIMATED AS AVERAGE EMISSIONS REDUCTIONS (ER) FOR HUTAN DESA LAMAN SATONG.

Project carbon benefits (or the net emission reductions resulting from this project) were calculated as the emission reductions made by avoiding deforestation (project scenario) and subtracting the carbon sequestered through the growth of oil palms if these had been planted (under the project baseline). Instead of calculating real emission reductions year on year (which would have resulted in a large number of emissions reductions in the first year of the project (i.e. when the loss of the forest was being avoided and no benefit in subsequent years), benefits were averaged over 20 years. Similarly, instead of simulating the real growth of oil palms year on year based on oil palm age, average values for the sequestration of CO_2 were used starting from year 2 (in year 1 of the project the assumption was that seedlings were being planted and would therefore not contribute to CO_2 sequestration significantly). Project benefits also take into account long-term wood product stored in logged trees **(Project carbon benefits are measured in CO2e – not t/C and the conversion factor is 44/12)*

Project Year	Year	Estimated average ERs (tonnes CO2e)*	Estimated ERs After 20% Buffer Deduction (tonnes CO2e)
0	2013		-
1	2014	**5,323.22**	**4,258.58**
2	2015	**5,323.22**	**4,258.58**
3	2016	**5,323.22**	**4,258.58**
4	2017	**5,323.22**	**4,258.58**
5	2018	**5,323.22**	**4,258.58**

6	2019	**5,323.22**	**4,258.58**
7	2020	**5,323.22**	**4,258.58**
8	2021	**5,323.22**	**4,258.58**
9	2022	**5,323.22**	**4,258.58**
10	2023	**5,323.22**	**4,258.58**
		TOTAL	**42,585.78**
		PER ANNUM	**4,258.58**

*() means CO_2 being sequestrated

G7 Leakage & Uncertainty

- *Identify any potential reductions in climate benefits due to leakage. If this is significant, describe how it will be mitigated by the project (PV requirement 5.19 & 5.20)*
- *Identify where uncertainty exists in the calculations and how this has been taken into account to give a conservative estimate of climate benefits (PV requirement 5.2)*
- *Identify and list key assumptions used in these calculations. Describe the approaches that will be used to validate these assumptions (including updating of these technical specifications) (PV requirement 5.3 & 5.9.5)*

By definition, leakage is any unintended GHG emissions that occur outside the project boundaries as a direct result of project activities and is not included in the calculation of carbon benefits (Plan Vivo, 2009). Leakage exists if improving forest protection within project areas has a knock-on effect increasing deforestation elsewhere (Plan Vivo, 2013). Leakage, if cannot be identified and quantified, is the major obstacle for the development of avoided deforestation project (Schlamadinger, Ciccarese, Dutschke, Fearnside, Brown, & Murdiyarso, 2005). Several approaches have been undertaken in identifying all possible leakage agents, drivers, and also the underlying causes. The management, mitigation, and accounting the risk of leakage is essential.

Only activity-displacement leakage from oil palm conversion activities is considered relevant to this project leakage calculations. This is because in the baseline scenario all forest resources in the project area would have been lost within the first year of oil palm conversion, and thus the agents of secondary deforestation (illegal logging, community logging etc.) would also have had to move to other areas of forest in the baseline scenario, regardless. We therefore identified the leakage components as described below.

- **Risk of Leakage**

The leakage agents in HD Laman Satong are led by the oil palm company, PT Kayung Agro Lestari (PT KAL) and the community that lives nearby. Before the project started, 20,000 ha forest land was assigned to PT KAL by the district level government for oil palm plantation (District Agriculture Agency Decree No 551.31/0562/Disbun.C; 12 Maret 2004). As much as 1,070 ha of this area was then allocated to become HD Laman Satong by the Ministry of Forestry (Ministry of Forestry Decree No 493/Menhut-II/2011). As a result, the final concession obtained by PT KAL was only 17,986 ha (District Agriculture Agency Decree No522/0229/DKH; 29 Maret 2010). Leakage would have happened if PT KAL has been given more area to match their initial concession (20,000 ha), but this is not the case as there no more forest land was allocated. Since no more forested land was obtained by PT KAL, we conclude that there is no leakage risk from PT KAL as one of the leakage agents.

We will conduct 'ex-post' (5 years after project start) leakage monitoring. The leakage will be accounted for if there are no significant changes in terms of the underlying causes of deforestation (e.g. demography, infrastructure, commodity prices, and governance/law

enforcement) but:

a. Oil Palm (PT KAL) concession size increases to 20,000 ha,
b. Forest clearing occurs due to project activities

- **Minimizing risk of leakage**

It is assumed that GHG emissions associated with aquaculture intensification, agricultural intensification, fodder production, or other measures to enhance cropland and/or grazing land areas, are conservatively excluded in the leakage mitigation.

To reduce the risk of leakage, the identified deforestation agents are involved in priority leakage mitigation actions. Naturally it is hoped that leakage will not affect the project, but it is still necessary to be proactive in preventing it now or into future. The project activities and the supporting activities are all designed to minimize the threats of deforestation.

Training on sustainable NTFP collection and agriculture intensification are some of the activities that aim to reduce the threats of opening new farmland. Tree planting and agroforestry are other activities that will trigger positive leakage by enhancing carbon stock particularly on the rehabilitation zone, which has low carbon stock. These tree planting and agroforestry activities are mandatory based on the HD regulation (P.49/Mehut-II/2008), supporting the Ministry of Forestry programme (P.20/Mehut-II/2009), and participating on the President of Republic Indonesia decree on National Tree Planting Programme (Presidential Decree No 24-2008). Thus, by implementing these activities, we are confident to succeed in minimizing the risk of leakage and if possible trigger positive leakage.

- **Actions mitigating risks to permanence:**

In order to mitigate as much as possible future internal and external threats to the permanence of this project the following activities will be implemented;

Sustainable livelihoods	Establishment of sustainable enterprises focusing on vegetable gardens, seed production, sapling production, chicken rearing and other opportunities as they arise
Forest regeneration	Enrichment planting and protection of natural regeneration of native species.
Forest replanting	Tree planting, agroforestry improvement. Enrichment planting around the sustainable use zone ensures a small supply of timber for construction materials, reducing the risk/temptation for community members to source this from the protection zone (project area)
Forest governance strengthening	Monthly meetings to discuss progress of forest patrolling activities and any other issues regarding the forest management
Capacity building	Patrolling, High Conservation Value/biodiversity and carbon surveys, as well as in agricultural practices as needed and as requested by the community. Trainings will be subject to the availability of grant funding, which the project coordinator will continue to raise.
Strengthening of the grievance mechanism	Following advice from the Plan Vivo Validator, the project coordinator has carried out a household mapping exercise on project perception and is adopting an additional, more informal grievance mechanism where the project coordinator relies on several community informants from different religious and ethnic groups to monitor perception of the project across the whole community. This system will function as an early warning system against potential problems that might arise in the future.

Part H: Project Coordination & Management

I1 Project Organisational Structure

- *Project coordinator and legal status (PV requirements 3.1 & 3.5)*
- *Describe the organizational structure for the project and the roles of each organization involved (use diagrams and tables if necessary) (PV requirement 3.2)*
- *Capacity and experience of each organization involved (PV requirement 3.4)*
- *Stakeholder analysis (diagram) (PV requirement 3.6)*

The HD area and management licences are granted by the government to the village forest management insitution (LDPHD). The LDPHD is responsible for conducting forest management activities to ensure compliance with laws and regulations pertaining to the HD licence. The LDPHD will function as the legally recognised community forest management group for the purposes of the Plan Vivo project.

FFI will act as focal point for project coordination, representing and providing the linkage with the Plan Vivo Foundation. A number of additional organisations will be involved as project implementing partners, including the Plantation & Forestry Department of Ketapang district (local government); long-standing local NGO partner Yayasan Palung (experienced in community facilitation and forest protection), ASRI (experienced in provision of rural health service, agroforestry/reforestation and community conservation), and PRCF (experienced in agroforestry/reforestation and community conservation). Yayasan Palung, RMI and PRCF provided technical services to the project, supporting in-depth socialisation of REDD+ and the Plan Vivo System, participatory project design and PDD development. None of the partners have a commercial interest in the project.

FFI champions the conservation of biodiversity to secure a healthy future for our planet where people, wildlife and wild places coexist. Lasting local partnerships have been at the heart of the organisation's conservation activities for more than one hundred years, and its work now spans the globe with more than 140 projects in over 40 countries. The FFI Indonesia Programme was established in 1996. Today the programme works to conserve a diverse range of threatened species and ecosystems throughout the archipelago. The project team has developed substantial expertise in climate change and the development of REDD+ activities. In order to adapt to the local context of existing partner relationships and distribution of skills and expertise, certain project co-ordinator responsibilities will be led or co-implemented by the partners above.

I2 Relationships to national organisations

- *Describe how the project coordinates and communicates with national organisations (especially government)*
- *Describe (if any) linkages between the project and other government schemes or projects*

The HD tenure arrangement was introduced as a formal community forestry scheme in Indonesia by the issuance of a Ministry of Forestry decree P. 49/2008 on HD. The purpose of HD is to legally recognise and to give access to local communities to sustainable utilisation of forest resources through village institutions. Improving local community well-being and sustainable management of the forest estate are the main objectives. The two main steps to establishing HD are obtaining 1) a MoF licence for the forest area and 2) a provincial governor licence for forest management. Both steps involve stringent formal verifications.

The HD licence is non-transferable, valid for 35 years, renewable, and monitored by the government at least once every five years. The LDPHD is responsible for HD

boundary demarcation, formulation of the HD management plan, forest protection, rehabilitation, and restoration/enrichment. There is a timber harvest quota for non-commercial purposes (housing and infrastructure construction in the village) of 50 m3 per annum. A framework for legal timber certification exists, but guidelines for commercial timber utilisation from community-managed state forests are still in the formulation stage. Commercial non-wood products utilisation (up to 20 tonnes per annum) and environmental service payment schemes, including payments for carbon sink and sequestration are allowed, but require separate government approvals.

I3 Legal compliance

- *Describe how the project will meet the legal requirements of the country. Include any written approval from government for the project if required. (PV requirements 3.7 & 3.8)*
- *Outline the policies of the project coordinator to ensure equal opportunities for employment and any other legal compliance (PV requirements 3.13-3.15)*

The project will facilitate target communities to secure the necessary permit/approvals for carbon sequestration project and carbon trading. The project will comply with all relevant national regulations. Frameworks for carbon sink and sequestration project are already promulgated. MoF decrees P.36/2009 and, most recently, P.12/2012 regulate forest carbon/REDD+ projects. Entities (government, private sector, local community) with forest management rights must register their projects with the MoF. In forest zones with no competing license, REDD+ project proponents need to apply for a carbon sink and sequestration business permit. International systems and standards for project development and marketing (CCBA, VCS, Carbon Fix, and Plan Vivo) are recognised in P.36/2009. The decree also stipulates vertical distribution/sharing of revenue from the sale of carbon credits, which is currently subject to inter-ministerial review. A clause in P.12/2012 states that to meet the national emissions reduction commitment, foreign country buyers will be permitted to purchase a maximum of 49% of the carbon emission reductions. Government regulation No. 12/2014 sets tarrif for non-tax state revenues from forestry sector, including from the sale of carbon credits.

The MoF has developed national standards for land cover classification (SNI 7645:2010), carbon stock measurement and accounting (SNI 7724:2011), formulation of allometric equations (SNI 7725:2011), and REDD+ demonstration activities (SNI 7848:2013).

