

**Roundtable on Sustainable Palm Oil  
New Planting Procedure  
Summary of Assessment Report and  
Management Plan**

**PT. AGRO ANDALAN**

**Sekadau Hulu Sub District, Sekadau District, West Kalimantan  
Indonesia**

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**2018**

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# Chapter 1

## 1. Overview and background

### 1.1 Area of New Planting and Development Plan

PT. Agro Andalan (PT AAN) is located in Sekadau Hulu Sub District, Sekadau District West Kalimantan Province. PT AAN has operational areas with HGU Permit No. 35/HGU/BPN RI/2011 dated 21 July 2011, for 6,993.2 Ha published by Kantor Pertanahan Sekadau District and Land Permit No. 593.41/205/Ekon/2015 dated 11 Mei 2015 for 11,047.6 ha published by Bupati Sekadau. Total area of PT AAN by Bupati Sekadau permit are 18,040 Ha, but based on actual calculation by GIS analysis in 2017 total area in PT AAN are 17,745.75 Ha. This total area which is real in the field and makes it easy to do spatial analysis. Total planted area in PT AAN until December 2016 are 3,446.73 hectare **(Figure 2)**

Administratively, The oil palm plantation area of PT AAN located in 7 (seven) village area, i.e village Mondri, Boti, Nanga Menterap, Setawar, Sungai Sambang, Tapang Perodah, Nanga Pemubuh on Sekadau Hulu Sub District, Sekadau District, West Kalimantan. PT AAN geographically situated at 111°0'16.756"E and 0°8'17.151"S.

A comprehensive and participatory independent Social Impact Assessment (SIA), Analisis Dampak Lingkungan (AMDAL/ SEIA) assessment which internal and external stakeholders were conducted by RSPO registered assessor from Anugrah Lintas Zaman (ALZ) and High Conservation Value Assessment conducted by PT Remark Asia. Based on decree of ministry of forestry, the location PT AAN is a part of land zoned for agriculture development (APL = Area Penggunaan Lain).

In the operations, PT AAN places high importance and care about the preservation of the environment in the site. The effort starts from land clearing by adapting no-burning policy, both for new plantings and replanting. PT AAN avoids new development in peatlands, areas with high carbon reserves, and committed to preserve areas that have High Conservation Value (HCV). PT AAN has a land clearing and management procedure for marginal soil such as: a steep area, sulfuric acid, peat and hardpan (spodosols).. Based on Map of Forest Area from Ministry of Environment and Forest 2016, the Forest area or "Hutan Lindung" (HL) is far from PT AAN (presented on Figure 4).

The Land cover of PT AAN concession area based on HCV Assessment presented consist of Dry Cultivated Land, Disturbed Forest (Secondary Forest), Rubber Plantation, Palm oil plantation, Shrubs, Swamp and Settlement (at Sub Bab 1.2). The Disturbed Forest (Secondary Forest) in concession PT

AAN have been protected as HCV and HCVMA Area (presented on Figure 3) and further information about HCV presented at Sub bab 3 at page 43.

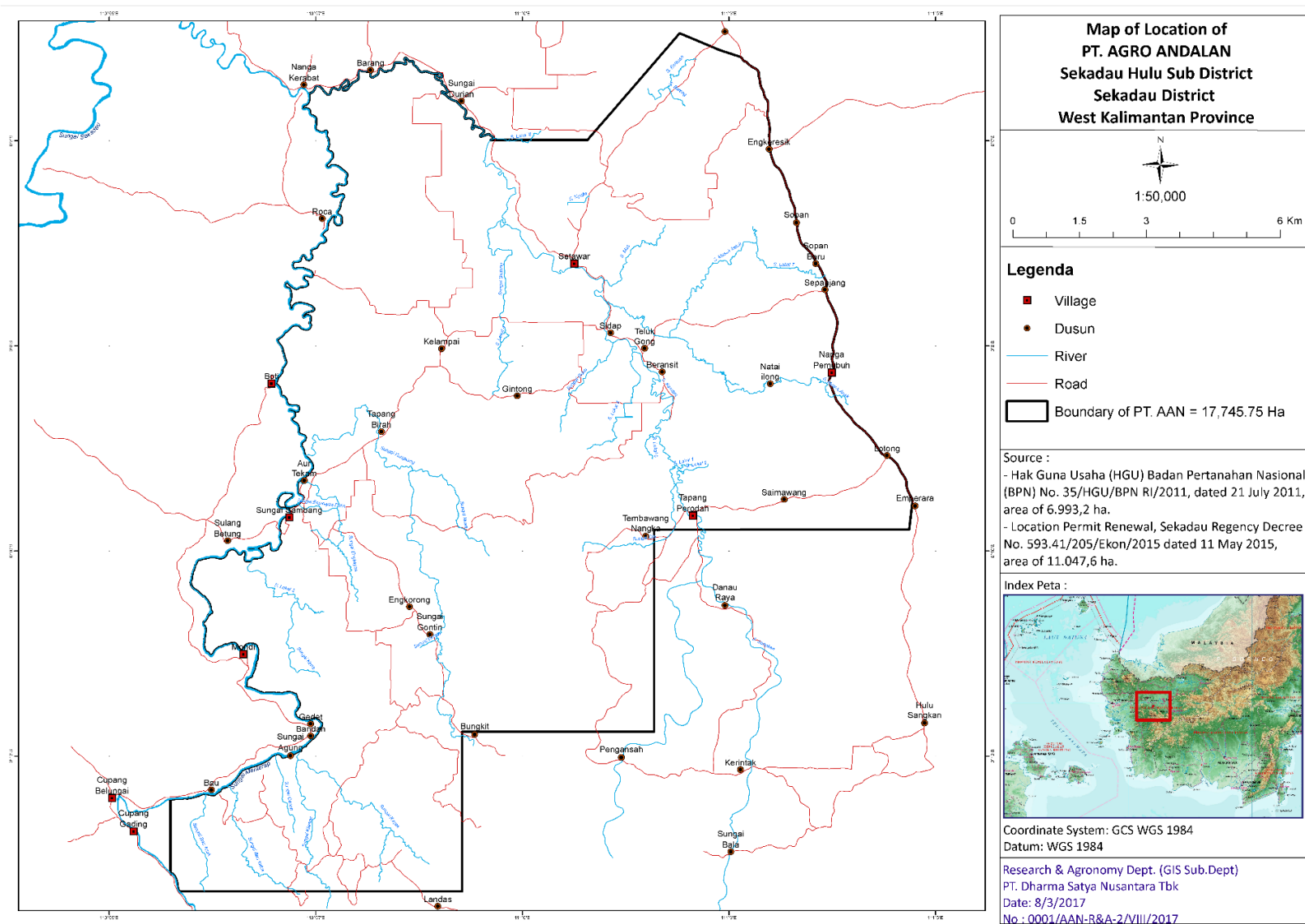
PT AAN has a new planting plan for oil plantation up to 2021. Based on HCV, SIA, and FPIC that potentially area for new planting are 8,016 Ha (Recommendation for development). New planting area consists of nucleus and plasma as mentioned in Table below and Figure 3 :

Table 1.1 New Planting Plan PT AAN on 2018 – 2021

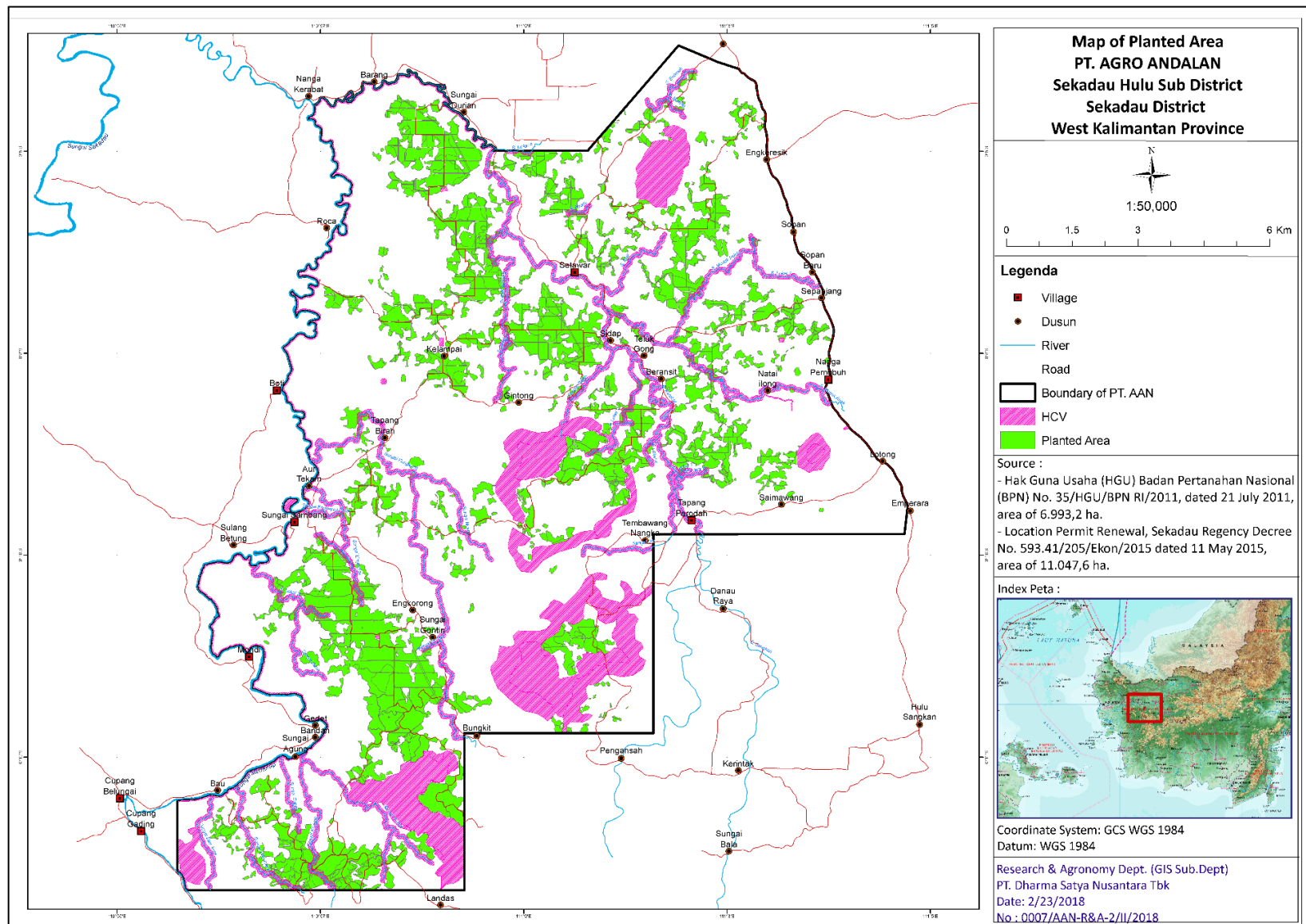
<b>Year</b>	<b>Planting Plan (Ha)</b>
2018	968
2019	2,357
2020	3,121
2021	1,570
<b>Total</b>	<b>8,016</b>

\*PT AAN will start planted on June 2018

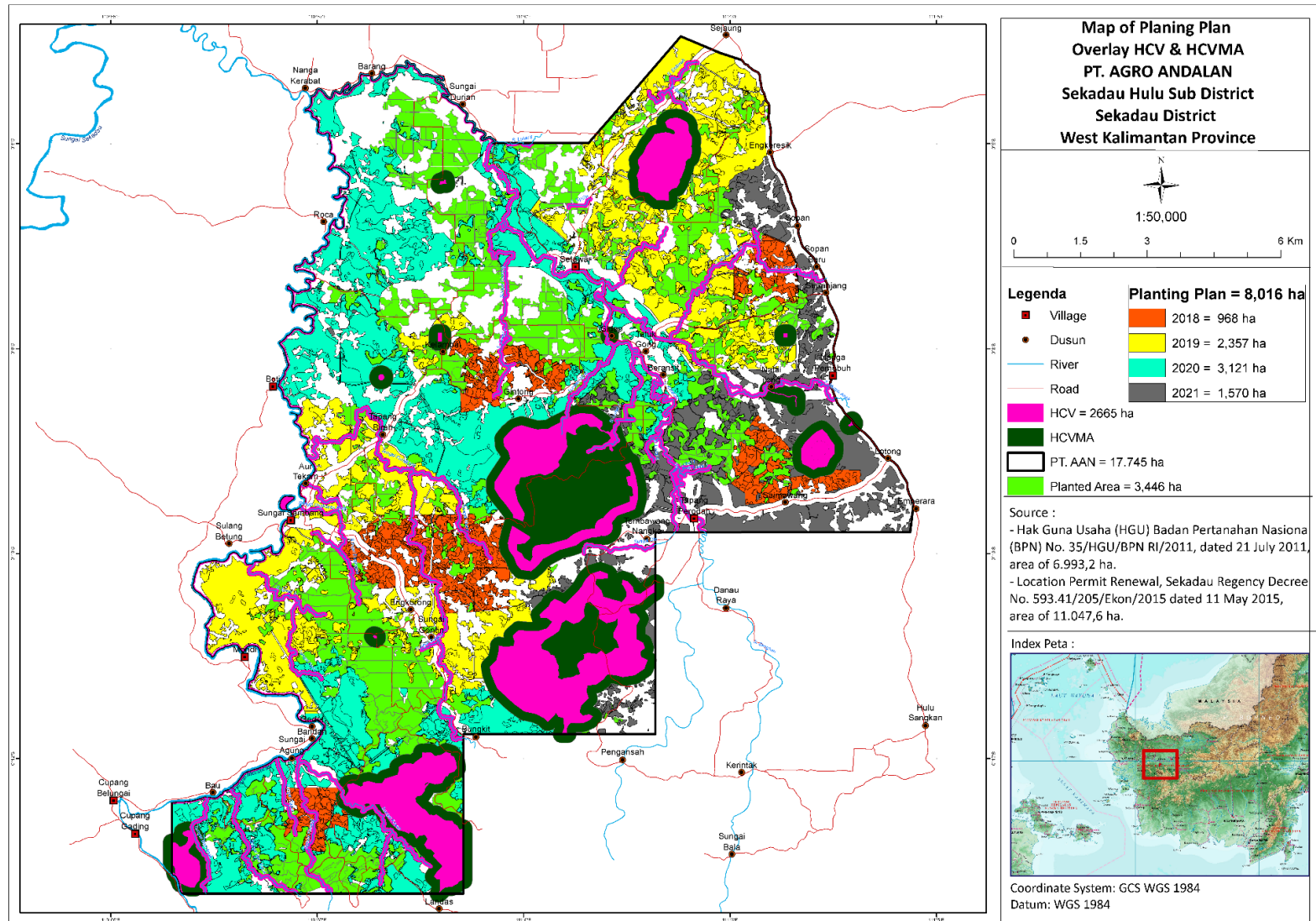




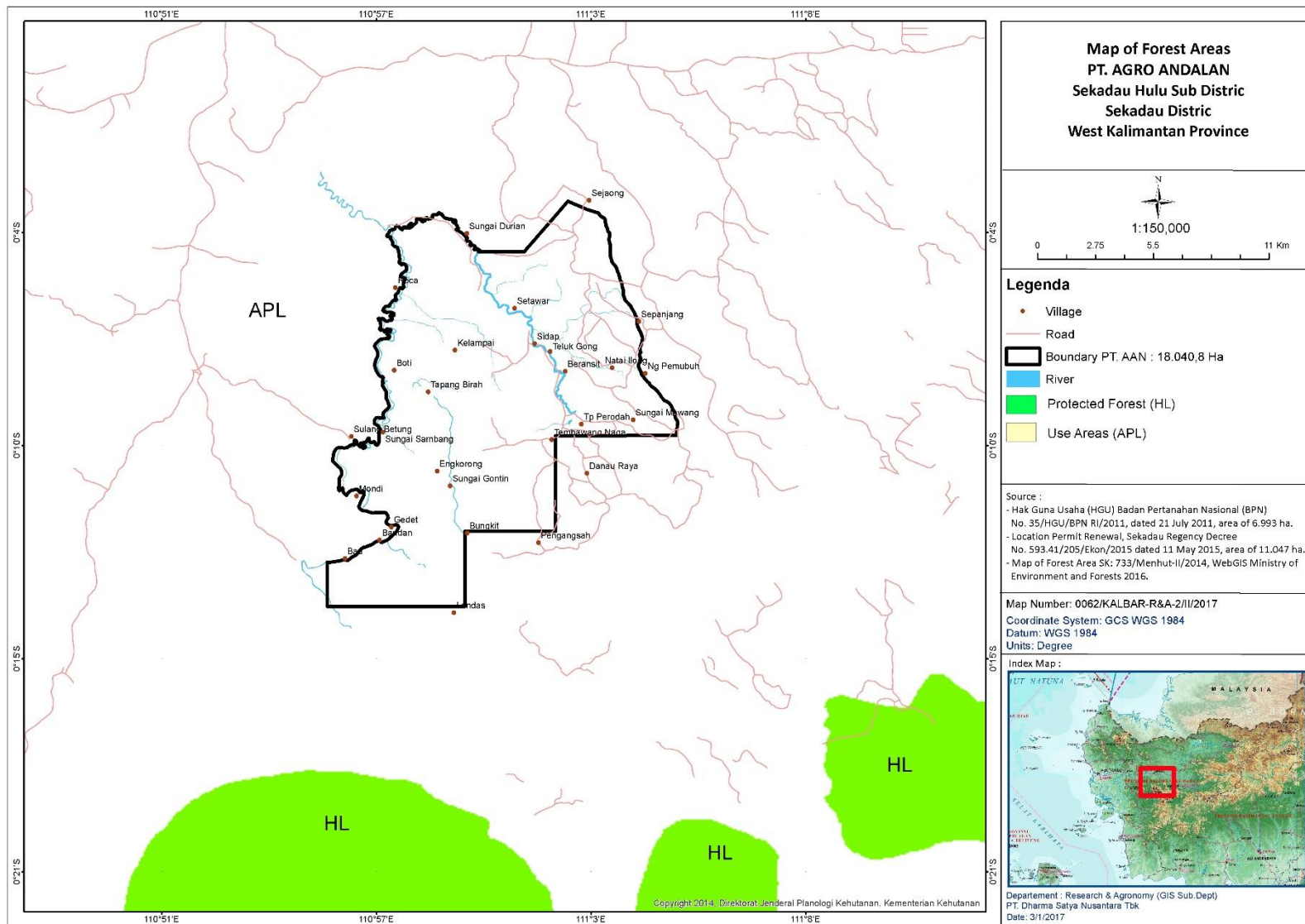
**Figure 1. Location Map PT AAN**



**Figure. 2.** Map of Hectare Statement PT AAN



**Figure. 3.** Area new planting plan of PT AAN



**Figure 4. Forested Area in around PT AAN**

## 1.2 Land Cover

Based on satellite imagery (dated September 2015) interpretation and field survey in HCV Report, there are 7 (seven) types land cover indicated. There are Dry cultivated land (858.68 ha, 4.82 %), Disturbed forest (726.95 Ha, 4.10 %), Rubber Plantation (8,656 ha, 47.36%), Palm oil plantation (3,065.2 ha, 17.27%), Shrubs (4,648.99 ha, 26.03%), Swamp Shrubs (13.3 ha, 0.07%) and Settlement (91.85 ha, 0.35%). Land cover as Figure 5 below. Disturbed Forest area have been protected as HCV and HCVMA area.

## 1.3 Land System

Based on the landsystem map from RePPProT (1987), there are 4 land systems: Lawanguwang (LWW) seluas 7,755.12 Ha (43.70%), Maput (MPT) seluas 1,865.71 Ha (10.51%), Tambera (TBA) seluas 114.48 Ha (9.49%), dan Teweh (TWH) seluas 7.573.59 Ha (42.68%) dan Kahayan (KHY) seluas 436.84 (2.46%). RePPProT land system map can be used to delineate potential extent on ecosystem type. Information on this type of ecosystem is part of consideration in establishing an HCV / HCV such as HCV 3. Distribution of land system in the permit area of PT AAN in Figure 6

## 1.4 Soil Type

Based on landsystem Map of RePPProt (1987), type of soil found in PT AAN can be classified into three (3) soil type association namely are (1) Paleudults, Tropudults, Tropoquepts : 7,755 ha (43,7%), (2) Tropaquepts, Fluvaquents, Tropohemis: 437 ha (2.5%), (3) Tropudults, Paleudults, Dystropepts: 9,554 ha (53.8%). Characteristic of four soil type association in PT AAN as **Table 1.2**.

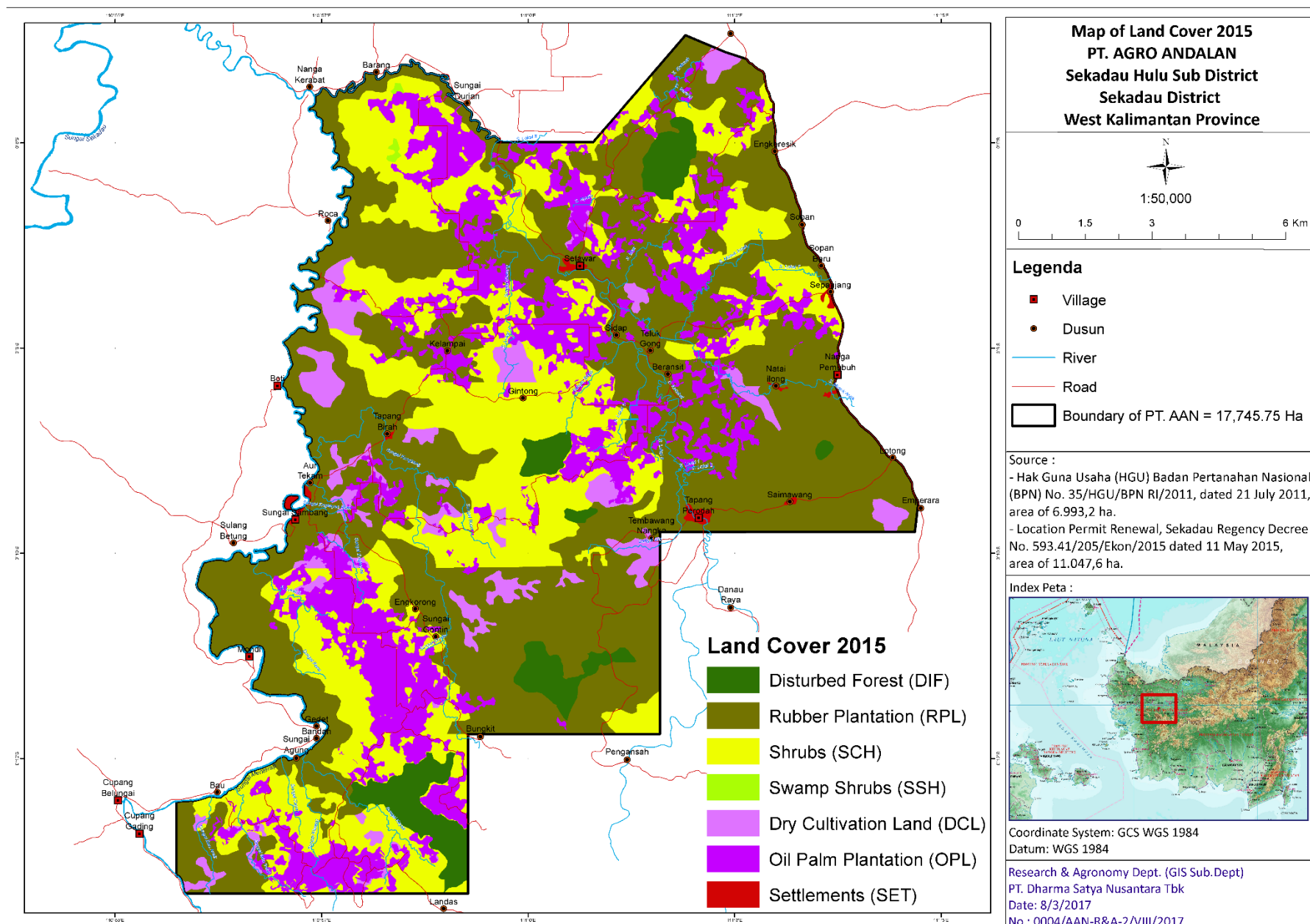
**Table 1.2 . Characteristic Soil Type in PT AAN**

No	Soil Type Association	Matches land (According PPT Bogor (1982)/ Dudal Suptorahadjo (1957)	Description
1	Paleudults, Tropudults, Tropoquepts	Aluvial	This soil type association is still young, have not undergone development, originated from alluvium parent material, have various textures, have not developed structure, have sticky consistence under wet condition, have various values of pH, fertility moderate- to high. Their distribution is in alluvial plain of river, coastal alluvial plain and depression area.

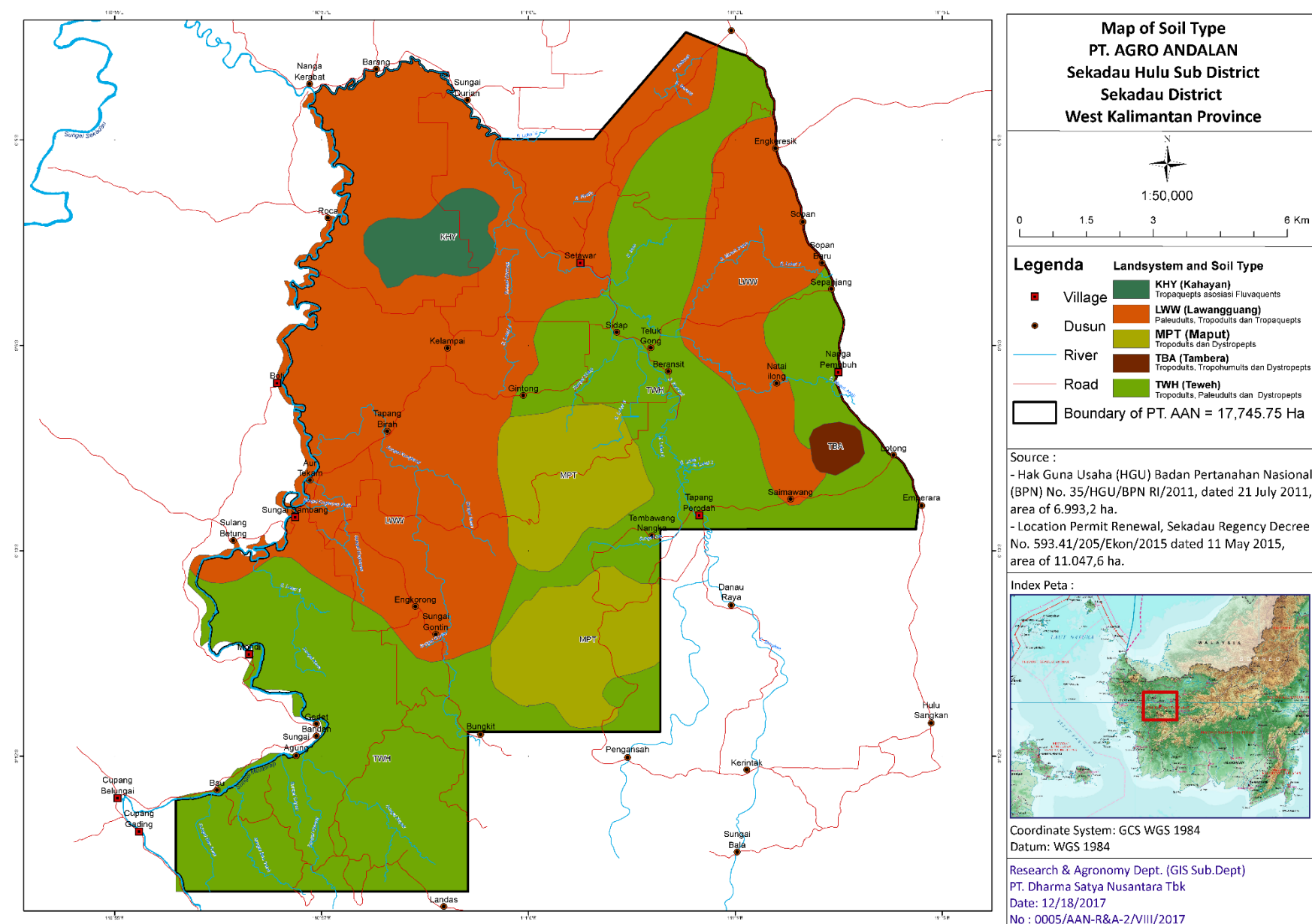
No	Soil Type Association	Matches land (According PPT Bogor (1982)/ Dudal Suptorahadjo (1957))	Description
2	Tropaquepts, Fluvaquents, Tropohemis	Podsolik Merah Kuning (PMK)	Mineral soils which have developed, have deep solum, texture clayey to sandy, blocky structure, sticky consistence, slightly acid (pH less than 5.5), fertility low to moderate, color red – to yellow, susceptible to erosion. This soil is derived from quartz sand rock, volcanic tuff, and acid. Distributed in wet climate region without dry months. Rainfall is more than 2500 mm / year.
3	Tropudults, Paleudults, Dystropepts		

\*) Note : padanan Tanahmenurut PPT Bogor (1982)/ Dudal Suprptoahardjo (1957))





**Figure 5 .Interpretation Result Satellite Imagery Landsat in PT AAN**



**Figure 6 .Maps Land System of PT AAN**



# Chapter 2

## 2. Assessment process and methods

### 2.1 SEIA Assessment

#### 2.1.1 Assesor Credentials

- a. AMDAL (Environment Impact Assesment) conducted by :  
Environmental Research Centre (PPLH) – Tanjung Pura University, Pontianak –  
West Kalimantan  
Address : Jl. Daya Nasional Pontianak Telepon : (0561) 7051316  
Fax : (0561) 7666463

#### Composition team :

<b>Leader</b>	: Ir. H. Syafruddin Said, MS
<b>Physical chemistry</b>	: Ir. Asrifin Aspan, MS Ir. Hj. Endang Mulyani, MT
<b>Biology</b>	: Drs. Darussalam, M.Sc Ir. H. Syafruddin Said, MS
<b>Social, Economic and Cultural</b>	: Drs. H. Abdul Muis Ismail Ir. Jajat Sudrajat, MSi

- b. SIA (Social Impact Assessment) conducted by :  
Social Impact Assessment conducted by : PT Anugrah Lintas Zaman  
Address Jl. Proklamasi No. 11A RT 01/08 Kel. Mekarjaya Kec. Sukmajaya Kota Depok 16411,  
West Java, Indonesia  
Telp: 62-21- 46239808  
Email: [agus.zulfaqar@yahoo.co.id](mailto:agus.zulfaqar@yahoo.co.id)

#### Team composition

List of Anugrah Lintaz Zaman field assessment team :

1. **Dr. Ir. Tutut Sunarminto, MSi– Leader of Socio-cultural Assessment Team.**  
Qualification S1 - S3 from Bogor Agricultural Institute. Many conduct studies in the field of EIA and the Master Plan on several UM and units of government activities in the field of Social, Economic and Cultural and Ecotourism since 1987. Involvement in HCV assessment activities, starting in 2012 in the study of HCV identification and SIA (Social Impact Assessment) in Oil Palm plantation PT . SSS, Kotawaringin West , Central Kalimantan . Currently, there are many studies of HCV and SIA on the various types of areas either in the forest Plants (IUPHHK- HTI) , natural forest ( IUPHHKHA ) and in the garden/ potential of oil palm plantations, especially in the field of

Economic Social and Cultural Rights ( HCV 5 and 6 ) . Active as assessors, instructors or guest speaker at various training HCV, including inhouse training in some palm oil companies since 2014.

