SUMMARY OF ASSESSMENTS AND MANAGEMENT PLANS

Proposed New Plantings by PT Sumber Hasil Prima,

West Kalimantan Province, Indonesia

February 2020

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List of Abbreviations

ALS	Assessor Licensing Scheme
AMDAL	Analisis Mengenai Dampak Lingkungan (Environmental Impact Assessment)
FPIC	Free, Prior and Informed Consent
GHG	Greenhouse Gas
HCS	High Carbon Stock
HCSA	High Carbon Stock Approach
HCV	High Conservation Value
HCVRN	High Conservation Value Resource Network
NDPE	No Deforestation, No Peat, No Exploitation
NGO	Non-Governmental Organization
NPP	New Planting Procedure
P&C	Principles and Criteria
PT SHP	Sumber Hasil Prima
RSPO	Roundtable on Sustainable Palm Oil
SIA	Social Impact Assessment

1. OVERVIEW AND BACKGROUND

PT Sumber Hasil Prima (SHP) is a subsidiary of Goodhope Asia Holdings, Ltd. (Goodhope) located in Sintang Regency, West Kalimantan Province. The company is managing its Izin Lokasi (location permit) as the concession area covering a total of 14,020 ha (13,963.9 ha according to GIS calculation). The concession is located in 22 vilage administrative areas in Serawai District and Ambalau District. Currently, the company has nearly 30% of its concession planted with oil palm and is planning to develop the unplanted area in the concession

Goodhope, parent company of PT SHP, became a member of RSPO in December 2014 and is committed to implement sustainable management practices across its operations according to the RSPO P&C. The Group operates 12 oil palm plantations and 6 mills in four provinces of Indonesia, namely Central Kalimantan, East Kalimantan, West Kalimantan and Papua. 4 from 6 mills of the group are certified under RSPO P&C.

As in accordance with the RSPO P&C, the company carried out several assessments and RSPO New Planting Procedures prior to the new development. There are HCV 1, HCV 2, HCV 3, HCV 4, HCV 5, and HCV 6 found in the concessions of Goodhope Sintang Region (scope of HCV Assessment covered concessions of two subsidiaries of Goodhope in Sintang, namely PT SHP and PT SSA). The HCVs comprise of secondary forest, shrubs, hilly areas, rivers and riparians, springs, sacred area of "Kelokak" (also known as Kolohka which is the site of old village), and old graves (burial ground). Total of HCV and HCVMA in the concessions of Goodhope Sintang Region is 3,181.64 ha; whereas specifically within the concession of PT SHP, HCV and HCVMA cover a total of 858.0 ha. In addition, in order to mitigation of GHG emission in the new development plan of PT SHP, there is also high carbon stock (HCS) area to be conserved. Total of HCV-HCS conservation areas in PT SHP concession is 1,293.5 ha.

Table 1. Organizational information and contact persons

Name of RPSO member	Goodhope Asia Holdings Ltd.
RSPO membership number	1-0175-14-000-00
Date of joining RSPO	December 2, 2014
Name of subsidiary/management unit	PT Sumber Hasil Prima (SHP)
Country of subsidiary/management unit	Indonesia
Province and district of subsidiary/management unit	Serawai District and Ambalau District, Kabupaten Sintang, West Kalimantan Province.
Total area of management unit (ha)	14,020 ha, (13,963.9 ha according to GIS calculation)
Contact person	Abrar Ramlan (abrar.ramlan@goodhope.co)

Table 2. List of legal requirements of the company

No.	License and Recommendation	Issued By	Number	Date
1.	Deed of establishment	Notary Suwanto, S.H.	Act No.01	5th January 2006

No.	License and Recommendation	Issued By	Number	Date
2.	Location Permit	Head of Sintang Regency	No. 533 Year 2007 covering of 20.000 Ha area	22nd October 2007
3.	Extension of Location Permit (Revised)	Head of Sintang Regency	No. 153 Year 2010 covering 20.000 Ha area	1st July 2008
4.	Extension of Location Permit (Additional)	Head of Sintang Regency	No. 525/282/Tahun 2012 Year 2012 covering 14,020 Ha area	5th April 2012
5.	Plantation Business Permit (IUP)	Head of Sintang Regency	No. 1232/Tahun 2010 Year 2010 covering of 20.000 Ha area	28th July 2010
6.	Plantation Business Permit (IUP) (Revised)	Head of Sintang Regency	No. 525/1074/Kep-Dishutbun/2014 Year 2014 covering 20.000 Ha area	8th September 2014
7.	Environmental Permit (Plantation AMDAL)	Governor of West Kalimantan	No. 130/BLHD/2010 Year 2010	18th March 2010
8.	Environmental Permit (UKL/UPL AMDAL Processor)	Head of Sintang Regency	No. 660.1/1049/KEP-BLH/2013 Year 2013	25th November 2013

Table 3. List of sub-districts and villages related with PT SHP concession area

No	sub-districts	Villages			
1.	Serawai	1.	Tamakung	11.	Gurung Sengiang
		2.	Tontang	12.	Batu Ketubung
		3.	Sawang Sengiang	13.	Tanjung Raya
		4.	Karya Jaya	14.	Nanga Serawai
		5.	Sabhang Landan	15.	Muara Kota
		6.	Tanjung Harapan	16.	Mekar Sari
		7.	Pagar Lebata	17.	Tunas Harapan
		8.	Talian Sahabung	18.	Tanjung Baru
		9.	Begori	19.	Nusa Tujuh
		10.	Bedaha	20.	Mentatai
2.	Ambalau	21.	Nusa Koring	22.	Lunjan Tingang

1.1. Maps of the project area
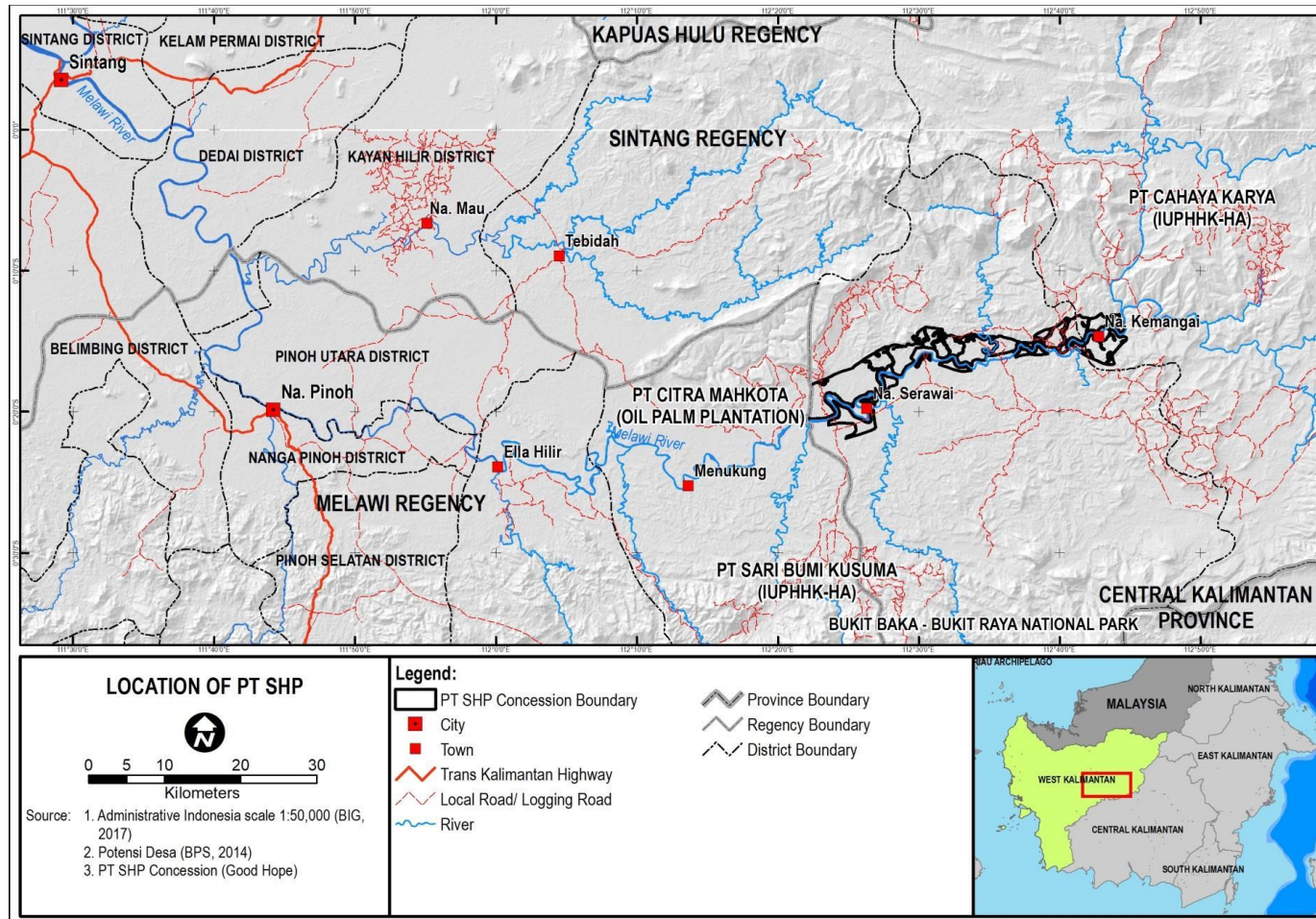
Figure 1. Map showing location of PT SHP concession
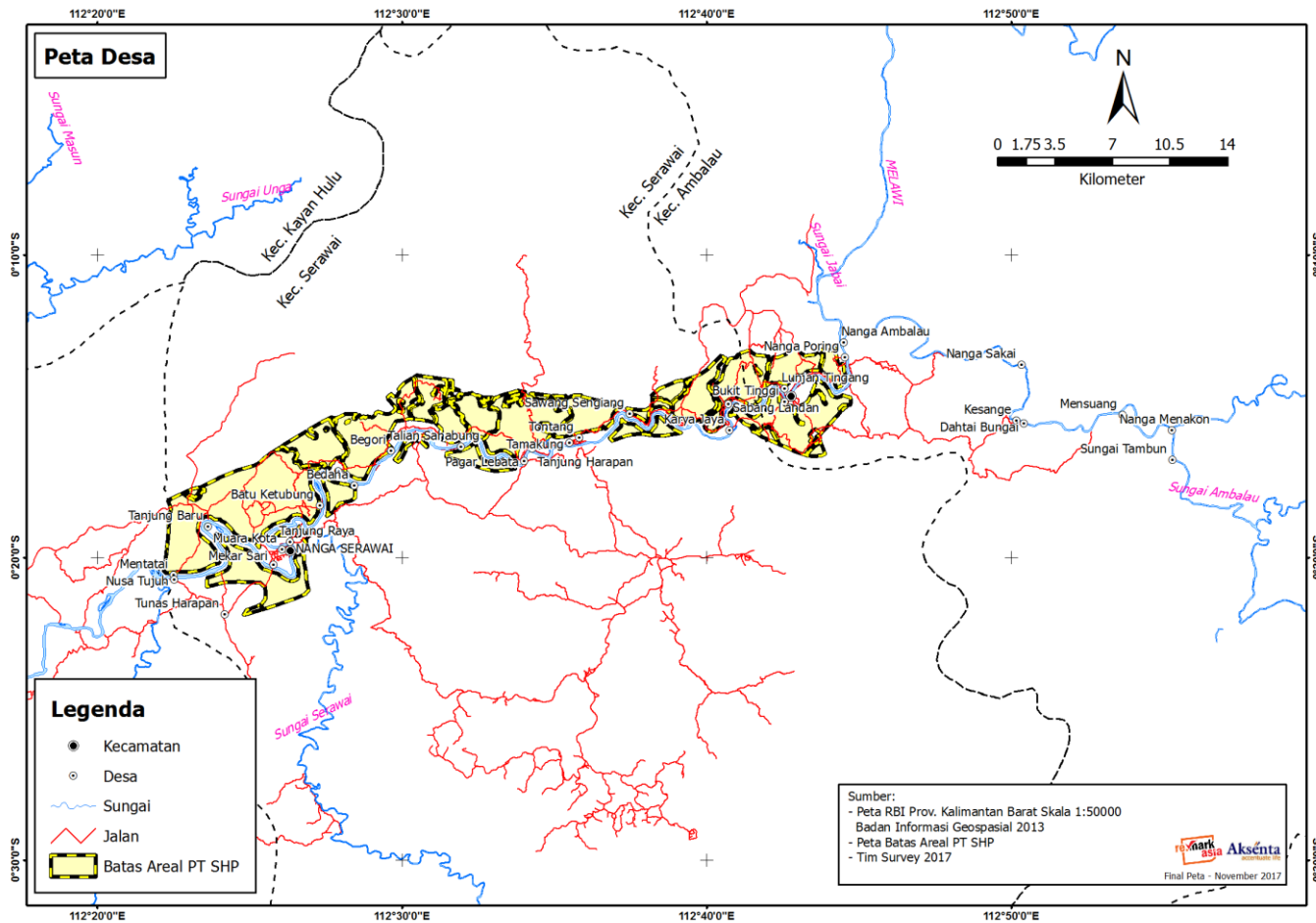
Figure 2. Map showing local administrative location of PT SHP concession

Figure 3. Map Provincial Land Use Planning and location of PT SHP concession

Peta Status Kawasan

BT. MENTAWA
BT. MECAHA
BT. PENGGUR
BT. TEMARANTAU

Sungai Unga
Sungai Jengor
Sungai Ambala
NANGA KEMANGAI
NANGA SERAWAI
MELAWI

0 2 4 8 12 16
Kilometer

TN BUKIT RA

Legenda

⊙	Kecamatan		APL
∿	Sungai		HP
∿	Jalan		HPT
▭	Batas Areal PT SSA		KSPA
▭	Batas Areal PT SHP		HL
▭	Batas Lanskap		

Sumber:
- Peta RBI Prov. Kalimantan Barat Skala 1:50000
  Badan Informasi Geospasial 2013
- Peta Batas Areal PT SHP, PT SSA
- Peta Kawasan Hutan dan Perairan Kalimantan Barat
  lampiran SK Menhutbun No. 259/Kpts-II/2000

remark asia Aksenta

Final Peta - November 2017

Figure 4. Map showing Forest Areas around the PT SHP concession

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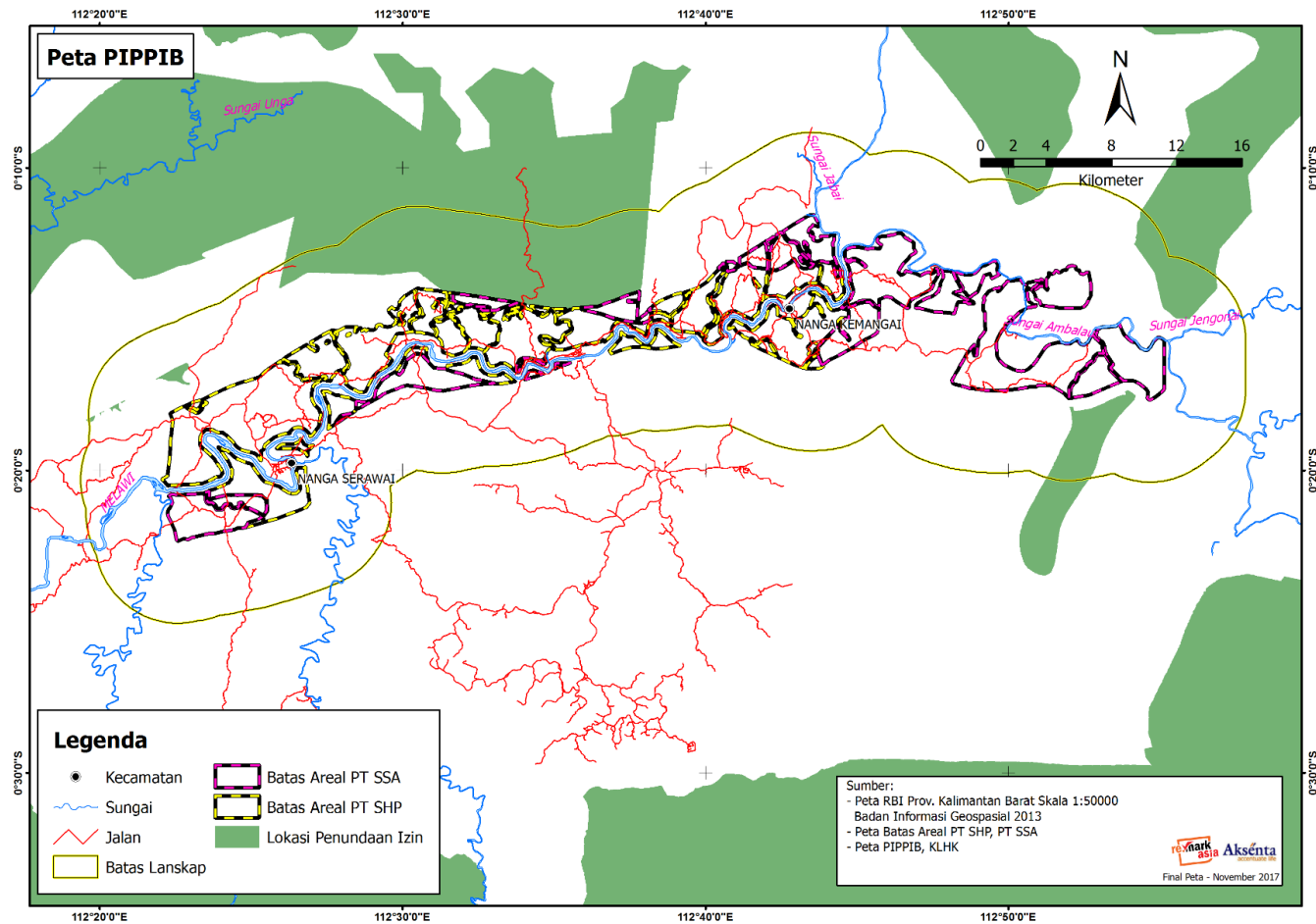
Figure 5. Map showing Indicative Moratorium Area around the PT SHP concession
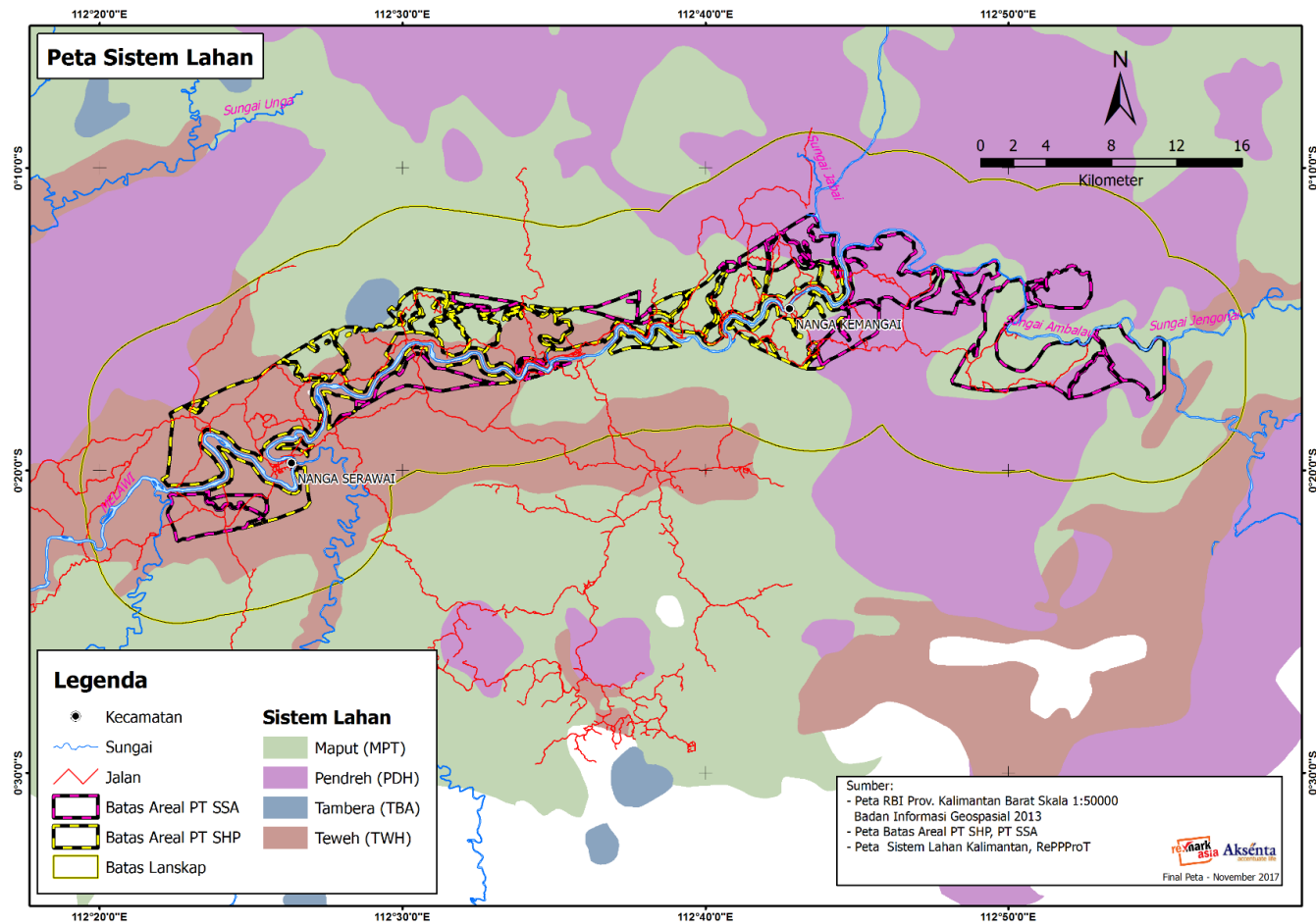
Figure 6. Map showing land system classification within and around the PT SHP concession
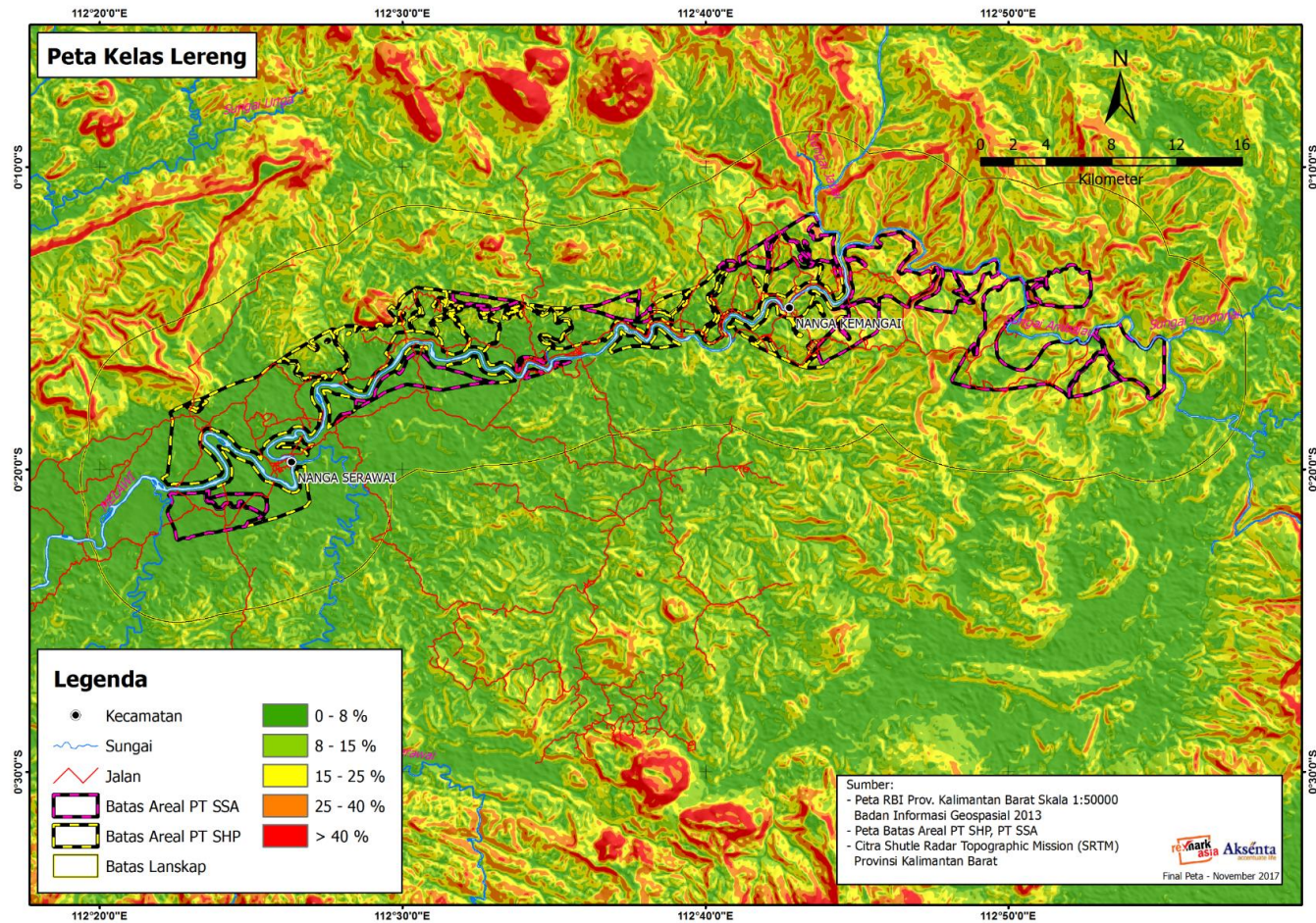
Figure 7. Map showing land slope classification within and around the PT SHP concession
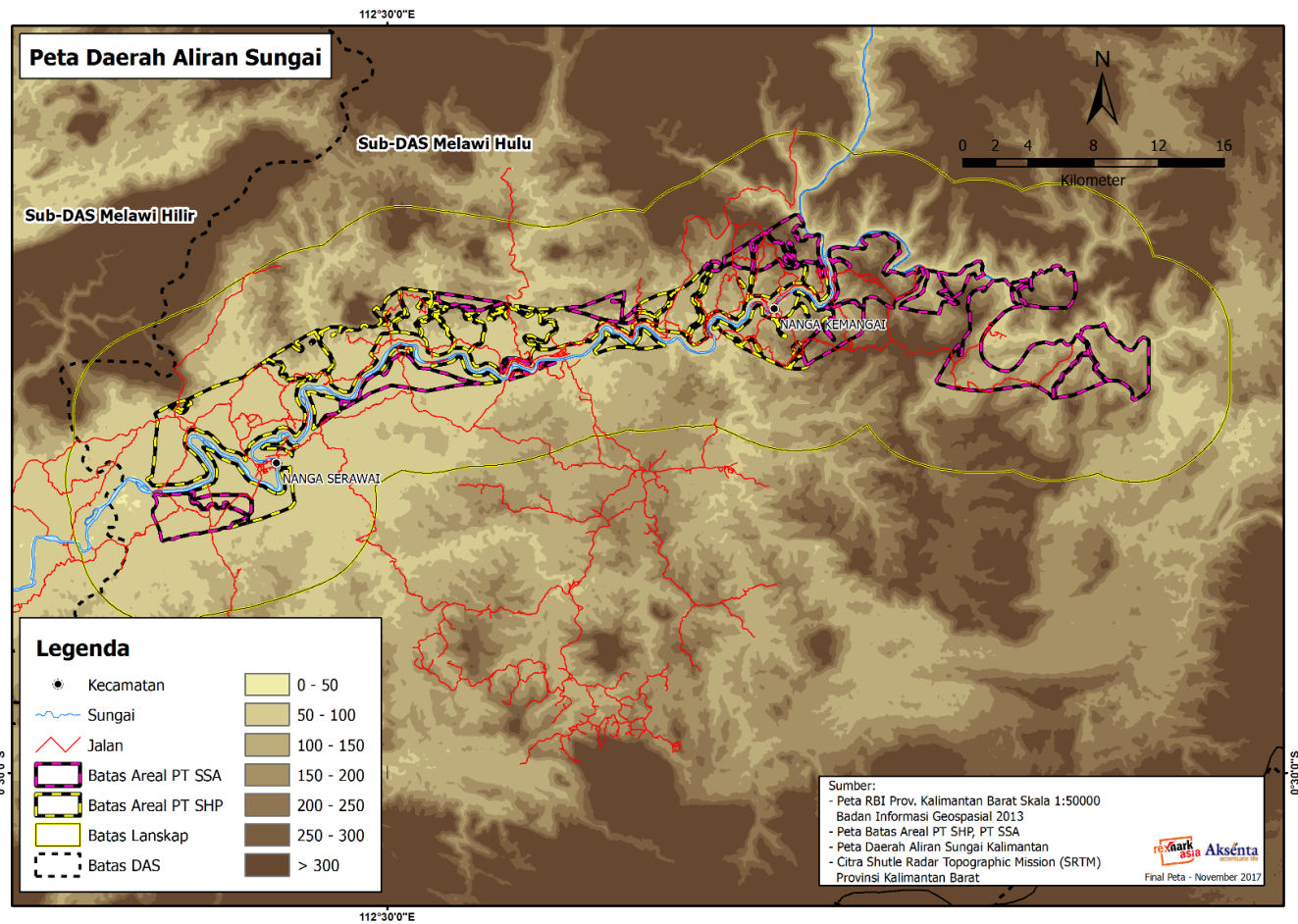
Figure 8. Map showing land elevation classification within and around the PT SHP concession

Peta Penutupan Lahan 2017

Legenda

- Kecamatan
- Sungai
- Jalan
- Batas Areal PT SSA
- Batas Areal PT SHP
- Batas Lanskap

- Kebun Campuran
- Semak
- Belukar Muda
- Kebun Sawit
- Lahan Pertanian

- Hutan Primer
- Hutan Sekunder
- Belukar Tua
- Tanah Terbuka
- Badan Air

Sumber:
- Peta RBI Prov. Kalimantan Barat Skala 1:50000
  Badan Informasi Geospasial 2013
- Peta Batas Areal PT SHP, PT SSA
- Citra Landsat 8 OLI (119/60) 18 Oktober 2017
- Peta Penutupan Hutan, KLHK 2017

Final Peta - November 2017

Figure 9. Map showing land cover classification within and around the PT SHP concession

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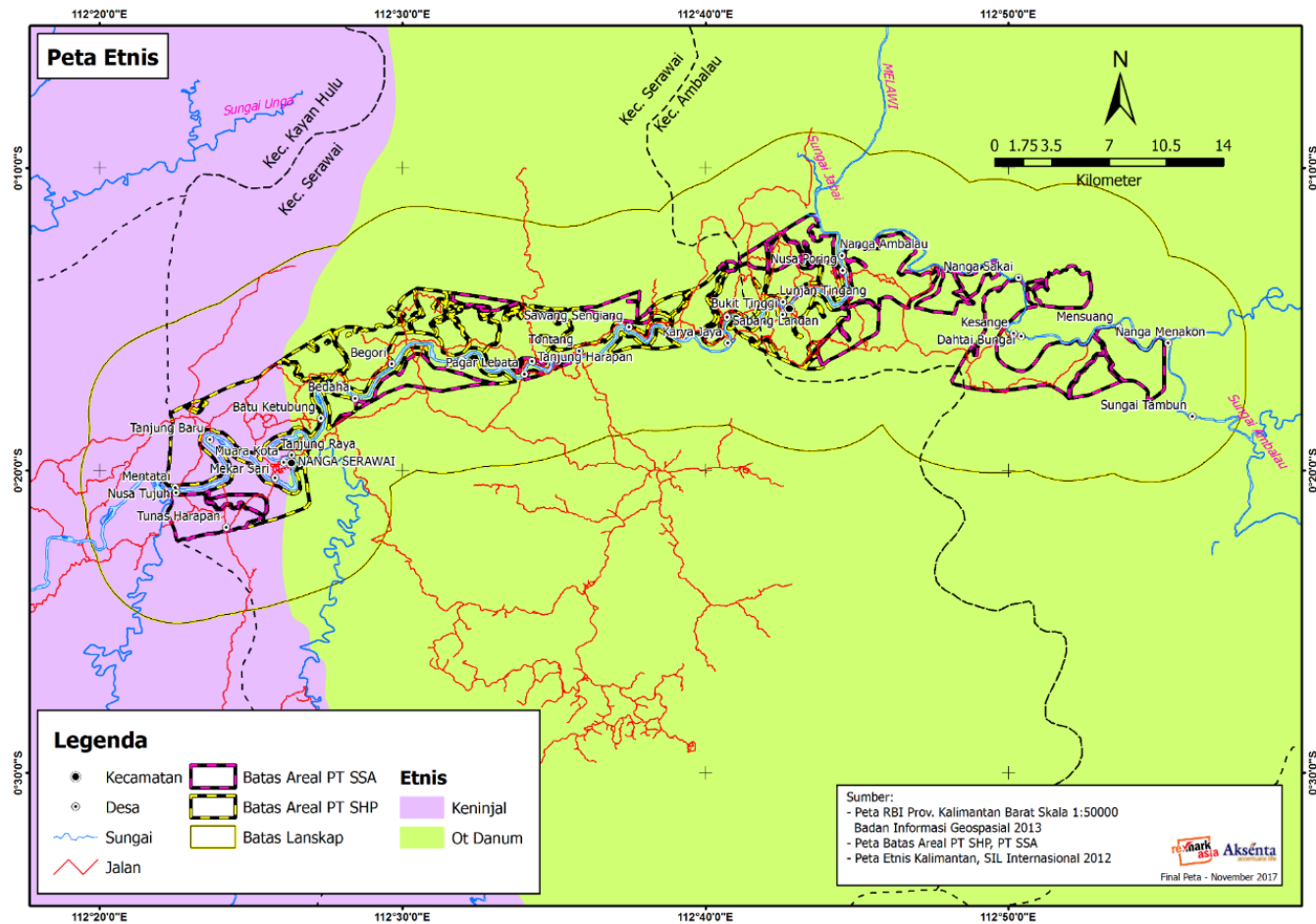
Figure 10. Map of ethnicity indicating land ownership by ethnic groups (malay and dayak)

1.2. General Description of the Landscape

PT SHP concession is located between 112°21'55,3''-112°44'49,7'' East and 0°21'56,1''-0°12'47,9'' South. It is administratively situated in 22 village areas of Serawai District and Ambalau District. Nanga Serawai, capital of the Serawai District, is the nearest urban from PT SHP concession. Nanga Serawai is about 105 km from Sintang City, the capital of Sintang Regency; and 340 km from Pontianak City, the capital of West Kalimantan Province. Sintang City can be accessed with airlines from Pontianak City, while Nanga Serawai and PT SHP concession can be accessed with 1 hour of road transport from Sintang City to Nanga Pinoh and 4-5 hours of river transport from Nanga Pinoh to Nanga Serawai. Moreover, transportation between villages in the area is mainly by river with boat taxi. Road access (plantation road village local road) is also available in certain parts of the area.

Map of Provincial Spatial Planning (Rencana Tata Ruang Wilayah Provinsi) of West Kalimanan Province confirms that PT SHP concession is located in Area for Plantation (Kawasan Perkebunan). However, the concession is surrounded by Forest Areas of several states, namely Limited Production Forest (Hutan Produksi Terbatas), Protection Forest (Hutan Lindung), and Production Forest (Hutan Produksi) as shown in the Forest Area Map. There is also Bukit Baka Bukit Raya National Park which is located approximately 27 km to the South of the concession.