I4 Project management

- *Give a timeline (approximate) for project establishment, piloting, scaling up and monitoring*
- *Describe the project record keeping system (PV requirements 3.11 & 3.12)*

Following UNFCCC COP in 2007 in Bali, in 2008 FFI started its REDD+ work in West Kalimantan. The 'community carbon pool project' (CCP), REDD+ in community forest areas, was then commenced in 2009. Due to biodiveristy richness and high level of threats (forest conversion into oil palm plantation), Ketapang and Kapuas Hulu districts were selected as priority districts. Since then, our work has focused on securing tenure and on designing and implementing REDD+ projects. Initially, a post-2012 Kyoto protocol compliance market was expected with some degree of optimism. More recently and in the absence of this compliance market, the orientation of our projects is focused more and more on the pre-compliance, voluntary market. Table I4 presents the timeline of community forest REDD+ project etablishment.

TABLE I4. TIMELINE FOR PROJECT ESTABLISHMENT

	Activity	Time frame
1	Secure HD approval and permit	2009 onward
2	Project designing:	
2.1	Community consultation	2009-2014
2.2	Carbon survey/accounting	2011-2013
2.3	PDD development	2012-2015
2.4	Registration & validation	2015
2.5	Plan Vivo certificate issuance	2015 onward
2.6	Project implementation, monitoring, & replication	2014 onward
2.7	Fund raising/marketing	2013 onward

Facing direct threat from planned forest conversion for oil palm plantation, Laman Satong was selected as the first PES REDD+ project. Project replication to other village forest areas is expected to start after registration and validation, followed with the issuance of Plan Vivo certificates and performance-based payments for Laman Satong in 2014-2015. Immediate target areas for replication are other 3 village forests in Ketapang district and 2 villages in Kapuas Hulu district.

As part of the project record keeping system, FFI will develop the project data-base system. Electronic and hard copies of project files and documentations such as village forest zoning map, records of community consultations, results of surveys and monitoring excercises, photos, reports of project activities, PES agreements and contracts, financial disbursement records, and records on grievance handling will be stored at LDPHD and FFI field offices. An electronic database of all documents has been created in dropbox and relevant folders with be permanently shared amongst LDPHD and FFI.

I5 Project financial management

- *Describe the mechanisms for disbursement of PES funds (PV requirement 3.9)*
- *Show the project budget and financial plan (PV requirement 3.10)*

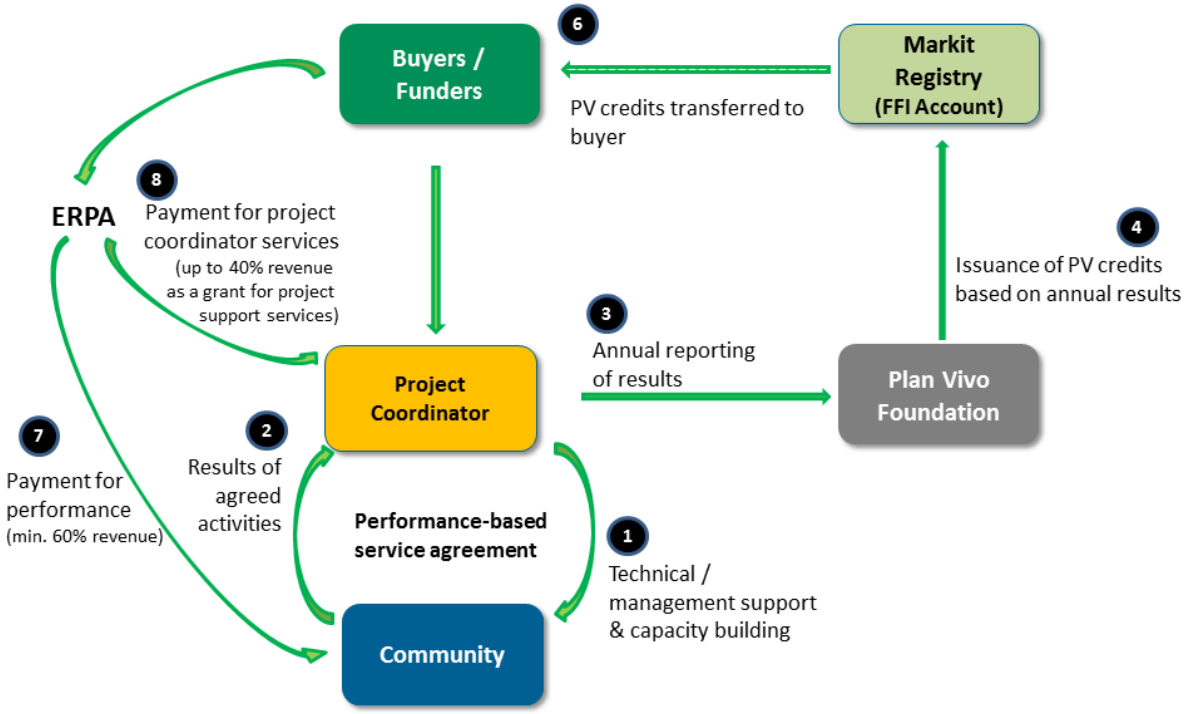


FIGURE 2: CONTRACTING STRUCTURE

Under Indonesian law, International NGOs (INGO) operating in Indonesia are not allowed to conduct profit-based activities. As a carbon sale agreement is regarded as a commercial activity, FFI cannot receive direct payments for carbon credits. FFI has therefore set up two potential payment models.

In the first model (Figure 2), the Lembaga Pengelolaan Hutan Desa (LDPHD) would sign ERPAs directly with buyers, while communities and FFI would enter a performance-based service agreement. Although FFI would not be a signatory in the ERPA, there are various safeguards included in the text of the ERPA, to ensure that FFI provide project coordination support and to ensure adherence to the requirements of the Plan Vivo Standard. The LDPHD Manjau is recognized as a legal entity under Indonesian Law, established through PERDES 1/2013 (Village Regulation 1/2013) and legally endorsed by Buro Hukum (Legal Office), as published in the Berita Daerah, Kabupaten Ketapang, 2013/10. (Regional News, Ketapang District, 2013/10). Under Indonesian law, LDPHD is regarded as a legal entity that is able to enter into sale agreements. LDPHD has set up a bank account with Bank Kalbar Syariah in Ketapang.

In this model a 'performance-based service agreement' is signed by FFI and by the community. This includes all key components that would have been in the PES agreement with the only exception that there is no transition of carbon rights to FFI and sales of carbon credits are not made directly by FFI. Communities then sign an ERPA with a buyer. It is purely a transaction, and FFI is not a signatory. However, there are various safeguards included in the text of the ERPA, such as the requirement that FFI provide project coordination support to the project, to ensure adherence to the requirements and recommendations of the Plan Vivo Standard[1]. Both the performance-based service agreement

[1] Note that under this model, it would be preferable if communities could sign an ERPA with a SINGLE buyer. This would be a lot less complex to administer than the community entering multiple ERPAs for different amounts and timeframes. Therefore, the aim should be to find buyers that are large enough to absorb credit total annual credit generation capacity of one/more communities for duration

and the ERPA should be legal documents.

The performance-based service agreement must provide assurance that the requirements and recommendations of the Plan Vivo Standard are met. Examples of key elements that should be included as follows (not an exhaustive list):

- Roles and responsibilities of the two parties:
    - Agreed community activities under the Plan Vivo and expected outcomes
    - Agreed technical and administrative support activities by FFI
- Performance monitoring targets, procedures, and timetable
- Payment schedule
- Details of link between performance thresholds (100% target met; 50% etc) and payment thresholds

What will make this document different from a 'traditional' PES agreement is that it will include:

- Commitment by FFI to market the project and facilitate negotiation of ERPAs directly between buyers/funders and communities;
- Commitment by FFI to guarantee a minimum payment to communities from grant funds ('*minimum payment*'), in the case that a buyer is not found - this would be a grant to the community with donor funds and it should be made clear in the contract that there is no link to carbon credits. It should be clarified to PV how the level of the '*minimum payment'* has been set to ensure that it is sufficient to be meaningful to the communities. At a minimum, this payment will need to cover all forest patrolling costs.
- If an ERPA is signed between the community and a buyer that is of greater value than the FFI 'minimum payment', then this will replace the 'minimum payment' for the duration of the ERPA.

    - If a 'minimum payment' using grant funds is paid by FFI, but an ERPA is signed shortly after (in the same reporting year), the grant funds should be returned into the FFI managed PES Fund once the larger ERPA payment has been received to avoid over payment in a single year and enable the store of grants funds to be replenished to provide guarantee in future years. The two streams of finance (minimum grant payment and actual income from a buyer) will be treated separately.

    As the carbon benefits achieved are not transferred to FFI in the proposed model, Plan Vivo cannot issue PVCs into an account owned by FFI. As discussed this could be easily resolved by a) issuing into an account owned by the participant or by b) including a waiver in the performance-based service agreement where FFI waive any claim to the PVCs. Option b will still be viewed by the Indonesian Government as FFI holding rights over the carbon. In addition, only communities are likely to be able to open Markit accounts as village forest license and PES license holders. Therefore FFI will adopt option a.

    FFI is responsible for overseeing the project's MRV and reporting to the Plan Vivo Foundation, and needs to retain its role in ensuring that certificates are only issued upon performance targets being met. For this reason the request for certificate issuance will not be made by communities, and PV will in practice be issuing into community Markit accounts on the instruction of FFI. FFI can demonstrate permission to make this request by writing a clause into its performance-based service agreement with the communities. FFI will also include a short letter of

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of the ERPA.

confirmation (or other form or declaration) that the request is being made on behalf of the communities in the annual reports.

It is definitely understood that buyers may want to transfer one or more years of payments upfront, and also prefer not to make transfers to two different entities; i.e. community (min 60%) and FFI (max 40%). FFI proposes that funds are paid into an Escrow account, managed by a third-party Escrow service, and money is held there until targets are met, monitored and reported on and the time has come for payments to be made.

It is also understood that being very clear about performance thresholds and payments levels in the ERPA may make risk of non-delivery more obvious to potential buyers. However, this risk will exist with any project and probably it is better to look for buyers that understand that. Definitely all ERPAs should be very carefully examined to ensure buyers do not try to introduce clauses that put communities at risk in situations of non-delivery.

The language in the ERPA could refer to FFI providing project coordination services in support of the community. The text of the ERPA would need to make it clear this support contributes to FFI's core conservation mission and contributes to meeting direct costs of project support at zero profit to FFI. Any income to FFI from this type of agreement would be defined as 'primary purpose' (i.e. contributes to FFI's core mission), and would not be subject to income tax in the UK. At the time of writing, FFI is still discussing the finer details of this contracting structure with the Plan Vivo Foundation and it is understood that some revisions to this proposed model are likely to occur.

In the second model, an association (Perkumpulan), called CFES (Community Forest Ecosystem Service), set up by Indonesian staff members of FFI will act as the intermediary between communities and buyers and sign contracts with both communities and buyers. The association was established on 29 August 2014, and is recognized by Notary Act Rosita Rosinauli Sianipar, No 372. CFES fulfils the governmental regulations regarding associations, including having executive and operations body as well as regulations. CFES has opened a Bank Account at the Mandiri Bank in Jakarta.

The project is expected to expand to include an additional 6 (six) village forests. Table I5 presents a conservative estimate of the annual budget to develop and expand as well as potential revenues from sales of Plan Vivo certificates.

TABLE I5. ANNUAL PROJECT BUDGET AND FINANCIAL PLAN (IN USD)

No	Description	Unit	Total
1	Project areas:		
1.1	No. of village/community forests (CF)	CF	6
1.2	Area (2000 ha per CF)	Ha	12.000
1.3	ER's (CO2-e) for sale (3000 tone per CF)	Tone	18.000
2	Project costs:		
2.1	Project development (USD 51,000 per CF)	USD	102.000
2.2	Project replication/expansion (US 24,000 per CF)	USD	96.000
2.3	Project monitoring (USD 6800 per CF)	USD	40.800
2.4	Project management/coordination (USD 1600 per CF)	USD	9.600
	Sub-total	USD	248.400
3	Project revenues:		
3.2	PES Fund - contribution from donor/aid agencies (USD 5 per tone CO2-e)	USD	45.000
3.2	PES Fund - from carbon credit sale (USD 10 per tone CO2-e)	USD	90.000
4	Income for project participants:		
4.2	All project participants (6 communities/villages)	USD	99.000
4.3	Per project participant (community/village)	USD	16.500

I6 Marketing

- *Describe how Plan Vivo certificates will be marketed by the project coordinator*
- *Describe the process for preparing a marketing plan for the project*

FFI is committed to supporting communities in marketing Plan Vivo certificates domestically in Indonesia and internationally. FFI offices in Indonesia, UK, US, and Singapore will actively engage with aid agencies, foundations, corporations, and carbon credit buyers/re-sellers. Plan Vivo certificates will be issued after funders and/or buyers have been identified and secured.