2. **Iyat Sudrajat, S.Hut** – Member of Social-cultural Survey Team

Passed Diploma III (D3) in 2012 Ecotourism Programs Diploma Program of IPB and continue S1 Study of Forest Resources Conservation Universitas Nusa Bangsa completed in the year 2015. Since the year 2011 - now follow the activity team of independent assessors Ministry of Forestry in Forest Park (Tahura) Wan Abdurrahman Bandar Lampung in 2011. involved in Planning and Development of Ecotourism, as a designer of Small Island Ecotourism Koloray Pulau Morotai in North Maluku province in 2012. Assistant Expert on Site Design Planning and Structuring Blocks Natural Park (TWA) Crater Kamojang and TWA Mount Guntur in Garut. Once part of the team in the Ecotourism Development LPPM Maritime Gebe Island, Central Halmahera in North Maluku in July 2014. In the plantation sector, involved in the assessment team High Conservation Value (HCV) areas of Sosekbud, Social Impact Assessment (SIA) as well as Social Mapping assistant Expert. Assistant Expert Assessment of HCV and Social Impact Assessment (SIA) on some palm plantation companies in Sumatra, Kalimantan, and Papua since the year 2012 until now. Additionally been joined by Tim BAPPEDA Cianjur District in Designing, Poverty Reduction Strategy and Increasing Role of Women in Cianjur in 2012. Social Mapping in PT. New PG Rejo Agung Madiun and PT.

New Kribet PG Malang District in the year 2013 as well as Social Mapping in PT. Pertamina EP Cepu ADK in the year 2015. In addition, being a Land and Forest Rehabilitation Team Bogor Sub District 2015, Tim groundcheck Areal KPHP Batulanteh, Sumbawa District in 2015, and the Environmental Monitoring Team PT. Pertamina Balongan 2015.

### 2.1.2 Methodology

The EIA study was conducted on September 2008 and SIA was conducted on February 2016 with field visit on 24 August – 2 September 2015. Village Assessment including Mondri, Boti, Nanga Menterap, Setawar, Sungai Sambang, Tapang Perodah, Nanga Pemubuh on Sekadau Hulu Sub District, Sekadau District, West Kalimantan Province. The study done in two methods:

- **Formal Method**

The formal method used to anticipate impact parameters measured or estimated using mathematical statistic model

- Information Method

Information method are used based on intuition, analogy, and experience, to anticipating the environmental that are difficult predict with statistic approach. Approach commonly used in informal methods are:

- a) Analogy

With the methods of analogy, environmental problem problems that arise in a location result from a wide variety of activities will be used as a basis for predicting and consideration of the possible effects on other locations that have the same ecosystem behavior due to the activity and the same characteristics.

- b) Environment Standard

Environment standard and criteria prescribed by the regulation (local, regional, or national) or using the standard and criteria that have accepted and recognized by common law.

- c) Consideration Professional

This method used when there is limited data and available information in field and lack of understanding on the impact.

Data collected by carried out including: primary and secondary data. Field survey supported with structured interview to obtain primary data. Assessor used questionnaire as a guide in interview process. While data collecting from local branches conducted using sampling purposive method for identify condition of the population, health, education, religious, cultural and economy in the form of secondary data.

Most of the information and data had obtained by the interview method which based on a questionnaire. In addition it also conducted by focus groups discussions and in-depht interviews.

- a) *Questionnaire*

Questions of questionnaires became as guidelines in getting data and information. The fill of questionnaire was accompanied by a team in order to gain same understanding of the question. If there are questions that need to be discussed, then the group will use the time to discuss.

- b) *Focus Group Discussion (FGD)*

The discussion was conducted in same time with the questionnaire. It often happens, some groups discuss certain issues in a question and then response by the other members. The group discussion is usually occur for impacts of the general case as river pollution, job vacancy and others.

This group discussions allows all members to expressing their opinions and then had recorded by the team. This discussion can be used as a tool of participatory research because of oil palm plantations and palm oil mills directly affect the community. This discussion sometimes becomes a tool for achieving consensus on certain issue.

*c) In-depth interview*

In-depth Interview were conducted to get perspective and feedback from communities that was directly affected by the oil palm plantations and palm oil mills. These interviews have focused on their views on the mitigation of the impact or possible solutions that they need to reduce the impact.

## **2.2 LUC Assessment**

### **2.2.1 Assessor Credentials**

Land Use Change Analysis was conducted by: PT Anugrah Lintas Zaman

Address Jl. Proklamasi No. 11A RT 01/08 Kel. Mekarjaya Kec. Sukmajaya Kota Depok  
16411, West Java, Indonesia

Telp: 62-21- 46239808

Email: [agus.zulfaqar@yahoo.co.id](mailto:agus.zulfaqar@yahoo.co.id)

#### **Composition team :**

1. **Ir. Siswoyo, MSi**, Lead, Biodiversity specialist, Biodiversity Survey Team, PT Anugrah Lintas Zaman
2. **Kasuma Wijaya, S.Hut, M.Si**, GIS, remote sensing, land use change analysis, Environmental Services.

### **2.2.2 Methodology**

LUCA has 7 steps for identify and categorize land cover. LUCA Analysis carried out remote sensing, Land use change analysis are as follows :

- a. Provision of Satellite Imagery (*Acquire best available satellite images*)

Basic data used to analysis and interpretation of land cover change is a series of satellite imagery, ie the period of November 2005 and November 2007, the period of November 2007 and December 2009, January 2010 and May 9 2014, and once after May 2014

- b. Pre-Processing Satellite Imagery

Satellite image processing preparatory activities cover three stages namely;

1. Correction radiometric
2. Correction giometri, and
3. improvement of satellite images.

c. Land Cover Classification

Land cover classification at the early stages of image interpretation activities using the classification of the Southeast Asia 2005 Land Cover data sets (Gunarso et. Al, 2013) have been published by the RSPO (Table 2.1).

**Table 2.1** Land Cover Classifications from Southeast Asia 2005 Land Cover (Gunarso et. al, 2013) which was Adapted from Badan Planologi, Ministry of Forestry of Indonesia (2001)

Value	Code	Class	Description	Corresponding GFW-C* RSPO Land Use Change Analysis Classification
1	UDF	<b>Undisturbed Forest</b>	Natural forest cover with dense canopy, highly diverse species and high basal areas. It has no logging roads, indicating that it has never been logged, at least under large-scale operation, and in some areas in Indonesia located in areas with rough topography. Canopy cover of undisturbed forest is usually >80%. In satellite image, it is indicated by high value of vegetation index and infrared spectrum channels, and lower value in visible spectrum channels.	<b>Primary Forest</b>
2	DIF	<b>Disturbed Forest</b>	Natural forest area with logging roads and degraded forest cover or logged spots.	<b>Secondary Forest</b>
3	USF	<b>Undisturbed Swamp Forest</b>	A swamp forest is a natural forest in wetland featuring temporary or permanent inundation of large areas of land by shallow bodies of water.	<b>Primary Forest</b>
4	UDM	<b>Undisturbed Mangrove</b>	Undisturbed mangrove is area along the coastline with high density of mangrove tree species, usually consists of diverse mangrove species composition, and has never been logged.	<b>Primary Forest</b>
5	DSF	<b>Disturbed Swamp Forest</b>	Logged-over swamp forest is swamp with natural forest cover that has sign of been logged or degraded.	<b>Secondary Forest</b>
6	DIM	<b>Disturbed Mangrove</b>	Logged-over mangrove is area along the coastline with various species of mangrove trees, has been logged in the past and partly degraded.	<b>Secondary Forest</b>
7	RPL	<b>Rubber Plantation</b>	Rubber Plantation	<b>Non-Forest</b>
8	OPL	<b>Oil Palm Plantation</b>	Oil Palm Plantation.	<b>Non-Forest</b>

\* Global Forest Watch Commodities (GFW-Commodities)

d. Land Cover Interpretation

Land cover analysis conducted with manual interpretation methods based on technique of screen digitizing.

e. Groundtruthing

Groundtruthing is an activity field checks using land cover data from the initial interpretation of satellite imagery that aims to validate land cover. In addition, groundtruthing activities are also used to obtain or gather information related to the history of the land cover to conduct interviews to companies and communities.

f. Reinterpretation

Reinterpretation is a process to improve the results of the previous interpretation so in accordance with the actual conditions in the field. In this activity redelineasi and relabeling the initial land cover maps according to results of validation on the field

g. Map Layout

Map Layout made to see the composition of land cover classification maps of the four periods of time based on the category of vegetation that is set in the compensation procedure RSPO (Land Use Change Analysis / LUCA).

## 2.3 Fragile Soil Assessment

### 2.3.1 Assessor Credentials

Fragile Soil Assessment conducted at the same time with High Conservation Value by:

PT Remark Asia

Address Jl. Bantarjati Atas RT 002 RW 002 Kel. Bantarjati Kec. Bogor Utara, Kota Bogor, West Java, Indonesia

Telp: 62-251 - 8359766

Email: [cecep.saepulloh@re-markasia.com](mailto:cecep.saepulloh@re-markasia.com)

Table 2.2 Composition team

No	Name	ALS License	Consultant	Position	Skill
1	Cecep Saepulloh	Provision Team leader <i>ALS license number : ALS15020CS - Licensed assessor since 20 January 2015</i>	Remark Asia	Team Leader	Forestry, License Environmental Services, HCV 5-6, HCS Assessor, Auditor RSPO, ISPO, ISCC, FSC, IFCC, ISO 9001, ISO 14001.
2	Marlan	N/A	Remark Asia	Member	Forestry, Fauna Conservation practice, Assessor HCV 1, 2, and HCV 3

3	Rhama Budhiana	N/A	Remark Asia	Member	Forestry, Fauna Conservation practice, Assessor HCV 1, 2, and HCV 3
4	Kuntoro Bayu aji	N/A	Remark Asia	Member	Forestry, GIS and Mapping
5	Hilma Suciandari Lahay	N/A	Remark Asia	Member	Agronomy, Social Practice HCV 5-6
6	Redy Miraz Muslim	N/A	Remark Asia	Member	Agronomy, Social Practice HCV 5-6

### 2.3.2 Methodology

The assessment process described in this report is as follows:

1. Compilation of secondary and available primary data, including preliminary stakeholder consultation during a short term pre-visit to the survey site
2. Team formation and project scope briefing
3. Team to assess the accuracy of topographical conditions described in secondary DEM data, general field observations
4. Analysis and Mapping

## 2.4 GHG Assessment

### 2.4.1 Assessor Credentials

GHG Assessment was conducted by :

PT. Anugrah Lintas Zaman

Address: Jl Proklamasi, Depok – Jawa Barat

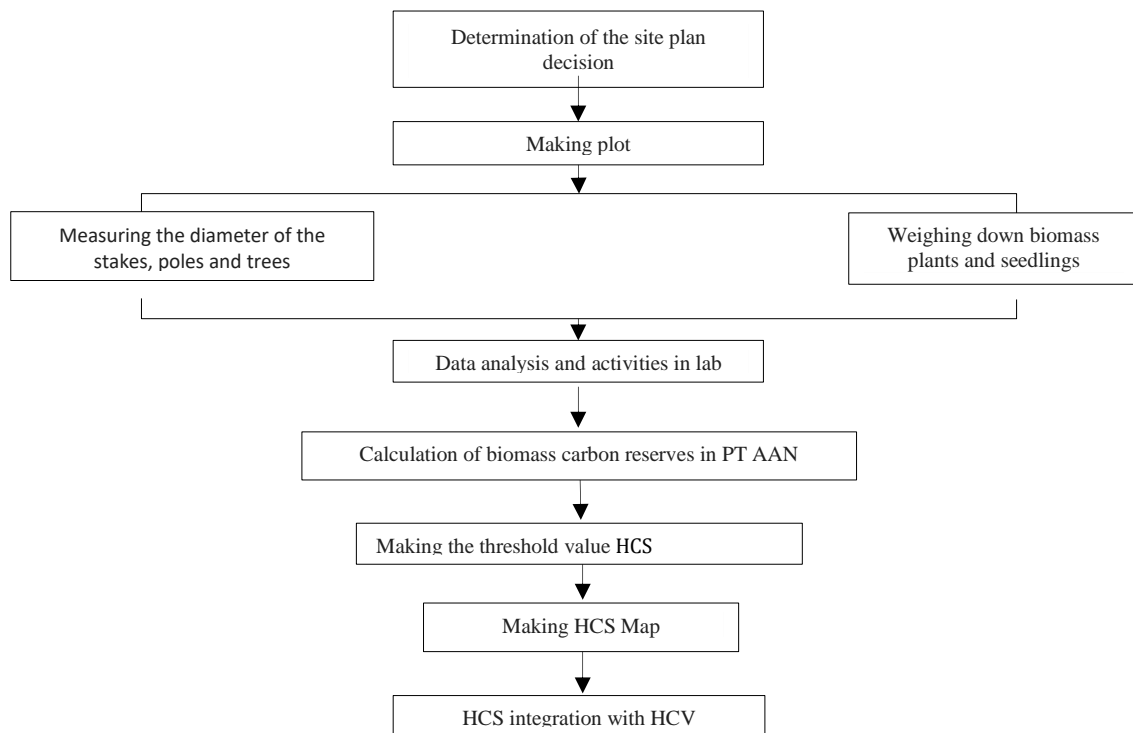
Table 2.3 Team profiles, which were the ones who developed the carbon stock Assessment

No.	Name	Position/skill	Status in RSPO
1	Ir. Kresno Dwi Santosa, M.Si	Team Leader/Social & Economic Expert	Accredited
2	Dr. I Wayan Susi Dharmawan	Member/Carbon Expert	-
3	G Manjela Eko Hartoyo, S.Si	GIS and RS Specialist	Accredited

## 2.4.2 Methodology

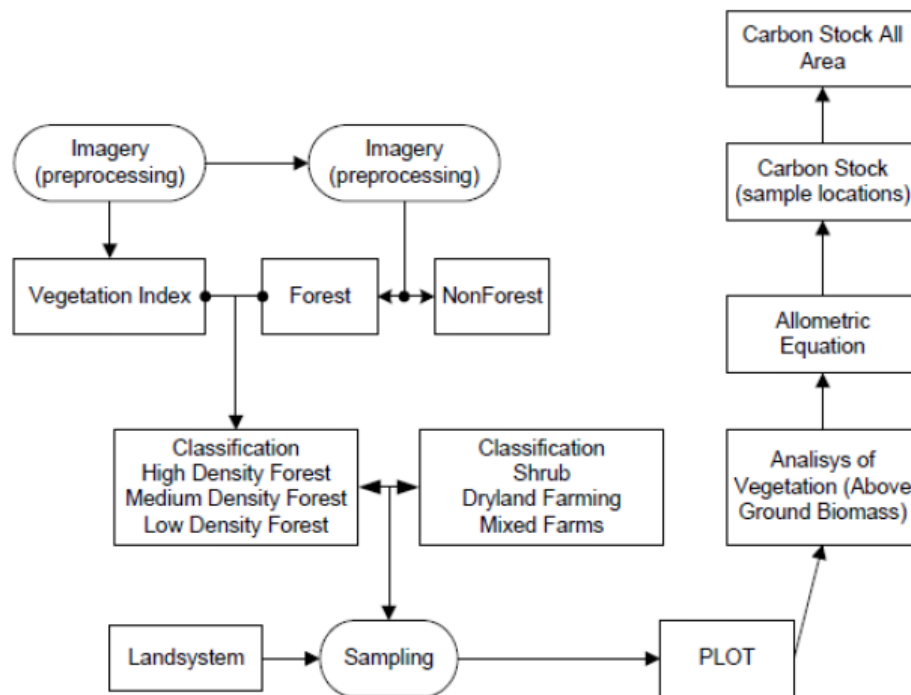
### 2.4.2.1 Methods and Carbon Stock Assessment Procedures

Stages of activity measurement and mapping carbon stocks in the concession area of PT. AAN grouped into four stages, namely (i) a desk study, (ii) field surveys, (iii) laboratory analysis and (iv) data analysis, mapping and reporting. These stages are composed of a series of activities as presented in **Figure 6**



**Figure 7.** Flow chart of activities.





**Figure 8.** The use of remote sensing data and geographic information system that is used as an approach to the landscape conditions and land cover classification manufacture in a management unit and determining locations of sampling / sample

The detail methodology of Carbon Stock Assessment are+++:

a. Sitting Sampling/Sample And Total Plot

A minimal amount calculated by the plot needs tools that are often called “*Winrock Calculator*”. PT AAN study using a level of confidence (confidence level) of 90% and 20 % sampling error. This condition is possible because in ISO 7724: 2011 on the Carbon Measurement in the field states that the maximum allowable sampling error of 20%. Many natural factors on the ground that can’t be controlled by humans such as topography, climate and weather , so the maximum sampling error of 20% is still allowed. Unlike the case with the greenhouse experiment ( research scale greenhouses ) , in which environmental factors indoor greenhouses can be controlled properly , resulting in a lot of research in greenhouses only use a maximum sampling error of 10% .

In “*Winrock Calculator*”, template or calculation formula using a formula developed by Walker et al . (2007 ) which is based on the CDM - Executive Board 2006 that AR - AM0001 AR - AM0003 , AR - AM 0004 , AR - AM0005 , AM0006 and AR - AR - AM0007. The formula suggested by UNFCCC (2006) are as follows :

$$n = \frac{\left[ \sum_{i=1}^{m_{SP}} N_i \cdot st_i - \sqrt{C_i} \right] \cdot \left[ \sum_{i=1}^{m_{SP}} N_i \cdot st_i \cdot \frac{1}{\sqrt{C_i}} \right]}{\left( N \cdot \frac{E}{z_{\alpha/2}} \right)^2 + \sum_{i=1}^{m_{SP}} N_i \cdot (st_i)^2} \quad n_i = \frac{\sum_{i=1}^{m_{SP}} N_i \cdot st_i - \sqrt{C_i}}{\left( N \cdot \frac{E}{z_{\alpha/2}} \right)^2 + \sum_{i=1}^{m_{SP}} N_i \cdot (st_i)^2} \cdot \frac{N_i \cdot st_i}{\sqrt{C_i}}$$

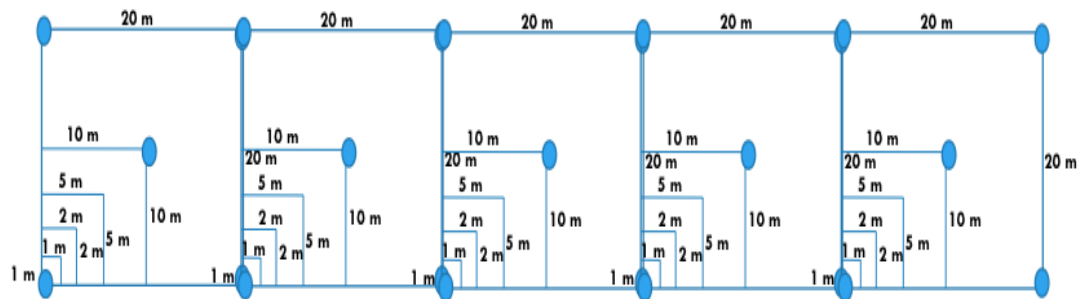
$$N = \frac{A}{AP} \quad N_i = \frac{A_i}{AP} \quad E = Q \cdot p$$

**Noted:**

- A = Total size of all strata, eg total project area; ha  
 Ai = Size of each stratum; ha  
 AP = Sample plot size; ha  
 Sti = Standard deviation for each stratum i; dimensionless  
 Ci = Cost of establishment of a sample plot for each stratum i; e.g. US\$  
 Q = Approximate average value of estimate quantity Q (eg tree biomass; m3/ha)  
 p = desired level of precision (e.g. 10%); dimensionless  
 N = Maximum possible number of plots in the project area  
 Ni = Maximum possible number of plot in stratum i  
 E = Allowable error (20%)  
 N = Sample size – total number of sample plots required in the project area  
 ni = Sample size for stratum i  
 Z = Value of the statistic z (normal probability density function), for  $\alpha = 0.05$  (implying a 95% confidence level)

b. Making Plot, Sampling / Sample Field and Laboratory Tests

Plots were constructed in these activities using nested plot and is square, as can be seen in Figure 8. Each track / sample point is made a maximum of five plots, depending on conditions on the ground.



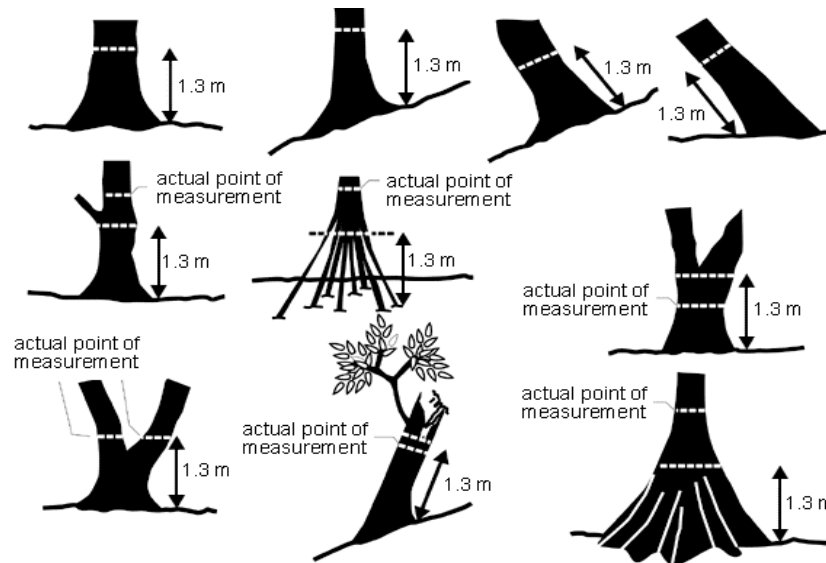
**Figure 9.** Plot measurement diagram

**Noted :**

- Seddling and undergrowth, plot 2 x 2 meters
- Sappling ( woody vegetation size D 2 cm - 10 cm ) is 5 x 5 meters
- Poles ( woody vegetation size D 10 cm - < 20 cm ) is 10 x 10 meters
- Trees ( woody vegetation size D > 20 cm ) is 20 x 20 meters
- Litter ( residual vegetation on the forest floor ) with a size of 1 x 1 meter
- Necromas (contained within the plot are measured ) ; necromas size D < 10 cm measured in a subplot 2 m x 2 m ; necromas size D > 10 cm measured in the subplots of 20 m x 20 m

c. Measurements biomass stand ( Spappling , Poles and Trees )

DBH diameter measurement using diameter tape or regular meter. A measurement of the size of the stakes , poles and trees with plot luaan compatible with the information in Figure 9. Measuring the correct diameter is that following the actual condition of the tree on the ground , as shown in Figure 5 .



**Figure 10.** Measurement of diameter at breast height

d. Measurement of biomass and plant seedlings under

Stages of seedling and plant biomass measurement under performed as follows (SNI 7724 : 2011 ) :

1. Cut all parts of seedlings and undergrowth above ground using scissors cuttings ;
2. Weigh the wet total seedlings and undergrowth in a plot area of measurement;
3. Take and weigh the wet weight of as much as  $\pm 300$  gram sample ;
4. Do drying is by using the oven in the laboratory with a temperature range of  $70^{\circ}\text{C}$  to  $85^{\circ}\text{C}$  until it reaches constant weight ;
5. Weigh the dry weight of seedlings and undergrowth ;
6. Did the analysis of organic carbon in the laboratory for carbon content

e. Processing and Data Analysis

Data tabulated by using statistical software Microsoft Excel (2003 ) . Calculation of carbon storage using the following formula :

**Carbon Calculation of biomass above ground**

$$C_{\text{bap}} = B \times \% \text{ C Organic}$$

Allometric equations for calculating biomass using equation stands Ketterings et al. (2001) as follows:  $\text{TDW} = 0,11 \times (\text{DBH})^{2.62}$  (Ketterings et al., 2001). The use of Ketterings equation is based on the premise that this equation is very suitable to be

applied to the type of secondary forest. Location PT AAN is a type of secondary forest. To get the accuracy of the value of the local circumstances, the value of the density of wood in Ketterings equation has been corrected by the value of local wood density obtained from the field in PT AAN (as many as 185 samples the density of the wood). Normatively, counting with Ketterings equation gives the range of values appropriate for secondary forest. Maulana research results and Pandu (2011), which compares between the similarities Ketterings and other equations (Brown; Basuki) as well as with local elected equation in Papua, shows that the equation Ketterings give an average value that comes closest to the actual conditions in the field of secondary forest. Meanwhile, ICRAF study results also stated that all the equations (Ketterings, Chave, Brown and Basuki) gives the carbon savings are not significant to the extent of 100 cm diameter. At a diameter of more than 100 cm, the equation Chave and Brown give overestimate the value compared with the equations Ketterings and Basuki. Calculation of aboveground biomass include counting to stand living with saplings , poles and trees. In accordance with the plan of the sample plot above, there are several formulas to determine the value of the biomass and carbon stands as follows:

1. Calculation biomass and carbon per ha for saplings ( 5 x 5 )
  - Biomass is calculated by using the formula ketterings BJ from tree wood samples from the location of the plot ( 1 )
  - As for the carbon value of  $0.47 \times$  value calculated by biomass ( Kg ) ( 2 )
  - The value of carbon to stake per Ha is ;  $( ( 2 ) / 1000 ) ( 10000/25 )$
2. Calculation biomass and carbon per ha for poles ( 10x 10 )
  - Biomass is calculated by using the formula ketterings BJ from tree wood samples from the location of the plot ( 1 )
  - As for the carbon value of  $0.47 \times$  value calculated by biomass ( Kg )
  - The value of carbon to stake per Ha is ;  $( ( 2 ) / 1000 ) * ( 10000/100 )$
3. Biomass and Carbon Calculation per Ha for tree level ( 20x20 )
  - Biomass is calculated by using the formula ketterings BJ from tree wood samples from the location of the plot ( 1 )
  - As for the carbon value of  $0.47 \times$  value calculated by biomass ( Kg )
  - The value of carbon to stake per Ha is ;  $( ( 2 ) / 1000 ) * ( 10000/400 )$

f. Carbon Counting down from biomass plants and seedlings

$$C_{\text{Tumbuhan bawah+semai}} = B \times \% C \text{ Organik}$$

Information:

B = biomass ( kg ) ; C = organic carbon ( % ) by 0.47 % ( IPCC , 2006 ) ; bap = aboveground biomass ( kg ) ;  $\rho$  = density of wood ( gr / cm<sup>3</sup> ) , DBH = diameter at breast height ( cm )

g. Making Value Internal Threshold

There is no standard by default on the determination of HCS . That there is now a wide range of publications related to carbon storage on land cover various conditions IPCC recommends using "data the specific site" in order to have a valid and reliable data .

The *threshold* should use limit values in accordance with the factual data in the field. If using carbon storage limitation of places or other locations would not be appropriate when applied in the study area. Because each place has a growing conditions, weather and specific climate.

The limit values of carbon deposits can be determined using the five classes which are very low, low, medium, high and very high. If the principle is very conservative, then the HCS class is the class of moderate to very high which can't be converted into a rubber plantation. Determination of carbon storage class intervals using percentile method.

$$\text{Interval Class} = \frac{\text{Value of carbon storage max} - \text{min carbon storage value}}{5}$$

However, in the judging process this carbon stock *threshold* also needs to be referenced standard types of plants and carbon stock of plants will be developed. Palm with average carbon reach 50-100 tonC / Ha ( FORDA 2010 ) would be more suitable if the carbon stock *threshold* is taken from the range.

h. Mapping carbon stock value

The carbon stock map is based on the existing land cover and above ground biomass count results from the size of the stakes, poles and trees. Step work cartography distribution of carbon stock are as follows

1. Overlaying the maps of land cover and map land system
2. Entering data point on the map and maps of land cover land system through the process identity so it can be hot spots at each closing and land system.
3. Doing reinterpretation and analysis to add a density level of each land cover classes based on the value at each sample location and generalize to areas with the same level of density. This analysis was performed for the class of forest and scrub. This analysis using Landsat satellite imagery-assisted high resolution imagery.

4. Mapping the content of above ground carbon stock based on the results of the analysis in the C number.
  5. Carbon stock classification based interval classes created and mapped by the carbon stock classes by looking at the content of C in each development type.
- i. Carbon stock integration with HCV
- Carbon stock data integration and HCV is done through the data overlay process between HCV and Carbon stock in order to obtain the data associated with HCV (partial), HCV and carbon stock (combined) and carbon stock (partial). Further analysis is then performed using the following classifications
1. HCV in the area overlaying the area of carbon stock threshold, then become an area that should be preserved.
  2. The area in the form of HCV and does not intersect with carbon stock threshold area remains as an area that should be preserved
  3. The carbon stock threshold area which does not include the area or not HCV and HCV analyzed bordering area core area.
  4. Core area of more than > 100 Ha shape analysis, if the compact shape (round or square) buffer do as far as 100 meters into the area and the area is maintained.
  5. If the area <100 ha when the distance between patch analysis to obtain the area is maintained and can be used for other things. Furthermore, if the patch is added to the risk factors which involves a series of parameters of the road and the river (transport) and settlements. If the patch is located close to the road and the river (transportation) and settlement analysis is carried out into the distance and if the buffer area then this area are at great risk and that are beyond the range of the low-risk patches against tampering.

