

Jakarta, November 6th 2017

PUBLIC SUMMARY REPORT

High Conservation Value Assessment

PT AGRIPPLUS

Indonesia
West Kalimantan Province
Ketapang District

Report Title	Public Summary Report of High Conservation Value Assessment, PT Agriplus, Indonesia, West Kalimantan Province, Ketapang District
Date of Report	November 6 th , 2017
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Organization Commissioning HCV Assessment	PT Agriplus Jln. Agus Salim Gg. Cucak Rowo RT 16 RW 08 Kelurahan Sampit, Delta Pawan Sub-District, Ketapang District, West Kalimantan Province
Location of Assessment	Belaban and Riam Batu Gading Villages (Marau Sub-District), and Tanggerang Village (Jelai Hulu Sub-District), Ketapang District, West Kalimantan Province, Indonesia
Assessment Period	• Pre-assessment: 5 July – 2 August 2017 • Field Assessment: 9-15 August 2017
Size of Assessment Area	Total ± 6.100 hectares (based on Location Permit)
HCVMA allocation area	1.974,5 hectares (HCV area size: 1.357,3 ha)
Land Use Plan	Oil palm plantation
Certification Scheme	RSPO <i>New Planting Procedure</i>

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LIST OF ACRONYMS

AOI	Area of Interest (wider landscape)
BGA	Bumitama Gunajaya Agro (oil palm company)
BKSDA	Balai Konservasi Sumber Daya Alam (Natural Resource Conservation Body)
BLHD	Balai Lingkungan Hidup Daerah (Regional Environmental Agency)
CITES	Convention on International Trade in Endangered Species of wild fauna and flora
DAS	Daerah Aliran Sungai
DEM	Digital Elevation Model
EBA	Endemic Bird Area
GIS	Geographic Information System
GPS	Global Positioning System,
HCV	High Conservation Value
HCVMA	HCV Management Area
HCVRN	High Conservation Value Resource Network
HL	Hutan Lindung (protection forest)
HoB	The Heart of Brunei
IBA	Important Bird Area
IFL	Intact Forest Landscape
IUCN	The International Union for Conservation of Nature and Natural Resources
IUP	Izin Usaha Perkebunan (Plantation Business Permit)
KEE	Kawasan Ekosistem Esensial (Essential Ecosystem Area)
KHG	Kesatuan Hidrologi Gambut (Peat Hydrological Unity)
LPG	Liquid Petroleum Gas
PIPIB	Peta Indikatif Penundaan Pemberian Izin Baru (indicative map on delaying new permits)
PLN	Perusahaan Listrik Negara (State Electricity Company), or Pakalunai Land System
PT AGP	PT Agriplus
RSPO	The Roundtable on Sustainable Palm Oil
RTE	Rare, Threatened or Endangered
TN	Taman Nasional (National Park)
TNC	The Nature Conservancy
UNESCO	The United Nations Educational, Scientific and Cultural Organization
WWF	World Wildlife Fund

1. Introduction and Background

The management of HCVs has become the commitment of most of the palm oil community who are members of the RSPO. The management of HCVs is a sign that the management of oil palm plantations has been carried out in an environmentally friendly manner based on the RSPO Principles and Criteria. In this context, PT Agriplus (hereinafter referred to as PT AGP) has carried out an HCV Assessment, and is committed to the proper maintenance and management of these areas which are located inside the PT AGP oil palm plantation location permit area and which conserve environmental functions, biodiversity values, and socio-cultural values.

The HCV assessments is part of the requirements for meeting RSPO certification, especially criteria 5.2¹ and criterion 7.3² for new plantings. The objectives of the HCV study are:

1. Identify and map the presence of HCV areas
2. Make recommendations for the protection, management and monitoring of HCV as a basis for the preparation of the HCV Management Plan for the HCV area

Carried out in July- November 2017, this HCV assessment involves pre-assessment (5 July-2 August 2017) and assessment phases (9 August-5 November 2017). The main reference used in this study is the Common Guidance for the Identification of High Conservation Values (Brown *et al.*, 2017). Specifically for HCV 3, identify using the 2008 HCV Indonesia Toolkit.

HCV assessment scope includes PT AGP Location Permit concession. Since obtaining a Location Permit in 2006, PT AGP has carried out socialization activities related to the plan to develop oil palm plantations and partnership plantation schemes. As of July 2017, PT AGP has compensated a total area of 4,249.46 ha (GRTT), more than half (2,208.17 ha) was acquired before the company was taken over by the BGA Group. Of these, 927.24 ha have obtained HGU certificates based on the Decree of the Head of BPN No. 49 / HGU / KEM-ATR / BPN / 2015 dated May 20, 2015.

Total area of plantation parts that have already been planted with oil palm per July 2017 is 3,090.87 ha. Most of these locations are situated in Belaban Village (2,614.92 ha) and the rest is in Tanggerang Village (282.39 ha) and Riam Batu Gading Village (12.24 ha). The company's nurseries are established in two locations, i.e. Division 2 (0.58 ha) and Divisi 6 (29.44 ha).

1.1. Description of the Assessment Area

PT AGP is registered as a member of the Roundtable on Sustainable Palm Oil (RSPO) under Bumitama Agri, Ltd. The following is a brief profile of the company:

Company name	: PT Agriplus (PT AGP)
Investment Status	: Domestic Investment
Line of business	: Oil palm plantations and processing
RSPO membership	: RSPO member, under Bumitama Agri, Ltd.
Contact person	: Hidayat Aprilianto Head of Sustainability
Office address	: Jln. Agus Salim Gg. Cucak Rowo RT 16 RW 08 Sampit Village, Delta Pawan District Ketapang Regency, West Kalimantan Province

¹ "The status of rare, threatened or endangered species and other High Conservation Value habitats, if any, that exist in the plantation or that could be affected by plantation or mill management, shall be identified and operations managed to best ensure that they are maintained and/or enhanced."

² "New plantings since November 2005 have not replaced primary forest or any area required to maintain or enhance one or more High Conservation Values."

The PT AGP Location Permit area has a size of $\pm 6,100$ ha. Administratively, the study area is in Belaban and Riam Batu Gading Villages which are included in the Marau District, and the Tangerang Village (Tanjung), Jelai Hulu District, Ketapang Regency, West Kalimantan Province, Indonesia. Based on geographical location, the study area is at coordinates $2^{\circ} 04' 09''$ - $02^{\circ} 04' 8.6''$ latitude and $110^{\circ} 36' 25''$ - $110^{\circ} 42' 38''$ east longitude. Distance from the Capital of Ketapang Regency to the study area ± 45 km and takes about 5 hours by land access. Road conditions are generally paved, except for certain sections that have been severely damaged.

The study area is surrounded by oil palm plantations and protected forests. The boundaries of the study area to the east, west and south are the area of oil palm plantations managed by oil palm plantation companies PT Andes Sawit Mas (Poliplan Group), PT Budidaya Agro Lestari (Minamas Group), and PT Kencana Graha Permai (Sinar Mas Group). Whereas in the north it is bordered by the Gunung Raya Protected Forest Area (**Figure 1**).

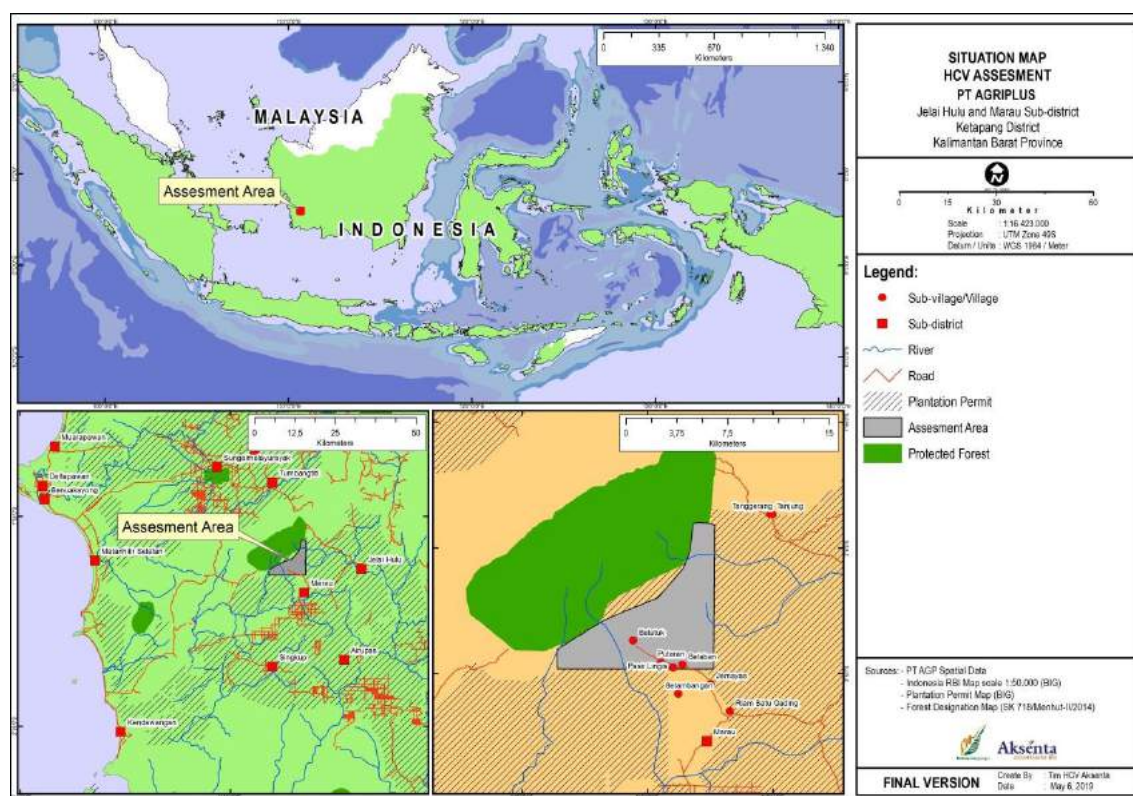


Figure 1. Situation map of assessment area and surrounding

Covering a total area of 6,100 ha, the assessment area has an operational scale that is considered medium and its operational intensity falls under 'medium intensity' category. That is, because some natural ecosystem remnants are still found on hilltops, although only shrubs and thickets dominate the land cover at the time this assessment is carried out. The remaining forest areas that may potentially swerve as habitats to wildlife species are found in three hills, i.e Kalanglampung, Sembelayang and Betung. Other factors that are also taken into account as operational intensity in oil palm plantation development are intensive use of agrochemicals. However, normally riverbanks in this area are still naturally/semi-naturally vegetated, making them functioning as filters against pollutants. Therefore, potential impacts from plantation operation in this area are considered medium.

1.2. HCV Assessment Team

This HCV assessment was carried out by a team from Aksenta (PT Gagas Dinamiga Aksenta). The composition of the assessment team is presented in **Table 1**.

Table 1. HCV Assessment Team in PT Agriplus

Nama	ALS Licence	Institution	Role	Expertise
Nandang Mulyana nandang@aksenta.com	Provisional ALS15037NM	PT Gagas Dinamiga Aksenta	Team Leader. Assessment field: socio-cultural aspects (HCV 5 and 6)	Socio, economic, cultural and environmental aspects. He is an expert of economic valuation and analysis and area planning.
Adhy Widya Setiawan adesahy@gmail.com	N/A	PT Gagas Dinamiga Aksenta	Team Member. Assessment field: biodiversity (HCV 1- 3)	Wildlife survey and management, and ecosystem
Fersely Getsemani Feliggi Salmon getsa@aksenta.com	N/A	PT Gagas Dinamiga Aksenta	Team Member. Assessment field: environmental services (HCV 4)	Hydrology, soil conservation, spatial analysis and remote sensing, and water management system
Zakaria Al-Anshori zakaria.forester@gmail.com	N/A	PT Gagas Dinamiga Aksenta	Team Member. Assessment field: flora and ecosystem	Botany. He has capacity to identify flora species in the field
Aulia Bahadori Mukti aulia@aksenta.com	N/A	PT Gagas Dinamiga Aksenta	Team Member. Assessment field: soil and environmental services	Soil survey in soil suitability assessments for agriculture and plantation, and peat soil conservation assessment
Noor Rakhmat Danumiharja noor@aksenta.com	N/A	PT Gagas Dinamiga Aksenta	Team Member. Assessment field: socio cultural aspects	He is a legal specialist, and forest policy analyst
Ali Akbar Hutzi ali.hutzi@aksenta.com	N/A	PT Gagas Dinamiga Aksenta	Team Member. Assessment field: socio-economic aspects	Socio-economic and cultural, and environmental economic fields
Nurindah Ristiana indah@aksenta.com	N/A	PT Gagas Dinamiga Aksenta	Team Member. Assessment field: GIS and field mapping specialist	Specialist of GIS and field mapping in biodiversity research

2. Timeline and Methods

2.1. Timeline

The HCV assessment includes: (i) pre-assessment (ii) assessment and post-field assessment. Details of the schedule for carrying out this HCV study are presented in **Table 2**.

Table 2. Timeline of HCV Assessment in PT Agriplus

Phase	Objective	Activity	Time
PRE-ASSESSMENT			
Pre-assessment and preparation	- Identify potentials and indications of the presence of HCV attributes or elements - Identify potential HCVAs - Understand better landscape context - Identify conservation issues and potential threats to HCV - Select method, survey design, assessment team, and field activity timeline	Collect initial data and information from the company on plantation development and management status	5 July - 2 August 2017
		Collect initial data and information from secondary sources (report, journal, books, statistic, basemap) and informants	
		Perform data and spatial analyses	
		Field surveys pre-assessment	29 July-2 August 2017
ASSESSMENT			
Opening meeting	- Communicate purpose and objectives of the HCV Assessment - Collect additional data and information on plantation development and management status - Build management unit's understanding on HCV: background, purpose and objective, concept, HCV types, attributes or elements, and identification method - Establish work team (HCV Assessment Team + the management unit's team as the counterpart) and agree upon the work timeline	- Deliver workshop with the company's management unit - Prepare work schedule and allocated supporting facilities and infrastructures to allow good implementation of field survey - Conduct training for the company's management unit	9 August 2017
Participatory mapping	- Clarify potential HCVAs resulted from pre-assessment with relevant stakeholder - Collect additional data/information on the presence of HCV attributes or elements	Deliver workshop with informants from company staff and employees, and community members who have knowledge on and experience with the Assessment Area	9-15 August 2017
Field survey	- Verify the presence of HCV attributes or elements - Identify HCVAs and map indicative HCVA boundaries - Identify threats and potential threats to HCV	- Check land cover in the field - Collect field data through interview with triangulation method	9-15 August 2017
Stakeholder consultation	- Present the HCV findings/identification to other stakeholders (community, local government and NGO) - Obtain input, additional information and clarification on the presence of HCV attributes or elements, and threats or potential threats to HCV - Obtain input and additional information for making recommendation and options for HCV management and monitoring plan.	In direct meeting, invite representatives of key stakeholders in the Assessment Area from local community (community leader, traditional leader, religious leader), local government institution (village government, Village Consultative Board/BPD, sub-district government), relevant district-level government agencies (BKSDA, BLHD, Forest and Plantation Office and Animal Farming Office, and interview with NGOs working around the	15 August 2017

Phase	Objective	Activity	Time
		Assessment Area, i.e. Palung Foundation, Ketapang), and other companies operating around the Assessment Area	
Closing meeting	Present the HCV Assessment's interim output to the Management Unit	- Presentation and discussion - Handover of interim report	16 August 2017
Analysis and reporting	Present the HCV Assessment in written with format and system that comply with scientific principles, but in a coherent and simple manner to allow the management unit, as the main user of the report, to understand	- Data analysis - Spatial analysis - Report preparation - Report finalisation	20 August - 5 November 2017

2.2. Methods and Survey Design

In this HCV Study, the guidelines used are: (i) General Guidelines for the Identification of High Conservation Values (Brown *et al.*, 2013) which have been updated in September 2017, (ii) HCV Assessment Manual (HCVRN, 2014), (iii) General Guidelines for HCV Management and Monitoring (HCVRN, 2014), (iv) Templates for High Conservation Values Assessment Report (HCVRN, 2014), and (v) Templates for Public Summary of Valuation Assessment Reports High Conservation Value (HCV) Assessor Licensing Scheme (ALS), HCV Resource Network (HCVRN, 2014). Specifically for HCV 3, the guidance used is the Indonesian HCV Toolkit (Consortium for Revision of the Indonesian HCV Toolkit, 2008).

2.2.1. Secondary Data

Data and information collected from secondary data consist of maps of the study area and thematic maps according to the field of study and BPS data. Land cover classification was obtained from two data sources, namely Landsat 8 OLI TIRS satellite imagery acquired on 27 February 2017 on path / row 120/061 (www.earthexplorer.com), as well as 2016 land cover maps produced by the Ministry of Forestry and Environment Life. The roads and rivers are obtained from the Rupa Bumi Indonesia map (BIG, 2017).

To assess HCV 1-3, data collected on Kalimantan's biodiversity such as conservation areas obtained from the Ministry of Environment and Forestry, as well as thematic maps published by institutions or international forums such as Intact Forest Landscape (IFL; www.intactforests.org), Ramsar Site (www.ramsar.org), key biodiversity area (KBA partnership; www.keybiodiversityareas.org), and Important Bird Area - Endemic Bird Area (IBA-EBA; www.datazone.birdlife.org). The list of important species refers to the IUCN Red List of Threatened Species (www.iucnredlist.org) which is also a checklist for field surveys. Several field guides for species identification were also used during the field survey.

To assess HCV 4 data and physical context maps are collected, including watershed boundary maps (KLHK, 2017), Digital Elevation Model 30 meters (USGS, 2000), land systems (RePPProT, 1990), river networks from the Rupa Bumi Indonesia map (BIG, 2017), as well as Landsat satellite imagery. Besides being used for HCV 4 analysis, land system maps are also used to identify the presence of HCV 3. For the social, economic, and cultural context of the community, the information collected includes statistical data from BPS, RBI maps (Rupa Bumi Indonesia), and Landsat satellite imagery. Other information concerning the current socio-cultural situation was collected from various relevant sources.

2.2.2. Primary Data

The emphasis of collecting data and information is aimed at HCV attributes or elements, using a combination of several methods, namely:

Participatory Mapping

This activity is carried out integrated for all types of HCV (biodiversity, environmental services, social culture. Resource persons come from the company's staff and employees and community members

who have knowledge and experience regarding the study area. The mapping results are then visited and translated into a georeference map.

Ground Truthing and field data collection

This study is a rapid assessment with a focus on collecting data and information aimed at HCV attributes or elements. Field verification focused on areas of potential HCV for each HCV are as follows.

HCV 1; HCV 1 assessment was carried out by means of purposive sampling and sampling areas relating to: (i) habitat quality assessment (combined with the results of flora studies), (ii) direct and indirect observation techniques ((traces, dirt, sounds, hair and nests) and (iii) interviews with local communities with selected sources (eg hunters)

HCV 2; Spatial analysis with GIS techniques and remote sensing was carried out to determine the position of the study area against the IFL area or conservation area or natural ecosystem area in and around the study area. Observations were made on several indicators focused on: i) the existence of natural ecosystems, ii) verification of natural ecosystems in the context of a broader landscape, and iii) verification of the connectivity of potential areas as a link for two or more broad landscapes.

HCV 3; Identification of HCV 3 uses a combination of spatial analysis and ground truthing methods with Precautionary Approach as presented in the 2008 HCV Toolkit for Indonesia document. Ground truthing is carried out to verify land cover resulting from interpretation of satellite imagery and ensure the presence (or absence) of natural ecosystems in the study area, namely qualitative observations of several proxy indicators or indicators (proxy indicators³), such as the stages of succession that occur and the quality or condition of the ecosystem.

HCV 4; HCV 4 field data collection is carried out oriented to the type of study object. Verification is focused on areas of potential HCV (purposive sampling). For each type of object of study, the basic questions that must be answered are the values, functions, and benefits of environmental services such as what is very important and can be given by the object of study. Each object of study found must be equipped with: (i) toponymy⁴, (ii) description of the location (current status such as the type and intensity of utilization), (iv) threats and potential threats, (v) coordinates, and (vi) documentation in the form field photo.

HCV 5 and HCV 6; HCV 5-6 identification was carried out jointly with local communities in three villages in the study area using FPIC principles (FPIC - Free, Prior, and Informed Consent). Collection of HCV 5-6 field data is carried out using purposive interview methods and snowball sampling with the following criteria: (i) communities traditionally utilizing natural resources in the study area, (ii) local communities who have (cultural) interactions with the land or with natural resources in the study area, (iii) history of the use of natural resources by the community.