FFI and partners have collected a wealth of relevant photos and videos which will be used in a series of marketing materials to attract PV certificate buyers for Laman Satong and other sites within the CFES programme. FFI has secured donor funding to engage with buyers during the rest of 2014 and all of 2015 (staff time and travel) as for the production of a short promotional video. FFI's aim is to obtain a multi-year purchase agreement with Disney Climate Solutions and other buyers by Q1 2015. FFI has also been engaging with IUCN regards to potential future sales of PV certificates because the CFES programme has been selected (together with one other project) as the recommended option for World Parks Congress participants to offset their travel.

I7 Technical Support

- *Describe how continued technical support and capacity development will be provided for project participants*

The section below highlights the expected division of key responsibilities of supporting NGOs in the Plan Vivo project.

Administrative:

- Registration and recording of community land-use management plans (Plan Vivos) and sale agreements (FFI);

- Managing the use of project finance in the Plan Vivo and making payments to producers (FFI));
- Coordinating and recording monitoring (FFI and local NGO partners);
- Negotiating sales of Plan Vivo Certificates (FFI);
- Reporting to the Plan Vivo Foundation (FFI);
- Contracting project validation and verification (FFI);
- Managing project data (FFI and local partners).

Technical:
- Providing technical support and training to producers in planning and implementing project activities (All partners plus additional external technical support on a needs basis);
- Developing, reviewing and updating forestry and agroforestry systems – the technical specifications (FFI and local partners);
- Evaluating the quality of community Plan Vivos (FFI and local partners);
- Monitoring implementation and impact of Plan Vivos (FFI and local partners).

Social
- Conducting preliminary discussions and on-going workshops with communities (FFI, Yayasan Palung);
- Gathering socio-economic information for project registration and reporting purposes (FFI, in collaboration with RMI and PRCF);
- Helping groups/individuals to demonstrate land tenure (FFI and local partners);
- Advising on issues such as community mobilisation, setting up bank accounts, dispute resolution etc. (FFI and local partners).

Part I: Benefit sharing

J1 PES agreements

- *Describe the procedures for entering into PES agreements (PV requirements 8.1 & 8.2)*
- *Describe how the project coordinator will ensure that obligations are met (PV requirement 8.5 & 8.7)*
- *Identify any risks and associated mitigation measures regarding PES agreements (PV requirements 8.3, 8.4 & 8.6)*

PES agreement signing will take place after the completion of the following steps have been completed:

1) Formal tenure/management right (e.g. *Hutan Desa* approval/license) has been approved by the government or progressing toward finalisation.
2) Zoning and delineation of boundaries of project area (*plan vivo*) completed.
3) Project participants are aware of REDD+ and PES agreement, and have given their consent (FPIC).
4) Calculation of estimated net emission reductions are finalised and communicated to project participants
5) Completed project design phase (drivers and project activities identified; benefit sharing, monitoring, and governance structure developed).

Intensive facilitation will be provided to ensure LDPHD members are able to perform community-level coordination functions. These include planning, implementation, and reporting of project activities. Specific attention will be given for the LDPHD to be able to assess and report project performance againts target indicators that will trigger payment. This includes, as necessary, undertaking corrective actions. In the case of being unable to meet performance targets, the duration of PES agreement will be extended to allow corrective actions.

To mitigate risk pertaining to market uncertainty, due to difficulty in finding buyer of the carbon credits, initial grant funding has been secured for the first 3 years. Another possible risk is internal conflict within the community on financial benefit sharing distribution. To cope with this, assistance for the LDPHD is provided by the project coordinator to organise community consultation meetings and ensure that a grievance mechanism is put in place and functional.

J2 Payments & Benefit Sharing

- *Describe how payments will be disbursed to participants and how they are linked to performance. Describe the conditions under which payments will be with held*
- *Describe the measures that will be taken to ensure equitable and transparent benefit sharing by the project (PV requirements 8.8-8.13)*

The result of a series of community consultations presented in Table J2 show indicators that directly link perfomance and payment of incentives. Annually, LDPHD will coordinate the submission of a report covering project activities and the results of monitoring against these indicators. Project coordinator field staff will verify the report and organise the submission of the report to Plan Vivo Foundation for approval.

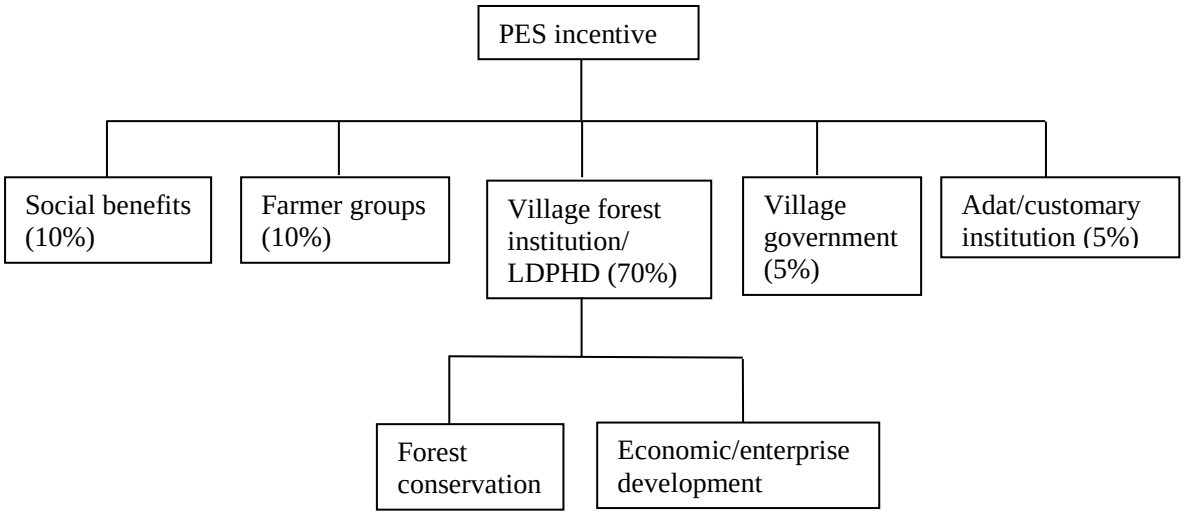
TABLE J2. PERFORMANCE INDICATORS AND PAYMENT

Payment	Deforestation (ha)
Full payment (100%)	<2.2
Partial payment (50%)	<4.4
No Payment (0%)	>4,4

Incorporated in the deforestation indicator is degradation (timber felling). Timber quota per year of 50 m3 per year equals to 35 trees (30 cm diameter and 20 m height). Additional felling of 53 trees equals to 1 ha deforestation.

From intensive community consultations, the agreed benefit sharing distribution for PES incentives is outlined in Figure J2. Activity groups submit proposals to LDPHD for review and approval. LDPHD treasurer will transfer the fund the activity groups' treasurers. The activity groups submit activity and financial report to LDPHD. To ensure transparent and equitable benefit sharing disribution, regular community consultation meetings will be organised to discuss issues as they emerge. Any individuals in the communty is also encoureged to raise questions, complaints and/or suggestions through the agreed grievance mechanism.

FIGURE J2. BENEFIT SHARING DISTRIBUTION



Note:

- Social benefits (10%) provided for: elders age over 70 years, disabled, orphan children, partial housing constuction support for the poorest, and support for religious activities. Cash health benefit to be provided for villagers in hospital care.
- Farmers group (10%), farmers owning lands within *Hutan Desa* area. Support is provided for agricultural inputs. Collective decisions on the exact use of funds will made through farmers group meetings.
- Village forest intitution/LDPHD (70%) will manage the fund for forest conservation activities (e.g. patrol, monitoring, tree nursery, tree planting/enrichment) and economic developement activities, such as the developement of green enterprises for women.
- Village government (5%) to provide supervision and support to LDPHD. The village government will organise village meetings to discuss matters related to *Hutan Desa*.
- Adat/customary instutions (5%) will organise adat/customary meetings to discuss matters related to *Hutan Desa*. Also to provide support for custormary events.

Part J: Monitoring

K1 Ecosystem services benefits

- *Describe the monitoring plan for each project intervention. (PV requirement 5.9)*
- *Describe how communities will be involved in monitoring activities*
- *Describe the indicators that will be monitored; the frequency (annually, after every 5 years etc.); who will carry out the monitoring and how the results will be used and shared with participants (PV requirement 5.9)*

Project monitoring will be carried out monthly and annually through a community based and participatory monitoring approach. The monitoring activities will not only include the project area (protection zone), but also at the leakage zone (rehabilitation zone) to minimize the risk of leakage, and to ensure forest protection goals are achieved.

Two main periodic monitoring excercises will be carried out, a monthly and an annual monitoring. The monthly monitoring carried out by community forest patrols will mark the location of cleared forest and trees. The patrols will record perimeter coordinates for cleared forest areas and the location of felled trees using handheld GPS. The patrol team will collate, summarise, and report the monitoring data to the community forest institution (LDPHD) on a bimonthly basis. The head of the LDPHD will share a quarterly result with the project coordinator. The project coordinator will aggregate quarterly monitoring reports and submit an annual report to the Plan Vivo Foundation.

The annual monitoring will be carried out in collaboration with the FFI team, which will visit the Permanent Sampling Plots (PSPs). Forest cover and presence-absence of trees will be the monitoring indicators, with deforestation measured by area of forest cleared, and degradation measured by the numbers of trees felled. The annual monitoring will re-survey 20% of all PSPs. In five years, the whole PSPs will be monitored. PSPs will be randomly selected. The use of remote sensing analysis to monitor land cover change will also be conducted annually with Landsat 8 satellite image (30m spatial resolution), and every five years with SPOT 5 satellite image ($\leq$10m spatial resolution). Field monitoring will be used to validate remote sensing analysis in the project areas. Along with the satellite images, habitat photos from fixed photo points (FPP) will also be analyzed. Habitat photos are taken in fix points that capture the forest landscape. Six fixed points with views onto the forest stands in HD were determined, and photos are taken and compared every 6 months. The location of each of the 6 FPPs is marked with a permanent signpost indicating the direction in which the photo should be taken so that subsequent photos can be taken easily by any community member.

The project coordinator will aggregate quarterly monitoring reports and submit an annual report to the Plan Vivo Foundation for certification. An exhaustive list of all social, biodiversity and forest/carbon indicators to be measured, together with indicator unit, frequency, intensity and responsibilities for each are listed in the following two sections.

A description of the performance indicators is shown in Table .