#### 2.4.2.2 Methods and procedures GHG assessment

Net GHG emissions are calculated by adding the emissions released during land clearing, crop production and crop processing, and subtracting from these emissions the sequestration of carbon in the standing crop and in any conservation areas. Stages of activity measurement and mapping GHG assessment in the concession area of PT. AAN as system boundary for the greenhouse gas calculation in Palm GHG. GHG Calculation stages are divided into input, output agricultural.

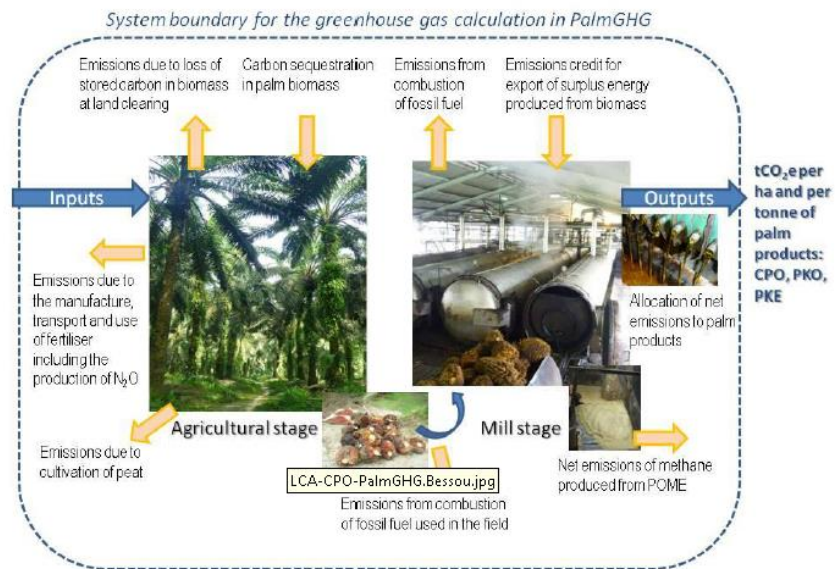
This emission sources included in the calculator are:

- i) Land clearing;
- ii) Manufacture of fertilizers and transport to the plantation;
- iii) Nitrous oxide and carbon dioxide resulting from the field application of fertilizers and mill by-products and other organic sources such as palm litter;
- iv) Fossil fuel used in the field (mainly for harvesting and collection of FFB);

- v) Methane produced from palm oil mill effluent (POME); and
- vi) Carbon dioxide and nitrous oxide generated by the cultivation of peat soils.

In addition, the following GHG fixation and credits are considered:

- i) Carbon dioxide fixed by oil palm trees, ground cover and carbon sequestered in plantation litter (see crop sequestration, below);
- ii) Carbon dioxide fixed by biomass in conservation areas;
- iii) GHG emissions avoided by the selling of mill energy by-products (e.g. electricity sold to the grid; palm kernel shell sold to industrial furnaces).



**Figure 11.** System Boundary of Palm GHG

## 2.5 HCV Assessment

### 2.5.1 Assessor Credentials

High Conservation Value Assessment were conducted by:

PT Remark Asia

Address Jl. Bantarjati Atas RT 002 RW 002 Kel. Bantarjati Kec. Bogor Utara, Kota Bogor,  
West Java, Indonesia

Telp: 62-251 - 8359766

Email: [cecep.saepulloh@re-markasia.com](mailto:cecep.saepulloh@re-markasia.com)

Table 2.4 Composition team

No	Name	ALS License	Consultant	Position	Skill
1	Cecep Saepulloh	Provision Team leader  <i>ALS license number : ALS15020CS - Licensed assessor since 20 January 2015</i>	Remark Asia	Team Leader	Forestry, License Environmental Services, HCV 5-6, HCS Assessor, Auditor RSPO, ISPO, ISCC, FSC, IFCC, ISO 9001, ISO 14001.
2	Marlan	N/A	Remark Asia	Member	Forestry, Fauna Conservation practice, Assessor HCV 1, 2, and HCV 3
3	Rhama Budhiana	N/A	Remark Asia	Member	Forestry, Fauna Conservation practice, Assessor HCV 1, 2, and HCV 3
4	Kuntoro Bayu aji	N/A	Remark Asia	Member	Forestry, GIS and Mapping
5	Hilma Suciandari Lahay	N/A	Remark Asia	Member	Agronomy, Social Practice HCV 5-6
6	Redy Miraz Muslim	N/A	Remark Asia	Member	Agronomy, Social practice HCV 5-6



## 2.5.2 Methodology

### A. Time-Frame

The time frame for HCV re-assessment of PT AAN was formulated with several adjustments considering these following factors:

1. HCV reassessment for an HCV assessment with unsatisfactory evaluation result, under the HCVRN procedure, is carried out by referring to the HCV assessment results by previous HCV assessors and by conducting additional field surveys when needed. Additional field survey is supplementary in nature, and is thus carried out within limited period of time and is subject to the company's budget efficiency policy.
2. The previous HCV assessment by HCV consultants from PT ALZ has already included adequate information to serve as source of information, while the data for re-assessment is obtained through additional field survey.
3. Additional field survey is conducted for verification and updating of the location information or HCV areas already set by the previous HCV assessment report, for verification of the field condition, and updating of the information about the designated management area of PT AAN.
4. Additional field survey also aims towards re-consulting the stakeholders as recommended by the review result of HCVRN Quality Panel.
5. Re assessment also conducted public consultation as suggested by initial review of HCVRN

The timeframe planned for the HCV reassessment of PT AAN in general is as followed:

Table 1.5. PT AAN HCV Re-assessment Timeframe

Activities		May				June				July				Sept
		1	2	3	4	1	2	3	4	1	2	3	4	
Pre-field reassessment and scoping: Review of HCV report by previous assessors and review of quality panel result	Preparation and preliminary information gathering	x												
	Potential desktop analysis of HCV	x												
Scoping Study	<ul style="list-style-type: none"> <li>• Desk Study and field visit</li> <li>• Initial public consultation</li> </ul>		x											
HCV assessment and public consultation	Preparation dan planning										x			
	Field survey and verification and											x		

Activities		May				June				July				Sept
		1	2	3	4	1	2	3	4	1	2	3	4	
	stakeholder consultation													
	Public consultation													x
	Additional field survey		x	x	x									
Analysis and Mapping	HCV area mapping and analysis			x	x	x								
Formulation of report and recommendation	Report formulation						x	x						
	Peer assessment								x	x	x	x		
	Report finalization													x
HCVRN Quality Panel													x	x

## B. Assessment Method

In general, the HCV assessment process according to HCVRN Guidance is included

### Pre- assessment phase

The pre-assessment phase is meant to prepare the assessment team for the full HCV assessment. It is a time for gathering information, identifying resources and data gaps, thoroughly preparing for field work and identifying stakeholders, to name some of the most important tasks. The pre-assessment phase helps assessors gain a clearer understanding of the situation and the potential HCVs present as well as to identify sources of data that can contribute to the identification of HCVs. The pre-assessment phase begins with the initial request from the Organisation commissioning the HCV assessment, and continues up to the point when the assessment team is ready to begin the full HCV assessment. Some activities on this phase are information exchange, tier rating, information gathering, scoping study and preparati and planinng before HCV identification.

### Scoping study

A scoping study is a field exercise, the main objectives of which are to:

- begin verifying some of the information gathered during the desk- based work
- identify key issues that should be covered during the assessment phase
- make contact with stakeholders and local community representatives and plan for participatory work such as mapping
- determine the expertise required in the HCV assessment team and meet potential team members or consultants; this is especially important if social experts are needed (e.g.

people who speak local languages, are familiar with the social context and are trusted by local people).

### **HCV Identification**

The identification step is likely to consist of field data collection, analysis, participatory mapping, consultation and regular assessment team discussions. The presence or absence of all six categories of HCVs must always be assessed in a way that is consistent with HCVRN guidance.

The outcome of this step will be:

- A clear description for each of the six HCV categories that includes a decision on its presence, potential presence or absence.
- Justification of the decision why an HCV is present, potentially present or absent. This must include reference to supporting primary and secondary data, stakeholder consultation, etc. It is insufficient simply to declare “potential presence” of an HCV without providing an evaluation of the likelihood of presence and the limitations of current knowledge. If a value is deemed potentially present, the precautionary approach should be used, otherwise a detailed outline of what needs to be done to identify the HVC for certain is required.
- Map(s) of HCV locations. It is important that maps show the extent of each HCV both inside and outside the assessment area, where the HCV extends into the surrounding area.

### **Biodiversity (flora dan fauna) identification**

Starting with the determination of the location of samples in the location to be assessed. The stratified random sampling was determined by considering the habitat representation based on the current land cover condition in the location. At each location the identification of flora and fauna sampling was done by opportunistic scan sampling by recording as many meetings of flora and fauna as possible on the path through which the observer.

The collection of animal encounter data is done either directly using the naked eye or binocular help, or indirectly which is usually the sound and traces left by the animals. Then all animal encounters in the field will be validated with some reference animal identification manuals. As each group of fauna and flora has varying degrees of difficulty in identification, it helps to determine areas important for fauna and flora, as well as broader ecosystems, the approach of key species or key umbrella species ) will also be used, especially for groups of fauna or flora that have limited adaptability to changes. A widely used example is using bird groups as a type indicator (BirdLife International 2013). For the determination of habitat important for fauna by the above approach, the proxy approach will be used by collecting

information on three basic components (Fryxell et al 2014), namely: cover, food and water. These three basic components will be reviewed based on best knowledge judgment supported by spatial information, field observations and scientific references.

### **Hidrology and environmental services**

Identification of HCV 4 sites is done by analyzing the area from spatial, landscape, topography and hydrological conditions, watershed location. Further field surveys and interviews with respondents at selected locations, ie springs, rivers, river border conditions, land clearing sites, erosion-prone locations or steep slopes, and some locations that represent the water system in the plantation/estate.

### **Social, economy and culture**

Identification of HCV 5 and 6 is done gradually, through a participatory mapping process to obtain information directly from the community by mapping together areas that have potential HCVs 5 and 6. The next stage is the interview and field observation by using purposive sampling method in the determination target respondents that have been obtained from the participatory mapping process. The next stage, to explore more complete information, focus group discussion (FGD) was held in each village. Through these processes, data and information on areas that have elements of HCV 5 and 6 will be mapped spatially and determined by delineation of their protected areas.

### **Stakeholder consultation**

Stakeholder consultation is used to gather information on the social and environmental situation in the assessment area, to contribute to the HCV identification and decision making process, Eliminate gaps in data, where information is held by stakeholders, Identify possible approaches for avoiding, mitigating or compensating for negative impacts of operations, Gather different perspectives and recommendations on threats and management options and Ensure the transparency of the assessment process and the credibility of the decisions taken.

Stakeholder consultation for PT AAN HCV assessment is conducted by FGD with people and public meeting who relevant as interviewee and key stakeholders as listed by company and assessor. The record of stakeholder consultations are kept and documented.

## **2.6 FPIC Process**

### **2.6.1 Assessor Credentials**

FPIC Assessment were conducted by:

CSR Dept. of PT Agro Andalan

Address : Gedung Sapta Mulia Center Jl. Rawa Gelam V Kav. OR/3B

Kawasan Industri Pulogadung

Telp: 62-21- 4618135

Email : [agustinus.triwibowo@dsngroup.co.id](mailto:agustinus.triwibowo@dsngroup.co.id)

#### **Composition Team :**

- 1. Parama Wisnu.** Trained by LINKS
- 2. Garis.** Trained by LINKS
- 3. Mustofa.** Trained by LINKS

For implementation of FPIC, DSN Team accompanied with Atamarie.

### **2.6.2 Methodology**

The assessment process described in this report is as follows

- A. Field verification.
- B. Focus Group Discussions (FGD) and interview in villages, focus on land ownership, it aims:
  1. Knowing the condition of the relationship between the communities and companies, especially regarding land.
  2. Knowing understanding of land acquisition procedures are already under way at the community level
  3. Socialization about the principal of FPIC
  4. Gather input from the communities are related to land acquisition procedures and implementation already underway
- C. Interview with stakeholders:
  1. Random interview with community in village
  2. Interview with head of the village
  3. Interview with head of the cooperative
  4. Interview with head of districts
- D. Participatory mapping in village:
  1. Activities conducted jointly by involving surveyors and members of the communities.
  2. Land use mapping
  3. identification of indigenous lands or community lands

# Chapter 3

## 3. Summary of findings

### 3.1 SEIA Findings and Results

The Existence of PT AAN Oil Palm Plantation in Sekadau District will certainly have a positive and negative impact for society and the environment for around villages.

- *Positive Impact*

There is balance results for (potential) positive and negative impacts at PT AAN based on SIA ALZ studies, i.e increase economy village, opportunity of employment, access opening roads to the village so as to facilitate religious or worship community.

- *Negative Impact*

The result of interview and Focus Group Discussion (FGD) with most of the people in villages around PT AAN and based on EIA has negative impact, i.e:

1. Decrease water quality and increased noise because if there development of palm oil mill in concession PT AAN
2. Decrease water quality and quantity i.e: Tembawang Angus River, Kerabat River, Menterap River, and Kungkang River.
3. Potential for land fires
4. Decrease biodiversity and population of protected flora and fauna
5. Public restlessness due to construction and operation phase PT AAN
6. Health impact for the community
7. Unclear status of plasma land
8. Multiple land tenure dispute

- *Public Expectations*

With a wide range of impacts, then the public has the expectation that negative impact can be minimize and positive impact can be enhanced. From the interview results with people in six village, community expectation are follow as :

1. Open road access rural community
2. Facilitate availability clean water, electricity all day, irrigation means for agriculture, facilities health and education
3. Increase income, opportunity employment, chance of invention and ease the cost of education and health

- *Company Social Activities*

Social activities is a part invitation of PT AAN. Based on report company social activity over the past few years, the company's social activity programs are:

- Develop productive economic business to villagers
- Develop entrepreneur integrated agricultural
- Strengthening capacity of economic business and smallholder
- Improving quality of roads and drainage
- Provision of clean water
- Rehabilitation public facility
- Assistance to cost of education, education campaign, the provision of educational facilities.
- Assistance for socio – cultural (donation or support for traditional ceremonies, feast day, etc)

## 3.2 LUC Findings and Results

Figure 12 to Figure 17 show plant cover maps from 2005, 2007, 2009, 2013, 2014 and 2018 (imagery 2017) according to interpretation satellite imagery. Table 3.1 shows the total results in Hectare (ha) for land cover in plantation for each date. The results interpretation satellite imagery to show areal concession HGU PT AAN indicated are follow as disturbed forest, disturbed swamp forest, shrubs, swamp shrubs, rubber plantation, dry cultivation land, oil palm plantation, rice field, bare land, and settlements.

**Tabel 3.1 Land Cover condition in concession HGU PT AAN period 2005, 2007, 2009, 2013, 2014 and 2018**

No.	Code	Land cover	Area (ha)					
			Before November 1, 2005	November 1, 2005 - November 31, 2007	December 1, 2007 - December 31, 2009	January 1, 2010 – May 9, 2014	May 9, 2014 – HCV identified	Ground truthing, 2018
1	DIF	<i>Disturbed Forest</i>	772.13	772.13	772.13	752.18	752.18	752.18
2	SCH	<i>Shrubs</i>	1,942.40	1,906.14	1,857.83	1,043.36	1,043.36	879.08
3	RPL	<i>Rubber Plantation</i>	946.78	946.78	741.41	687.95	687.95	687.95
4	DCL	<i>Dry Cultivation Land</i>	13,,860.26	13,622.93	13,514.47	10,673.02	10,649.83	9,920.73
5	OPL	<i>Oil Palm Plantation</i>	-	-	251.47	3,339.38	3,362.56	4,064.04
6	RCF	<i>Rice Field</i>	389.37	401.55	439.17	495.21	495.21	992.58
7	BRL	<i>Bareland</i>	545.44	806.85	833.53	1,418.91	1,418.91	1,113.21
8	SET	<i>Settlements</i>	70.68	70.68	117.06	117.06	117.06	117.29
9	WAB	<i>Water Bodies</i>	144.17	144.17	144.17	144.17	144.17	144.17
<b>Total (ha)</b>			<b>18,671.24</b>	<b>18,671.24</b>	<b>18,671.24</b>	<b>18,671.24</b>	<b>18,671.24</b>	<b>18,671.24</b>

PT Agro Andalan as a subsidiary of PT Dharma Satya Nusantara, Tbk was non RSPO member at the time periods of liability then become a member since April 2015. Meanwhile, land clearing for oil palm plantation has been done since 2009 where PT AAN is still controlled by non-member RSPO.

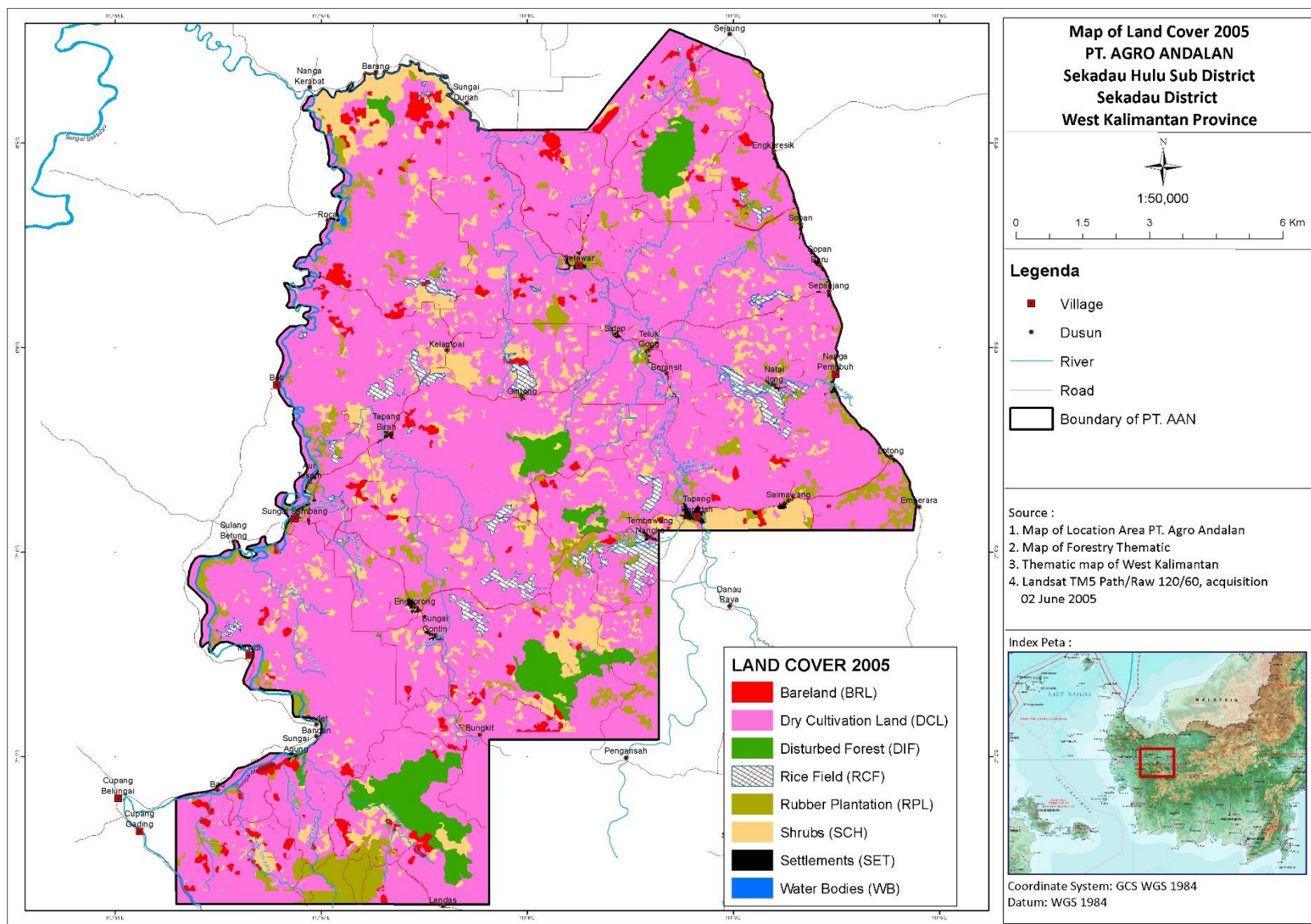
Total area of management unit are 18,671 hectare and total area of raw non-compliant land clearance are 3,363.72 hectare is presented below :

**Table 3.2 Sub-totals of raw non-compliant land clearance, by timeframe (in hectares)**

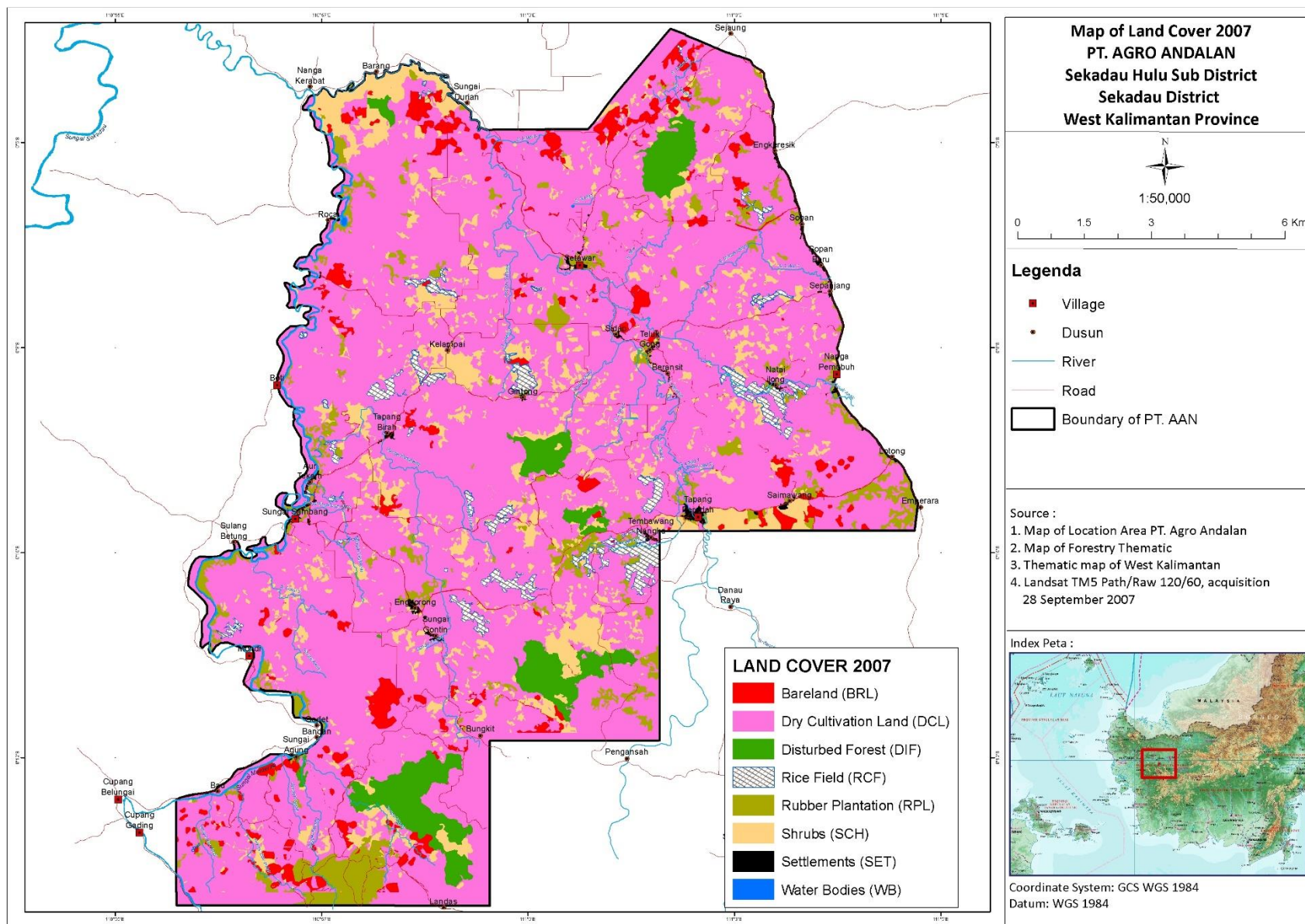
Time of Clearance			
November 2005 to 30 November 2007	December 1, 2007- December 31, 2009	January 1, 2010 - May 9, 2014 (date of introduction of compensation mechanism)	Land clearing after May 9, 2014 (date of introduction of comp mechanism)
	251.47	3,089.06	23.19

Based on disclosure PT AAN for identifying social liability for the loss of HCV 4,5,6 that there is no communities/ users livelihoods in permit area and no potential negative social impact were identified in land clearing periods.





**Figure 12. Interpretation Land Cover 2005 Cut Of Nov 2005**



**Figure 13. Interpretation Land Cover 2007 Cut Of Nov 2007**



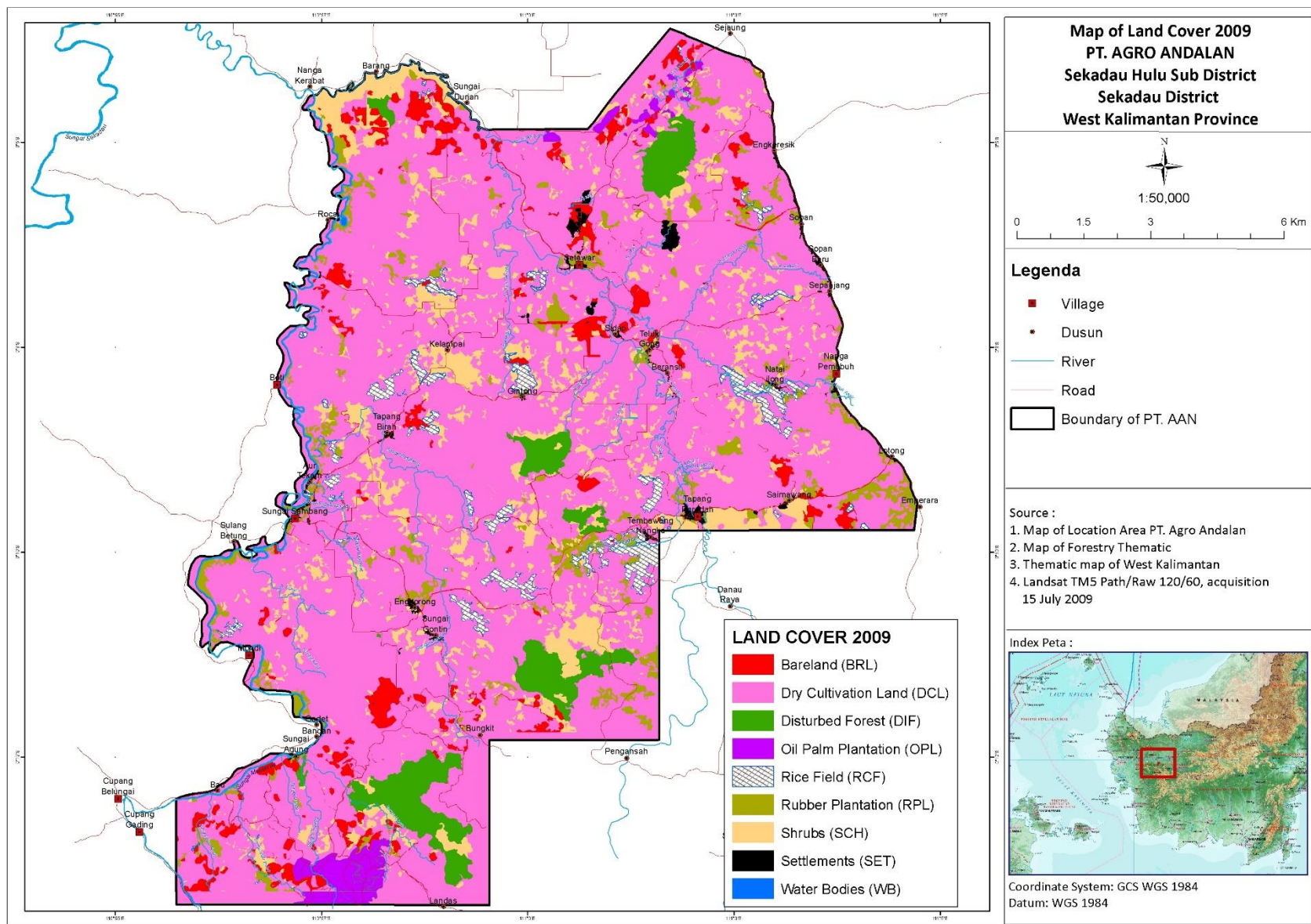
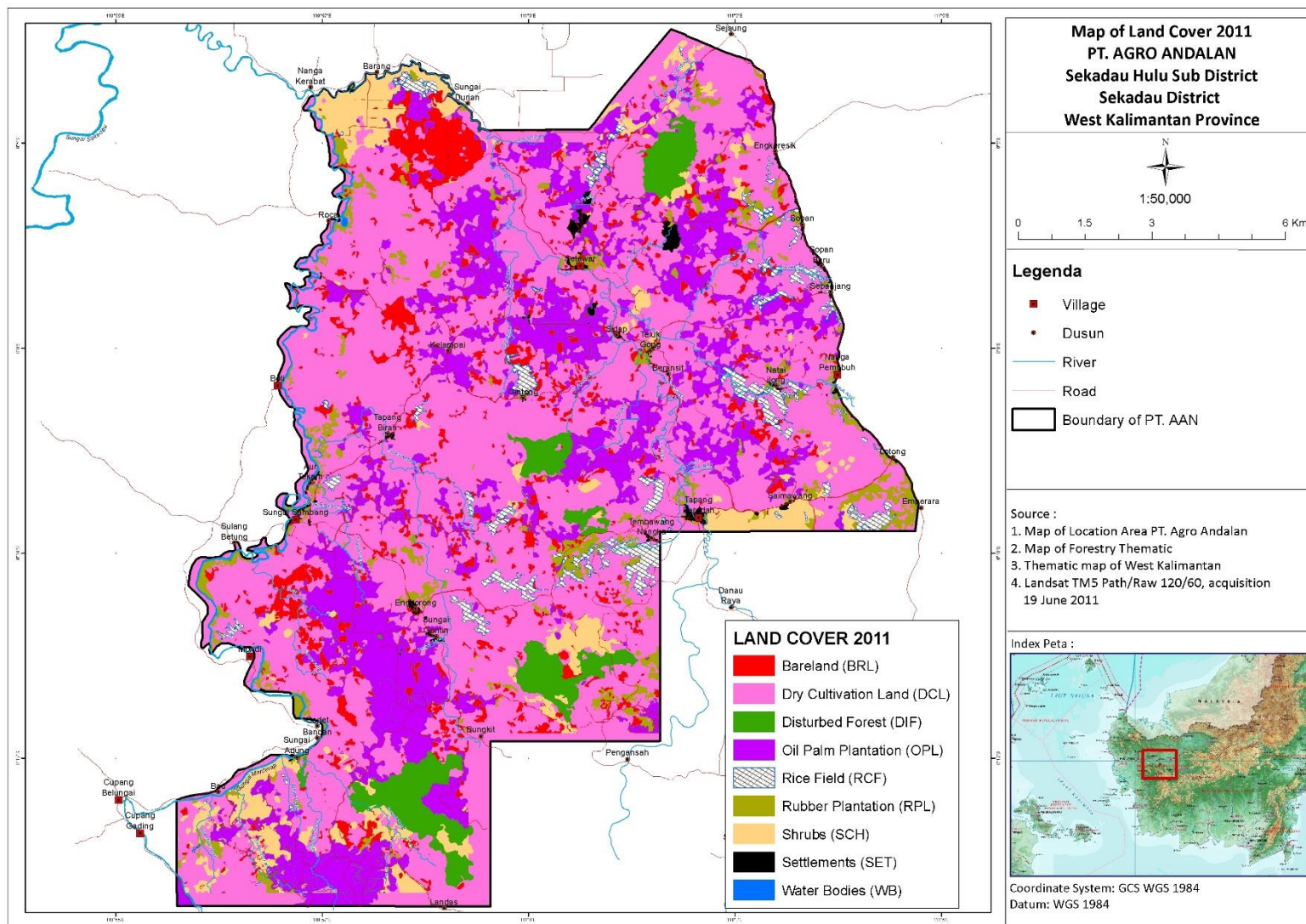
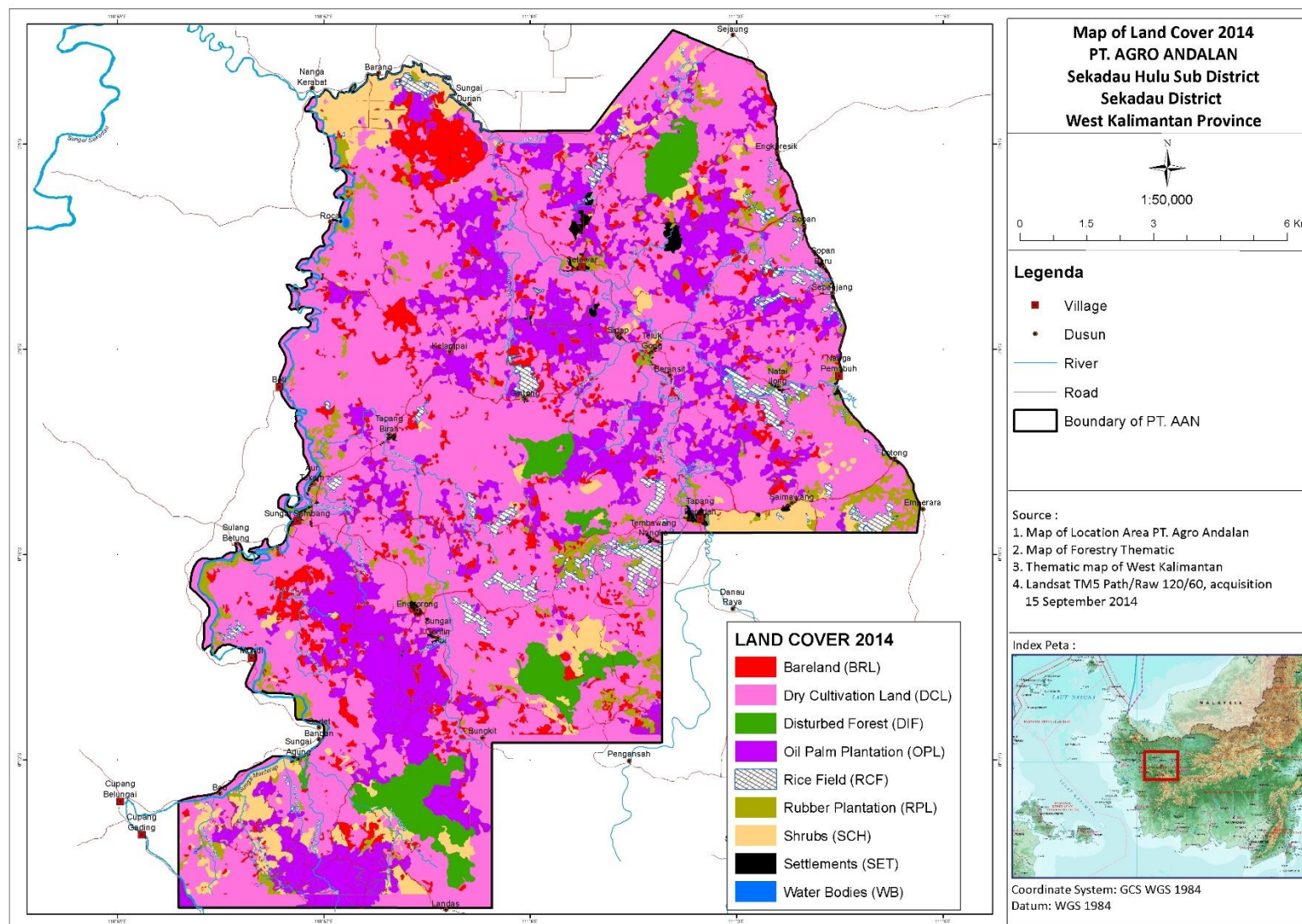