In-depth interviews with communities in the study area

Information on the presence of HCV attributes and elements was also collected through interviews with selected sources, namely community members, company employees, and key figures who have a lot of knowledge or experience regarding the natural environment in the study area. For this secondary information, a verification or validation process is always carried out through a triangulation process. The number of respondents from surrounding communities interviewed in the field in this study totaled 56 people.

2.2.3. Data Analysis and HCV Area Mapping

Spatial analysis includes interpretation and classification of land cover, and mapping of HCV areas is carried out using ArcMap software 10.1. In addition to secondary data such as satellite imagery or land

³Other variables are used to represent the actual ones, that are impossible or otherwise difficult to assess, or impossible to assess during the given period of assessment. Proxy indicator may serve as reliable information that illustrates a condition or tendency.

⁴Scientific description on toponyms, origins, meaning, use, and the typologies. The first part of 'toponym' comes from Greek, *tópos* (τόπος), that means location, which is followed by *ónoma* (ὄνομα) that means name. Toponym is part of onomastics, the study of various names. Toponym includes names of places, areas, or other parts of earth surface, including the natural (e.g. river) and artificial (e.g. city).

cover maps (KLHK, 2016), the results of the field survey are also used as input in spatial analysis, including ground-truth coordinates (GPS) and participatory mapping results.

Land Cover Classification

Band merger in this study was conducted on band 6, band 5, and band 3. Specifically for the class of road and river land cover using secondary data from the Rupa Bumi Indonesia map (BIG, 2017). To obtain a final land cover classification, a verification of the initial land cover classification is verified by checking at the observation points determined purposively in the scoping study phase and in the full study. The next step is to compare land cover data from the interpretation of satellite imagery and field verification results using a contingency matrix. Accuracy testing of results is done using overall accuracy and *kappa accuracy*.

HCV Area Mapping

The boundaries of the area with similar field characteristics in the relevant location are then digitized on the work map. From this digitization process, closed polygons will be generated. The boundaries of areas on the map represented by closed polygons are expressed as indicative boundaries of HCV areas. Said to be indicative because these boundaries are based on the results of tracing the area above the map; delineation has not been done yet.

2.2.4. Stakeholder Consultation

Consultation with stakeholders is done through informal meetings and formal meetings. This consultation was carried out using the in-depth interview method, participatory mapping, discussion and field visits. The stakeholders involved in the consultation are grouped based on their relationships and interests in the study area and the object being studied (**Table 2**).

2.2.5. Threat Assessment

The approach used in this threat assessment is the “5-S Framework” and the Participatory Conservation Planning developed by The Nature Conservancy (TNC, 2000). The threat assessment process is used to prioritize HCV management.

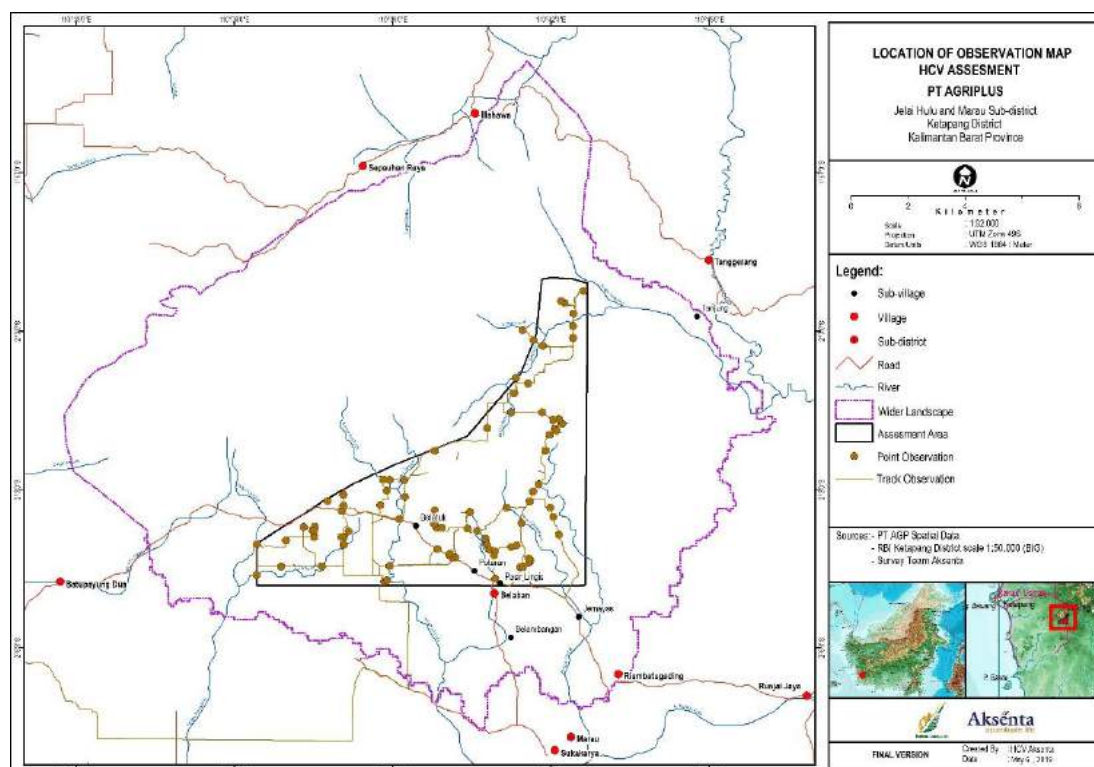


Figure 2. Observation points and field survey tracks

3. Results

3.1. National and Regional Context

The study is in the Kalimantan island landscape which has several types of tropical habitats that are rich in biodiversity. As an illustration, on the island of Borneo there are 225 species of terrestrial mammals with 44 species of which are endemic (Payne *et al.*, 2000); 639 bird species, with 358 species including settlers and 37 endemic species (MacKinnon *et al.*, 2000), 166 species of snakes (Stuebing, 1991), between 140-150 species of amphibians (Inger & Stuebing, 1997), 394 species of aquatic fish tasteless with 149 endemic species (MacKinnon *et al.*, 1996). Some unique animal species inhabit this island, namely Borneo Orangutan (*Pongo pygmaeus*), Proboscis Monkey (*Nasalis larvatus*), Sun Bear (*Helarctos malayanus*), Clouded Leopard (*Neofelis diardi*), Bornean Bay Cat (*Pardofelis badia*), White-shouldered Ibis (*Pseudibis davisoni*), Storm's Stork (*Ciconia stormi*) and Bulwer's Pheasant (*Lophura bulweri*).

Based on the distribution of plant species, of the 267 species of Dipterocarpaceae, 155 of them are endemic to Kalimantan, thus making the island of Borneo the center of the world's diversity of *Dipterocarpa*. On the island of Borneo there are several types of flora that are endangered and protected by Indonesian laws and regulations, mainly trees from the *Dipterocarpaceae* family (*Shorea spp.*, *Vatica spp.*). In addition, there are several other important flora species which are protected by the Indonesian government based on Minister of Agriculture Decree No. 54/Kpts/ Um-2/1972 and Minister of Forestry Decree No.261/Kpts-IV/1990, such as jelutung (*Diera costulata*) and benggeris (*Koompassia excelsa*), as well as various species of semar sacs (*Nephentes spp.*).

Key areas for biodiversity, or key biodiversity areas, can be broadly defined, but several international organizations have identified key areas for biodiversity with their respective criteria. The key areas that are internationally recognized are:

1. **Important Bird and Biodiversity Areas (IBA)**;); Important areas for bird species as well as for nearby conservation are Mount Palung ID 047, which also includes EBA 157 "Bornean Mountains" (Kalimantan mountains; ± 100 km to the north), and IBA in Muara Kendawangan which is ± 65 km away (Holmes *et al.*, 2001).
2. **Endemic Bird Areas (EBA)**; Kalimantan Mountains, or "Bornean Mountains" number 157. This EBA covers mountains in the interior of Borneo, and is the largest EBA in the Greater Sunda Islands region.
3. **Ecoregions**; Around the study area there are five types of ecoregions, namely: Borneo Lowland Forests, Bornean Peat Swamp Forests, Southwest Borneo Freshwater Swamp Forests, Sundaland Heath Forests, and Sunda Shelf Mangroves. The study area is in the area of the Borneo Lowland Rain Forest. However, the study area is not included in the Intact Forest Landscape area.
4. **Ramsar Site**; Ramsar Site; in Kalimantan there are only two Ramsar Sites which are located very far from the study area, namely Danau Sentarum National Park (± 330 km to the northeast) and Tanjung Putting National Park (± 250 km to the southeast).
5. **The Heart of Borneo (HoB)**; the study area is not in the HoB area. The closest distance to this area is ± 200 km to the northeast.

The economic sector that dominated the contribution to the income of Ketapang Regency mainly came from the agriculture sector, which accounted for 83.9% (BPS, 2016). The agriculture sub-sector itself is dominated by the plantation sub-sector, which in 2015 reached 62.89%. In the same year, other sectors that were classified as large were forestry and logging (9.56%), and livestock (9.21%).

3.2. Landscape Context

The broader landscape context (AOI) are obtained from the aggregation of the biodiversity, hydrological, and social landscape boundaries. The boundaries of the biodiversity assessment landscape are determined based on the existence of natural ecosystems and/ or locations that have potential as wildlife habitats, especially areas that have connectivity with study area. The landscape boundaries of the hydrology are determined based on the sub-watershed boundaries. The boundaries of the social assessment landscape are determined based on administrative boundaries or radius boundaries with the closest village/settlement. Based on these criteria, the landscape boundary of this

study covers 31,892.5 ha which also includes the Gunung Raya Protected Forest Area to the north of the study area (**Figure 3**).

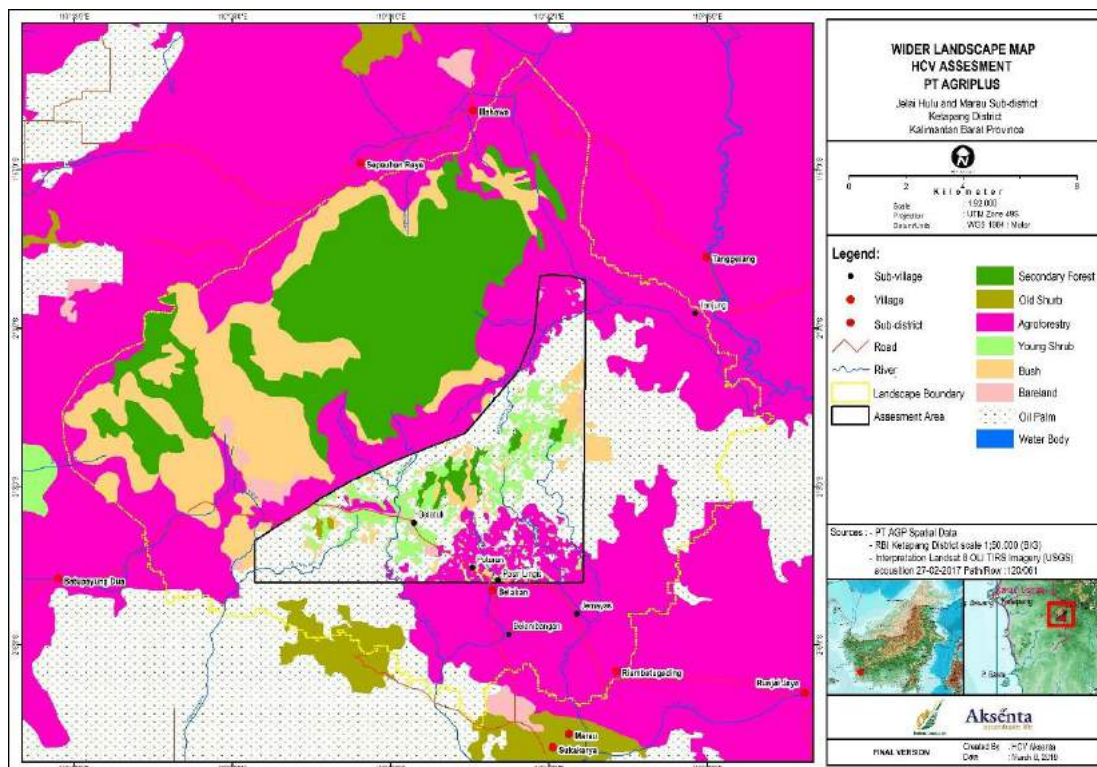


Figure 3. The boundaries of the study area in the wider landscape

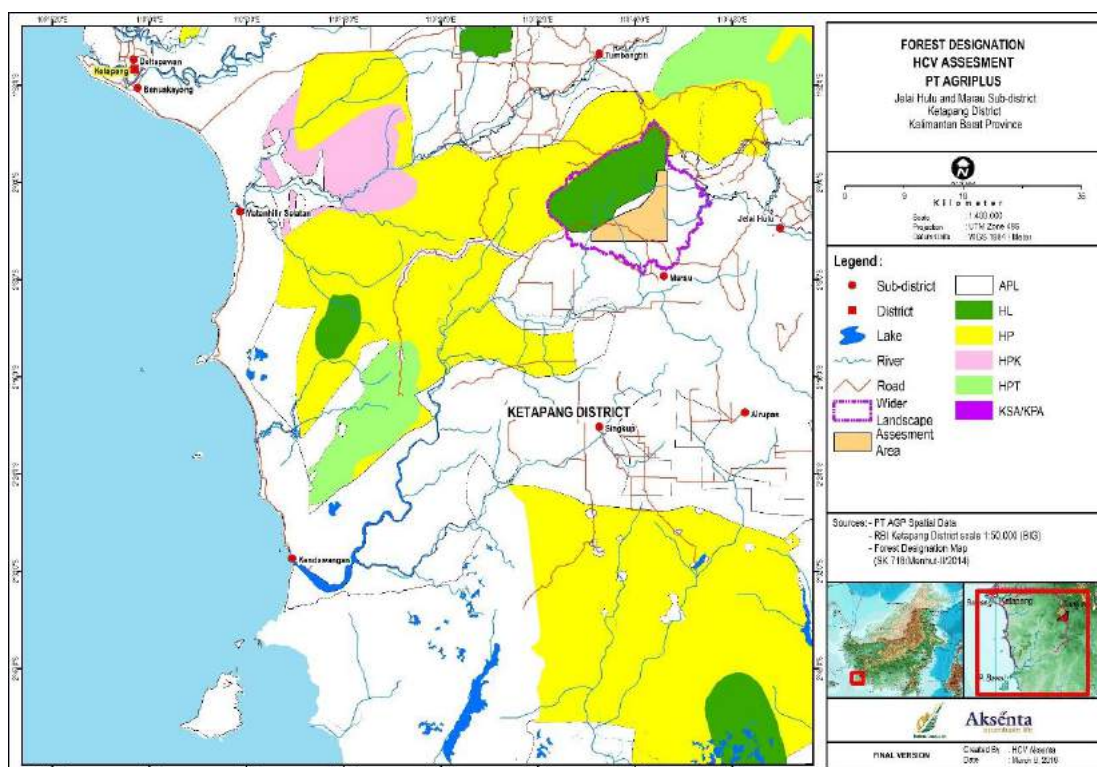


Figure 4. Study area projected on Land Status and Land Use Map

The entire area of the company based on PT AGP's Location Permit (issued August 5, 2010) and PT AGP's IUP (issued August 6, 2010) are in Other Use Areas (APL) based on the Decree. Minister of Forestry No. SK.936 / Menhut-II / 2013 concerning Map of Changes in Designation, Function and Designation of Forest Areas. However, after SK 733 / Menhut / 2014 was issued, there was a small area that overlapped the Gunung Raya Protection Forest area to the north and west. The APL area

around the study area has generally become an oil palm plantation, both managed by the company or by individuals or farmer groups (**Figure 4**).

Based on the Indicative Map of the Delay in Granting a New Location Permit (PIPIB) for revision XI in 2017 (**Figure 5**), there are some areas that overlap with the moratorium area. The area is located in the northern part of the study area, namely the HL Gunung Raya area. While the Peat Hydrology Unit (KHG) does not exist in the study area and its surroundings (30-40 km to the west: **Figure 6**).

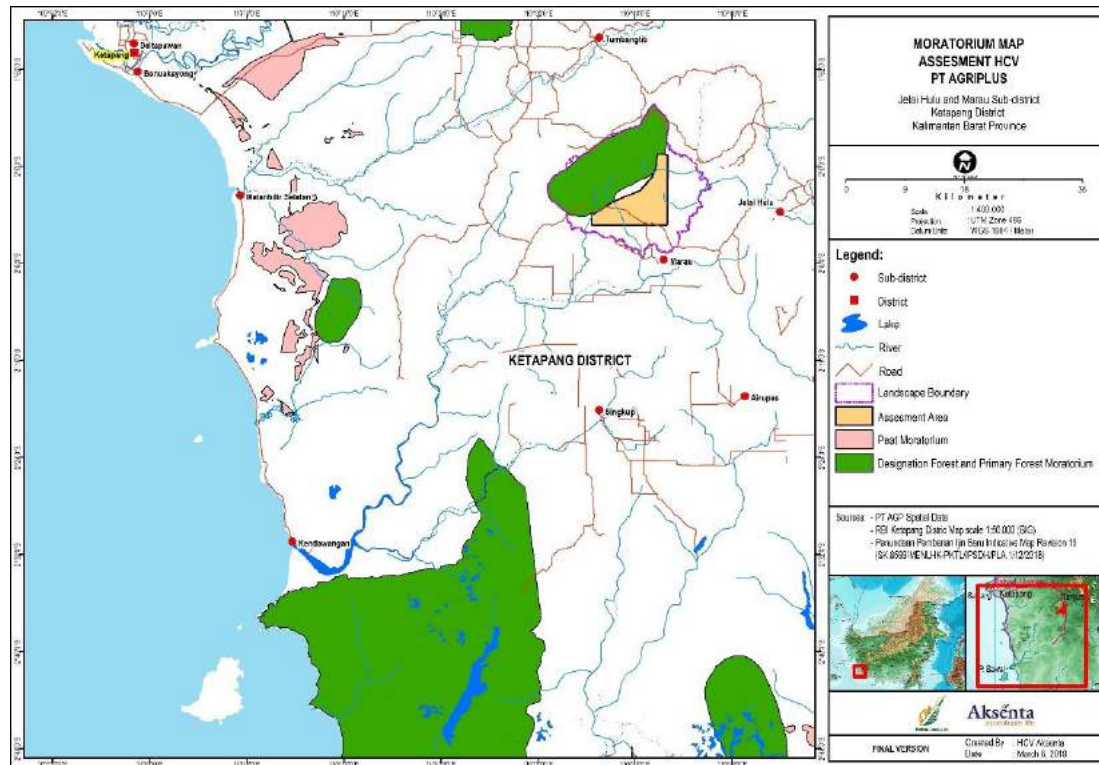


Figure 5. Study area projected on the Revision XI PIPB Map of 2017

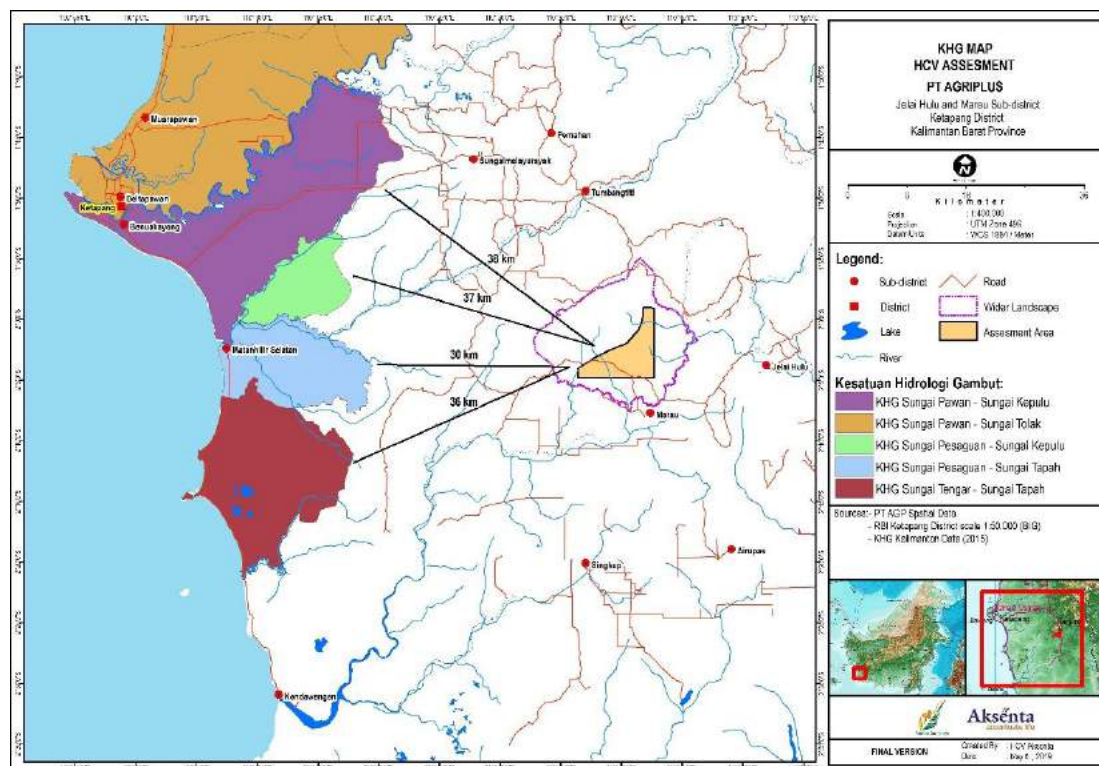


Figure 6. Study area projected on the Peat Hydrology Area Map (*Kawasan Hidrologi Gambut*)

Based on the analysis of Landsat satellite imagery on 27 February 2017 (**Figure 7** and **Figure 8**) there are seven types of land cover in the study area with agroforest and oil palm cover dominance. Agroforest, oil palm, and bush land cover types also dominate the landscape. However, in the study landscape (AOI) there is still a forest cover covering an area of 6,304.2 which is located in the Gunung Raya Protection Forest area to the north of the study area.