TABLE 7. THE DESCRIPTION OF PERFORMANCE INDICATORS AND PAYMENT IN HD LAMAN SATONG

Payment	Requirement	Maximum Carbon Loss (tonnes)	Maximum Area Loss (ha)	
			30 years	per year
Payment 100%	Maximum 10% carbon loss in 30 years	6,397.81	65.37	2.18
Payment 50%	Maximum 20% carbon loss in 30 years	12,795.63	130.73	4.36

No Payment	More than 20% carbon loss in 30 years	>12,795.63	>130.73	>4.36

K2 Socio-economic impacts

- *Describe the socio-economic monitoring plan (PV requirement 7.3)*
- *Clearly identify the selected socio-economic monitoring indicators and describe how they will be regularly monitored in a participatory way focusing on target groups (PV requirement 7.4)*

The socio-economic monitoring plan is described in the table below (Table 5)

TABLE 8. SOCIO-ECONOMIC MONITORING PLAN

Type of monitoring	Indicator	Methods	Indicator unit	Frequency	Intensity	Responsibilities
Socio-economic	Yield of vegetable gardens	Data is recorded periodically	Kilos of each type of vegetable harvested / Number of IDR earned (if produce is sold) and by whom (paying attention to the representation of landless and poorest individuals – this is a women's only activity)	3 months	The women's vegetable growing activity group	Head of the women's farming group (each RT)
Socio-economic	Palm Oil Seed business success	A record of seedling planting and sales to oil palm company is kept	The number of seeds planted / surviving / for sale / Number of IDR earned (both total and by women-headed, landless and poorest households)	6 months	Seed-growing activity group	Chairman of the LDPHD
Social	Law enforcement	A record of all law enforcement actions is kept	Cases of law enforcement conducted	Annual	Community -wide	Traditional leader
Social	Strengthening of village level forest management institution (LDPHD)	Keeping a record of village meeting attendance and minutes in which forest management is discussed	Number of meetings/proportion of young/old in the institution (disaggregated by gender and wealth - paying attention to the representation of women, landless and poorest individuals)	Monthly	Community -wide	Chairman of the LDPHD
Social	Increased use of tools in the landowner's association	A records of all equipment and kinds/quantities of seeds is kept	Numbers of tools/seeds (disaggregated by wealth – paying attention to poorest and women-headed households)	Annual	Landowners Group	Chairman of the landowners association
Social	Increased access to healthcare and social services	A log of people receiving healthcare and social services is kept	Number of individuals receiving health care and social services (disaggregated by gender and wealth – paying attention to women-headed, landless and poorest households)	Annual	Community -wide	Head of Human Resources
Socio-economic	Expenditure of PES funds as agreed in management plan and PES agreement	Book keeping and financial reporting	Number of Indonesian rupiah (IDR) spent on each activity by which community member or household (paying particular attention to women-headed, landless and poorest households)	Annual	For the 5 community groups established	LDPHD

A Participatory Wellbeing Assessment (PWA) will be completed in the 1st year of the crediting period. PWA will be repeated every 5 years. The result of the assessment is locally defined wellbeing categories and indicators (Table 6). The number of households belonging to each wellbeing categories was subsequently assessed. The monitoring will focus on the change in number of households falling into the most vulnerable category (poor). The project is expected to improve community wellbeing by contributing to reduction in the number of poor households. The results of the monitoring will be used to inform improvement of project design (e.g. project activities, benefit sharing, grievance mechanism).

Household surveys conducted in the beginning of the project will be repeated every 5 years. These surveys assess household assets, income, and spending and are followed with an assessment on how change is affecting and affected by project activities. The result of household surveys will complement the results of PWA to inform overall project design improvement.

TABLE 9. WELLBEING INDICATORS

Criteria	Poor	Medium	Rich
House	Bamboo or board/wooden plank walls, roof leaves, floor board/plank, average size of building 4x6. Comprises kitchen, living room, bedroom.	Metal or tile roof, plank/board walls, plank/board floor. Building dimension 6x9. Comprises kitchen, living room, 2-3 bedrooms.	Metal roof, cement walls, ceramic floor. Building dimension 6x12. Comprises kitchen, living room, dining room, 3-4 bedrooms. 1-2 floors.
Electricity	Rent/link with electricity supply of neighbour; use oil lamp for power cuts.	450w electricity supply to house. Use candles for power cuts.	900w electricity supply to house. Can provide electricity to neighbours. Own generator (for power cuts)
Electronics & Vehicles	Radio; bicycle	TV, bicycle, motorbike	Fridge, TV, bicycle, motorbike, car
Land ownership	Max. 5ha / household head	5-10 ha/ household head	10+ha
Agroforestry gardens	Max 2ha fruit trees and rubber	2-7ha fruit trees and rubber	7+ha fruit trees, rubber and gaharu (resin trees)
Work	Unskilled labourer, farmer, stone miner, hunter/poacher	Daily or permanent labourer/employee, teacher / civil servant, oil palm labour)	Permanently employed worker; businessman
Income	Less than IDR 1.2 million / month	IDR 1.2 – 5 million / month	IDR 5+ million / month
Sanitation facilities	No toilet in the home	Toilet in the home, with board/plank walls	Toilet with ceramic floor

K3 Environmental and biodiversity impacts

- *Describe environmental and biodiversity indicators that will be monitored*
- *Describe how each indicator will be assessed; the frequency and who will carry out the monitoring*

The monthly monitoring carried out by community forest patrol teams will mark the location of encounters with high conservation value (HCV) species and threats to biodiversity (e.g. cleared forest and trees, poaching, fire). A comprehensive list of forest/carbon, water and biodiversity indicators are listed in Table 7.

Monitoring will be undertaken for water. The indicator for stability of water supply is the height of the water surface (water-table) in 1) the reservoir for drinking water and 2) stream sourcing irrigation water for wet ricefields in the village.

TABLE 10. FOREST AND BIODIVERSITY MONITORING PLAN

Monitoring type	Indicator	Methods	Indicator unit	Frequency	Intensity	Responsibilities
Forest	Forest cover change	GPS records of cleared/burnt forest and felled tree locations	Number of hectares of cleared/burnt forest and number of felled trees	Monthly	1 transect 16km long, usually lasting 5-7 days every month	Community forest patrols - head of each patrol group(s)
		Re-measurement of permanent sample plots (PSPs)	Number of hectares of cleared forest and number of felled trees	Annual	20% of PSPs	Community patrols with FFI team
		Landsat 8 satellite image analysis following FFI procedural document – good practice remote sensing methods for detecting deforestation	Number of hectares of forest by forest strata/classes	Annual	Protection zone	FFI remote sensing expert
		Forest cover as documented by fix-point photography. Visual assessment of photos at these points: *409843 9843008 413095 9844486 407264 9849131 407859 9846722 410681 9849525 409181 9850191 407617 9847226*	Extent of cleared areas/intact areas	6 months	7 points overlooking the protection zone	LDPHD and FFI
Forest	Forest condition (degradation)	SPOT satellite image classification	Hectares of degraded forest	5-yearly	Protection zone	FFI remote sensing expert
Water	River water debit	Measure water level on a fixed graded pole in the reservoir and in the stream sourcing irrigation water for wet ricefields in the village	Millimetres	Monthly	1 location in the reservoir	Community forest patrols - head of each patrol group(s)

Biodiversity	*Hylobates albibarbis* (white bearded gibbon), *Spizaetus nannus, Alcedo euryzona, Centropus rectunguis, Pitta baudii* (birds),	GPS records of sighting locations	Number of sightings and individuals	Monthly	1 transect 16km long, usually lasting 5-7 days every month (the collection of biodiversity data occurs during forest patrols)	Community forest patrols - head of each patrol group(s)
	Gonocephalus doriae (crested lizard), *Cuora amboinensis kamaroma*, *Amyda cartilaginea* (freshwater turtles)					
	Hopea ferruginea, Eusideroxylon zwageri (trees)					

K4 Other monitoring

- *Describe other monitoring and indicators that will be used including (i) indicators of the drivers of degradation (ii) institutional indicators (iii) governance indicators*

Monitoring on project governance will focus on community participation in project decision making and activities. Data will be collected from records of commuity meetings and reports of project activities to indicate number of community members, particularly women, participating in project activities and decision-making meetings. From records of grievances and responses, satisfactory complaints handling will also be used as indicators. The LDPHD will share a quarterly result with the project coordinator. The project coordinator will aggregate quarterly monitoring reports into the annual report.

Annexes

Annex 1. List of key people involved with contact information

Name	Role	Expertise
Lorens loarang@yahoo.com	Project Lead, Ketapang District	CBNRM, community facilitation, government & partner liaison, project management, NTFPs
Rahmawati rahmawati.ffi@gmail.com	Field Officer, Ketapang District	Community facilitation, participatory methodologies, livelihoods/NTFPs
Hariyo T Wibisono beebach66@yahoo.com	Wildlife & Biodiversity Advisor	Conservation biology – surveying, monitoring, species & ecosystem conservation, High Conservation Value Forest (HCVF) assessment
Joseph Hutabarat joseph.htbrt@gmail.com	Biodiversity & Forest Carbon Specialist	Forest carbon assessment & avoided emissions modelling, remote sensing techniques
Samantha Citroen samantha.citroen@fauna-flora.org	Carbon & Forest Specialist	Forest carbon assessment & avoided emissions modelling, remote sensing techniques
Sugeng Raharjo sraharjo2010@gmail.com	Governance & Land Use Advisor	Spatial planning, landscape-level forest governance, social baseline assessment & monitoring
Ahmad Kusworo a.kusworo@hotmail.com	Community Forest, Climate and Livelihoods Advisor	Community-based natural resource management (CBNRM) & governance, national REDD+ regulations
Edy Nordiansyah ed_forester85@yahoo.co.id	Forestry and Hydrology Expert	Forest carbon and hydrological monitoring
Desi Kurniawati, (Yayasan Palung)	Community facilitation	Community engagement and awareness raising
Imanul Huda, (PRCF)	People Resource Conservation Foundation	Community engagement - assisted in completing household surveys, focussing on household assets, income, and spending.
Dorothea Pio dorothea.pio@fauna-flora.org	Environmental Markets	Project development and marketing

Annex 2. Information about funding sources

The community forestry REDD+ initiatives undertaken by FFI in West Kalimantan are possible thanks to the generous support provided from various funding sources. These include foundations such as Packard, CLUA, Arcus, Newman, and Frankilinia, aid organisations such as UK FCO, USAID, AusAid, IFC/BACP, ICCO, and Disney and from individuals (Monahan and Bourne). Currently, PES funds secured for Plan Vivo projects in West Kalimantan for 2014-2015 are provided by grant funding provided by ICCO and Disney.

Annex 3. Producer/group agreement template

PES Agreement between LDPHD Manjau and CFES (full translation available on request)

Kesepakatan Imbal Jasa Ekosistem Hutan antara LDPHD Manjau dan CFES

1) Pembukaan

Hutan menyediakan beragam manfaat jasa ekosistem yang berguna bagi kelangsungan hidup manusia. Manfaat jasa ekosistem hutan diantaranya adalah penyediaan udara bersih, pengaturan tata air dan kesuburan tanah, habitat satwa dan tumbuhan, produksi hasil-hasil hutan, dan budaya. Ekosistem hutan memberi manfaat perlindungan iklim, daerah aliran sungai, dan keanekaragaman hayati.

Pembayaran imbal jasa ekosistem (*PES: payment for ecosystem services*) merupakan pemberian insentif imbalan dana kepada pelaku pengelola hutan atas keberhasilan melaksanakan upaya-upaya perlindungan dan pelestarian hutan. Keberhasilan pelindungan dan pengelolaan hutan dapat diukur dari perubahan tutupan hutan dan keberadaan pepohonan di dalamnya.

CFES *(Community Forest Ecosystem Services)* merupakan wadah yang menampung dan menyalurkan dana imbal jasa ekosistem dari hutan-hutan yang dikelola masyarakat setempat/adat. LDPHD Manjau adalah lembaga Desa yang telah mendapatkan Penunjukan Areal kawasan Hutan Desa dari Menteri Kehutanan berdasarkan No SK SK.493/Menhut II/2011 dengan luas areal 1.070 hektar yang terletak di desa Laman Satong kecamatan Matan Hilir Utara Kabupaten Ketapang Provinsi Kalimantan Barat.