Figure 14. Interpretation Land Cover 2009 Cut Of Des 2009

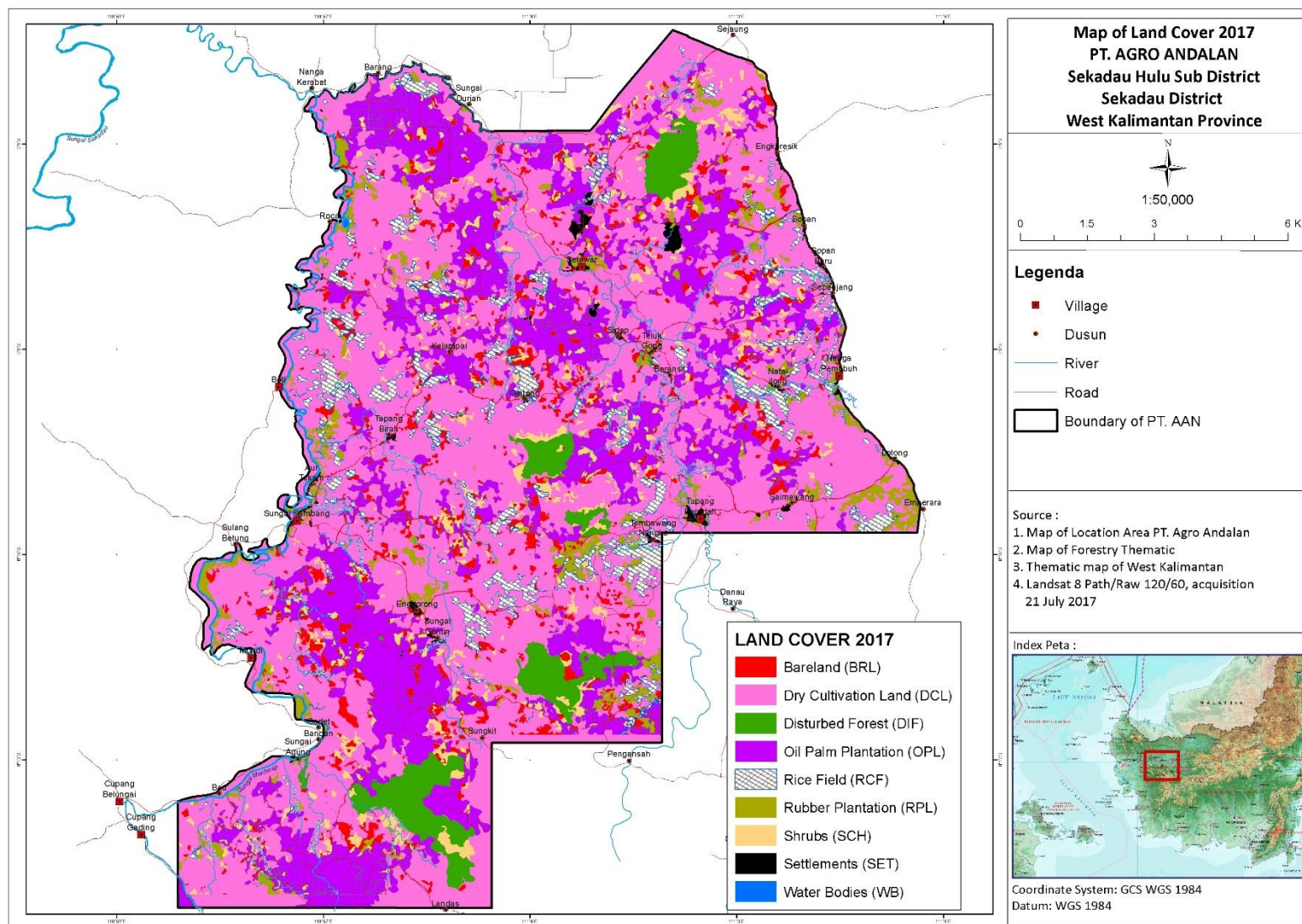


**Figure 15. Interpretation Land Cover 2011**





**Figure 16. Interpretation Land Cover 2014 Cut Off 9 Mei 2014**



**Figure 17. Interpretation Land Cover 2017**

## 3.3 HCV Assessment

### 1.1 Finding and decision on the absence of HCV

Based on HCV assessment in the concession area of PT AAN, there are found five HCVs, such as HCV1, HCV3, HCV4, HCV5 and HCV6. Total area size of all HCV in PT AAN are 2,665.11 Ha, as shown in **Table 3.3** and presented in **Figure 18**.

**Table 3.3. Summary of identified areas for HCVA and HCVMA of PT AAN**

<b>HCV Category</b>	<b>Description</b>	<b>Status</b>	<b>HCV Area (Ha)</b>	<b>HCVMA (Ha)</b>
HCV 1. Species diversity	Biological diversity concentrations including endemic species and rare, threatened or endangered species (RTE), that are significant at global, regional or national level.	<b>Present</b>	<b>1,942.89</b>	<b>4,363.69</b>
HCV 2. Landscape-level ecosystem and mosaics	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.	<b>Absent</b>	-	-
HCV 3. Ecosystems and habitats.	Rare, threatened or endangered ecosystems (RTE), habitats or refugia.	<b>Present</b>	<b>1,942.89</b>	<b>4,363.69</b>
HCV 4. Ecosystem services	Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.	<b>Present</b>	<b>2,660.53</b>	<b>4,520.9</b>
HCV 5. Community needs	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 people.	<b>Present</b>	<b>708.05</b>	<b>3,638.41</b>



HCV Category	Description	Status	HCV Area (Ha)	HCVMA (Ha)
HCV 6. Cultural value	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 people.	<b>Present</b>	<b>723.94</b>	<b>3,189.62</b>
<b>Total Area</b>			<b>2,665.11</b>	<b>4,605.47</b>

Note : the HCVMA area si buffer area with distance 200 m from core area of HCV area (HCV) and for buffer for river (riparian zone) is 50 m – 100 m left and right of river

#### 1) HCV 1 – Species Diversity

In the designated area of PT AAN there is still a population of wild plants and animals categorized as endemic and RTE (Rare, Threatened, or Endangered) species. Previous HCV assessment report and results of additional surveys along with HCS study result in 2016 by Ata Marie consultant have discovered about 338 kinds of plants from 104 families and 100 kinds of animals consisting of 14 species of mammals (from 11 families), 69 species of birds (from 30 families), 12 species of reptiles (from 8 families), and 5 species of amphibians (from 3 families).

There are at least 19 species of plants, 8 species of mammals, 16 bird species and 1 protected reptile species. Among the protected plant species are the kantong semar / akar entuyut (*Nepenthes gracilis*) and 6 orchid species namely anggrek tanah (*Bromheadia finlaysonianana*), anggrek pandan (*Cymbidium finlaysonianum*), anggrek kelapa (*Cymbidium lancifolium*), anggrek merpati (*Dendrobium crumenatum*), anggrek bawang (*Pholidota chinensis*), and *Thrixpernum ridleyanum*. Kantong Semar (nepenthes and Orchid belong to the CITES class of Appendix II, where the sale of both types is prohibited or limited.

A part from the indication of diversity and uniqueness of species, other indications found in the designated area of PT AAN is a population of endemic or RTE species. From the species of plants and animals found, some of them belong to the endemic or RTE categories that are protected by Government Regulation no. 7 of 1999 or other international regulations, such as the IUCN or CITES.



From the findings of these plants and animal species, there is an indication of HCV 1 in the designated management area of PT AAN. Most of them are found in areas that still have land covers, most already degraded and turned into patches of forested areas that still allow for some species of wild plants and animals to occupy. The designated area of PT AAN still has a high degree of diversity and uniqueness of species based on this encounters with the plants and animals species. Additionally, the area serves as shelters to some endemic or RTE species like Sunda Pangolin (*Manis javanica*) and Sun bear (*Helarctos malayanus*). That being said, based on the findings and indications of HCV 1, it can be concluded that within the designated management area of PT AAN can also be found HCV 1 such as: secondary forests located within the designated area of PT AAN and also river border zones which serve as local conservation areas that can support the local community. The rivers in itself function as habitats to some species of aquatic animals that need protection.

According to Orang Utan distribution map area from WWF (Sekadau Regency was considered as Orangutan distribution area. In the west side of PT AAN there is Nyiut Mountain which is determined as conservation area by the government as Orangutan habitat. WWF data explained that in 2004, the population of Orang Utan sub species *Pongo pygmeus pygmeus* in West Kalimantan and Serawak, was estimated as 3.000 – 4.500 species. For the last 20 years, Orangutan habitat in Borneo decreased for at least 55% of all population ([http://www.wwf.or.id/program/spesies/\\_orangutan\\_kalimantan/](http://www.wwf.or.id/program/spesies/_orangutan_kalimantan/)). At the year of 2010, Center for Orangutan Protection (COP) confiscated three orangutans from Sekadar Regency precisely in Nanga Mahap). Even though during scoping study and field assessment there was no sign of Orangutan in around PT AAN area, it becomes important to notify that Sekadau Regency is determined as Orangutan distribution area. According to this point, the restoration potency of Orangutan habitat in Sekadau Regency considered as high potential, However PT AAN area based on the map is not part of orang utan distribution area.

Based on the findings of flora and fauna, there are three species of endemic of Kalimantan fauna: Macan dahan (*Neofelis diardi borneensis*), Burung Bondol Kalimantan (*Lonchura fuscans*), and Burung Pentis Kalimantan (*Prionochilus xanthopygius*).

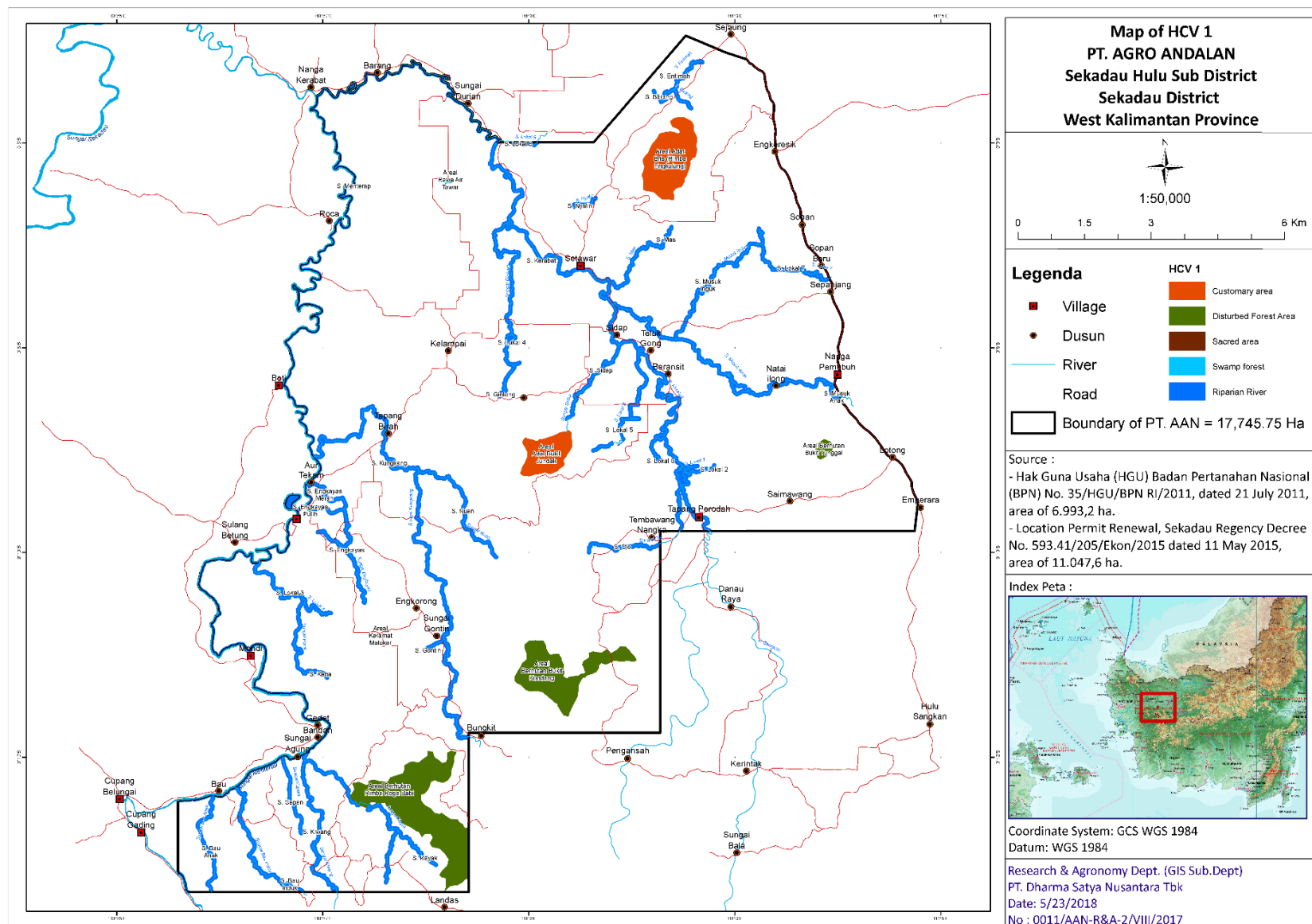
From the results of the identification of fauna and literature studies (datazone.birdlife.org) also, several species of birds are migrants, such as Kangkok india (*Cuculus micropterus*), Kareo rice (*Amaurornis phoenicurus*), Wiwik lurik (*Cacomantis sonneratii*), and Wiwik elabu (*Cacomantis merulinus*). However, based on other information from the bird field guide in Sumatra, Java, Bali and Kalimantan, it is indicated that the species is indicated as a residential type (MacKinnon, J., K. Phillipps, B. van Balen 2000. Birds in Sumatra, Java, Bali and Kalimantan, LIPI and BirdLife IP.) as well as from other references such as <http://www.kutilang.or.id>. From field observation and information from community and company staff, there is no known

transit point from migrant bird (stopover) species at PT AAN location. Below is

**Table 3.4. List protected flora and fauna and/or rare, treathened and endangered in PT AAN**

No	Group/ Botanical name	Local name	Conservation status			Remark
			PP No 7 Tahun 1999	CITES	IUCN	
<b>A.</b>	<b>Flora</b>					
1	<i>Anisoptera grossivenia</i>	Kenyau	TD	TT	EN	Endemik
2	<i>Dryobalanops beccarii</i>	Kapur	TD	TT	EN	Endemik
3	<i>Hopea mengarawan</i>	Kayu Mang	TD	TT	CR	Langsung
4	<i>Shorea seminis</i> v. Slooten	Serindak	D	TT	CR	Langsung
5	<i>Shorea johorensis</i> Foxw	Ketumba	TD	TT	CR	Langsung
6	<i>Aquilaria malaccensis</i>	Engkaras	TD	App. II	VU	Langsung
7	<i>Combretocarpus rotundatus</i>	Perepat	TD	TT	VU	Langsung
8	<i>Cotylelobium lanceolatum</i>	Kayu mang Besi	TD	TT	VU	Langsung
9	<i>Durio kutejensis</i> (Hassk.) B	Pekawai	TD	TT	VU	Endemik
10	<i>Shorea seminis</i> v. Slooten	Meranti batu	TD	TT	VU	Langsung
11	<i>Nepenthes gracilis</i>	Akar entuyut	D	App. II	LC	Langsung
12	<i>Shorea palembanica</i>	Kayu Majo	D	TT	TT	Langsung
13	<i>Shorea pinanga</i> Scheff	Tengkawang	D	TT	TT	Endemik
14	<i>Bromheadia finlaysonianana</i>	Anggrek tanah	TD	App II	TT	Langsung
15	<i>Cymbidium finlaysonianum</i>	Anggrek pandan	TD	App II	TT	Langsung
16	<i>Cymbidium lancifolium</i>	Anggrek kelapa	TD	App II	TT	Langsung
17	<i>Dendrobium crumenatum</i>	Anggrek merpati	TD	App II	TT	Langsung
18	<i>Pholidota chinensis</i>	Anggrek bawang	TD	App II	TT	Langsung
19	<i>Thrixperum ridleyanum</i>	Anggrek	TD	App II	TT	Langsung
<b>B.</b>	<b>Mamalia</b>					
1	<i>Manis javanica</i>	Trenggiling peusing	D	App I	CR	informasi
2	<i>Hystrix brachyuran</i>	Landak raya	D	TT	LC	informasi
3	<i>Neofelis nebulosa</i>	Macan dahan	D	App I	VU	Endemik
4	<i>Prionailurus bengalensis</i>	Kucing kuwuk	D	App II	LC	informasi
5	<i>Sus barbatus</i>	Babi berjenggot	TD	TT	VU	informasi
6	<i>Muntiacus muntjak</i>	Kijang muncak	D	TT	LC	informasi
7	<i>Helarctos malayanus</i>	Beruag madu	D	App I	VU	Langsung
8	<i>Cervus unicolor</i>	Rusa sambar	D	TT	VU	Langsung
<b>C.</b>	<b>Bird</b>					
1	<i>Ictinaetus malayensis</i>	Elang Hutan	D	App II	LC	Langsung
2	<i>Nisaetus cirrhatus</i>	Elang brontok	D	App II	LC	Langsung
3	<i>Alcedo meninting</i>	Raja udang meninting	D	TT	LC	Langsung
4	<i>Rhipidura javanica</i>	Kapasan belang	D	TT	LC	Langsung
5	<i>Anthreptes simplex</i>	Burungmadu polos	D	TT	LC	Langsung
6	<i>Anthreptes malacensis</i>	Burung madu kelapa	D	TT	LC	Langsung
7	<i>Anthreptes singalensis</i>	Burungmadu belukar	D	TT	LC	Langsung
8	<i>Hypogramma hypogrammicum</i>	Burungmadu rimba	D	TT	LC	Langsung
9	<i>Cinnyris jugularis</i>	Burungmadu sriganti	D	TT	LC	Langsung
10	<i>Aethopyga siparaja</i>	Burungmadu sepah raja	D	TT	LC	Langsung
11	<i>Arachnothera longirostra</i>	Pijantung kecil	D	TT	LC	Langsung
12	<i>Arachnothera flavigaster</i>	Pijantung tasmak	D	TT	LC	Langsung
13	<i>Gracula religiosa</i>	Tiong emas	D	App II	LC	Langsung
14	<i>Prionochilus xanthopygius</i>	Pentis kalimantan	TD	TT	LC	Endemik
15	<i>Lonchura fuscans</i>	Bondol kalimantan	TD	TT	LC	Endemik
16	<i>Psitucula alexandri</i>	Betet biasa	TD	App II	LC	
<b>D.</b>	<b>Reptil</b>					
1.	<i>Amyda cartilagina</i>	Labi-labi/Bulus	TD	App II	VU	Langsung

D = Dilindungi, TD = Tidak dilindungi, TT = Tidak Terdaftar, App = Appendix CITES, CR = Critically Endangered (kritis), EN = Endangered (genting), VU = Vulnerable (rentan), LC = Least Concern (resiko rendah)



**Figure 18 . Map Location HCV1 in PT AAN**

## 2) HCV2. *Landscape-level ecosystem and mosaics*

Based on field observation, the landscape of the study area generally consists of shrubs, community's cultivated land, and secondary forests (small patches). The shrubs in this area was formed out of abandoned fields or gardens from agricultural activities like growing rice or rubber; this is also the case for the formation of the secondary forests. A forest with a minimum area of 200 km<sup>2</sup> (20,000 ha) is **NOT FOUND** in the designated area and the areas surrounding PT AAN.

The forest in the designated management area of PT AAN consists of a series of secondary forests fragmented between one another by fields of shrubs. Secondary forests with relatively good condition do not cover wide enough area. Fragmented habitats, either inter-habitats within or outside the designated area of PT AAN do not have any corridor to connect between them.

As such, an area wide enough far from settlement and road zone is not found, and there is no corridor to connect the designated area of PT AAN with conservation area or other areas with high quality habitat and no natural zone within PT AAN can be found. Overlaying PT AAN location map with Intact Forest Landscape (IFL) Shown that PT AAN area is out of IFL area. The closest IFL area is around 9.33 km from north part of PT AAN. Based on those conditions that are missing from the designated area of PT AAN, it can be concluded that HCV 2 is **NOT FOUND**.

## 3) HCV3. *Ecosystem and Habitat*

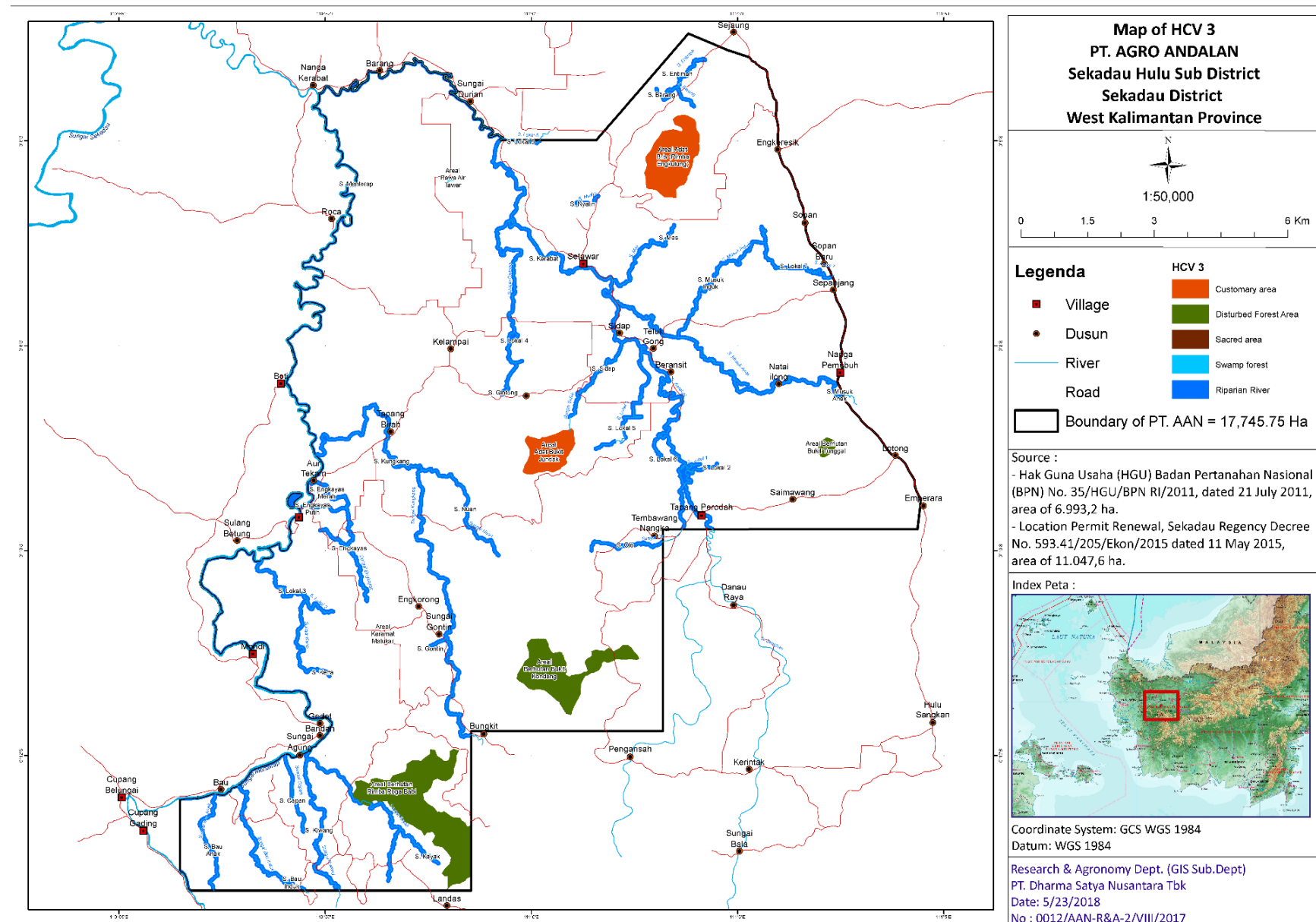
There are 4 type of ecosystems found in PT AAN area: Lowland forest ecosystem, fresh water swamp ecosystem, riparian ecosystem and river ecosystem. Currently, the four ecosystem types are in threatened condition in PT AAN area, due to the company's operational activities and agricultural cultivation activities carried out by the community, including the construction of settlements and community housing that tends to be built at the riparian zone as a riparian ecosystem. For fresh water swamp ecosystem is mostly in shrub, oil palm and mixed crops. For lowland forest ecosystem that most of the customary forests and sacred forests are still maintained communally by the community. This forested ecosystem is limited and fragmented. Its existence is threatened by the existence of the company's activities and also the community's need for forest resources either the utilization of its forest products or its land needs.