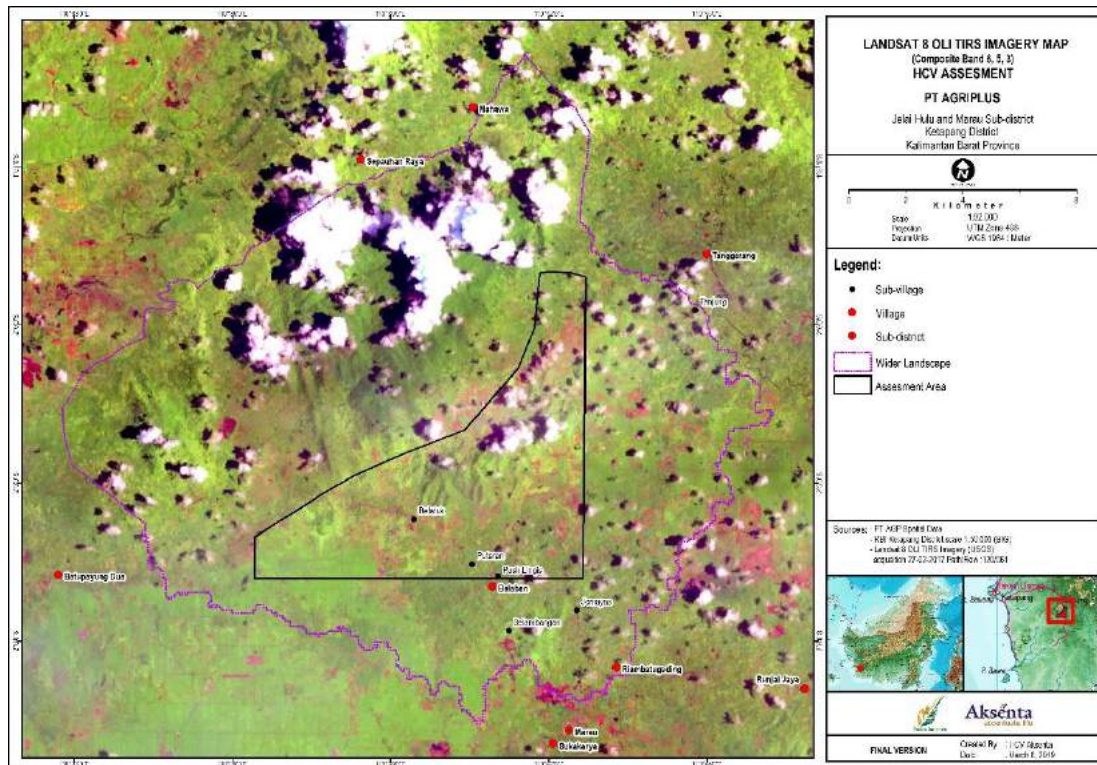


Figure 7. Landsat imagery showing land cover in the landscape of the study area

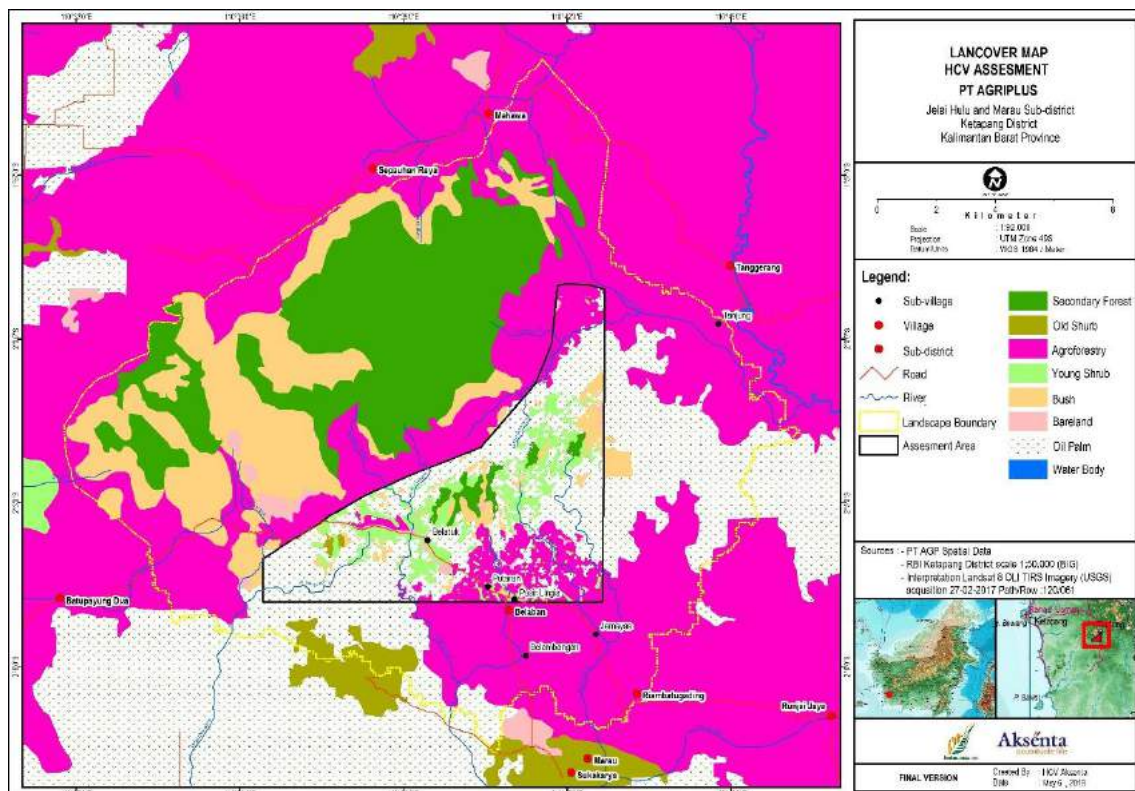


Figure 8. Land cover in the study area and surrounding areas (AOI)

3.3. Biodiversity Context

This area is far from areas that are usually places for biodiversity research, such as conservation areas or places considered to have high levels of biodiversity. Therefore, specific information about biodiversity in the study area is very limited. However, referring to the position of the study area which is located in the lowlands, then information on relevant biodiversity can refer to a protected area that is relatively one stretch, namely the Gunung Raya Protected Forest (HL)⁵ which a small part of the area overlaps with the study area.

Based on the research of Harahap *et al.* (2015), HL Gunung Raya is dominated by the Dipterocarpaceae family. The largest potential of stands is dominated by Meranti Merah (*Shorea leprosula*) 183,77 m³ and the smallest volume of Keranji (*Dialium indum*) 6.14 m³. The types of IUCN status recorded in HL Gunung Raya are *Eusideroxylon zwageri* (EN), *Dipterocarpus borneensis* (NT), *Shorea acuminatissima* (CR), *Shorea leprosula* (NT), *Shorea bracteolata* (EN), *Brugmani syndrome*, and *Dyera Lowii*. For the types of fauna found in HL Gunung Raya, literature has not been found to support this study, but based on the composition of the natural stands it is estimated that the area has a relatively higher diversity of animals compared to the study area. It is estimated that the HL region can become a migration corridor for animals that are able to support top predators or species that have quite extensive home ranges such as orangutans and sun bears to live and breed. According to the IUCN global map for the distribution of rare and threatened species, the study area includes the distribution of Bornean Orangutan (*Pongo pygmaeus*), Proboscis Monkey (*Nasalis larvatus*), Agile Gibbon (*Hylobates albibarbis*), Sunda Pangolin (*Manis javanica*), Flat-headed Cat (*Prionailurus planiceps*), Spiny Turtle (*Heosemys spinosa*), Giant River Tortoise (*Orlitia borneensis*), False Gharial (*Tomistoma schlegelii*).

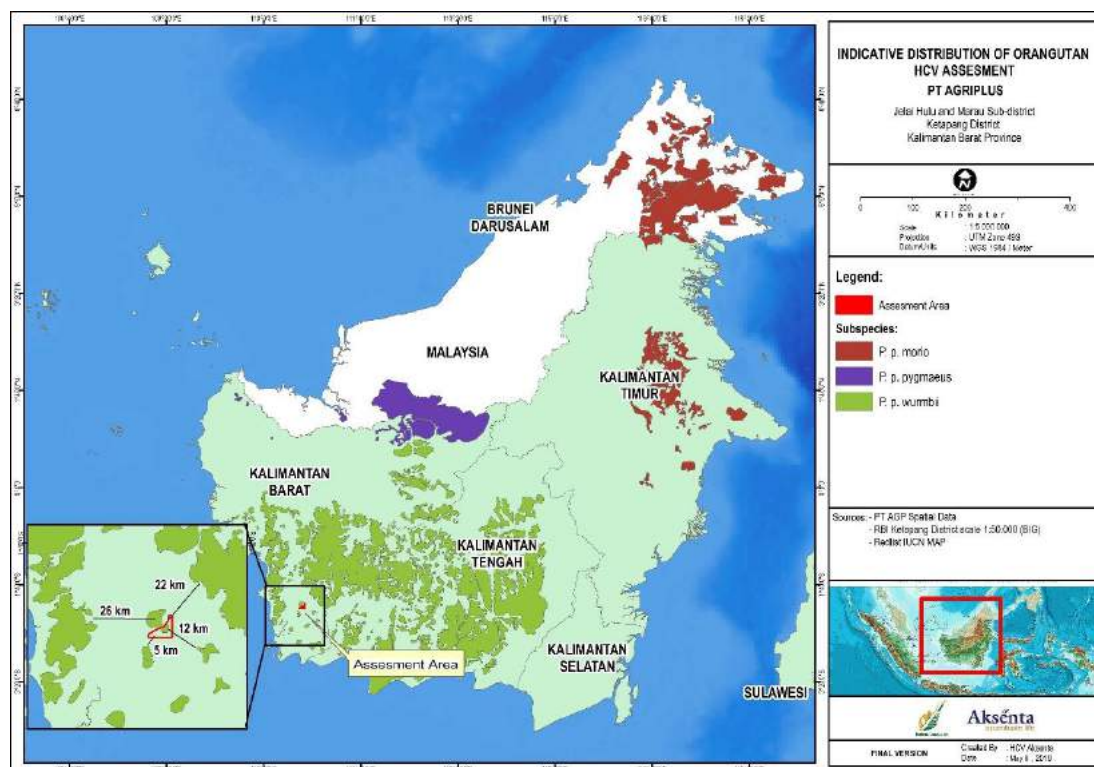


Figure 9. Study area projected on the distribution map of Bornean Orangutan

Kalimantan's charismatic primate species, namely orangutans, are known to be concentrated in only a few regions of Kalimantan. This charismatic primate habitat spreads in primary tropical rain forests, secondary tropical rain forests, and is often found in Dipterocarpa lowland forests, freshwater swamp forests and peat swamp forests. Orangutans are also recorded on plains with altitudes up to 1,500

⁵ Informasi atau hasil penelitian mengenai keanekaragaman hayati di HL Gunung Raya juga cukup minim. Hal ini antara lain disebabkan karena status kawasan hutan tersebut yang bukan dilindungi karena keanekaragaman hayatinya, namun sebagai fungsi lindung hutan sebagai daerah resapan air dan hasil hutan non kayu lainnya (No SK 352/Kpts-II/199423/08/1994).

meters above sea level, although the number of encounters in areas with this height is not significant (MacKinnon, 1974; Rijksen, 1978; Payne, 1988; Payne and Andau, 1989; Rijksen and Meijaard, 1999). The reduced area of orangutan habitat or hunting has drastically reduced the population of these primates, so the existence of orangutans is now classified as Critically Endangered. The distribution of the Bornean Orangutan sub-species has been mapped by Banes (2016), and on the map the study area is in the distribution of *P. pygmaeus wrumbii* (**Figure 9**). However, the orangutan distribution map accumulates secondary data and information, not all of the results and still require field verification.

3.4. Physical Environment Context

Climate in the study area is a tropical climate that belongs to the type of Am (Koppen, 1900 in Kottek *et al.*, 2006). This means that the study area experiences a short dry season period, but the annual rainfall is high enough so that the soil is relatively moist. The average annual rainfall is 2,410 mm / year.

Based on Presidential Decree No. 12 of 2012, the study area is located in the Jelai-Kendawangan River Region. Most (76%) of this area is located in the Kendawangan watershed, while the rest (24%) is in the Jelai watershed (**Figure 10**). Based on its position on the watershed boundaries, the study area is located in the upper reaches, so that the presence of water catchment areas (hills) or rivers in this region has an important role in the hydrological context of the region.

The entire study area is located at an altitude of <400 m asl (**Figure 11**). Half (50%) of the area is at an altitude of 50-100 m above sea level. In the middle, there is a hilly area that has a height of 200-400 m above sea level. Hilly areas are also found to the north of the study area, namely in the Gunung Raya Protected Forest Area. In general, the study area is a flat area with a slope of <8% (**Figure 12**). However, in this area there are steep sloped areas (slopes of 25% to > 40%). These areas are hills which are still partially covered by secondary forests and shrubs. The existence of this hill area has important value in the context of environmental services, especially related to the water catchment, erosion control and sedimentation.

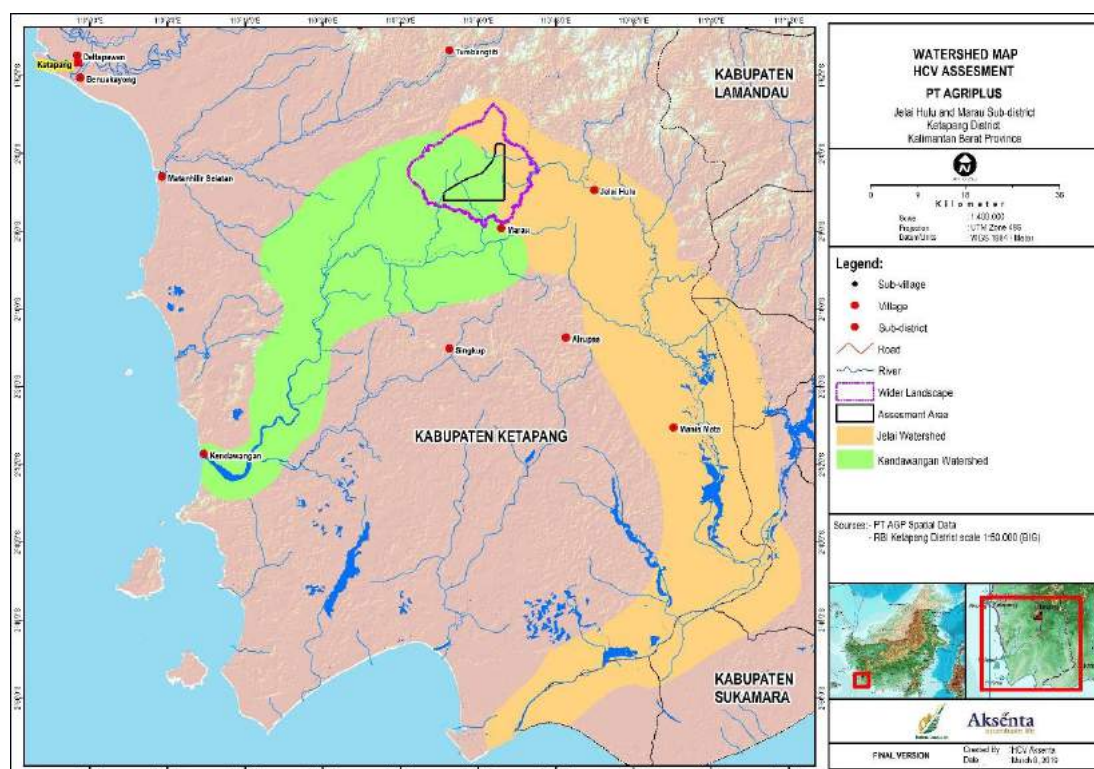


Figure 10. Position of the study area against the boundaries of the Jelai and Kendawangan watersheds

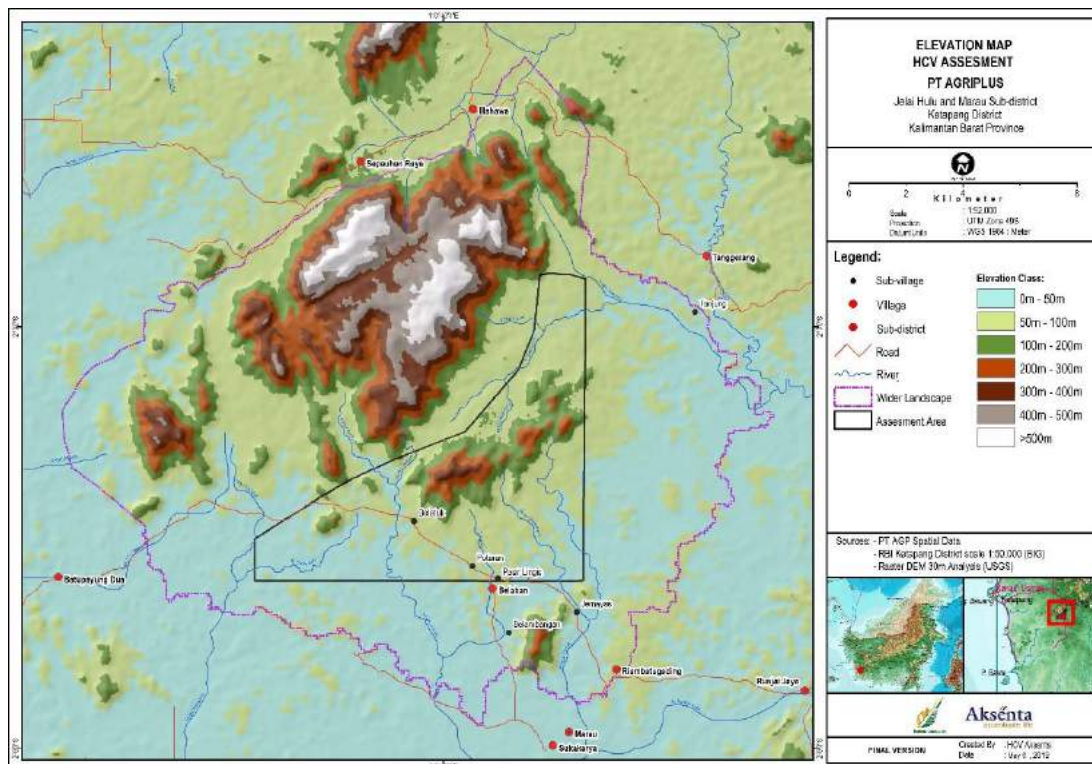


Figure 11. Topography in the study area and surrounding areas

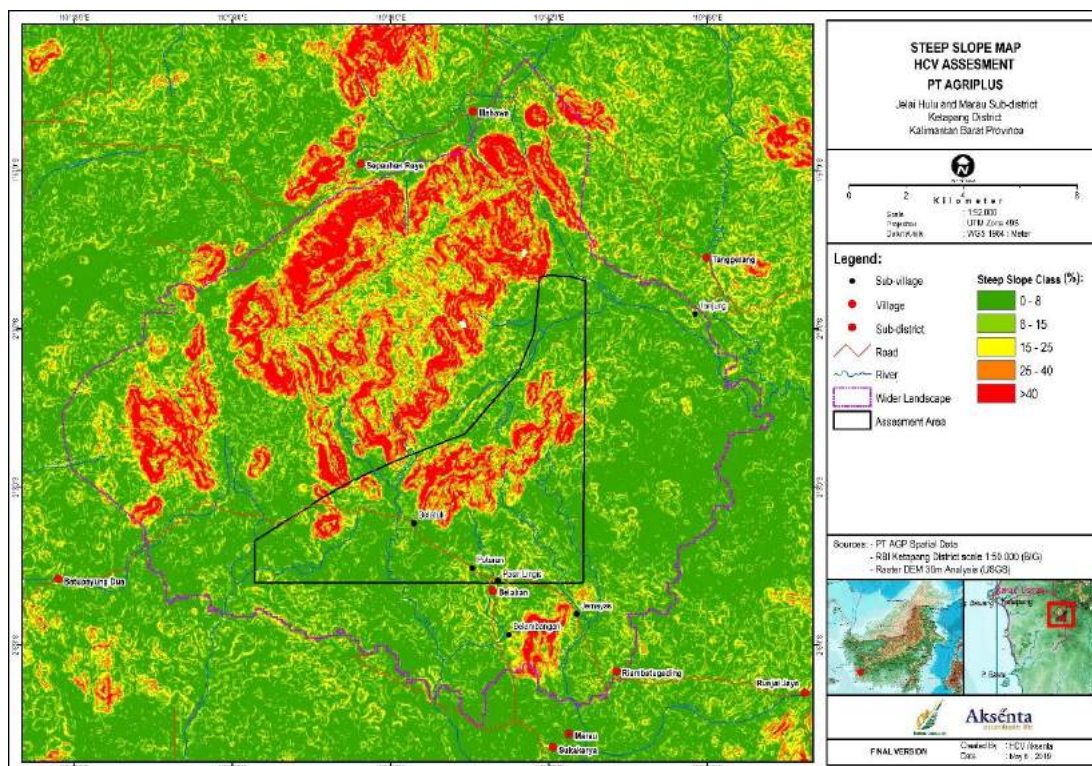


Figure 12. Slopes in the study area and surroundings

Based on the Land System Map (RePPProT, 1990; **Figure 13**), the study area consists of four land systems, namely Honja (38%), Pakalunai (34%), Rangankau (27%), and Telawi (1%). Areas with Honja and Rangankau land systems are plains with undulating to hilly landforms. The Pakalunai land system has a physiographic form in the form of hills, while Telawi is a mountain range.