Atas dasar niat baik dan saling percaya, CFES dan LDPHD Manjau secara sukarela melaksanakan kesepakatan imbal jasa ekosistem hutan ini sebagai bagian dari upaya untuk mencapai pengelolaan hutan lestari dan peningkatan kesejahteraan masyarakat. Penerima imbalan adalah kelompok-kelompok kegiatan yang terdiri dari anggota masyarakat Desa.

2) Landasan hukum dan aturan

a). Pelaksanaan kesepakatan ini mengacu pada peraturan perundangan di Indonesia mengenai kehutanan, konservasi keanekaragaman hayati, pengelolaan lingkungan, dan penurunan emisi gas rumah kaca (GRK).
b). Pemberian insentif imbalan dana bagi masyarakat pengelola hutan dan pemantauan manfaat jasa ekosistem hutan dalam kesepakatan ini mengacu pada persyaratan yang ditetapkan Plan Vivo Foundation.

3) Peran dan tanggungjawab

CFES (Community Forest Ecosystem Services)

a) Menyalurkan dana imbal jasa ekosistem hutan kepada LDPHD Manjau secara bertahap dan mengacu pada hasil pelaporan monitoring hutan sesuai keberhasilan pencapaian target yang tertuang pada Lampiran 1.

1

b) Bersama lembaga mitra dan LDPHD Manjau, mengkoordinasikan perencanaan dan pelaksanakan monitoring atas hutan, kenakaragaman hayati, dan sosial-ekonomi .
c) Bersama lembaga mitra, menyiapkan dan menyampaikan laporan rutin kepada Plan Vivo Foundation.

LDPHD Manjau

a) Mengelola kegiatan-kegiatan untuk melindungi dan mengelola secara lestari hutan Desa Manjau, yang selanjutnya menghasilkan manfaat/jasa ekosistem hutan.
b) Bekerjasama dengan lembaga mitra untuk memastikan kegiatan monitoring atas hutan yang tertuang pada Lampiran 2 terlaksana dengan baik.
c) Melaksanakan penyaluran pembayaran imbal jasa ekosistem hutan kepada kelompok-kelompok kegiatan (Lampiran 3) dan memantau penggunaan dana, mengacu pada Kesepakatan Pembagian dan Penggunaan Dana Imbal Jasa Ekosistem Hutan antara LDPHD dan kelompok kegiatan.
d) Jika diperlukan, LDPHD dan CFES dapat menyepakati, melaksanakan, atau memantau upaya-upaya perbaikan termasuk perubahan atas isi kesepakatan ini.

Kelompok-kelompok kegiatan

a) Kelompok-kelompok kegiatan adalah pelaksana kegiatan perlindungan dan pengelolaan hutan secara lestari. Kelompok-kelompok kegiatan adalah penerima dana imbal jasa ekosistem hutan.
b) Besarnya bagian dana yang diterima masing-masing kelompok untuk menjalankan kegiatan tertuang pada Lampiran 3.
c) Kelompok-kelompok kegiatan mengajukan usulan kegiatan, menerima dana, dan melaporkan penggunaan dana kepada LDPHD.

Lembaga mitra

a) FFI-IP Ketapang dan Yayasan Palung sebagai lembaga mitra berperan sebagai pendamping yang memberikan dukungan-dukungan teknis dalam pelaksanaan kesepakatan ini.
b) Lembaga mitra menyiapkan dan menyampaikan laporan kepada lembaga pemerintah terkait.

4) Monitoring dan imbalan

Tata cara monitoring diuraikan pada Lampiran 2. Indikator yang akan diamati terutama meliputi:

a) Pembukaan hutan
b) Penebangan pohon

Besarnya imbalan dana tergantung dari pencapaian target keberhasilan berdasarkan hasil monitoring. Indikator pencapaian target keberhasilan dan nilai imbalan tertera pada Lampiran 1.

5) Sumber dan penggunaan dana

a) Dana imbal jasa ini berasal dari Disney dan sumber lainnya

b) Dana imbal jasa dibagikan kepada kelompok-kelompok kegiatan, mengacu pada pembagian yang tertuang pada Lampiran 3.

6) Perubahan

a) CFES dan LDPHD Manjau dapat mengajukan perubahan atas isi kesepakatan ini, melalui musyawarah untuk mencapai mufakat atas upaya perbaikan yang perlu dilakukan.
b) Jika tidak dicapai kesepakatan, CFES dan LDPHD Manjau dapat menunjuk pihak ketiga untuk mencapai kesepahaman/mufakat.

7) Jangka waktu

a) Kesepakatan ini berlaku selama 1 (satu) tahun mulai 1 April 2014 hingga 31 Maret 2015
b) Dalam hal dana tidak dibayarkan pada periode waktu tertentu, CFES dan LDPHD dapat melakukan perpanjangan jangka waktu dan menyepakati upaya perbaikan.

Para pihak yang sepakat dengan isi kesepakatan ini:

LDPHD Manjau

Yohanes Heriyono Dogol
Ketua
Lembaga Desa Pengelola Hutan Desa
15 April 2014

CFES

Adam Aziz
Perwakilan
Community Forest Ecosystem Services
15 April 2014

Mengetahui:

Pemerintahan Desa

Sriyanto
Kepala Desa Laman Satong
15 April 2014

BPD

Alpianto
Ketua BPD
15 April 2014

Dusun

Sabianus Sucin
Kepala Dusun Manjau
15 April 2014

Fauna & Flora International

Lorens
Project Coordinator
15 April 2014

Lampiran 1. Indikator pencapaian target dan nilai imbalan

Tabel 1. Sistem monitoring dan imbalan

	Pembayaran penuh (100%)	Pembayaran sebagian (50%)	Tanpa pembayaran (0%)
Pembukaan hutan (hektar)	≤ 2,2 ha	≤ 4,4ha	≥ 4,4 ha

Luas hutan desa: 1.070 hektar
Luas blok lindung: 654 hektar
Dana PES per tahun: Rp 100,000,000 (seratus juta rupiah)

Tabel 2. Jadwal laporan monitoring dan pembayaran*

Waktu	Pembayaran penuh (100%)	Pembayaran sebagian (50%)	Tanpa pembayaran (0%)
01 April 2014	Rp50.000.000	Rp25.000.000	0
01 November 2014	Rp50.000.000	Rp25.000.000	0
Total	Rp100.000.000		

* Dalam hal dana tidak dibayarkan pada periode waktu tertentu, CFES dan LDPHD dapat menyepakati perpanjangan jangka waktu kesepakatan untuk melaksanakan upaya-upaya perbaikan.

Lampiran 2. Tata cara monitoring

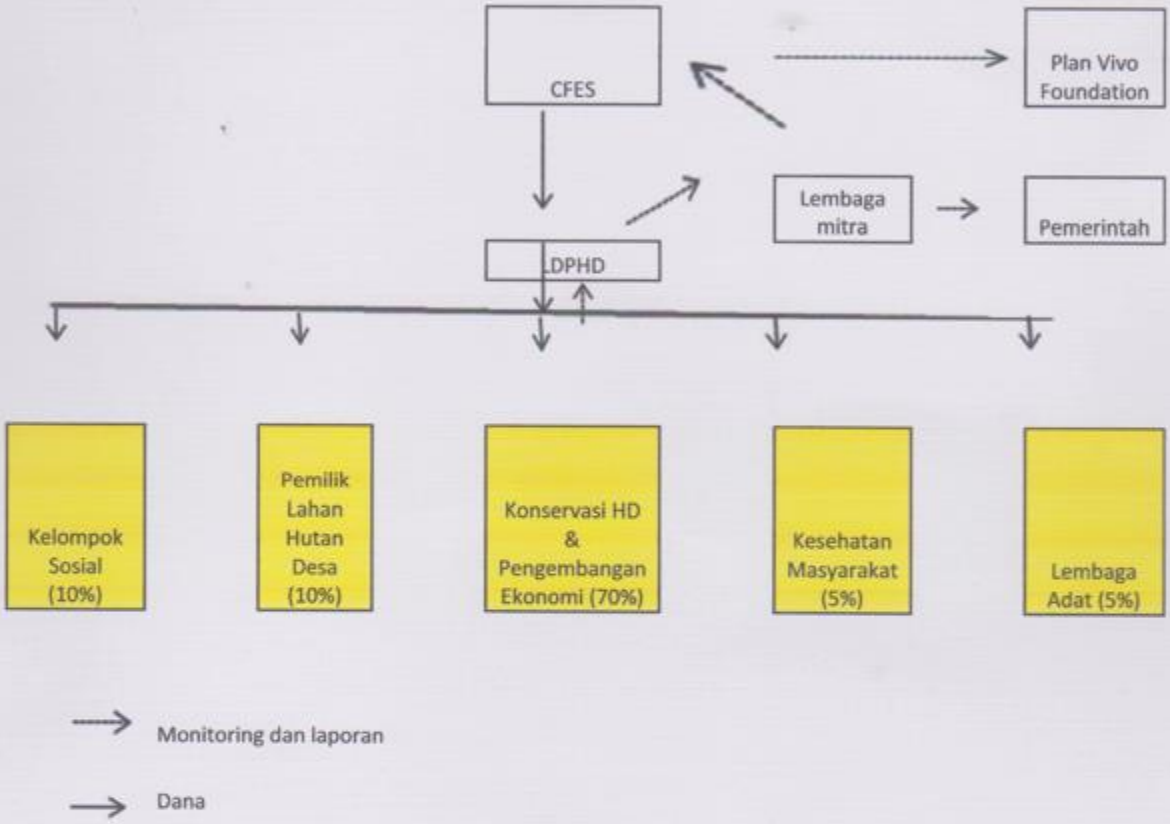
1) Hasil monitoring atas perubahan tutupan hutan dan keberadaan pepohonan di dalamnya menjadi acuan untuk mengukur keberhasilan upaya pencegahan deforestasi dan degradasi hutan.
2) Deforestasi diukur dari luas (hektar) hutan yang terbuka.
3) Degradasi hutan diukur dari jumlah pohon yang ditebang. (Penebangan 53 batang pohon berdimater $\geq$ 30 cm setara dengan 1 hektar pembukaan hutan.)
4) Pembayaran imbal jasa ekosistem dilakukan berdasarkan pencapaian target indikator yang tertera pada Lampiran 1.

Anggota kelompok monitoring dan patroli:

1) Melaksanakan monitoring dan patroli secara rutin (sekurang-kurangnya satu kali setiap bulan) untuk mengetahui lokasi pembukaan hutan dan/atau penebangan pohon.
2) Mencatat informasi lain terkait ancaman terhadap kelestarian ekosistem hutan.
3) Melakukan pengambilan data *way points* menggunakan GPS pada sekeliling lokasi pembukaan hutan dan di atas tunggul pohon-pohon yang ditebang.
4) Mengumpulkan informasi tambahan (pelaku/pemilik, jenis alat yang digunakan, jenis tanaman yg ditanam, dll.) dan mengambil foto.
5) Setiap kuartal menyiapkan laporan berisi rangkuman data, hasil pengamatan, dan foto untuk diserahkan kepada LDPHD.
6) Laporan monitoring akan diverifikasi oleh lembaga mitra dan selanjutnya disampaikan kepada CFES.
7) Laporan monitoring menjadi acuan pembayaran dana imbalan, yang besarnya mengacu pada pencapaian target indikator yang tertera pada Lampiran 1.

Lampiran 3. Pembagian dana imbalan

Gambar 1. Skema pembagian dana dan pelaporan



Benefit sharing and PES funds use agreement between Manjau LDPHD and activity groups (full translation upon request)

Kesepakatan
Pembagian dan Penggunaan Dana Imbal Jasa Ekosistem Hutan antara LDPHD Manjau dan kelompok-kelompok Kegiatan

1) Pembukaan

Kesepakatan ini merupakan acuan dalam pembagian dan penggunaan dana imbal jasa ekosistem hutan antara LDPHD Manjau dengan kelompok-kelompok kegiatan. LDPHD Manjau adalah lembaga Desa yang telah mendapatkan ijin Penunjukan areal kawasan Hutan Desa dari Menteri Kehutanan Republik Indonesia Dengan No SK 493/Menhut-II/2011 dengan luas areal 1.070 hektar yang terletak di Desa Laman Satong kecamatan Matan Hilir Utara Kabupaten Ketapang Provinsi Kalimantan Barat. Jumlah dan peran kelompok-kelompok kegiatan tertera pada Tabel 1.