Referring to the RePPPProT ecosystem classification table (HCV Toolkit 2008), it can be seen that these ecosystems are threatened ecosystems. The next step is to use a precautionary approach that refers to the HCV toolkit 2008. Then, based on the results of the overlay of the Map of the permit area of PT AAN with biophysiographic map of the High Conservation Value Toolkit in 2008

(Landscape Map - Biophysiographic), the permit area of PT AAN belongs to the ecoregion of Middle Kapuas Basin and Southern Plains and Mountains. Consisting of lowland forest ecosystems, freshwater swamp - forest and riparian ecosystems.

Based on the history of PT AAN land cover change, there has been a significant change in 2009 until 2017, an increase in the area of oil palm by 98.82%. From the information of land cover changes, the tendency of forest conversion to oil palm plantations continues to increase so that the existence of existing natural ecosystems are in threatened.

According to the type of ecosystems listed in the IUCN ecosystems redlist, Indonesia has not been included in the red list of ecosystems, at least according to published publications (<http://www.mongabay.co.id/2013/05/10/penelitian-para-ahli-ciptakan-daftar-merah-untuk-ekosistem-terancam-di-dunia/>) as well as from the publication of the IUCN red list (<https://iucnrl.org/resources/published-assessments/>).



**Figure 19. Map Location HCV3 in PT AAN**

#### 4) HCV4. Ecosystem Services

For ecosystem service, in PT AAN area is found secondary forest area, river & the riparian zone, steep area, spring and natural water pond that potentially as HCV 4.

The existence of forests in a region can function orologically (prevent erosion), hydrological (regulating water) and also climatological (governing climate) and other ecosystem services functions. In addition to forested areas, areas of great importance to withstand water flow rates or extreme runoff are the riparian zone. Riparian zone is a riverside protected area that becomes one with the river. The river border protects the river from scouring, erosion, and pollution, as well as having high biodiversity. The loss of riparian zone due to other occupation will cause a decrease in river water quality due to loss of filter function that holds non-point source polluters.

For clean water need, currently people in the surrounding of PT AAN meet the needs from rivers, springs, water ponds and artificial wells. Even the use of river water for daily needs some people still use river water for drink, bathing, washing and sanitary

Some of the areas that are still forested in PT AAN (Disturbed forest/DIF) are in the form of customary forest communities such as customary forest of Bukit Jundak, indigenous forest of Bris (Rimba engkulung), customary forest of Kondang, customary forest of Roga Babi, single hill, rimba of Empalin and forest which is rescued by the people like the sacred forest of Malukar. For the river and riparian zone in the area of PT AAN is S. Menterap, and S. Kerabat, S. Bau Induk, S. Bau Anak, S. Cipan, S. Kiwang, S. Kayak, S. Kena, S. Engkayas, S. Kungkang, S. Nuan, S. Gintung, S. Nyalin, S. Mas, S. Sidap, S. Musuk Anak, S. Musuk Parent, S. Olo, S. Entimah, S. Barang, S. Engkayas Putih, S. Engkayas Merah and an unnamed local small river.

There is also Pelabuh Bindang water spring found in the designated area of PT AAN, which has served as a very important spring used by the community for their livelihood. A spring is a ground water flow that naturally gushes to the ground surface due to clipping of the flow by the topography of its surrounding area before emerging out of rocks. The local community utilize the spring by connecting pipes from the spring to their settlement. Other water bodies utilized by the community for livelihood is *embung air Punti* or *embung Punti*, a sort of pond where the locals go to fish.

Other HCV 4 potentials in PT AAN are also found in good forested area that still function as water absorption zones for the surrounding areas and serve also as the upstream for several tributaries flowing around it. These well-forested areas (disturbed forest) include customary forests such as Bukit Jundak, Bris, Kondang, Roga Babi, Bukit Tunggal, Rimba Empalin customary forests and forest that the community consider sacred like the Malukar sacred forest.

In PT AAN area are found steep area. The area with steep slopes is a very potential area of erosion and landslides, if the forested vegetation on it is removed. The area with steep slopes with well-forested vegetation is very effective to prevent erosion and the landslide. The existing of natural vegetation and forested area is very important on the steep area. Identification of zones that serve to prevent soil erosion and landslide that may disturb or impact damage property and community livelihood was carried out through erosion hazard level analysis. Through a review on the slope class distribution map and field survey, it was found that there was a zone with a very steep slope of 40% or with erosion hazard level of > 180 ton/ha/year as HCV 4. This may be taken into consideration to indicate HCV 4 potentials in the designated area of PT AAN, which is a steep zone, or zones with large rainfall and great erosion hazard. HCV 4 location are presented in Figure 20



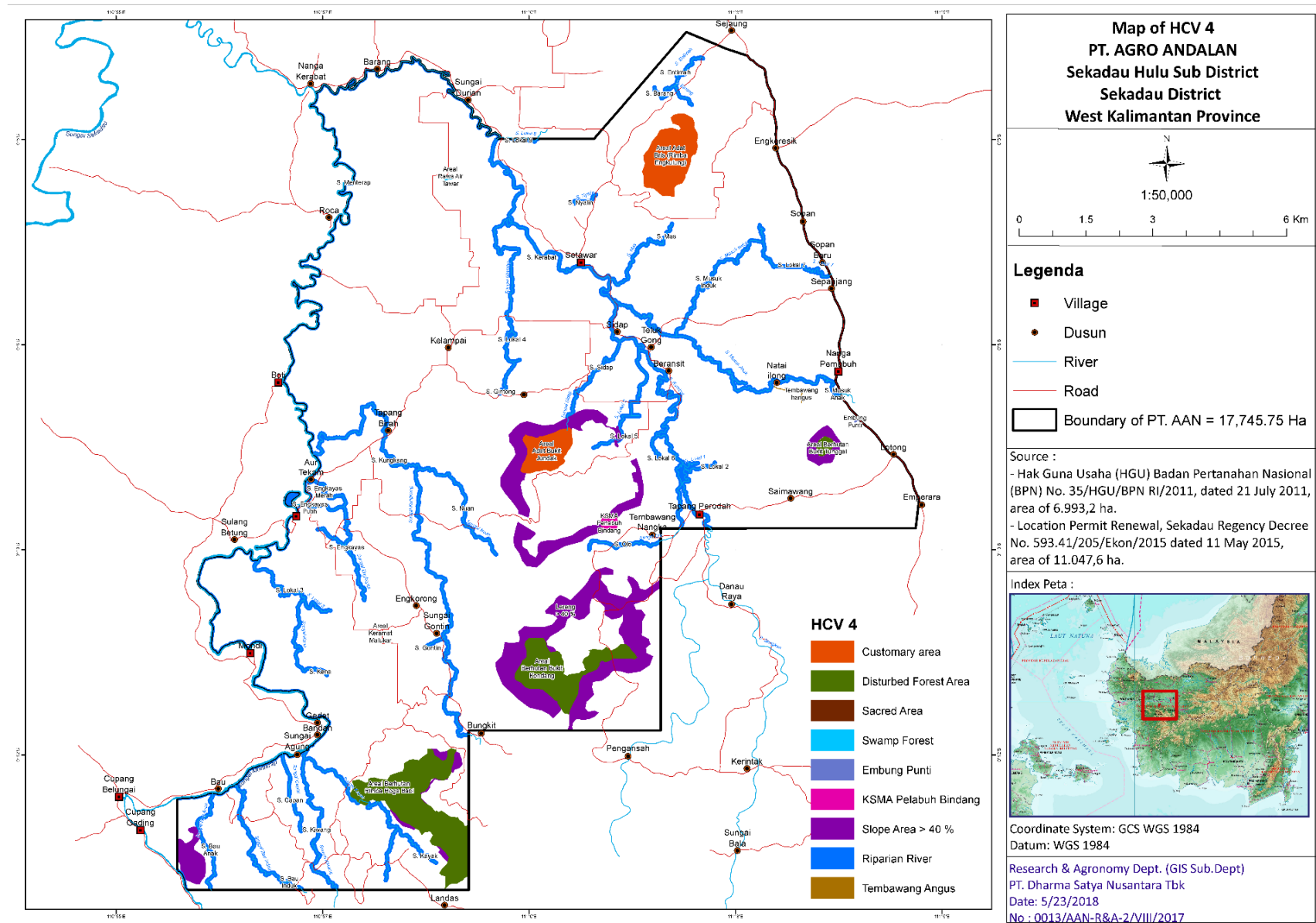


Figure 20. Map Location HCV4 in PT AAN

#### 5) *HCV5. Community Needs*

According to the HCV Resource Network (HCVRN) HCV assessment guide, the fundamentals for basic needs fulfillment include hunting grounds, non-timber forest production, fuel sources for household activities such as cooking, lighting, heating, fish and freshwater species (as the main source of protein), the source of building materials, fodder and seasonal grazing, an important source of water for consumption and sanitation, and goods that are exchanged for the fulfillment of primary needs or cash sold to purchase essential goods such as medicines, school fees, etc.

In the review of HCV 5, the assessment team have visited and conducted interview with local communities in 7 villages—Tapang Perodah, Nanga Pemubuh, Setawar, Boti, Sungai Sambang, Mondri, and Nanga Menterap.

From the results of interviews with the community and field observations, HCV 5 is found in the area of PT AAN with the condition of people still using, consuming and dependent on the surrounding natural resources from the existence of forests, rivers and springs.

To meet the needs of water for daily purposes and drinking, the community utilizes existing water resources such as rivers, springs, water ponds and some others take from wells and even buy gallon bottled water.

Meanwhile, to meet the protein needs of the community there are still hunting wild animals such as wild boar and other game animals. Catching fish in rivers is also a part of community activities to meet the needs of protein. However currently most people meet their protein needs by buying in the market around the PT AAN site.

Utilization of non-timber forest products such as nuts and vegetables are now widely met from buying in the market and from their own fields. As for the needs of drugs obtained from drug stores and pharmacies close to the village.

For the purpose of building houses and household furniture, currently some people still take advantage of or take away from the forest that still exists around it. However, since some of the forests surrounding PT AAN are customary forests, their utilization is limited by customary rules agreed upon. With the condition decreasing the source of timber from the forest, the community began to buy wood for the purposes of his house.

In terms of fuel fulfillment for household activities, some people already use gas, but there are still families who use wood as fuel derived from fields, yards and from forests.

The community is also currently utilizing the river by mining the sand for the next sale and the results to meet the needs of the community. But this practice is only done by a small part of community members.

To conclude it, the finding of this HCV 5 among others is the use of rivers and water springs in the seven villages around PT AAN, as elaborated in this following table:

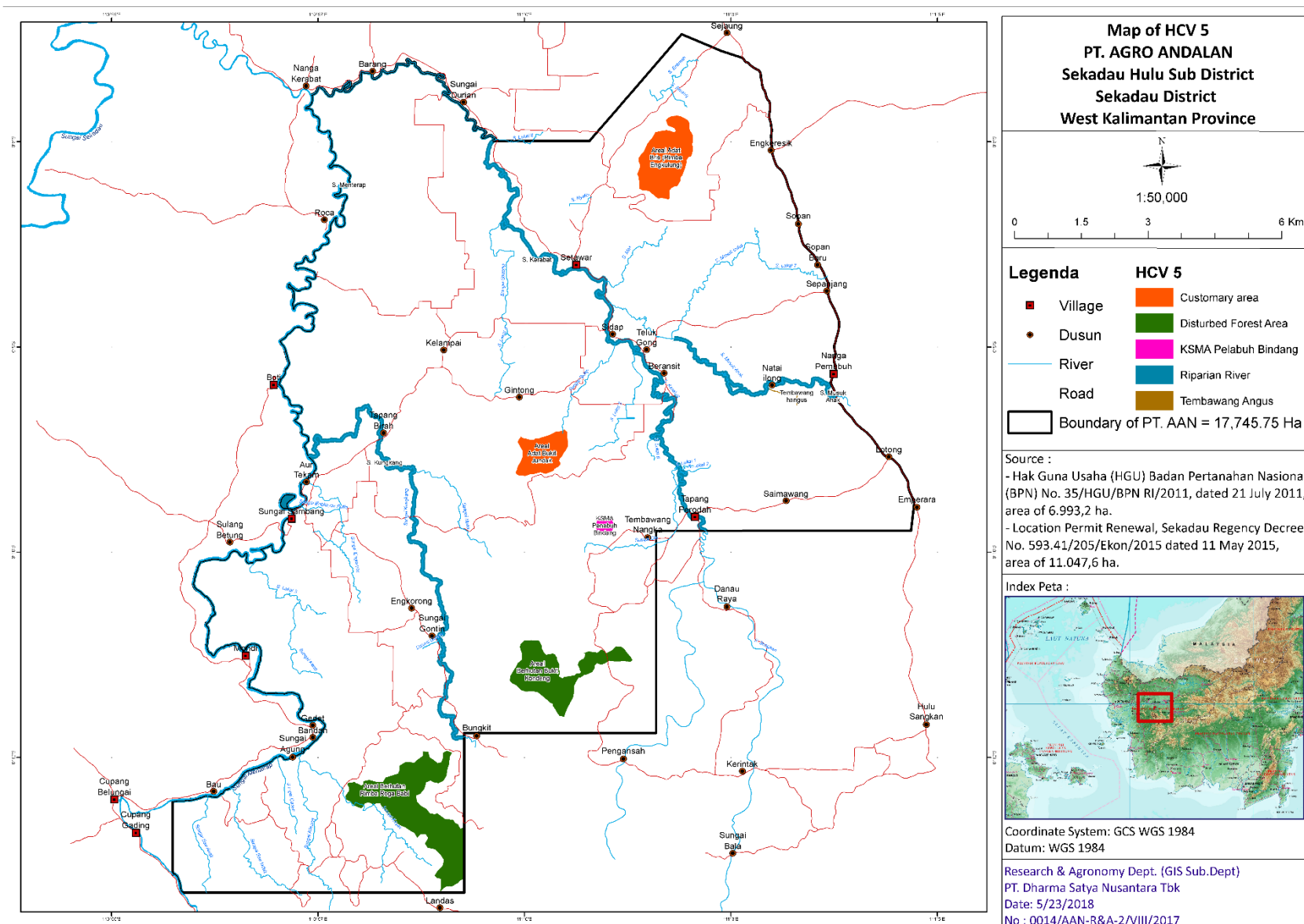
**Table 3.5. Description HCV 5 findings in PT AAN**

Location Name	Information
<b>Bukit Jundak Spring</b>	Main source of water for Kampung Sidap and Kampung Gintung (Dusun Sidap). The spring has been connected to pipelines since 2014, but a flaw in the installation caused the water debit to flow too small and stop flowing at all during the dry season. As a substitution, the community take water from Kerabat river. Water from Bukit Jundak is 100% used for drinking by the residents of Kampung Gintung.
<b>Kerabat River</b>	90% of people in Setawar village use the water for their bathroom and toilet. Less than 40% of the residents use water from Kerabat river for consumption, as most of them already have access to drilled wells, dug wells, or refillable mineral water. Also serve as place for defecation, source of drinks, sand mining, and fishing spot for Setawar village, Tapang Perodah village, and Dusun Sungai Durian in Nanga Menterap Village.
<b>Musuk Anak River</b>	For Nanga Pemubuh Village, specifically the residents of Dusun Natai Ilong, the river is used for field irrigation. Less than 40% of its residents use for consumption as most already have access to dug wells (60%).
<b>Bindang river</b>	The water used to be connected through pipes to the residents of Tapang Perodah village, but due to pipe leakage the flow has stopped completely. The residents relies on dug wells for daily consumption and use the river for shower or defecation. The water is also used to irrigate rice fields covering an area of 300 ha The water from Pelabuh Bindang Spring also functions as tourism object.
<b>Menterap river</b>	Its tributaries, such as Enkayas putih and Enkayas merah river, are still used by the residents of Dusun Sungai Sambang for shower and defecation. For consumption, they rely on drilled wells. Residents of Mondri village still use the water for drinking, and shower and defecation, as well as customary rituals for newly born babies or wedding ceremony, and to catch fish to fulfill their daily needs. Apart from Menterap river, the residents of Mondri village also use the water-flow from Kayak river. There is a waterfall, Pentak waterfall, in Kayak river
<b>Kungkang river</b>	Used by the residents of Sungai Sambang village and Boti village for shower and consumption purposes. Although the residents of Boti village rely mostly on Tobu and Nuan river for consumption as their water is cleaner to drink, during rainy season when the water becomes too muddy to drink, the residents gathered rainwater for consumption.
<b>Semanuk river</b>	Used by residents of Mondri village, Dusun Roca as source of water for bathing and toilet
<b>KSMA Pelabuh Bindang</b>	Water source for Tapang Perodah village (consult attachment 4 Public Consultation Note, statement from the representative of Tapang Perodah village)
<b>Landas river</b>	Water source for Mondri village. Used for bathing, sanitary, and toilet purposes; some still use it for consumption.

And utilization of forest resources, mainly for timbers, is as followed:

**Table 3.2. utilization of forest resources, mainly for timbers in PT AAN**

Location Name	Details
<b>Bris Customary Area</b>	Source of timber for building houses and firewoods; and also source of non-timber resources for the residents of Setawar village
<b>Kondang Hill</b>	Source of timber that can only be accessed by the paternal heirs of the area. Timbers produced by the area are only used for personal needs and are not traded or sold.
<b>Roga Babi</b>	Source of building material and firewood that is customarily protected by the residents of Mondri village.



**Figure 21.**Map Location HCV5 in PT AAN

## 6) HCV6. Cultural Value

HCV 6 identification was carried out by interviewing village leaders and local figures in each village around the area of PT AAN, followed by ground truthing on the field. Identification by field observation and interview showed that there are parts of 722,42 ha used to fulfil the community's cultural identity, some of them are: KSMA (*Water Source Area*) Pelabuh Bindang, customary area of Kondang and Jundak, in Tapang Perodah Village, customary area of Bris and Sacred Area of Danau Lindung in Setawar Village, customary area of Roga Babi in Mondri Village, Bukit Tunggal and Rimba Empalin in Nanga Pemubuh Village, Sacred Area of Malukar in Sungai Sambang Village, Natai Kelampai and Pulau Bindang in Boti Village.

Table below contains explanations of designated area for HCV 6, whom had cultural values, and ritual activities normally taken place.

**Table 3.7. Description HCV 6 findings in PT AAN**

Name	Location	Designation
<b>Customary area of Bukit Kondang</b>	Desa Tapang Perodah	The locals agree that the area is a customary forest, where all utilization activities must be under permission of customary stakeholder. The utilization of the area must be free from any economic activity, and if it is proven that there is any activity in the area without the permission of customary stakeholder, a penalty will be charged upon ( <i>Jipen</i> ).
<b>Customary area of Bris</b>	Desa Setawar	Customary area of Bris was used as a worshipping place ( <i>berhajat</i> - vowing specific purposes) for the Kaharingans. Currently, the locals rarely visit the customary forest for worshipping purpose. However, the area is still maintained by the locals, aiming that the future generations could learn about their ancestors' history.  This customary forest is protected from any economic-related activity. Penalty ( <i>Jipen</i> ) will be taken place if any money-making activity is evidently present in this area, without permission of customary stakeholder.
<b>Customary area of Roga Babi</b>	Desa Mondri	Roga Babi is protected by the village government and customary government of Desa Mondri, and its utilization is regulated by the village. The village government protects this area and assigns Roga Babi as a customary forest, also used as a sacred place for Kaharingan's ritual.  This customary forest is protected from any economic-related activity. Penalty ( <i>Jipen</i> ) will be taken place if any money-making activity is evidently present in this area, without permission of customary stakeholder.
<b>Customary area of Bukit Jundak</b>	Desa Tapang Perodah	Bukit Jundak is a customary area assigned by the government of Desa Tapang Perodah, as the area was used for worshipping ( <i>berhajat</i> ),

Name	Location	Designation
		meditating, and praying by the locals, Today, the locals rarely follow this believe as they mostly has been converted to Islam/Christian. However, the area is still preserved as a historical place of Desa Tapang Perodah.
<b>Bukit Tunggai</b>	Desa Nanga Pemubuh	It is believed that whoever opens or disturbs the area in Bukit Tunggai, death will come over him. Moreover, a pond claimed as angels' dwelling place ( <i>Kolam Bidadari</i> ) and a cave alleged being inhabited by tigers ( <i>Batu Macan</i> ) are believed to be presence in this area.
<b>Rimba Empalin</b>	Desa Nanga Pemubuh	This area is considered as a sacred area because the locals' attempt to convert the forests into farming areas always end up unsuccessfully. According to the locals, a tiger was once spotted in the area of Rimba Empalin.
<b>Sacred area of Lindung Lake</b>	Desa Setawar	This area covers a lake of 10 x 20 m considered sacred by the community. Before holding any event or opening a land for plantation, the community usually visits the place for worshipping.
<b>Sacred area of Malukar</b>	Desa Sungai Sambang	The area is considered as a sacred forest since local people normally worship in this location, asking for a blessing before opening new lands for agricultural area.
<b>KSMA Pelabuh Bindang</b>	Desa Tapang Perodah	KSMA or Water Spring area, in form of waterfall is found in Tapang Perodah Village—its water is used for birth ritual and marriage ceremony.
<b>Natai Kelampai</b>	Desa Boti	According to the local stories, Natai Kelampai was at first a fully inhabited village but a sudden plague happened and destroyed the whole village. No one ever lived there ever since, and Natai Kelampai was considered as a sacred area by the people of Boti Village. Natai Kelampai is believed for bringing a bad luck for its visitors.
<b>Pulau Bindang</b>	Desa Boti	The place located in Tapang Birah Kampong with total area 1,5 ha. There is an old rubber tree, which estimated as 30 years old (huge tree), as a sign of ancestor heritage. This was a hiding place, during war era. The icon of the place is five Bindang Tree, which believed as planted when the ancestor (Datuk) was hiding. The trees are for his children, so they remember to protect and preserve nature, as their living source.  Pulau Bindang is a protected area for its historical story of Desa Boti.

Below are Some HCV areas have more than one HCV as follows :

**Table 3.8. Summary of identified areas for HCVA per HCV location in PT AAN**

No.	HCV	HCV Category	Area HCVA (Ha)
1	Area of Bukit Jundak (Water Spring) custom forest	HCV: 1, 3, 4, 5, 6	82.10
2	Area of Adat Bris (Rimba Engkulung) custom forest	HCV: 1, 3, 4, 5, 6	151.10
3	Area of Bukit Kondang custom forest	HCV: 1, 3, 4, 5, 6	168.75

No.	HCV	HCV Category	Area HCVA (Ha)
4	Bukit Tunggal (Tunggal Hill)	HCV: 1, 3, 4, 6	12.66
5	Area of Roga Babi custom forest	HCV: 1, 3, 4, 5, 6,	291.75
6	Sacred area of Malukar	HCV: 1, 4, 6	0.50
7	Swamp forest	HCV: 1,3,4	1.12
8	Embung Punti	HCV: 4	0.94
9	KSMA Pelabuhan Bindang	HCV: 4, 5, 6	12.56
10	Slope area > 40%	HCV: 4	702.40
11	Tembawang Angus	HCV: 4,5	1.81
12	Sacred area of Danau Lindung	HCV: 6	0.01
13	Natai Kelampai	HCV: 6	2.01
14	River and Riparian areas (Riparian)	HCV: 1, 3, 4, 5	1,234.90
15	Rimba Empalin	HCV: 6	1.00
16	Pulau Bindang	HCV: 6	1.5
<b>Total Area of HCV and HCVMA</b>			<b>2,665.11</b>
<b>Arearea of PT AAN</b>			<b>17,745.75</b>
<b>Persentase of HCV and HCVMA on area of PT AAN</b>			<b>15.02 %</b>

**Note :** the HCVMA area si buffer area with distance 200 m from core area of HCV area (HCV) and for buffer for river (riparian zone) is 50 m – 100 m left and right of river

Below are Some HCVMA areas have more than one HCV as follows :

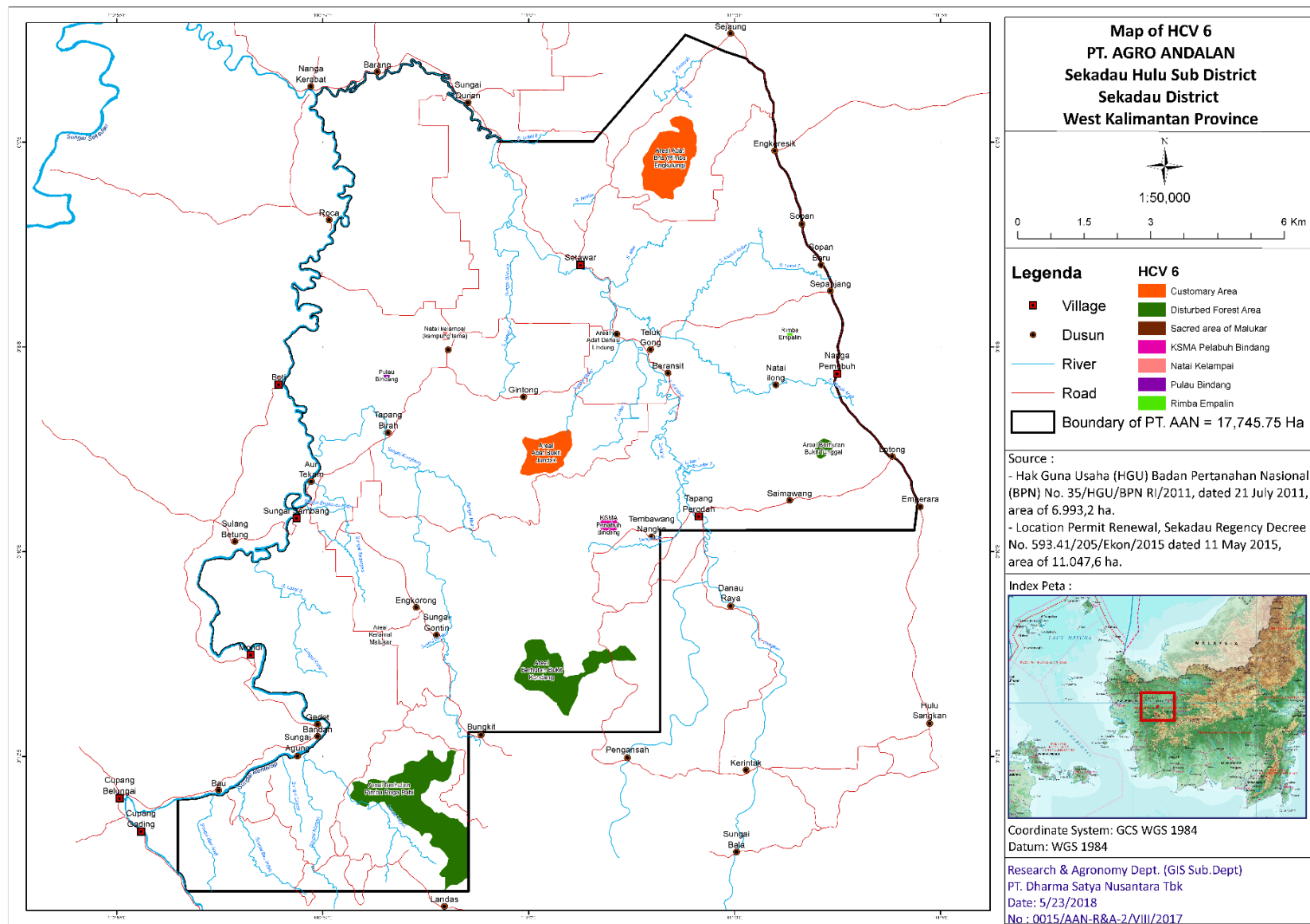
**Table 3.9. Summary of identified areas for HCVMA per HCV location in PT AAN**

No.	Areal KPNKT/HCVMA	Kategori NKT	Luas Areal Pengelolaan NKT atau HCVMA (Ha)
1	Area of Bukit Jundak (Water Spring) custom forest Area of Bukit Kondang custom forest KSMA Pelabuhan Bindang Slope area >40% (steep area) KSMA Pelabuhan Bindang	NKT : 1, 3, 4, 5, 6	2,077.70
2	Area of Adat Bris (Rimba Engkulung) custom forest	NKT : 1, 3, 4, 5, 6	268.75
3	Bukit Tunggal (Tunggal Hill) Slope area >40% (steep area) Tembawang Angus	NKT : 1, 3, 4, 6	176.16
4	Area of Roga Babi custom forest Slope area >40% (steep area)	NKT : 1, 3, 4, 5, 6,	564.36
5	Sacred area of Malukar	NKT : 1, 4, 6	18.35
6	Swamp forest	NKT : 1,3,4	23.47
7	Embung Punti	NKT : 4	21.74
8	Slope area >40% (steep area)	NKT : 4	135.74
9	Sacred area of Danau Lindung	NKT : 6	13.37
10	Natai Kelampai (Kampung lama)	NKT : 6	26.59
11	River and Riparian areas (Riparian)	NKT : 1, 3, 4, 5	1,234.90