There is no peat and primary forest moratorium area in the concession as indicated by the Indicative Moratorium Map (PIPPIB) Version XI. Map of Land System from RePPProT (1989) also confirms that there is no indication of peat in the concession. Moreover, analysis of digital elevation model shows that the topography within and around the concession various from flat to hilly, and below 50masl up to 300masl.

PT SHP concession is situated in the upstream of Melawi River sub-basin. Besides the Melawi River, there are also 8 tributaries of Melawi River around the concession, namely Melaku River, Mentibar River, Demu River, Tempe River, Melawi Hulu River, Ambalau River, Serawai River, Lekawai River, and Mentatai River. Moreover in the hydrological aspect, the area is relatively wet according to the annual rainfall. Average of annual rainfall is ranging from 2,899 – 3,026 mm with 133-184 rain days per year. Peak of the rainy season occurs in April-May and November-December whereas peak of the dry season occurs in August-September.

Land cover of the PT SHP concession is dominated by non-forest land covers, however there are old shrubs (belukar tua) areas which can be categorized as potential for natural habitat and pool of biomass carbon stock. Within the landscape boundary, the concession is surrounded by relatively more intact forest areas.

Communities from the 22 villages around the PT SHP concession were identified as the potentially impacted social communities from presence and activities of the company. Majority of the communities are Dayak People (from Dayak Ot Danum, Dayak Melahui, Dayak Limbai, and Dayak Kubin) and Malay People. Majority of the Dayak People are Catholics whereas only few of them still adheres their traditional belief. All of the Malay People are Moslems.

Main livelihood of the communities is by earning money to buy needs. Activities to earn money in the communities can be divided based on its sources, namely agricultural farming, gold mining, logging, fishing, and working as labour. Working as labour in oil palm companies is one of the main

source of livelihood to earn money for the communities. There are community members who work as non-permanent labour and others who work as permanent labour in the oil palm plantation. According to interviews with the community, workers can earn Rp. 2,500,000 per month. In addition, some of the communities also own their rubber or oil palm plantation and rice farm (used for subsistence need only).

1.3.   Proposed Areas for New Plantings

PT SHP has approximately 8,700 ha of proposed gross area for new development which comprises of non-oil palm low carbon stock land cover. For the up coming new development, company plans oil palm planting for a total of 2,695.0 ha. It comprises of (i) new oil palm planting for as much as 2,385.9 ha within proposed gross area for new development and (ii) oil palm insertion (*penanaman sisipan*) for as much as 309.1 ha within existing plantation area. Further new development in the rest 6,300 ha of the proposed gross area for new development is still under discussion for several reasons such as establishment of the permanent license area (Hak Guna Usaha), planning of the partnership scheme plantation (plasma), and etc.

The new development is planned to take place within 2 years period beginning in 2020. Details of the new development plan phases are provided in table and figure below.

Table 4. New development phases and other land use

Land Use	Area (Ha)
New planting 2020	1,332.2
OP insertion 2020*	152.0
Total new development 2020	**1,484.2**
New planting 2021	1,053.7
OP insertion 2021*	157.1
Total new development 2021	**1,210.8**
Total new development 2020-2021	**2,695.0**
HCV-HCS Conservation Area	1,293.5
Existing Oil Palm Area**	3,599.2
Excluded from new planting	6,376.1
Total Area of PT SHP	**13,963.9**

*) Existing oil palm area that requires insertion

*) Exisiting oil palm area that does not require insertion
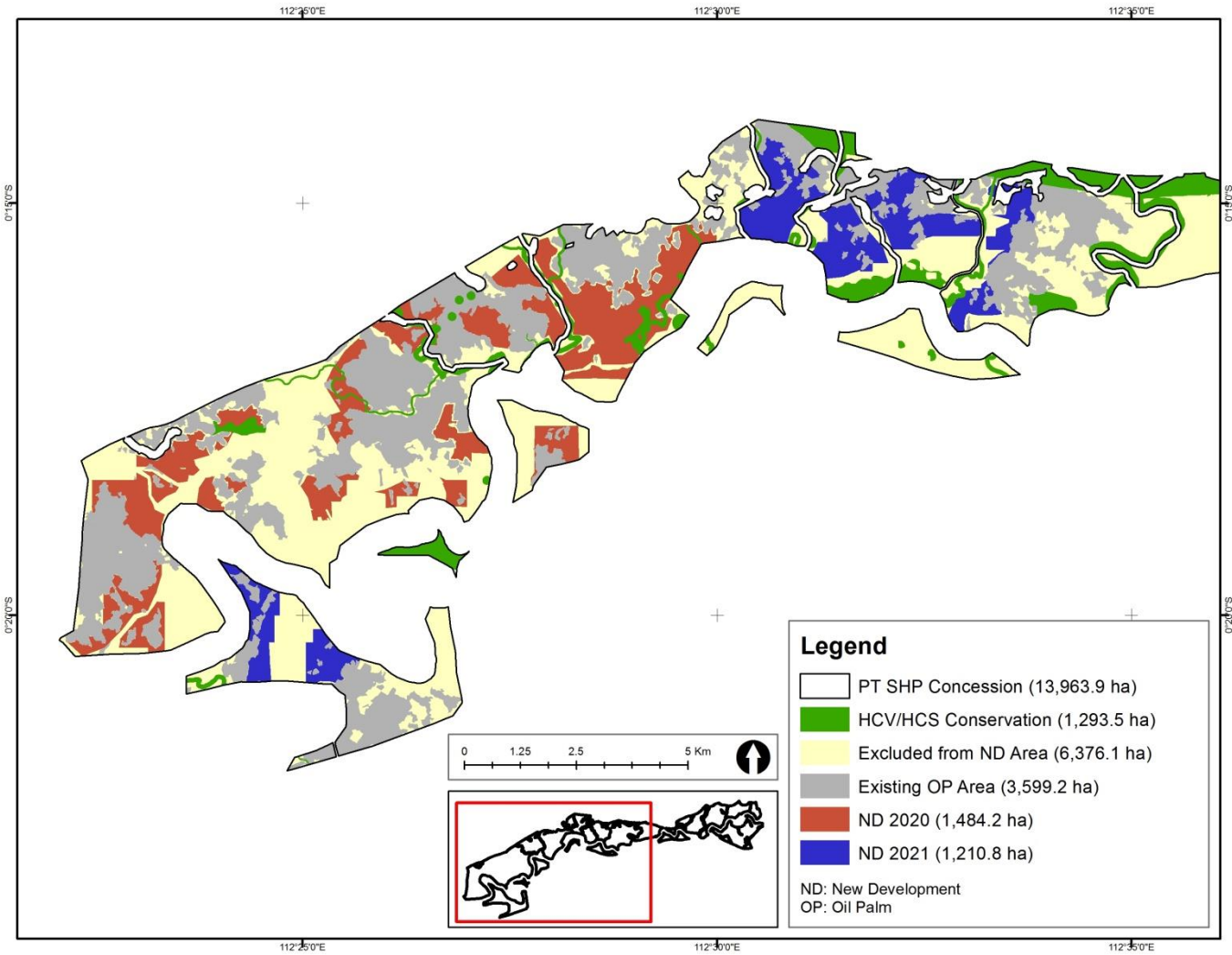
Figure 11. New development plan phases in PT SHP concession (West part)

Legend

- PT SHP Concession (13,963.9 ha)
- HCV/HCS Conservation (1,293.5 ha)
- Excluded from ND Area (6,376.1 ha)
- Existing OP Area (3,599.2 ha)
- ND 2020 (1,484.2 ha)
- ND 2021 (1,210.8 ha)

ND: New Development
OP: Oil Palm

Legend

☐ PT SHP Concession (13,963.9 ha)
■ HCV/HCS Conservation (1,293.5 ha)
■ Excluded from ND Area (6,376.1 ha)
■ Existing OP Area (3,599.2 ha)
■ ND 2020 (1,484.2 ha)
■ ND 2021 (1,210.8 ha)

ND: New Development
OP: Oil Palm

Figure 12. New development plan phases in PT SHP concession (East part)

2. ASSESSMENT PROCESSES AND METHODS

2.1. SEI Assessment

Social and Environmental Impact (SEI) Assessment of PT SHP comprised of 2 different assessments, namely environmental impact assessment (EIA or also known as AMDAL in Indonesia) and social impact assessment (SIA).

2.1.1. Dates of assessments

EIA of PT SHP was carried out in November-December 2010 whereas the SIA of PT SHP was updated with a reassessment in November 2017.

2.1.2. Assessor and their credentials

List of assessors of EIA and SIA and their credentials are provided respectively in Table 5 and Table 6 below.

Table 5. Assessors of the EIA and their credentials

No	Assessor	Role in Team	Expertise/credential
1	Ir. M. Idham	Team Leader	Forestry and Wildlife Biology (AMDAL A&B)
2	Ir. Erianto, MP	Physic and Chemist Expert	Forestry, Environment, and Socio-Culture (AMDAL A&B)
3	Iswansyah, SP		Agriculture and Soil Expert
4	Rahman Lupar, ST		Civil Engineering
5	Drs. Siti Khotimah, MSi.	Biology Expert	Biologist and Environment
6	Ir. Iskandar, AM		Forestry
7	Evi Herleni, SE	Social-Culture Expert	Socio-Economic
8	Agus Susanto, SE		Socio-Economic
9	Drs. Herman		Socio-Economic

Table 6. Assessors of the SIA (reassessment) and their credentials

No	Team	Role in Team	Expertise/credential
1	Sutji R Shinto	SIA Team Leader	- Anthropology (Social Culture) - Social practitioner, CSR, *social assessor*, SEIA, FPIC and *participatory mapping*
2	Herry Triyana	Member	- Social Community Assessor and Technical Expert for *participatory mapping*, SEIA, & FPIC
3	Hilma Suciandari L	Member	- Social Community Assessor and Technical Expert for *participatory mapping*, SEIA, & FPIC
4	Aslinda Nur Mazida	Member	- Social Community Assessor and Technical Expert for *participatory mapping*, SEIA, & FPIC
6	Tatang Rohimat	Member	- Social Community Assessor and Technical Expert for *participatory mapping*, SEIA, & FPIC
7	Sigit Pamungkas	Member	- Communication and Community Development - Communication expert for Community Farming and Villages Development, SEIA, Participatory Mapping, and

No	Team	Role in Team	Expertise/credential
			FPIC
8	Redy Miraz M	Member	- Social Community Assessor and Technical Expert for *participatory mapping*, SEIA, & FPIC
9	Risna Amalia	Member	- Anthropology (Social Culture) - Communication and Community Development

2.1.3. Methodology

Data collection of EIA involved a set of environmental and social surveys according to the assessment parameters, namely physical-chemical, biology, and social; on predictions of environmental condition in each phase of plantation operational activities, namely pre-construction, construction, operation, and post operation.

Data analysis and development of conclusions of the EIA involved descriptive and quantitative analysis. Result of the analysis is presented in a matrix that shows impacts classification from each parameter based on 3 indicators, namely scale of environmental quality, quantity of impact, and remark of the impact (positive vs negative).

SIA of PT SHP involves 6 steps in the assessment (Table 7). The assessment is focused to the communities from 22 villages around PT SHP concession as the potential communities receiving impact from activities of PT SHP.

Table 7. Steps of the SIA

Stage	Description
Literature study	Literature study was carried out to get an understanding of social - environmental context in assessment area. This was done in the pre-assessment (prior to the field visit) and in the data analysis.
Dialogue	Dialogues were carried out with the communities which is external social component and workers which is internal social component of the SHP. Dialogues were conducted in formal and informal meetings, and in focused-group discussions. Dialogues were used to identify stakeholders and information gathering on social issues, communities' aspiration and preceptions, and etc related to potential impacts from SHP.
Field Observation	Field observation was used to derive information and to understand the issues and social impacts that may occure from SHP.
In-Depth Interview	In-depth interview was used to derive more specific information from pre-determined key stakeholders. The key-stakeholders that were interviewed choosed based on several criteria, including their knowledge related to SHP and/or their role as an actor which receive the impacts directly.
Triangulation (verification)	Triangulation was used to verify the information gathered in the previous stages. Triangulation was conducted with crosschecking on the results derived from previous stages and also additional information derived with integration of methods used in the previous stages. Triangulation was conducted to verify informations gathered from the previous stages (issues, opinion, aspiration, and etc.).
Social-learning cycle	Social-learning cycle is an approach used by assessor to re-digest the information gathered as in the perspective of the communities (stakeholders receiving the impacts). Social Impact assessment is not a linear process that happens once, but rather a cycle process which serves as a social learning process to respond to changes in environment that occurs.

2.2. HCV Assessment

An HCV assessment was carried out in 2010. In accordance with the complaints raised regarding with the first assessment, a new HCV assessment was carried out in October 2017 as per required by the RSPO complaints panel. Scope of the new HCV Assessments covered both the PT SHP and PT SSA concessions and its surrounding area as multi-site assessment (Figure 4). This NPP refers to the new HCV assessment.

2.2.1. Dates of the assessment

HCV Assessment in PT SHP took place in between July 20th and October 7th, 2017. Scoping was conducted on August 4th to 16th, 2017, the first field study on September 5th to 19th, 2017 was carried out by Aksenta Team and the second field study on November 21st to 28th, 2017 by Remark Asia team. Stages of assessment activities are including pre-assessment, field study, stakeholder consultation, data analysis, and reporting. The timeline of the HCV assessment is briefly presented in table below.

Table 8. Timeline of the HCV Assessment

Stages	Objectives	Activities	Date
Pre Survey			
Pre-assessment and preparation.	• Identify the presence of HCV indications • Identify and mapping the potential area of HCV • Identify the landscape context • Identify the issues of natural resources conservation, land use, and potential threats to HCV areas • Identify the conservation issues, regarding the concerns by NGOs and staff employees to Bukit Baka-Bukit Raya National Park	• Pre-assessment including desk study, tier-rating and planning for field study • Data collection and information from Unit Management on plantation management and development status • Scoping study • Secondary data collection • Data and Spatial analysis • Discussion with NGOs in Sintang District	20 July - 4 September 2017 4 - 16 August 2017 5 and 6 September 2017
Field Study			
Opening meeting	• Communicationg the objectives of HCV assessment • Collecting data and information on plantation development and management status • Improve understanding of HCVs (background, objectives, objectives, concepts, species, key elements or attributes, and identification methods) • Establish the supporting team for HCV assessors	• Workshop with Unit Management • Training for Unit Management's staffs • Coordination for the field assessment planning	6 September 2017
Participatory Mapping	• Clarify the HCV consept and potential HCVs that have been identified in the Scoping Study. • Collect additional data and information related to HCV attributes / attributes	• Workshop with key informan and local community	5 - 19 September 2017
Field Survey	• Verify the presence of HCV attributes/elements	• Field verification of the land cover condition	5 - 19 September 2017

Stages	Objectives	Activities	Date
	• Identify the HCV area • Mapping the indicative boundary of HCV area • Identifythe potential threat of HCV elements and its presence.	• Field data collection • Interviews using triangulation techniques • Field verification on land cover condition • Data collection in the field • Iinterviews with triangulation techniques ***) notes:** Indicative maps of HCV areas are prepared every afternoon and sometimes at night. The team conducts discussions and analysis on all aspects required. Indicative maps of HCV areas are prepared for public consultation sessions.	
Data Analysis	• Daily compilation of field data • Mapping the HCV indicative areas that have been identified and verified during fieldwork.	• Internal coordination • Field data and information compilation every afternoon/night.	7 September – 22 Oktober 2017
Public Consultation	• Communicate the HCV areas identification results along with their threats to stakeholders (communities, local governments, academic institutions, and NGOs) • Consultation with local stakeholders for the findings of the assessment results • Collecting additional data and information from all stakeholders. • Discussing management recommendations for HCV areas and monitoring plan by all stakeholders	• FGD with all key stakeholders • Interview the key informants from local communities. • Open discussion in forums with related stakeholders in Serawai sub-district. • Open discussion in forums with related stakeholders in Sintang.	5 - 19 September 2017 16 September 2017 18 September 2017
Post – Field Study			
Public Consultation	• Communicate the findings of HCV area identification with all stakeholders • Recording and documenting all inputs from public consultation.	• Discussions with NGOs in Jakarta.	28 September 2017
Analysis and Reporting	• Analyse the final data • Prepare the HCV assessment report based on the ALS format	• Data Analysis • Spatial Analysis • Report	25-28 September – 30 October 2017

2.2.2. Assessors and their credentials

Team of the HCV Assessment comprised of 31 experts. List of the assessors and their credentials are provided in table below.

Table 9. Assessors of the HCV Assessment and their credentials

No	Name	Institutions	ALS Licence	Role	Expertise
1	Dwi Rahmad Muhtaman	Remark Asia	Provisionally Licensed Assessor (ALS15022DM)	Team Leader; Lead Assessor	Social assessor, participatory approach, facilitator, RSPO auditing, HCV assessor
2	Iwan Setiawan	Aksenta	N/A	*Biodiversity & landscape*	Ecologist, Conservation of Natural resources Management, habitat and Wildlife Population Expert, HCV Assessor since 2012
3	Resit Sozer	Aksenta	N/A	*Biodiversity and landscape*	*Tropical ecologist* of Wildlife Management , habitat and Wildlife Population Expert, HCV Assessor since 2007
4	Dera Syafrudin	Remark Asia	N/A	Biodiversity and landscape	Ecologist, ornithologist, facilitator in Biodiversity assessment, HCV Assessor since 2011
5	M. Faesal Rakhman Khakim	Aksenta	N/A	*Biodiversity and landscape*	Ecologist, Botanis, Primatologys, Mammalogist, Biodiversity Assessment Facilitator since 2009
6	Reza Pradipta	Remark Asia	N/A	GIS specialist	GIS and remote sensing analysis for conservation, HCV assessor sincek 2012,
7	Mustofa	Remark Asia	N/A	Assessment and Delineation	Ecologist, environmental management planner, community engagement, HCV Assessor since 2013
8	Hilma Suciandari Lahay	Remark Asia	N/A	Socio-Cultural assessment	*Agronomist,* Socio-economic, community engagement, HCV Assessor since 2015
9	Pupung F Nurwatha	Aksenta	N/A	*Biodiversity-fauna*	Ecologist, ornithologist, Natural Resources Conservation pracitices, HCV Assessor since 2007
10	Anwar Muzakir	Aksenta	N/A	Plants Ecology	*Botanist*, Plant Taxonomist, *carbon stock assessment*, HCV Assessor since 2014
11	M. Ahda Agung Arifian	Aksenta	N/A	Plants Ecology	*Botanist*, Plant Taxonomist, *carbon stock assessment*, HCV Assessor since 2015
12	T. Ade Fachlevi	Aksenta	N/A	Socio-Ekonomic	*Sociologist*, Participatoru Mapping, *social liability*, Sosial Analysis of Natural Resources, HCV Assessor since 2014
13	Andri Novi Hendratno	Aksenta	N/A	Socio-Ekonomic	Sociologist, Participatory mapping, social liability, Social assessor of Natural ResourcesHCV Assessor since 2008
14	Fersely Getsemani F.,	Aksenta	N/A	*Assessment and Delineation*	*Hydrologist*, Water Management, GIS, *remote sensing* and Spatial Analysis, HCV Assessor since 2012
15	Yanto Ardiyanto	Aksenta	N/A	*Assessment and*	*Hydrologist*, Water Management,

No	Name	Institutions	ALS Licence	Role	Expertise
				Delineation	GIS, *remote sensing* and Spatial Analysis, HCV Assessor since 2010
16	Reza Abdillah	Aksenta	N/A	GIS	GIS dan *remote sensing* analysis for conservation area, HCV Assessor since 2012
17	Nur Indah Ristiana	Aksenta	N/A	GIS	GIS dan *remote sensing* analysis for conservation area, HCV Assessor since 2012
18	Pramitama Bayu Saputro	Aksenta	N/A	GIS	GIS dan *remote sensing* analysis for conservation area, HCV Assessor since 2012
19	Ryan Karida Pratama	Aksenta	N/A	Land Use Change Analysis	GIS dan *remote sensing*, Land Use Change Analysis, HCV Assessor since 2013
20	Bias Berlio Pradyatma	Aksenta	N/A	Land Use Change Analysis and HCS Approach Patch Analysis Decision Tree	Land Cover Change Analysis, HCV and HCS Approach Assessor
21	Aryo Adhi Condro	Aksenta	N/A	Land Use Change Analysis	GIS dan *remote sensing*, Land Cover Change Analysis, HCV Assessor since 2017
22	Aulia Bahadhori Mukti	Aksenta	N/A	Land Use Change Analysis	Landcover Change Analysis, Soil Study, Carbonstock Assessment, HCV Assessor since 2012
23	Muhamad Fakhrul	Aksenta	N/A	Land Use Change Analysis	GIS dan *remote sensing*, Landcover Change Analysis, *carbon stock assessment*, HCV Assessor since 2016
24	Rahmat Darmawan	Aksenta	N/A	Plants Ecology	*Botanist*, Plant Taxonomist, *carbon stock assessment*, HCV Assessor since 2017
25	Muhamad Rizal	Aksenta	N/A	Plants Ecology	*Botanist*, Plant Taxonomist, *carbon stock assessment*, HCV Assessor since 2017
26	Heidei Putra Hutama	Aksenta	N/A	Land Use Change Analysis	GIS dan *remote sensing*, Landcover Change Analysis, *carbon stock assessment*, HCV Assessor since 2016
27	Catur Wibawa Praja	Aksenta	N/A	Plants Ecology	*Botanist*, Plant Taxonomist, *carbon stock assessment*, HCV Assessor since 2017
28	Teungku Haykal	Aksenta	N/A	Land Use Change Analysis	GIS dan *remote sensing*, Landcover Change Analysis, *carbon stock assessment*, HCV Assessor since 2013
29	Priyo Dwi Utomo	Aksenta	N/A	Land Use Change Analysis	GIS dan *remote sensing*, Landcover Change Analysis, *carbon stock assessment*, HCV Assessor since 2016

No	Name	Institutions	ALS Licence	Role	Expertise
30	Ahmad Arief Hilman	Aksenta	N/A	Socio-Economic	*Sociologist*, Participatory Mapping, *social liability*, Social Assessor for Natural Resources, HCV Assessor since 2016
31	Ali Akbar Hutzi	Aksenta	N/A	Socio-Economic	*Sociologist*, Participatory Mapping, *social liability*, Social Assessor for Natural Resources, HCV Assessor since 2016

2.2.3. Methodology

The HCV assessment was conducted following several guidances, including (i) the Common Guidance for Identification of HCVs (Brown *et al.* 2013), the HCV Assessment Manual (HCVRN, 2014), and HCV Toolkit Indonesia (Consortium to Revise the HCV Toolkit for Indonesia, 2008). Methodology used in the assessment can be divided into 4 based on the stages of the assessment.

a. Pre-assessment

Main activities in the pre-assessment stage include (i) collection of data and information from SHP management, (ii) collection of secondary data and information from various sources (references) including relevant experts concerning biodiversity, environmental service, and socio-cultural issues, (iii) analysis and validation of the collected data and information, and (iv) spatial analysis using the available base maps.

Table 10. List of references used in the HCV assessment

Main sources of data and -information	HCV					
	1	2	3	4	5	6
A Field Guide to The Birds of Borneo, Sumatra, Java and Bali (MacKinnon & Phillipps, 1993)	✓					
A Field guide to The Frogs of Borneo (Inger, R.F. and R.B. Stuebing, 1997)	✓					
A Field guide to The Snake of Borneo (Stuebing, R.B. and Inger, R.F, 1999)	✓					
Appendices I, II and III CITES, valid from 2 January 2017 (CITES, 2017)	✓					
IUCN Red List of Threatened Species. www.iucnredlist.org	✓					
Manual of Dipterocarps for Foresters. Borneo Island Light Hardwoods (Newman *et al*., 1996a, Newman *et al*., 1996b)	✓					
Manual of Dipterocarps for Foresters. Borneo Island Medium and Heavy Hardwoods (Newman *et al*., 1996a, Newman *et al*., 1996b)	✓					
Flora of Malesiana Seri I and II Volume 1 - 12 Part 1-3, (C.G.G.J. van Steenis and various authors, 1963-1996)	✓					
Panduan Lapangan Mamalia di Kalimantan, Sabah, Sarawak & Brunei Darussalam (Payne et al., 2000)	✓					
The Mammals of The Indomalayan Region (Corbet & Hill, 1992)	✓					
HCV report PT Sumber Hasil Prima, 2010	✓	✓	✓	✓	✓	✓
HCV report PT Sinar Sawit Andalan, 2010	✓	✓	✓	✓	✓	✓
Dokumen AMDAL of PT Sumber Hasil Prima	✓	✓	✓	✓	✓	✓
Dokumen AMDAL of PT Sinar Sawit Andalan	✓	✓	✓	✓	✓	✓
Kabupaten Sintang dalam Angka 2016 (BPS Kabupaten Sintang, 2016)					✓	✓
Kecamatan Serawai dalam Angka (BPS Kabupaten Sintang, 2016)					✓	✓
Kecamatan Ambalau dalam Angka (BPS Kabupaten Ambalau, 2016)					✓	✓
Laporan Kajian Sosial dan Kelembagaan Terkait Dengan Pengelolaan Hutan					✓	✓

Main sources of data and -information	HCV					
	1	2	3	4	5	6
Dalam Skema REDD di Kabupaten Sintang, Kalbar (Pusat Kajian Antopologi Universitas Indonesia, 2011)						
The Ecology of Kalimantan (MacKinnon et al., 1996)	✓	✓	✓			
Ramsar Sites in Indonesia (http://www.ramsar.org)		✓				
Endemic Bird Area Factsheet: Kalimantan (BirdLife International, 2015)		✓				
Important Bird Areas: Key Sites for Conservation (Birdlife International, 2015)		✓				
Citra Landsat 8 (USGS, Januari 2017)		✓	✓			
DEM Shuttle Radar Topography Mission, 30 meter (USGS, 2004)				✓		
Consession area boundary map PT SHP(source: PT SHP)	✓	✓	✓	✓	✓	✓
Consession area boundary map PT SSA (source: PT SSA)	✓	✓	✓	✓	✓	✓
Boundary Maps of the Watershed (BPDAS Kalimantan Barat)				✓		
Ethnic Distribution maps in Kalimantan, retrieved at http://www.ethnolog.com.					✓	✓
Ecosystem Map of Kalimantan (WWF, 2006)			✓			
Protected areas map,(Departemen Lingkungan Hidup dan Kehutanan)	✓	✓				
Peta Indikatif Penundaan Pemberian Izin Baru (PIPPIB) revisi IX, Lampiran (Kemenlhk, 2015)			✓			
Peta Jenis Tanah (RePPPProt, 1986)				✓		
Peta Ketinggian Tempat (hasil pengolahan berdasarkan data DEM SRTM)				✓		
Peta Kelas Kelerengan (hasil pengolahan berdasarkan data DEM SRTM)				✓		
Intact Forest Landscape Map (downloaded at: http://www.intactforest.org)		✓				
Land Cover Map (result of analysis Landsat Imagery 8, 2016)				✓		
RTRW Map of Wets Kalimantan, 2014-2024		✓				
Landsystem Map 1:250.000 (RePPPProt, 1989)			✓	✓		

b. Scoping study

Scoping study is a preliminary field visit which was conducted to obtain more understanding of the AOI and to verify the information gathered in pre-assessment stage. It was conducted on 4-16 August 2017.

Rapid field observation and social suevey were carried out to verify the data and information derived from pre-assessment. Results from the scoping study were used to be able to identify potential HCV areas in the study area and its wider landscape.

c. Field data and information collection

There were two field visits in the HCV assessment. The first was carried out on 5-19 September 2017 and the second was on 21-28 November 2017. Data and information collection was focused to the potential of HCV areas based on the results of pre-assessment and scoping study. Data and information were collected using combination of the following methods.

Participatory mapping

Participatory mapping was carried out to gather data from all of the six HCVs (biodiversity, environmental services, and sociocultural). Participatory mapping was carried out involving stakeholders who have knowledge about:

- The existence of forests and other natural ecosystems and wildlife species
- The existence of water catchment areas, water sources, water bodies, and watersheds
- The existence of areas which traditionally utilized by locals or natural resources within the community, both for the basic needs fulfillment and as part of cultural identity and traditions

Resource persons were choosen from community representatives, traditional leaders and village government representatives at the villages in assessment area. These villages are the place where the villagers own land and or interact in the study area. Here is the list of participants from each village from participatory mapping results.

Table 11. List of communities involved in the consultations of the HCV assessment

Village	Semi structured Interviews	FGD	Participatory Mapping	Village	Semi structured Interviews	FGD	Participatory Mapping
Sub-District Nanga Serawai				**Sub-District Nanga Serawai**			
Tamakung		✓	✓	Tunas Harapan		✓	✓
Tontang		✓	✓	Tanjung Baru		✓	✓
Sawang Sagiang/ Tempe/ Lemboyu		✓	✓	Nusa Tujuh		✓	✓
Karya Jaya	✓	✓		Mentatai	✓	✓	
Sabang Landan	✓			**Sub-District Nanga Ambalau**	✓		
Tajung Harapan	✓	✓		Nanga Kemangai	✓	✓	
Pagar Lebata		✓	✓	Nusa Koring		✓	✓
Talian Sahbung		✓	✓	Lunjan Tingang		✓	✓
Begori		✓	✓	Bukit Tinggi		✓	✓
Bedaha		✓	✓	Ambalau		✓	✓
Gurung Sengiang		✓	✓	Nanga Sakai		✓	✓
Batu Ketubung	✓			Kesange	✓		
Tanjung Raya	✓			Datah Bungai	✓	✓	
Nanga Serawai		✓		Mensuang/ Urok		✓	
Muara Kota		✓		Nanga Manokai/ Nanga Jenggonoi	✓	✓	
Mekar Sari		✓		Sungai Tambun/ Nanga Kepingoi	✓	✓	

Ground-truthing

Ground-truthing was carried out by verifying the land cover interpretation from satellite imagery during the pre-assessment phase. Moreover, potential HCV areas were also surveyed to identify the HCV attributes or elements according to the type of HCVs (e.g. HCV 1-3 (biodiversity), HCV 4 (environmental services), and HCV 5-6 (socio-cultural)).

Field data collection

Field data collections were carried out together with the field checking activities. The purpose of this activity is to verify the presence of HCV attributes/elements or clarify the existence of HCV areas that have been determined from the pre-assessment. Field data collection was conducted using preliminary data and information that has been enriched by additional information from participatory mapping and interview results. This activity focused on the HCV area map of pre-assessment analysis (the HCV areas potential map), as well as other sites within or around areas of assessment considered important for checking (eg checking the linkages of HCV 1-3 areas), comparing the RTE species inside and outside the assessment area, and checks the connectedness of catchment areas, erosion control areas, and river networks for HCV 4).

Threat analysis

The approach for threat assessment is using the 5S Framework and Participatory Conservation Planning issued by The Nature Conservancy (TNC). The threat analysis is done by comparing the decrease of conservation value and 'critical damage', due to pressure (symptoms or causes, such as population reduction), and threat sources (causes of pressure such as hunting, Stewart et al., 2008).

Stakeholder consultation

Information that emphasizes the presence of attributes or elements of HCVs is also collected through interviews with selected sources; ie local communities or company employees and key informants with knowledge and experience of natural resources in the area surrounding the assessment. The information collected includes the existence of HCVs in the present and the past. The results of these interviews are assessed as secondary data to be verified and validated through a triangulation process, in which the accuracy of the data will be checked by asking the same questions to different sources.

d. Public consultation

Public consultations during fieldwork are conducted through direct meetings and dialogue with community representatives (local or indigenous) as key informants, field managers, academics, NGOs, neighbouring companies, and relevant local government representatives.

e. Data analysis and HCV area mapping

The data collected then compiled and tabulated based on the observation area. In the preliminary phase, compilation and tabulation data are conducted separately for each assessment criteria (biodiversity, environmental services and socio-cultural aspects). Each area was created a list to show the presence of attributes or elements of HCVs that have been confirmed through field checks. This process is followed by in-depth analysis to strengthen justification of conclusions related to HCV attribute/elements findings in the assessment area, to delineate the entire HCV area.

The location coordinates of each HCV findings are mapped in a single work map, containing the information and description about the location. Similar field characters, in the case of HCVs 1-3 and HCV 5-6, might be similar land cover types, or ecosystems (such as primary forests, secondary forests, shrubs, lakes, rivers, and swamps). In the case of HCV 4, the character of the field is like areas with high steepness, river borders, flood-prone lowlands, open water bodies, or basins.

Furthermore, the area boundaries with similar field characters are digitized on the HCV area work maps. This digitization process is performed using a closed polygon. The boundary area on the map depicted by the closed polygon is hereinafter referred to as the indicative boundary of the HCV area.

2.3. Carbon and GHG Assessment

2.3.1. Dates of the assessment

Carbon and GHG Assessment can be divided into 2 based on the process of the assessement, namely carbon stock assessment and GHG assessment for new planting. Carbon stock assessment is referring to the forest inventory and land cover carbon stock assessment which is the element of HCS Approach Assessment and GHG Assessment for new planting. Field survey of the carbon stock assessment took place in September 2017 whereas the land cover carbon stock analysis and GHG assessment for new planting carried out later in September-December 2017.

2.3.2. Assessor and their credentials

Carbon and GHG Assessment was conducted by a team comprised of 9 experts. Details of the assessors and their credentials are provided in table below.

Table 12. Assessors of the Carbon and GHG Assessment and their credentials

No	Name	Assessment	Expertise/credentials
1	Pramitama Bayu Saputro	Land Cover Carbon Stock Assessment/forest inventory	GIS, Remote Sensing, Carbon Stock Assessment, Land Use Change Analysis
2	Ryan Karida Pratama		GIS, Remote Sensing, Carbon Stock Assessment, Land Use Change Analysis, Soil Study
3	Aryo A Condro		GIS, Remote Sensing, Carbon Stock Assessment, Land Use Change Analysis
4	Heidei Putra Hutama		GIS, Remote Sensing, Carbon Stock Assessment, Land Use Change Analysis, Soil Study
5	Catur Wibawa Praja		Carbon Stock Assessment, Vegetation Analysis, Plant Identification
6	M. Ahda Agung		Carbon Stock Assessment, Vegetation Analysis, Plant Identification
7	Tengku Haikal		GIS, Remote Sensing, Carbon Stock Assessment, Land Use Change Analysis, Soil Study
8	Priyo Dwi Utomo		GIS, Remote Sensing, Carbon Stock Assessment, Land Use Change Analysis, Soil Study
9	Bias Berlio Pradyatma	GHG Assessment for New Planting	Greenhouse Gas Calculator for New Development, GIS, Remote Sensing, Carbon Stock Assessment, HCS Approach Assessment

2.3.3. Methodology

Methodology used in the assessment can be divided into 2 based on the stage of the assessment, namely land cover carbon stock assessment and GHG assessment for new planting.