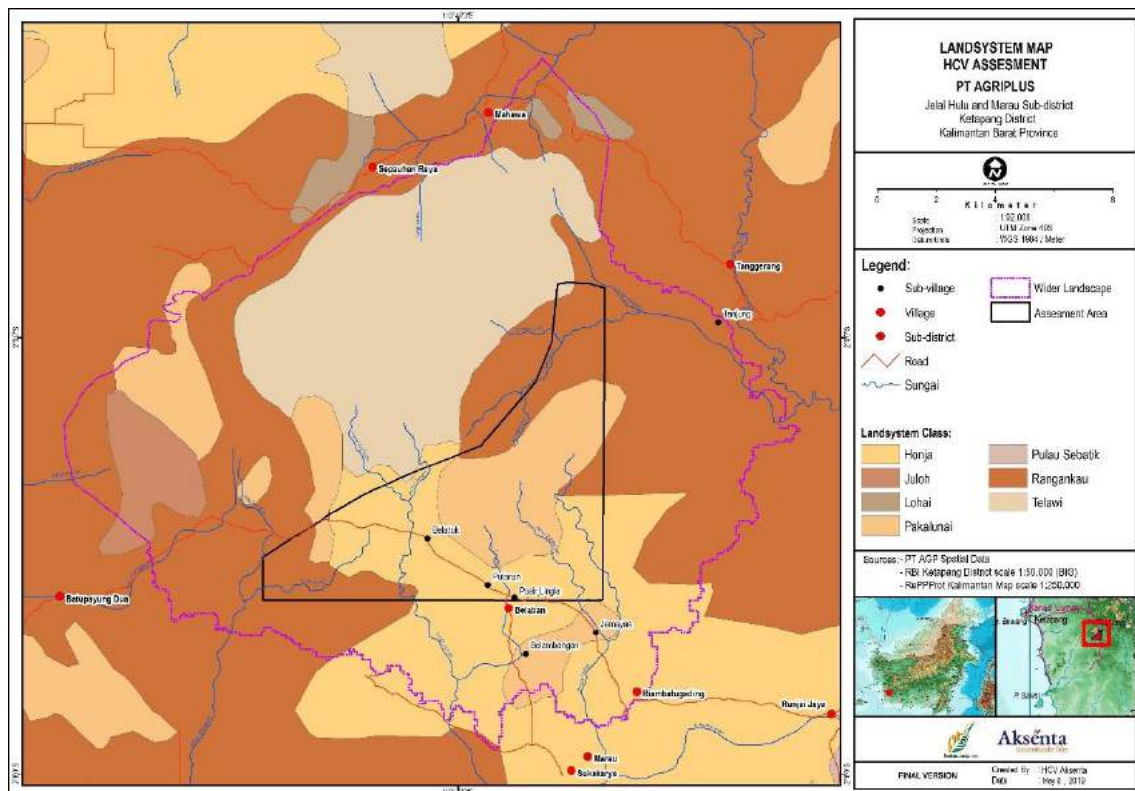


Figure 13. Land system in the study area and surrounding areas

Soil types in the study area consist of four soil associations (**Figure 14**; RePPProT, 1990), namely: (i) *dystropepts*, *tropudults*, and *haplorthox*; (ii) *tropudults*, *paleudults*, and *tropaquepts*; (iii) *tropudults*, *paleudults*, and *tropohumults*; and (iv) *tropudults* and *dystropepts*. Of these types of soil, there is no soil included in the category of marginal or fragile soil, such as peat, sand, or acid sulphate soils. Tropudults soil type is the dominant soil found in each land association.

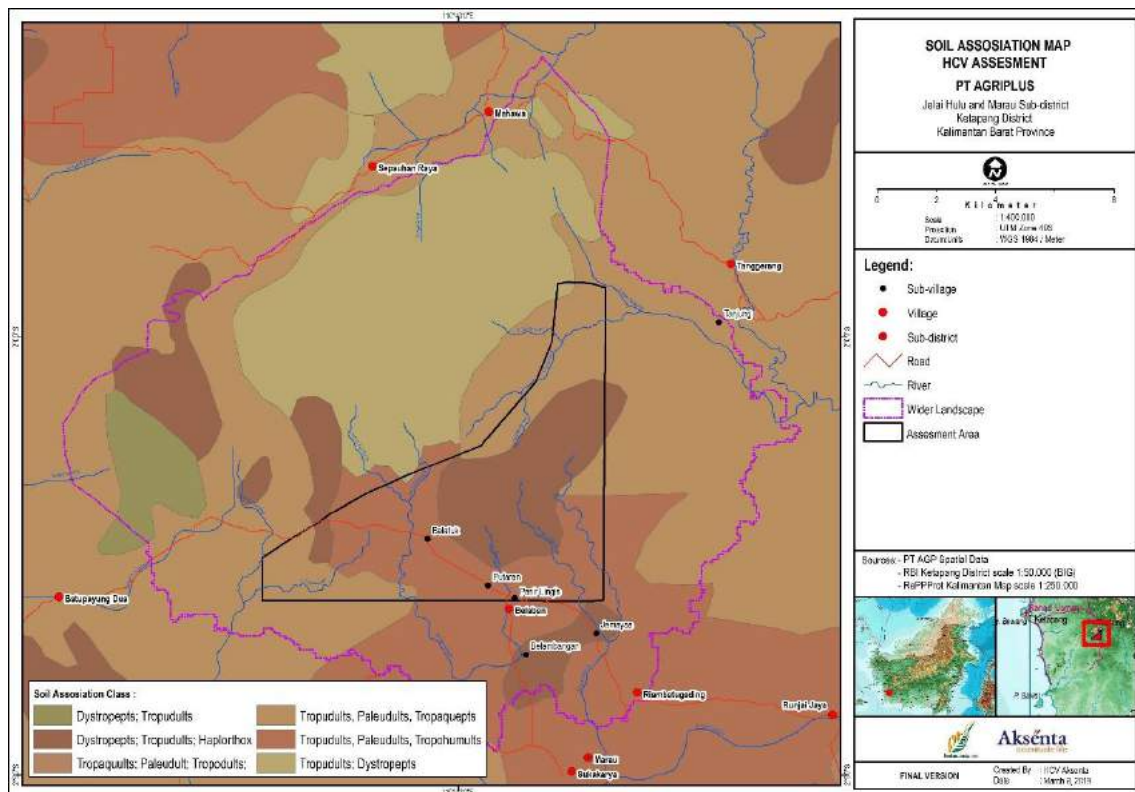


Figure 14. Soil types in the study area and surrounding areas

3.5. Social-Cultural Context

Demography and Social Economy

Administratively, the PT AGP Location Permit area is within the areas of Belaban Village, Riam Batu Gading (Marau District) and Tanggerang Village (Jelai Hulu). This region is located at the eastern end of Ketapang Regency and is bordered by Sukamara Regency, Central Kalimantan Province⁶. Based on village demographic data, the total population in the three villages in the study area is still relatively rare compared to the area. Population density in this region is still below the average population density of Ketapang Regency (**Table 3**).

Statistical data on population composition based on livelihoods are not available, but based on interviews and observations in the field, the main livelihoods of Belaban and Riam Gading villages are generally rubber, oil palm and other food crops farmers, other livelihoods of traders and employees of plantation companies and PNS employees / honorer. Whereas in Tanggerang Village most work in plantation companies; the rest have livelihoods as rubber farmers, oil palm farmers, food crop farming, traders, civil servants / honorary, agricultural laborers and collectors of agricultural products with the main commodities are rubber, palm oil, agricultural crops and other food crops (**Table 4**).

Table 3. Demography of villages in the study area

No.	Village	Sub-District	Area (km ²)	Population				Ratio
				Family	People	Male	Female	
1.	Belaban	Marau	268,24	684	2.438	1.264	1.174	108
2.	Riam Batu Gading		138,71	450	1.649	844	805	105
3.	Tanggerang	Jelai Hulu	218,50	599	1.903	925	978	109

Source: Marau and Jelai Hulu Sub-Districts in Number, 2016 (BPS of Ketapang District, 2017)

Table 4. Socio-economic condition in the local villages around the Assessment Area

Basic Needs	Village		
	Belaban	Riam Batu Gading	Tanggerang
Source of livelihood	Work in plantation companies (60%), work as rubber farmer (30%) and others (10%)	Work as rubber farmer, oil palm smallholder and crop plantations (80%), while the rest as merchant and plantation company worker and permanent/contract Civil State Employee	Work in plantation companies, while the rest work as rubber farmer, oil palm smallholder, crop farmer, merchant, permanent/contract Civil State Employee, plantation labourer and farming product collector.
Accessibility, transportation, communication and energy	- Local villages in the Assessment Area has road network, some of which are still in the form of dirt roads, while others are already asphalt roads, although several parts of the roads already start getting damaged. - The entire village road network is connected directly by provincial road network to the district capital (Tumbang Titi – Manis Mata-Telayap- Sandai-Trans Kalimantan) - Public transports (cars) are available for rent, particularly for long distance use. For daily use (short distance), community uses motorcycles. - Mobile phone service coverage is yet to entirely reach the Assessment Area. Only certain locations, such as around Riam Batu Gading Village Hall, is covered. In other locations some people use signal boosters/antenna. - Electricity from State Electricity Company (PLN) is yet to operate 24 hours, except in sub-district capital. To have electricity, community uses village and personal generator set, as well as solar panel from government aid.		
	- Fuel oil can be easily obtained in all villages - Cooking fuel: most of local families already use LPG, but some others are still using firewood.		

⁶ Village map sources were obtained from Village Potential data (BPS, 2014). Village boundaries are not definitive yet. Based on information in the field, the northernmost study area is still included in the village area of Tangerang.

Basic Needs	Village		
	Belaban	Riam Batu Gading	Tanggerang
Education and health	- Available education facilities include 2 units of kindergarten, and 4 units of elementary school. As for senior high school, this can be accessed in the nearest village. - Health facilities include 2 units of village health centres, and 3 mother and children health centres. For certain illness, people get referred to Public Health Centre in Marau Sub-District.	Available education facilities only include 1 unit of elementary school, while junior high school and senior high school can be accessed in the nearest villages (Runjai Jaya, Randai, and Suka Karya (parent village)) Public Health Centre is available in Marau	- Available education facilities include 1 unit of kindergarten and 3 units of elementary school, while junior and senior high schools are available in the nearest village (Teluk Rinjai) - Health facility includes 1 unit of auxiliary Public Health Centre. For certain illness, people get referred to Public Health Centre in Jelai Hulu Sub-District
	Needs for medicines are mostly met through buying. However, there are community members who still use traditional herbs that they can obtain from around the local settlement.		
Water (for consumption and sanitation)	Needs for drinking water (consumption) and sanitation are met from source of water within PT Agriplus concession, i.e. Senggraha and Riam Kekalap springs, and Air Putih River.	- Drilled well and stream get dried during dry seasons. - Clean water is mostly obtained from dug wells or pumped wells. For the needs for sanitation, especially during dry seasons, community uses river water.	Needs for drinking water (consumption) and sanitation are met from dug well (water is taken from well to water tank), spring and Sepupuan River.

Source: Interview, field visit by Aksenta (2017)

Ethnic, Culture and Religion

The majority of indigenous communities in the study areas are the Dayak Jelai Tribe and the Dayak Kendawangan Tribe. Other tribes are migrant tribes originating from Java, Sumatra and Sulawesi (**Table 5**). The practice of customs is limited and ceremonial. In the implementation of these customs and culture, it is very closely related to the cycle of human life (birth, maturity, illness, marriage, and death), as well as the cycle of paddy farming (planting and harvesting). The ceremonies related to the human life cycle have been filled with religious values, according to the religion they profess. The social infrastructure of the community and their daily lives are more governed by state law (positive law). Catholicism is a religion adopted by the majority of the population in the villages in the study area. In addition, there are also members of the community who embrace Protestantism and Islam. In a limited number there are still adherents of ancestral beliefs (animism), especially the parents. Islam is usually adopted by migrants.

Table 5. Composition of ethnicity and religion in the local villages in the Assessment Area

Village	Sub-District	Ethnicity	Religion
Belaban	Marau	Native community: Dayak Jelai (95%) Immigrant community: Javanese and Malay (5%)	Catholicism (50%), Protestantism (45%), Islam (5%)
Riam Batu Gading	Marau	Native community: Dayak Kendawangan (80%) Immigrant community: Javanese (Demak), and others from Sulawesi, and Sumatera (20%)	Catholicism (60%), Protestantism (35%), Islam (5%)
Tanggerang	Jelai Hulu	Majority: Dayak Jelai (90%) Immigrant community: Javanese, Chinese, Malay (10%)	Catholicism (90%), Protestantism and Islam (10%)

Source: Aksenta interview (2017)

3.6. Presence of HCVs

The results of this study conclude, that in the study area there are all types of HCV, ranging from HCV 1 to HCV 6 as presented in the summary of the presence of HCV in **Table 6**.

Table 6. Summary of HCV presence in the assessment area

HCV	Definition	Summary of Description and Justification		
		Present	Potential	Absent
1	Concentrations of biological diversity including endemic species, and Rare, Threatened or Endangered (RTE) species, that are significant at global, regional or national levels.	Population of endemic or RTE species, i.e. 18 bird, 11 mammal, 2 reptilian and 5 plant species.	There is an indication of the presence of orangutan in Gunung Raya Protection Forest	-
2	Large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.	Some small parts of the area overlap with Gunung Raya Protection Forest constituting an important ecosystem at landscape level or areas important to the availability of supporting habitats to apex predator or wide-ranging species.	-	-
3	Rare, threatened, or endangered ecosystems, habitats or refugia.	There remains threatened ecosystem in the hill area, i.e. mixed dipterocarp forest.	-	-
4	Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.	There are areas playing important roles to regulate local hydrologic aspects, i.e. rivers and their banks, hilly areas, and springs.	-	-
5	Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for livelihoods, health, nutrition, water, etc...), identified through engagement with these communities or indigenous peoples.	There are important areas as source of local community needs, i.e. river and spring (source of water).	-	-
6	Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples.	There are areas important to local community culture and history, i.e. sacred sites, burial ground, and <i>tembawang</i> .	-	-

3.6.1. HCV 1

There are a number of conditions that are indicative of detecting the presence of HCV 1 areas (Brown *et al.*, 2017) as presented in **Table 7**. The results of the study found that conditions that meet the HCV 1 criteria can be found in the study area.

Table 7. Indication of the HCV 1 in the Assessment Area

HCV 1 Requirement (Brown et al., 2017)	Present/ Absent
High species richness, diversity or uniqueness	-
Populations of multiple endemic or RTE species	✓
Important populations or a great abundance of individual endemic or RTE species	-
Small populations of individual endemic or RTE species, in cases where the national, regional or global survival of that species is critically dependent on the area in question	-
Sites with significant RTE species richness	-
Particularly important genetic variants, sub-species or varieties	✓

Note: ✓ = present; - = absent

Justification

The closest protected area to the study area is Gunung Raya Protection Forest (HL) which is in the north. Although the protected status of the area is as a water catchment area, its existence can be a proxy for biodiversity in the study area. Most of the study areas, especially areas with sloping slopes, have changed their land use to oil palm plantations. Remnants of forested areas can still be found on the hilltop, namely in Kalanglampung Hill, Betung Hill, and in the area around the Riam Kekelap Spring.

Based on field survey results in the study area there were 63 species of birds, 19 species of mammals, 9 species of reptiles and amphibians, and 250 species of plants. HCV Criteria 1 is met by the presence of 18 species of RedList IUCN and 5 species of Appendix I CITES. Species included in the IUCN RedList consist of 11 species of mammals, 2 species of reptiles, and 5 species of plants (**Table 8**). Endemic flora groups were not found, while Borneo several endemic fauna species were found, namely red langur (*Presbytis rubicunda*), white forehead (*Presbytis frontata*), kelempiau (*Hylobates albibarbis*), lemurs (*Nycticebus menagensis*), clouded leopards (*Neofelis diardi*), Slow Loris (*Nycticebus menagensis*), and Kalimantan bondol (*Lonchura fuscans*).

Important sub-species variants in the Kalimantan Forest are orangutans (*Pongo pygmaeus*) and gibbons (*Hylobates* spp). The study area and its surroundings are included in the distribution of orangutan sub-species (*P. p. Wurmii*) and gibbons (*H. Albibarbis*). Even though it is an orangutan distribution area, the existence of orangutan species has not been found since 2006, when the forest was cleared to become a rubber plantation. Based on community information, it is estimated that the existence of this orangutan moved away towards HL Gunung Raya. Opportunities for orangutan movement are possible if there is an increase in disturbance at HL Gunung Raya. Based on this, orangutans are still an important record in potential HCV 1 that is outside the study area.