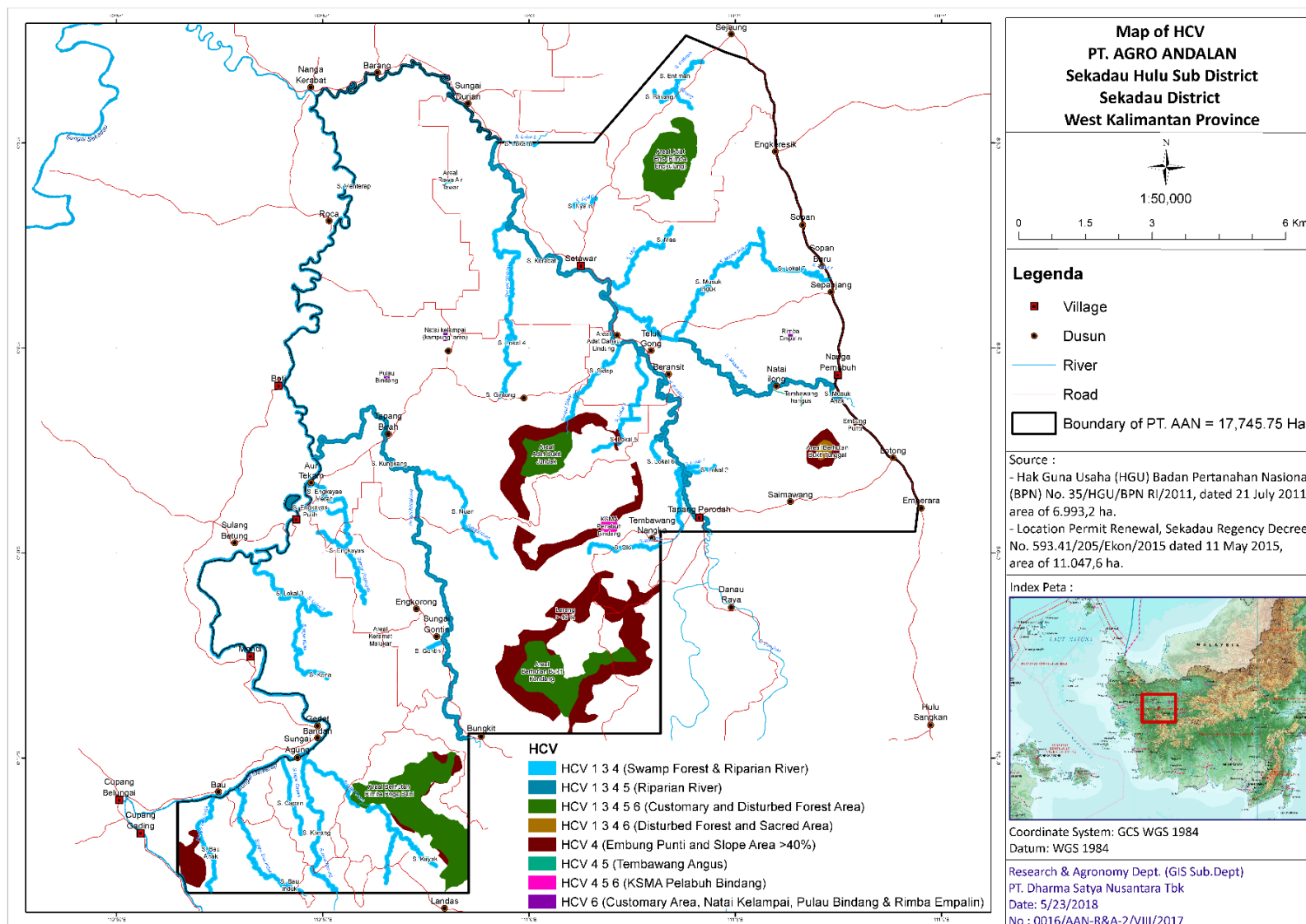


No.	Areal KPNKT/HCVMA	Kategori NKT	Luas Areal Pengelolaan NKT atau HCVMA (Ha)
12	Rimba Empalin	NKT : 6	21.58
13	Pulau Bindang	NKT : 6	22.76
	<b>Total Areal KPNKT/HCVMA</b>		<b>4,605.47</b>
	<b>Luas areal PT AAN</b>		<b>17,745.75</b>
	<b>Persentase areal KPNKT/HCVMA terhadap luas areal PT AAN</b>		<b>25.95 %</b>

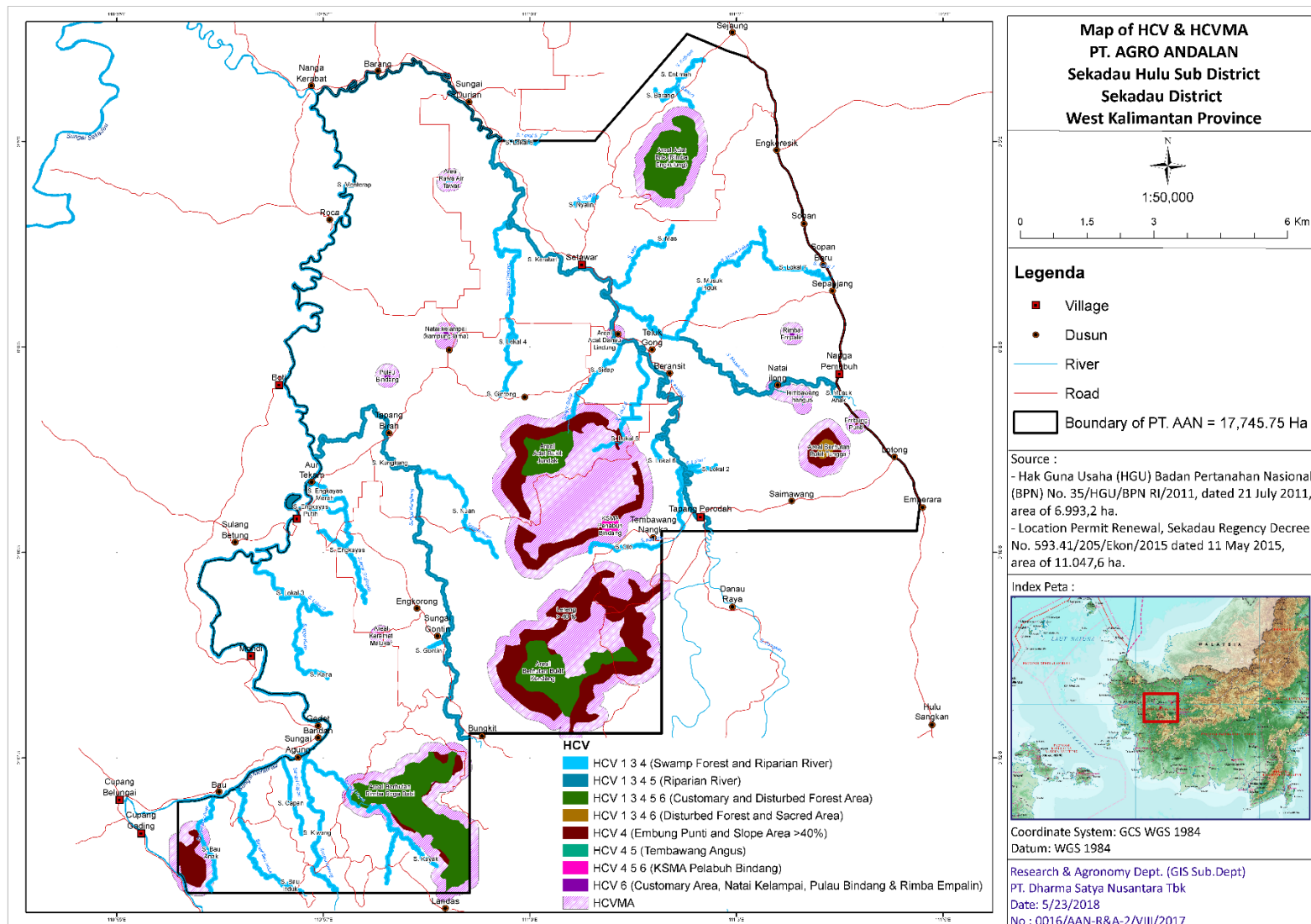
**Note :** the HCVMA area si buffer area with distance 200 m from core area of HCV area (HCV) and for buffer for river (riparian zone) is 50 m – 100 m left and right of river



**Figure 22. Map Location HCV6 in PT AAN**



**Figure 23.** The distribution area map of HCV in the PT AAN concession area



**Figure 24.** The distribution area map of HCV and HCVMA in the PT AAN concession area

### 1.3.2 Stakeholder Consultation

Public Consultation PT AAN was held two time during scoping study, the first meeting conducting with scoping study which was attended by stakeholders from each village Sekadau Hulu Regency, and the second meeting was conducted after assessment with same participants. Public consultation for scoping study (on 10 Mei 2017) describe what is HCV, and aim of HCV re-assessment by PT Remark Asia, as a follow up of the results of unsatisfactory previous report. The second meeting was conducted after assessment activities in July 2017. The meeting more specially discussing the findings of HCV. Each person is given a map and list of key areas, and provides input regarding urgency of each HCV.

Consultation activities in this report refer to the results of the public consultation by PT ALZ and PT Remark Asia consultant. Assessment with communities and community leaders directly with visits to villages and to the field are not recorded in this report, as they are listed in the content of HCV report and are the material and basis for the preparation of the report.

The conclusion of this meeting is an agreement between community, company, and local government to determine conservation area in PT AAN.

Summary and HCV-related inputs from the public consultation attendees are presented in the following table:

Table 3.10 Summary and HCV-related inputs from the public consultation

No	Key Issues related with HCV assessment	Name/title/representatio	Respond to the input/comment
1	<ul style="list-style-type: none"><li>• Bukit Tunggal will be a recreation area, because there is a Bukit Macan in it. This area is important to protect</li><li>• Tembawang Angus is still used by the community, because many of the Durian trees, and as a historic place the origin of the community of Dusun Natai Ilong.</li><li>• Animals that still frequently seen in Bukit Tunggal is the type of birds, hedgehog, mouse deer, deer, angkis (a kind of hedgehog), and apes. Some are still hunted for their own consumption.</li></ul>	Polonius Litus (BPD Desa Nanga pemubuh/Representative council of Desa Nanga)	These inputs strengthen the justification of conservation area determination and become the report material

No	Key Issues related with HCV assessment	Name/title/representatio	Respond to the input/comment
2	Pelabuh Bindang as well as a place that will be developed for tourism, is also a source of water for Dusun Tembawang Nangka and Dusun Tapang Perodah. The water is used for consumption, so it is important to maintain the environment around the Pelabuh Bindang. There has been a Community Seeds program from the government along the Pelabuh Bindang river in the form of 50,000 trees from fruit and wood, but no follow-up. Hopefully the company can work with the company in managing the HCV areas.	Kandomius Lukas (Kepala Desa / head of village Tapang Perodah)	This input has been included in the report that the Pelabuh Bindang is one of the HCVs
3	Kondang Hill is the border between Tapang Perodah Village and Sungai Sambang Village, which until today has not been definitive. Inside the hill there is a source of clean water used for water consumption by residents of Dusun Bongkit, Dusun Borong, and Dusun Sungai Bongkit.	Kandomius Lukas (Head of Desa Tapang Perodah)	This input has been included in the report that the Bukit Kondang is one of the HCVs
4	In the area of Bukit Jundak there is also a place called Pandolipo, as a place of origin Tapang Perodah Village residents. The place is a point with a marker symbol (a kind of monument).	Kandomius Lukas (Head of Desa Tapang Perodah)	This input has been included in the report that Bukit Jundak as one of HCV
5	In Bukit Kondang and Bukit Jundak several times seen bear, Trenggiling/pangolin and gambiau, and still often seen also hedgehogs, angkis, kelampiau, Kucing batu, and boar.	Head of Adat Desa Tapang Perodah	The species have been included in the HCV report and the area is included as one HCV
6	In addition to what has been mentioned by the Village Head Tapang Perodah, in Bukit Kondang also still a lot of rattan used by housewives, for the needs of personal kitchen furniture.	Head of Desa Sungai Sambang	The use of non-timber forest products has been considered in HCV 5 determination
7	The area of Keramat Malukar, although empty is nothing (not wooded tree like other conservation areas), but still wanted to be maintained by the people of Dusun	Head of Desa Sungai Sambang	The sacred Melukar area is included as HCV

No	Key Issues related with HCV assessment	Name/title/representatio	Respond to the input/comment
	Engkorong and Dusun Sungai Koting. That area will be an example that once there was once a sacred forest in that place.		
8	The ditch area is used for farming, located in Sungai Sambang hamlet, please be on guard and do not get cultivated.	Hermanto (Villager Sungai Sambang)	The ditch area can be included in PT AAN monitoring program
9	At the foothills of Jundak there is Merapu River whose water is used for the consumption of Tapang Birah (especially). Please to keep and maintain by the company.	BPD (representative council) of Desa Boti	Rivers and riparian areas are included in the HCV area and included in HCV management and monitoring
10	There is a Natai Statue forest about 200 meters from the River Menterap. The forest is now planted by Mr. Hasan's rubber plantation.	Pana (head of Adat Desa Boti)	Management and monitoring activities will include activities undertaken by the community to maintain HCV areas
11	There are already customary rules imposed to regulate the utilization of wood in Roga Babi. The area should only be utilized by the heirs of land owners located in six villages: Kampung Mondri, Pendet, Badat, Landas, Sangiang, Bongkit and Bau. The guard team is also called Tim Rimba, which is also preparing rules for the use of the prey. Types of animals that are still hunted are ape, hedgehog, angkis, and owa-owa. While the wood that is still there from the type of Meranti.	Head of Desa Mondri	The existence of customary or village regulations has been included in the HCV management plan
12	Water from Jundak hill that is still used by the community is now experiencing drainage constraints. The pipeline that has been built has been leaked, so the community expects assistance from the company for the provision of clean water in the village.	Adi Sumarno (Head of BPD Desa Setawar)	PT AAN will record this proposal and make CSR program
13	Like Roga Babi, the custom area of Bris also has a management team that regulate the utilization of the area. Animals that are still visible in the Adat Bris area are the hornbill, rangkong, beruk and kelampiau.	Bengki (Head of Adat Desa Setawar)	The existence of customary or village regulations has been included in the HCV management plan

No	Key Issues related with HCV assessment	Name/title/representatio	Respond to the input/comment
14	There is no more high conservation value area in Nanga Menterap village, because it has been surrounded by four different companies and the rest of the area that is not planted with palm has now become a rice field. People can only depend on the rice fields, if they want to paddy.	Head of Desa Nanga Menterap	Not given a special response, just as information from the Head of Nanga Menterap Village
15	There are 94 important location points and still in the form of forest in Sekadau District which has been in the map and used as the area to be protected and will not be submitted to the investor despite APL status. Areas with High Conservation Values may be submitted for protection under the Bupati's Decree, provided that submission must be made by the land-owning community. The government, both village and sub-district governments, are not entitled to apply for protection of the area if it is located in the APL area and owned by the community.	Mr. Sandae as Head of Food Security, agriculture and plantation (Kepala Dinas Ketahanan Pangan, Pertanian dan Perkebunan)	Not given a specific response, but rather emphasize the public to pay attention to the procedure of submitting high conservation areas as a legally protected area

Based on public consultation with stakeholders there are few points of interest with this HCV assessment material and taken into account in establishing and justifying the existence of HCV and base of material management and mitigation plan HCV and SEIA.

Results of public consultation with stakeholder by PT Remark Asia conducted on Tuesday, 5 September 2017 in Balai Pertemuan Sekada Hulu District with attended from representative of Dinas Ketahanan Pangan dan Perkebunan, Sekadau, Local Government of Sekadau Hulu Regency, and community related. Suggestion and Comments from all stakeholder have entered into justification of detemining HCV Areas



### 3.4 Soil and Topography

According to Landsystem Map from RePPPProT (1987), soil types found in concession area of PT AAN can be distinguished into 3 (three) soil types association, they are namely:

No	Tanah	Luas	%
1	Paleudults, Tropudults, Tropoquepts	7,755	43.7
2	Tropaquepts, Fluvaquents, Tropohemis	437	2.5
3	Tropudults, Paleudults, Dystropepts	9,554	53.8
Total		17,745	100

Territory concession area of PT AAN is at altitude 20-240 m above sea level. Based on the slope classes, the concession area of PT AAN can be divided into five (5) slope classes, namely 0-8% slope class covering area of 9,080.62 ha (50.33%), slope class 8-15% covering area of 2,652.85 ha (14.70%), slope class 15 -25% covering area of 2,716.07 ha (15.06%), slope class 25-40% covering area of 2,843.59 ha (15.76%), and slope class > 40% covering area of 747.67 ha (4.14%).

### 3.5 GHG Assessment

#### 3.5.1 Carbon Stock Evaluation

##### 3.5.1.1.Land Cover Stratification

Implementation of high carbon stock assessment in the concession area of PT AAN using methods that have been scientifically recognized and guidelines are based on international standards (IPCC), the RSPO and national standard (SNI). Footage plot consists of 7 strata of vegetation, namely Hutan Terganggu (Disturbed Forest), Semak/Belukar (Shrub), Tanaman Pohon (Tree crop), Tanaman Tahunan/Pangan (Annual/Food crop), Kelapa Sawit (Oil Palm), Pemukiman (Settlements), and Badan Air (Water Bodies). The amount of carbon in the scale of this plot into a parameter extrapolation (up scaling) to map the distribution of spare carbon on a scale concession area of PT AAN, mainly sourced from biomass.

Extrapolation high carbon stocks for concession area of PT AAN use the resulting equation of correlation between the value of the biomass AGB in each plot with the data *spectral radiance* Band 6 derived from extrapolation data Landsat satellite 8. The results

are then converted into the value of the biomass carbon stock and its distribution mapped. As a base mapping is the classification of biomass carbon stocks are also to describe the condition of land cover. Classification of biomass carbon stocks of PT. AAN area on 2017 divides into 7 classes, are presented on table below.

Table 3.11. Land cover stratification in concession PT AAN on 2017

Kelas Penutupan Lahan	Luas (Ha)
Disturbed Forest (DIF)	747.38
Shrubs (SCH)	872.75
Mixed Tree Crop (MTC)	9918.76
Dry Cultivation Land (DCL)	2055.76
Rice Field (RCF)	72.22
Oil Palm Plantation (OPL)	3983.42
Settlements (SET)	71.35
<b>Total</b>	<b>17,745.75</b>

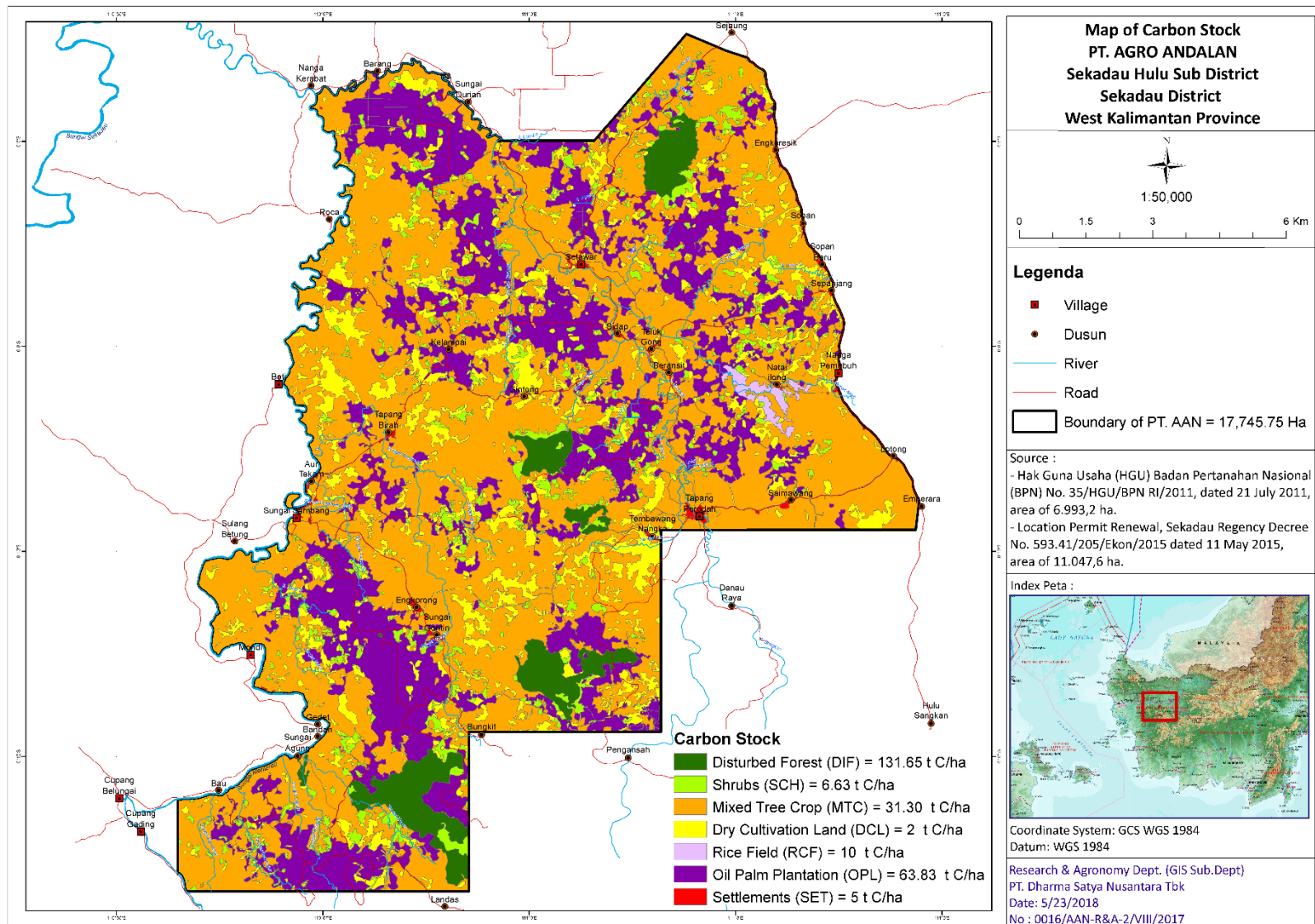
### 3.5.2 Results of GHG Calculations

#### 3.5.2.1 Scenario selection

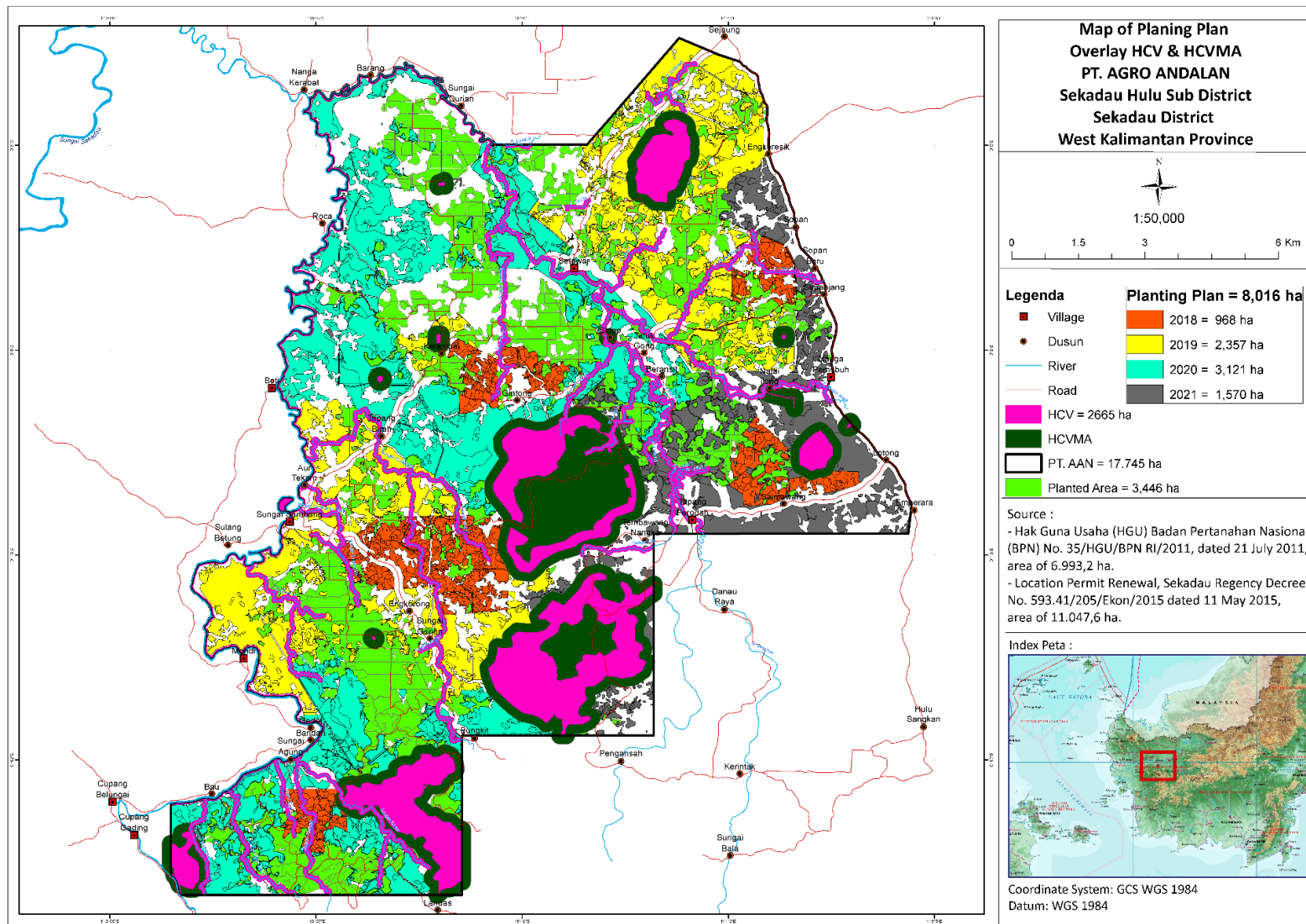
According with the information above, Table below.

Table 3.12 Scenarios for new developments of PT AAN.

No.	Scenario	Explanation
1	Scenario 1	Mixed vegetation types (non-forest areas) cleared for oil palm development, <b>No methane capture</b> facility planned for the mill. No clearing of HCV areas and community areas as identified in HCVA and SEIA <ul style="list-style-type: none"> <li>Planned planted area = 8,016 ha</li> <li>Planned conservation area = 3,284 ha</li> </ul>
2	Scenario 2	Mixed vegetation types cleared for oil palm development included all tree plant land cover, <b>No methane capture</b> facility planned for the mill. No clearing of HCV areas and community areas as identified in HCVA and SEIA <ul style="list-style-type: none"> <li>Planned planted area = 8,551 ha</li> <li>Planned conservation area = 2,745 ha</li> </ul>



**Figure 25. The Carbon stock map of PT AAN**



**Figure 26.** The new planting plan map of PT AAN

Table 3.13. Total carbon stock and classifications for each land cover type in concession PT AAN

Kelas Penutupan Lahan	Luas (Ha)	Stok Karbon (t C/ ha)
Disturbed Forest (DIF)	747.38	131.65
Shrubs (SCH)	872.75	6.63
Mixed Tree Crop (MTC)	9918.76	31.30
Dry Cultivation Land (DCL)	2055.76	2
Rice Field (RCF)	72.22	10
Oil Palm Plantation (OPL)	3983.42	63.83
Settlements (SET)	71.35	5.00
<b>Total</b>	<b>17,745.75</b>	

Table 3.13 The average carbon stock in the Secondary Forest in PT AAN is 131.65 ton-C / ha, a Shrub is 6.63 ton-C / ha, etc. This value is the basis for mapping the carbon stocks for the whole area of the study area within the concession area of PT. AAN.

The amount of biomass carbon reserves in the concession area of PT AAN is 513.782 kilo tons-C with an average of broad unity is 28.95 ton-C / ha.

### 3.5.2.2. Scenario

		Scn 1	Scn 2
<b>Area avoided for developments</b>		3,284	2,745
<b>Potential areas for new deveopment</b>	Hutan Sekunder	-	-
	Semak/Belukar (Shrub)	585	602
	Dry Cultivation	827	840
	Tanaman Pohon	6,604	7,110
<b>POME Treatment</b>	Open Pond	Y	Y
	Methane Capture	-	-

	Scn 1	Scn2
<b>Land conversion</b>	0.70	0.71
<b>Crop sequestration</b>	(1.56)	(1.56)
<b>Peat oxidation</b>	-	-
<b>Conservation Sequestration</b>	(0.36)	(0.28)
<b>Fertiliser (mineral soil; manufacture &amp; transport)</b>	0.20	0.20
<b>N2O Emissions</b>	0.16	0.16
<b>Fuel Consumption</b>	0.01	0.01
<b>Net estateemission</b>	(0.84)	(0.76)
<b>POME</b>	0.82	0.82
<b>Mill Diesel fuel</b>	0.02	0.02
<b>Purchased Electricity</b>	-	-
<b>Credit</b>	-	-
<b>Net Millemission</b>	0.84	0.84
<b>NetGHGemission(tCO2e/tCPO)</b>	0.00	0.07

Scenario (Scn) 1 is stipulated for GHG calculation and mitigation plan, because PT AAN until now has no plan to build methane capture and the GHG balance is zero. The prediction of PT AAN GHG emission is calculated using New Development GHG Calculator-English from RSPO.

Based on carbon stock studies conducted by PT SAN, then planting plan in PT AAN will be prioritized in the area of dry cultivation, shrubs, and tree land cover. In the scenario, GHG emission from land clearing and operation can be covered by carbon sequestration from oil palm and conservation area.

## **3.6 FPIC Process**

### **3.6.1 Community Engagement – Objectives and Approach**

The key objectives of PT AAN Team and Ata Marie's in community engagement activities were as follows:

1. To seek consent related activities in the field.
2. To seek input and knowledge from communities into preparation of the management plan
3. To seek input from communities regarding procedures for future negotiations between AAN and communities regarding land-use planning and land release negotiations (initial socialization, representation, negotiation processes, complain mechanism etc).

Community engagement activities carried out by PT AAN Team and Ata Marie's were designed to capture community input, knowledge and experience. This activities include the following :

1. Initial socialization of PT AAN development plan, field work plan and schedules. The socialization was also repeated inclusively during FGD and interviews.
2. Focus Group Discussions (FGD) and interviews at sub village level with Kepala Desa, support staff and/or respected community members of each village within the AAN permit area. There are 7 village and 21 sub village within the AAN license area. FGD activities were conducted 17 times at the sub village level.
3. Interviews with Camat, and Ketua Koperasi conducted to get perspective from the related respected stakeholders.
4. Participatory mapping of land cover and land use, with particular focus for ensuring community agriculture areas are correctly mapped.
5. Socialisation of draft ICLP (Integrated Conservation and Land Use Plan)

### **3.6.2 Community Engagement Activities**

Ata Marie team and AAN staff conducted initial socialization of planned activities at village level.

Table 3.14 Schedule of FGD and interviews with plasma farmers

Date	Village	Dusun	Interview with plasma farmer	FGD	No of Antendee	Attendee
18/11/2016	Sungai Sambang	S. Sambang	1	1	17	KaDus, chief of RW, Hansip, KPD, plasma farmer, teacher, community leader
19/11/2016		Engkorong	2	1	11	KaDus, community leader.
		Sulang Betung	n.a	1	12	KaDus, RT, RW, plasma farmer, village farming counselor
21/11/2016		S. Gontin	2	1	6	KaDus, plasma farmer, ex staff
	Mondi	Gedet	2	1	14	KaDus, RT
Bandan		2				
22/11/2016	Mondi	S. Agung	2	1	6	religious leader, housewife, plasma farmer
23/11/2016		Mondi	2	1	13	KaDes, RT, RT, plasma farmer, BPD
		Boti	Roca	1	1	11
24/11/2016	Boti	Tapang Birah	3	1	8	cultural leader, community leader, plasma farmer
	Boti	Boti	1	1	13	community leader chief of sub village, plasma farmer
25/11/2016	Tapang Perodah	Tembawang Nangka	1	1	6	KaDus, RT, plasma farmer
	Nanga Pemubuh	Natailong	1	1	15	KaDus, RT, plasma farmer
		Sopan	1	1	11	KaDus, plasma farmer, housewives
		Sepanjang	n.a			
26/11/2016	Setawar	N. Pemubuh	1	n.a		
		Setawar	1	1	6	KaDus, ketua koperasi, plasma farmer
		Sidap	3	1	7	Cooperation vice chairman, plasma farmer, cooperation



Date	Village	Dusun	Interview with plasma farmer	FGD	No of Antendee	Attendee
						caretaker
28/11/2016		Teluk Agung (Sidap)	n.a	1	14	KaDus, plasma farmer, community leaders, RT
	Tapang Perodah	Tapang Perodah	2	1	11	KaDus, village finance officer, plasma farmer, Ibu RT
		Danau Raya	1	n.a		
30/11/2016	Setawar	Beransit	2	n.a		
	Nanga Menterep	Sungai Durian	2	n.a		

### 3.6.3 Summary of Others Findings

In general, community members has good communication with PT AAN. Communities generally reported a good relationship with AAN's CSR team, and appreciated of CSR programs and the effort AAN has made to mend communication. The improved relationship has also made them feel more comfortable to raise issues related to plantation development and impacts.