Carbon Stock Assessment

Carbon stock assessment used nested square plot to samples the land cover biomass in the field. The biomass sampling plot comprised of 4 sub-plots. Details of the sampling plots used in carbon stock assessment are provided in Figure 13 and Table 13. As much as 63 sampling plots within and around PT SHP concession were used in the assessment (Figure 14).
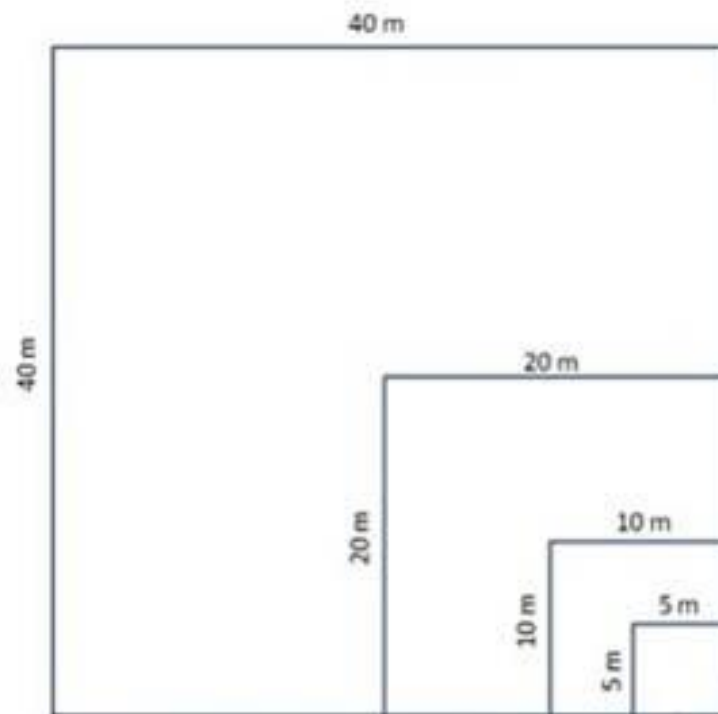
Figure 13. Nested square plot used in carbon stock assessment

Table 13. Details of tree DBH measured in each sub-plot

Sub-plot Size	Tree DBH to Measure
5 x 5 m^2	Bushes-Shrub and sapling vegetation stage with 5-10 cm of DBH
10 x 10 m^2	Thicket and pole vegetation stage with 10-20 cm of DBH
20 x 20 m^2	Thicket and tree with 20-35 cm of DBH
40 x 40 m^2	Trees with > 35 cm DBH

Biomass carbon stocks were calculated with DBH data collected from field sampling plots. The calculation process can be divided into 4 stages, namely (i) field data collection, (ii) plant identification, (iii) biomass calculation, and (iv) carbon calculation.

Field data collection gathered a set of data, namely visual verification of the land cover, DBH, and identification of the tree species. Verification of land cover in the sampling plot then was used to verify the land cover classification whereas the DBH and species identification were used for biomass calculation using species alometric model. Biomass values from the calculation then were converted into biomass carbon using fraction of 0.47 (carbon-biomass ratio according to the IPCC 2006).
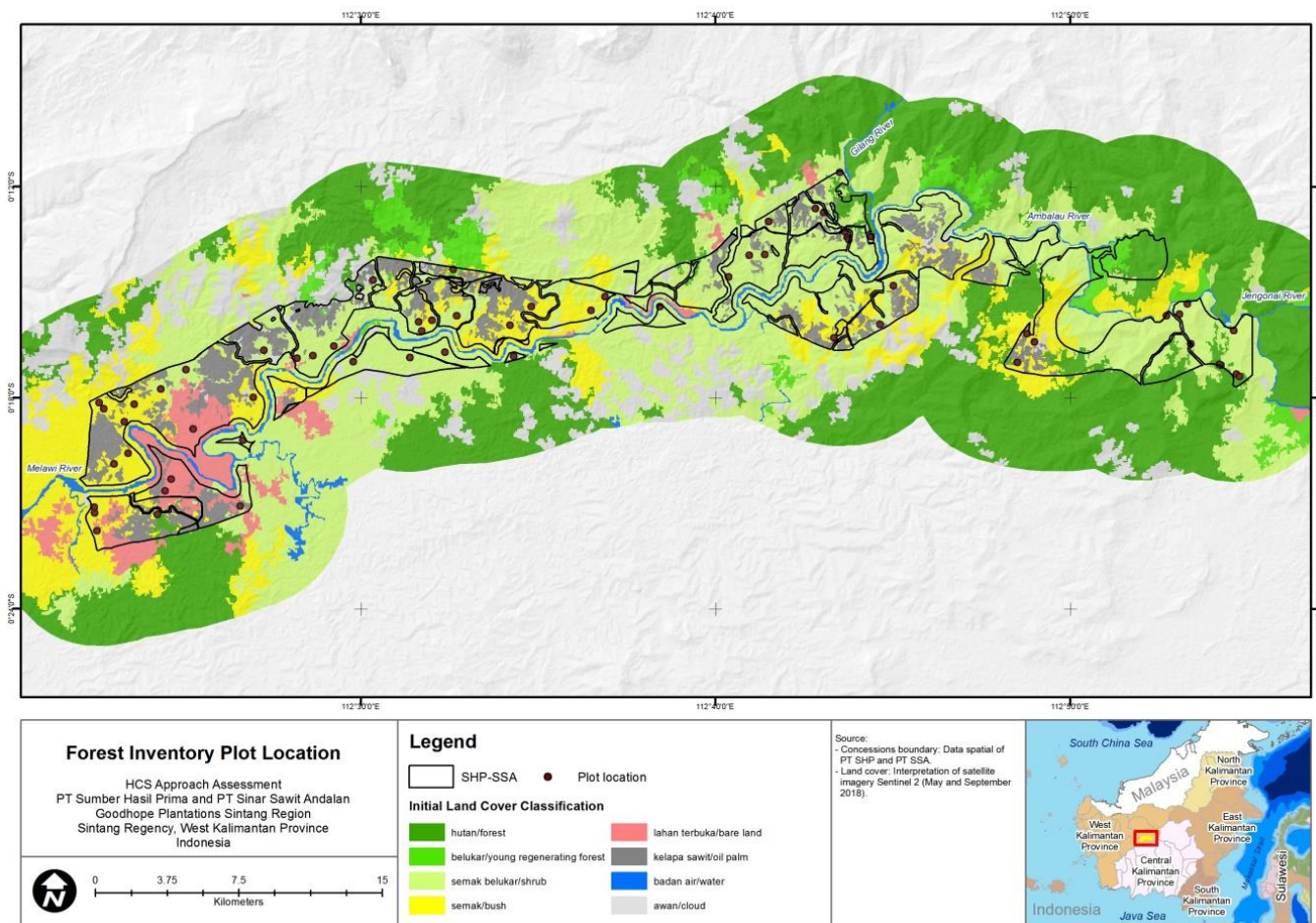
Figure 14. Map showing location of the carbon stock assessment sampling plots

GHG Assessment for New Planting

GHG calculation was carried out following the RSPO GHG Assessment Procedure for New Plantings (Version 3, 30th October 2016). There were 8 variables used in analysis using the RSPO New Development GHG Calculator. Table 14 presents list of the variables and source of the data.

Table 14. Variables used in the GHG assessment for new planting

No	Variable	Source
1	Land use change	Carbon stock assessment/forest inventory
2	FFB production	Company's existing plantation operation data
3	Field fuel	Company's existing plantation operation data
4	Emission from peat	Soil type mapping and spatial analysis
5	Fertilizer and N_2O	Company's existing plantation operation data
6	Sequestration from conservation area	Conservation area mapping and spatial analysis
7	Sequestration from oil palm crop growth	Default data from RSPO
8	Palm oil production in mill	Goodhope's operating mill data

2.4. Land Use Change Analysis

2.4.1. Dates of assessment

Land use change analysis (LUCA) in PT SHP carried out in August 2017. Analysis to identify non compliance land clearing and to calculate liabilities according to RaCP was prepared and the report was finally compiled after RSPO Review in 2018. Additional LUCA to identify compliance to completion of the RSPO NPP was carried out in December 2019 (at the same time of preparation and submission of NPP).

2.4.2. Assessors and their credentials

The LUCA of PT SHP was conducted by a team from Aksenta. List of the assesssors and their credentials are provided in table below.

Table 15. Assessors of LUCA and their credentials

Name	Expertise
Bias Berlio Pradyatma	Land Use Change Cover Analysis; involved in HCV Assessmnets since 2013
Ryan Karida Pratama	GIS and remote sensing, land use change cover analysis, involved in HCV assessment since 2013
T. Ade Fachlevi	Sociologist, Participatory Mapping, Social Liability, Social Analysisi on Natural Resources, Involved in HCV Assessmnet since 2014
Andri Novi Hendratno	Sociologist, Participatory Mapping, Social Liability, Social Analysisi on Natural Resources, Involved in HCV Assessmnet since 2008
Ahmad Arief Hilman	Sociologist, Participatory Mapping, Social Liability, Social Analysisi on Natural Resources, Involved in HCV Assessmnet since 2016
Ali Akbar Hutzi	Sociologist, Participatory Mapping, Social Liability, Social Analysisi on Natural Resources, Involved in HCV Assessmnet since 2016

2.4.3. Methodology

The LUCA of PT SHP was conducted following the LUCA Guidance in RSPO RaCP. In addition, LUCA of PT SHP aims to identify:

- Non compliance of land clearing prior to HCV Assessment
- Liabilities from the land clearing prior to HCV Assessment
- Compliance to the "stop work order" from RSPO complaints panel issued in 28 April 2017 until a new HCV assessment completed as required by the RSPO complaints panel
- Compliance to completion of the RSPO NPP

In order to fulfill the aforesaid purposes, several satellite imagery representing cut off dates used in the assessment were used as detailed in table below.

Table 16. Satellite imagery used

Cut-off date	Acquisition Date	Description of Satelite Images Used	Resolution	Cloud cover
November 1, 2005	August 14, 2005 & November 18, 2005	Landsat 5 TM,	30 m	3%
December 1, 2007	September 21, 2007	Landsat 5 TM,	30 m	5%
January 1, 2010	February 9, 2010 & June 1, 2010	Landsat 5 TM,	30 m	0%
After HCV areas identified	June 1, 2010 & August 12, 2010	Landsat 5 TM,	30 m	5%
May 9, 2014	April 17, 2014	Landsat 8 OLI	30 m	5%
After becoming RSPO member (December 2, 2014)	March 3, 2015	Landsat 8 OLI	30 m	>30%
After the management unit acquired (if relevant)	-	-	-	-
After company's stop work order issued	March 24, 2017 April 9, 2017	Landsat 8 OLI	30 m	30%
After HCV reassessment conducted	March 24, 2017 April 9, 2017	Landsat 8 OLI	30 m	30%
Latest satellite image used for ground truthing	March 24, 2017 April 9, 2017	Landsat 8 OLI	30 m	30%
December 28, 2017 (time of submission of the HCV reassessment report and field verification on obedience of the stop work order from RSPO)	November 19, 2017 and October 18, 2017	Landsat 8 OLI	30 m	5%
December 2019 Submission of the NPP	September 16, 2019	Sentinel 2	10m	<5%

Land cover analysis and ground-truthing was conducted according with the LUCA Guidance. Land cover classification was conducted using visual interpretation and on screen digitation. The classification then was verified with 65 samples from the field. Accuracy assessment shows that the classification is accurate (accuracy of 90.57%) and sufficient to be used for liability calculations.

Land use change occurred in the assessment periods were calssified into 2 categories, namely non-corporate land use change and corporate land use change. Categorization of each land use change

detected was following several criteria, including size and shape of clearance and changes of land cover into oil palm and or other plantation infrastructure. The categorizations were also verified with field verification, document review, and interview with relevant communities. Only corporate land clearance will be identified as potential of non compliance.

Liability calculations were carried out in accordance with the LUCA Guidance and RSPO RaCP. Environmental remediation liabilities was assessed based on the relevant environmental physical features in PT SHP concession (topography/land slope classification and river network) using GIS analysis and field verification, while social remediation liabilities was assessed through social liability study involving engagements with the communities and GIS analysis. Compensation liability calculation was carried out referring to the vegetation coefficient as per the LUCA Guidance and RSPO RaCP (Figure 15).

2.11. Vegetation coefficient

Describe the method used and process conducted to determine and categorize the land cover class into vegetation coefficient

Land Cover	Vegetation Coefficient
Primary forest	1
Secondary forest	0.7
Old shrub	0.7
Agroforestry/mixed forest/non-monoculture rubber	0.4
Bush/old shrub	0
Barren land	0
Monoculture/plantation/agriculture/developed land	0

Note: Referring to RSPO Remediation and Compensation Procedure Related to Land Clearance Without Prior to High Conservation Value (HCV) Assessment of November 12, 2015 version (RaCP 2015). Page: 11

The result of image classification was verified through ground truthing. Vegetation structure and composition of every land cover was checked and documented during field verification, every land cover then describe according to the key interpretation and field condition and finally classified into vegetation coefficient after the description meet the requirement of RaCP vegetation coefficient definition.

Figure 15. Vegetation coefficients per land cover class

2.5. Soil and Topography Identification

Three assessments covering the identification of soil and topography has been carried out in PT SHP concession. The first was a survey conducted by internal team of PT SHP in 21 June-20July 2007 as part of feasibility study of proposed oil palm plantation development. The second was carried out by CV Bina Mitra Sejati in December 2010 as part of EIA/AMDAL. The third was carried out by the team of HCV and HCS Approach assessments in 2017. Soil and topography identification in this NPP is referring to the survey by HCV and HCS Approach assessments team considering that it is the most up to date information.

2.5.1. Dates of the assessment

See Section 2.2.1.

2.5.2. Assessors and their credentials

See Section 2.2.1.

2.5.3. Methodology

Soil identification was referring to the land system in RePPProT (1986) Map and topographic features namely slope classification and elevation classification were derived with analysis using Digital Elevation Model SRTM (30m). Field verifications were carried out during the field visit of the HCV and HCS Approach Assessment.

2.6. FPIC Study

Studies focusing on the FPIC of PT SHP have been carried out twice. The first was a review on the implementation of FPIC conducted by LINKS. The study reviewed compliance of the company's FPIC implementation against (i) the RSPO FPIC Guidelines (2008) and (ii) IFC's Performance Standards. Using several activities (i.e. document review, in-depth interviews, and participatory focus group discussions), the study reviewed 5 indicators as described below:

1. Community participation through the involvement of their representatives (stakeholder engagement).
2. Delivery of information to the community concerning on presence and operation of the company.
3. Process of negotiation and land acquisition.
4. Implementation of adequate social and environmental impact assessment, including sufficient transfer of knowledge to local communities.
5. Procedures for resolving complaints and conflicts.

The second study was conducted as part of the HCV and HCS Approach assessments by the assessment team (see Section 2.2.2). The second FPIC study was carried out with several activities including document review, engagements with the communities, participatory mapping, and the final consultation of the assessment.

3. SUMMARY OF FINDINGS

3.1. SEI Assessment

3.1.1. Environmental impact assessment

EIA/AMDAL of PT SHP found that there each phase of the operational activities of the company would cause impacts to its environment including (i) physical-chemical aspect, (ii) biological aspect, and (iii) social aspect. Findings and analysis of the EIA is presented in a matrix as shown in Table 17.

Table 17. Matrix of environmental impact analysis

Environment's component impacted and Potential Impact	Preparation Process	Activity Socialization	Deliniation and Land Procurement	Labour Acceptence and Mobilization	Mobilization of Equipmenmt and	Land Clearing	Establishment of	Nurserey and Planting	Soil Conservation and	Planting Palm Oil	Maintanence of	Social Responsibility	Maintanence of Mature	Harvesting	Transportation of FFB	Returning of Infrastructure Asset	Termination of Employment	Remarks for Negative-Positive Impact
I. PHYSICAL-CHEMICAL																		
1. Decline of Air Quality					4/5	3							3/1	3	2/3			NO Impact
2. Noise Increment						3												NO Impact
3. Increase in erosion rate and sedimentation						1	1/4	2/2	2/4									Negative Impact (2 Scale)
4. Decrease in surface water quality						1	1/5	1/4	1		1/5		1/5					Negative Impact (1 Scale)
5. Decrease in ground water quality						1	1/5				1/5		1/5					Negative Impact (1 Scale)
6. Change in Physical-Chemical and Soil Fertile											4/5		4/5					Positive Impact (2 Scale)
7. Potential Impact in Forest Fire and Land Fire						1												Negative Impact (2 Scale)
8. Disturbed in Forest Ecosystem Function						1												Negative Impact (2 Scale)
II. BIOLOGY																		
9. Declining in Abundance and Biodiversity of Flora-Fauna						2/3	2/2	2/5										Negative Impact (1 Scale)
10. Declining in Abundance and Diversity of Water Biota						2/3	2/5	2/5	2		1/5		1/5					Negative Impact (1 Scale)
III. SOCIAL																		
11. Community positive/negative perception would emerge		4		1/5								2						NO Impact
12. Community concern				2/5	3	2/4		1/5	2		2/5	2	2/5					Negative Impact (1 Scale)
13. Loss of Income generation			4/1	5/5	4/1		4/1	5/5		4	5/5	4	5/5	5/5			2/5	Positive Impact (1 Scale)

Item																			Impact
14. Nutritional health Status													5						Positive Impact (3 Scale)
15. Decline on Sanitation Environment													5						Positive Impact (2 Scale)
16. Local Revenue of Government				4/5	4/5	4/3	4/1							4					NO Impact
17. Work accident				1/1	3/4	4	4		4	1		4/3	4		1/2				Negative Impact (2 Scale)
18. Social Conflict			2/5							1		1				3/5			Negative Impact (2 Scale)
19. Public Health Disturbance				1/1		1			1		1	1							Negative Impact (2 Scale)

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3.1.2. Social impact assessment

Social impact assessment identified several aspects including the key stakeholders related to the company's activities and social issues occurred in the social environment of the company. Based on those aspects, the assessment was then formalized social impact classifications based on its risk categories. In addition, impacts to the internal social stakeholders were also identified.

a. Stakeholders

There are 11 key stakeholders related with the activities of PT SHP. Table 18 presents roles and perceptions of the key stakeholders in relation with activities of PT SHP.

Table 18. List of stakeholders related with PT SHP activities

No	Stakeholder	Role	Perception
1	Management of the companies	- To plan and implement activities according to the task and function of the companies and according to the law and regulations, and to be responsible on the management of the partnership scheme plantation. - Implementer of the management and monitoring of the environment and social aspects of the oil palm plantation. - Participatory mapping. - Address land claim/land compensation (ganti rugi lahan)/crops compensation (ganti rugi tanam tumbuh). - Address the social impact around the oil palm plantation. - Implementation of the sustainable CSR program.	- Expect support from the communities to ensure that the companies' operational activity can be implemented smoothly. - Participatory mapping with involvement of the community. - Completely solving land claim issue without any problem. - Implementation of the CSR program according to the needs of the communities.
2	Workers of the companies (local and immigrant)	- To implement companies' operational activities according to its task and function, commitments, and according to the law and regulations.	- Expect to receive proper job according to expectations and willing. - Expect that the companies to be able to improve the prosperity of the workers.
3	Government of the Districts (Ambalau and Serawai)	- To implement its policies, and the official administrations, to provide public service, and to support the coordination with provincial government. - Partner of the companies in coordinating activities between villages. - Partner/intermediary of the companies in affairs with district and regent government.	- Will support the presence and operations of the companies in terms of supporting improvement of the communities' economy. - Expect contribution from the companies in village development and community empowerment through continuously implementation of the CSR program.
4	Governments and officials of the villages and hamlets (*Desa* and *Dusun*)	- Party that have significant role in the development of oil palm plantation in its administrative area, direct involvement in administrative affairs especially in land tenure/ownership. - Party that have significant role in presence of business investment and community mobilization. - Party that have capacity as mediator and facilitator for the parties involved in any problem/issue.	- Will support the presence and operations of the companies. - Involvement of the community figures or the village officials in implementation of the environmental monitoring. - Expect the companies to support the improvement of the communities' economy. - Expect addition of the quota of labor employment from the local

No	Stakeholder	Role	Perception
		- Partner of the companies in administrative affairs in village level. - Support socialization of the programs for community (CSR/partnership scheme). - Community mobilization.	villages. - Expect CSR program for community members that have limited access and assets. - Expect continuously implementation of CSR programs. - Expect re-socialization of the companies' concession area.
5	Chief of the Dayak Customary Council (*Temenggung Adat* Dayak)	- Party that have capacity to provide mediation between companies and community members which have objections to the companies operation. - Party that have capacity to provide mediation and facilitation between companies and community member which involved in environmental or social issue. - Party that have capacity to provide mediation and facilitation between companies and land owners.	- Will support the presence and operations of the companies. - Expect partnership scheme plantation for the community. - Expect the companies to prioritize the local community as source of labor. - Expect support from the companies to repair village roads. - Acknowledge the companies to comply with the customary law and regulation. - Expect MoU between the companies and the villages for implementation of the CSR program.
6	Figures in the communities, including: - Figures of the communities - Religious Leaders - Figures of the youth - Figures of the women - Teachers - Agricultural Instructor (*Penyuluh Pertanian*) - Medics	- Party that have capacity to influence the perception, attitude, and act of the community in general. It includes any matter that is in line with sustainability of the production process and the opposite. - Party that has capacity as mediator and facilitator in regards with community land ownership. - Party that has capacity as mediator and facilitator between the companies and village government officials. - Party that has capacity as mediator and facilitator in between of the community groups that potentially conflicts with each other.	- Will support the presence and operations of the companies. - Expect pre-coordination (verbal or via letter) from the companies prior to any meetings organized by the companies. - Expect support from companies' CSR program for road service, lightings, clean water facility, scholarship, contract teacher support, etc.
7	Local entrepreneur, including: - Labour Service Contractor - Commodity traders/collectors - Transportation Service Provider	- Party that provide any services that are not provided by the companies. - Party that support the availability and quality of facilities and infrastructure that is necessary for the companies. - Party that have capacity to influence the opinion of the community about the companies.	- Expecting opportunities to be able to partner with the companies in continuity.
8	- Farmers - Independent small holder oil palm farmers - Partnership scheme oil palm farmers	- Party that have the ownership of the lands. - Party that is affected by the companies' operations which includes farmers and oil palm farmers that are able to transport its FFB to companies' POM.	- Expecting that there will be partnership system for receiving FFB from the farmers. - Expecting that the companies to be able to receive all of the FFB from the community farmers.
9	Community in general, including: - Local community - Immigrant	- Partners of the companies in the oil palm plantation management. - Partners of the companies as contractors. - Main partner of the companies in as source of labor.	- Expecting sustainable mutually beneficial partnership. - Expecting to be able to be permanent workers in the companies. - Expecting CSR programs for the communities and the

No	Stakeholder	Role	Perception
			development of the villages continuously.
10	- Officials of the Partnership Scheme Cooperative - Officials of the Independent Cooperative	- Party that have capacity in coordination and management of the partnership system between the cooperative and the member farmers. - Party that have capacity to help the companies to manage the administration of the partnership scheme plantation.	- Expecting transparency from the companies to the partnership scheme cooperative officials. - Expecting fair management between the core plantation and partnership scheme plantation.
11	- Figures of the media - Figures of the community organization/NGO	- Partner of the companies in information socialization. - Partner of the companies as consultancy service provider.	- Expecting mutually beneficial cooperation from the companies.

b. Social issues and risk factor classification

The SIA identified risk factors from strategic issues occured in the area and impacts from the operational activities of the company. Identified impacts will be used as basis to prepare mitigation plan, whereas risk factors will be used as guidance on how the company can implement their social management to avoid potential social problems such as conflicts, loss of capitals, etc.

Strategic issues can be defined as the occurring and/or potential problem in the future. Identification of the strategic issues is useful as the guidance to implement social management to avoid more social problems and to improve the quality of social life by gradually addressing the issues.

Based on each of five resources in sustainable livelihood approach, and CSR Program; the assessment identified occurring issues and analyzes the risk factors of the each issue. Below is summary of the identified strategic issues and risk factor classification.

Table 19. Social issues and risk factor classification

Source	Issues	Risk factor classification
Natural resources	Decreasing of the community agriculture activities (slash and burn agriculture)	Medium
	Legal basis of land ownership	High
	Availability of clean water	High
Human resources	Lack of education	High
	Lack of counselling	Medium
	Unemployment	Medium
Economic resources	Declining of rubber price	Medium
	Lack of smallholder's capitals to develop oil palm plantation	Medium
	Lack of contribution from the cooperative union	High
Social cultural resources	Division of the district (pemekaran kecamatan)	Low
	Lack of assistance from the village institution	Medium
Infrastructure and accessibility resources	Poor road access	High
	Limited facilities for lightings	Medium
	Limited accessibility to health facility	Medium
CSR program	Community does not know the main priority of CSR program for each village.	Medium
	Community has not get CSR program since 2015/2016	Medium
	Lack of company's response to community's proposal for CSR program	Medium
	Lack of monitoring and evaluation of CSR program	High

3.2. HCV Assessment

The HCV Assessment report was first submitted to the HCVRN for evaluation by Dwi Rahmad Muhmataman (ALS15022DM) on 28 December 2017. The report then was published as satisfactory from the evaluation by HCVRN QP on 28 January 2019.

HCV assessment identified HCV 1, HCV 2, HCV 3, HCV 4, HCV 5, and HCV 6 in the scope of assessment area (within and around the boundary of PT SHP and PT SSA – Goodhope Asia Holdings Ltd., Sintang Region). HCV Area consists of secondary forests, shrubs, hilly terrain, rivers and riparians, springs, sacred areas (location of old village locally known as "Kelokak" of "Kolohka"), and old graves. Total of indicative HCV area is 1,791.54 ha with HCVA and HCVMA areas of 3,181.64 ha, or 12.72% of the total area of Goodhope Sintang Region. Specifically within PT SHP concession, there is 585.3 ha of HCV Area (858.0 ha including HCVA and HCVMA).

Link to the HCV Public Summary Report:

https://hcvnetwork.org/reports/hcv-goodhope-asia-holdings-ltd-sintang-region-indonesia/

3.2.1. Landscape context

The landscape boundaries of the assessment were derived from the aggregation of landscape boundaries of biodiversity, environmental and social service studies. The biodiversity assessment landscape boundary is determined based on the presence of natural ecosystems and/or sites with potential for wildlife habitats, especially areas with connectivity with HCV potential within the assessment areas; if these areas are not encountered, then we use a limit of 1 km from the boundary of the assessment area. The landscape boundary for environmental service assessment is determined based on watershed or sub-basin boundaries covering the assessment area. The boundaries of social assessment are defined by the smallest administrative boundaries covering the assessment area; ie the village. If the village boundary is unavailable or invalid, then we use subdistrict boundaries.

3.2.2. Region status

According to Forest Area of West Kalimantan Province Map, the study area is located in non-forestry cultivation area (KBNK) or Other Area of Use (APL) (Figure 4). The Limited Forest Production area flanking the northern and southern parts and partially the assessment area (3rd Division of PT SHP) bordering the protected forest area in the north. The Conservation Area of Bukit Baka Bukit Raya National Park (TNBBBR) is 27 km in the southern of the assessment area.

Based on the Indicative Map of New Revocation Permit (PIPPIB) Revision XI (Figure 5), the assessment area is outside the moratorium area. Meanwhile, according to Spatial Provincial (RTRWP) of West Kalimantan (Figure 3), the assessment area is located in the area reserved for plantation development.

3.2.3. Physical environment

According to rainfall measurement data, the averages of annually rainfall in the assessment area are range 2.899 – 3.026 mm with the number of rainy days about 133-184 days.

Rainfall distribution follows equatorial pattern that has 2 peak rainfall in a year; ie in April-May and November-December. The peak of the dry season occurs in August-September. Further to east of the assessment area, the number of rain in the dry season is more frequent. The amount of rainfall in the dry season is averaged greater than 100 mm. This condition shows that throughout the year the assessment area is relatively wet.

Table 20. Rainfall records in the assessment area

Avarage Rainfall measurement*	Assessment area	
	PT SHP	PT SSA
Annually	2.899 mm	3.026 mm
The number of rainy days	133 days	184 days
The amount of rainfall at the peak of the dry season	154 mm (June)	147 mm (September)
The amount of rainfall at the peak of the rainy season	291 mm (May) 411 mm (November)	366 mm (Mayi) 403 mm (November)

According to the land system map (RePPProT, 1989) (Figure 6); the dominant soil great groups in the assessment area are Tropudults (podsolic), Paleudults (latosols) and Dystropepts (Kambisol). In general, soil erodibility is moderate and soil texture[1] varies from dusty clay to clay. Based on the Soil Hydrologic Group[2] (SHG), this fine-grained land is classified as SHG-D. The softer the soil texture then the infiltration rate is slower. Therefore, soils that include SHG-D have greater potential for surface runoff.

The study area is located in the Upper Melawi sub-basin, lying along the banks of Melawi River. The sub-basin area of Melawi upstream affects the hydrological condition of the assessment area is about 0.91 million ha. The major rivers located in region I are Melawi River, Melaku, Metibar, Demu, Tempe, Melawi Hulu, Ambalau, Serawai, Lekawai and Mentatai (Table 21). Increasing water levels of the Melawi River cause a high flood potential in the assessment area. This is because of the water wall effect from Melawi River so the water is concentrated around the estuaries of the river. The complete rivers profile is presented in Sub Chapter of the HCV 4 Presence.

Table 21. Rivers in the assessment area

Rivers' width (m)	Rivers in the assessment area	
	PT SHP	PT SSA
< 5	Ipak, Mantun, Gurung, Bedara, Bedaha, Begori, Prae, Nalai, Ai, Mengori, Hape, Bakung, Ruwe Pala, Mentatui, Bomban, Dungo, Lohpati, Silat, Baru	Ruan, Sengalang, Kembaung, Duhun, Kantuk, Nango, Runuk, Ombak, Penahaya Abang, Penahaya Apuh, Penahaya Riyuk, Penahaya Maning, San, Kolomahan
5-10	Anak Sungai Tempe, Ruwe, Melape, Kensae Doho, Nyangai, Toras, Mendung, Bere Katingan	Kesange Besar, Mentalan, Penahaya Kehukup, Tanjung Keting, Tahtok, Sahpo, Anak Sungai Lebane, Anak Sungai Sakai
10-20	Melaku, Sengkahawai, Mentibar, Pengolon, Demu, Nalai Penahan, Tempe, Mentatai*, Dahange, Kensae, Pae, Kemangai	Mokile, Tomoluse Komuloi, Penahaya, Lebane

[1] Result from Soil analysis from AMDAL (2010)

[2] *Soil Hidrological Group* or SHG is grouping of soil hydrological characteristics based on potential infiltration rates and surface runoff. Rawls at al. (1982) classifies various soil textures into 4 SHG. SHG A has a high infiltration rate, sandy ground texture & loamy sand. SHG B has a moderate rate of infiltration, sandy loam & loam soil texture. SHG C has a slow infiltration rate, ground texture silt loam & sandy clay loam, SHG D has very slow infiltration rate, clay loam soil texture; silty clay loam; sandy clay; silty clay; and clay

Rivers' width (m)	Rivers in the assessment area	
	PT SHP	PT SSA
20-40	-	Tomoluse Ngotouk, Biyai, Lekawai*
40-80	-	Ambalau

The study area located in the lowlands with land elevation ranging from 46 to 398 m above sea level. About 50% of the assessment area has a land elevation of <200 m asl (Figure 8). The topographic condition of the study area is undulating to rolling in PT SHP and rolling to hilly in PT SSA (Table 22). Very steep slopes (> 40%) are found in PT SSA areas, such as Korong Sudiron, Topilih, Duhung, Tambun and Puak Nyangon (Figure 7). The hilly area in PT SHP area is outside the assessment area (Bukit Boluh). These hills are important water catchments for rivers in the assessment area. In addition, the hills also functioned as a steep slope protective area and erosion control[3].

Table 22. Topography in the assessment area

Topographic and Elevation	Assessment area	
	SHP	SSA
Topography	*Undulating-Rolling*	*Roling-Hilly*
Elevation	49-284 m dpl	46-398 m asl
slope > 40%	-	Korong Sudiron, Topilih, Duhung, Tambun dan Puak Nyangon

According to the RePPProT land system map (1989), the assessment area has three land systems; Teweh (TWH), Maput (MPT) and Pendreh (PDH). The PDH land system is only available in PT SSA, whereas the TWH and MPT land systems are located in PT SHP and SSA (Figure 6). This land system has sandstone & shale lithology; conglomerate; and mudstone. The PDH land system has mountains landform with more than 60o slope. MPT land is a form of hills with slope 41-60o. For the TWH land system, the plains form with slope 16-25o. The potential HCV presence of environmental services in the PDH land system is relatively high compared to other land systems, depends on the factual land cover conditions.

3.2.4. Socio-cultural aspect

According to the map from Summer Institute of Linguistics International (Figure 10), indigenous peoples in the assesment area comprise of Dayak Uud Danum and Dayak Keninjal. The team found that the original community are consists of Dayak Uud Danum, Dayak Melahui, Dayak Limbai, Dayak Kubin and Malay. The majority of Dayak people are Catholic, only a small part still adheres to traditional beliefs, while the majority Malays are mostly Muslim.

Since the 1980s, the logging companies (HPH) existence such as PT Benua Indah, PT Sari Bumi Kusuma and PT Barito Pacific Timber have had impacted on significant migration in the region. Some tribes come from various regions in Indonesia, including Java, China, Sunda, Madura, Batak and Aceh. Some migrants settled in this area due to marital factors with local communities.

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[3] This depends on the land cover in the area. Hilly areas with potential HCV value are hills with forest cover, agroforest, or non-degraded old shrub

3.2.5. Findings

The HCVs found in the assessment area are HCV 1, HCV2, HCV 3, HCV 4, HCV 5 and HCV 6. The HCV 1 element is associated with populations of several endemic or RTE species including white-bearded Gibbon (*Hylobates albibarbis*), White-faced Langur (*Presbityis frontata*) Red Langur (*Presbytis rubicunda*), Dusky Munia (*Lonchura fuscans*), Borneo Durian (*Durio kutejensis*), and Keruing (*Dipterocarpus caudiferus*).

An area of shrubland adjacent to the the Bukit Penggur Protection Forest to the north of the concession has been identified as an important HCV2 area, serving as a buffer zone and connecting corridor for the protected forest. Patches of lowland dipterocarp forests in the hills have been identified as HCV3 since the presence of this forest has reduced drastically due to past anthropogenic activities. Although there is no primary forest in the assessment area there are secondary forests with dipterocarp species and threatened ecosystem types; Pedreh (PDH), Maput (MPT), Teweh (TWH), and Tambera (TBA). HCV 4 element is linked to water control as an environmental service, while the HCV 5 element is found in water sources and the use of Non-Timber Forest Products (NTFP), and HCV 6 elements are related to historical, cultural, religious and other values. See the details in table below for the HCV presence.

Table 23. Summary of findings and justifications of the HCV Assessment

		Description summary and Justification		
HCV	Definition	Presence	Potential	Absence
1	Concentrations of biological diversity including endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.	Population of endemic species, and rare, threatened or endangered species (RTE), *Lutung Merah* (*Presbytis rubicunda*), *Lutung Dahi-putih* (*Presbytis frontata*), Owa (*Hylobates albibarbis*); and other dipterocarpa	Orang utan Kalimantan (*Pongo pygmaeus*)	-
2	Landscape-level ecosystems and mosaics. Intact forest landscapes and 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.	The landscapes of study area are fields or community gardens, outside and far from the IFL. The study landscape has been degraded and fragmented, but to the north of the Goodhope Sintang study area there is a shrub area directly adjacent to the Bukit Penggur Protection Forest so that it becomes a buffer and connecting corridor between the study area and the Bukit Penggur HL which still has good cover.	-	

HCV	Definition	Description summary and Justification		
		Presence	Potential	Absence
3	Rare, threatened, or endangered ecosystems, habitats or refugia.	There are mixed or hill dipterocarp forest	-	-
4	Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.	There are important areas for the hydrological arrangement of the region, which consists of hills, rivers, river banks; and springs	-	-
5	Sites and resources fundamental for satisfying the necessities of local communities or indigenous peoples (for livelihoods, health, nutrition, water, etc...), identified through engagement with these communities or indigenous peoples.	There are important areas for the basic needs of local communities; rivers and springs as water sources; and the river as a source of fish	-	-
6	Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples.	There are important area as the cultural identity of local communities; historical graves and sites with religious values /sacred for the Dayak community	-	-

a. HCV 1 findings

HCV 1 includes significant biodiversity concentrations, recognized as unique or exceptional compared to other areas in West Kalimantan and Indonesia, based on priority frameworks or field assessments and consultations. Following the HCV Network Common Guidance for High Conservation Values Identification, the team assessed whether the assessment areas could be considered as potentially supporting national species concentrations, based on field surveys, literature reviews and expert opinions.