Table 8. Status of RTE species in PT AGP concession

No.	Scientific Name	Indonesian Name	Status			Remark
			IUCN	CITES	Law	
Mammal						
1	<i>Hylobates albibarbis</i>	Kelempiau	EN	App. I	P	Strong information
2	<i>Helarctos malayanus</i>	Beruang madu	VU	App. I	P	Scratch mark
3	<i>Nycticebus melagenis</i>	Kukang	VU	App. I	P	Strong information
4	<i>Tarsius bancanus</i>	Tarsius	VU	App. II	P	Strong information
5	<i>Manis javanica</i>	Trenggiling	CR	App. II	P	Nest
6	<i>Neofelis diardii</i>	Macan dahan	VU	App. I	P	Strong information
7	<i>Presbytis frontata</i>	Lutung dahi putih	VU	App. II	P	Found
8	<i>Cervus unicolor</i>	Rusa sambar	VU	-	P	Strong information
9	<i>Sus barbatus</i>	Babi berjenggot	VU	-	-	Strong information
10	<i>Macaca nemestrina</i>	Beruk	VU	App. II	-	Strong information
11	<i>Pongo pygmaeus wurmbii</i>	Orangutan	CR	App.I	P	Not found, but strong info is found in Gunung Raya Protection Forest
Bird						
1	<i>Alcedo meninting</i>	Rajaudang meninting	LC	-	P	Found
2	<i>Anorrhinus galeritus</i>	Enggang klihingan	LC	App II	P	Found
3	<i>Anthreptes malacensis</i>	Burungmadu kelapa	LC	-	P	Found
4	<i>Anthreptes singalensis</i>	Burung madu belukar	LC	App II	P	Found
5	<i>Arachnothera longirostra</i>	Pijantung kecil	LC	-	P	Found
6	<i>Buceros rhinoceros</i>	Rangkong badak	NT	App II	P	Found
7	<i>Cuculus micropterus</i>	Kangkok india	LC	-	NP	Found (migrant)
8	<i>Elanus caeruleus</i>	Elang tikus	LC	App II	P	Found
9	<i>Gracula religiosa</i>	Tiong emas	LC	App II	P	Found
10	<i>Ictinaetus malayensis</i>	Elang hitam	LC	App II	P	Found

No.	Scientific Name	Indonesian Name	Status			Remark
			IUCN	CITES	Law	
11	<i>Leptocoma sperata</i>	Burungmadu pengantin	LC	-	P	Found
12	<i>Lonchura fuscans</i>	Bondol kalimantan	LC	-	NP	Found
13	<i>Loriculus galgulus</i>	Serindit melayu	LC	App II	NP	Found
14	<i>Microhierax fringillarius</i>	Alapalap capung	LC	App II	P	Found
15	<i>Nisaetus cirrhatus</i>	Elang brontok	LC	App II	P	Found
16	<i>Pelargopsis capensis</i>	Pekaka emas	LC	-	P	Found
17	<i>Pernis ptilorhynchus</i>	Sikepmadu Asia	LC	App II	P	Found (migrant)
18	<i>Rhipidura javanica</i>	Kipasan belang	LC	-	P	Found
19	<i>Turdus obscurus</i>	Anis kuning	LC	-	NP	Found (migrant)
Herpetofauna						
1	<i>Notochelys platynota</i>	Kura-kura ceper	VU	-	-	Found
2	<i>Amyda cartilaginea</i>	Labi-labi	VU	App. II	-	Found
Flora						
1	<i>Shorea leprosula</i>	Meranti	EN	-	-	Found
2	<i>Aquilaria malacensis</i>	Gaharu	VU	App. II	P	Found
3	<i>Eusideroxylon zwageri</i>	Ulin	VU	-	P	Found
4	<i>Dipterocarpus cornutus</i>	Keruing	CR	-	-	Found
5	<i>Durio kutejensis</i>	Durian Lae	VU	-	-	Found

Source: Aksenta field survey (Aksenta, August 2017)

Note: EN: endangered; VU: vulnerable, P: protected by Law 5 of 1999 and Government Regulation No. 7/1999)

Location and Size of HCV 1 Areas

Referring to the presence of important species and important habitats for RTE species, the HCV 1 area is the flow of the river and its banks (30-50 m wide) and secondary forest areas or natural vegetation on hilltops (**Figure 15**). The total HCV 1 area is 821.7 ha (**Table 9**).

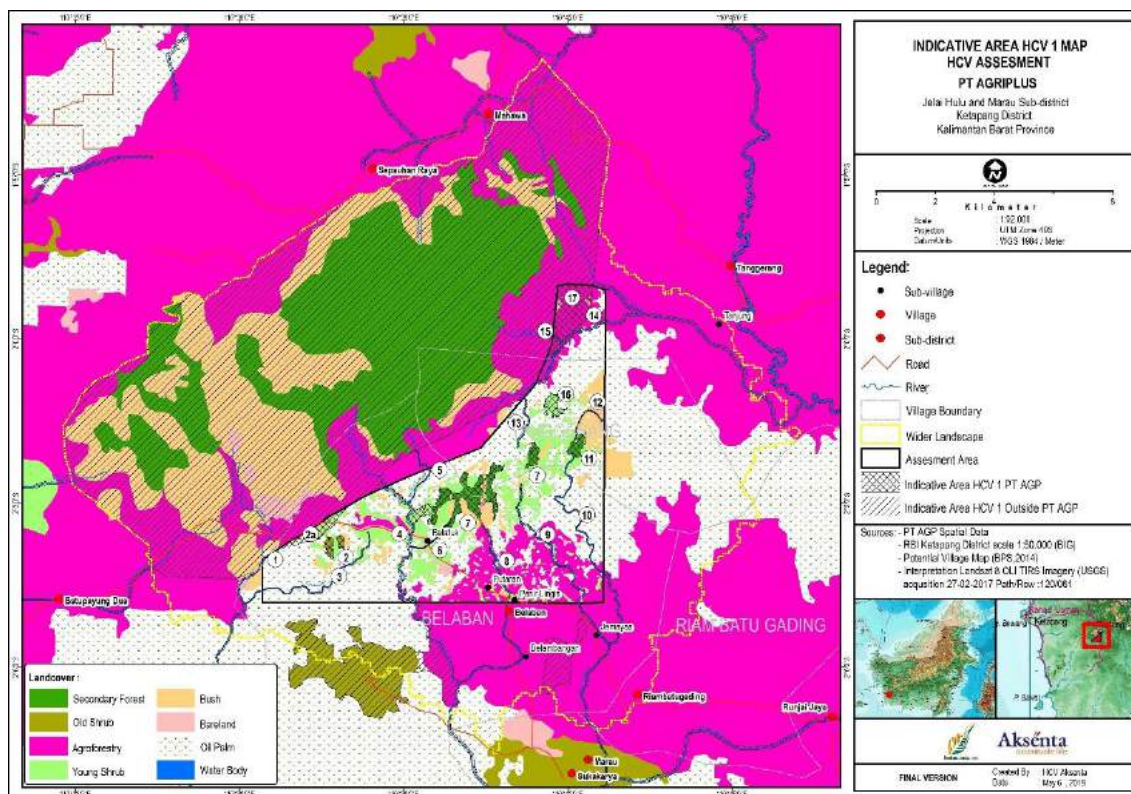


Figure 15. Distribution of HCV 1 areas in the study area

Table 9. Location and size of HCVA1 in PT AGP Location Permit concession

ID	Location	Area (ha)
1	River Langsat and its riverbank (width: 30 m)	0.8
2	Shrub areas on Kalanglampung – Semerumbung hills	25.0
2a	Areas overlapping with Gunung Raya Protection Forest Area	64.0
3	River Sanawansik and its riverbank (width: 30 m)	22.7
4	River Air Putih and its riverbank (width: 50 m)	66.7
5	River Depatut and its riverbank (width: 30 m)	5.7
6	River Sementabang and its riverbank (width: 30 m)	8.4
7	Forested area on Limau Tupai – Sembelayang hills, including Riam Kekalap spring's buffer zone (buffer width: 200 m radius) and wildlife corridor to River Air Putih.	221.3
8	River Sentabik and its riverbank (width: 30 m)	22.2
9	River Sengabang and its riverbank (width: 30 m)	34.6
10	River Kampak and its riverbank (width: 30 m)	25.1
11	Forested area on Betung Hill	27.8
12	River Panyangkauan and its riverbank (width: 30 m)	11.5
13	River Bepinsang and its riverbank (width: 30 m)	12.3
14	River Sepupuan and its riverbank (width: 50 m); this area is also in overlap with Gunung Raya Protected Forest area.	38.5
15	River Sejelemuan and its riverbank (width: 30 m); this area is also in overlap with Gunung Raya Protected Forest area.	2.7
16	Thicket area on Batu Manunggul hill.	31.3
17	Areas in overlap with Gunung Raya Protected Forest area.	201.1
Total Size of HCVA 1		821.7

3.6.2. HCV 2

Several situations to detect the presence of HCV 2 areas (Brown, et.al, 2017) are presented in **Table 10**. Based on these criteria, the results of this study concluded that HCV 2 was found in the study area.

Table 10. Indication of HCV 2 in the Assessment Area

HCV 2 Requirement (Brown et al., 2017)	Present/ Absent
Large areas (e.g. could be greater than 50,000ha) that are relatively far from human settlement, roads or other access.	-
Smaller areas that provide key landscape functions such as connectivity and buffering	✓
Large areas that are more natural and intact than most other such areas	-

Note: ✓ = present; - = absent

Justification

The study area is not in the Intact Forest Landscape (IFL) area according to a map released by Greenpeace and Forest Watch Indonesia⁷. Based on the map, this area has no longer been intact forested since 2000 (**Figure 16**). The closest IFL area to the study area is 113 km northeast. This area is also not part of and is located far from important conservation landscapes, such as IBA, EBA, KBA, Ramsar Site, HoB, and KHG.

Gunung Raya Protection Forest (HL) has an area of around 15,000 ha. Although this area is less than the threshold used in the guidelines (CG, 2013), this area is an important area for the availability of natural habitat compared to other areas around the study area. This area is considered to be able to support top predators or species with large home ranges such as Kalimantan orangutans, sun bears and various birds of prey. The hilly forest area in the study area is not connected to HL Gunung Raya because it was cut off by oil palm plantations and community mixed plantations. However, broader landscape connectivity and buffering functions are indicated in the northern study area which overlaps with HL Gunung Raya. The area has an important value as a wildlife corridor, especially animals that have a large roaming area that uses forest canopy as a means of moving its place, for example arboreal animals. The area also has the potential as an area of animal visit, especially in terms of foraging activities and shelter.

⁷ <http://www.intactforests.org/world.webmap.html> Skala peta 1:1.000.000

Location and Size of HCV 2 Areas

Based on the explanation above, although there is landscape fragmentation, it can be concluded that in the study area there are still HCV 2 areas, namely areas that overlap with the HL Gunung Raya area (Figure 17). The total area of HCV 2 in the study area is 276 ha. The management area for HCV 2 also includes a HL zone buffer zone with a width of 500 m.

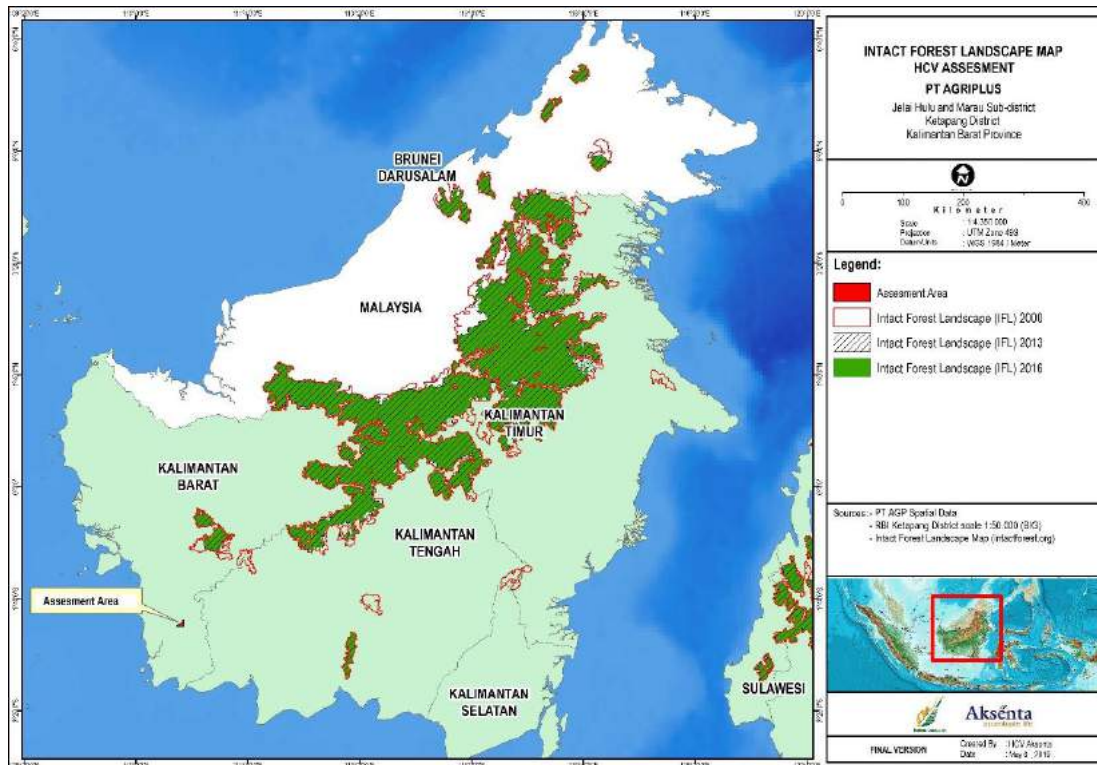


Figure 16. Position of the study area in the IFL area in 2006, 2013 and 2016

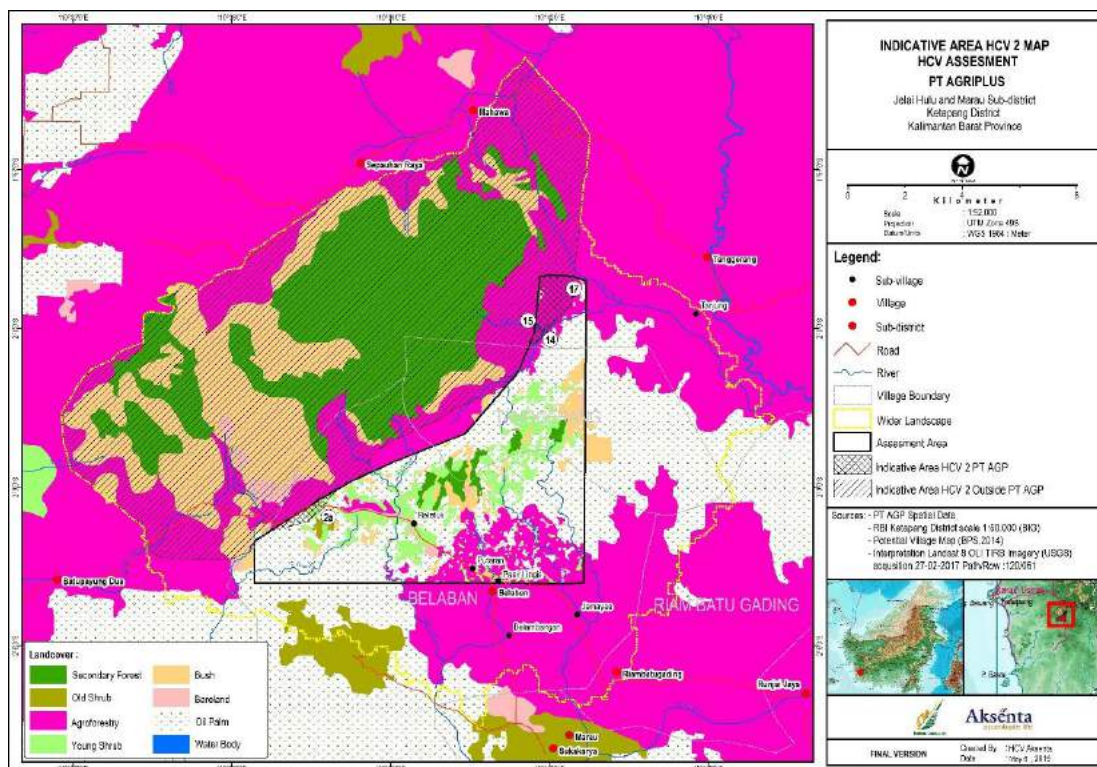


Figure 17. Distribution of HCV 2 areas in the study area

3.6.3. HCV 3

Specifically for HCV 3, HCV identification refers to the 2008 HCV Toolkit for Indonesia using the precautionary approach (**Table 11**).

Table 11. Identification of HCV 3 using Prudential Approach (HCV Toolkit 2008)

Question	Answer	Indication	Criteria
1. Is one or more ecosystems categorised threatened or rare under Table 8.3.1 or 8.3.2 located (i) within the Management Unit concession; or (ii) outside the Management Unit concession but is likely to get affected by the use planned by the Management Unit?	Yes	Potential HCV 3 may be found within the concession or nearby; proceed to No. 2.	There is a potential or Lowland Dipterocarp Forest under threatened category (PLN, RGK, HNJ, and TLW land systems)
	No	-	-
2. Does the ecosystem constitute vegetation on peatland?	Yes	-	-
	No	Proceed to No. 4.	No peatlands in the assessment area.
3. Has the peatland undergone a drastic change preventing the natural hydrologic system, making the hydrologic function not possible for restoration?	Yes	N/A	-
	No	N/A	-
4. Has the ecosystem undergone a drastic change of land cover so that it meets 'non-productive land' criteria under Minister of Forestry Decree No. 21/Kpts-II/2001?	Yes	There might be no potential HCV 3, but it is necessary to proceed to step No. 5.	-
	No	HCV 3 is located in the assessment area or its surroundings.	There is the remaining of wood vegetation area, in the form of forest and shrub that are yet to be fully encroached or burn, i.e. areas on the hilltop and others around springs.
5. Is it still possible to restore the ecosystem through a natural process, if not converted, taking into account the following factors: (i) ecological attributes or unique characteristics of the ecosystem in question; (ii) condition and status of the neighbouring lands; (iii) applicable spatial planning; and (iv) local development planning?	Yes	N/A	-
	No	N/A	-

Justification

All land systems in the study area, namely Pakalunai (PLN), Rangankau (RGK), Honja (HNJ), and Telawi (TLW), are included in the threatened ecosystem types in Kalimantan, namely Mixed Dipterocarpaceae Forest ecosystems on Deep Frozen Rocks (Granite), based on the 2008 Indonesian HCV Toolkit. In this region there was no confirmed peat ecosystem, both based on land system maps and field verification results. The ecosystem in the study area is lowland dipterocarp forest which has experienced a decline in quality due to logging and land conversion. Utilization of natural resources and land use in this region has been going on for a long time, at least intensively starting in the 1980s. Large-scale fires in 1997 and 2015 are also one of the causes of forest degradation in the region.

Even so, the remaining good enough dipterocarp forests can be found on hilltops and areas around springs that are maintained by the community, such as around the Riam Kekalap spring.

The forest concentration is relatively good and is dominated by a group of young dipterocarps which are quite abundant, from the type of keruing (*Dicarpus cornutus*), branches (*Shorea ovalis*), red meranti (*Shorea leprosula*), merawan (*Hopea dryobalanoides*), and ulin (*Eusideroxylon zwageri*). Therefore, although most of the dipterocarpaceae forest ecosystem in this region has been degraded, there are still some areas that are classified as natural ecosystems.

Location and Size of HCV 3 Areas

The HCV 3 area in this region is a dipterocarp lowland forest ecosystem which is classified as a threatened ecosystem type in Kalimantan. These areas are on the Kalanglampung-Semerumbung Hill, the Limau Tupai-Sembelayang Hill, and the Betung Hill with forest cover and bushland (**Table 12** and **Figure 18**). The total area of HCV 3 covers 245.1 ha.

Table 12. Location and size of HCVA 3 in PT AGP Location Permit concession

Index	Location	Area (ha)
2	Shrub area on Kalanglampung – Semerumbung hills	25.0
7	Forested area on Limau Tupai – Sembelayang hills	192.3
11	Forested area on Betung hill	27.8
Total Size of HCVA 3		245.1

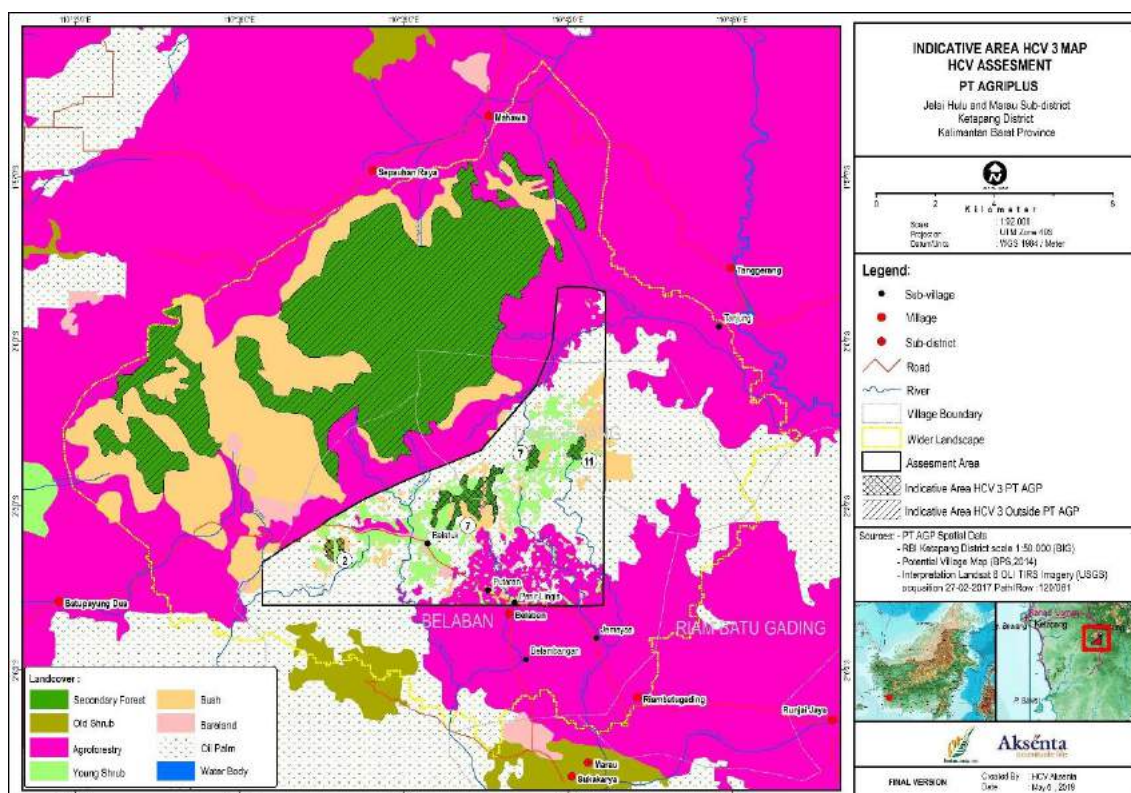


Figure 18. Distribution of HCV 3 in the study area

3.6.4. HCV 4

The existence of HCV 4 area is detected from the function and value of ecosystem services that play an important role in critical situations. All criteria that indicate the presence of HCV 4 are found in the study area (**Table 13**).