Other items commonly brought up during FGDs included:

- Maximize employment opportunities to local communities, including staff positions for educated youths (fresh graduates) as well as temporary labouring work (plantation maintenance etc).
- Offering work opportunities to community members that are not members of the plasma farmer co-operative (priority is generally given to members).
- How to apply for assistance under CSR programs.

Employment issues are discussed indept in the SIA report

### 3.6.4 Participatory Mapping

Participatory mapping was carried out collaboratively at Dusun level by teams consisting of community members, Ata Marie surveyors and AAN field staff. Objectives of the Participatory Mapping activities were as follows:

- Ground truthing of land cover and land use maps.

- Identification of any additional no-go areas not captured during HCV assessment, with major focus on community/customary land use aspects.
- Identification of sensitive land uses requiring additional joint discussion with communities before being classed as “go – area”
- Improved mapping of rivers and streams requiring buffering.
- Where possible identify land ownership (note – not a land ownership mapping exercise).
- Checking identification and boundaries of steep land, peat land areas and other potential conservation areas (if any)

Community/customary land use no-go areas targeted for identification included areas such as:

- Cultural sites and sacred areas (e.g. kuburan, tembawang, hutan adat)
- Critical water sources
- Areas for collection of non-timber products
- Settlement areas and land for planned expansion of settlements

Sensitive land uses requiring additional joint discussion with communities included areas such as:

- Padi fields (sawah) and other food production areas (related to food security and Government rice field rehabilitation programs)
- Other productive agriculture areas planned to be managed by communities (e.g. productive rubber areas, tembawang etc)

Steps in the participatory mapping exercise included the following:

1. Detailed mapping of land cover from aerial photography and satellite imagery. Desk top activity prior to field visit.
2. Initial socialisation (during FGD), including listing of known water sources and adat areas for field survey, and selection of the Dusun team to be involved in the field mapping.
3. GPS surveys in the field to ground truth land cover and land use, and map streams and no-go areas.
4. Integration of results into the final draft Integrated Land Use Plan. (Office based activity after the first field visit).

5. Participatory review of draft land use plans with communities. 1:5000 scale maps were printed and presented for discussion during meetings held in each Desa during the second field visit.

Significant input was received during these meetings.

Output :

The key output of the Participatory Mapping exercise was the preparation of an improved and detailed spatial data set that will be useful for multiple purposes including:

1. Conservation area management and monitoring
2. Identification of no go areas for plantation development
3. Planning of targeted CSR programs e.g. agricultural programs
4. Planning of water quality management and monitoring

Other key outputs included improved awareness of AAN conservation plans (HCV and HCS) and the need for joint management of conservation areas.

Although considerable effort was put into the mapping process, it is not perfect and AAN needs to develop procedures for updating and improvement of the dataset. This should be carried out in conjunction with land surveying during the GRTT process. For instance, although the river and stream alignment has been much improved, it is likely smaller streams have not all been identified correctly, so buffers will have to be measured and marked by AAN surveyors.

# Chapter 4

## 4. Summary of Management Plans

### 4.1 Team responsible for developing management plans

Monitoring management of HCV and SEIA PT AAN in region base, controled by Plantation Head PT AAN (PH) along with relevant functional departments. Estate planning process synergize with program planning and management of HCV and SIA. The department which involved in management plan and implementation. Area figured below.

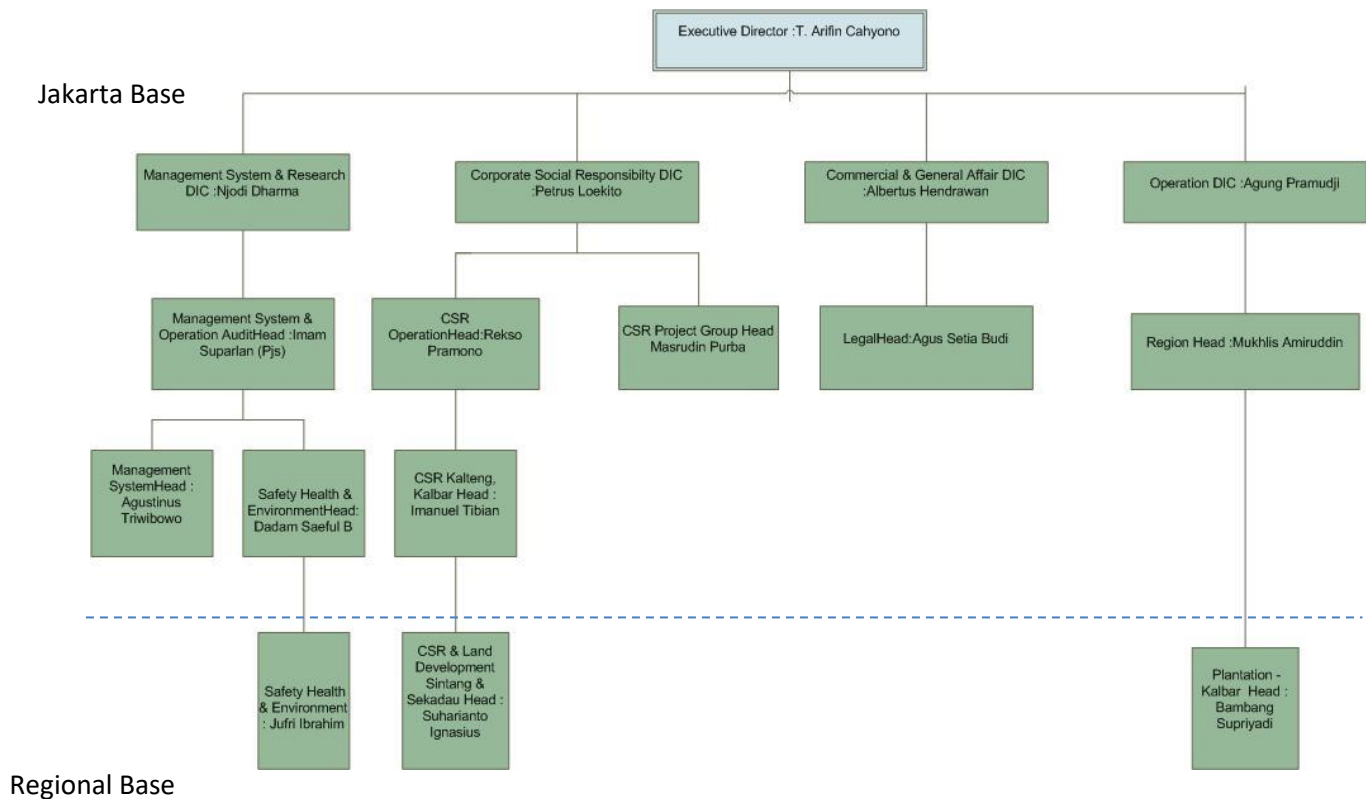


Figure 27. The department which involved in management plan and implementation

### 4.2 Stakeholder to be involved

Stakeholders are parties who give or receive influence from existence oil palm plantation in PT AAN. The parties referred to in this study focused on key stakeholder, are parties directly, significant and interactive and give each other a sustainability stakeholder.

The company has been carrying out a public consultation which it held on August 9<sup>th</sup>, 2015 involved community, local government who live in the neighborhood concession HGU company. The villages that follow the public consultation that village Mondri, Boti, Nanga Menterap, Setawar, Sungai Sambang, Tapang Perodah, Nanga Pemubuhon Sekadau Hulu Sub District, Sekadau District, West Kalimantan.

#### **4.3 Summary of Management and Mitigation SEIA**

Potential impact, risk and social issue based on SEIA report has been classified based on the resources from group process development activities oil palm plantation and has done PT AAN. The assessment of SEIA in the executive summary of AMDAL and SIA Report for identified negative and positive impact on the environment and surrounding community of PT AAN. (**Table 4.1**).

#### **4.4 Summary of Management and Mitigation Plans (HCV)**

Management Plan HCV was develop with the intention of providing guidance for the company in designing and implementation HCV and SEIA program. Monitoring HCV area during every six months. So that their resources can be focused a more integrated and effective in achieving the vision of the management plan PT AAN as **Table 4.2**

#### **4.5 Summary of Management and Mitigation Plans of GHGEmmision**

The mitigation plan are associated with oil palm cultivation & processing in the new development of plantation and mill operation. Land clearing for plantations will be prioritized in areas with low carbon stocks. The efforts to minimize GHG emissions, the efficient use of fuel through the engine maintenance and selection of technology which more efficient fuel usage, an accurate fertilizer recommendations, maximize the use of biological agents for pest control, etc.

The Plan for monitoring the implementation of selected scenario for new development including measures for enhancing carbon stock and minimising GHG emissions. In order to determine the successful management of carbon stocks and GHG mitigation , it is necessary to the efforts of monitoring and periodic evaluation, calculating carbon balance every year, so that can know the value of net GHG emissions using updated RSPO GHG Calculator, and evaluate any form of management based on the value of benchmarks and targets set ( total AGB Replanting practices – The assessments need to do prior to replanting, especially to assess future drainability, and also practices to reduce GHG emissions during replanting. Zero-burning concepts are emphasiz

**Table 4.1 PT AAN Social Management and Monitoring Program**

N o	Social Impact/ Social Issues	Target	Strategy Target Achievement	Location	PIC	Timeframe for completion	Monitoring
1	Infrastructure						
	a. The dust in the dry season	No diseases caused by dust in the dry season	Doing watering roads near settlements in the dry season	The main street villages through which the company's operating units	SHE Staff & Ast K3L	2018-2022	Every year
2	Environment & Conservation						
	a. River Water Conditions	There is no river pollution due to the activity of the garden	Not doing chemis applications in border river	The river that crosses PT AAN	SHE Staff & Ast K3L	2018-2022	Every year
	b. Flora and Fauna	Monitoring Flora and Fauna 1 year	Identifying and Inventory of flora and fauna in accordance with the type of land cover	Concession PT AAN	SHE Staff & Ast K3L		
	c. Hazardous and toxic waste	Hazardous and toxic waste managed	a. identification of hazardous and toxic waste	PT AAN	SHE Staff & Ast K3L	2018-2022	Every year
			b. Creating Places Temporary Storage of hazardous and toxic waste				
			c. Creating symbols and labeling of hazardous and toxic waste				
			d. Delivery of hazardous and toxic waste to a third party authorized				
3	Education						
	a. Help educational infrastructure	There is a support infrastructure of schools around the company	Giving aid education infrastructure	Schools in villages around PT AAN	CSR Dept Head	2018-2022	Every year
	b. Scholarship	There are scholarships to the children of people who excel	Gives scholarships to children of society and employees who excel	Schools in villages around PT AAN	CSR Dept Head		

N o	Social Impact/ Social Issues	Target	Strategy Target Achievement	Location	PIC	Timeframe for completion	Monitoring
4	Human Resources						
	a. Employment Opportunity	There are employment opportunities for people around PT AAN accordance with the skill	a. Job priority to communities around the garden	Villages around PT AAN	Human Capital	2018-2022	Every year
			b. Job vacancies notified to the village				
	b. Career opportunities	There is a mechanism of career advancement for employees	Career enhancement mechanisms are set in the company regulations	Employees PT AAN	Human Capital		Every year
5	Health						
	a.epidemic of a disease	No outbreaks of disease	Cooperation with the local health clinic for routine doctor visits	Employees and the community around PT AAN	SHE Staff & Ast K3L	2018-2022	Every year
	b.Employee health	medical examinations for employees	Cooperation with HIPERKES / Labkes related to employee health testing	Employees PT AAN	SHE Staff & Ast K3L	2018-2022	

**Tabel 4.2. Matrix Management and Mitigation Plan HCV**

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
HCV1	HCV Area with biodiversity area : 1. Hutan adat bukit Jundak 2. Hutan Adat Bris (Rimba engkulung) 3. Hutan Bukit Kondang 4. Hutan Bukit Tunggal 5. Rimba Roga Babi 6. Hutan Keramat Malukar 7. Areal Rawa Air Tawar 8. River and Riparian	<ul style="list-style-type: none"> <li>Deforestation, Land clearing in forest area and or riparian area for production and infrastructure likely open new area for oil palm plantation, roads, settlements, and etc</li> <li>Fragmentation of wildlife and flora habitats that cause depressed habitat extent sufficient for the survival of the wildlife habitat and the flora</li> </ul>	a. Inform, Communicate and awareness raising to the community around the PT AAN area that the area still has a good diversity of flora and fauna and other ecosystem services functions such as water providers and as fire breaks	Conducting monitoring with patrols / supervision at the location in order to avoid the opening of the forested area by self-supporting by the community	Villages around PT AAN	SHE Staff & Ast K3L	2018-2022	Every year
			b. Making SOP and socialization management HCV area for all employee and community around PT AAN	Control enforcement of village regulations / customary rules prohibiting forest clearing or forest clearance in HCV areas	PT AAN Office and villages around	SHE Staff & Ast K3L	2018-2022	Every year
			c. Making awarning board is prohibited area to cut down excess trees, open forest areas, and river borders within HCV area	Monitoring patrol condition warning board in HCV area	Concession PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every year



HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			d. Make village regulations/ indigenous rule to prohibited for opening and cutting forests in commercial scheme of HCV areas based on agreed upon by the community	Regulation with community	Villages around PT AAN	CSR Dept Head	2018-2022	Every two year
			e. Making marking boundary of HCV area	Patrol the condition of the boundaries HCV regularly	Concessions PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every year
			f. For HCVMA HCV 1 zones, reduce access to community activities that endanger the existence of forest resources such as fire use activities in their activities.	Conducting monitoring with patrols	HCVMA HCV1 PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every six monts
			g. Reducing the intensity of plantation activities that could potentially	Company polic y for protected HCV Area	HCV Area	SHE Staff, Ast K3L and Operational Staff	2018-2022	Review every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			threaten the existence of HCVMA such as developing the main roads of traffic in the activities of the Plantation, developing the settlement of employees around HCV / HCVMA					
		Illegal logging and wild animal hunting in the forest areas or riparian areas	<p>a. Making policy about forbiddeng to cut the trees and hunt wildlife around PT AAN</p> <p>b. Making SOP and socialization management HCV area for all employee and community around PT AAN</p>	<p>Patrols are periodic and consistent especially in areas prone to wood theft and animal hunting.</p> <p>Conducting inventory of protected, endangered, vulnerable, or limited-range species of flora and fauna present within the HCV area and around the partnership garden at least once a year Socialization to</p>	<p>Concessions PT AAN</p> <p>PT AAN Office and villages around</p>	<p>SHE Staff Dept</p> <p>SHE Staff &amp; Ast K3L</p>	<p>2018-2022</p> <p>2018-2022</p>	<p>Every five year</p> <p>Every year</p>

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			c. Socialization to employee and the community about the importance of the existence flora and fauna that are protected, endangered, vulnerable, or limited around PT AAN and for balance of ecosystem	employee and community  Monitoring patrols HCV warning board conditions	PT AAN Office and villages around	SHE Staff & Ast K3L	2018-2022	Every year
			d. Making a warning board is prohibited area to cut down excess trees, open forest areas, river borders and hunting wildlife within HCV area		Concession PT AAN	SHE Staff	2018-2022	Every year five
			e. Make village regulations/ indigenous rule to prohibited for opening and cutting forests in commercial scheme of HCV areas based on agreed upon by	Regulation with community	Villages around PT AAN	CSR Dept Head	2018-2022	Every year two

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			the community f. Creating enrichment program in HCV area with local seed species (ulin trees, etc) g. Making marking boundary of HCV area	Monitoring enrichment seed species in HCV area  Patrol the condition of the boundaries HCV regularly	Concession PT AAN  Concessions PT AAN	SHE Staff & Ast K3L  SHE Staff, Ast K3L & Operational Staff	2018-2022  2018-2022	Every two year  Every year
		Forest Fire	a. Capacity building of the community and employees in the context of fire prevention and fire drill or simulation of fire handling routinely b. Provision of adequate fire suppression equipment (Water pumps, water hose, etc.) c. Making SOP for prevention and control of forest fires	Monitoring program capacity building about fire handling  Monitoring the condition of fire-fighting equipment  Monitoring the effectiveness of SOP of SOP for prevention and reforestation of forest fires	Concession PT AAN & Villages around  Concession PT AAN  Concession PT AAN	SHE Staff & Ast K3L  Operational or Plantation Head  SHE staff & Ast K3L	2018-2022  2018-2022  2018-2022	Every year  Every year  Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			d. Provision of water  e. Making board appeal on fire hazard  f. Installing the fire hazard index board and Renewing the fire hazard index board for any changes in the rainy or dry season  g. Socialization about the dangers of forest fires to employees and communities around PT AAN  h. Cooperate with communities by forming a fire-caring community to raise awareness together with the dangers of forest and land fires	Monitoring water regularly  Monitoring board regularly  Patrols are periodic and consistent especially in the dry season. Monitoring Hot spots regularly in the dry season  List member of socialization  Fire caring policy	Concession PT AAN  Concession PT AAN  Concession PT AAN  Concession PT AAN and villages around  Concession PT AAN and villages around	Operational or Plantation Head  Operational or Plantation Head  Operational or Plantation Head  SHE Staff & CSR Dept Head  SHE Staff & CSR Dept Head	2018-2022  2018-2022  2018-2022  2018-2022  2018-2022	Every year  Every year  Every year  Every year  Every year
		<ul style="list-style-type: none"> <li>River and ditch water pollution by fertilizer , gasoline, and other chemicals</li> </ul>	a. Preparing SOP for Monitoring of Quality River Water (eg limiting the distance of	Conduct periodic monitoring of river water quality Monitoring periodic erosion and	Concession PT AAN	SHE Staf & Ast K3L	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		and non-organic waste • Unsustainable way of catching fish in the river (using electric wave or chemical poison) • Riparian areas erosion caused by rain and tide, later causing riverbed silting	fertilization or the administration of other chemicals $\pm$ 50 meters from the river or along the river border)  b. Making SOPs and socialization of agricultural solid waste disposal and agricultural B3 waste to employees and community around PT AAN   c. Installation of an appeal board not to throw garbage into the river d. Socialization to the community to maintain the cleanliness of the watershed and Installation boards HCV area in HCV area	sedimentation according to RKL / RPL   Monitoring of agricultural activities along the river border   Monitoring board in riparian area  Monitoring socialization to community	Concession PT AAN   Concession PT AAN Concession PT AAN	SHE Staf & Ast K3L   SHE Staf & Ast K3L SHE Staf & Ast K3L	2018-2022   2018-2022 2018-2022	Every year   Every year Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			e. Conduct awareness (training and socialization) of HCV areas (Employees and Community around PT AAN)	Monitoring training awareness of HCV area	Concession PT AAN and village around	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year
			f. Socialization SOP Management and Monitoring of HCV	Monitoring socialization SOP	Concession PT AAN and village around	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year
			g. Socialization SOP prohibiting chemical fertilization in riparian river area	Monitoring socialization SOP	Concession PT AAN and village around	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year
			h. Installing a bulletin board for the use of fish poison at riparian river area	Updating bulletin board regularly	Concession PT AAN	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year
			i. Applying SOP of best practice for fertilizer	Internal Audit of SOP	Concession PT AAN	Operational Staff, SHE Staff & Ast K3L	2018-2022	Every year
			j. Provide markers for prohibition of detonation and poisoning for fishing	Patrol the use of fish poison	Concession PT AAN	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year



HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			k. Planting and enrichment trees in riparian river with local species.	Monitoring the success of growing local tree crops planted along the river border	Concession PT AAN	SHE Staff	2018-2022	Every year
		Infrastructure building plan by Regional/ Provincial Government that could affect the HCV areas	Provide notice of HCV presence in PT AAN area to local government and its interest to keep the HCV area	Monitoring of regional development and development plans by local governments in concession PT AAN	Concession PT AAN and local government	SHE Staff & Legal Dept	2018-2022	Every policy from government

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
HCV3	HCV areas with ecosystem and habitats value is : 1. Hutan adat bukit Jundak 2. Hutan Adat Bris (Rimba engkulung) 3. Hutan Bukit Kondang 4. Hutan Bukit Tunggal 5. Rimba Roga	<ul style="list-style-type: none"> <li>Deforestation, Land clearing in forest area and or riparian area for production and infrastructure likely open new area for oil palm plantation, roads, settlements, and etc</li> </ul>	a. Communicating and awareness raising to the community around the PT AAN area that the area still has a good diversity of flora and fauna and other ecosystem services functions such as water providers and as fire breaks	Conducting monitoring with patrols / supervision at the location in order to avoid the opening of the forested area by self-supporting by the community	Villages around PT AAN	SHE Staff & Ast K3L	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
	Babi 6. Hutan Keramat Malukar 7. Areal Rawa Air Tawar 8. Ecosystem River is a Riparian River	<ul style="list-style-type: none"> <li>Fragmentation of wildlife and flora habitats that cause depressed habitat extent sufficient for the survival of the wildlife habitat and the flora</li> </ul>	b. Making SOP and socialization management HCV area for all employee and community around PT AAN  c. Making awarning board is prohibited area to cut down excess trees, open forest areas, and river borders within HCV area  d. Make village regulations/ indigenous rule to prohibited for opening and cutting forests in commercial scheme of HCV areas based on agreed upon by the community  e. Making marking boundary of HCV area	Control enforcement of village regulations / customary rules prohibiting forest clearing or forest clearance in HCV areas  Monitoring patrol condition warning board in HCV area  Regulation with community  Patrol the condition of the boundaries HCV regularly	PT AAN Office and villages around  Concession PT AAN  Villages around PT AAN  Concessions PT AAN	SHE Staff & Ast K3L  SHE Staff, Ast K3L and Operational Staff  CSR Dept Head  SHE Staff, Ast K3L and Operational Staff	2018-2022  2018-2022  2018-2022  2018-2022	Every year  Every year  Every two year  Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			<p>f. For HCVMA HCV zones, reduce access to community activities that endanger the existence of forest resources such as fire use activities in their activities.</p> <p>g. Reducing the intensity of plantation activities that could potentially threaten the existence of HCVMA such as developing the main roads of traffic in the activities of the Plantation, developing the settlement of employees around HCV / HCVMA</p>	<p>Conducting monitoring with patrols</p> <p>Company policy for protected HCV Area</p>	<p>HCV Area PT AAN</p> <p>HCV Area PT AAN</p>	<p>SHE Staff, Ast K3L and Operational Staff</p> <p>SHE Staff, Ast K3L and Operational Staff</p>	<p>2018-2022</p> <p>2018-2022</p>	<p>Every 3 months</p> <p>Every year</p>

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		Illegal logging and wild animal hunting in the forest areas or riparian areas	<p>a. Making policy about forbidding to illegal logging and hunt wildlife around PT AAN</p> <p>b. Making SOP and socialization management HCV area for all employee and community around PT AAN</p> <p>c. Socialization to employee and the community about the importance of the existence flora and fauna that are protected, endangered, vulnerable, or limited around PT AAN and for</p>	<p>Patrols are periodic and consistent especially in areas prone to wood theft and animal hunting.</p> <p>Conducting inventory of protected, endangered, vulnerable, or limited-range species of flora and fauna present within the HCV area and around the partnership garden at least once a year Socialization to employee and community Monitoring patrols HCV warning board conditions</p>	<p>Concessions PT AAN</p> <p>PT AAN Office and villages around</p> <p>PT AAN Office and villages around</p>	<p>SHE Staff Dept</p> <p>SHE Staff &amp; Ast K3L</p> <p>SHE Staff &amp; Ast K3L</p>	<p>2018-2022</p> <p>2018-2022</p> <p>2018-2022</p>	<p>Every five year</p> <p>Every year</p> <p>Every year</p>

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			balance of ecosystem d. Making a warning board is prohibited area to cut down excess trees, open forest areas, river borders and hunting wildlife within HCV area		Concession PT AAN	SHE Staff	2018-2022	Every year five
			e. Make village regulations/ indigenous rule to prohibited for opening and cutting forests in commercial scheme of HCV areas based on agreed upon by the community	Regulation with community	Villages around PT AAN	CSR Dept Head	2018-2022	Every year two
			f. Creating enrichment program in HCV area with local seed species (ulin trees, etc)	Monitoring enrichment seed species in HCV area	Concession PT AAN	SHE Staff & Ast K3L	2018-2022	Every year two
			g. Making marking boundary of HCV area	Patrol the condition of the boundaries HCV regularly	Concessions PT AAN	SHE Staff, Ast K3L & Operational Staff	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		Forest Fire	a. Capacity building of the community and employees in the context of fire prevention and fire drill or simulation of fire handling routinely	Monitoring program capacity building about fire handling	Concession PT AAN & Villages around	SHE Staff & Ast K3L	2018-2022	Every year
			b. Provision of adequate fire suppression equipment (Water pumps, water hose, etc.)	Monitoring the condition of fire-fighting equipment	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year
			c. Making SOP for prevention and control of forest fires	Monitoring the effectiveness of SOP of SOP for prevention and reforestation of forest fires	Concession PT AAN	SHE staff & Ast K3L	2018-2022	Every year
			d. Provision of water	Monitoring water regularly	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year
			e. Making board appeal on fire hazard	Monitoring board regularly	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year
			f. Installing the fire hazard index board and Renewing the fire hazard index	Patrols are periodic and consistent especially in the dry season.	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			board for any changes in the rainy or dry season g. Socialization about the dangers of forest fires to employees and communities around PT AAN h. Cooperate with communities by forming a fire-caring community to raise awareness together with the dangers of forest and land fires	Monitoring Hot spots regularly in the dry season  List member of socialization  Fire caring policy	Concession PT AAN and villages around  Concession PT AAN and villages around	SHE Staff & CSR Dept Head  SHE Staff & CSR Dept Head	2018-2022  2018-2022	Every year  Every year
		<ul style="list-style-type: none"> <li>River and ditch water pollution by fertilizer , gasoline, and other chemicals and non-organic waste</li> <li>Unsustainable way of catching fish in the river (using electric wave or chemical poison)</li> <li>Riparian areas erosion caused</li> </ul>	a. Preparing SOP for Monitoring of Quality River Water (eg limiting the distance of fertilization or the administration of other chemicals ± 50 meters from the river or along the river border) b. Making SOPs and socialization of agricultural solid waste disposal and	Conduct periodic monitoring of river water quality Monitoring periodic erosion and sedimentation according to RKL / RPL  Monitoring of agricultural activities along the river border	Concession PT AAN  Concession PT AAN	SHE Staff & Ast K3L  SHE Staf & Ast K3L	2018-2022  2018-2022	Every year  Every year



HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		by rain and tide, later causing riverbed silting	agricultural B3 waste to employees and community around PT AAN					
			c. Installation of an appeal board not to throw garbage into the river	Monitoring board in riparian area	Concession PT AAN	SHE Staf & Ast K3L	2018-2022	Every year
			d. Socialization to the community to maintain the cleanliness of the watershed and Installation boards HCV area in HCV area	Monitoring socialization to community	Concession PT AAN	SHE Staf & Ast K3L	2018-2022	Every year
			e. Conduct awareness (training and socialization) of HCV areas (Employees and Community around PT AAN)	Monitoring training awareness of HCV area	Concession PT AAN and village around	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year
			f. Socialization SOP Management and Monitoring of HCV	Monitoring socialization SOP	Concession PT AAN and village around	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year
			g. Socialization SOP prohibiting chemical fertilization in riparian river area	Monitoring socialization SOP	Concession PT AAN and village around	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			h. Installing a bulletin board for the use of fish poison at riparian river area  i. Applying SOP of best practice for fertilizer  j. Provide markers for prohibition of detonation and poisoning for fishing  k. Planting and enrichment trees in riparian river with local species.	Updating bulletom board regularly  Internal Audit of SOP  Patrol the use of fish poison  Monitoring the success of growing local tree crops planted along the river border	Concession PT AAN  Concession PT AAN  Concession PT AAN  Concession PT AAN	SHE Staff, Ast. K3L & CSR Staff  Operational Staff, SHE Staff & Ast K3L SHE Staff, Ast. K3L & CSR Staff  SHE Staff	2018-2022  2018-2022  2018-2022  2018-2022	Every year  Every year  Every year  Every year
		Plans for infrastructure development by Government that result in HCV areas being opened	a. Provide notice of HCV presence in PT AAN area to local government and its interest to keep the HCV area  b. Provide an alternative area to the government other than HCV areas for infrastructure	Monitoring of regional development and development plans by local governments in concession PT AAN  Discussion with local government	Concession PT AAN and local government  Concession PT AAN	SHE Staff & Legal Dept  SHE Staff & Legal Dept	2018-2022  2018-2022	Every policy from government  Every policy from goverment