Kesepakatan ini berisi syarat dan ketentuan dalam pembagian dana untuk pelaksanaan rencana-rencana kegiatan sebagai bagian dari Kesepakatan Imbal Jasa Ekosistem Hutan antara CFES (Community Forest Ecosystem Services) dan LDPHD Manjau. Besaran/bagian dana imbal jasa ekosistem yang dibayarkan LDPHD kepada kelompok-kelompok kegiatan tertera pada Gambar 2.

2) Pembagian dana imbalan

Kesepakatan ini berlaku selama 1 (satu Kesepakatan ini berlaku selama 1 (satu) tahun mulai 1 April 2014 hingga 31 Maret 2015.

LDPHD Manjau sepakat:

1) Mengelola kegiatan-kegiatan perlindungan dan pengelolaan hutan desa (Tabel 1).
2) Atas nama masyarakat desa dan kelompok-kelompok kegiatan menerima dana imbal jasa ekosistem dari CFES.
3) Mendorong sebanyak mungkin warga masyarakat berperan aktif dalam kelompok-kelompok kegiatan. Memastikan warga miskin dan perempuan menerima manfaat dana imbal jasa ekosistem.
4) Meminta/menerima ajuan rencana dan laporan kegiatan dan penggunaan dana dari kelompok-kelompok kegaitan dan warga.
5) Menunjuk tim bendahara yang mencatat seluruh penerimaan dan pengeluaran dana dari rekening bank khusus dana imbal jasa ekosistem LDPHD. Tim bendahara mencatat seluruh transaksi dan menyimpan bukti-bukti pembelian barang dan pembayaran.
6) Melakukan pembayaran dana imbal jasa ekosistem kepada kelompok-kelompok kegiatan, setelah memeriksa laporan kegiatan dan penggunaan dana yang diberikan sebelumnya.
7) Memastikan tidak terjadi penyimpangan penggunaan dana imbal jasa ekosistem. Mencegah pihak tertentu mengambil keuntungan pribadi atas dana imbal jasa ekosistem.
8) Secara berkala setiap 6 Bulan Sekali menyiapkan laporan pelaksanaan kegiatan dan penggunaan dana imbal jasa ekosistem untuk disampaikan kepada lembaga mitra dan CFES.

1

Kelompok-kelompok kegiatan sepakat:

1) Mematuhi kesepakatan pembagian dana imbal jasa ekosistem yang tertera pada Gambar 1.
2) Mengajukan rencana kegiatan dan dana kepada LDPHD, mengacu pada rencana pengelolaan hutan desa, untuk selanjutnya menerima bagian dana imbal jasa ekosistem. Usulan berisi uraian kegiatan, waktu pelaksanaan, dan kebutuhan dana yang terkait langsung dengan pelaksanaan rencana kegiatan.
3) Melaksanakan kegiatan sesuai rencana yang disetujui/disepakati.
4) Meminta bendahara kelompok kegiatan untuk secara berkala setiap 3 Bulan Sekali melaporkan keadaan keuangan kepada seluruh anggota kelompok dan LDPHD.
5) Mendorong sebanyak mungkin warga berperan aktif dalam kelompok kegiatan. Melibatkan seluruh anggota kelompok dalam pengambilan keputusan. Memastikan warga miskin dan perempunan menerima manfaat dana imbal jasa ekosistem.
6) Memastikan tidak terjadi penyimpangan penggunaan dana kegiatan. Mencegah pihak tertentu mengambil keuntungan pribadi atas dana kegiatan.

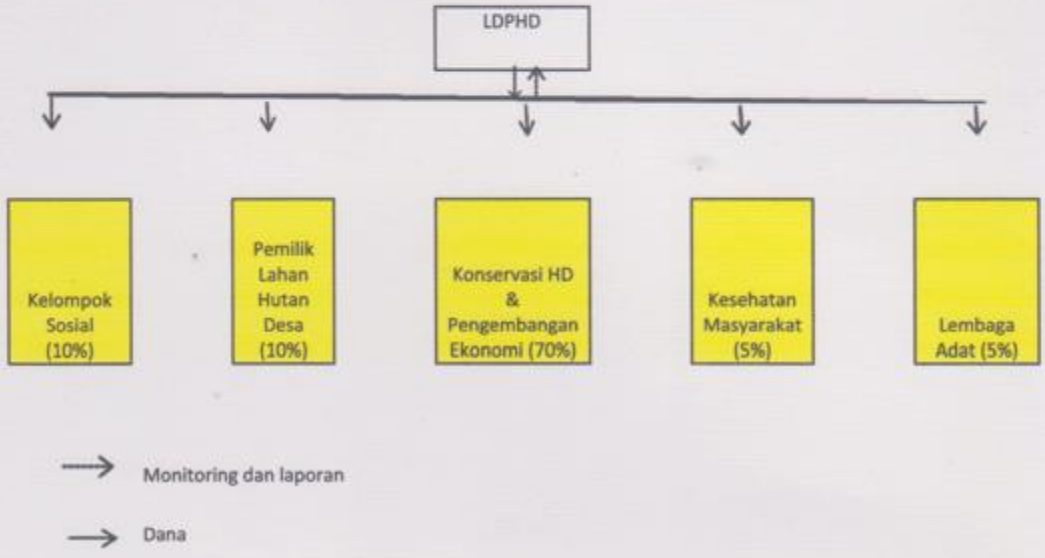
3) Kelompok-kelompok kegiatan

Pada saat kesepakatan ini ditandatangani terdapat empat kelompok kegiatan yang berperan aktif dalam perlindungan dan pengelolaan hutan desa Manjau. Dalam jangka waktu kesepakatan ini, jumlah kelompok-kelompok kegiatan tidak bertambah. Setelahnya, dapat dibentuk kelompok kegiatan baru berdasarkan hasil musyawarah antara LDPHD, kelompok-kelompok kegiatan, dan warga.

Alokasi pembagian dana imbal jasa ekosistem bagi kelompok-kelompok kegiatan tertuang dalam Gambar 1. Peran dan tanggungjawab masing-masing kelompok kegiatan tertera pada Tabel 1.

Kelompok-kelompok kegiatan hutan desa Manjau meliputi:
1) LDPHD Manjau
2) Konservasi Hutan Desa dan Pengembangan Ekonomi
3) Kelompok Bantuan Sosial
4) Kelompok Tani Pemilik lahan
5) Kelompok Pengurus Adat

Gambar 1. Pembagian dana imbal jasa ekosistem



Tabel 1. Lingkup dan peran kelompok kegiatan

No.	Nama kelompok kegiatan	Peran dan tanggungjawab	
1	LDPHD	1	Menandatangani kesepakatan imbal jasa ekosistem dengan CFES
		2	Menerima dana imbal jasa ekosistem dan menyimpannya pada rekening bank khusus
		3	Menerima usulan dan memeriksa laporan dari kelompok-kelompok kegiatan
		4	Menyampaikan laporan berkala kepada lembaga mitra dan CFES
		5	LDPHD bertanggung jawab mengelola kegiatan Hutan Desa dan pengembangan Ekonomi masyarakat
2	Kelompok Konservasi HD dan Pengembangan Ekonomi Masyarakat		
a.	Tim monitoring dan patroli	1	Memeriksa batas luar hutan desa dan memperbaiki tanda batas yang rusak
		2	Melakukan patroli, monitoring, mencatat, dan memetakan deforestasi (pembukaan hutan) dan degrdadasi hutan (penebangan pohon)
		3	Melakukan pencegahan/penanganan atas pembukaan hutan dan penebangan pohon tidak terkendali
		4	Memonitor dan mencegah/menangani ancaman lain (perburuan, kebakaran, konflik satwa) terhadap kelestarian hutan dan keanekaragaman hayati
		5	Memelihara peralatan/perlengkapan monitoring dan patrol
b.	Kegiatan Perempuan	1	Melaksanakan kegiatan pengembangan perekonomian yang melibatkan Ibu-ibu rumah tangga
		2	Secara berkala melaporkan kegiatan kepada LDPHD
c.	Pembibitan dan Rehabilitasi Lahan	1	Merehabilitasi lahan pada zona rehabilitasi
		2	Membuat Desain kelola kawasan dan menentukan jenis pohon dan lokasi penenaman
		3	Secara berkala melaporkan hasil penanaman pada zona rehabilitasi
3	Kelompok Bantuan Sosial	1	Orang Jompo dengan Kriteria umur untuk menerima bantuan 70 tahun keatas
		2	Penderita Cacat Fisik: Buta, Lumpuh dan / atau Tidak bisa Bekerja karena cacat fisik tersebut

		3	Anak Yatim piatu yang tidak bisa mempunyai penghasilan sendiri , Anak Usia sampai dengan SMP yang belum Bekerja.
		4	Bedah Rumah : Prioritas persentase dengan berdasarkan skala Prioritas yang dibutuhkan (hanya bagian tertentu saja)
		5	Fasilitas rumah Ibadah: bantuan yang diberikan berupa fasilitas tertentu yang diperlukan (Bukan Berupa Bangunan)
4	Kelompok Tani Pemilik Lahan	1	Kelompok tani Berembuk menentukan keperluan bibit, sarana Produksi pertanian
		2	Distribusi dari bibit dan penggunaan sarana produksi pertanian diatur oleh kelompok Tani dengan cara berembuk
		3	Kelompok tani berkewajiban menjaga Aset Kelompok tani seperti alat dan lainnya
		4	Membuat Laporan secara berkala kepada LDPHD tentang perkembangan Kelompok tani
5	Pelestarian Adat Budaya	1	Rembuk Adat untuk penyelesaian masalah Hutan Desa
		2	Penegakan Hukum Adat terhadap pelanggaran Hutan Desa
		3	Melaporkan Dokumen kegiatan Kepada LDPHD Secara Berkala
6	Kesehatan Masyarakat		Masyarakat Desa Laman Satong yang sakit berat dan di rujuk Ke Rumah Sakit dengan Besaran bantuan Dana Rp 200.000,-
			Melaporkan distribusi dana kepada LDPHD secara Berkala

Para pihak yang menandatangani:

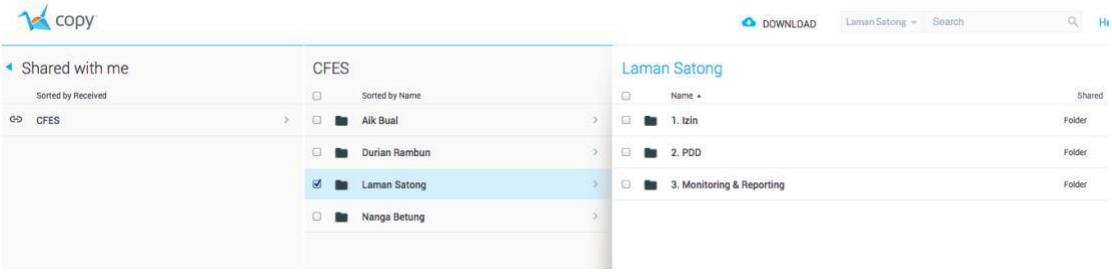
LDPHD Manjau	Pemilik Lahan Hutan Desa	Konservasi HD dan Pengembangan Ekonomi
		
Yohanes Heriyono Dogol 15 April 2014	Yohanes Terang 15 April 2014	Hendrikus Sara 15 April 2014
Kesehatan Masyarakat	Lembaga Adat	Kelompok Bantuan Sosial
		
Antonia Sapia 15 April 2014	Timoteus Perikan 15 April 2014	Ramli 15 April 2014

6

Annex 4. Database templates

4.1 Laman Satong Copy filing system

A screenshot of the Laman Satong filing system in Copy. It is divided into 3 main folders (legal and administrative documents, PDD documentation, and a monitoring and reporting folder).