Table 13. Indications of HCV 4 in the Assessment Area

Requirements of HCV 4 (Brown <i>et al.</i> , 2017)	Present/ Absent
Managing extreme flow events, including vegetated riparian buffer zones or intact floodplains	✓
Maintaining downstream flow regimes	✓
Maintaining water quality characteristics	✓
Fire prevention and protection	✓
Protection of vulnerable soils, aquifers and fisheries	✓
Provision of clean water; and Natural ecosystem important for stabilizing steep slopes	✓
Protection against winds, and the regulation of humidity, rainfall and other climatic elements	✓
Pollination services, for example exclusive pollination of subsistence crops	✓

Note: ✓ = present; - = absent

Justification

The main rivers in this region are (i) the Air Putih River which empties into the Kendawangan River, and (ii) the Sepupuan River which empties into the Kepayang River and then to the Jelai River. The two rivers have a relatively similar profile: the width of the river crossing ranges from 10-12 m, the watershed is still naturally vegetated, the river water is clear, and the discharge flows throughout the year. The physical characteristics of the two main rivers indicate that the main river can function as a natural firebreak.

Because the position of the study area is located in the upper reaches of the watershed, rivers in this region has an important function in managing extreme water flow events, especially for downstream flows. The criteria for managing water flow events not only include the river flow, but also include the border of the river as a buffer zone. The entire river border area within the study area also still has a function to maintain river water quality. This relates to land cover in border areas dominated by shrubs and shrubs. The existence of natural / semi-natural vegetation functions as a filter for pollutants, both originating from soil erosion and from residues of agrochemicals carried by surface runoff. River borders that are still covered by natural vegetation, such as those found in the Air Putih River and the Sepupuan River, have relatively high humidity and relatively low air temperatures so as to maintain a balance of microclimate that is suitable for the metabolism of living creatures in the vicinity.

The recommended river border width into the HCV area is 30-50 m. The width is determined based on the function approach and important values found in the border area (Gumbert *et al.*, 2009). Other references that are also used in determining border widths are the RSPO Manual on Best Management Practices (BMPs) for the Management and Rehabilitation of Riparian Reserves (Barclay *et al.*, 2017) and Simplified Guide Management and Rehabilitation of Riparian Reserve (Lucey *et al.*, 2018).

The hilly area located in the middle of the study area contributes to the maintenance of the downstream river flow regime. At the very west, there are Bukit Kalanglampung and Semerumbung. Then in the middle to the north-east, there are Bukit Limau Tupai, Sembelayang, Tunggal, Rimau, Lang Dasa, Bepinsang, Betung, Bijan, and Bukit Batu Manunggal. The existence of these hills also functions as an area controlling erosion and sedimentation; potential as a habitat for pollinating agents; and is a water catchment area that supports the sustainability of spring discharge.

Within the study area six water springs were identified which flowed throughout the year. Three of the six springs have been used intensively by the community in Belaban Village. Senggraha Springs are used by the people of Belatuk Hamlet; The Kalalap Riam Spring is utilized by the people of the Round and Pasir Lingis hamlets; while Unak Pulang Springs is utilized by the people of Carik Hamlet. The three springs are used for domestic needs, such as drinking, cooking, and MCK, through piping since 2008.

Location and Size of HCV 4 Areas

The total area of HCV 4 identified was 1,197.8 ha spread over 18 locations (**Table 14** and **Figure 19**). The area is dominated by hilly areas which cover 78% of the total area of HCV 4. The hilly area is included in the spring and its reservoir (buffer zone radius of 200 m). The HCV 4 area includes not only the tops of hills, but also areas of shrubs on steep slopes, especially areas that are continuous with forested peaks. Steep sloping areas that have been degraded or that have covered bushes and oil palm plantations are not categorized as HCV 4, but are HCV 4 (HCVMA) management areas.

Table 14. Location and size of HCVA 4 in PT AGP Location Permit concession

ID	Location	Area (ha)
1	River Langsat and its riverbank (width: 30 m)	0.8
2	Shrub area on Kalanglampung – Semerumbung hills	45.3
2a	Area in overlap with Gunung Raya Protection Forest	64.0
3	River Sanawansik and its riverbank (width: 30 m)	22.7
4	River Air Putih and its riverbank (width: 50 m)	66.7
5	River Depatut and its riverbank (width: 30 m)	5.7
6	River Sementabang and its riverbank (width: 30 m)	8.4
7	Forested area on Limau Tupai – Sembelayang hills, including the presence of Senggraha, Riam Kekalap, and Unak Pulang springs (buffer zone width: 200 m)	555.9
8	River Sentabik and its riverbank (width: 30 m)	22.2

ID	Location	Area (ha)
9	River Sengabang and its riverbank (width: 30 m)	34.6
10	River Kampak and its riverbank (width: 30 m)	25.1
11	Forested area on Betung hill	49.1
12	River Panyangkauan and its riverbank (width: 30 m)	11.5
13	River Bepinsang and its riverbank (width: 30 m)	12.3
14	River Sepupuan and its riverbank (width: 50 m); this area is also in overlap with Gunung Raya Protection Forest area	38.5
15	River Sejelemuan and its riverbank (width: 30 m); this area is also in overlap with Gunung Raya Protection Forest area	2.7
16	Shrub area on Batu Manunggul hill	31.3
17	Area in overlap with Gunung Raya Protection Forest area	201.1
Total Size of HCVA 4		1,197.8

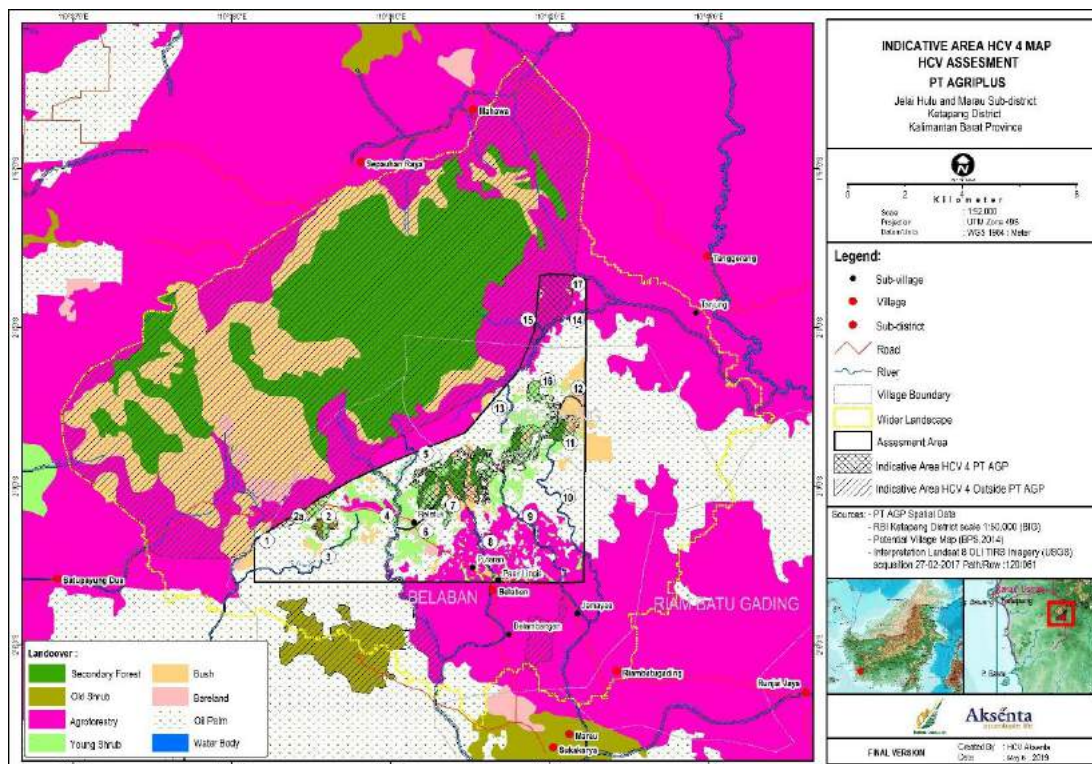


Figure 19. Distribution of HCV 4 in the study area

3.6.5. HCV 5

The results of the field study and interviews / discussions using the principles of FPIC indicate that in the study area there is a socioeconomic situation of the community that indicates HCV 5 (**Table 15**).

Table 15. Indications of HCV 5 in the Assessment Area

Requirements of HCV 5 (Brown <i>et al.</i> , 2017)	Present/ Absent
Hunting and trapping grounds (for game, skin and furs)	-
NTFPs such as nuts, berries, mushrooms medicinal plants, rattan	-
Fuel for household cooking, lighting and heating	-
Fish (as essential sources of proteins) and other freshwater species relied on by local communities)	-
Building materials (poles, thatching, timber)	✓
Fodder for livestock and seasonal grazing	-
Water sources necessary for drinking water and sanitation	✓
Items which are bartered in exchange for other essential goods, or sold for cash which is then used to buy essentials including medicine or clothes, or to pay for school fees	✓

Note: ✓ = present; - = absent

Justification

At present, most of the sources of meeting the fundamental basic needs for animal protein (meat) in Belaban, Batu Riam Gading and Tangerang villages are filled with purchases and cultivation (animal husbandry). Even if hunting still occurs within the study area, it is more recreational and not aimed at meeting basic needs. The same is true for the fisheries sector as a source of meeting the needs of animal protein (fish), which is obtained by buying on the market. Even if there are people who fish, it is only done as a hobby. Livestock grazing activities are carried out permanently in their respective gardens / lands or released around the village area. In the study area there are no nomadic herders who use communal managed forests or land.

Open accessibility makes it easier for people to obtain health services, education, and access economic centers. Residents in the study area have adopted a modern lifestyle with a variety of livelihood patterns in meeting their basic needs. People already have a high capacity to accumulate wealth, and are not limited to meeting their daily needs. The biggest cash income of the people (especially Tangerang Village), is mostly obtained from working as laborers / employees in oil palm plantation companies.

When the study was conducted, there were no more communities in the study area that met basic needs by extracting directly from forests / other natural ecosystems (non-cultivation). Likewise with the method of treatment, people prefer the method of modern medicine. Electricity and fuel (BBM) supplies are also available and easily available, both for transportation and production needs. Most households already use LPG gas stoves and kerosene for cooking.

Most of the houses in the study area still use wood as the main material but it has been combined with manufacturing materials (such as cement, brick, zinc, asbestos, plywood, mild steel frame and others). The thatched houses have not been found. Timber building materials are mostly obtained by buying and some are obtained from private and family-owned shrubs and Tembawang plantations in the study area.

Within the study area there are areas that have important and fundamental values for the local community, namely the area of water supply in the form of springs and rivers that flow throughout the year. This water source is used by the community for consumption, sanitation and agricultural irrigation purposes. The existence of this water source is protected by the community through an agreement on the prohibition of opening fields in the upstream area of the spring, as well as restrictions on fishing activities in the river. Those who violate this agreement may be subject to adat fines. This agreement is also regulated in the Village Regulation since 2012.

Location and Size of HCV 5 Areas

The HCV 5 area that was verified together with the local community consisted of five sites with a total area of 48.5 ha (**Table 16**). The HCV 5 areas are in the form of springs and streams (water bodies) that are used by the community as water sources, both for consumption, sanitation and irrigation purposes. The distribution of HCV 5 area locations at PT AGP is presented in **Figure 20**.

Table 16. Location and size of HCVA 5 in PT AGP Location Permit concession

ID	Location	Important value to community	Area (ha)
7a	Air Senggraha spring and its buffer zone (width: 200 m)	Source of clean water for consumption and sanitation	12.6
7b	Riam Kekalap spring and its buffer zone (width: 200 m)	Source of clean water for consumption and sanitation	12.6
7c	Unak Pulang spring and its buffer zone (width: 200 m)	Source of clean water for consumption and sanitation	12.6
4	River Air Putih	Source of clean water for sanitation and irrigation	7.2
14	River Sepupuan	Source of clean water for sanitation and irrigation	3.5
Total luas area HCV 5			48.5

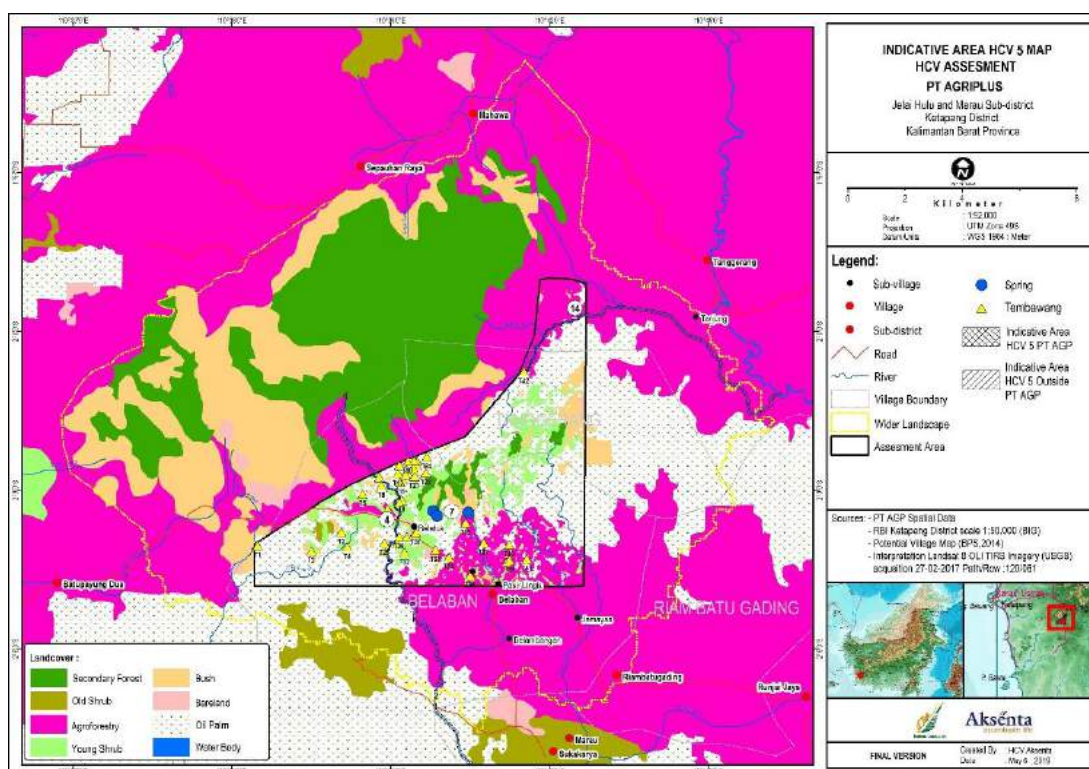


Figure 20. Distribution of HCV 5 in the study area

3.6.6. HCV 6

HCV 6 represents areas of cultural significance that have an important traditional role for local or indigenous communities. In the Common Guide for HCV Identification (2017), a number of social and cultural situations in the community that are qualified as HCV 6 are explained (**Table 17**).

Table 17. Indications of HCV 6 in the Assessment Area

Requirements of HCV 6 (Brown <i>et al.</i> , 2017)	Present/ Absent
Sites recognised as having high cultural value within national policy and legislation.	-
Sites with official designation by national government and/or an international agency like UNESCO.	-
Sites with recognised and important historical or cultural values, even if they remain unprotected by legislation.	✓
Spiritual or sacred sites, burial grounds or sites at which traditional ceremonies take place that have importance to local or indigenous people.	✓
Plant or animal resources with totemic values or used in traditional ceremonies.	-

Note: ✓ = present; - = absent

Justification

In the study area there are no sites / sites or distribution sites that are recognized by national policy and legislation of high cultural value. In West Kalimantan, only 15 cultural reserves have been recognized by the government by issuing a decree based on the Law on Protection of high historical value objects regulated in Law No. 11 of 2010 concerning Cultural Heritage. The cultural site that is recognized by national policy and legislation closest to the study area is the Royal Palace of Matan Tanjungpura, which is located in Sampit Village, Delta Pawan District, Ketapang Regency with a distance of about 45 km.

Sites/locations for official determination of national governments and / or international institutions (UNESCO) are not available in the study area. Sites listed on the Tentative List of UNESCO World Heritage Sites are located in Embaloh Hulu, Embaloh Hilir and Putussibau Districts, Kapuas Hulu Regency, West Kalimantan Province, namely the Betung Kerihun National Park (Transborder Rainforest Heritage of Borneo). The area is about 450 km from the study area.

Based on field observations and interviews, it is known that in the study area there are areas that have cultural and spiritual values, especially related to the beliefs of the Dayak community. These areas are sacred sites, Tembawang, former settlements, and cemeteries. The area is a site that is quite important for local people, although it is not protected by law.

Tembawang; or often referred to as agroforests, is a form of land use system that consists of various types of plants, ranging from large trees. This system is managed with certain techniques according to their local wisdom and follows social and customary rules so as to form a complex diversity resembling a forest ecosystem. Tembawang management is regulated by ownership and utilization based on community groups, ranging from personal use, nuclear family, extended family up to the village level containing very high socio-cultural values. Fruit trees (durian, langsung, kelampayan, kumpang, limat (janta ') and kekalik) are plants that have important value not only in economic terms but also culture for the Dayak community in the study area. Therefore, in their custom there is a traditional fruit ceremony which is usually done at every fruit season.

The Dayak community in the study area still believes and respects the existence of sacred places and old graves that are considered to have magical powers. The existence of these places is still visited and maintained by the surrounding community. Most of the ancestral graves found in the study area are in the Tembawang area. Similar to the tomb, sacred places are also widely available in the area of Tembawang. The form of sacred areas in the field in the form of stones, large trees, old trees, or sacred tombs. While sites / locations of plant or animal resources that have totem values or for traditional ceremonies are not found in the study area. The implementation of traditional ceremonies in the study area is more ceremonial and cultural in nature, and is more influenced by the religion of each ethnic group.

Location and Size of HCV 6 Areas

In the study area there were 42 Tembawang locations, 7 sacred sites, and 24 grave sites. The total area of HCV 6 in the PT AGP Location Permit area is 130.5 ha (**Table 18**). The HCV 6 area distribution consisting of Tembawang, tombs and sacred places is presented in **Figure 21**.