According to field studies, field observations and GIS measurements, there are indications of HCV 1 in the designated areas as presented in table below.

Table 24. Indications of HCV 1 criteria

Situation indicated the presence of HCV 1	Presence indication
Richness, diversity, or high species uniqueness	X
Population of endemic species or RTE (rare, threatened or endangered).	✓
Important population or endemic species or many RTE individuals.	X

Situation indicated the presence of HCV 1	Presence indication
Small populations of endemic or RTE species, where national, regional or global survival of the species is critically depending on related areas	✓
Sites with significant RTE species richness	X
Important variants, sub-species or genetic varieties	X

Goodhope Sintang with an area of 25,014 ha, is a landscape habitat for various flora and fauna. The results of the pre-assessment indicate that the assessment area is outside or not adjacent to the conservation and biodiversity concentration area. Local people consistently hunt wildlife. Land clearing for shifting cultivation is still ongoing. However, RTE or protected species in the assessment area were documented.

Flora and fauna species that have been confirmed likely to exist in the area are 371 species, with details of 230 flora species from 55 families and 142 fauna species grouped into 59 families consisting of 35 species of mammals (17 families), 90 species of birds (32 families), and 17 species of reptiles (10 families). Of these there are 8 endemic species, 26 RTE species (IUCN Red-List), 6 CITES Appendix I species, 49 CITES Appendix II species and 46 protected species

Biodiversity in the assessment area in comparison with the nearby conservation area of Gunung Palung National Park (total area of 90,000 ha comprising 883 plant species, 134 species of mammals, 202 bird species, and 39 species of amphibians), has a higher uniqueness value (https://yayasanpalung.wordpress.com/orangutan-di-gunung-palung).

Table 25. Number of species identified by groups and conservation status

Group	Species Number	Endemic	IUCN			CITES		Protected
			CR	EN	VU	App. I	App. II	
Plant	230	3	0	1	4	0	17	3
Mammal	35	4	2	1	12	6	11	18
Bird	90	1	0	0	1	0	14	22
Reptile	17	0	0	1	4	0	7	2
	372	**8**	**2**	**3**	**21**	**6**	**49**	**45**

Based on the identification results, species found; both flora and fauna; there are species included in the category of endemic species or RTE, in which protected by the Law of the Republic of Indonesia (UU RI) also by international regulations such as IUCN and CITES. Endemic tree species found in the assesment area include Pekawai (*Durio kutejensis*) and Orah/ Keruing bukit (*Dipterocarpus caudiferus*). Endemic mammal species include the Red Langur (*Presbytis rubicunda*), White-faced Langur (*Presbytis frontata*), and Bornean White-bearded Gibbon (*Hylobates albibarbis*), while endemic birds include the Bondol Kalimantan (*Lonchura fuscans*).

The Bornean Orangutan (*Pongo pygmaeus*) which has a critical status (CR) according to the IUCN is potentially found in the study area. In total there are 26 species of flora and fauna included in the RTE category found in the region: 5 plant species, 15 mammal species, 1 bird species and 5 reptile species. Types of flora and fauna that enter CITES Appendix is 54 species (App I is 5 species and App II is 49 species), and 45 species are protected by Indonesian Law. A complete list of species including RTE species, categorized as CITES, and protected by the Indonesian Law are presented in Table 13 and Table 14.

Protected species (RTE) are often found in areas with relatively good forest cover or thicket with a low level of disturbance as their main habitat. However, there are protected bird species that are seen in settlements and oil palm plantations, such as the Elangus mouse species (*Elanus caerulus*), Kipasan belang (*Rhipidura javanica*), and honey Bird species. This type of bird is a type that does not require specific habitat and is common in all areas.

Table 26. Plant species identified in the assessment

| No | Families | Scientific name | Distribution | STATUS | | |
				IUCN	CITES	UU RI
1	Malvaceae	*Durio kutejensis*	E	VU		D
2	Dipterocarpaceae	*Dipterocarpus crinitus*		EN		
3	Dipterocarpaceae	*Shorea fallax*		VU		
4	Dipterocarpaceae	*Shorea macrophylla*	E	VU		
5	Dipterocarpaceae	*Dipterocarpus caudiferus*	E			
6	Lauraceae	*Eusideroxylon zwageri*		VU		D
7	Orchidaceae	*Acriopsis liliifolia*			App II	
8	Orchidaceae	*Agrostophyllum elongatum*			App II	
9	Orchidaceae	*Appendicula alba*			App II	
10	Orchidaceae	*Arundina graminifolia*			App II	
11	Orchidaceae	*Bulbophyllum capitatum*			App II	
12	Orchidaceae	*Bulbophyllum cernuum*			App II	
13	Orchidaceae	*Bulbophyllum echinolabium*			App II	
14	Orchidaceae	*Ceratostylis capitata*			App II	
15	Orchidaceae	*Dendrobium acaciifolium*			App II	
16	Orchidaceae	*Dendrobium acianthum*			App II	
17	Orchidaceae	*Dendrobium crumenatum*			App II	
18	Orchidaceae	*Dendrobium heterocarpum*			App II	
19	Orchidaceae	*Dendrobium mutabile*			App II	
20	Orchidaceae	*Grammatophyllum speciosum*			App II	D
21	Orchidaceae	*Macodes petola*			App II	D
22	Orchidaceae	*Pinalia floribunda*			App II	
23	Orchidaceae	*Spathoglottis aurea*			App II	D
24	Orchidaceae	*Spathoglottis plicata*			App II	

Data Source: Aksenta Team Survey, July 2017

Note: *) The English name is based on the commercial name of hard and medium quality wood trees

E = Endemic Kalimantan; IUCN (2017): CR = Critical, EN = Genting, VU = Vulnerable; CITES: App I = CITES Appendix I, App II = CITES Appendix II;

D = Protected under Indonesian Law (RI Law No. 4 of 1990 and PP No. 7 of 1999)

A = Protected based on Minister of Agriculture Decree No. 54 / Kpts / Um / 2/1972 dated February 5, 1972,

B = Protected above 50 cm (DBH) according to Minister of Forestry Decree No. 261 / Kpts-IV / 1990

Table 27. Mammal, bird, and reptile species identified in the assessment

| NO | FAMILIES | SCIENTIFIC NAME | INDONESIAN NAME | ENDEMIK / MIGRAN | STATUS KONSERVASI | | | KET |
					IUCN	CITES	UU RI	
A.	**Mamalia**							
1	Tupaiidae	*Tupaia glis*	Tupai Akar		LC	App II		L
2	Lorisidae	*Nycticebus coucang*	Kukang Bukang		VU	App I	D	In
3	Tarsiidae	*Tarsius bancanus*	Krabuku Ingkat		VU	App II	D	In
4	Cercopithecidae	*Presbytis rubicunda*	Lutung Merah	E	LC	App II	D	In

NO	FAMILIES	SCIENTIFIC NAME	INDONESIAN NAME	ENDEMIK / MIGRAN	STATUS KONSERVASI			KET
					IUCN	CITES	UU RI	
5	Cercopithecidae	*Presbytis frontata*	Lutung Dahi-Putih	E	VU	App II	D	L
6	Cercopithecidae	*Macaca fascicularis*	Monyet-Ekor Panjang		LC	App II		In
7	Cercopithecidae	*Macaca nemestrina*	Monyet Beruk		VU	App II		L
8	Hylobatidae	*Hylobates albibarbis*	Owa Ungko	E	EN	App I	D	In
9	Manidae	*Manis javanica*	Trenggiling Peusing		CR	App I	D	In
10	Hystricidae	*Hystrix brachyura*	Landak Raya		LC		D	In
11	Ursidae	*Helarctos malayanus*	Beruang Madu		VU	App I	D	In
12	Mustelidae	*Mydaus javanensis*	Teledu Sigung		LC		D	In
13	Mustelidae	*Aonyx cinerea*	Sero Ambrang		VU	App II		In
14	Viverridae	*Prionodon linsang*	Linsang Linsang		LC	App II	D	In
15	Viverridae	*Arctictis binturong*	Binturung		VU	App III	D	In
16	Viverridae	*Hemigalus derbyanus*	Musang Belang		VU	App II		In
17	Felidae	*Neofelis diardi*	Macan Dahan		VU	App I	D	In
18	Felidae	*Pardofelis marmorata*	Kucing Batu		VU	App I	D	In
19	Felidae	*Prionailurus bengalensis*	Kucing Kuwuk		LC	App II	D	L
20	Suidae	*Sus barbatus*	Babi Berjenggot		VU			In
21	Tragulidae	*Tragulus javanicus*	Pelanduk Kancil		LC		D	In
22	Tragulidae	*Tragulus napu*	Pelanduk Napu		LC		D	In
23	Cervidae	*Muntiacus muntjak*	Kijang Muncak		LC		D	In
24	Cervidae	*Muntiacus atherodes*	Kijang Kuning		LC			In
25	Cervidae	*Cervus unicolor*	Rusa Sambar		VU		D	In
26	Hominidae	*Pongo pygmaeus*	Orangutan Kalimantan	E	CR	App I	D	Pot
B.	**Burung**							
1	Ardeidae	*Egretta garzetta*	Kuntul Kecil	<>	LC		D	L
2	Accipitridae	*Pernis ptilorhynchus*	Sikepmadu Asia	<	LC	App II	D	L
3	Accipitridae	*Elanus caeruleus*	Elang Tikus	<G	LC	App II	D	L
4	Accipitridae	*Haliastur indus*	Elang Bondol	<>	LC	App II	D	L
5	Accipitridae	*Ichthyophaga ichthyaetus*	Elangikan Kepala-Kelabu	<	NT	App II	D	L
6	Accipitridae	*Nisaetus cirrhatus*	Elang Brontok	<	LC	App II	D	L
7	Phasianidae	*Lophura erythrophthalma*	Sempidan Merah	<	VU			In
8	Phasianidae	*Argusianus argus*	Kuau Raja	<	NT	App II	D	In
9	Psittacidae	*Loriculus galgulus*	Serindit Melayu	<	LC	App II		L
10	Strigidae	*Otus lempiji*	Celepuk Reban	<	LC	App II		L
11	Alcedinidae	*Alcedo meninting*	Rajaudang Meninting	<	LC		D	L
12	Alcedinidae	*Ceyx erithaca*	Udang Api	<	LC		D	L
13	Bucerotidae	*Berenicornis comatus*	Enggang Jambul	<	NT	App II	D	L
14	Bucerotidae	*Anorrhinus galeritus*	Enggang Klihingan	<	LC	App II	D	In
15	Bucerotidae	*Anthracoceros malayanus*	Kangkareng Hitam	<	NT	App II	D	L
16	Bucerotidae	*Anthracoceros albirostris*	Kangkareng Perut-putih	<	LC	App II	D	L
17	Bucerotidae	*Buceros rhinoceros*	Enggang Cula	<	NT	App II	D	L
18	Rhipiduridae	*Rhipidura javanica*	Kipasan Belang	<	LC		D	L
19	Nectariniidae	*Anthreptes malacensis*	Burungmadu Kelapa	<	LC		D	L
20	Nectariniidae	*Hypogramma hypogrammicum*	Burungmadu Rimba	<	LC		D	L
21	Nectariniidae	*Leptocoma sperata*	Burungmadu Pengantin	<	LC		D	L
22	Nectariniidae	*Aethopyga siparaja*	Burungmadu Sepah-raja	<	LC		D	L
23	Nectariniidae	*Arachnothera longirostra*	Pijantung Kecil	<	LC		D	L
24	Nectariniidae	*Arachnothera crassirostris*	Pijantung Kampung	<	LC		D	L
25	Estrildidae	*Lonchura fuscans*	Bondol Kalimantan	B	LC			L
26	Sturnidae	*Gracula religiosa*	Tiong Emas	<	LC	App II	D	L
C.	**Reptil**							
1	Pythonidae	*Python reticulatus*	Sanca Kembang			App II		In

NO	FAMILIES	SCIENTIFIC NAME	INDONESIAN NAME	ENDEMIK / MIGRAN	IUCN	CITES	UU RI	KET
						STATUS KONSERVASI		
2	Pythonidae	*Python breitensteini*	Sanca Puraca		LC	App II		L
3	Elapidae	*Naja sumatrana*	Ular Sendok		LC	App II		L
4	Elapidae	*Ophiophagus Hannah*	Ular Kobra		VU	App II		L
5	Varanidae	*Varanus salvator*	Biawak		LC	App II		L
6	Trionychidae	*Amyda cartilaginea*	Bulus		VU	App II		In
7	Geoemydidae	*Cuora amboinensi*	Torop Leher-panjang		VU			In
8	Geoemydidae	*Siebenrockiella crassicollis*	Kura-kura lumpur		VU			In
9	Testudinidae	*Manouria emys*	Baning Coklat		EN	App II		In

Information:

E = Species that are endemic to the Republic of Indonesia; B = Species endemic to Kalimantan; <= This species is recorded in the Philippines or Southeast Asia; > = Species recorded in the Bismarck, Solomon and Australian Islands; G = Species recorded in Papua and New Guinea (Papua New Guinea) on the outside of Indonesian territory (for this region see Mayr 1941), excluding Bismarck, Solomon and Australia Islands (other than>)

IUCN (2017) CR = Critically Endangered (Critical); EN = Endangered; VU = Vulnerable (prone); NT = Near Threatned (almost threatened); LC = Least Concern (less attention); CITES: App I = CITES Appendix I, App II = CITES Appendix II; RI Law (referring to Law No. 5/1990 concerning Conservation of Biological Resources and Ecosystems, PP No. 7/1999 concerning Preservation of Plant and Animal Types and PP No. 8/1999 concerning Utilization of Plant and Wildlife Types): D = Protected; L = Direct; In = Information; Pot = Potential

*) Red List of Endangered Species, IUCN. Version 2017-1. <www.iucnredlist.org>. Downloaded on 26 July 2017.

**) CITES, Appendixces, download July 30, 2017

b. HCV 2 findings

Generally, the threshold size for HCV 2 should be linked to the area needed to maintain a viable population, especially large or extensive species. The area of 500 km2 (50,000 ha) has been widely used as a standard. Land-use planning avoiding fragmentation focused on development closer to the main roads and villages, is one approach to conserving HCV 2 forests in practice.

Based on the results of field findings and GIS analysis, there were situations in the study area which indicated the presence of HCV 2.

Table 28. Situation of study areas related to the presence of HCV 2

Situations that indicate possible HCV 2	Indications of existaence
Large area (for example >50.000 ha), which is located relatively far from human settlements roads or other access	X
Smaller size areas that provide key functions for landscapes such as connectivity and support	✓
Large areas that are more natural and intact than other similar regions	X

Notes : ✓ = found; X = none

Large areas (for example:> 50,000 ha), which are located relatively far from human settlements, roads or other access is one indication of the existence of HCV 2 in the Goodhope Sintang Region (PT SSA and PT SHP), these indications are characteristic of the concept intact forest (Intact Forest Landscapes / IFL). Referring to HCV 2 terminology, HCV 2 analysis in the Goodhope Sintang Region has been carried out in 3 (three) phases, namely: (1) overlay analysis of the area boundary map with the applicable Forest Use Map, namely the Forest Area Map of the Ministry Forestry and overlay of Intact Forest Landscapes (IFL), (2) overlay between map of work area with the latest landcover maps, (3) checking the field to confirm identification results on the map.

Based on the results of a landscape overlay between the study area and the Map of Forest and Watershed Areas of West Kalimantan Annex SK Menhutbun No. 259 / Kpts-II / 2000 and Map of the Kalimantan Biodiversity Center, the study area is directly adjacent to the Bukit Penggur Protection Forest and is within the center of Kalimantan's biodiversity, the Heart of Borneo (HoB). According to WWF (the initiator of the HoB concept in 2007), the development of (palm) companies in HoB is not prohibited if carried out in a sustainable manner in accordance with the Roundtable on Sustainable Palm Oil. Although the forest area in the study area and its surroundings has been reduced and fragmented, there are still areas that are directly adjacent to protected forests so that the study area can be said to be a corridor for connecting protected areas or high quality habitats. Forested areas outside Goodhope's concession reached 48,282.12 Ha, with cover in the form of secondary forest and primary forest. Therefore, it can be concluded that HCV 2 is found in the study area, because there are areas that can serve as buffer zones for protected areas or corridors that link protected areas or high quality habitats. Shrubland bordering protected forest in the north of the study area has been identified as an important HCV2 area to serve as a buffer zone /corridor for the adjacent protected forest.

c. HCV 3 findings

According to field surveys and secondary data analysis, the presence of HCV 3 in the Goodhope Sintang assessment area is as shown in the table below.

Table 29. Situation at the assessment area related to the existence of HCV 3

Situation indicated the existence of HCV3	Existence indication
Rare naturally due to its dependency on soil type, location, hydrology or other highly localized or climatic or physical features, such as some types of limestone karst forests, inselberg, montane forests, or river forests in barren zones.	✓
Rare anthropogenicly, as the extent of these ecosystems has been drastically reduced due to human activity over its historical extent, such as grasslands in fertile soils naturally experienced seasonal floods, or primary forests fragments in the areas where almost all primary forests have been eliminated.	✓
Endangered or threatened (for example: drastically reduced) due to ongoing or proposed operations	X
Classified as endangered at the national or international system (such as red list of IUCN about ecosystem)	X

Keterangan: ✓ = exist/found; X = not exist;

In the study area there are rare natural ecosystems due to their dependence on soil types, location, hydrology or other highly localized climatic or physical features. According to the Borneo Ecoregion Map created by WWF (2009), the study area is in the Borneo type Ecoregion Lowland Rain Forest, the largest and most common ecoregion type in Borneo. Based on the results of the RePPProT classification and referring to the 2008 Toolkit, with the limitations of the Pawan Hulu Sub-watershed Landscape, that around the Goodhope Asia Holdings Ltd area, the Sintang Region found a land system that was threatened, namely the Pedreh (PDH), Maput (MPT) land system, Teweh (TWH), and Tambera (TBA).

The four land systems found in the study area are included in the lowland forest elevation zone (0 - 500 masl) where the PDH, MPT, and TWH land systems are lowland forest ecosystem types on sandstone and TBA is a type of hill dipterocarp forest ecosystem on rock volcanic which is in the threatened category.

Using the Precautionary Approach to identify HCV 3, it can be concluded that HCV 3 is located in the study area as Lowland Forest on Sandstone. Remaining secondary forest is found on Pendreh (PDH)

landsystem in the Sudiron, Duhung and Puruk Tukan hills (around the Biye Parik River) as described in Figure 20. The hilly area is located in the PT SSA permit area covering 214.34 ha or 1.9% of the the area of PT SSA's permanent permit.

When viewed from the existing land cover, forest land cover has been transformed into agroforestry, oil palm plantations, farm land, shrubs and bush. This indicates changes in forest cover due to community activities around the study area, suggesting that the remaining lowland forest on sandstone ecosystem is threatened by activities caused by humans.

Based on the results of land cover analysis in 1990 and 2014, with the boundaries of the Kalimantan Island Landscape, in the vicinity of the Goodhope Sintang area, there was no significant change in forest cover. When viewed from the history of land cover, forested areas in 1990 had an area of 41,785,955.56 ha, in 2014 it had an area of 30,691,813.48 ha. There was a reduction in forested area to 11,094,142.08 ha or 26.55%.

Table 30. Total area of forest cover in and around areas of assessment

Areal Hutan	1990 (hektar)	2014 (hektar)
Primary Dryland Forest	12.573.004,34	9.698.936,94
Secondary Dryland Forest	15.837.947,01	13.197.156,64
Primary Mangrove Forest	109.140,77	61.411,95
Primary swamp forest	408.837,40	200.696,59
Secondary Mangrove Forest	846.724,18	456.483,05
Secondary swamp forest	12.010.301,85	7.077.128,30
Total	**41.785.955,56**	**30,691,813,48**

Based on the description of the findings above, it can be concluded that HCV 3 was found in the study area. The presence of HCV 3 is considered to be anthropogenically rare, because the ecosystem has been drastically reduced due to human activity compared to its historical presence Although there is no primary forest, there are small patches of secondary forest in the study area which are indicated to be HCV 3. These are in the Bukit (Korong) Duhung and Puruk Tukan complexes, and around the Biye Parik River. The area that has land cover in the form of bushes and young shrubs, is an area that has been very degraded, so that the area has no important value, as HCV 3.
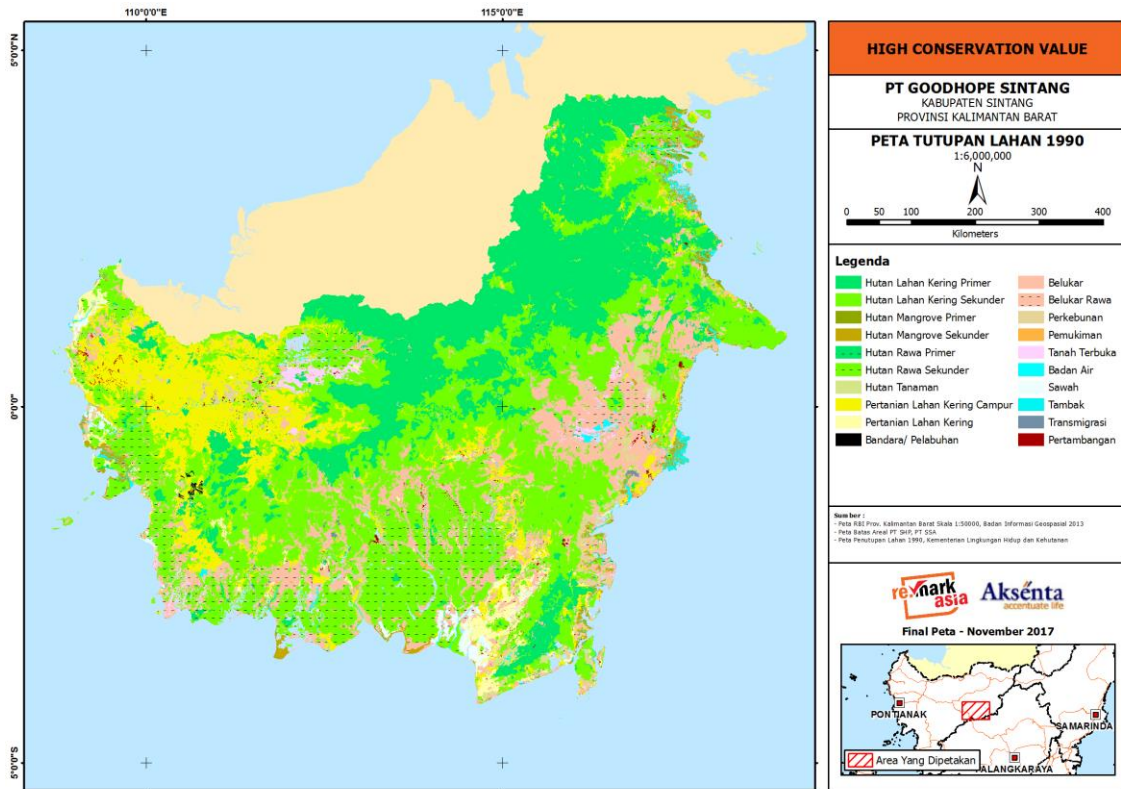
Figure 16. Map of land cover in study area year 1990
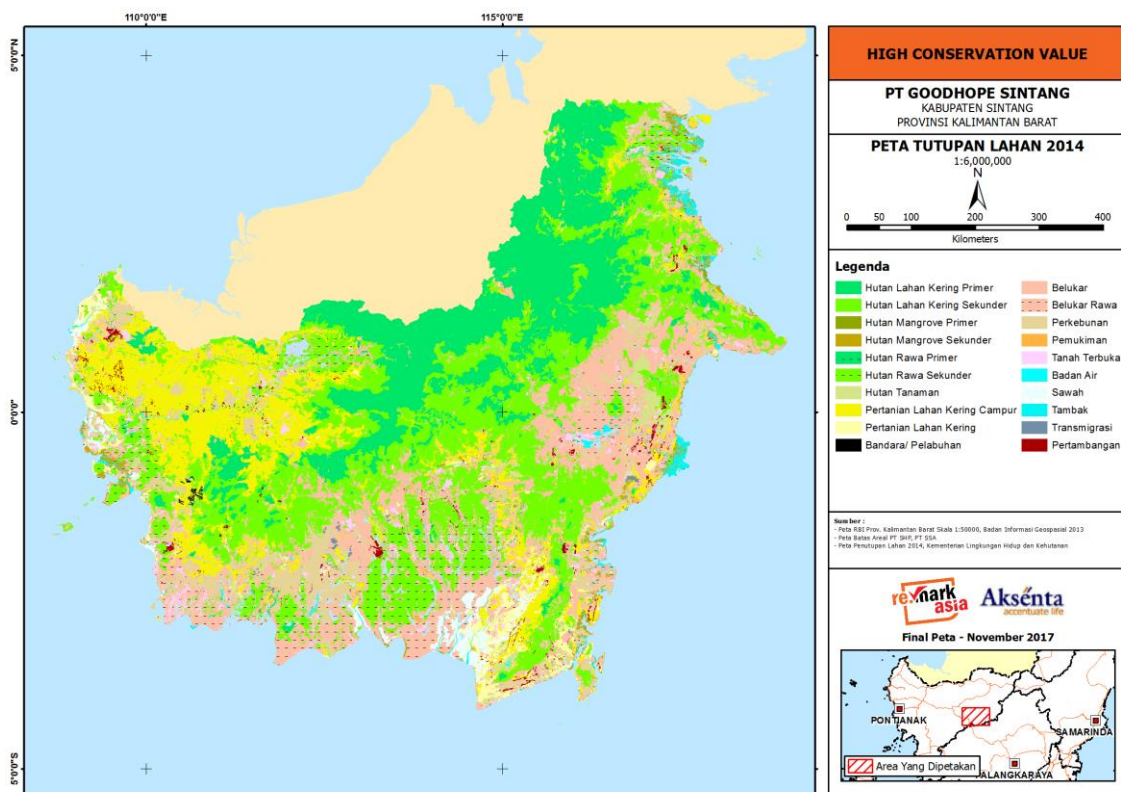
Figure 17. Map of land cover in study area year 2014

d. HCV 4 findings

There are indications of HCV 4 in the assessment area, which is related to flood control, water absorption, water supply, erosion / sedimentation control, and fire prevention. The forms of HCV 4 areas are identified as rivers, riverbanks, hills, and springs.

Table 31. Situation indicates the existence of HCV 4

Situation indicates the existence of HCV 4	Indication
Extreme water flow management, including the stealthy buffer zones or intact floodplains	✓
Maintenance of downstream river flow regimes	✓
Maintenance of water quality characteristics	✓
Prevention and protection from fire	✓
Protection of vulnerable soils, aquifers, or fisheries.	✓
Clean water supply	✓
Natural ecosystems that play an important role in maintaining the stability of the steep slopes	✓
Wind protection, and moisture, rainfall, and other climatic elements	×
Pollination services, for example exclusive pollination for subsistence food crops	×

Extreme water flow management, including the stealthy buffer zones or intact floodplains

Field verification results show that in the assessment and surrounding areas there are 77 streams. Of these, 70 rivers are located within the assessment area. The rivers are dominated by tributaries that have a width <5 m. With the characteristics of high rainfall throughout the year and total area of catchment area reaching 0.9 million hectares, then this region has high potential surface water. The rivers existence in this area has an important function as natural drainage associated with surface runoff controlling, from the upstream and surrounding areas.

Rivers in the assessment area are also valuable as retarding areas, especially rivers that flows into the Melawi and Ambalau River. The local community states that there have been at least three large floods in 1981, 1994 and (end of August) 2017. Thus, flood control function in the study area is not only located in the river stream but also covers the ridge as a buffer zone.

The width of the river banks which has HCV 4 is determined by on the profile of each river, as well as the needs to protect important functions in each stream. Downstream river with larger cross-sectional streams require a wider buffer zone as well. The width of the river banks that has HCV values ranges from 15-100 m. More specifically, the list of river names and widths of the ledges is shown on the following table.

Table 32. Rivers located at the assessment area

River's width (m)	Names of river in the assessment area		Riverbank's width (m)
	PT SHP	PT SSA	
< 5	Ipak, Mantun, Garung, Bedara, Bedaha, Begori, Prae, Nalai, Ai, Mengoik, Hape, Bakung, Ruwe Pala, Mentatui, Bomban, Dungo, Lopahti, Silat, Baru	Ruan, Sengalang, Kembaung, Duhun, Nango, Runuk, Ombak, Penahanya Abang, Penahanya Apuh, Penahanya Riyuk, Penahanya Maning, Saan, Kolomahan	15-50
5-10	Tempe Plai, Nyangai, Ruwe, Melape, Kensae Doho, Toras, Bere Katingan, Mendung	Kesange Besar, Mentalan, Penahaya Kehukup, Tanjung Keting, Tahtok, Sahpo, Mensalim, Hacik, Biye Parik	30-50
10-20	Melaku, Sengkahawai, Mentibar, Demu, Tempe, Nalai Penahan, Mentatai*, Pengolon, Dahange, Kensae, Pae, Kemangai	Mokile, Tomoluse Komuloi, Penahaya, Lebane, Biye Boruk	50-100

River's width (m)	Names of river in the assessment area		Riverbank's width (m)
	PT SHP	PT SSA	
20-40	Lekawai	Tomoluse Ngotouk, Biyai	50-100
40-80	-	Ambalau	100

Notes: * only the riverbanks located in the assessment area

Maintenance of water quality characteristics

The quality of river water in the assessment area are quite good (clearand odorless), especially the rivers at the central to the eastern part,and the existence of natural/semi-natural vegetation in the riverbanks should be conserved to maintain water quality in main rivers or downstream. Land cover is dominated by shrubs and agroforest (keloka/gupung). The presence of natural /semi-natural vegetation serves filters for pollutants; from land erosion and surface agrochemical residues carried by surface runoff. In addition, the presence of vegetation on the river banks also functioned to maintain the stability of river cliffs through the root system, thus preventing the landslides or erosion. Some of river bank areas that have already been degraded have been identified asHCV management areas (HCVMA).

In the western part of the assessment area, there are several rivers that degraded by the community's gold mining activities. The activities taken place since the 1960s and was massively done in the 1990s. Currently, this activity is still found in the assessment area and surrounding, i.e in Mensulang River. Therefore, Mensulang River is considered to have been degraded and no longer functions as HCV 4.MA area).

Prevention and Protection from Fire

A natural firebreak is found inside the assessment area; the Ambalau River flow around the Nanga Sakai village. Natural firebreaks are also found in other main rivers located outside the assessment area, such as the Melawi and Sakai River. Based on hotspot data from 2005-2017, the hotspot distribution is concentrated at the northern and southern part of the assessment area, separated by the Melawi and Ambalau River. This indicates that both streams can limit the expansion of fires. In that period, most hotspots in 2015 reached 30 hotspot points. In addition, large-scale fires occurred in 1997.

Clean Water Supply

These criteria are found throughout all rivers and springs within the assessment area. The springs are identified in 17 locations all of which have debits flowing throughout the year. From the 17 springs, 7 springs located in the assessment area; Mata Air Ombak, Lopahti, Lodeh, Kelinas 1, Kelinas 2, Ara, Nango and Sungai Putus Fountains. These seven springs are utilized by the community for domestic purposes (drinking, cooking and MCK).

Maintenance of downstream river flow regimes; Protection of vulnerable soils, aquifers, or fisheries and Natural ecosystems that play an important role in maintaining the stability of the steep slopes

The steep slope area (slope> 40%) is found in the eastern part, including Bukit (Korong) Sudiron, Puruk Tukan, Duhung, Puak Nyangon, Tambun, Sopilih, Lubuk Puruk, Bahiu, Tanak Tapas and Soak Mohanoi. However, natural or semi-natural hill areas are only found in Sudiron Hill, Puruk Tukan,

Duhung, Tambun, Puruk Tukan and Sopilih, while the rest are shrubs or bushes. Therefore, the hill area that still has HCV 4 is only found on those six hills.

The hills are the area of charging the aquifer (recharge area) as well as the keeper area of river flow regime in the downstream. This important value is related to the existence of land cover which is generally in the form of shrub, agroforest (keloka/gupung) and secondary forest as a function of increasing water absorption capacity. Land clearing in this area will increase the amount of surface runoff so that it will contribute to the fluctuation of downstream river flows. Degraded hill converted as shrubs or oil palm are not considered as HCV areas. However, these areas are included as HCV management (HCVMA) areas that need best practice management, especially related to erosion control and surface runoff. These areas are found in parts of Bukit Puak Nyangon and Bukit Duhung.

Areal HCV 4

The total area of HCV 4 is 1,715.1 ha or 6,9% from the total assessment area. The area is dominated by rivers and riverbanks covering 66% of area HCV 4. Detailed location and distribution of HCV 4 area are described in the final report.

e.   HCV 5 findings

Based on the eligible citation of HCV 5 (Brown et al., 2013) it was concluded that local communities in 31 villages interacting within the assessment area did not have significant dependence on ecosystems for fulfilling living needs. The results from stakeholder's consultations in the 31 villages indicates that most of local communities meet their basic needs through purchases from small village/hamlet shops and markets in sub-district towns (Nanga Kemangai Village - Ambalau Sub-district - and Nanga Serawai Village - Kecamatan Center Serawai-).

The areas identified as HCV 5 are rivers; as a place for fishing (primary protein source), rivers and springs; as a source of clean water for drinking and sanitation. Communities in 31 villages interacting within the assessment area stated that there are 21 rivers commonly used by communities to catch fish and other freshwater species, 52 rivers are used for clean water sources and 17 springs as a source of clean water. However, some of these areas are located outside the assessment area.

Following are further explanations about the HCV 5 existence and absence of in the assessment area and its surroundings:

Hunting and Trapping

According to the interview result, there are no specific areas for hunting and trapping, either customarily or hunting for subsistence. Dayak people in the assessment area are still hunting in accordance with their culture, but hunting is not the only activity to obtain the protein source.

Non-Timber Forest Product

The Non-timber forest products (NTFP) commonly used by local people are ferns, fruits and bamboo, rattan and aloes. Ferns, fruits and bamboo plants are found around the settlements area; in the former cultivation areas of that have been planted with rubber. They called it tembawang/gupung /kelokak. According to the local community, there is no special area for fern that are customary protected.

The area of tembawang/gupung/kelokak are not included as HCV 5 definition. The main reason for tembawang / gupung / kelokak not set as HCV 5 are: (1) to value the opinions of the local

community in accordance with the RSPO's mandates, (2) not the fundamental livelihood source for local communities and (3) individual ownership of tembawang /gupung /kelokak is not customary protected.