4.2 Patrol authorization template

LEMBAR AUTORISASI PATROLI

NOMOR PATROLI

Tanggal mulai patroli:

Tanggal selesai patroli:

Nama Tim

Sarana Patroli:

Jalan Kaki Sepeda Motor Perahu Lainnya:.....

Tujuan Patroli:

Patroli dan Monitoring Rutin Pemadaman Kebakaran

Daftar Tim patroli

Nama	Asal	Tugas
Total Jumlah Orang		

Ketua Tim Patroli Pemberi Autorisasi

4.3 Patrol and monitoring form

1. **Form Pergerakan Patroli dan Monitoring**

Lokasi dan Nomor Patroli: | Hari ke | dari | hari patroli

Tanggal: | Pengguna GPS: | ID GPS:

No. Urut	No. GPS	X	Y	Waktu	Observasi	Tipe Observasi	Jenis	Jumlah	Perilaku	ID Foto

Observasi	Tipe Observasi	Jenis	Perilaku
Posisi	Mulai, Istirahat, Melanjutkan, Kamp, Berpencar, Berkumpul, Selesai		
Pengambilan SDA	Pembalakan, Perburuan/penjarahan, Pertambangan		
Kerusakan Habitat	Perambahan hutan, Kebakaran, Kanal		
Burung	Terlihat, Suara, Sarang	elang, Burung hantu, Rangkong, Tiong, Kuntul, Ruai, Sempidan, Bangau, Pitta, Murai, Kucak@ucakan, Kucak Ijo, Punai, Pelatuk, Belibis	diam/istirahat, Berjemur, Bersuara, Menelisik, Terbang, Makan, Minum, Membuat Sarang, Ikawin, Berkelahi
Mamalia	Terlihat, Suara, Kotoran, Jejak, Cakaran/tusukan, Bekas Makanan, Sarang, Kubangan	rusa, Kijang, Kancil, Pelanduk, Landak, Trenggiling, Monyet, Bekantan, kelampiau, Kelelawar, Kucing, Musang, Kukang, Tarsius, Beruang, Kubung, tupai, Berang@erang,	diam/istirahat, Berjemur, Bersuara, Menelisik, Berjalan, Lari, terbang, Makan, Minum, Membuat Sarang, Ikawin, Berkelahi
Herpetofauna	Terlihat	kura@ura, Iiabi@bi, Buaya, Cicak/draco, Tokek, Ular, Katak/kodok, Biawak, bunglon	diam/istirahat, Berjemur, Bersuara, Berjalan, Lari, Makan, Minum, Membuat Sarang, Ikawin, Berkelahi
Tumbuhan	Terlihat	kantong Semar, Anggrek, Pandan, Rotan, Pakis, Bambu, Nipah, Kulit Kayu, enau, Madu	berbunga, Berbuah
Orangutan	Terlihat, Sarang		

2. **Form Pengambilan SDA**

Lokasi dan Nomor Patroli :

Tanggal :
Waktu :
No. Urut :
No. GPS :

		Pembalakan	ditemukan	disita	dihancurkan	Perburuan/penjarahan	ditemukan/status	disita	dimusnahkan	dilepaskan	Alat dan Transportasi	Status : baik/tidak	ditemukan	disita	dimusnahkan
X :		Jenis temuan :				Jenis satwa/tumbuhan :					**Alat**				
Y :		☐ Pohon tumbang/rebah													
Pelaku		☐ Tunggul/tunggak													
Ditemukan/tidak		☐ Kayu gergajian/olahan				Kondisi : Hidup/mati					Anjing				
Nama :		☐ Kayu gelondongan				Jumlah : ..... Individu/Kg/ikat/batang					Burung Pemikat				
Sendiri/kelompok						Bagian tubuh:					*chain saw*				
Jumlah kelompok :		Diameter (cm) :				Temuan lama/baru					Jala kabut				
Jenis Kelamin :		P x L x T (cm) :									Kampak				
Asal :		Tinggi (cm) :				**Pertambangan**					Jerat : rotan/tali/kawat				
Umur :		Jumlah : ..... keping/batang/kubik				Kondisi : aktif/tidak					Pancing				
Tujuan :						Jenis : emas/pasir/zirkon/bauksit/besi					Pukat				
Tindakan	Ket	Temuan lama/baru									Racun				
Dibiarkan		Jenis Kayu :				Metode : modern/semi/tradisional					Senjata api/rakitan				
Peringatan lisan		**Jenis infrastruktur : Baik/tidak**				Luas : .....hektar					Tombak				
Pernyataan tertulis		☐ Kuda-kuda				**Transportasi**					Tali/sling				
BAP		☐ Rintisan				sepeda					Dulang				
Keterangan		☐ Jalan sepeda				motor					Dompeng				
		☐ Sungai				sampan					Cangkul				
		☐ Anak sungai				mobil					Golok				
		☐ laut				speed boat					Sawmill mini				
		☐ Kanal				jalan kaki									
		Pondok kerja				rakit									
		Pembalakan/perburuan/pertambangan				perahu									
		Dipakai/tidak dipakai													
		Kapasitas : .....orang/.....pondok													

3. Form Kerusakan Habitat

Lokasi dan Nomor Patroli :							
Tanggal :	Kebakaran Hutan	Alat dan Transportasi	Status : baik/tidak	ditemukan	disita	dimusnahkan
Waktu :						
No. Urut :						
No. GPS :						
X :	Tipe kebakaran	Alat				
Y :	☐ Atas/tajuk	alat berat				
Pelaku	☐ Permukaan	bensin				
Ditemukan/tidak	☐ Bawah/gambut	cangkul				
Nama :	**Kondisi**	Golok				
Sendiri/kelompok	☐ Sedang terbakar	chain saw				
Jumlah kelompok :	☐ Sudah terbakar	kampak				
Jenis Kelamin :	**Penyebab**	korek api				
Asal :	Diketahui : alami/sengaja/tidak	**Transportasi**				
Umur :	Tidak diketahui	sepeda				
Tujuan :	**Peruntukan :** sawah/ladang/kebun/tambang	motor				
Tindakan / Ket	**Luas kebakaran :**……hektar	mobil				
Dibiarkan		rakit				
Peringatan lisan	**Jenis Infrastruktur** : Baik/tidak	perahu				
Pernyataan tertulis	☐ Kuda-kuda	sepeedboat				
BAP	☐ Rintisan	tongkang				
	☐ Jalan sepeda					
Perambahan Hutan	☐ Sungai	**Pondok kerja**				
Temuan lama/baru	☐ Anak sungai	Perambahan/kebakaran				
Metode : Tebas/bakar/mesin	☐ Laut	Dipakai/tidak dipakai				
Proses : Sedang /sudah dikerjakan	☐ Kanal	Kapasitas : ……orang/……pondok				
Peruntukan : Sawah/ladang/ kebun/tambang/…… : …… hektar						

4. Form Temuan Orangutan

Lokasi dan Nomor Patroli :										
Tanggal :	**Pertemuan Langsung**		**Sarang**						**ID Foto**	
Waktu :	Jenis kelamin	jantan/betina (ada/tdk ada anak)	Kelas :	A	B	C	D	E		
No. Urut :	Usia	dewasa/remaja/anak	Tinggi sarang :							
No. GPS :	Jumlah		Posisi :	1	2	3	4	5		
X :	Aktifitas	makan, bergerak, membangun sarang, kawin, istirahat	Jumlah :							
Y :			Jenis pohon :							
Keterangan			Temuan lama/baru							
			Jarak pegamat ke sarang							

Lokasi dan Nomor Patroli :										
Tanggal :	**Pertemuan Langsung**		**Sarang**						**ID Foto**	
Waktu :	Jenis kelamin	jantan/betina (ada/tdk ada anak)	Kelas :	A	B	C	D	E		
No. Urut :	Usia	dewasa/remaja/anak	Tinggi sarang :							
No. GPS :	Jumlah		Posisi :	1	2	3	4	5		
X :	Aktifitas	makan, bergerak, membangun sarang, kawin, istirahat	Jumlah :							
Y :			Jenis pohon :							
Keterangan			Temuan lama/baru							
			Jarak pegamat ke sarang							

A. POSISI SARANG

1. cabang pohon utama
2. cabang dahan
3. puncak ujung daun
4. ujung dahan antar pohon
5. ujung cabang

B. KELAS SARANG

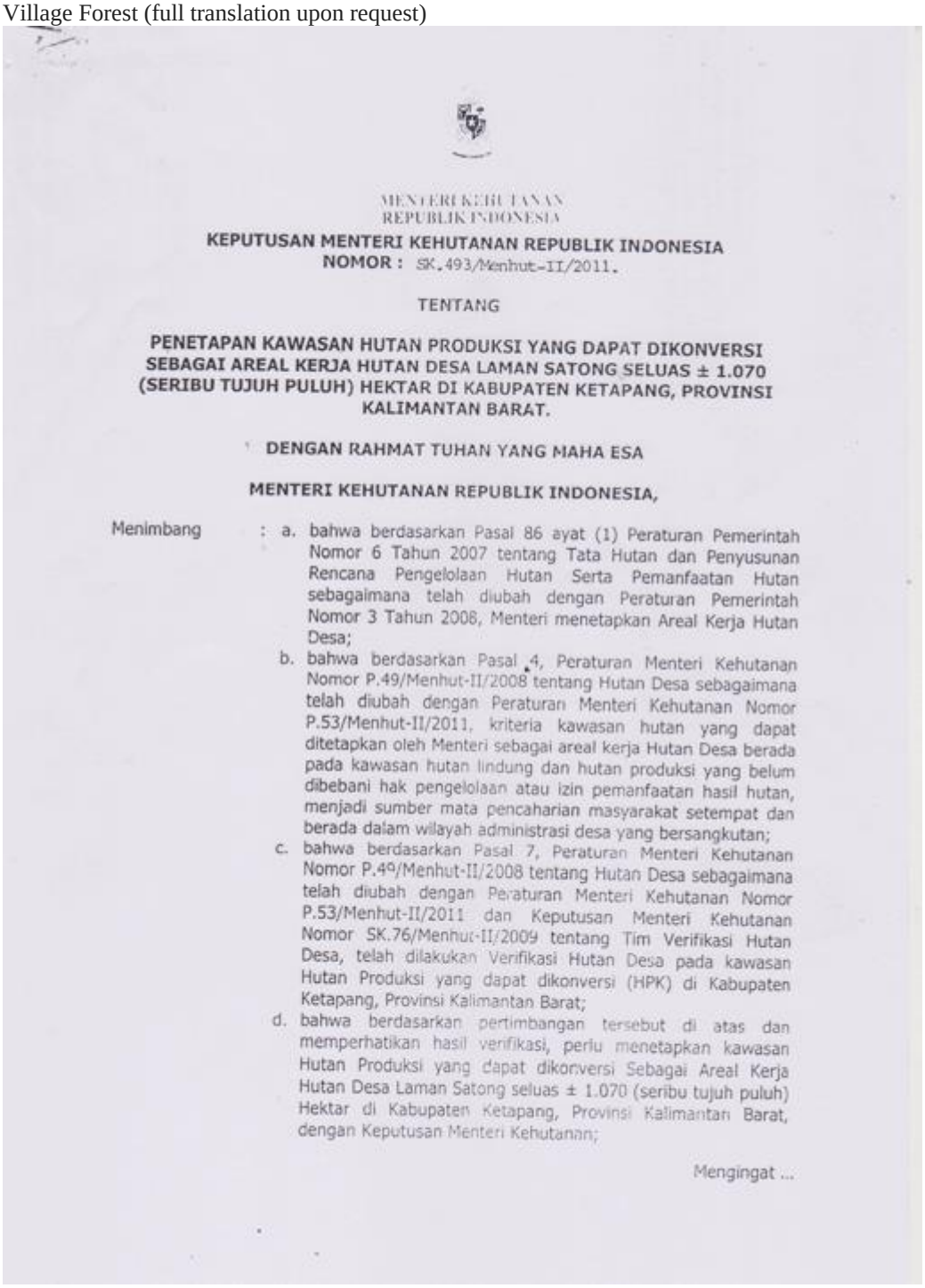
A. Sarang Baru yang Masih lutuh dan hijau
B. Sarang baru yang sudah menguning
C. Sarang yang sudah menghitam
D. Sarang yang sebagian daunya berguguran
E. Sarang yang tinggal ranting & anting kayu

Annex 5. Example forest management plans/plan vivos

5.1 3D map of Laman Satong village forest divided into strictly protected zone (everything above the red line) and sustainable use zone (everything above the yellow line and below the red line)

Annex 6. Permits and legal documentation

6.1 Decree from the Ministry of Forestry of the Republic of Indonesia designating Laman Satong as a Village Forest (full translation upon request)



MENTERI KEHUTANAN
REPUBLIK INDONESIA

KEPUTUSAN MENTERI KEHUTANAN REPUBLIK INDONESIA
NOMOR : SK.493/Menhut-II/2011.