Table 18. Location and size of HCVA 6 in PT AGP Location Permit concession

ID	Location	Importance to Community	Size (ha)
Tembawang			
T1	Lubuk Buluh Tembawang	Cultural, ecological, or spiritual/sacred values	0,5
T2	Selampayan Tembawang	Cultural, ecological, or spiritual/sacred values	1
T3	Kurung Beringin Tembawang	Cultural, ecological, or spiritual/sacred values	0,5
T4	Lubang Lundung Tembawang	Cultural, ecological, or spiritual/sacred values	0,8
T5	Tumbangan Penalang and Asam Buah Burial Ground	Cultural, ecological, or spiritual/sacred values	3
T6	Sayang Tedung Tembawang	Cultural, ecological, or spiritual/sacred values	3
T7	Sungai Ketupat Tembawang and Old Burial Ground	Cultural, ecological, or spiritual/sacred values	2
T8	Tempajak / Lubang Lalabi Tembawang and Burial Ground	Cultural, ecological, or spiritual/sacred values	2
T9	Semempulang Tembawang	Cultural, ecological, or spiritual/sacred values	1
T10	Benua Lambat Tembawang and Old Burial Ground	Cultural, ecological, or spiritual/sacred values	6
T11	Segarangan Tembawang	Cultural, ecological, or spiritual/sacred values	1,5
T12	Sepasaran Tembawang	Cultural, ecological, or spiritual/sacred values	0,5
T13	Riam Tembawang	Cultural, ecological, or spiritual/sacred values	5
T14	Kusik Tenggalung Tembawang	Cultural, ecological, or spiritual/sacred values	7
T15	Kampung Muda Tembawang	Cultural, ecological, or spiritual/sacred values	3
T16	Selunakan Tembawang	Cultural, ecological, or spiritual/sacred values	1
T17	Batu Besar Tembawang and Burial Ground	Cultural, ecological, or spiritual/sacred values	2
T18	Siakaman Tua Tembawang	Cultural, ecological, or spiritual/sacred values	3

ID	Location	Importance to Community	Size (ha)
T19	Siakaman Pandaman Tembawang	Cultural, ecological, or spiritual/sacred values	2
T20	Seprayunan Tembawang	Cultural, ecological, or spiritual/sacred values	0,01
T21	Petapuk-Durian Beruk-Durian Denyiur Tembawang	Cultural, ecological, or spiritual/sacred values	3
T22	Lata Tembawang	Cultural, ecological, or spiritual/sacred values	2
T23	Karah Beruang Tembawang	Cultural, ecological, or spiritual/sacred values	3
T24	Sungai Belabu Tembawang and Pail Burial Ground*	Cultural, ecological, or spiritual/sacred values	0
T25	Upuy Jaling Sacred Burial Ground & Muara Danau Blatuk Setembirikan Tembawang	Cultural, ecological, or spiritual/sacred values	5
T26	Rantau Panjang Tembawang	Cultural, ecological, or spiritual/sacred values	3
T27	Pulau Nangka Tembawang	Cultural, ecological, or spiritual/sacred values	2,5
T28	Muara Sementabang Tembawang and Burial Ground	Cultural, ecological, or spiritual/sacred values	0,25
T29	Sementabang Tuha Tembawang	Cultural, ecological, or spiritual/sacred values	5
T30	Sementabang Muda Tembawang	Cultural, ecological, or spiritual/sacred values	3,5
T31	Muara Sungai Kusik Tembawang	Cultural, ecological, or spiritual/sacred values	1
T32	Serapuan Tembawang	Cultural, ecological, or spiritual/sacred values	4
T33	Pakit Tembawang	Cultural, ecological, or spiritual/sacred values	1
T34	Sinabaka Tembawang and Bakah Berandung Burial Ground	Cultural, ecological, or spiritual/sacred values	1
T35	Riam Kekalap Tembawang	Cultural, ecological, or spiritual/sacred values	2
T36	Perumahan Kopi Tembawang	Cultural, ecological, or spiritual/sacred values	2
T37	Sebabahan Tembawang	Cultural, ecological, or spiritual/sacred values	20
T38	Seminting Tembawang	Cultural, ecological, or spiritual/sacred values	0,05
T39	Pangkalan Tembawang	Cultural, ecological, or spiritual/sacred values	0,05
T40	Air Mengkuang Tembawang	Cultural, ecological, or spiritual/sacred values	3
T41	Benyit Tembawang	Cultural, ecological, or spiritual/sacred values	0,04
T42	Batu Menunggulan Tembawang	Cultural, ecological, or spiritual/sacred values	2
Total Area of Tembawang			108,2
Burial Ground			
C1	Semial Burial Ground	Cultural or spiritual/sacred values	0,005
C2	Kesirin Burial Ground	Cultural or spiritual/sacred values	0,5
C3	Kalimantan Pait Burial Ground	Cultural or spiritual/sacred values	0,2
C4	Jumpung Limat Burial Ground	Cultural or spiritual/sacred values	1
C5	Tumbangan Penalang and Asam Buah Burial Ground *	Cultural or spiritual/sacred values	-
C6	Sejambur Burial Ground	Cultural or spiritual/sacred values	0,01
C7	S. Tempajak / Lubang Lalabi* Tembawang & Burial Ground	Cultural or spiritual/sacred values	-
C8	Sungai Ketupat Tembawang and Old Burial Ground*	Cultural or spiritual/sacred values	-
C9	Benua Lambat Tembawang and Old Burial Ground	Cultural or spiritual/sacred values	0
C10	Impar Old Burial Ground	Cultural or spiritual/sacred values	2
C11	Riam Burial Ground	Cultural or spiritual/sacred values	0,01
C12	Sekumpangan Burial Ground	Cultural or spiritual/sacred values	0,01
C13	Batu Besar Tembawang and Burial Ground	Cultural or spiritual/sacred values	0
C14	Siakaman Pandaman Burial Ground & Tembawang	Cultural or spiritual/sacred values	0,01
C15	Sungai Belabu Tembawang and Pail Burial Ground	Cultural or spiritual/sacred values	0
C16	Muara Sementabang Tembawang and Burial Ground	Cultural or spiritual/sacred values	-

ID	Location	Importance to Community	Size (ha)
	*		
C17	Jumpung Tanam Belatuk Burial Ground	Cultural or spiritual/sacred values	1
C18	Upuy Jaling Sacred Burial Ground & Muara Danau Blatuk Setembirkan Tembawang*	Cultural or spiritual/sacred values	-
C19	Pakit Burial Ground	Cultural or spiritual/sacred values	0,5
C20	Atugila Burial Ground	Cultural or spiritual/sacred values	0,049
C21	Sinabaka Tembawang and Bakah Berandung Burial Ground *	Cultural or spiritual/sacred values	-
C22	Putaran and Pasir Linggis Burial Grounds	Cultural or spiritual/sacred values	2
C23	Benyait Tembawang and Burial Ground *	Cultural or spiritual/sacred values	-
C24	Bepinsang Pelalin Burial Ground	Cultural or spiritual/sacred values	0,5
Total Area of Burial Ground			7,8
Sacred Sites			
S1	Lelambang Atuk Patang (sacred site)	Cultural or spiritual/sacred values	1
S2	Pulau Ibul Sacred Site	Cultural or spiritual/sacred values	3
S3	Batu Bekunci Sacred Site	Cultural or spiritual/sacred values	1
S4	Danau Tetilik Sacred Site	Cultural or spiritual/sacred values	2
S5	Tung Panitan Sacred Site	Cultural or spiritual/sacred values	4
S6	Kupang Kupit / Nini Pangau Sacred Forest	Cultural or spiritual/sacred values	3
S7	Kubangan Pelalin Guntung Sacred Site	Cultural or spiritual/sacred values	0,5
Total Area of Sacred Sites			14,5
Total Area of HCVA 6 in PT AGP Concession			130,5

Note: *) burial ground area is already included in tembawang

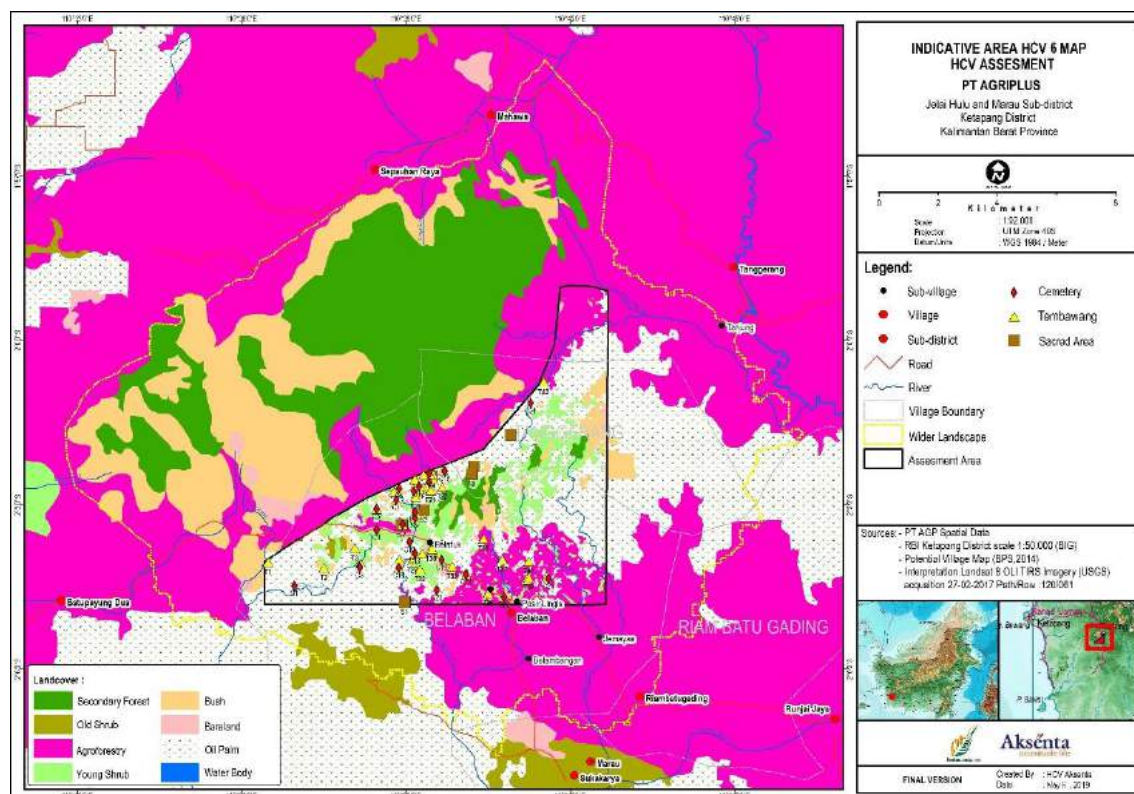


Figure 21. Distribution of HCV 6 in the study area

3.7. Stakeholder Consultation Results

Consultation with stakeholders is done through informal meetings and formal meetings. Consultation with stakeholders through informal meetings was carried out at all stages of the study, starting from the preparation / pre-assessment, field study, and in the process of preparing the report. This consultation was carried out using in-depth interviews, participatory mapping, discussion and field visits. Consultations with stakeholders through formal meetings are carried out through public consultations to deliver the results of the interim study (not the final result) with a presentation and discussion approach. Stakeholder input at the time of the consultation was included in the management and monitoring plan in this report. The public consultation activity was held on August 15, 2017.

During a public consultation, not all respondents interviewed in the field and those invited were able to attend the meeting for various reasons. Likewise with NGOs, when the field study was conducted, information was obtained that the NGO that had a program in the study area and its surroundings was the Palung Foundation. But for future management and monitoring of HCVs, it is recommended that companies work together with other NGOs (in the field of conservation). Nonetheless, the number of participants present represented the community in three villages in the study area, namely from Belaban Village, Riam Batu Gading (in Marau District) and Tangerang Village (in Jelai Hulu District). A summary of the results of stakeholder consultations on HCV studies is presented in **Table 19**.

Table 19. Summary of stakeholder consultation output

Name and Position/Role	Organisation or Social Group	Main Concern & Recommendation/Response from the HCV Assessment Team
Dahlan	Belaban Village Head	- The result of this HCV Assessment in PT AGP concession will be used for what purpose? This HCV Assessment is yet to be comprehensive. Many wildlife encounters are yet to be recorded, especially those that are migrating or moving to Gunung Raya Protection Forest. - Based on the assessment result, concerning HCV 6 elements, particularly sacred sites, ancient villages, and ritual sites in Belaban Village, is there any addition as to the potential HCVA 6 in village area? - In 2008 and 2009, PT AGP gradually cleared conducted lands and planted oil palm which have been confirmed to be located far from protection forest. However, in 2015, the seven-year-old planting area was included by the protection forest area, leading to removal of oil palm plants by the government because of regulation on new area. Based on this, can the community use the area for their own management? Team Response: - The HCV Assessment result make recommendation on HCVAs, and these areas should be protected and maintained together by the company and community for mutual benefit. - This HCV Assessment is yet to cover all aspects because our time is relatively limited. Therefore, inputs from this public consultation will enrich the data and strengthen the recommendation on the HCVA, including wildlife encounter in the Assessment Area. - Community cannot use the area as the company has asked, because the status of the area is protected forest. Protected forest is an air catchment area that must be maintained and preserved by both the company and the surrounding community. This will be included as an evaluation in HCV Management and Monitoring.
Hamjah	Community member who uses water from Riam Kekalap spring, Pasir Linggis Sub-Village, Belaban Village	Community that uses water from Riam Kekalap spring has made an agreement regarding prohibition of land clearing in the spring's upstream area, i.e. Bukit Sembelayang. Anyone who violates this agreement will be subject to customary fine. This agreement has also been provided under Village Regulation since 2012. Team Response: Local community's initiative to maintain river and spring will be included into HCV management plan recommendation, so that the management can be integrated into the existing management by local community.
Markus Singkuy	Community member of Belatuk Sub-Village, Belaban Village	Large-scaled land fires broke out in 1997/1998 and mid-2000s before PT AGP operated, these fires burnt most of the area. Team Response: This information will be used in land cover assessment.

Name and Position/Role	Organisation or Social Group	Main Concern & Recommendation/Response from the HCV Assessment Team
Fardy Akmyarsyah	Agriculture, Animal Farming, and Plantation Office	This public consultation is positive and part of the company's commitment to sustainable oil palm management, not only under RSPO scheme but also ISPO's. Team Response: This HCV Assessment requires public consultation, the implementation of which must be participatory and involve local community, especially when it relates to designation of HCV 5. In addition, public consultation also serves as means of discussion, consultation, and information dissemination on HCV presence.
Edwardo Hungan	Settlement and Environmental Office	- This activity is positive because it is carried out in a participatory manner by involving not only local government, but also local community. - Environmental Impact Assessment (EIA) is available, as well as the Environmental Management Plan (RKL)/Environmental Monitoring Plan (RPL). However, the result of this assessment will enrich the company's EIA and Environmental Management and Monitoring Plan (RKL/RPL), so that the environmental management of this area will be more comprehensive. Team Response: - As explained previously mentioned, it is required to hold a public consultation in HCV assessment, the implementation of which must be participatory and involve local community, and in this stakeholder consultation, local community also attends this forum, together with the government and NGO. - EIA, as well as RKL/RPL, is one of the sources of information in this assessment, so that HCVA management is expected not to overlap with activities that are already carried out.
Ruswanto	Natural Resources Conservation Agency (BKSDA) of West Kalimantan Province	- Protected animals should not be hunted, e.g. northern grey gibbon and sun bear. - HCVA can be promoted to become essential ecosystem area. Currently, we already have minister regulation designating essential ecosystem areas in three districts, i.e. Ketapang, North Kayong, and Sekadau Districts. Team Response: - This input will be useful in preparing HCVA monitoring and management plan. - HCVA designation also considers connectivity of HCVA to the surrounding areas (national park, protection forest, essential ecosystem area).
Yoga	BKSDA of West Kalimantan	- Will the wildlife data presented in the HCV report document be the same as the one presented in the presentation slide (where wildlife is categorised by their conservation status)? - Is Proboscis monkey found in the Assessment Area? Team Response: - Presentation of animal data will be adjusted to the report's format, starting from global, domestic, and local issues. - According to the assessment result (field observation and interview with workers and local community), there is no record of Proboscis monkey presence in the Assessment Area. - Potential HCVAs, especially HCVA 3, are indeed unique and vulnerable ecosystems, such as forest on limestone (karst), peat forest, heath forest, and mangrove forest. However, in this assessment, the existing condition of PT AGP is mostly in the form of severely damaged heath forest that forms desert with very low biodiversity and environmental carrying capacity. Such damage is caused by the recurring forest and land fires and land clearing.
Edward Tang	Palung Foundation	- The company is committed to managing HCVAs, including compensating the areas (land compensation/GRTT) so that they can be managed by the company. - It is recommended to establish a special division in company management that covers both the company and community's participations in establishing a team to monitor and manage biodiversity as part of HCVA management. Team response: - The company is obliged to manage and monitor HCVAs in its concession. - This has already been included in recommendation for HCV monitoring and management in the report.

Note:

- During public consultation, indicative HCV map is presented for confirmation, verification, and discussion.
- Stakeholder consultation is not meant to present the final result.
- Input from stakeholders have been included in the management and monitoring plan in this report

4. HCV Management and Monitoring

4.1. HCV Management Area (HCVMA)

Total size of HCVA in PT AGP Location Permit concession is 1,357.3 ha, accounting for 22.2% of the concession's total area. This is a combination of HCVA 1 to HCVA 6 sizes. Meanwhile total area of HCVMA in the PT AGP Location Permit area is 1,974.5 ha or 32.3% of the area of the study area. In addition to covering HCV areas, the HCVMA also consists of: i) HCVMA No Go area in the form of hills and river borders whose land cover has been degraded, and ii) HCVMA Go Area is a buffer zone of HL Gunung Raya area (buffer zone width 500 m) with oil palm and mixed plantations owned by the community (**Figure 22** and **Figure 23**). The area of the HCVMA No Go Area covers 1,612.6 ha while the area of the HCVMA Go Area covers 361.8 ha (**Table 20**).

Table 20. Location and size of HCV Management Area (HCVMA) in PT Agriplus Location Permit concession

ID	Description	Area Size (ha)*	
		HCVMA 'No-Go' Areas	HCVMA 'Go' Areas
1	River Langsat and its riverbank (width: 30 m)	0.8	-
2	Shrub area on Kalanglampung – Semerambung hills	45.3	-
2a	Area in overlap with Gunung Raya Protection Forest (buffer zone width of 500 m as HCVMA 'Go' Area)	64.0	190.5
3	River Sanawansik and its riverbank (width: 30 m)	22.7	-
4	River Air Putih and its riverbank (width: 50 m)	66.7	-
5	River Depatut and its riverbank (width: 30 m)	5.7	-
6	River Sementabang and its riverbank (width: 30 m)	8.4	-
7	Forested area on Limau Tupai – Sembelayang hills, including the presence of Senggraha, Riam Kekalap, and Unak Pulang springs (buffer width: 200 m)	840.2	-
8	River Sentabik and its riverbank (width: 30 m)	22.2	-
9	River Sengabang and its riverbank (width: 30 m)	34.6	-
10	River Kampak and its riverbank (width: 30 m)	25.1	-
11	Forested area on Betung hill	49.1	-
12	River Panyangkauan and its riverbank (width: 30 m)	11.5	-
13	River Bepinsang and its riverbank (width: 30 m)	12.3	-
14	River Sepupuan and its riverbank (width: 50 m); this area is also in overlap with Gunung Raya Protection Forest area	38.5	-
15	River Sejelemuan and its riverbank (width: 30 m); this area is also in overlap with Gunung Raya Protection Forest area	2.7	-
16	Thicket area on Batu Manunggul hill	31.3	-
17	Area in overlap with Gunung Raya Protection Forest (buffer zone width of 500 m as HCVMA 'Go' Area)	201.1	171.4
18	Sacred sites distributed in 7 locations	14.5	-
19	<i>Tembawangs</i> distributed in 42 locations	108.2	-
20	Burial grounds distributed in 24 locations	7.8	-
Total Size of HCVMA (ha)		1,612.6	361.8
		1,974.5	
Size of PT AGP Location Permit Concession (ha)**		6,109.6	6,109.6
Percentage of the HCVMA Size against the Location Permit Concession (%)		22.2	5.9

Note: * Cumulative size

In the HCVMA “No Go” Areas, several management activities (BMP) that need to be carried out include: restrictions on the application of agrochemicals in the river border area; making sediment traps or gully plugs in the flow channel to reduce sediment loads in the main river; and enrichment of vegetation in open areas, both in the hills and along river banks. In the long run, these areas are not recommended for replanting. While in the HCVMA Go Area, the best management practices that need to be done are mainly related to wildlife conflict mitigation.