Fuel for household activities

Fuel for household activities such as cooking is mostly obtained by purchase. The fuel commonly used by local people is Liquified Petroleum Gas (LPG), which is LPG 3 kg subsidized by the government. The price for LPG 3 kg ranged from Rp. 25,000 - 35,000. Firewood is still used by the local community but not as the main fuel source. Firewood is obtained from the fields around the settlement.

Fish and other freshwater species used by local communities

Fish and fresh water resources are an important natural resource for the community's life in the villages surrounding the assessment area. Based on the results of stakeholder consultations, there are 21 rivers (Table 26 and Figure 20) commonly used to catch fish.

Rivers commonly used by locals to search for fish and other fresh water species in this study are classified into the definition context for HCV 5. The reasons are: (1) valueing the opinions of local communities in accordance with the RSPO mandate, (2) as an important protein source for local communities and (3) as sustainable use practices

Building Material

The community houses in the assessment area are mostly made of wood and some are made of cement. Timber and cement are obtained by purchases because the timber resources availability for building materials in the villages area is very limited.

Individual area of tembawang/gupung/kelokak utilized by the community for logging do not fall into the HCV 5 definition. The reason for this is because the timber utilization of by local communities and migrants is for commercial purposes, unsustainable use and not regulated by customary rules.

Animal Feed and Seasonal Grazing

Local people in the villages around the assessment area were not familiar with large-scale farms. Livestock is done on a small scale and within the scope of the settlement. From the stakeholder consultations results, known that the livestock cultivated by local communities are pigs and chickens. The feed given to livestock is usually leftover food from the household.

There are no specific natural resources used for livestock feed and there is no pasture area for livestock so it does not fall within the HCV 5 definition.

Important water source for drinking and sanitation

Clean water source for local people used for consumption and sanitation is obtained from rivers and springs. Water retrieval from the source is obtained in three ways: (i) direct retrieval, (ii) using a water pump machine and (iii) gravity flow.

The water source coming from the river and spring goes into the HCV 5 definition so it is important to be mapped, protected and managed. The reason for river and water springs as HCV 5 is: (1) respecting the local communities' sovereign rights over their protected areas in accordance with the RSPO mandate, (2) it is an important source for local communities to fullfill the water needs for

consumption and sanitation and as an effort to address the water resources availability for local communities as impact of the company's operations.

Items exchanged with other essential goods

Community livelihoods in the villages around the assessment area are rice and rubber cultivation. Based on the results of stakeholder consultations, the cultivation area is reaches 6 km from the settlement, but now the paddy field is only done in areas that are easily reached by the community. In addition, the current rice cultivation activity tends to decline due to police letter number: Mak/01/VII/2015/West Kalimantan Police on Banned on Forest Burning and Land /Garden. Paddy rice price ranged between Rp 2,500 - Rp 3,000 per kg.

The majority of the villagers around the assessment area are seeking rubber crops as a source of livelihood. The rubber is sold to collectors at a price between Rp 5,000 - Rp. 7. 000 per kg.

Some areas of rice cultivation and community rubber plantations are within the company's license area. However, these areas do not fall within the HCV 5 definition. The reasons for this, because the areas of paddy fields and rubber gardens that produce cash-for-sale items for living; according to the results of stakeholder consultations are: the areas of rice and rubber cultivation is still very wide, hence the community were not worry about agricultural land reserves. The communities want to have their independent palm oil plantations given by companies, that can be used as an income source especially if the price of rice and rubber fell.

Table 33. Location and area of HCV 5 area in the assessment area and its surrounding

Lokasi	Perusahaan	Desa	Indeks	Nama	Tipe HCV	Nilai	Keterangan Lokasi	Luas (ha)*
		Tanjung Baru	1	Lodeh Water Spring	5	Water source	On the map	-
		Gurung Sengiang	2	S. Melaku	5	Water source, Fish	On the map	5.56
		Batu Ketubung	3	Kelinas 2 Spring	5	Water source	On the map	-
		Batu Ketubung	4	Kelinas 1 Spring	5	Water source	On the map	-
		Gurung Sengiang	9	S. Bedara	5	Water source	On the map	0.14
				S. Mentibar	5	Water source, Fish	On the map	3.50
		Talian Sahabung	13	S. Nyangai	5	Water source, Fish	On the map	0.46
			14	S. Nalai	5	Water source, Fish	On the map	1.07
		Pagar Lebata	16	Ara Water Spring	5	Water source	On the map	-
		Tamakung	17	S. Demu	5	Water source, Fish	On the map	21.47
		Sabang Landan	20	S. Dahange	5	Water source	On the map	1.03
				S. Pengolon	5	Water source	On the map	2.36
			21	S. Bere Katingan	5	Water source	On the map	0.97
	PT SHP	Lunjan Tingang	25	Ombak Spring	5	Water source	On the map	-
		Bukit Tinggi	27	Lopahti Spring	5	Water source	On the map	-
		Nusa Tujuh	33	Mata Air Sungai Putus	5	Water source	On the map	-
			42a	S. Ipak	5	Water source	On the map	0.36
			49a	S. Penahaya Kehukup	5	Water source	On the map	0.51
				S. Penahaya	5	Water source	On the map	0.43
	Total Luas HCV							**37.87**
	Luas PT SHP							**13,920**
Inside study area	**Presentase**							**0.27**
		Tunas Harapan	14b	S. Nalai	5	Water source	On the map	0.16
			42	S. Ipak	5	Water source	On the map	1.09
		Bedaha	46	S. Bedaha	5	Water source	On the map	0.16
		Nusa Poring	49	S. Penahaya	5	Water source	On the map	1.17
				S. Penahaya Abang	5	Water source	On the map	0.44
				S. Penahaya Apuh	5	Water source	On the map	0.26
	PT SSA			S. Penahaya Kehukup	5	Water source	On the map	0.08

Lokasi	Perusahaan	Desa	Indeks	Nama	Tipe HCV	Nilai	Keterangan Lokasi	Luas (ha)*
				S. Penahaya Maning	5	Water source	On the map	0.99
				S. Penahaya Riyuk	5	Water source	On the map	0.57
		Nanga Sakai (S. Runuk)	52	S. Kolomahan Alit Sugemang	5	Water source	On the map	0.15
		Nanga Sakai (S. Runuk)		S. Kolomahan Calai Hendak	5	Water source	On the map	0.54
			53	S. Runuk	5	Water source	On the map	0.18
			56	S. Tomoluse Komuloi	5	Water source	On the map	0.21
				S. Tomoluse Ngotouk	5	Water source	On the map	0.01
		Nanga Sakai (Kembaung)	57	S. Kembaung	5	Water source	On the map	0.40
		Nanga Sakai (Singa)	58	S. Ruan	5	Water source	On the map	1.47
		Kesange	61	S. Kesange Besar	5	Water source	On the map	0.69
		Datah Bungai	65	S. Lebane	5	Water source, Fish	On the map	7.61
		Mensuang	69	Nango Spring	5	Water source	On the map	-
			70	S. Nango	5	Water source	On the map	0.11
			73	S. San	5	Water source	On the map	1.24
Total Luas HCV 5 PT SSA								**17. 51**
Luas PT SSA								**11,094**
Presentase								**0.16**
Total Luas HCV 5 PT SHP dan PT SSA								**55.37**
Luas PT SHP dan PT SSA								**25,014**
Presentase Total								**0.22**
Outside study area		Semua Desa	-	Sungai Melawi	5	Water source, Fish	On the map	-
		Nanga Serawai, Bedaha	-	Sungai Serawai	5	Water source, Fish	On the map	-
		Bedaha	-	Batu Seladang Spring	5	Water source	On the map	-
		Gurung Sengiang	-	Gudang Water Spring	5	Water source	On the map	-
			-	Sampak Spring	5	Water source	On the map	-
		Talian Sahabung	-	S. Lebane	5	Water source, Fish	On the map	-
		Jenggonoi	-	Jenggonoi Spring	5	Water source	On the map	-
		Nanga Kemangai	-	Mendung Spring	5	Water source	On the map	-
		Nanga Kepingoi	-	Cang Spring	5	Water source	On the map	-
		Nusa Poring	-	Lanjau Spring	5	Water source	On the map	-

Lokasi	Perusahaan	Desa	Indeks	Nama	Tipe HCV	Nilai	Keterangan Lokasi	Luas (ha)*
			-	Rotang Spring	5	Water source	On the map	-
			-	SD Kantuk Spring	5	Water source	On the map	-
		Ambalau	-	S. Jati	5	Water source	Yet on map	-
			-	S. Kantuk	5	Water source	Yet on map	-

Note : GIS measurement

f. HCV 6 findings

Survey, interviews and consultations regarding the Free, Prior and Informed Consent (FPIC) principles with the local community indicate that most of the local communities already embrace government acknowledged religions. However, areas are found that meet the HCV 6 definition in and outside PT SHP and PT SSA concessions. The identified areas are tembawang (fruit field) containing historic and cultural values, in addition to sites of religious/sacred values for traditional and spiritual ceremonies.

Precense and Justification

Based on participatory mapping, Focus Group Discussion, in-depth interviews and field surveys with local communities around the assessment area (evidence of collection data, see Appendix 2) HCV 6 areas are identified as follows

The tomb in which is an area/site with historical and cultural value to the local community around the company's concession, so its existence needs to be protected.

There are some sites / areas with religious values /sacred for Dayak people in which are used for traditional and spiritual ceremonies or should not be disturbed (pemali) around the company concession area, so its existence needs to be protected

Findings:

Survey results shown that most local people are already embraced religion. Their beliefs in their own religion were gradually changing the traditions

However, there are several areas that fall within the definition of HCV 6 as defined in the HCV Common Guidance for HCV Identification, 2013 located inside and outside the consessions (PT SHP and SSA). Areas identified as HCV 6 are the areas that have historical and cultural values, and sites/areas that have religious/sacred values for traditional and spiritual ceremonies.

Sites acknowledged of high cultural values by national policies and legislation

In this area, there are no sites acknowledged of high cultural values by national policies and legislation. Indonesian policies and legislation only assigned 15 cultural heritages in West Kalimantan Province, and none is located within the assessment area.

National government and/or international agency officially assigned sites

Borneo has only one UNESCO-registered site which is listed under 'tentative list', namely 'Sangkulirang-Mangkalihat Karst: Prehistoric rock art area', located in East Kalimantan,4 far away from the assessment area.

Sites of important historical and cultural values acknowledged, even when unprotected by legislation

The historical area is the tomb of the kampung founders, especially in villages with the majority of the Malays ethnic, such as in Nanga Serawai and Pagar Lebata. In Nanga Serawai, there is a grave of H. Mas Puspawangsa and H. Bajuri. In Desa Pagar Lebata, there is Raden Sutalame. But there are also

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[4] whc.unesco.org/

Dayak ethnic graves in Begori Village and Kampung Ipak Darat, Tanjung Harapan Village as well as tombs in Nanga Kemangai Village and Lunjan Tingang Village.

Religious or sacred sites, burial ground or sites where there takes place traditional ceremony of important role to local or traditional community

According to the informants of the sacred place, concerning the culture of Uud Danum and Melahui, there is always a sacred area of prayer called Tohjahan. Then it associated with Dalo' ada Kelohkak (Sandung or bone house), Toras (pole where the sacrifice is bound) and Sopundu' or Temado '(a statue considered to represent a deceased person). In addition, there is a place called Gupung Mali or sites that should not be disturbed and cultivated because there had been a fatal accident, or a grave or place of placenta (temuni) hanged.

Table 34. Location and area of HCV 6 in the assessment area

Location	Company	Village	Indeks	Name	Type HCV	Value	Location decription
Inside Study Area	PT.SHP	Batu Ketubung	5	Gupung	6	Gupung	Mapped
		Gurung Sengiang	6	Tanah Karobah	6	Keramat	Mapped
			7	Lundang badak	6	Keramat	Mapped
			8	Toras S Langir	6	Keramat	Mapped
		Begori	11	Makam Begori	6	Keramat	Mapped
		Nanga Kemangai	22	Kelokak Pengolon	6	Kelokak	Mapped
			29	Korong Tojahan	6	Kelokak	Mapped
		Ambalau	31	Kelokak Lubang Labing	6	Kelokak	Mapped
	PT.SSA	Nusa Tujuh	34	Gupung Temuni	6	Gupung	Mapped
			37	Gupung Natai dalung	6	Gupung	Mapped
			38	Gupung Guyung	6	Gupung	Mapped
			40	Gupung Nangka	6	Gupung	Mapped
			41	Gupung Tebedak	6	Gupung	Mapped
		Tunas Harapan	35	Gupung Laman Pasarah	6	Gupung	Mapped
			36	Gupung Sandung	6	Gupung	Mapped
			39	Gupung Kuburan (Sera) BM05	6	Gupung	Mapped
			43	Gupung Ipak	6	Gupung	Mapped
			44	Gupung S Olos	6	Gupung	Mapped
			45	Gupung Karet Kandang	6	Gupung	Mapped
		Pagar Lebata	48	Makam Sutalame	6	Keramat	Mapped
		Nanga Sakai	54	Tojahan Nyekoi	6	Tojahan	Mapped
			55	Kelokak Liang Basau	6	Kelokak	Mapped
			59	Bhatuk Tuku Kawah	6	Keramat	Mapped
			62	Kelokak Toh Pah Tung	6	Kelokak	Mapped
		Mensuang	68	Liang Basaik	6	Mapped	Mapped
Outside Study Area		Ambalau		Maria Cave	6	Situs Religi	Un-mapped
		Begori		Sandung Dan Kesarah	6	Keramat	Un-mapped
				Temaduk	6	Keramat	Un-mapped
		Gurung Sengiang		Gupung Dan Makam Natai Sanggo	6	Gupung dan Keramat	Un-mapped
				Langku Batu	6	Keramat	Un-mapped
				Temaduk	6	Keramat	Un-mapped
		Lunjan Tingang		Grave In Lunjan Tingang	6	Keramat	Un-mapped
				Grave In Ombak River	6	Keramat	Un-mapped
				Grave In Ruwe River	6	Keramat	Un-mapped
		Mekar Sari		Gupung Odi	6	Keramat	Un-mapped
		Muara Kota		Dara Muning	6	Keramat	Un-mapped
				Goa Maria	6	Keramat	Un-mapped
				Sandung	6	Keramat	Un-mapped
		Nanga Kemangai		Grave Of Ulong Lopahti	6	Keramat	Un-mapped
		Nanga Sakai		Bhatu Badak	6	Keramat	Un-mapped

Location	Company	Village	Indeks	Name	Type HCV	Value	Location decription
				Kelokak Brani	6	Keramat	Un-mapped
				Misai	6	Keramat	Un-mapped
				Nokan Hacik	6	Keramat	Un-mapped
				Nokan Senumang	6	Keramat	Un-mapped
				Tojahan Kolomahan	6	Keramat	Un-mapped
				Toras Palik	6	Keramat	Un-mapped
		Nanga Serawai		Makam H Bajuri	6	Keramat	Un-mapped
				Makam Mas Pusmawangsa	6	Keramat	Un-mapped
		Pagar Lebata		Makam Pagar Lebata	6	Keramat	Un-mapped
		Talian Sahabung		Sandung	6	Keramat	Un-mapped
		Tanjung Baru		Temaduk	6	Keramat	Un-mapped
		Ambalau		Korong Bunut	6	Keramat	Un-mapped
				Korong Nyabung	6	Keramat	Un-mapped
				Kurong	6	Kelokak	Un-mapped
				Liang Malam	6	Kelokak	Un-mapped
				Lobuk Puruk	6	Keramat	Un-mapped
				Luting Munang	6	Tojahan	Un-mapped
				Nyabung Wiwu Abui	6	Kelokak	Un-mapped
				Rubu Deleng	6	Keramat	Un-mapped
		Dahtah Bungai		Baluhu Hajo	6	Keramat	Un-mapped
				Kelokak S. Beruang	6	Kelokak	Un-mapped
				Kelokak Sungai Dungan	6	Kelokak (1 Ha)	Un-mapped
				Kelokak Toh Pah Tung	6	Kelokak (2 Ha)	Un-mapped
				Korong Keladan	6	Hulu Sungai Sopan	Un-mapped
				Korong Tanak Tahpas	6	Hulu Sungai Sumber Air	Un-mapped
				Kuburan Keramat	6	Keramat	Un-mapped
				Tajahan Liang Nohtok	6	Keramat	Un-mapped
		Jengonoi		Balai Beruk	6	Keramat	Un-mapped
				Sauang Anggui	6	Tojahan	Un-mapped
				Tawai Dibung	6	Tojahan	Un-mapped
		Karya Jaya		Gupung Kurai	6	Keramat	Un-mapped
				Gupung S. Dahange	6	Keramat	Un-mapped
				Gupung Tamiang	6	Keramat	Un-mapped
				Gupung Tobung	6	Keramat	Un-mapped
				Gupung Usop	6	Keramat	Un-mapped
		Kepingoi		Batu Dunik	6	Keramat	Un-mapped
				Bukit Sodoruk	6	Keramat	Un-mapped
				Doho Andon	6	Keramat	Un-mapped
				Kelokak Pocoh	6	Keramat	Un-mapped
				Nanga S. Rajun	6	Keramat	Un-mapped
				Nokan Bola	6	Keramat	Un-mapped

Location	Company	Village	Indeks	Name	Type HCV	Value	Location decription
				Sahai Sahpa	6	Keramat	Un-mapped
		Mensuang		Batu Taku	6	Kelokak	Un-mapped
				Kelokak	6	Kelokak	Un-mapped
				Kelokak Karah	6	Kelokak	Un-mapped
				Labuang Poyang	6	Kelokak	Un-mapped
				Liang Basaik	6	Kelokak	Un-mapped
				Nokan Nuan	6	Keramat	Un-mapped
				Nokan Olung Bio	6	Keramat	Un-mapped
				Nokan Sangalang	6	Keramat	Un-mapped
				Pematang Korong Duhung	6	Pematang (Tojahan)	Un-mapped
				Puak Nyanggun	6	Pematang (Tojahan)	Un-mapped
				Taluai Dibuang	6	Tojahan	Un-mapped
				Topalangan Kawe	6	Pematang (Tojahan)	Un-mapped
		Nanga Sakai		Batu Ampar	6	Keramat	Un-mapped
				Koroi	6	Kelokak	Un-mapped
				Korong Aba	6	Keramat	Un-mapped
				Kuburan Keramat	6	Keramat	Un-mapped
				Kuburan Keramat, Sandung	6	Keramat	Un-mapped
				Teluk Pamai	6	Keramat	Un-mapped
				Tojahan Pating Dan Tupu Kawah, Korong Ponopas	6	Keramat	Un-mapped
		Nanga Sakai (Jengkahang)		Kelokak Berani	6	Kelokak	Un-mapped
				Kelokak Korong Lahung Hajo	6	Kelokak	Un-mapped
				Lubuk Puruk	6	Keramat	Un-mapped
		Nanga Sakai (S. Runuk)		Kelokak Telun	6	Kelokak	Un-mapped
				Tanah Mali	6	Keramat	Un-mapped
				Tojahan Dungan	6	Tojahan	Un-mapped
				Tojahan Kolamahan	6	Tojahan	Un-mapped
				Tojahan Makelandai	6	Tojahan	Un-mapped
				Tojahan Nyekoi	6	Tojahan	Un-mapped
		Sawang Sengiang		Lubang Harimau	6	Kelokak	Un-mapped
		Temakung		Batu Hajo	6	Keramat	Un-mapped
		Tontang		Batu Betaha	6	Keramat	Un-mapped
				Batu Tulis	6	Keramat	Un-mapped

3.2.6. Conclusions of HCV findings

This HCV assessment has examined six HCV types; HCV 1, HCV 2, HCV 3, HCV 4, HCV 5 and HCV 6, located in and around the Goodhope Asia Holdings Ltd., Sintang Region (scope area). HCV areas consist of shrubs, secondary forests, hilly terrain, rivers and borders, springs, sacred areas such as "kelokak" (Kolohka, old village site), and old graves. The total indicative area of the HCV area is 1,791.54 hectares, with HCV and HCVMA area of 3,181.64 hectares, or 12,72 % of the total area of Goodhope Sintang Region. Details of HCVA and HCVMA in PT SHP specifically are provided in the following table.

Table 35. List of HCVAs and HCVMAs identified within PT SHP concession

Indeks	Location	HCV Types	Hectares		Indeks	Location	HCV Types	Hectares
5	Gupung	HCVMA	2.74				HCVMA	1.04
6	Tanah Karobah	HCVMA	3.14		15	S. Ai	HCV4	0.30
7	Lundang badak	HCVMA	3.14			Buffer S. Ai	HCV4	9.77
8	Toras S Langir	HCVMA	3.14		17	S. Mengori	HCV4	0.07
11	Makam Begori	HCVMA	8.24			S. Demu	HCV4 dan HCV5	21.47
22	Kelokak Pengolon	HCVMA	2.69			Buffer S. Mengori	HCV4	2.91
29	Korong Tojahan	HCVMA	3.14			Buffer S. Demu	HCV4	90.26
31	Kelokak Lubang Labing	HCVMA	0.56				HCVMA	2.14
10	S. Melape	HCV 4	0.63			Buffer S. Ambalau	HCVMA	1.09
		HCVMA	0.01		18	S. Hape	HCV4	0.42
	Buffer S. Melape	HCV 4	28.50			Buffer S. Hape	HCV4	21.00
		HCVMA	0.92		19	S. Tempe	HCV4	2.11
12	S. Prae	HCV 4	0.08			Buffer S. Tempe	HCV4	36.56
		HCVMA	0.08			Buffer Anak S. Tempe	HCV4	4.90
	Buffer S. Prae	HCV 4	2.25			Anak S. Tempe	HCV4	0.26
		HCVMA	2.61		2	S. Sengkahawai	HCV4	20.35
13	S. Nyangai	HCV4 dan HCV5	0.46				HCVMA	7.46
		HCVMA	0.05			S. Melaku	HCV4 dan HCV5	5.56
	Buffer S. Nyangai	HCV4	16.68			Buffer S. Melaku	HCV4	33.12
		HCVMA	2.06				HCVMA	2.35
14	S. Nalai Penahan	HCV4	0.18		20	S. Pengolon	HCV4	0.04
		HCVMA	0.13				HCV4 dan HCV5	2.36
	S. Nalai	HCV4 dan HCV5	1.07				HCVMA	0.04
		HCVMA	0.02			S. Dahange	HCV4 dan HCV5	1.03
	Buffer S. Nalai Penahan	HCV4	5.06			Buffer S. Pengolon	HCV4	20.51
		HCVMA	3.47				HCVMA	2.62
	Buffer S. Nalai	HCV4	34.34			Buffer S. Dahange	HCV4	11.52

Indeks	Location	HCV Types	Hectares
		HCVMA	1.11
21	S. Bere Katingan	HCV4 dan HCV5	0.97
		HCVMA	0.00
	S. Bakung	HCV4	0.09
	Buffer S. Bere Katingan	HCV4	29.96
		HCVMA	2.41
	Buffer S. Bakung	HCV4	1.42
		HCVMA	0.09
23	S. Ruwe Pala	HCV4	0.16
	S. Ruwe	HCV4	0.76
	Buffer S. Ruwe Pala	HCV4	3.03
	Buffer S. Ruwe	HCV4	12.33
24	S. Ombak	HCV4	0.18
	Buffer S. Ombak	HCV4	5.59
26	S. Lopahti	HCV4	0.11
		HCVMA	0.16
	S. Lekawai	HCV4	1.22
	Buffer S. Pae	HCV4	20.21
		HCVMA	4.98
	Buffer S. Lopahti	HCV4	1.24
		HCVMA	2.24
	Buffer S. Lekawai	HCV4	4.11
26b	S. Pae	HCV4	2.83
	Buffer S. Pae	HCV4	0.01
28	S. Toras	HCV4	1.90
		HCVMA	0.00
	S. Mendung	HCV4	1.47
	S. Kemangai	HCV4	0.78

Indeks	Location	HCV Types	Hectares
	S. Baru	HCV4	0.43
	Buffer S. Toras	HCV4	11.11
		HCVMA	0.30
	Buffer S. Mendung	HCV4	7.96
	Buffer S. Kemangai	HCV4	11.36
	Buffer S. Baru	HCV4	4.17
		HCVMA	0.08
30	S. Metatui	HCV4	0.25
		HCVMA	0.01
	S. Kensae Doho	HCV4	0.09
	S. Kensae	HCV4	0.53
	S. Dungo	HCV4	0.07
		HCVMA	0.01
	S. Bomban	HCV4	0.15
		HCVMA	0.01
	S. Bakung	HCVMA	0.02
	Buffer S. Metatui	HCV4	4.93
		HCVMA	0.52
	Buffer S. Kensae Doho	HCV4	0.83
	Buffer S. Kensae	HCV4	7.08
	Buffer S. Dungo	HCV4	1.15
		HCVMA	0.75
	Buffer S. Bomban	HCV4	3.01
		HCVMA	0.32
42a	S. Mantun	HCV4	0.02
		HCVMA	0.02
	S. Ipak	HCV4 dan HCV5	0.36
	Buffer S. Mantun	HCV4	0.58

Indeks	Location	HCV Types	Hectares
		HCVMA	0.39
	Buffer S. Ipak	HCV4	12.07
42b	S. Mantun	HCV4	0.02
		HCVMA	0.01
47	S. Begori	HCV4	0.01
	Buffer S. Begori	HCV4	0.01
47a	S. Begori	HCV4	0.12
	Buffer S. Begori	HCV4	4.23
49	Buffer S. Penahaya Kehukup	HCV4	0.01
49a	S. Silat	HCV4	0.20
		HCVMA	0.04
	S. Penahaya Kehukup	4 dan 5	0.51
	S. Penahaya	4 dan 5	0.43
	Buffer S. Silat	HCV4	2.58
		HCVMA	0.51
	Buffer S. Penahaya Kehukup	HCV4	4.71

Indeks	Location	HCV Types	Hectares
	Buffer S. Penahaya	HCV4	3.30
9	S. Mentibar	HCV4 dan HCV5	3.50
	S. Garung	HCV4	0.11
	S. Duo	HCV4	1.05
		HCVMA	0.09
	S. Bedara	HCV4 dan HCV5	0.14
		HCVMA	0.17
	Buffer S. Mentibar	HCV4	27.14
		HCVMA	0.00
	Buffer S. Garung	HCV4	2.88
	Buffer S. Bedara	HCV4	3.73
		HCVMA	5.34
75	Buffer Hutan Lindung	HCVMA	202.36
77	Areal Belukar Lainnya	HCVMA	0.22
Total HCVA and HCVMA (Netto) PT SHP			**858.0**

HIGH CONSERVATION VALUE

GOODHOPE SINTANG REGION
KABUPATEN SINTANG
PROVINSI KALIMANTAN BARAT
PETA NKT KESELURUHAN
1:220,000

Legenda

- Sungai
- Batas Areal PT SSA
- Batas Areal PT SHP
- Areal Keramat (KPNKT 6)
- Mata Air (KPNKT 4&5)
- Areal Keramat (KBKT 6)
- Mata Air (KBKT 4&5)
- Koridor

- Lahan Pertanian
- Hutan Primer
- Kebun Campuran
- Hutan Sekunder
- Lahan Terbuka
- Areal NKT Keseluruhan
- KBKT Keseluruhan

- Belukar Muda
- Belukar Tua
- Kelapa Sawit
- Badan Air
- Semak

0 1.5 3   6   9   12
Kilometer
Proyeksi   : Transverse Mercator
Sistem Grid : Grid Geografis
Datum   : WGS 1984

Final Peta - November 2017

Sumber :
- Peta RBI Prov. Kalimantan Barat
  Skala 1:50000
  Badan Informasi Geospasial 2013
- Peta Batas Areal PT SHP, PT SSA
- Tim Survey 2017