TENTANG

PENETAPAN KAWASAN HUTAN PRODUKSI YANG DAPAT DIKONVERSI SEBAGAI AREAL KERJA HUTAN DESA LAMAN SATONG SELUAS ± 1.070 (SERIBU TUJUH PULUH) HEKTAR DI KABUPATEN KETAPANG, PROVINSI KALIMANTAN BARAT.

DENGAN RAHMAT TUHAN YANG MAHA ESA

MENTERI KEHUTANAN REPUBLIK INDONESIA,

Menimbang : a. bahwa berdasarkan Pasal 86 ayat (1) Peraturan Pemerintah Nomor 6 Tahun 2007 tentang Tata Hutan dan Penyusunan Rencana Pengelolaan Hutan Serta Pemanfaatan Hutan sebagaimana telah diubah dengan Peraturan Pemerintah Nomor 3 Tahun 2008, Menteri menetapkan Areal Kerja Hutan Desa;

b. bahwa berdasarkan Pasal 4, Peraturan Menteri Kehutanan Nomor P.49/Menhut-II/2008 tentang Hutan Desa sebagaimana telah diubah dengan Peraturan Menteri Kehutanan Nomor P.53/Menhut-II/2011, kriteria kawasan hutan yang dapat ditetapkan oleh Menteri sebagai areal kerja Hutan Desa berada pada kawasan hutan lindung dan hutan produksi yang belum dibebani hak pengelolaan atau izin pemanfaatan hasil hutan, menjadi sumber mata pencaharian masyarakat setempat dan berada dalam wilayah administrasi desa yang bersangkutan;

c. bahwa berdasarkan Pasal 7, Peraturan Menteri Kehutanan Nomor P.49/Menhut-II/2008 tentang Hutan Desa sebagaimana telah diubah dengan Peraturan Menteri Kehutanan Nomor P.53/Menhut-II/2011 dan Keputusan Menteri Kehutanan Nomor SK.76/Menhut-II/2009 tentang Tim Verifikasi Hutan Desa, telah dilakukan Verifikasi Hutan Desa pada kawasan Hutan Produksi yang dapat dikonversi (HPK) di Kabupaten Ketapang, Provinsi Kalimantan Barat;

d. bahwa berdasarkan pertimbangan tersebut di atas dan memperhatikan hasil verifikasi, perlu menetapkan kawasan Hutan Produksi yang dapat dikonversi Sebagai Areal Kerja Hutan Desa Laman Satong seluas ± 1.070 (seribu tujuh puluh) Hektar di Kabupaten Ketapang, Provinsi Kalimantan Barat, dengan Keputusan Menteri Kehutanan;

Mengingat ...

Mengingat :

1. Undang-Undang Nomor 5 Tahun 1960 tentang Peraturan Dasar Pokok-pokok Agraria;
2. Undang-Undang Nomor 5 Tahun 1990 tentang Konservasi Sumber Daya Alam Hayati dan Ekosistemnya;
3. Undang-Undang Nomor 41 Tahun 1999 tentang Kehutanan sebagaimana telah diubah dengan Undang-Undang Nomor 19 Tahun 2004;
4. Undang-Undang Nomor 32 Tahun 2004 tentang Pemerintahan Daerah sebagaimana telah diubah dengan Undang-Undang Nomor 12 Tahun 2008;
5. Undang-Undang Nomor 26 Tahun 2007 tentang Penataan Ruang;
6. Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup;
7. Peraturan Pemerintah Nomor 6 Tahun 2007 tentang Tata Hutan dan Penyusunan Rencana Pengelolaan Hutan, serta Pemanfaatan Hutan sebagaimana telah diubah dengan Peraturan Pemerintah Nomor 3 Tahun 2008;
8. Peraturan Pemerintah Nomor 38 Tahun 2007 tentang Pembagian Urusan Pemerintahan antara Pemerintah, Pemerintahan Daerah Provinsi dan Pemerintahan Daerah Kabupaten/Kota;
9. Peraturan Pemerintah Nomor 76 Tahun 2008 tentang Rehabilitasi dan Reklamasi Hutan;
10. Peraturan Presiden Nomor 47 Tahun 2009 tentang Pembentukan dan Organisasi Kementerian Negara;
11. Peraturan Presiden Nomor 24 Tahun 2010 tentang Kedudukan, Tugas dan Fungsi Kementerian Negara serta Susunan Organisasi, Tugas dan Fungsi Eselon I Kementerian Negara;
12. Keputusan Presiden Nomor 84/P Tahun 2009 tentang Pembentukan Kabinet Indonesia Bersatu II;
13. Peraturan Menteri Kehutanan Nomor P.49/Menhut-II/2008 tentang Hutan Desa sebagaimana telah diubah dengan Peraturan Menteri Kehutanan Nomor P.53/Menhut-II/2011;
14. Peraturan Menteri Kehutanan Nomor P.40/Menhut-II/2010 tentang Organisasi dan Tata Kerja Kementerian Kehutanan;

Memperhatikan :

1. Surat Bupati Ketapang Nomor 522/1988/Dkh-PPH tanggal 19 Juli 2010 perihal Verifikasi dan Usulan Penetapan Areal Kerja Hutan Desa;
2. Berita Acara Hasil Verifikasi Usulan Penetapan Areal Kerja Hutan Desa Laman Satong Nomor BA.343/BPS-2/2010 tanggal 6 November 2010;

3. Surat ...

3. Surat Direktur Jenderal Planologi Kehutanan Nomor S.1088/VII-WP3H/2010 tanggal 31 Desember 2010 perihal Penyampaian Peta Areal Kerja Hutan Desa di Kabupaten Ketapang Provinsi Kalimantan Barat.

M E M U T U S K A N :

Menetapkan : **KEPUTUSAN MENTERI KEHUTANAN TENTANG PENETAPAN KAWASAN HUTAN PRODUKSI YANG DAPAT DIKONVERSI SEBAGAI AREAL KERJA HUTAN DESA LAMAN SATONG SELUAS ± 1.070 (SERIBU TUJUH PULUH) HEKTAR DI KABUPATEN KETAPANG, PROVINSI KALIMANTAN BARAT.**

KESATU : Kawasan Hutan Produksi yang dapat dikonversi seluas ± 1.070 (seribu tujuh puluh) hektar di wilayah administrasi Desa Laman Satong, Kecamatan Matan Hilir Utara, Kabupaten Ketapang, Provinsi Kalimantan Barat, ditetapkan sebagai Areal Kerja Hutan Desa.

KEDUA : Letak dan batas Areal Kerja Hutan Desa sebagaimana dimaksud pada Amar KESATU adalah sebagaimana tergambar pada lampiran Keputusan Menteri ini;

KETIGA : Penetapan areal kerja Hutan Desa sebagaimana dimaksud pada Amar KESATU tidak mengubah status dan fungsi kawasan sebagai Hutan Produksi yang dapat dikonversi (HPK).

KEEMPAT : Setelah Penetapan Areal Kerja Hutan Desa, kawasan yang berfungsi lindung harus dipertahankan sebagai daerah resapan air, sebagai sumber benih dan pelindung asset desa serta melakukan pengamanan areal kerja Hutan Desa dari perambahan dan perladangan berpindah.

KELIMA : Penetapan Areal Kerja Hutan Desa sebagaimana dimaksud pada Amar KESATU digunakan sebagai dasar pemberian Hak Pengelolaan Hutan Desa oleh Gubernur kepada Lembaga Desa sesuai dengan ketentuan Peraturan Perundang-undangan.

KEENAM : Dalam pemberian Hak Pengelolaan Hutan Desa sebagaimana dimaksud pada Amar KELIMA, Gubernur Kalimantan Barat memperhatikan kesiapan Lembaga Desa calon penerima Hak Pengelolaan Hutan Desa.

KETUJUH : Lembaga Desa yang telah mendapatkan Hak Pengelolaan Hutan Desa dari Gubernur Kalimantan Barat sebagaimana dimaksud pada Amar KELIMA wajib menyusun Rencana Kerja Hutan Desa sesuai ketentuan Peraturan Menteri Kehutanan Nomor P.49/Menhut-II/2008 tentang Hutan Desa sebagaimana telah diubah dengan Peraturan Menteri Kehutanan Nomor P.53/Menhut-II/2011, dan petunjuk pelaksanaannya.

KEDELAPAN ...

KEDELAPAN : Dalam penyelenggaraan pengelolaan hutan desa, Gubernur Kalimantan Barat berkewajiban melakukan sosialisasi, fasilitasi, bimbingan dan pembinaan kepada lembaga desa sesuai ketentuan Peraturan Menteri Kehutanan Nomor P.49/Menhut-II/2008 tentang Hutan Desa sebagaimana telah diubah dengan Peraturan Menteri Kehutanan Nomor P.53/Menhut-II/2011 dan petunjuk pelaksanaannya;

KESEMBILAN : Keputusan ini mulai berlaku pada tanggal ditetapkan, dan apabila dalam jangka waktu 2 (dua) tahun sejak diterbitkan Keputusan Menteri ini tidak ada Pemberian Hak Pengelolaan Hutan Desa, maka Keputusan Menteri ini batal dengan sendirinya.

Ditetapkan di Jakarta
Pada tanggal 24 Agustus 2011
MENTERI KEHUTANAN
REPUBLIK INDONESIA,

TTD.

ZULKIFLI HASAN

Salinan sesuai dengan aslinya
Kepala Biro Hukum dan Organisasi,

Krisna Rya, SH, MH.
NIP. 19590730 199003 1 001

Salinan Keputusan ini disampaikan kepada :
1. Menteri Dalam Negeri.
2. Menteri Pertanian.
3. Menteri Koperasi dan Usaha Kecil Menengah.
4. Menteri Perindustrian.
5. Menteri Lingkungan Hidup.
6. Kepala Badan Pertanahan Nasional.
7. Pejabat Eselon I lingkup Kementerian Kehutanan.
8. Gubernur Kalimantan Barat.
9. Bupati Ketapang.
10. Kepala Pusat Pengendalian Pembangunan Kehutanan Regional III.
11. Kepala Balai Pengelolaan Daerah Aliran Sungai Kapuas.
12. Kepala Balai Pemantapan Kawasan Hutan Wilayah III Pontianak.

Annex 7. Evidence of community participation

7.1 Photographs/videos of the planning processes with communities (PV requirement 4.10)

Women's group agricultural training 24 September 2013

Participatory management planning for Laman Satong village forest, 2013

Traditional dance by customary leaders to celebrate seed planting in 2013

Women's agricultural training, September 2013

Forest patrol team, 2013