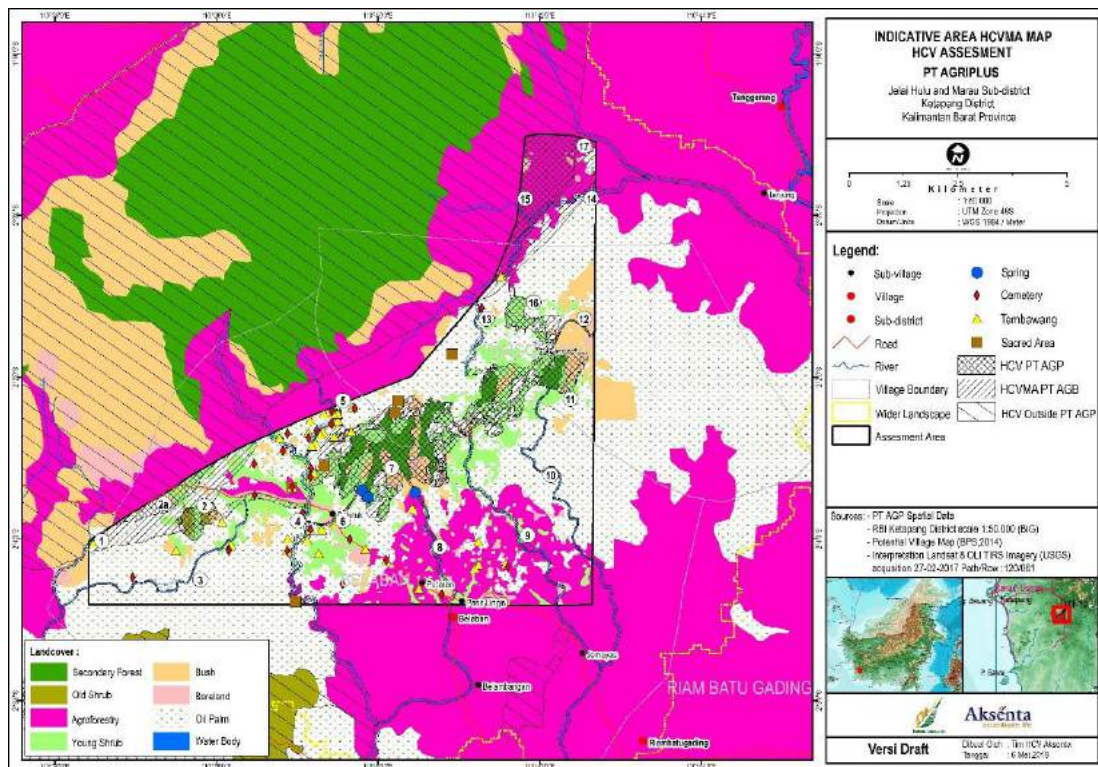


Figure 22. Indicative area HCVMA di areal in PT AGP Location Permit Concession

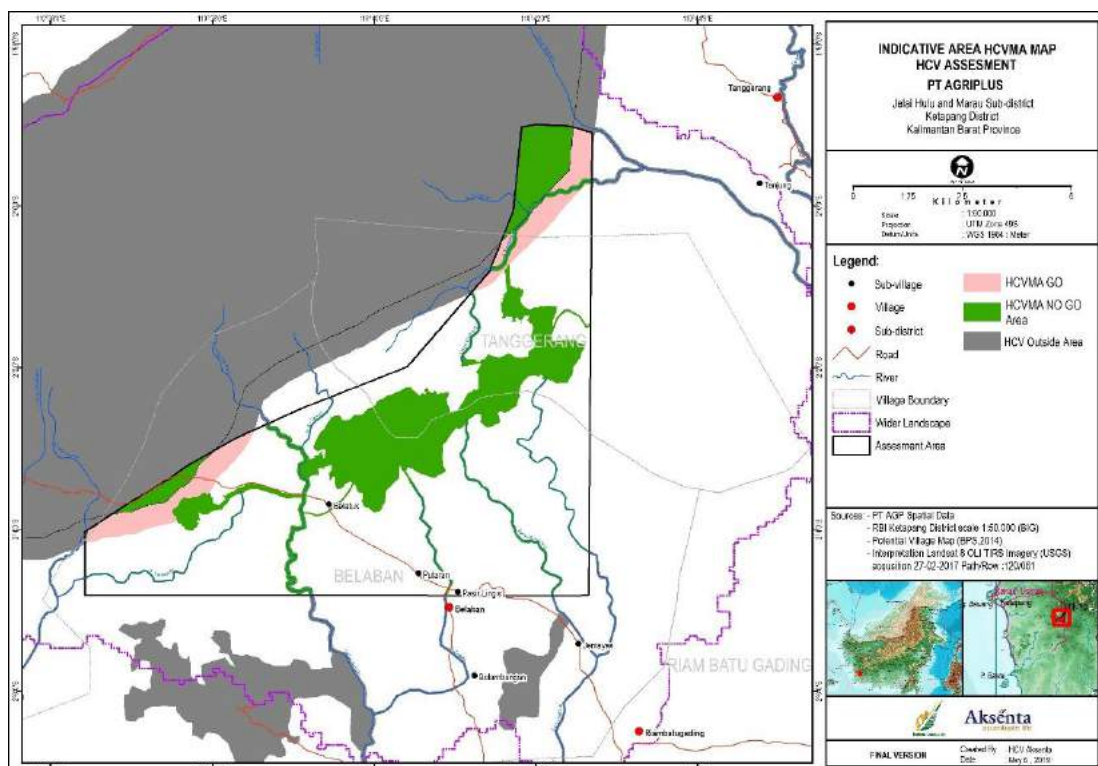


Figure 23. HCVMA Go Area dan HCVMA No Go Area in PT AGP Location Permit Concession

4.2. Threat Assessment Results

Threats to HCV can come from the internal scope of land managers or from external factors (community institutions or personal). Threat assessment aims to help the garden manager to overcome internal threats with proper management, and improve the ability to reduce various external threats. The assessment process is used to prioritize the management of HCV areas.

Most of the threats identified came from external factors, including hunting, timber use, and land fires. The threat from internal factors could potentially occur from the application of agrochemicals or over-clearing by LC contractors due to unclear HCV area boundaries in the field (**Table 21**). Identified threats can affect one or more types of HCV. This is because the threat is a threat to the typology of HCV areas that can have more than one HCV value, for example threats to hilly areas not only affect HCV 4, but also to HCV 1 if the area is a habitat for key species.

Table 21. Summary of assessment of threat to HCVA in the assessment area

Current situation/ pressure	Potential impact on value	Cause/Source (potential contribution to pressure)	Note
HCV 1			
Small population of Sunda pangolin (<i>Manis javanica</i>)	Medium-high	Hunting	Sunda pangolin habitats are the remaining forests. However, sometimes they go down to oil palm plantations in which they may potentially encounter community.
Reduced population of Müller's gibbon	Medium	Fragmented habitat to Müller's gibbon because of land clearing, normally for farmlands	- The remaining species live in Kalanglumpung and Semerumbung hills, as well as around Riam Kekalap spring. - Some local community members believe Müller's gibbon should not be hunted as they tell when daybreak comes.
Reduced population of coucang, tarsius and macaque	Low	Hunting	Often found near community farm huts or in <i>tembawang</i>
Reduced population of deer and wild boar	Medium-high	Hunting	Community sees wild boar as pests.
Small population of meranti, keruing and Bornean ironwood	Low-Medium	Logging for construction material	Community already protects the currently forested hills as water catchment. These areas still have RTE plant species such as keruing, meranti, and Bornean ironwood.
Reduced population of Asian leaf turtle and Malayan softshell turtle	Medium	- Hunting - Declined quality of aquatic habitat out of damaged riverbank.	- Some members of local community keep both species. - Some parts of the riverbanks are still naturally/semi-naturally vegetated.
Conflict with sun bear, clouded leopard and (potentially) orangutan	Low-Medium	- Community activities in hill-surrounding areas such as logging or farming. - Habitat damage in Gunung Raya Protection Forest may cause dislocation of wildlife to the assessment area.	Potential conflict with community members who own farm huts on the hills and areas adjacent to the protection forest area.
HCV 2			
Reduced size of forest area in the protection forest area (particularly those overlapping with the assessment area)	Medium	- Use of timber - Land use change into plantation of farm - Policy concerning the changed area status	Areas in overlap with Gunung Raya Protection Forest that are yet to be clearly/definitively delineated.
Broken connectivity of landscape or fragmented corridor			
HCV 3			
Reduced size and declining quality of the remaining forest areas	Low-Medium	- Logging for construction materials - Forest and land fires	- Ex logging area can be found in the remaining forest areas on the hills - Great fires broke down in 1994, 1997/1998 and 2004
HCV 4			
Deteriorating water quality	Low	Residuals out of fertiliser, pesticide and herbicide	The river water quality is currently good.

Current situation/ pressure	Potential impact on value	Cause/Source (potential contribution to pressure)	Note
		application, that get carried by surface runoff, as well as land erosion	
Land conversion along riverbanks.	Medium	- Community farming. - Planting of oil palms along the riverbanks	In general, land cover along the riverbanks is still relatively in a good condition. However, some parts are already degraded or cleared.
River siltation	Low	Land erosion and morpho-erosion	River water quality is currently good. Riverbanks are currently dominated by natural/semi-natural vegetation.
Reduced size and declined quality on the hills and along the riverbank	Medium	- Repeated forest and land fires. - Clearing for farm and plantation. - Use of timber in the remaining forested areas.	- Ex logging area can be found in the remaining forest areas on the hills and along the riverbank. - The remaining forested areas are protected by community as they are water catchments to springs used by community. - Large scale fires in 1994, 1997/1998 and 2004
HCV 5			
Deteriorating quality of river water	Low	- Over clearing during plantation development - Residuals out of fertiliser, pesticide and herbicide application, that get carried by surface runoff	Currently sound river water quality, so that this threat remains potential
Reduced size and declined quality of land cover in water catchment areas, especially in springs used by community as their source of water	Low	- Land clearing in water catchment areas may lead to reduced function of the catchments. - Forest and land fires	- Land cover in the water catchment areas are still in a good condition so that they still function optimally - Large scale fires in 1994, 1997/1998 and 2004
HCV 6			
Damaged/loss of spiritual and historical sites as well as <i>tembawang</i>	Low	- Plantation development, especially during land clearing - Over clearing by land clearing contractor	Locations of <i>tembawang</i> , burial ground and sacred sites have been made enclave by PT AGP, but no clear boundary marks are seen down the field

4.3. Recommendations for HCV Management and Monitoring

The purpose of HCV management is to protect HCV area elements from damage, as well as to maintain or enhance their value or function. HCV management plan must aim at protecting and managing HCV areas and elements. The management and monitoring recommendations in this study are not specific because they only refer to the main threats in each type of HCV. However, these recommendations are a reference that must be considered in developing and compiling a more comprehensive HCV Management and Monitoring Plan.

Recommendation for each value

Regard to river borders, recommended border widths are adjusted to the functions and important values contained in each river. Based on legal aspects, all rivers in the study area are categorized as small rivers, so the required river border width is 50 m. However, in this study, only the main rivers are 50 m wide, namely the Air Putih River and the Sepupuan River. While the width of the border in the creeks is 30 m. This width is sufficient for the protection and preservation of rivers in this region (Barclay *et al.*, 2017; Lucey *et al.*, 2018; and Gumbert *et al.*, 2009). The determination and mapping of definitive boundaries of sacred, Tembawang and tomb areas need to be carried out in a participatory manner by involving heirs, traditional leaders, village government and other elements of the community that are related to these areas.

Table 22. Recommendation for HCV management and monitoring in the assessment area

Threat	Management Recommendation	Monitoring Recommendation
HCV 1		
Declining key species diversity due to poaching of, among others, pangolin, Müller's gibbon, Sunda slow loris, tarsius, Southern pig-tailed macaque, deer and wild boar.	- Establish information board on poaching prohibition and disseminate information to community and plantation workers concerning the presence of key species. - Enrich food trees in fragmented areas. - Establish HCVA-managing groups whose one of the tasks is monitor threats of poaching of, particularly, rare and threatened wildlife species. - Report and coordinate with Natural Resources Conservation Agency (BKSDA) concerning poaching of protected wildlife species. - Collaborate with Forestry Office and stakeholders in the area of Gunung Raya Protection Forest, e.g. education programmes for local schools in and around the assessment area. - Facilitate village governments in making village spatial plan, especially relating to land allocation for farmlands (farms/plantations).	- Document the information dissemination activity and make minutes of information board establishment. - Monitor vegetation growth (growth percentage) - Regularly (every six months) monitor key species presence. - Document the minute of reporting for BKSDA. - Document every meeting with stakeholders.
Decreasing small population of meranti and keruing (<i>Dipterocarpaceae</i>), and Bornean ironwood.	- Make Permanent Sample Plot (PSP) to identify standing's annual increment or growth. - Establish information boards on species names and their threatenedness statuses. - Establish information boards on felling prohibition in HCVAs and disseminate the information. - See Section HCV 4 for fire management.	- Monitor vegetation growth (growth percentage) - Make minutes of information board establishment. - See Section HCV 4 for fire monitoring.
Decreased population of Asian leaf turtle and softshell turtle	- Facilitate village governments in making their village spatial plans, especially relating to allocation of riparian areas for protection areas. - Disseminate information on prohibition of poaching of these species. This includes information board establishment. - Conserve riparian zone as buffer and support to aquatic habitats. - See Section HCV 4 relating to management of water quality and riparian areas.	- Document the dissemination of information on the information board establishment and make the minutes. - Regularly (every six months) monitor the presence of key species. - See Section HCV 4 for management of water quality and riparian areas.
Conflict with sun bear, clouded leopard and (potentially) orangutan	- Disseminate information to community and plantation workers on the presence of wildlife species. This includes establishment of information boards on danger signs in locations that probably are used by wildlife species as their corridors. - Make SOP on wildlife conflict mitigation and disseminate this information to the entire staff, all workers and contractors. - Apply the 'buddy system', which is an operational standard where workers should not be alone in the plantation area. - Apply a reporting mechanism known to the entire staff and all workers. Coordinate with the relevant authorities. - Work together with NGOs or conservancies concerning wildlife conflict mitigation. This include training for staff and workers.	- Document the information dissemination activity and make minutes for information board establishment. - Document the SOP information dissemination. - Document reports on encounter with sun bear, clouded leopard or orangutan. - Engage community and local government in patrol activities.
HCV 2		
Forest's decreased size and deteriorating quality in protection forest (particularly in parts in overlap with the assessment area).	- Maintain the intactness of HCVA through, among others, HCVA gazettement and boundary marker establishment. - Carry out reforestation and rehabilitation in HCVMA that are already in a cleared or degraded condition (e.g. enrichment of food trees).	- Monitor HCVA boundaries on a regular basis. - Monitor vegetation growth (growth percentage). - Document every meeting with stakeholders.

Threat	Management Recommendation	Monitoring Recommendation
Connectivity between fragmented landscapes or corridor fragmentation.	- Engage local stakeholders such as community, traditional leaders, and village governments to initiate forest protection in hilly areas that serve as refugia to key species, in addition to water catchment. - Facilitate village governments in making village spatial plans with regard to allocation of cultivation and protection areas. - See Section HCV 4 for fire management.	See Section HCV 4 for fire monitoring.
HCV 3		
Decreasing size and deteriorating quality of the remaining forest areas.	- Disseminate information on the presence of threatened ecosystems to stakeholders in the assessment area. - Engage local stakeholders such as community, traditional leaders, and village governments to initiate forest protection in hilly areas that serve as conservation areas. - Facilitate village governments in making village spatial plans in making hills as protection areas. - Prevent against logging activities in HCVAs.	- Document information dissemination. - Document meetings with stakeholders. - Regularly monitor HCVA boundaries. - Engage community and local government in patrol activities.
HCV 4 and HCV 5		
Deteriorating water quality	- Establish signboards on prohibition of chemical application along riparian areas. - Establish signs to mark boundaries along riparian areas in which agrochemical use must stop and disseminate this information to spraying workers. - Make sediment traps/gully plugs along the streams or tributaries, particularly in undulating to steep areas. - Construct silt pits (2 x 1 x 1 m) in rolling to hilly areas. These areas include planting areas and both sides of the roads. This activity aims at increasing water retention and infiltration and holding against erosion material.	- Document and make minutes of information board establishment activities and disseminate this information. - Regularly (at least once in 6 months) check water quality at water monitoring points (river's inlet and outlet). - Monitor the physical condition of civil engineering structures.
Water body siltation		
Deteriorating quality of land cover on the hills and landuse conversion along riparian areas.	- Carry out gazettelement of hill and riparian areas as HCVAs and disseminate information to workers and local community on the presence and functions of these areas. - Collaborate with community, governments (village to district levels), neighbouring companies, and NGOs in conservation and protection programmes of rivers and hills as important water catchment. - Disseminate information to workers and land clearing contractors on boundaries of riparian areas to prevent against overclearing. - Facilitate village governments in making village spatial plans, particularly to make riparian areas, spring bank and water catchments protection areas. - Prepare SOP on riparian area protection and management and implement it. - Enrich vegetation in degraded riverbanks and hills (use of native tree species, or others with deep, strong rooting and thick canopy is recommended). - During replanting period, carry out rehabilitation for hills or riverbanks that has already been planted with oil palms.	- Regularly monitor HCVA boundaries. - Document meetings with relevant stakeholders. - Monitor riparian area boundaries on a regular basis (at least once in a month). - Assist land clearing contractors and document land clearing process. - Document SOP information dissemination. - Monitor vegetation growth (growth percentage).
Land fires	- Establish SOP for dealing with fires, including mechanisms for quick response and reporting to the relevant authorities. - Establish taskforce for mitigating and controlling land fires, with support from trainings, facilities and infrastructures. - Disseminate information on the danger of land fires and establish signboards on land fires.	- Document the SOP information dissemination and record the reports. - Record numbers of fire events and make the minutes. - Coordinate with the neighbouring companies and governments in mitigating land and forest fires. - Patrol on regular basis during dry

Threat	Management Recommendation	Monitoring Recommendation
	- Collaborate with community, village government, and relevant stakeholders to control the use of fires when clearing lands for their farms. - Maintain areas that may potentially function as manmade firebreak such as plantation roads or <i>parit gajah</i> (large channel). - Map water source locations for addressing land fires. - Apply fire information system. This includes drought index-based early warning or others that are based on fire watchtower monitoring, as well as fire potential (Fire Danger Rating System/FDRS).	seasons, i.e. from July to September. - Monitor water discharge at water source locations to anticipate fires. - Document FDRS-related reports.
HCV 6		
Degradation or clearing of HCVA 6	- Supervise land clearing activities, particularly in areas near to HCVAs. These should be participatory, in which key stakeholders are engaged. - Develop agreement between the company and local community/stakeholders on HCVA 6 management and protection (including prohibited activities). - Facilitate and allow community to have activities in HCVA 6.	- Document land clearing activities. - Document meetings with key stakeholders.

Cross-Value Recommendations

In the wider landscape there are several important areas (HCV) that are outside the PT AGP Location Permit area, for example the HL Gunung Raya area, rivers, or HCV areas in the oil palm plantation concession area around the study area. Management of these important areas can be done with a variety of activities, including through: the establishment of a conservation area management forum in the area; making maps of shared conservation areas; RTE wildlife monitoring is carried out together with each stakeholder; coordinate and cooperate with BKSDA, the Forest Service, or NGOs for handling when wildlife and human conflicts occur; and collaborating with surrounding companies, local communities and village government, such as joint patrols.

See the following general recommendation for each HCVA.

1. Confirm the HCV area. The stages are delineating the HCV area map, verifying the results of delineation, and setting the final result as a HCV area map. The company needs to document this process in an official report on the delineation of the HCV area. The next action is the installation of a HCV management area boundary (HCVMA) and a sign board. Specifically for HCV 5 and 6, HCV area inauguration needs to be done in a participatory manner.
2. Socializing well and on target towards:
 - a. Internal company (field employees, staff, and members of cooperative partnerships)
 - b. Nearby communities (land users and traditional institutions)
 - c. Related agencies (consultation)
3. Prepare a HCV Management and Monitoring Plan, taking into account:
 - a. Aspects of species protection, including helping to reduce the breeding of animals, and maintaining wildlife trails or corridors, both between HCV areas and forested areas around the study area
 - b. Aspects of HCV area connectivity with local landscapes
 - c. Strengthening communication with surrounding companies to jointly develop a HCV management plan and action plan
 - d. Involvement of the local community, because the interests and benefits of the HCV are the interests and benefits of all parties
 - e. Implementation of procedures and policies that have been available in the company
4. Socializing the existence of the site, the shape of the area, and the importance of the HCV area, including the company's commitment to protect it. This is especially intended for land clearing contractors, company staff and workers, communities, and local governments
5. Develop organizations to manage HCV areas:

- a. Establish a management unit to ensure the effectiveness and achievement of HCV management
 - b. Staff training or, if necessary, recruit staff who are competent to manage HCV areas
 - c. Making SOPs and HCV management policies
- 6. Develop HCV management, monitoring and evaluation capacity:
 - a. HCV monitoring training: the basics of identifying flora and fauna, measuring water quality, stakeholder involvement and other relevant matters
 - b. Consistent implementation of policies and SOPs
 - 7. Develop a system of mitigation and handling of land fires which includes the preparation of SOPs, the formation of a patrol team supported by facilities and infrastructure, training of staff and employees, including coordinating with relevant parties
 - 8. Make a list of stakeholders and communicate it and collaborate with all stakeholders related to the management of HCV areas, specifically HCV 5 and HCV 6.

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Statement of Responsibility

On behalf of PT Agriplus, we have accepted the HCV assessment and will implement the guidelines (management and monitoring) provided in the report.

Date : Jakarta, October 20th, 2017



Name : Hidayat Aprilianto
Functon : Head of Sustainability of PT Agriplus

On behalf of Aksenta I hereby confirm that Aksenta indeed carried out this HCV assessment, that it has written a report of which the Public Summary is included here, and is that it is responsible for the findings and recommendations presented.

Date : Jakarta, October 20th, 2017



Name : Nandang Mulyana
Functon : Social expert, PT Gagas Dinamiga Aksenta
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