Areal Yang Dipetakan

Figure 18. Map showing HCVAs in PT SHP concession and its surroundings

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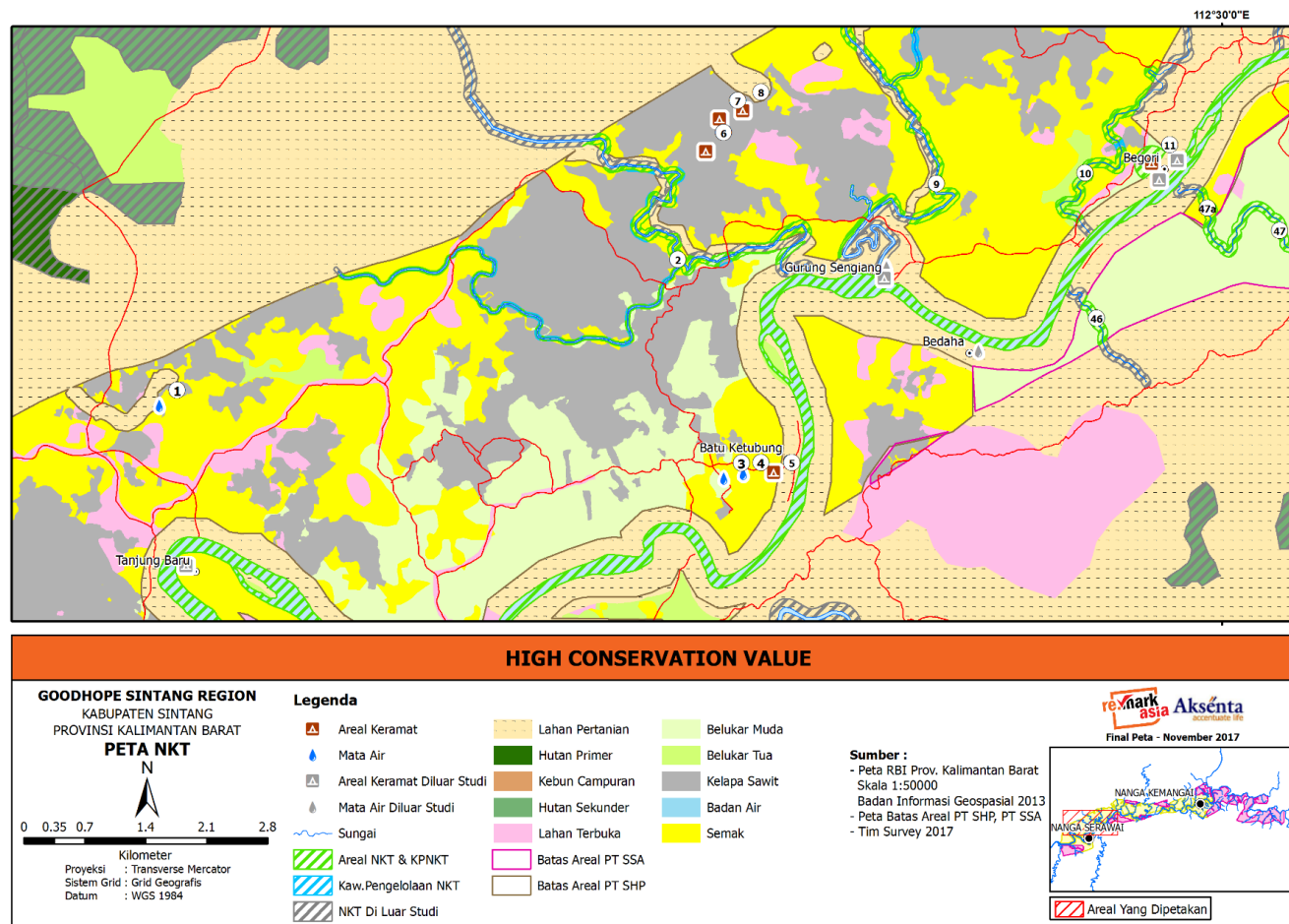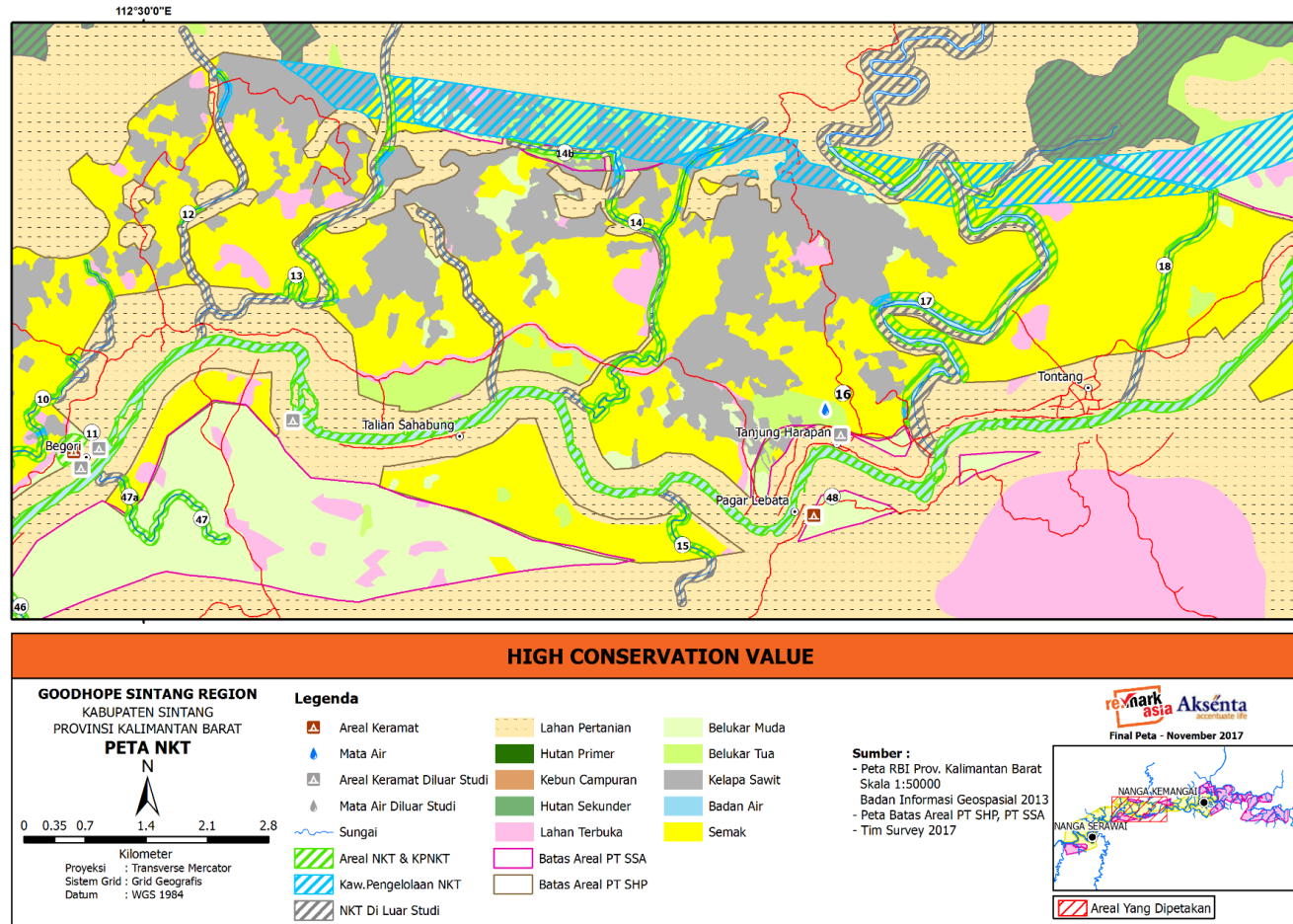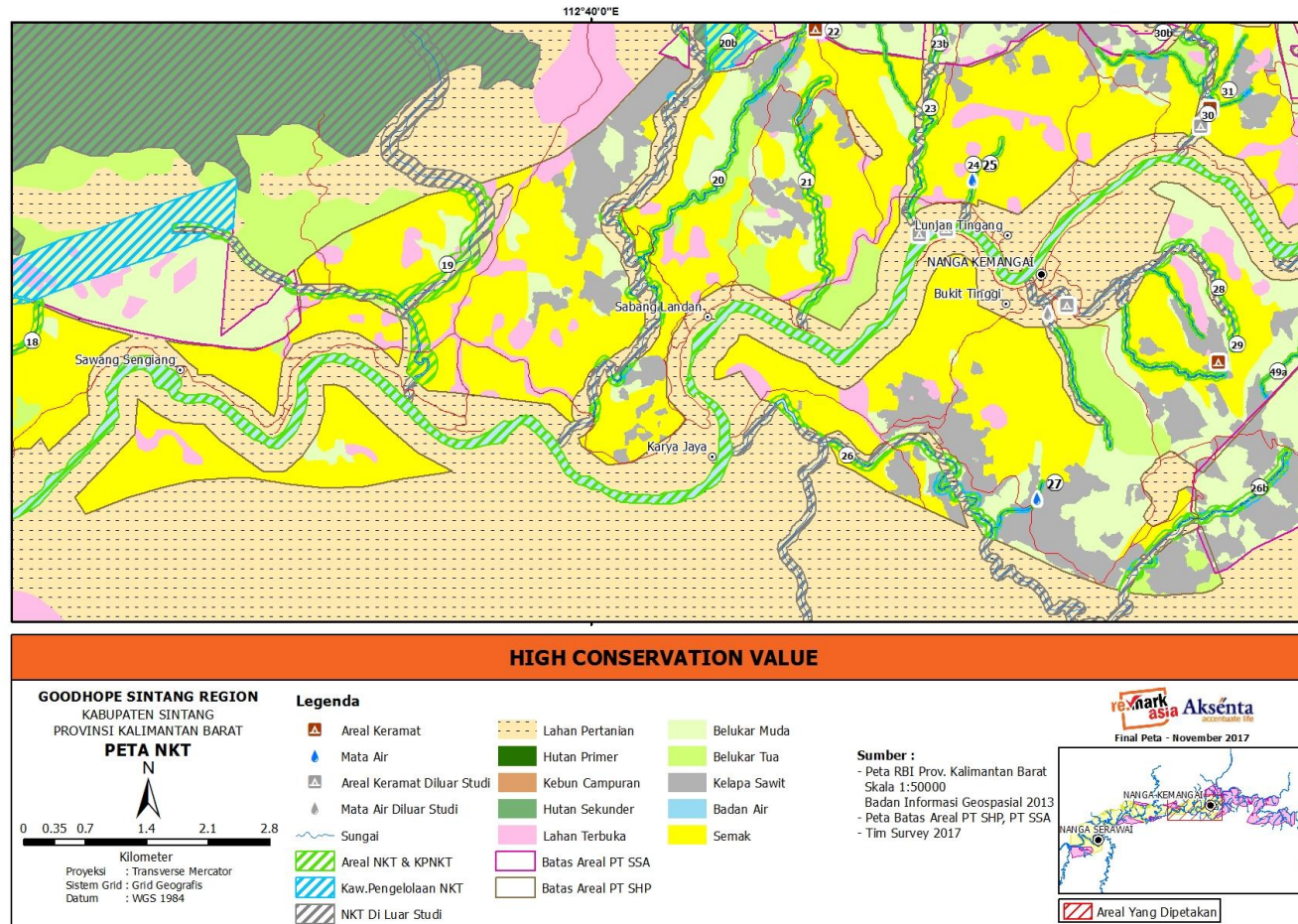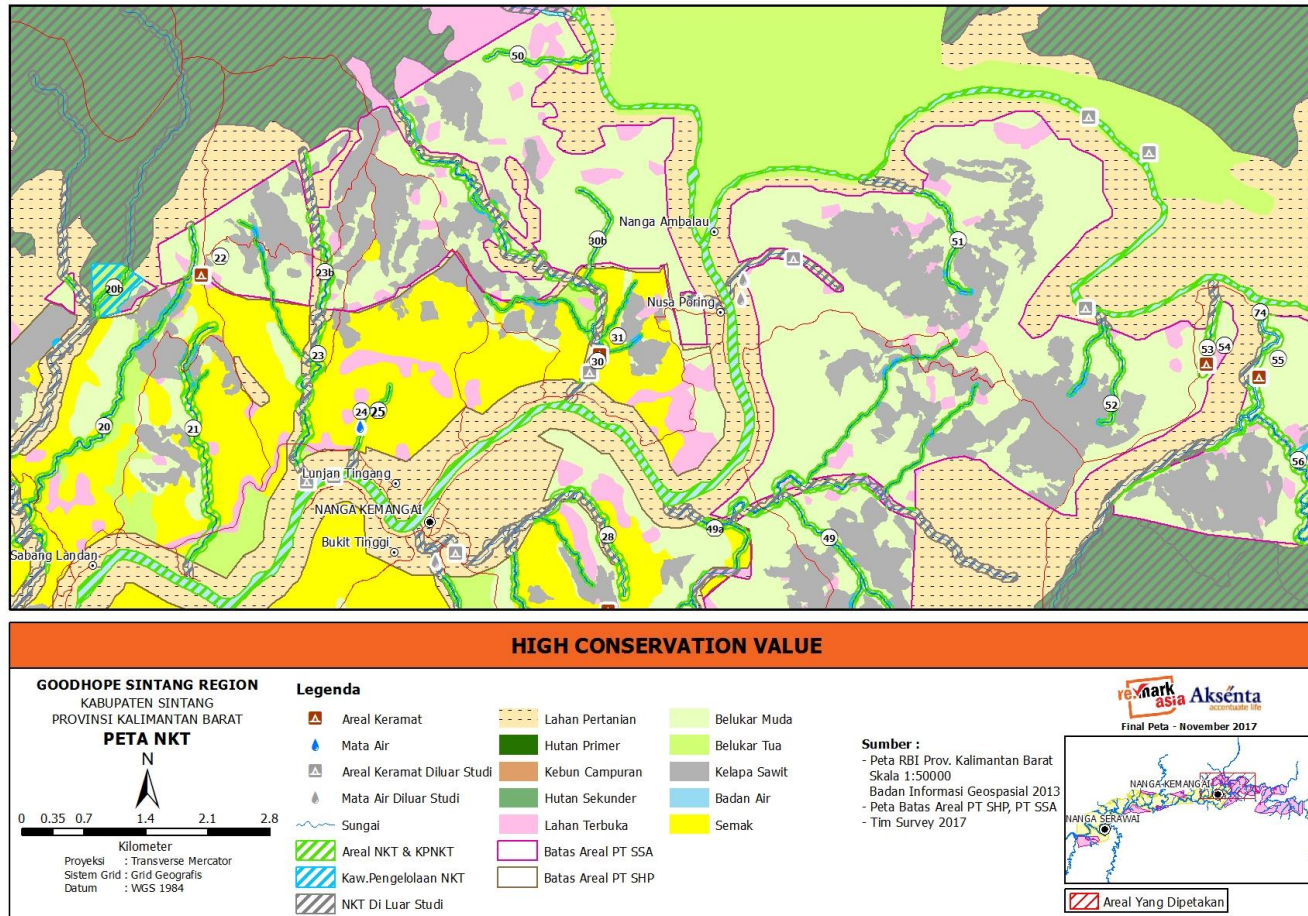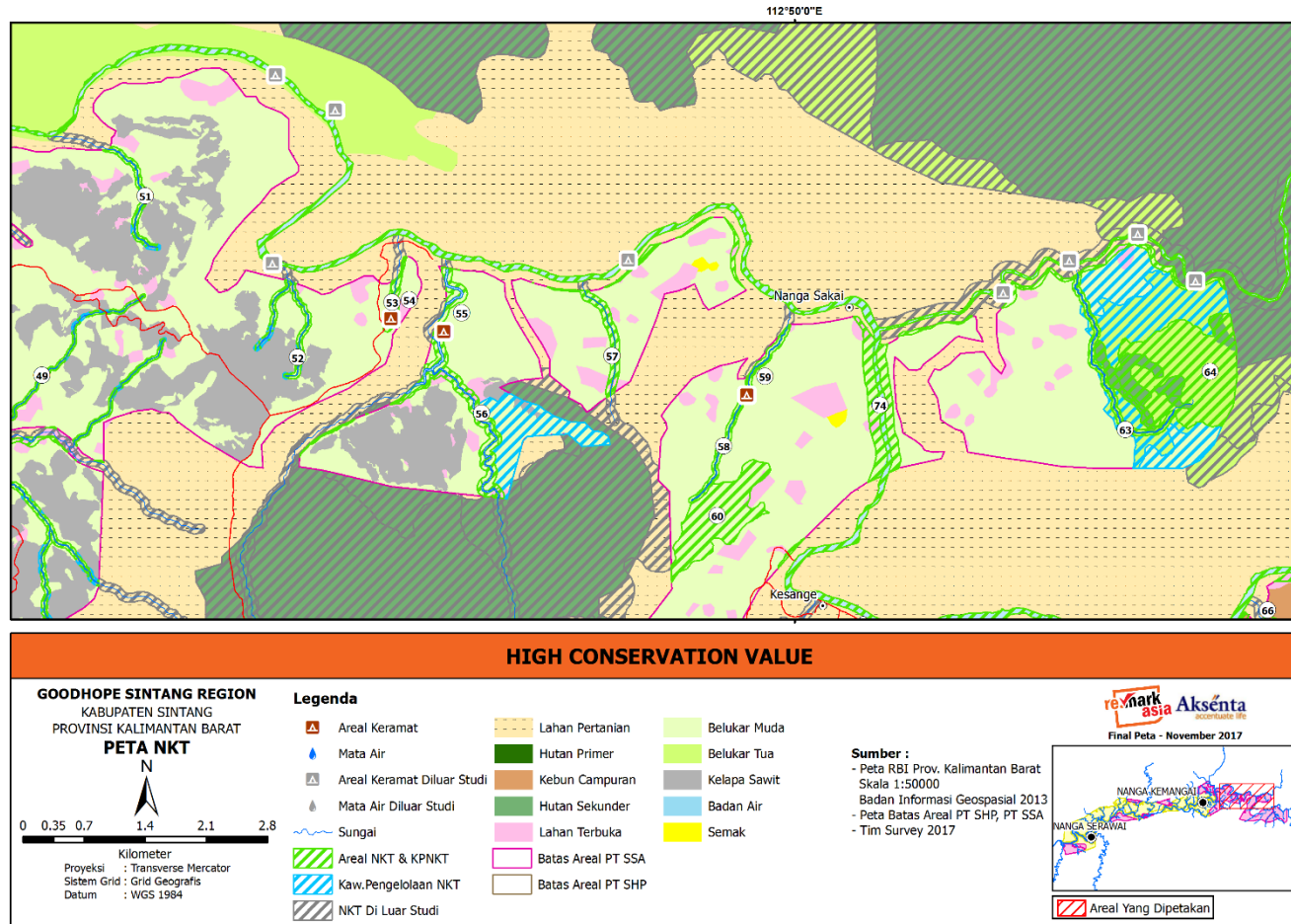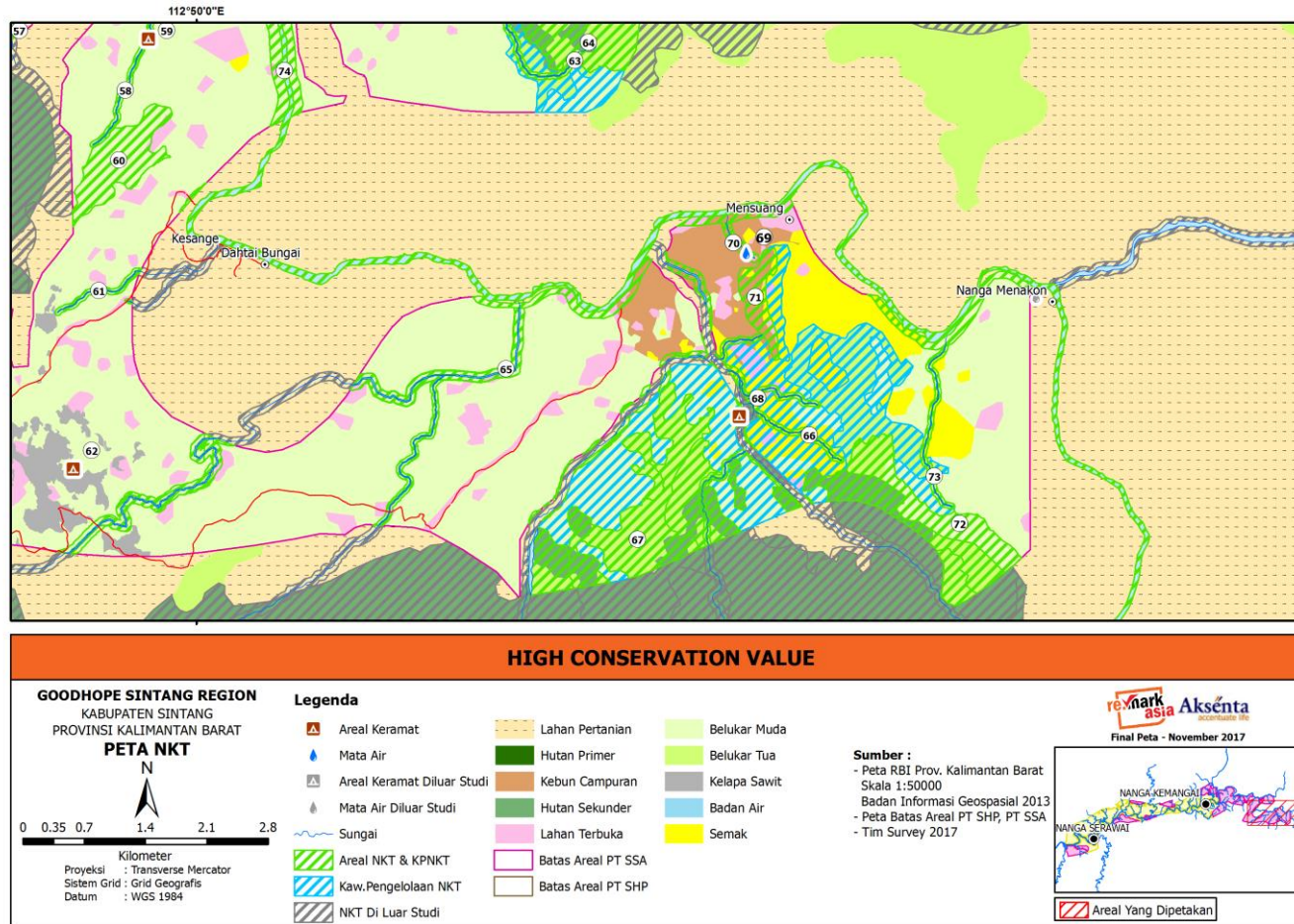Figure 19. Map showing HCVMAs in the PT SHP concession and its surroundings

HIGH CONSERVATION VALUE

GOODHOPE SINTANG REGION
KABUPATEN SINTANG
PROVINSI KALIMANTAN BARAT
PETA NKT
N

0   0.35 0.7   1.4   2.1   2.8
Kilometer
Proyeksi   : Transverse Mercator
Sistem Grid : Grid Geografis
Datum   : WGS 1984

Legenda

- Areal Keramat
- Mata Air
- Areal Keramat Diluar Studi
- Mata Air Diluar Studi
- Sungai
- Areal NKT & KPNKT
- Kaw.Pengelolaan NKT
- NKT Di Luar Studi

- Lahan Pertanian
- Hutan Primer
- Kebun Campuran
- Hutan Sekunder
- Lahan Terbuka
- Batas Areal PT SSA
- Batas Areal PT SHP

- Belukar Muda
- Belukar Tua
- Kelapa Sawit
- Badan Air
- Semak

Sumber :
- Peta RBI Prov. Kalimantan Barat
  Skala 1:50000
  Badan Informasi Geospasial 2013
- Peta Batas Areal PT SHP, PT SSA
- Tim Survey 2017

remark asia Aksénta
Final Peta - November 2017

Areal Yang Dipetakan

Figure 20. Map showing HCVMAs in the PT SHP concession and its surroundings Part A

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HIGH CONSERVATION VALUE

GOODHOPE SINTANG REGION
KABUPATEN SINTANG
PROVINSI KALIMANTAN BARAT
PETA NKT

N

0   0.35 0.7   1.4   2.1   2.8
Kilometer

Proyeksi   : Transverse Mercator
Sistem Grid : Grid Geografis
Datum   : WGS 1984

Legenda

- Areal Keramat
- Mata Air
- Areal Keramat Diluar Studi
- Mata Air Diluar Studi
- Sungai
- Areal NKT & KPNKT
- Kaw.Pengelolaan NKT
- NKT Di Luar Studi

- Lahan Pertanian
- Hutan Primer
- Kebun Campuran
- Hutan Sekunder
- Lahan Terbuka
- Batas Areal PT SSA
- Batas Areal PT SHP

- Belukar Muda
- Belukar Tua
- Kelapa Sawit
- Badan Air
- Semak

Sumber :
- Peta RBI Prov. Kalimantan Barat
  Skala 1:50000
  Badan Informasi Geospasial 2013
- Peta Batas Areal PT SHP, PT SSA
- Tim Survey 2017

Final Peta - November 2017

Areal Yang Dipetakan

Figure 21. Map showing HCVMAs in the PT SHP concession and its surroundings Part B

Figure 22. Map showing HCVMAs in the PT SHP concession and its surroundings Part C

Figure 23. Map showing HCVMAs in the PT SHP concession and its surroundings Part D

HIGH CONSERVATION VALUE

GOODHOPE SINTANG REGION
KABUPATEN SINTANG
PROVINSI KALIMANTAN BARAT
PETA NKT
N

0 0.35 0.7   1.4   2.1   2.8
Kilometer
Proyeksi   : Transverse Mercator
Sistem Grid : Grid Geografis
Datum   : WGS 1984

Legenda

Areal Keramat	Lahan Pertanian
Mata Air	Hutan Primer
Areal Keramat Diluar Studi	Kebun Campuran
Mata Air Diluar Studi	Hutan Sekunder
Sungai	Lahan Terbuka
Areal NKT & KPNKT	Batas Areal PT SSA
Kaw.Pengelolaan NKT	Batas Areal PT SHP
NKT Di Luar Studi	

Belukar Muda	
Belukar Tua	
Kelapa Sawit	
Badan Air	
Semak	

Sumber :
- Peta RBI Prov. Kalimantan Barat
  Skala 1:50000
  Badan Informasi Geospasial 2013
- Peta Batas Areal PT SHP, PT SSA
- Tim Survey 2017

Final Peta - November 2017

Areal Yang Dipetakan

Figure 24. Map showing HCVMAs in the PT SHP concession and its surroundings Part E

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Figure 25. Map showing HCVMAs in the PT SHP concession and its surroundings Part F

3.2.7. Stakeholder consultations

Stakeholder consultations were carried out during the all phases of the assessment (i.e. pre-assessment, field visit, final consultation, and reporting). Stakeholders consulted in the assessment were grouped based on its relationship to and interests over the PT SHP concession area and environmental and social features inside it. Five stakeholder groups identified in the assessment comprised of (i) local community, (ii) local community-representing organisations and institutions, (iii) stakeholders holding rights over the natural resources, and (iv) social and environmental organisations including academicians, and (v) district-level governmental institutions.

Table 36. Summary of consultation processes in the HCV assessment

Date	Time and Place	Name	Position/ Role	Affiliations/ Social group	Main Issue, Recommendation and Team Respond
05-09-2017	19.00 – 20.00 WIB at Hotel My Home, Sintang	Drh. Victor	Manajer	Sintang Orangutan	The nearest distribution of orangutan from PT SHP and PT SSA is located in Bukit Baka National Park and Bukit Raya. Sintang Orangutan does not have a program in Serawai and Ambalau, but some issues that must be considered from oil palm plantation activities is to minimize the impact of operations on the environment, mitigation against hunting threats, especially from company employees (migrants) **Team's Respond:** We will be focused on the Orangutan issue, if there're threats for the habitat or potential presence of Orangutans in the assessment area, the habitat specific area will be reserved for and trying to analyze the corridor path, so that Orangutans can survive. One of the objectives of the HCV study is to minimize the impact of plantation operations on ecosystems..
06-09-2017	10.00 – 12.00 WIB in Office of WWF Sintang	Hasbi	Staff Community Development	WWF Sintang mendorong pengelolaannya dengan prinsip-prinsip ramah lingkungan.	The Heart of Borneo (HoB) is an international program of cooperation between the Indonesian government with Malaysia and Brunei Darussalam initiated by WWF. HoB in West Kalimantan includes 3 districts of Kapuas Hulu, Sintang and Melawi. The purpose of HoB is to encourage multi-stakeholders associated with the area to implement sustainability principles. HoB is not directly related to the spatial and functional plans of the region specified by the government, permitted investors are welcome to conduct activities in this area, but we currently, WWF Sintang is in the process of assisting Sintang District government in conducting studies related to spatial planning for strategic areas of environment and

Date	Time and Place	Name	Position/ Role	Affiliations/ Social group	Main Issue, Recommendation and Team Respond
					forestry in Sintang Kabupaten. HoB is one of the strategic areas of environment and forestry, but plantation activities are not in conflict with it. Serawai and Ambalau which included in the HoB, are important areas for water catchment. The issue of water catchment areas is expected to be the main concern of this HCV study. The alternative income is very important for the people in Serawai and Ambalau. The community is expected to not only depends on one commodity but many. It can protect people and the environment if the price of one of the commodities goes down, people will still have other options. For example, the last few years the price of rubber commodities has dropped so many people are switching jobs as gold miners and loggers. It has a negative impact on the environment. **Team's Respond :** One of the purposes of conducting HCV studies is the principle of sustainability. We will encourage companies by providing appropriate recommendations from field findings. The results of our desk study mentioned that the assessment area are consists of hilly areas, indicating many water catchment and rivers, so this will be our main interest.
06-09-2017	12.00 – 13.00 WIB at Taman Nasional Bukit Baka and Bukit Raya, Sintang Office	Hernowo Suprianto	Kepala Seksi	Taman Nasional Bukit Baka dan Bukit Raya	Protected flora and fauna must follow the Indonesian laws. The majority of people in Serawai and Ambalau sub-districts are Uud Danum tribe, however, based on our experience, the Uud Danum tribe currently does not have customary law written and mutually agreed upon. According to our experience, in Serawai and Ambalau there are many land claims on behalf of customary forest supported by unscrupulous persons who have positions in Sintang Kabuapaten. In Serawai and Ambalau sub-district, especially in the Melawi River, there are many illegal gold mining activities supported by unscrupulous government staff. Gold mining in the region uses mercury as a separator between gold and other materials. Expectations of Bukit Baka and Bukit Raya National Park for oil palm plantations in Serawai and Ambalau are they would be able to change community behavior related to forest destruction activities, especially in Bukit Baka National Park and Bukit Raya, with the presence of income alternative sources. **Team's Respond :** In the HCV study, we used the IUCN red list reference as the basis for determining the

Date	Time and Place	Name	Position/ Role	Affiliations/ Social group	Main Issue, Recommendation and Team Respond
					status of flora and fauna We will learn more about the socio-cultural conditions of the communities in the assessment area so that the assessment team composition also filled by some socio-cultural and socio-economic experts. Regarding the land claims, we will re-examine the point where we use the RSPO standard in the assessment of FPIC for RSPO members. In regard to illegal mining, it is beyond our authority, these activities are temporarily defined as potential threats to the existence of HCV areas
06-09-2017	14.00 – 15.00 WIB di Rumah Pastor, Sintang	Pastor Jasques Maessen	Ketua Yayasan	Yayasan KOBUS	The young generation of the Dayak tribe recently change a lot, they are following the updatet rends They have a desire for modern life. Oil palm plantations provide significant changes to indigenous peoples' lives in Sintang District. A common concern for oil palm plantations is the mis-management that have a negative impact on environmental pollution and social conflict. The community must have an alternative income, so it is good if the community seeks some agricultural commodities such as rubber and oil palm. Recently, most individualized land ownership is evidenced by land certificates **Team's Respond** : We agree with what was presented by Mr. At present oil palm plantations are not solely seeking profit. With the existence of RSPO, and ISPO in the national context, encouraging companies to run businesses by considering environmental and social rules
06-09-2017	16.00 – 17.00 WIB at Kantor Lembaga Gemawan	Sri Wihastuti	Manager	Lembaga Gemawan	Lembaga Gemawan does not have a program in Serawai and Ambalau but we know some of the issues in the region about the land disputes and the usage of ulayat land that happened in 2007. **Team's Respond:** Thank you for the response, but when we conduct assessment activities, based on information from the community, there were no cases of land disputes.
16-09-2017	10.00 – 13.00 WIB at Gedung Serbaguna	Embedus Entang	Sekretaris Desa	Desa Nanga Ambalau	We expect the company to take care of the rivers that have been identified by the team, especially the River Penahanya and Sungai Rotang in our village, so that the water will always be usable.

Date	Time and Place	Name	Position/ Role	Affiliations/ Social group	Main Issue, Recommendation and Team Respond
	Serawai Sub-district				We expect the management of HCV areas that have been exposed by the team can be managed together with the community. There should be strict rules against for those who damage the HCV area. Suggestions: all areas identified as HCV were bordered and provided with information boards. **Team Respond :** All the suggestions will be incorporated into HCV management and monitoring as well as recommendations for the company.
16-09-2017	10.00 – 13.00 WIB at Gedung Serbaguna Serawai Sub-district	Alowisius Otong	Kepala Desa	Desa Mensuang	We hope the company will re-socialization on company's permit boundaries and the plan for identified HCV area. **Team's Respond:** Suggestions from you regarding socialization of company permit limits and HCV area boundaries will be conveyed to the unit management
16-09-2017	10.00 – 13.00 WIB at Gedung Serbaguna Serawai Sub district	Tondan	Public Figure	Desa Muara Kota	Some areas that have been cleared by the company but until 2017 there has been no oil palm planting. We hope the company can immediately planting. Cleared areas will not benefit us, but if the area is planted with oil palm then our community can work there. **Team's Respond:** At present the company is getting orders not to continue plantation development activities, until the provisions of the new opening procedure have been fulfilled.
16-09-2017	10.00 – 13.00 WIB in Gedung Serbaguna Kecamatan Serawai	Samsudin	Public Figure	Desa Sabang Landan	We hope the company can seriously run the findings from the assessment team especially for the rivers and springs we used as a source of clean water. **Team's Respond:** The company will buffer rivers and springs as HCV areas.
16-09-2017	10.00 – 13.00 WIB at Gedung Serbaguna Kecamatan	Rahmat Hidayat	Sekretaris Desa	Desa Nura Poring	We hope that in the HCV management, it is necessary to establish ways to crack down on people who are involved in logging activities. In the HCV management is also expected to give understanding to all community elements to be aware of the importance of environmental management.

Date	Time and Place	Name	Position/ Role	Affiliations/ Social group	Main Issue, Recommendation and Team Respond
	Serawai				**Team's Respond:** In this public consultation also at the same time as one of the ways to be aware of the community about HCVs. It is expected that the people who are the representatives of this meeting can further convey the results of today's meeting.
16-09-2017	10.00 – 13.00 WIB in Gedung Serbaguna Kecamatan Serawai	Ernan	Dewan Adat	Kecamatan Ambalau	Many people are still don't know about the company boundaries, so it is important to be socialized. The community agreed to look after the identified HCV areas **Team's Respond:** Thank you for your willingness to participate in maintaining the HCV area, regarding the socialization of boundaries as previously stated, will be forwarded to the management unit to be followed up.
16-09-2017	10.00 – 13.00 WIB in Gedung Serbaguna Kecamatan Serawai	Niko SHO	Dewan Adat	Kecamatan Serawai	We hope the company can focus its CSR activities for the construction of clean water pipeline, either from springs or from rivers around the village. **Team's Respond:** This will be one of the recommendations for the company.
16-09-2017	10.00 – 13.00 WIB in Gedung Serbaguna Kecamatan Serawai	Masaini	Public Figure	Desa Nanga Serawai	We hope the company can build a water dam to hold clean water from the springs in our village. We look forward to the company for the sacred areas identified by the assessmet team to be fenced and well managed **Team's Respond:** Like the previous comments, this will be considered to be one of the management recommendations.
16-09-2017	10.00 – 13.00 WIB in Gedung Serbaguna Kecamatan Serawai	Veronika	Sekretaris Desa	Desa Sawang Sangian	In the process of land acquisition, it's expected the company involve all parties so it would not be a trigger for conflict between communities. **Team's Respond:** Your comments will be a recommendation for the community to be involved in every

Date	Time and Place	Name	Position/ Role	Affiliations/ Social group	Main Issue, Recommendation and Team Respond
					element of the activity
18-09-2017	14.00 – 15.30 WIB in ruang pertemuan Hotel My Home	Hernowo Suprianto	Kepala Seksi	Balai Taman Nasional Bukit Raya dan Bukit Baka	Worried for the process of the plantation development can affect to the drought that caused fire spreading to Bukit Baka and Bukit Raya National Park. With the presence of oil palm plantation, it is expected that the community will no longer perform logging activities in Bukit Baka and Bukit Raya National Park because of the existence of alternative sources of income **Team's Respond:** Thank you for the response. We also hope that the SHP and SSA can manage or conduct water management properly. Then maintain the condition of the river and its proximity properly, so that the drought that is feared does not occur. Also for fires, companies must try to maintain / monitor fire in the area and outside the area. Yes sir, with the existence of a fields, there will be a need for labor that is expected to come from the closest villages.
18-09-2017	14.00 – 15.30 WIB in ruang pertemuan Hotel My Home	Kayatanus	Staff	KPH Sintang Timur	Does this study identify the potential for hydropower? **Team Respond:** Our HCV study did not identify potential sources of electricity because its beyond our study boundaries.
18-09-2017	14.00 – 15.30 WIB at meeting room Hotel My Home	Gunadi	Staff	Dinas Perkebunan	In 2013, Paguyuban Uud Danum sent a letter to the Agriculture and Plantation Agency in Sintang, requesting for customary forest and sacred places located in Nanga Sakai Village to not be intended as oil palm plantations After the survey activities assisted by BKSDA Kabuapten Sintang, the existence of customary forest and sacred areas are outside the company's license (PT SSA). Sacred areas are common in Nanga Sakai and most have been recorded by the assessment team as shown in this presentation. **Team's Respond:** Thanks for the information. Hopefully the results of this study by registering HCV 6 can help communities and companies to jointly protect the area.
18-09-	14.00 – 15.30	Munawir	Staff	WWF Sintang	Appreciate the companies whose committed towards sustainability.

Date	Time and Place	Name	Position/ Role	Affiliations/ Social group	Main Issue, Recommendation and Team Respond
2017	WIB at meeting room Hotel My Home				Important notes related to the distribution of orangutans, need to be considered and further analyzed for the existence of Orangutans in the assessment area. Ideally HCV concept is done prior to the opening of the area. FPIC should be done many times and participatory principles need to be put forward in the management process. RTRW Sintang: Enter the strategic areas of living environment and forestry. In the future, can be synergize with company program **Team's Respond:** Thank you for your input. Yes sir, for orangutans, we will dig up information and examine more about its existence. For FPIC, we really agree about FPIC that must be done continuously. For programs, ideally all environmental and social programs should be synergized with other related parties, resulting in collaborative management

3.2.8. HCV management and monitoring

HCV Management in Goodhope Asia Holdings Ltd., Sintang Region concerns the management of forests, hilly areas, rivers and borders, springs, sacred areas such as "kelokak" (Kolohka, old village sites), and very old graves appreciated by the community. In addition to HCV areas, HCV management areas (HCVMA) have been identified to provide connectivity to the forests in the wider landscape and to support the maintainance or enhancement of the HCVs.

Areas of old scrub considered high value for regeneration and which provide connectivity or act as buffer zones to adjacent forests have been identified as HCVMA. Both HCVAs and HCVMAs are recommended to be No-Go areas for development.

Below are some recommendations for the management and monitoring of HCVs at Goodhope Asia Holdings Ltd., Sintang Region.

a. Threat assessment

The threat assessment result on each identified HCV is potential impact that varies from low to high impact. Most sources of threat contribute to pressure are come from external. This is due to at least two factors: (i) the identified HCV areas are 'open access'; (ii) some HCV areas are not fully controlled by the company because they have not received compensation yet.

Table 37. Summary of HCV threat assessment

HCV	Summary of the important value in the assessment area	Main Threat
1	Existence of RTE species	• Decreasing of diversity RTE species due to community hunting • Decreasing or degradation of forest on the hills and the destruction of river borders or riparian habitats • Potential human-orangutan conflict
2	Secondary forest and Corridor	• Timber logging • Land conversion for plantation
3	Threatened lowland forest onsandstone	• Timber logging • Land conversion for plantation
4	Management of extreme water flow, including vegetated buffer zone or intact flooded areas	• Decreasing on area and/or land cover quality in catchment area • Potential of land conversion for oil palm plantation and community cultivation
	Maintenance of downstream river flow regimes (related to river base flow)	
	Natural ecosystems that play an important role in maintaining steep slope stability	
	Clean water supply	
	Protection of aquifers (or catchment areas, especially for creeks and springs)	
	Maintenance of water quality characteristics	• Potential of land conversion in the riverbanks • Residues from agrochemical applications and erosion results washed out by surface runoff • Gold mining activities by the community
	Prevention and protection from fire	• Decreasing area and /or land cover quality in the catchment area, which will impact to the base flow of the tributaries, thus contributing to debit fluctuation of Ambalau River.
5	Water resources needed by local communities for drinking and sanitation	• Potential of land conversion especially in water catchment and riverbanks • Logging activities by local communities at the river borders causing high run off • Pesticide residues, fertilizers, and eroded materials can potentially degrade the river water quality due to high surface runoff
	Fish (as an important source of protein) and other fresh water species which is relied upon by local people	• Fish poisoning activities by migrant communities in the watersheds and its surrounding. Toxins can contaminate the

HCV	Summary of the important value in the assessment area	Main Threat
		river, while decreasing fish populations
6	Gupung buah, historic or sacred sites, graves and ceremonial places that are important for local or indigenous people	• Theft of sacred objects • Degradation or removal of HCV 6 area

b. Recommendation for management

- Permanent marking of the HCV areas. The marking should be clearly visible.
- Signboards and socialization explaining the boundaries of HCV areas and importance of HCV Areas to community and environment.
- Collaboration with local communities, government, neighbor companies, and NGOs in managing HCV areas.
- Induction to external parties in the operations (land clearing and processing contractors) explaining the boundaries of HCV areas and importance of HCV Areas to community and environment.
- Supervising the land clearing activity by the third party (contractor) especially in areas adjacent to HCV areas.
- Preparation and socialization of the SOP for "encounter with Orangutan".

c. Recommendation for monitoring

- Periodically monitor the boundaries of HCV Area and physical condition of the HCV site (at least once a month).
- Evaluation of the effectiveness of HCV area management.
- Documentation of socialization activities with related stakeholder.
- Monitoring of the land clearing activities by third parties.
- Regular patrol.
- Monitor vegetation growth (% growth) in reforestation/rehabilitation areas.
- Periodically monitor the water quality (at least every 6 months) at water monitoring points (river inlet-outlet), both visually and laboratory test.
- Monitoring of sediment thickness in all tributaries in the companies concession.
- Monitoring the physical condition of civil engineering buildings.
- Record the number of landslide or high erosion locations.
- Record number of fire incidents with documentation and official report.
- Regularly checking the existence of RTE species.
- Record any occurrence of hunting and the habitat area decreasing.
- Periodically monitoring of lowland dipterocarp secondary forest ecosystems in Korong Sakai Village (ID 67), Korong Duhung (ID69) and Korong Biye Parik (ID 73).
- Record the destruction of ID 67, ID 69 and ID 73 areas.
- Periodically monitoring or measurement of sedimentation rates at Water Quality Monitoring Sites.
- Monitor chemical application activities in a location adjacent to riverbank determined as HCV area.
- Regularly monitor the boundaries and HCV area, at least once a month.