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			development to be built					

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
HCV4	HCV Area with ecosystem services is : 1. Hutan adat bukit Jundak 2. Hutan Adat Bris (Rimba engkulung) 3. Hutan Bukit Kondang 4. Hutan Bukit Tunggal 5. Rimba Roga Babi 6. Hutan Keramat Malukuar 7. Areal Rawa Air Tawar	Deforestation, Land clearing in forest area and or riparian area for production and infrastructure likely open new area for oil palm plantation, roads, settlements, and etc	a. Communicating and awareness raising to the community around the PT AAN area that the area still has a good diversity of flora and fauna and other ecosystem services functions such as water providers and as fire breaks	Conducting monitoring with patrols / supervision at the location in order to avoid the opening of the forested area by self-supporting by the community	Villages around PT AAN	SHE Staff & Ast K3L	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
	8. Embung Air Punti 9. Tembawang Angus 10. KSMA/ Air Terjun Pelabuhan Bindang 11. Topography Area >40% 12. River and Riparian		b. Making SOP and socialization management HCV area for all employee and community around PT AAN	Control enforcement of village regulations / customary rules prohibiting forest clearing or forest clearance in HCV areas	PT AAN Office and villages around	SHE Staff & Ast K3L	2018-2022	Every year
			c. Making awarning board is prohibited area to cut down excess trees, open forest areas, and river borders within HCV area	Monitoring patrol condition warning board in HCV area	Concession PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every year
			d. Make village regulations/ indigenous rule to prohibited for opening and cutting forests in commercial scheme of HCV areas based on agreed upon by the community	Regulation with community	Villages around PT AAN	CSR Dept Head	2018-2022	Every two year
			e. Making marking boundary of HCV area	Patrol the condition of the boundaries HCV regularly	Concessions PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			f. Rehabilitation riparian river with local species	Monitoring local species	Riparian zone	Conservation Staff	2018-2022	Every year
			g. For HCVMA HCV zones, reduce access to community activities that endanger the existence of forest resources such as fire use activities in their activities.	Conducting monitoring with patrols	HCV Area PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every six months
			a. Reducing the intensity of plantation activities that could potentially threaten the existence of HCVMA such as developing the main roads of traffic in the activities of the Plantation, developing the settlement of employees around HCV / HCVMA	Company policy for protected HCV Area	HCV Area PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		Illegal logging and wild animal hunting in the forest areas or riparian areas	<p>a. Making policy about forbidding to cut the trees and hunt wildlife around PT AAN</p> <p>b. Making SOP and socialization management HCV area for all employee and community around PT AAN</p> <p>c. Socialization to employee and the community about the importance of the existence flora and fauna that are protected, endangered, vulnerable, or limited around PT AAN and for balance of ecosystem</p>	<p>Patrols are periodic and consistent especially in areas prone to wood theft and animal hunting. Conducting inventory of protected, endangered, vulnerable, or limited-range species of flora and fauna present within the HCV area and around the partnership garden at least once a year Socialization to employee and community</p> <p>Monitoring patrols HCV warning board conditions</p>	<p>Concessions PT AAN</p> <p>PT AAN Office and villages around</p> <p>PT AAN Office and villages around</p>	<p>SHE Staff Dept</p> <p>SHE Staff &amp; Ast K3L</p> <p>SHE Staff &amp; Ast K3L</p>	<p>2018-2022</p> <p>2018-2022</p> <p>2018-2022</p>	<p>Every five year</p> <p>Every year</p> <p>Every year</p>

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			d. Making a warning board is prohibited area to cut down excess trees, open forest areas, river borders and hunting wildlife within HCV area		Concession PT AAN	SHE Staff	2018-2022	Every year five
			e. Make village regulations/ indigenous rule to prohibited for opening and cutting forests in commercial scheme of HCV areas based on agreed upon by the community	Regulation with community	Villages around PT AAN	CSR Dept Head	2018-2022	Every year two
			f. Creating enrichment program in HCV area with local seed species (ulin trees, etc)	Monitoring enrichment seed species in HCV area	Concession PT AAN	SHE Staff & Ast K3L	2018-2022	Every year two
			g. Making marking boundary of HCV area	Patrol the condition of the boundaries HCV regularly	Concessions PT AAN	SHE Staff, Ast K3L & Operational Staff	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		The opening of the area and planting in the area of a steep area (slope > 40%)	<ul style="list-style-type: none"> <li>a. Deliniating the steep area or slope &gt; 40% as an area for cultivation of oil palm plantations</li> <li>b. Prohibition of opening the area and conducting oil palm cultivation by installing sign board prohibition and socialization to the community about the potential danger that caused the opening of the area</li> <li>c. Conducting rehabilitation of land with local species in open areas</li> <li>d. For HCVMA areas in steep areas, eco-friendly cultivation activities are conducted and prevent surface erosion by planting legumes cover crop and other soil cover crops and reducing the use of agricultural chemicals</li> </ul>	<ul style="list-style-type: none"> <li>a. Monitoring oferosion</li> <li>b. Monitoring of planting cover crops</li> <li>c. Routine patrols of land clearance by community</li> <li>d. Monitoring the success of land rehabilitation</li> </ul>	Concessions PT AAN	SHE Staff, Ast K3L & Operational Staff	2018-2022	Every year



HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		Forest Fire	a. Capacity building of the community and employees in the context of fire prevention and fire drill or simulation of fire handling routinely	Monitoring program capacity building about fire handling	Concession PT AAN & Villages around	SHE Staff & Ast K3L	2018-2022	Every year
			b. Provision of adequate fire suppression equipment (Water pumps, water hose, etc.)	Monitoring the condition of fire-fighting equipment	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year
			c. Making SOP for prevention and control of forest fires	Monitoring the effectiveness of SOP of SOP for prevention and reforestation of forest fires	Concession PT AAN	SHE staff & Ast K3L	2018-2022	Every year
			d. Provision of water	Monitoring water regularly	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year
			e. Making board appeal on fire hazard	Monitoring board regularly	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year
			f. Installing the fire hazard index board and Renewing the fire hazard index board for any	Patrols are periodic and consistent especially in the dry season. Monitoring Hot spots regularly in	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			<p>changes in the rainy or dry season</p> <p>g. Socialization about the dangers of forest fires to employees and communities around PT AAN</p> <p>h. Cooperate with communities by forming a fire-caring community to raise awareness together with the dangers of forest and land fires</p>	<p>the dry season</p> <p>List member of socialization</p> <p>Fire caring policy</p>	<p>Concession PT AAN and villages around</p> <p>Concession PT AAN and villages around</p>	<p>SHE Staff &amp; CSR Dept Head</p> <p>SHE Staff &amp; CSR Dept Head</p>	<p>2018-2022</p> <p>2018-2022</p>	<p>Every year</p> <p>Every year</p>
		<p>a. River and ditch water pollution by fertilizer , gasoline, and other chemicals and non-organic waste</p> <p>b. Unsustainable way of catching fish in the river (using electric wave or chemical poison)</p> <p>c. Riparian areas erosion caused by rain and tide, later</p>	<p>a. Preparing SOP for Monitoring of Quality River Water (eg limiting the distance of fertilization or the administration of other chemicals <math>\pm</math> 50 - 100 meters from the river or along the river border)</p> <p>b. Making SOPs and socialization of agricultural solid waste disposal and agricultural B3 waste to employees and</p>	<p>Conduct periodic monitoring of river water quality</p> <p>Monitoring periodic erosion and sedimentation according to RKL / RPL</p> <p>Monitoring of agricultural activities along the river border</p>	<p>Concession PT AAN</p> <p>Concession PT AAN</p>	<p>SHE Staf &amp; Ast K3L</p> <p>SHE Staf &amp; Ast K3L</p>	<p>2018-2022</p> <p>2018-2022</p>	<p>Every year</p> <p>Every year</p>

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		causing riverbed silting	community around PT AAN c. Installation of an appeal board not to throw garbage into the river d. Socialization to the community to maintain the cleanliness of the watershed and Installation boards HCV area in HCV area e. Conduct awareness (training and socialization) of HCV areas (Employees and Community around PT AAN) f. Socialization SOP Management and Monitoring of HCV l. Socialization SOP prohibiting chemical fertilization in riparian river area	Monitoring board in riparian area  Monitoring socialization community to  Monitoring training awareness of HCV area  Monitoring socialization SOP  Monitoring socialization SOP	Concession PT AAN  Concession PT AAN  Concession PT AAN and village around  Concession PT AAN and village around  Concession PT AAN and village around	SHE Staf & Ast K3L  SHE Staf & Ast K3L  SHE Staff, Ast. K3L & CSR Staff  SHE Staff, Ast. K3L & CSR Staff  SHE Staff, Ast. K3L & CSR Staff	2018-2022  2018-2022  2018-2022  2018-2022  2018-2022	Every year  Every year  Every year  Every year  Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			m. Installing a bulletin board for the use of fish poison at riparian river area n. Applying SOP of best practice for fertilizer o. Provide markers for prohibition of detonation and poisoning for fishing p. Planting and enrichment trees in riparian river with local species.	Updating bulletom board regularly  Internal Audit of SOP  Patrol the use of fish poison  Monitoring the success of growing local tree crops planted along the river border	Concession PT AAN  Concession PT AAN  Concession PT AAN  Concession PT AAN	SHE Staff, Ast. K3L & CSR Staff  Operational Staff, SHE Staff & Ast K3L  SHE Staff, Ast. K3L & CSR Staff  SHE Staff	2018-2022  2018-2022  2018-2022  2018-2022	Every year  Every year  Every year  Every year
		Plans for infrastructure development by Government that result in HCV areas being opened	a. Provide notice of HCV presence in PT AAN area to local government and its interest to keep the HCV area	Monitoring of regional development and development plans by local governments in concession PT AAN	Concession PT AAN and local government	SHE Staff & Legal Dept	2018-2022	Every policy from government

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			b. Provide an alternative area to the government other than HCV areas for infrastructure development to be built	Discussion with local government	Concession PT AAN	SHE Staff & Legal Dept	2018-2022	Every policy from goverment

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
HCV5	HCV Area with social cultural value is : 1. Hutan adat bukit Jundak 2. Hutan Adat Bris (Rimba engkulung) 3. Hutan Bukit Kondang 4. Rimba Roga Babi 5. KSMA/ Air Terjun Pelabuh	Deforestation, Land clearing in forest area and or riparian area for production and infrastructure likely open new area for oil palm plantation, roads, settlements, and etc	a. Communicating and awareness raising to the community around the PT AAN area that the area still has a good diversity of flora and fauna and other ecosystem services functions such as water providers and as fire breaks	Conducting monitoring with patrols / supervision at the location in order to avoid the opening of the forested area by self-supporting by the community	Villages around PT AAN	SHE Staff & Ast K3L	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
	Bindang 6. Hutan Keramat Malukar 7. Rivers : Kerabat River, Musuk anak River, Menterap River and Kungkang River 8. Tembawang Angus		b. Making SOP and socialization management HCV area for all employee and community around PT AAN  c. Making awarning board is prohibited area to cut down excess trees, opren forest areas, and river borders within HCV area  d. Make village regulations/ indigenous rule to prohibited for opening and cutting forests in commercial scheme of HCV areas based on agreed upon by the community  e. Making marking boundary of HCV area	Control enforcement of village regulations / customary rules prohibiting forest clearing or forest clearance in HCV areas  Monitoring patrol condition warning board in HCV area  Regulation with community  Patrol the condition of the boundaries HCV regularly	PT AAN Office and villages around  Concession PT AAN  Villages around PT AAN  Concessions PT AAN	SHE Staff & Ast K3L  SHE Staff, Ast K3L and Operational Staff  CSR Dept Head  SHE Staff, Ast K3L and Operational Staff	2018-2022  2018-2022  2018-2022  2018-2022	Every year  Every year  Every two year  Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			f. Rehabilitation riparian river with local species	Monitoring local species	Concessions PT AAN	Conservation Staff	2018-2022	Every year
			g. For HCVMA zones, reduce access to community activities that endanger the existence of forest resources such as fire use activities in their activities.	Conducting monitoring with patrols	HCV Area PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every six months
			h. Reducing the intensity of plantation activities that could potentially threaten the existence of HCVMA such as developing the main roads of traffic in the activities of the Plantation, developing the settlement of employees around HCV / HCVMA	Company policy for protected HCV Area	HCV Area PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		Illegal logging and wild animal hunting in the forest areas or riparian areas	<p>a. Making policy about forbiddeng to cut the trees and hunt wildlife around PT AAN</p> <p>b. Making SOP and socialization management HCV area for all employee and community around PT AAN</p> <p>c. Socialization to employee and the community about the importance of the existence flora and fauna that are protected, endangered, vulnerable, or limited around PT AAN and for balance of</p>	<p>Patrols are periodic and consistent especially in areas prone to wood theft and animal hunting. Conducting inventory of protected, endangered, vulnerable, or limited-range species of flora and fauna present within the HCV area and around the partnership garden at least once a year Socialization to employee and community</p> <p>Monitoring patrols HCV warning board conditions</p>	<p>Concessions PT AAN</p> <p>PT AAN Office and villages around</p> <p>PT AAN Office and villages around</p>	<p>SHE Staff Dept</p> <p>SHE Staff &amp; Ast K3L</p> <p>SHE Staff &amp; Ast K3L</p>	<p>2018-2022</p> <p>2018-2022</p> <p>2018-2022</p>	<p>Every five year</p> <p>Every year</p> <p>Every year</p>



HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			ecosystem					
			d. Making a warning board is prohibited area to cut down excess trees, open forest areas, river borders and hunting wildlife within HCV area		Concession PT AAN	SHE Staff	2018-2022	Every year five
			e. Make village regulations/ indigenous rule to prohibited for opening and cutting forests in commercial scheme of HCV areas based on agreed upon by the community	Regulation with community	Villages around PT AAN	CSR Dept Head	2018-2022	Every year two
			f. Creating enrichment program in HCV area with local seed species (ulin trees, etc)	Monitoring enrichment seed species in HCV area	Concession PT AAN	SHE Staff & Ast K3L	2018-2022	Every year two
			g. Making marking boundary of HCV area	Patrol the condition of the boundaries HCV regularly	Concessions PT AAN	SHE Staff, Ast K3L & Operational Staff	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		Forest Fire	a. Capacity building of the community and employees in the context of fire prevention and fire drill or simulation of fire handling routinely	Monitoring program capacity building about fire handling	Concession PT AAN & Villages around	SHE Staff & Ast K3L	2018-2022	Every year
			b. Provision of adequate fire suppression equipment (Water pumps, water hose, etc.)	Monitoring the condition of fire-fighting equipment	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year
			c. Making SOP for prevention and control of forest fires	Monitoring the effectiveness of SOP of SOP for prevention and reforestation of forest fires	Concession PT AAN	SHE staff & Ast K3L	2018-2022	Every year
			d. Provision of water	Monitoring water regularly	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year
			e. Making board appeal on fire hazard	Monitoring board regularly	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year
			f. Installing the fire hazard index board and Renewing the fire hazard index	Patrols are periodic and consistent especially in the dry season. Monitoring Hot	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			board for any changes in the rainy or dry season	spots regularly in the dry season				
			g. Socialization about the dangers of forest fires to employees and communities around PT AAN	List member of socialization	Concession PT AAN and villages around	SHE Staff & CSR Dept Head	2018-2022	Every year
			h. Cooperate with communities by forming a fire-caring community to raise awareness together with the dangers of forest and land fires	Fire caring policy	Concession PT AAN and villages around	SHE Staff & CSR Dept Head	2018-2022	Every year
		a. River and ditch water pollution by fertilizer , gasoline, and other chemicals and non-organic waste b. Unsustainable way of catching fish in the river (using electric wave or chemical poison)	a. Preparing SOP for Monitoring of Quality River Water (eg limiting the distance of fertilization or the administration of other chemicals ± 50 meters from the river or along the river border)	Conduct periodic monitoring of river water quality Monitoring periodic erosion and sedimentation according to RKL / RPL	Concession PT AAN	SHE Staf & Ast K3L	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		c. Riparian areas erosion caused by rain and tide, later causing riverbed silting	b. Making SOPs and socialization of agricultural solid waste disposal and agricultural B3 waste to employees and community around PT AAN	Monitoring of agricultural activities along the river border	Concession PT AAN	SHE Staf & Ast K3L	2018-2022	Every year
			c. Installation of an appeal board not to throw garbage into the river	Monitoring board in riparian area	Concession PT AAN	SHE Staf & Ast K3L	2018-2022	Every year
			d. Socialization to the community to maintain the cleanliness of the watershed and Installation boards HCV area in HCV area	Monitoring socialization to community	Concession PT AAN	SHE Staf & Ast K3L	2018-2022	Every year
			e. Conduct awareness (training and socialization) of HCV areas (Employees and Community around PT AAN)	Monitoring training awareness of HCV area	Concession PT AAN and village around	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			f. Socialization SOP Management and Monitoring of HCV	Monitoring socialization SOP	Concession PT AAN and village around	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year
			g. Socialization SOP prohibiting chemical fertilization in riparian river area	Monitoring socialization SOP	Concession PT AAN and village around	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year
			h. Installing a bulletin board for the use of fish poison at riparian river area	Updating bulletin board regularly	Concession PT AAN	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year
			i. Applying SOP of best practice for fertilizer	Internal Audit of SOP	Concession PT AAN	Operational Staff, SHE Staff & Ast K3L	2018-2022	Every year
			j. Provide markers for prohibition of detonation and poisoning for fishing	Patrol the use of fish poison	Concession PT AAN	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year
			k. Planting and enrichment trees in riparian river with local species.	Monitoring the success of growing local tree crops planted along the river border	Concession PT AAN	SHE Staff	2018-2022	Every year
		Plans for infrastructure development by Government that result in HCV areas being	a. Provide notice of HCV presence in PT AAN area to local government and its interest to keep the HCV area	Monitoring of regional development and development plans by local governments in	Concession PT AAN and local government	SHE Staff & Legal Dept	2018-2022	Every policy from government

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		opened	b. Provide an alternative area to the government other than HCV areas for infrastructure development to be built	concession PT AAN  Discussion with local government	Concession PT AAN	SHE Staff & Legal Dept	2018-2022	Every policy from government

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
HCV6	HCV Area with social cultural is : 1. Hutan adat bukit Jundak 2. Hutan Adat Bris (Rimba engkulung) 3. Hutan Bukit Kondang 4. Rimba Roga Babi 5. Bukit Tunggal 6. Rimba Empalin 7. Areal Keramat	Deforestation, Land clearing in forest area and or riparian area for production and infrastructure likely open new area for oil palm plantation, roads, settlements, and etc	a. Communicating and awareness raising to the community around the PT AAN area that the area still has a good diversity of flora and fauna and other ecosystem services functions such as water providers and as fire breaks	Conducting monitoring with patrols / supervision at the location in order to avoid the opening of the forested area by self-supporting by the community	Villages around PT AAN	SHE Staff & Ast K3L	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
	Danau Lindung 8. KSMA Pelabuh Bindang 9. Hutan Keramat Malukar 10. Natai Kelampai 11. Pulau Bindang		b. Making SOP and socialization management HCV area for all employee and community around PT AAN	Control enforcement of village regulations / customary rules prohibiting forest clearing or forest clearance in HCV areas	PT AAN Office and villages around	SHE Staff & Ast K3L	2018-2022	Every year
			c. Making awarning board is prohibited area to cut down excess trees, opren forest areas, and river borders within HCV area	Monitoring patrol condition warning board in HCV area	Concession PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every year
			d. Make village regulations/ indigenous rule to prohibited for opening and cutting forests in commercial scheme of HCV areas based on agreed upon by the community	Regulation with community	Villages around PT AAN	CSR Dept Head	2018-2022	Every two year
			e. Making marking boundary of HCV area	Patrol the condition of the boundaries HCV regularly	Concessions PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			f. Rehabilitation riparian river with local species	Monitoring local species	Concessions PT AAN	Conservation Staff	2018-2022	Every year
			g. For HCVMA zones, reduce access to community activities that endanger the existence of forest resources such as fire use activities in their activities.	Conducting monitoring with patrols	HCV Area PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every six months
			h. Reducing the intensity of plantation activities that could potentially threaten the existence of HCVMA such as developing the main roads of traffic in the activities of the Plantation, developing the settlement of employees around HCV / HCVMA	Company policy for protected HCV Area	HCV Area PT AAN	SHE Staff, Ast K3L and Operational Staff	2018-2022	Every year



HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		Illegal logging and wild animal hunting in the forest areas or riparian areas	<p>a. Making policy about forbiddeng to cut the trees and hunt wildlife around PT AAN</p> <p>b. Making SOP and socialization management HCV area for all employee and community around PT AAN</p> <p>c. Socialization to employee and the community about the importance of the existence flora and fauna that are protected, endangered, vulnerable, or limited around PT</p>	<p>Patrols are periodic and consistent especially in areas prone to wood theft and animal hunting.</p> <p>Conducting inventory of protected, endangered, vulnerable, or limited-range species of flora and fauna present within the HCV area and around the partnership garden at least once a year Socialization to employee and community</p> <p>Monitoring patrols HCV warning board conditions</p>	<p>Concessions PT AAN</p> <p>PT AAN Office and villages around</p> <p>PT AAN Office and villages around</p>	<p>SHE Staff Dept</p> <p>SHE Staff &amp; Ast K3L</p> <p>SHE Staff &amp; Ast K3L</p>	<p>2018-2022</p> <p>2018-2022</p> <p>2018-2022</p>	<p>Every five year</p> <p>Every year</p> <p>Every year</p>

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			AAN and for balance of ecosystem					
			d. Making a warning board is prohibited area to cut down excess trees, open forest areas, river borders and hunting wildlife within HCV area		Concession PT AAN	SHE Staff	2018-2022	Every year five
			e. Make village regulations/ indigenous rule to prohibited for opening and cutting forests in commercial scheme of HCV areas based on agreed upon by the community	Regulation with community	Villages around PT AAN	CSR Dept Head	2018-2022	Every year two
			f. Creating enrichment program in HCV area with local seed species (ulin trees, etc)	Monitoring enrichment seed species in HCV area	Concession PT AAN	SHE Staff & Ast K3L	2018-2022	Every year two
			g. Making marking boundary of HCV area	Patrol the condition of the boundaries HCV regularly	Concessions PT AAN	SHE Staff, Ast K3L & Operational Staff	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		Forest Fire	a. Capacity building of the community and employees in the context of fire prevention and fire drill or simulation of fire handling routinely	Monitoring program capacity building about fire handling	Concession PT AAN & Villages around	SHE Staff & Ast K3L	2018-2022	Every year
			b. Provision of adequate fire suppression equipment (Water pumps, water hose, etc.)	Monitoring the condition of fire-fighting equipment	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year
			c. Making SOP for prevention and control of forest fires	Monitoring the effectiveness of SOP of SOP for prevention and reforestation of forest fires	Concession PT AAN	SHE staff & Ast K3L	2018-2022	Every year
			d. Provision of water	Monitoring water regularly	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year
			e. Making board appeal on fire hazard	Monitoring board regularly	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year
			f. Installing the fire hazard index board and Renewing the fire hazard index board for any changes in the rainy	Patrols are periodic and consistent especially in the dry season. Monitoring Hot spots regularly in the dry season	Concession PT AAN	Operational or Plantation Head	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			<p>or dry season</p> <p>g. Socialization about the dangers of forest fires to employees and communities around PT AAN</p> <p>h. Cooperate with communities by forming a fire-caring community to raise awareness together with the dangers of forest and land fires</p>	<p>List member of socialization</p> <p>Fire caring policy</p>	<p>Concession PT AAN and villages around</p> <p>Concession PT AAN and villages around</p>	<p>SHE Staff &amp; CSR Dept Head</p> <p>SHE Staff &amp; CSR Dept Head</p>	<p>2018-2022</p> <p>2018-2022</p>	<p>Every year</p> <p>Every year</p>
		<p>a. River and ditch water pollution by fertilizer , gasoline, and other chemicals and non-organic waste</p> <p>b. Unsustainable way of catching fish in the river (using electric wave or chemical poison)</p>	<p>a. Preparing SOP for Monitoring of Quality River Water (eg limiting the distance of fertilization or the administration of other chemicals ± 50 meters from the river or along the river border)</p> <p>b. Making SOPs and socialization of agricultural solid waste disposal and</p>	<p>Conduct periodic monitoring of river water quality Monitoring periodic erosion and sedimentation according to RKL / RPL</p> <p>Monitoring of agricultural activities along the river border</p>	<p>Concession PT AAN</p> <p>Concession PT AAN</p>	<p>SHE Staf &amp; Ast K3L</p> <p>SHE Staf &amp; Ast K3L</p>	<p>2018-2022</p> <p>2018-2022</p>	<p>Every year</p> <p>Every year</p>

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		c. Riparian areas erosion caused by rain and tide, later causing riverbed silting	agricultural B3 waste to employees and community around PT AAN					
			c. Installation of an appeal board not to throw garbage into the river	Monitoring board in riparian area	Concession PT AAN	SHE Staf & Ast K3L	2018-2022	Every year
			d. Socialization to the community to maintain the cleanliness of the watershed and Installation boards HCV area in HCV area	Monitoring socialization to community	Concession PT AAN	SHE Staf & Ast K3L	2018-2022	Every year
			e. Conduct awareness (training and socialization) of HCV areas (Employees and Community around PT AAN)	Monitoring training awareness of HCV area	Concession PT AAN and village around	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year
			f. Socialization SOP Management and Monitoring of HCV	Monitoring socialization SOP	Concession PT AAN and village around	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year
			g. Socialization SOP prohibiting chemical fertilization in riparian river area	Monitoring socialization SOP	Concession PT AAN and village around	SHE Staff, Ast. K3L & CSR Staff	2018-2022	Every year

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
			h. Installing a bulletin board for the use of fish poison at riparian river area i. Applying SOP of best practice for fertilizer j. Provide markers for prohibition of detonation and poisoning for fishing k. Planting and enrichment trees in riparian river with local species.	Updating bulletom board regularly  Internal Audit of SOP  Patrol the use of fish poison  Monitoring the success of growing local tree crops planted along the river border	Concession PT AAN  Concession PT AAN  Concession PT AAN  Concession PT AAN	SHE Staff, Ast. K3L & CSR Staff  Operational Staff, SHE Staff & Ast K3L  SHE Staff, Ast. K3L & CSR Staff  SHE Staff	2018-2022  2018-2022  2018-2022  2018-2022	Every year  Every year  Every year  Every year
		Infrastructure building plan by Regional/ Provincial Government that could affect the HCV areas	a. Provide notice of HCV presence in PT AAN area to local government and its interest to keep the HCV area b. Provide an alternative area to the government other than HCV areas for infrastructure development to be built	Monitoring of regional development and development plans by local governments in concession PT AAN	Concession PT AAN and local government	SHE Staff & Legal Dept	2018-2022	Every policy from goverment

HCV	Type/ form of HCV Areas	Threat of HCV	Management & Mitigation Plan	Monitoring Plan	Location	PIC	Timeframe for completion	Monitoring
		Decrease of cultural values and historical values of local communities	a. Determination of local historical sites through a letter of appointment by local government (Camat or Bupati) for location of Pulau Bindang  b. Create a history site introduction program with the preparation of a local history Book	Monitoring socio-cultural impacts by harmonizing social governance plans as per the results of social impact assessments	Concession PT AAN	CSR & SHE Staff	2018-2022	Every two year

## 5. References

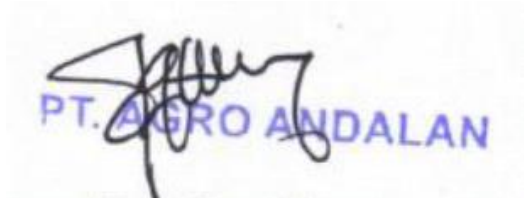
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## 6. Internal Responsibility

The oil palm grower signs to confirm that the necessary assessment have been done and completed in accordance to the relevant RSPO procedure.

Signed for and on behalf of PT Agro Andalan

A handwritten signature in black ink is written over a purple rectangular stamp that reads "PT. AGRO ANDALAN".

Agung Pramudji  
Operation Director  
Date : April 2017

Signed for and on behalf of PT Remarks Asia

A handwritten signature in black ink is written over a logo for "Remark Asia". The logo features the word "Remark" in black and "asia" in red, with a stylized orange and yellow graphic. Below the signature, the text "Cecep Saepulloh" and "Team Leader of HCV Assessment" is printed, followed by "Date : July 2017".

Signed for and on behalf of PT Anugrah Lintas Zaman

A handwritten signature in black ink is written over a blue and red logo for "PT. ANUGRAH". The logo features a stylized blue and red graphic above the text "PT. ANUGRAH".

Dr. Tutut Sumarmianto, MS  
Team Leader of SEIA Assessment  
Date : July 2017

## 6.1 Organizational information and contact persons.

Contact details of the company are as follows :

Company Name	:	PT Agro Andalan (PT AAN)
Address	:	Gedung Sapta Mulia, Jl. Rawa Gelam V, Kav. OR 3B, Kelurahan Pulogadung, Jakarta
Location for proposed NPP	:	Sekadau Hulu Sub District, West Kalimantan
Telp/ Fax	:	021 – 4618135/ 021 – 4606942
Contact Person	:	Agustinus Triwibowo
Position	:	Management Representative
Email	:	<a href="mailto:agustinus.triwibowo@dsngroup.co.id">agustinus.triwibowo@dsngroup.co.id</a>
Status Business Land	:	Land Use rights permit certificate, issued by Land Agency Office of Sekadau District No 35/HGU/BPN RI/2011 dated on July 21, 2011 and Decree Letter from Head of Sekadau District No. Decree Letter from Head of Sekadau No.593.41/205/Ekon/2015 dated May 11, 2015 regarding Changed of location permit for plantation area PT Agro Andalan location in Sekadau
Total Area of Location Permit	:	18,040.80 Ha
Total Area of GIS Deliniation	:	17,745.75

## 6.2 List of Legal Document for process New Planting Procedure (NPP)

**Table 6.1 . List of Legal Document for process New Planting Procedure (NPP)**

No.	Description	Number of Legality	Area
1.	Location permit issued by Head of Sekadau Regency, West	No 400-07/IL-41-2008 dated on January 17, 2008	18,000
2	Location permit extension issued by Head of Sekadau Regency, West Kalimantan	No 400-189REV/IL-41-2009 dated on December 9, 2009	18,174
3	Location permit extension issued by Head of Sekadau Regency, West Kalimantan	No 593.41/169.a/Ekon/2011 dated on October 11, 2011	11,180.80
4	Location permit extension, issued by Head of Sekadau Regency, West	No 593.41/205/Ekon/2015 dated May 11, 2015	11,047.60

<b>No.</b>	<b>Description</b>	<b>Number of Legality</b>	<b>Area</b>
3.	Land Use rights permit certificate, issued by Land Agency Office of Sekadau Regency	No 35/HGU/BPN RI/2011 dated on July 21, 2011. Land Use Permit consist of :  No 14.11.00.00.3.00058 (179.94 ha)	6,993.20
5	EIA and Head of Dishutbuntam	No 660/526/Hutbuntam-IV dated on September 25, 2008	
6.	Decree Letter from Head of Sekadau District No.Decree Letter from Head of Sekadau District	No.593.41/205/Ekon/2015 dated May 11, 2015 regarding Changed of location permit for plantation area PT Agro Andalan location in Sekadau Hulu District.	11,047.60