3.3. Carbon and GHG Assessments

3.3.1. Land cover carbon stock

Carbon stock assessment found that old shrub (belukar) land cover is contains the highest biomass carbon stock in PT SHP concession. Moreover, HCS Approach assessment also identified that the old shrub is equivalent with the lowest strata of HCS Forest according to the toolkit, namely young regenerating forest. The other land cover classes (except oil palm and water body) contain lower biomass carbon stock and were not identified as potential high carbon stock land cover according to the HCS Approach assessment.

Table 38. Summary of land cover biomass carbon stock in PT SHP concession

Land Cover	Average Carbon Stock (TonC/Ha)	Average Carbon Stock (TonCO2e/Ha)
Old shrub (Belukar)	56.7	207.9
Shrub (Semak Belukar)	22.1	81.3
Bush (Semak)	6.2	22.7
Bare land (Lahan Terbuka)	0.0	0.0

In accordance with the integrated conservation land use plan from HCS Approach assessment, there are 5.3% of the PT SHP concession area determined to be conserved for its high conservation values and high carbon stock. The other 28.7% of the area is the existing oil palm plantation while the last 63.8% is non-planted and proposed as the potential area for new development.
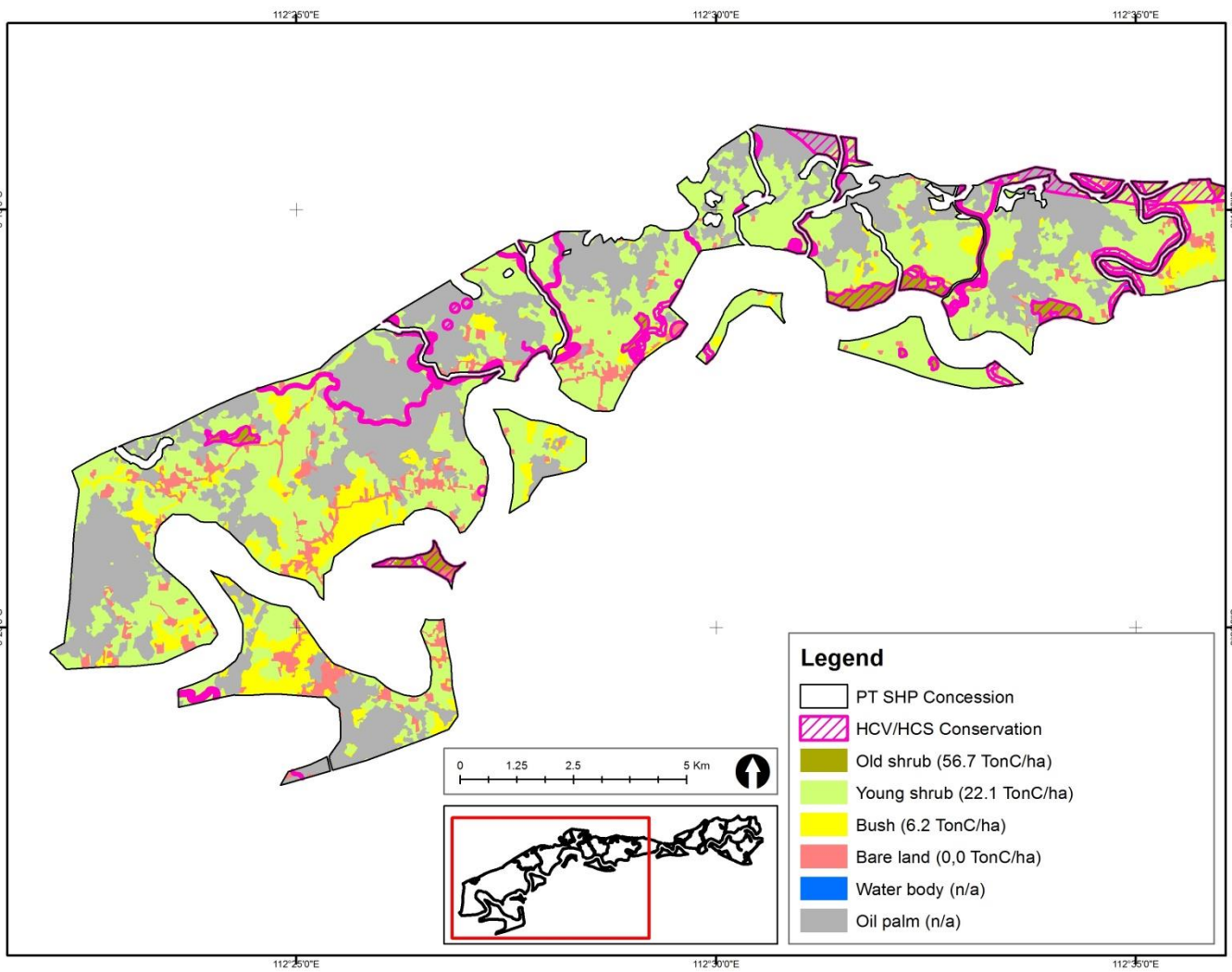
Figure 26. Map of land cover carbon stock in PT SHP concession (western part)
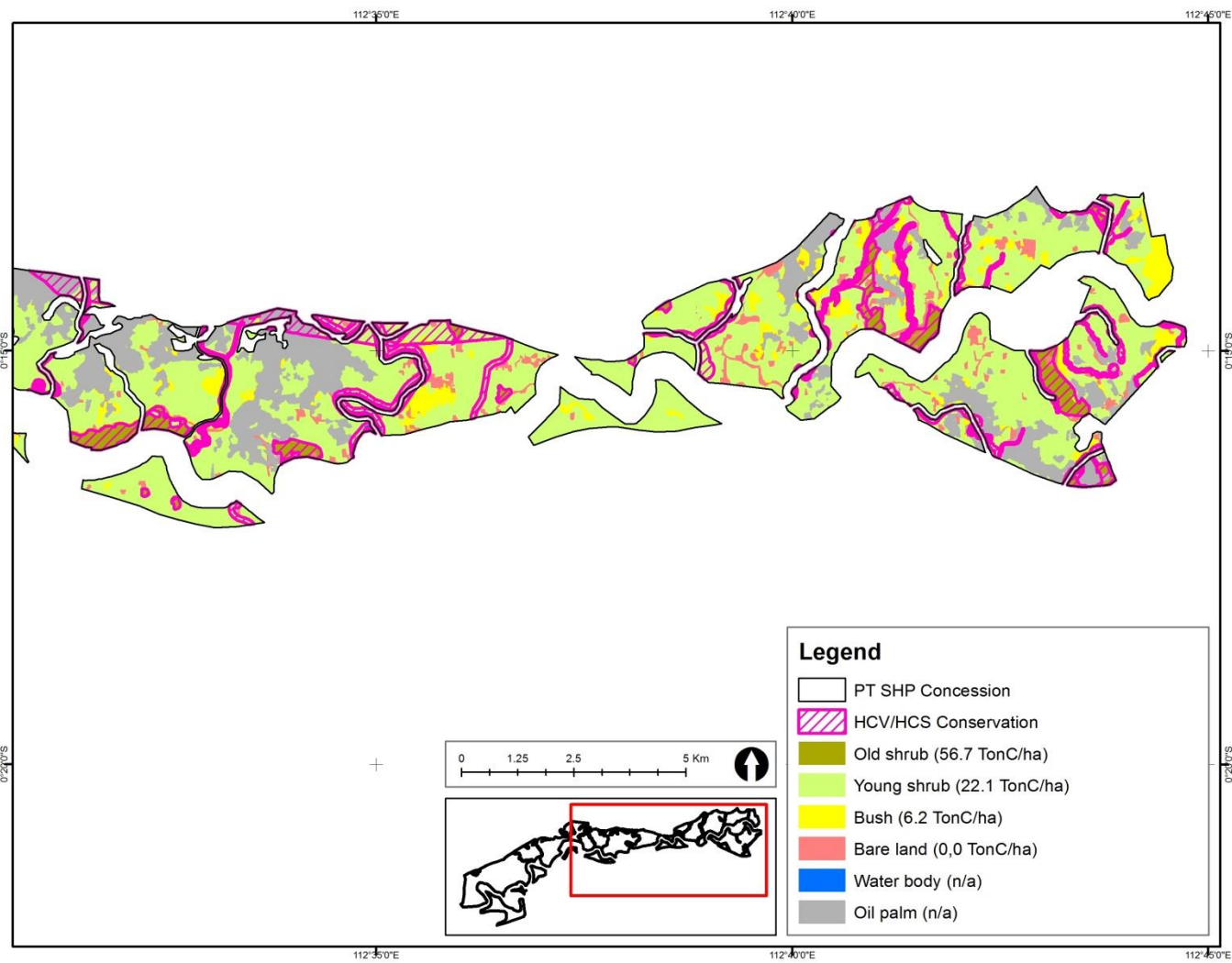
Figure 27. Map of land cover carbon stock in PT SHP concession (eastern part)

3.3.2. Organic soil/peat carbon stock

There is no peat soil in PT SHP concession, thus there is no potential of high carbon stock from organic soil.

3.3.3. GHG net emission beaseline

GHG net emission baseline was derived from calculation of GHG emission of default scenario of new plantation development and management (i.e. wo efficiency of fertilizer use, no advance treatment of POME, etc.). Emission of GHG is sourced from (i) land clearing, (ii) FFB production and fertilizer use, (iii) N_2O emission from fertilizer, and (iv) fuel use in plantation. Fixation/sequestration of GHG is sourced from (i) growth of the oil palm crop and (ii) growth and standing stock of biomass in conservation area (HCV-HCS area).

Calculation of the baseline GHG net emission shows that use of fertilizer and POME contributes to the highest emission compare to the other sources in the plantation activity (FFB production) and mill activity (palm oil production), whereas growth of the oil palm crop contributes to the highest fixation compare to conservation area. Table below presents contributions of GHG emission and fixation from the sources and the total of baseline GHG net emission.

Table 39. Summary of baseline GHG net emission from FFB production

Sources	Total Emissions (t CO_2e)	Emission/Area (t CO_2e/ha)	Emission/Produced FFB (t CO_2e/t FFB)
Land clearing	22,345.88	2.69	0.11
Crop sequestration	-77,891.40	-9.36	-0.37
Fertilizers*	53,301.14	6.41	0.26
N_2O	40,647.12	4.89	0.20
Field fuel*	42.84	0.01	0.00
Peat	0.00	0.00	0.00
Conservation credit	-3,233.75	-0.39	-0.02
Total	**35,211.83**	**4.23**	**0.17**

Note: "negative (-)" indicates fixation/sequestration of carbon

Table 40. Summary of baseline GHG net emission from palm oil production

Sources	Total Emissions (t CO_2e)	Emission/Area (t CO_2e/ha)	Emission/Produced FFB (t CO_2e/t FFB)
POME	40,772.45	4.90	0.20
Mill fuel	2,595.90	0.31	0.01
Purchased electricity	0.00	0.00	0.00
Credit (excess electricity exported)	0.00	0.00	0.00
Credit (sale of biomass for power)	0.00	0.00	0.00
Total	**43,368.35**	**5.21**	**0.21**

Table 41. Summary of overall baseline GHG net emission

Field Emissions (t CO_2e)	35,211.83
Mill Emissions (t CO_2e)	43,368.35

Total Emissions (t CO₂e)	**78,580.18**
Total Emissions/ha (t CO₂e/ha)	**137.30**
Total Emissions/Produced CPO (t CO₂e/t CPO)	**1.40**
Total Emissions/Produced Palm Kernel Oil (t CO₂e/t PK)	**1.40**
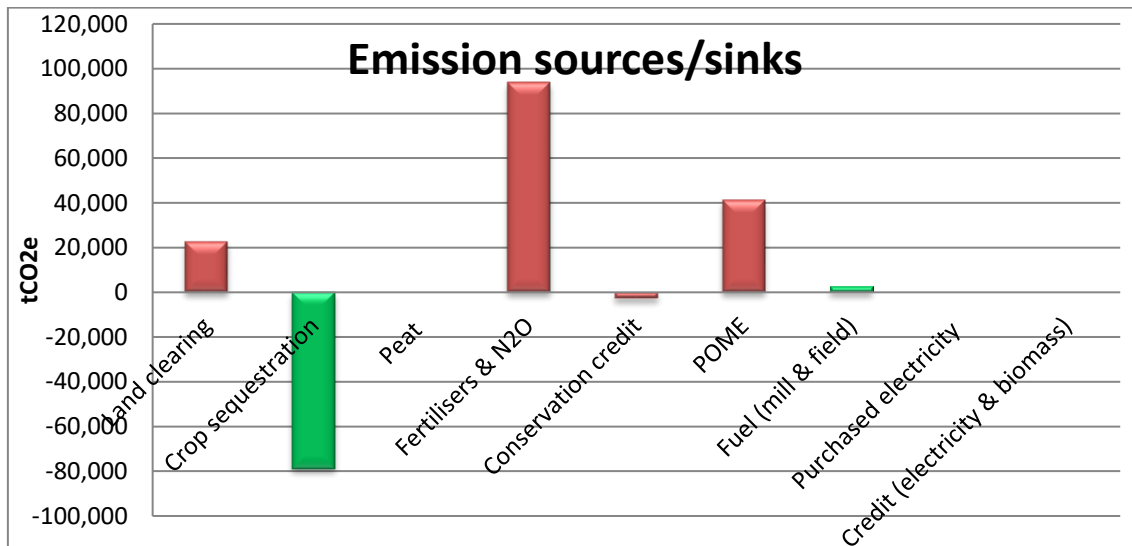
Figure 28. Chart showing baseline net GHG emission and fixation (scenario 1)

3.3.4. Scenario testing

Five scenarios including the base line were prepared to determine optimal development plan scenario to reduce GHG emission in the new development. Fertilizer use and POME are the most significant contributors of the GHG emission in the baseline scenari. Use of fertilizer in plantation is more flexible to be adjusted and the implementation is more feasible compare to applying advance treatment of POME which requires development of advance POME treatment facility (such as land application network, methane capture, etc.). Therefore, use of fertilizer was selected as the source of GHG emission to be adjusted in the scenario testing to reduce GHG emission in the new plantation development and management. Summary of the scenario testing is presented in table below.

Table 42. Summary of new development scenario testing

Scenario	Details
S1	• Setting aside conservation areas • No POME treatment • No efficiency on fertilizer use
S2	• Setting aside conservation areas • No POME treatment • 5% efficiency on fertilizer use
S3	• Setting aside conservation areas • No POME treatment, 10% efficiency on fertilizer use based on the reflection from the existing plantation management

Scenario	Details
S4	• Setting aside conservation areas • No POME treatment • 15% efficiency on fertilizer
S5	• Setting aside conservation areas • No POME treatment • 20% efficiency on fertilizer use based on the reflection from the existing plantation management

		S1	S2	S3	S4	S5
Conservation Areas (ha)		1,293.5	1,293.5	1,293.5	1,293.5	1,293.5
Land cover of the proposed area for development (ha)	Old Shrubs (207.9 TonCO$_2$e/ha)	0.0	0.0	0.0	0.0	0.0
	Shrubs (81.3 TonCO$_2$e/ha)	6,487.0	6,487.0	6,487.0	6,487.0	6,487.0
	Bushes (22.7 TonCO$_2$e/ha)	1,450.9	1,450.9	1,450.9	1,450.9	1,450.9
	Bare Land (0.0 TonCO$_2$e/ha)	839.9	839.9	839.9	839.9	839.9
POME Management	Conventional Treatment	no	no	no	no	no
	Methane Capture	no	no	no	no	no
Fertilizer Use Efficiency	(%)	0.0%	5.0%	10.0%	15.0%	20.0%
	(ton/year)	42,211.3	40,100.8	37,990.2	35,879.6	33,769.1

GHG net emission calculation was carried out for each of the scenario. The calculation shows that the GHG net emission is decreasing respectively from the first to the fifth scenario. Simulation of each scenario would decrease GHG net emission 4,600 t CO$_2$e (5.8%). Therefore, the company can choose from scenario number 2-5 to mitigate its GHG emission by considering the feasibility of the implementation in the future.

Table 43. Summary of GHG net emission calculation from each scenario

Emission ton (CO$_2$e)					
Source	**S1**	**S2**	**S3**	**S4**	**S5**
Field emissions & sinks					
Land clearing	22,345.88	22,345.88	22,345.88	22,345.88	22,345.88
Crop sequestration	-77,891.40	-77,891.40	-77,891.40	-77,891.40	-77,891.40
Fertilisers	53,301.14	50,636.08	47,970.99	45,305.89	42,640.88
N2O	40,647.12	38,684.56	36,721.97	34,759.38	32,796.86
Field fuel	42.84	42.84	42.84	42.84	42.84
Peat	0.00	0.00	0.00	0.00	0.00
Conservation credit	-3,233.75	-3,233.75	-3,233.75	-3,233.75	-3,233.75
Nett Field Emission	35,211.83	30,584.21	25,956.53	21,328.84	16,701.31
Mill emissions & credit					
POME	40,772.45	40,772.45	40,772.45	40,772.45	40,772.45
Mill fuel	2,595.90	2,595.90	2,595.90	2,595.90	2,595.90
Purchased electricity	0.00	0.00	0.00	0.00	0.00
Credit (excess electricity exported)	0.00	0.00	0.00	0.00	0.00
Credit (sale of biomass for power)	0.00	0.00	0.00	0.00	0.00
Nett Mill Emission	43,368.35	43,368.35	43,368.35	43,368.35	43,368.35
Total Nett Emission (Field and Mill)	78,580.18	73,952.56	69,324.88	64,697.19	60,069.66

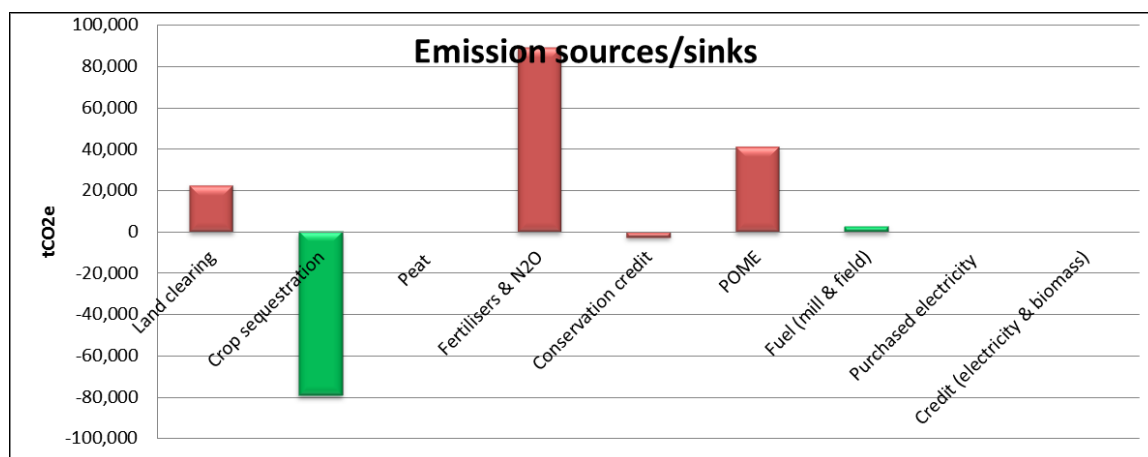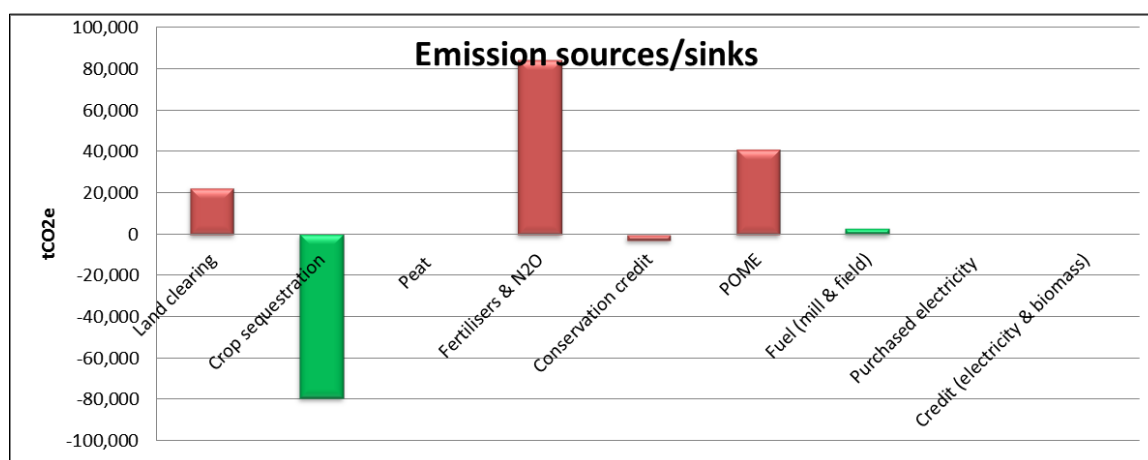| Nett Emission/Production					
t CO₂e/t CPO	1.40	1.32	1.23	1.15	1.07
t CO₂e/t PK	1.40	1.32	1.23	1.15	1.07
Decrease of Emission					
(t CO2e)	0.00	4,627.62	9,255.30	13,882.99	18,510.52
(%)	0.00	5.89	11.78	17.67	23.56

Figure 29. Chart showing net GHG emission and fixation from scenario 2

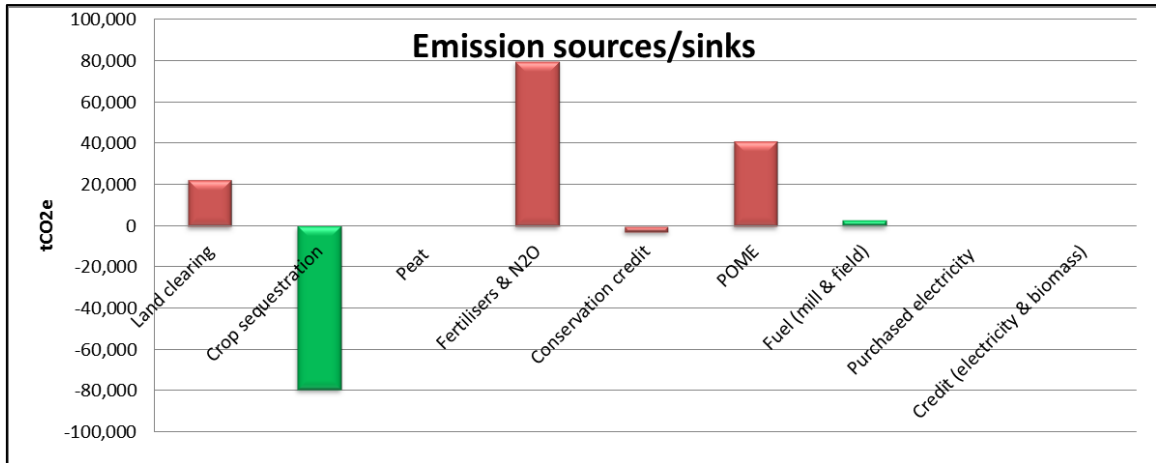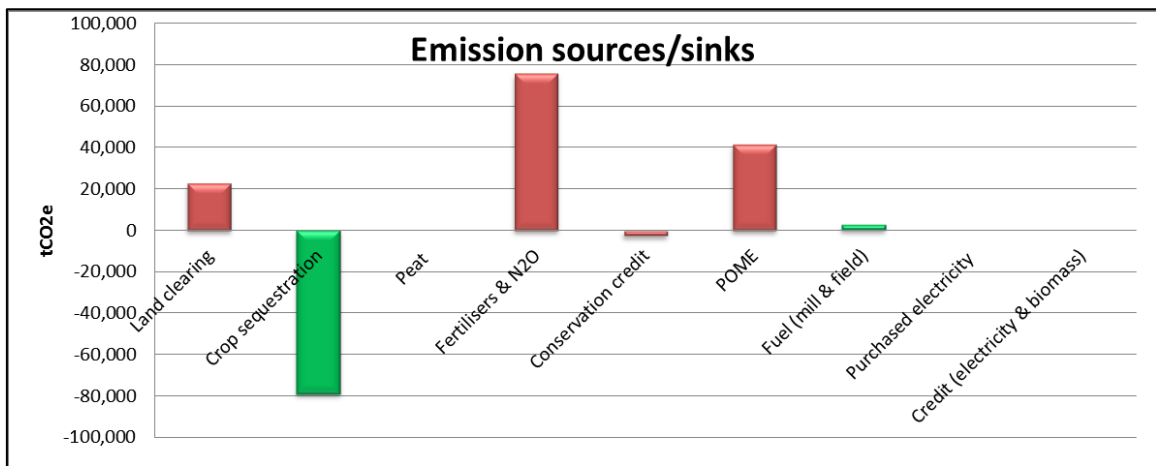**Figure 30. Chart showing net GHG emission and fixation from scenario 3**

Figure 31. Chart showing net GHG emission and fixation from scenario 4

Figure 32. Chart showing net GHG emission and fixation from scenario 5

3.3.5. Scenario selection

Use of fertilizer was identified as the source of GHG emission that can be adjusted to reduce the GHG emission in the new plantation of PT SHP. The company is given with 4 new development and management scenarios that can reduce its GHG emission. The greater the reduction is better; however, the company should also consider the feasibility of the implementation to ensure its sustainable production and commitment such as effects to the growth rate of the crop, fertilizer application technique, and etc. Furthermore, increase of productivity is also one of the efforts to GHG emission mitigation.

The company selected scenario 3 in the new development. Implementation of scenario 3 will reduce the GHG emission by nearly 12% (Figure 30). Moreover, amount of fertilizer to be used in scenario 3 is considered sufficient while the scenario 4 and 5 may risk the growth of the crop and its productivity in the future. Therefore, scenario 3 was selected as the most optimal scenario to mitigate GHG emission from the new plantation.

3.4. Land Use Change Analysis

According to the cut off dates used in the assessment, LUCA found that corporate land clearance took place in the period between October 2010 and May 2014 which was after the first HCV

assessment completed (2010). Development as indicated by size of the oil palm area is identified growing until RSPO issued the stop work order in April 2017. There is no corporate new land clearing or new oil palm area as indicated by the size of oil palm area in the period between the issuance of the stop work order (April 2017) and the HCV reassessment (August 2017). Furthermore, additional LUCA regarding with the new NPP submission also found that there is no corporate land clearing or new oil palm area up until the time of NPP submission, namely December 2019. Table below presents the historical land use change in the assessed periods.

Table 44. Summary of historical land use change in PT SHP concession

Landcover	Nov 2005	Dec 2006	Dec 2007	Jan 2010	Oct 2010 (1st HCV)	May 9, 2014	April 28, 2017 (SWO)	August 15, 2017 (new HCV)	September 16, 2019 (NPP)
Secondary forest	0	0	0	0	0	0	0	0	0
Agroforest	0	0	0	0	0	0	0	0	0
Old shrub	845.37	824.22	643.83	568.24	589.45	395.44	444.46	431.04	434.71
Young shrub	8757.13	8594.43	7,949.36	8866.75	8845.54	8600.14	6981.38	6706.10	7,335.05
Bush	2332.78	3252.90	3,907.84	3,041.89	3041.89	1541.66	1495.39	1470.00	1,202.54
Bare land	1980.70	1,244.43	1,414.96	1,439.10	1439.10	621.82	874.06	1188.16	898.12
Oil palm	0	0	0	0	0	2757.71	4121.53	4121.53	4,056.36
Water body	47.98	47.98	47.98	47.98	47.98	47.18	47.13	47.13	47.13
Total	13,963.9	13,963.9	13,963.9	13,963.9	13,963.9	13,963.9	13,963.9	13,963.9	13,963.9
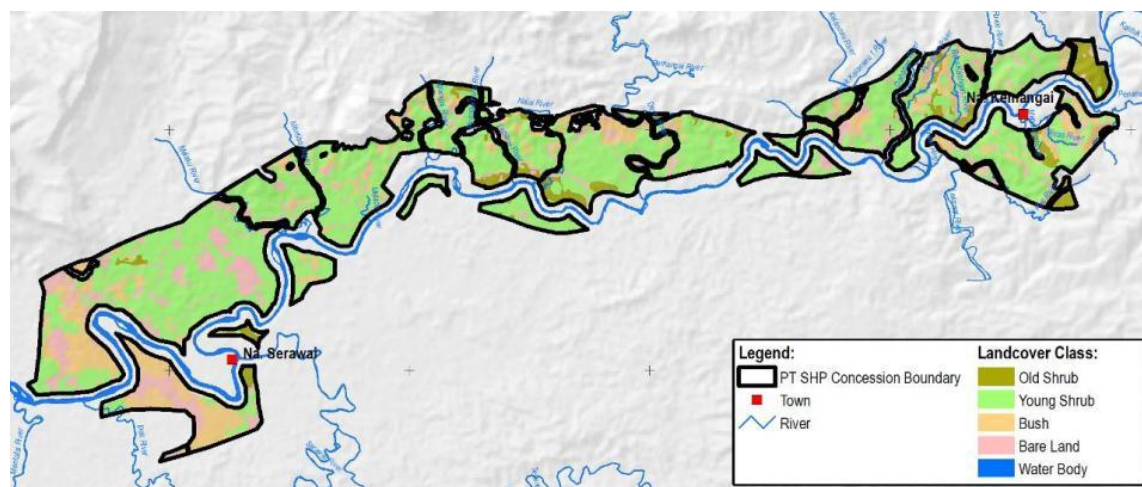
November 1, 2005
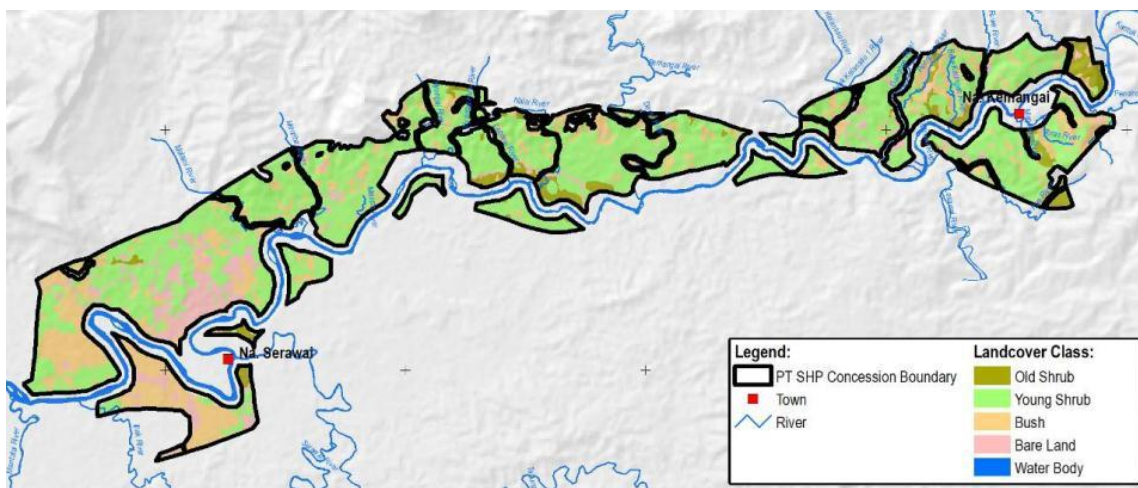
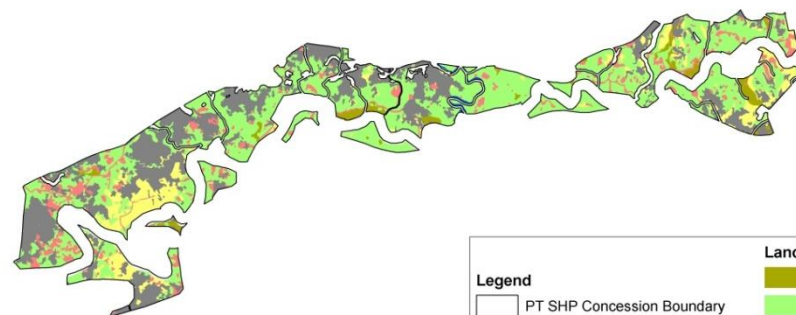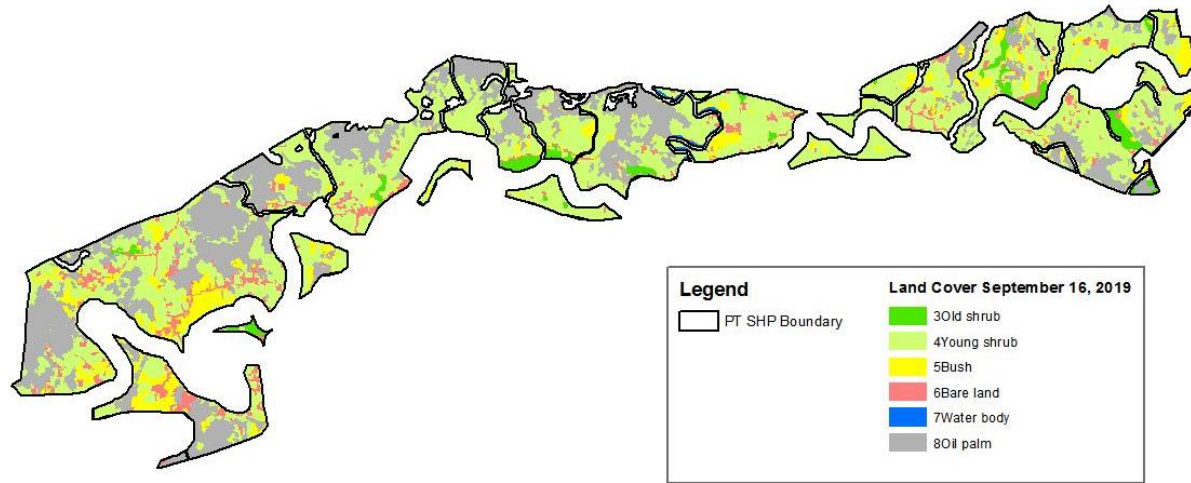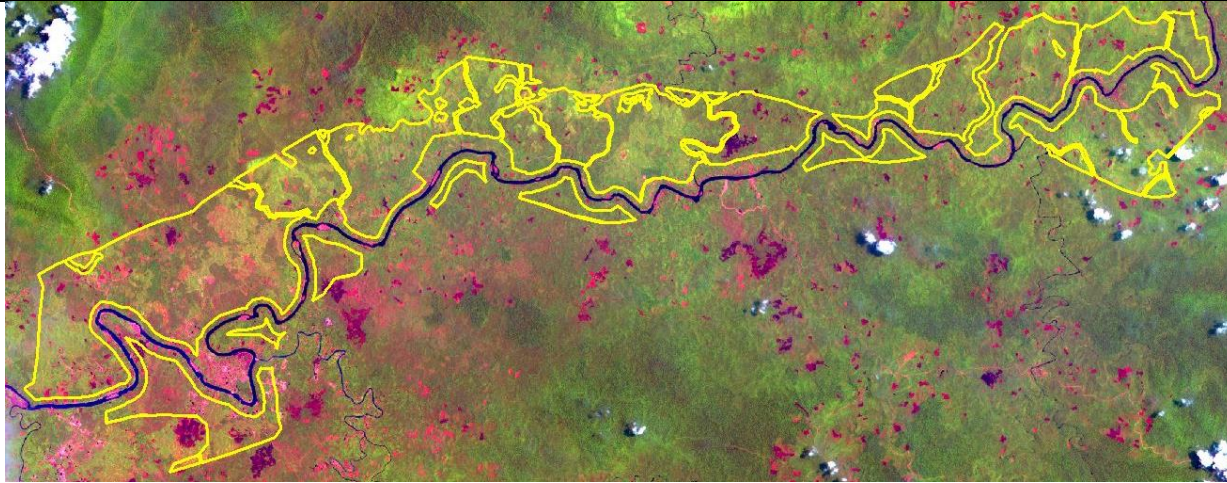December 12, 2006
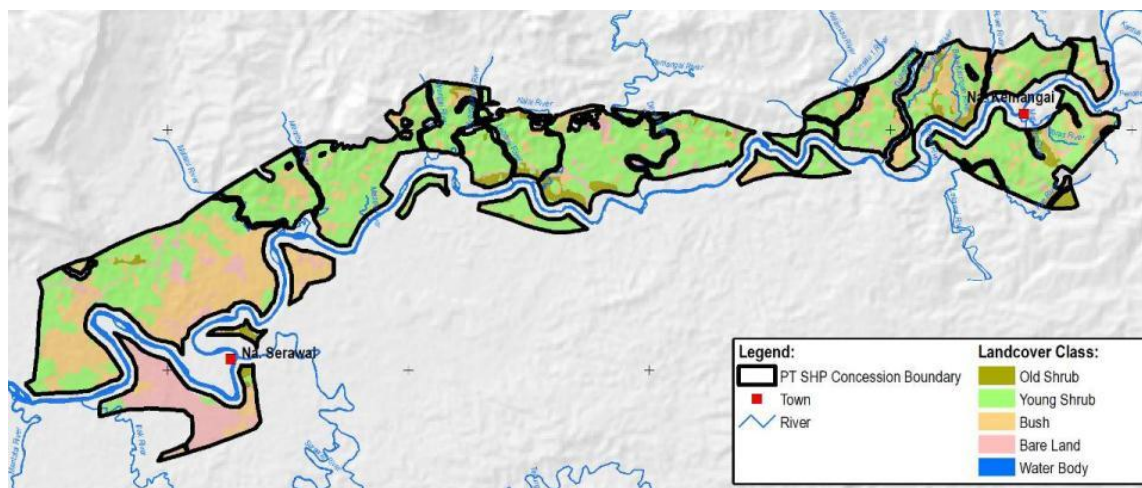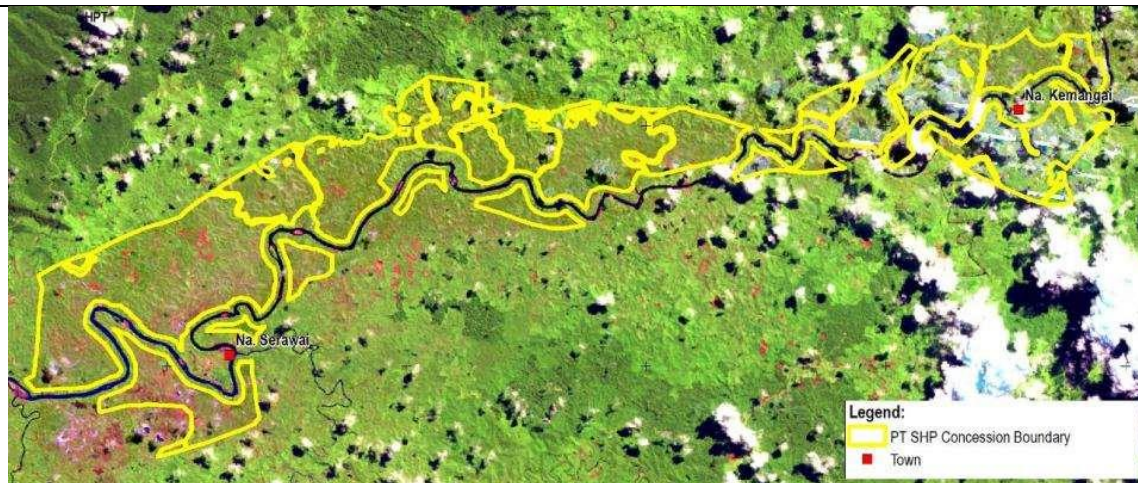
December 1, 2007
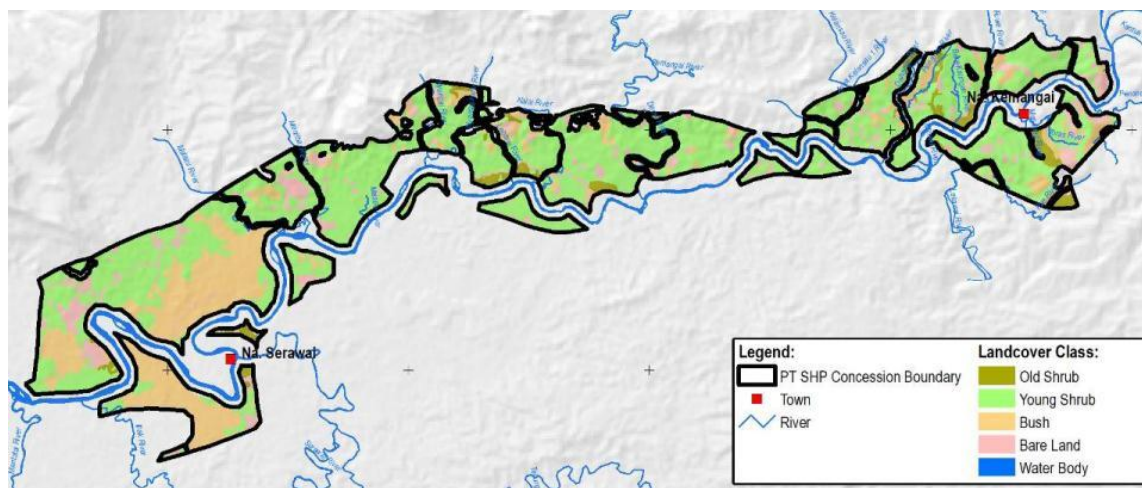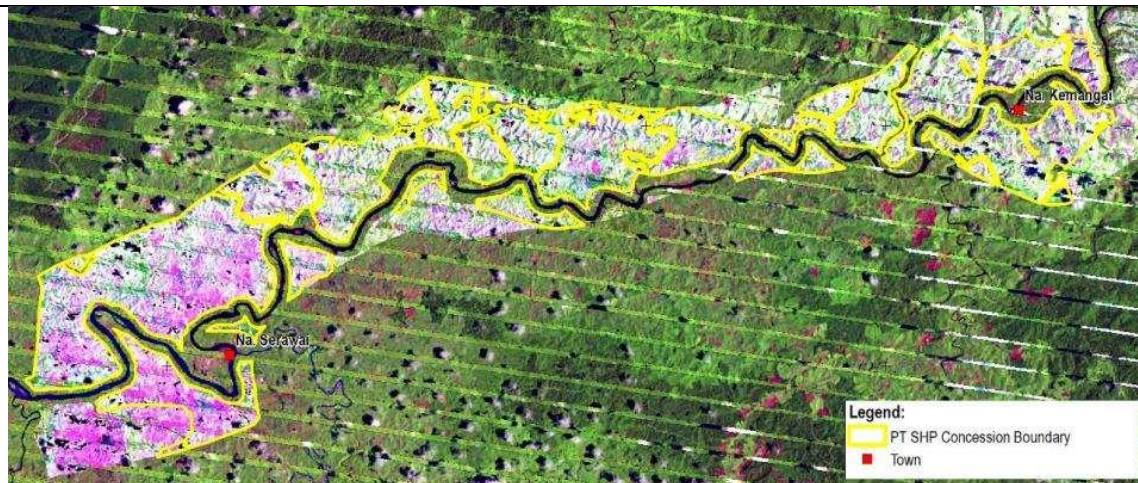
January 1, 2010

October 2010

Legend
PT SHP Concession Boundary

Legend
PT SHP Concession Boundary

Land Cover:
Old Shrub
Young Shrub
Bare Land
Bush
Oil Palm
Water Body

May 9, 2014

April 28, 2017

Legend
PT SHP Concession Boundary

Legend
PT SHP Concession Boundary

Land Cover:
Old Shrub
Young Shrub
Bush
Bare Land
Oil Palm
Water Body

August 15, 2017

Legend
PT SHP Concession Boundary

Legend
PT SHP Concession Boundary

Land Cover of April 28, 2017
Old Shrub
Young Shrub
Bush
Bare Land
Oil Palm
Water Body

November 19, 2017

September 16, 2019

Figure 33. Maps showing historical land use change in PT SHP concession

However, in relation with the complaint raised regarding with the first HCV assessment, PT SHP was required to commission a new HCV assessment (which was carried out in 2017) and all of the land clearing/plantation development before the new HCV assessment was required to be calculated with its vegetation coefficient as potential of liability. The complaints panel will decide whether the company should compensate for the land clearing and will determine the amount of the final compensation liability.

Table 45. Calculation of raw liability from clearing per land cover

Land cover class	Vegetation Coefficient	LUCA period where land clearing identified	
		Oct, 2010 to May 9, 2014	May 9, 2014 to Dec 28, 2017
One or more land cover classes which fulfill the criterion of vegetation coefficient 1.0	1.0	-	-
One or more land cover classes which fulfill the criterion of vegetation coefficient 0.7	0.7	30.65	0.74
One or more land cover classes which fulfill the criterion of vegetation coefficient 0.4	0.4	-	-
One or more land cover classes which fulfill the criterion of vegetation coefficient 0.0	0	1,147.36	495.59
Sub-total (sum of period)		**1,178.01**	**496.33**
Total (sum of all periods)		**1,674.34**	

Table 46. Calculation of final compensation liability

Period of land clearance	Land controlled as a non-member at time of clearance	Land controlled as an RSPO member at the time of clearance
August 15, 2017 to November 19, 2017	N.A*	0.0
April 28, 2017 to August 15, 2017	N.A*	0.0
Dec 2, 2014 to April 28, 2017	N.A*	Not calculated as per RSPO RaCP
May 9, 2014 to Dec 2, 2014	Not calculated as per RSPO RaCP	N.A.**
Oct, 2010 to May 9, 2014	Not calculated as per RSPO RaCP	N.A.**
Jan 1, 2010 to Oct, 2010	0.0	N.A.**
Dec 1, 2007 to Dec 31, 2009	0.0	N.A.**
Dec 12, 2006 to Nov 30, 2007	0.0	N.A.**
Nov 1, 2005 to Dec 11, 2006	0.0	N.A.**
Total (sum of rows and columns)	**Final compensation liability will be determined by the Compensation Panel**	

*) The company has enlisted as an RSPO Member

**) The company was not an RSPO Member yet

In accordance with the areas prohibited for plantation development by the RSPO, LUCA found that there is oil palm plantation development in 2.2 ha of riparian. The company will remediate the degraded riparian areas as depicted in figure below.
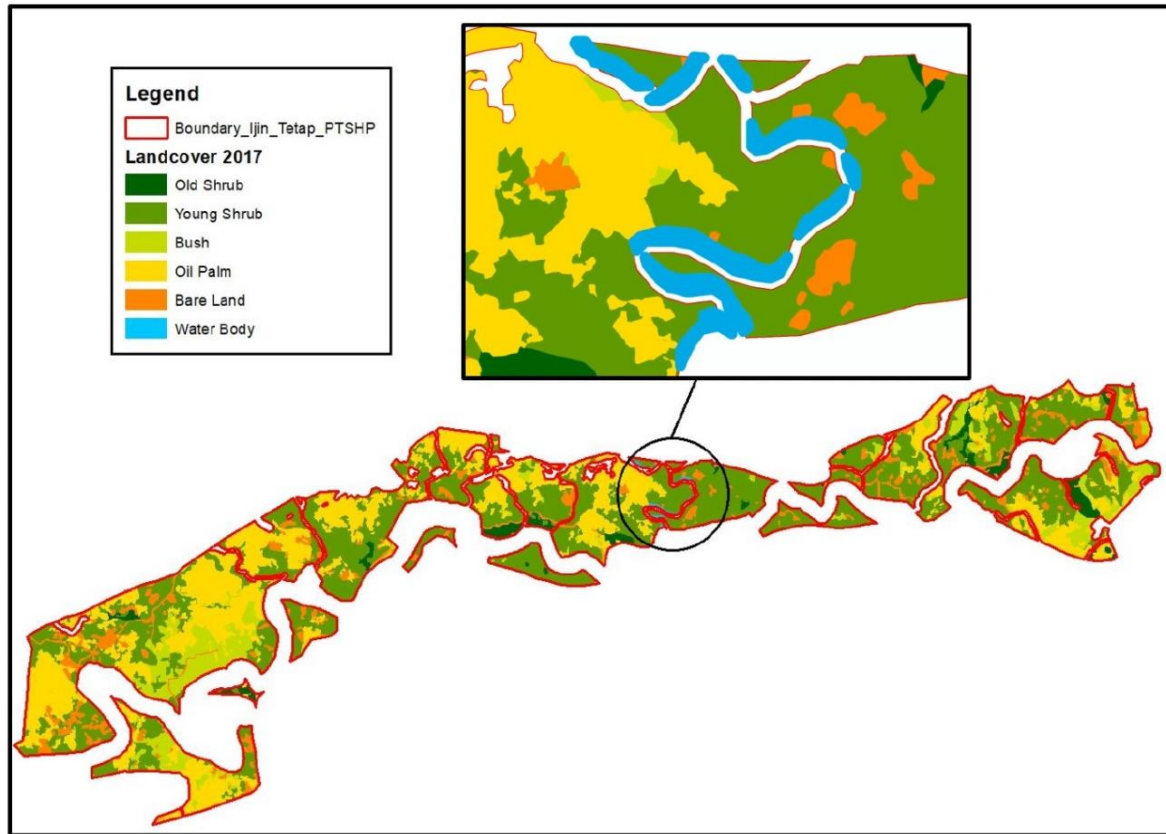
Figure 34. Maps showing riparian areas requiring remediation in PT SHP concession

3.5. Soil and Topography Identification

Soil type and topography analysis in the HCV and HCSA assessments identified that there is no peat soil within the PT SHP concession while steep slope can only be found outside the concession. However, undulating-rolling topography of the concession is also the concern regarding with soil and water conservation. There are ridges over the concession where run-off and erosion potentially occur if the natural vegetation cover above them (i.e. old shrub) cleared. Conservation of the ridges with relatively natural land cover within PT SHP concession is covered by the biophysical conservation of HCV and HCS.

3.6. FPIC Study

Initiations of FPIC can be divided into several topics, namely engagement with the communities, tenurial documentation and participatory mapping, and implementation of the FPIC.

Engagements with the communities

Engagements with the communities to socialize plan of the company's oil palm development have been carried out continuously since 2008 after the location permit (Izin Lokasi) was received by the company in 2007. The first socialization was in 12 and 13 March 2008 located in Nanga Serawai Village and Nanga Kemangai Village. The socialization was attended by a total of 160 people that includes the community representatives, customary representatives in the District levels and Village

level, young figures, religious leaders, regional representative council (DPRD), team TP3K of the Sintang Region, and representatives of the company.

Up until this study was carried out, there were at least 29 formal meetings held with the communities to socialize the company's development and operation plans. Among the earlier meetings were the (i) engagement with the communities to socialize about the location permit and ask their permission to operate in village and district levels, (ii) public consultation of AMDAL (social and environmental impact assessment), (iii) formal socialization to the stakeholders including the government, (iv) public consultation on HCV assessment, (v) participatory mapping and field measurement on the community's land that would be released for the development plan, and (vi) the plasma plantation (kebun masyarakat).

Negotiation and land compensation were carried out gradually following the company's operation timeline. Any land operation would be preceded by identification of land owner, socialization, negotiation for agreement, and compensation if the owners give the consent on the land as it is regulated in the company's SOP for land acquisition.

In 2015 and 2016, the companies halt their operation including land acquisition in order to precede its operation with the RSPO NPP. The companies are committed to continue engagements for land acquisition process after the NPP is completed. In addition to that, the companies also commit to the 20% partnership scheme plantation for the communities (plasma) as it is stated in the National Regulation.

Tenurial documentation

The process of tenurial documentation and land compensation were vetted by the village officials as the representative of the community and the authority in the village region. Land owners are encouraged to register their land to the village officials to receive formal recognition on their ownership as documented in a letter known as "Surat Keterangan Tanah/SKT". The SKT then can be used as the legal basis of their right on the land to proceed with compensation process vetted by the village officials. According to information gathered during the field visit, not all of the community has registered their land to the village officials. However, the village officials are open for community members who are willing to register their land ownership and to issue the SKT and also to vet the land compensation process.

Chief of Adat in the villages are also important stakeholder to help facilitate tenure identification and land compensation process. The chiefs are the ones who have historical knowledge of the villages, including borders of the villages and locations of important areas for the adat (HCV 6). The Chiefs of Adat is also the ones who have knowledge and have authority to address the customary laws and regulations which should be respected and adhered by the communities and the companies.

Participatory mapping process has been completed gradually as part of the process for land compensation and acquisition. In addition to that, during the field visit of the assessments, participatory mapping to identify land tenure, land use, and social HCVs were also carried out involving village Officials, Chief of Adat, and representatives of the land owners.

Implementation of the FPIC

According to interviews, the communities are open to the company's development plan. It is due to the benefit from the plantation operation that could help them to optimally utilize and gain more benefit from their lands through land compensation and the partnership plantation scheme. The communities are expecting economic benefit from oil palm plantation development especially because price of the rubber is declining. The recent price of rubber has made their gardens no longer feasible to be managed for income. However, according to consultation, there are also community members who plan to withhold their consent on their old rubber farm and their garden lands which are considered as their reserved land for future.

According to information given during the social surveys, the communities were free to decide their consent on their land. In addition to their consent, land acquisitions were also preceded with mapping and field measurement which carried out together with the land owner and representative from the village. Valuation for compensation is made based on the condition of the land (existing crop, size of the area, etc.). The land owner is free to negotiate and to make decision either to give or withhold their consent.

In order to verify that the FPIC principles are followed, FPIC verification was carried out through documents review and interviews with the communities. Verification found that the communities have been given the information about the development plan and potential impact from the development and operation; and the land compensation process for company's development.

In relation to the issue of plasma plantation, the company acknowledged that detailed development plan of the plasma plantation and its timeline is not clearly socialized to the communities yet. Planning and mapping of the development of plasma plantation requires the conservation land use map which would be derived after the assessment and NPP completed. The company would prepare the plan for plasma plantation development and socialize the plan with the communities once the NPP completed.

Each component of the FPIC has been followed in land compensation process. The communities have been given information prior to their consent and are free to make their decision. It is confirmed by the findings that there are community members give their consent and there are also others that withhold their consent based on their personal reasons. Furthermore, the communities also got their time. Land owners which withhold their consent are allowed to engage the company when they are willing to change their decision. Such situation is addressed in the companies SOP.

4. SUMMARY OF MANAGEMENT PLANS

PT SHP commits to carry out management and monitoring activities in accordance with the Goodhope Group's Sustainability Policy and RSPO Principles and Criteria. Sustainability team of the PT SHP and Goodhope will be responsible in development of the management plans and its implementation. Below is organizational structure of the sustainability team of PT SHP and Goodhope.
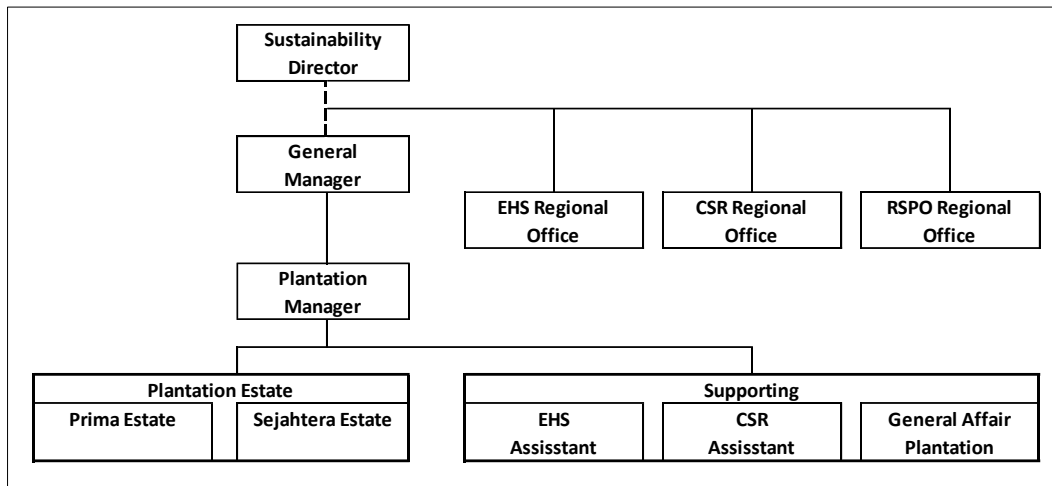

Figure 35. Organizational structure of the sustainability team

4.1. Management Plans for Social and Environmental Impact

Management of the social and environmental impact is planned in accordace with the steps of impact mitigation, namely (i) to avoid negative impact, (ii) to reduce negative impact, and (iii) to remediate the negative impact. Recommendations of the next step in developing management plan to be followed by the company are as follow:

1. Cooperate with local government of Sintang Regency in an effort to improve the quality of human resources in the local area, especially health and education.
2. Cooperate with the local government of Sintang Regency as well as service providers in basic infrastructure development that can support the lives of affected communities.
3. Cooperate with the local government of Sintang Regency and other related parties in poverty alleviation efforts.
4. Cooperate with the local government of Sintang Regency and also the village government in an effort to strengthen the capacity of the village government apparatus and support the improvement of the quality of the administrative services of the village administration.
5. Cooperate with the local government of Sintang Regency, particularly the Regional Disaster Management Agency (BPBD), and other relevant parties and local communities in disaster risk management efforts in the local area.
6. Cooperate with local government of Sintang Regency, customary institution, and TNI / Polri in law enforcement in local area.
7. Encourage the presence of relevant multi-stakeholder forums in local area landscape management.

8. Cooperate with local governments of Sintang Regency, customary institutions, religious institutions (church clans, MUI, etc.) and other stakeholders for strengthening cultural and religious practices for communities in the local area.

9. Cooperate with the local government of Sintang regency and other concerned parties to undertake the development and strengthening of the capacity of social organizations such as community business cooperatives, youth organizations, women's organizations and so on.

10. Develop feedback and complaints handling mechanisms.

11. Facilitate the process of arranging agreements between the management unit and the community

12. Develop and implement a participatory monitoring plan with indicators to monitor changes over time. Conduct periodic evaluations and reviews and adaptive management.

Table below presents the management plan to be implemented based on the environmental and social impacts originated from the company's activities respectively.

Table 47. Management plan for the mitigation of environmental impact

No	Impacts	Activities act as impact source	Impact Management
1	Potential reduced access to the production of land such as farming, hunting/fishing, timber, rattan, etc.	Land Clearing	Providing support to the community to access production sources in other areas
			Strengthening community knowledge and capacity on replacement nutrition sources such as cultivation / livestock
2	Potential conflicts arise due to differences in the amount of compensation received by each community member / Cooperative.	Land Provision	Encourage the application of transparent land sharing compensation mechanisms to members Cooperative management
			Socialization to Cooperative members together with Cooperative management
3	Increase in the number of disease sufferers caused by mosquitoes as disease vectors	Land Preparation	Conduct monitoring of public health conditions and prepare health care support if needed
4	Potential disruption to the source of clean water	Land clearing	Conducting sustainable water management efforts by involving the community
			Monitoring the community's water supply and preparing clean water support if needed
5	Potential loss of nutrients due to reduced location of hunting and fishing	Land clearing	Conducting management of important areas for the community (HCV 5)
			Strengthening community knowledge and capacity on replacement nutrition sources such as cultivation / livestock
6	Potential loss of local food sources due to land clearing activities	Land clearing	Conducting management of important areas for the community (HCV 5)
			Strengthening community knowledge and capacity on replacement food sources such as cultivation
7	Potential conflicts between the board and members of Cooperative as well as between Cooperative members (the public) and the company due to the limited understanding of Cooperative members to business processes, including operational costs to cooperatives and the distribution of plasma output.	Partnership	Strengthening the capacity and knowledge of the board and members of the community about the plantation business process
			Maximize grievance and conflict resolution mechanisms

No	Impacts	Activities act as impact source	Impact Management
8	Cooperative management is not working well	Partnership	Capacity building and knowledge of Cooperative management on an ongoing basis
			Monitoring of Cooperative management periodically
9	Potential of river water pollution that can decrease the quality of river water and disruption of water biota life due to the use of fertilizers and pesticides	Nurseries	Apply the appropriate pattern of fertilizer and pesticide usage
			Monitoring the environmental impacts of rivers and other water sources
10	Potential occurrence of landslide disaster due to soil erosion in the process of planting oil palm on hilly areas	Planting	Prevent landslide prevention in hilly areas
			Perform periodic monitoring of hilly areas especially during the rainy season
11	A potential declining in productivity of oil palm crops due to massive pest attacks due to the planting of homogeneous plant species (palm)	Planting	Perform pest and disease management regularly
			Conduct regular monitoring of the condition of oil palm trees
12	Potential health problems due to increased dust content due to mobilization of operational vehicle plantations	Planting	Perform periodic road watering
			Conduct public health monitoring and prepare health care support if needed
13	Potential disruption of community mobility due to road damage due to mobilization of operational vehicle plantations	Planting	Improving the quality of plantation roads so as not to be easily damaged
			Conduct monitoring of road conditions and repairs in case of damage
14	river water pollution that can decrease the quality of river water and disruption of water biota life due to the use of fertilizers and pesticides	Maintenance	Apply the appropriate pattern of fertilizer and pesticide usage
			Monitoring the environmental impacts of rivers and other water sources
15	Potential reduced water discharge that can disrupt public water supply due to water use	Maintenance	Conducting sustainable water management efforts by involving the community
			Monitoring the community's water supply and preparing clean water support if needed
16	Potential health problems during maintenance activities due to the use of chemical fertilizers and pesticides	Maintenance	Apply the appropriate pattern of fertilizer and pesticide usage
			Conduct public health monitoring and prepare health care support if needed
17	Potential Health problems due to increased dust content due to mobilization	Maintenance	Perform periodic road watering

No	Impacts	Activities act as impact source	Impact Management
	of operational vehicle plantations		Conduct public health monitoring and prepare health care support if needed
18	Potential disruption of community mobility due to road damage due to vehicle mobilization plantation operations	Maintenance	Improving the quality of plantation roads so as not to be easily damaged
			Conduct monitoring of road conditions and repairs in case of damage
19	The emergence of potential conflicts between local peoples and migrant workers	Maintenance	Strengthening Capacity and work patterns of the community in order to compete with migrant communities
			Maximize grievance and conflict resolution mechanisms
20	Potential health problems due to increased dust and noise content due to mobilization of plantation operations	Harvesting	Perform periodic watering of the road
			Conduct public health monitoring and prepare health care support if needed
21	Potential disruption of community mobility due to road damage due to mobilization of plantation operations	Harvesting	Improving the quality of plantation roads so as not to be easily damaged
			Conduct monitoring of road conditions and repairs in case of damage
22	The emergence of potential conflicts between local peoples and migrant workers	Development of Palm Oil Mill	Strengthening Capacity and work patterns of the community in order to compete with migrant communities
			Maximize grievance and conflict resolution mechanisms
23	Potential health problems due to increased dust and noise content due to mobilization of operational vehicle of plantation	Development of Palm Oil Mill	Perform periodic road watering activities
			Conduct public health monitoring and prepare health care support if needed
24	Potential disruption of community mobility due to road damage due to mobilization of plantation operations	Development of Palm Oil Mill	Improving the quality of plantation roads so as not to be easily damaged
			Conduct monitoring of road conditions and repairs in case of damage
25	Potential health problems arising from air pollution and noise due to the activity of palm oil mill machinery	Development of Palm Oil Mill	Implementation of waste management and factory pollution well
			Conduct public health monitoring and prepare health care support if needed
26	Potential health problems caused by environmental pollution from oil palm	Palm Fruits Processing	Implementation of waste management and

No	Impacts	Activities act as impact source	Impact Management
	machine activity		factory pollution well
			Conduct public health monitoring and prepare health care support if needed
27	Potential health problems due to increased dust and noise content due to mobilization of plantation operations	Palm Fruits Processing	Perform periodic road watering activities
			Conduct public health monitoring and prepare health care support if needed
28	Potential disruption of community mobility due to road damage due to mobilization of plantation operations	Palm Fruits Processing	Improving the quality of plantation roads so as not to be easily damaged
			Conduct monitoring of road conditions and repairs in case of damage
29	Potential conflict arising between local peoples and migrant workers	Palm Fruits Processing	Strengthening Capacity and work patterns of the community in order to compete with migrant communities
			Maximize grievance and conflict resolution mechanisms

Table 48. Management plan for the mitigation of social impact

Program	Activity	Strategy	PiC	Time Plan
Resolving land tenure related to customary right around company area	Problem solving disagreements communal land development plan for oil palm plantations	• Held a customary meeting of with the villages of PT SHP/PT SSA	Estate Manager, Humas and CSR Departement	2020
	Inventory land ownership around the village areas	• Build communication involving heads of customary/adat, village officials, community leaders and law enforcement agencies in solving the problem of land dispute • Enclave on the location-the location that does not allow for open palm plantation (settlement, sacred areas, etc)	Estate Manager, Humas and CSR Departement	2020
Build communication and network with all related stakeholders of PT. Sumber Hasil Prima/PT Sinar Sawit Andalan	Regular meeting with all stakeholders	• Develop a routine meeting schedule • Determine a topic of each meeting • Documentation of meeting result • Follow up the meeting result	Humas and CSR Departement	Start from 2020
	Socialization with local community	• Conduct regular meetings, especially with the chiefs, heads of sub-tribes, village officials, community leaders and land owners	Humas and CSR Departement	2020
Improve the educational quality of society	Develop a plan to improving an educational aspect from kindergarten to Senior High School	• Using educational consultant • Cooperation and communication with Educational Agency of Sintang	Humas and CSR Departement	Start from 2021
	Provide the auxiliary teacher	• Provide the auxiliary teacher for teaching in some Village	Humas and CSR Departement	Start from 2021
	Provide the scholarship	• Develop a detail plan related to scholarship scheme • Conduct a selection process with related stakeholder	Humas and CSR Departement	Start from 2020
Improve the health quality of society	Conducting studies on issues and health problems in Serawai District and Ambalau District	• In cooperation with the Health Agency of Sintang • Optimizing the company's health officer	Humas and CSR Departement	2020
	Conduct a counseling, health checks and treatment to communities	• Determine the counseling materials most needed by the community • Conduct activities in cooperation with local health	Humas and CSR Departement	Start From 2021

Program	Activity	Strategy	PiC	Time Plan
		office		
Economic Empowerment of Society	Conduct Potential Economic Analysist	• Focus group discussion with local community for identifying potential economic that can be developed • Conduct a study involving a consultant related to community economic development	Humas and CSR Departement	2020
	Develop a demonstration plot of annual food crops	• Preparation of Organizational and Institutional in the community level • Conduct a training related to annual food crops cultivation. • Continuous mentoring related to annual food crops cultivation	Humas and CSR Departement	2020-2024
	Counseling and training in order to create business opportunities and alternative livelihoods	• Continuous mentoring • Conduct a training for entrepreneurship • Facilitation of capital and business equipment • Ongoing mentoring activities both in terms of production and marketing	Humas and CSR Departement	2020-2024
	Develop a small holder scheme	• Conduct intensive meetings to disseminate information about the scheme of plasma cooperation especially with respect to area, the rules and requirements necessary • Conduct a meeting with the community to create a plasma participatory planning • Involving the community, traditional leaders and village government in the plasma program development	Humas and CSR Departement	2020-2024
Environmental Improvement Program	Campaigning, training and dissemination of 3R (Reduce-Reuse-Recycle) to the community	• Cooperating with professional consultants in the 3R implementation • Creating productive goods as a result of activities 3 R.	EHS Departement	Start from 2020
	Management / conservation of ground water	• Fresh water monitoring, especially in the dry season • Conduct a ground water conservation training to the company staff and local community	EHS Departement	Each year, start from 2020
	Reduction of river water	• Conduct training on a regular basis to the waste	EHS Departement	Each year,

Program	Activity	Strategy	PiC	Time Plan
	pollution	management officer • Regular training of waste treatment • Improvement the quality of waste treatment technology • Monitoring the quality of river water periodically		start from 2020
Accessibility and public facilities Improvement Program	Facilitating the repair and construct of roads and bridges	a. Make a road in the company area that can improve a connection between villages b. Maintaining road quality together with local community	Estate Manager	2020
	Supporting electricity program	• Cooperation with third party to search and implementing alternative elctricity sources • Socialization to the community related to electricity program	Humas and CSR Departement	2021-2025

4.2. Management Plan for the HCV and HCS

Stakeholders from external and internal of the PT SHP were involved in the process of developing management plans. Involvement of the stakeholders is important to ensure the practicality and effectivity of the plans. A public consultation was carried out in September 2017 involving the communities, local government, NGOs who live in the neighborhood concession of company. Table below presents list of the communities involved in the consultation.

Table 49. List of communities involved in the consultation

Serawai Sub District		Ambalau Sub District
1. Desa Tamakung,	11. Desa Gurung Sengiang,	1. Desa Nanga Kemangai,
2. Desa Tontang,	12. Desa Batu Ketubung,	2. Desa Nusa Poring,
3. Desa Sawang Sengiang,	13. Desa Tanjung Raya,	3. Desa Lunjan Tingang,
4. Desa Karya Jaya,	14. Desa Nanga Serawai,	4. Desa Bukit Tinggi,
5. Desa Sabang Landan,	15. Desa Muara Kota,	5. Desa Nanga Ambalau,
6. Desa Tanjung Harapan,	16. Desa Mekar Sari,	6. Desa Nanga Sakai,
7. Desa Pagar Lebata,	17. Desa Tunas Harapan,	7. Desa Kesange,
8. Desa Talian Sahabung,	18. Desa Tanjung Baru,	8. Desa Dahtah Bungai,
9. Desa Begori,	19. Desa Nusa Tujuh	9. Desa Mensuang,
10. Desa Bedaha,	20. Desa Mentatai.	10. Desa Nanga Menakon,
		11. Desa Sungai Tambun

In order to prepare the integrated management plan for the HCV and HCS conservation area, below are the recommended actions to be followed by the company:

A. Management activities
1. To establish permanent markings (and clearly visible) at the border of HCV-HCS areas.
2. To establish signboards and socialization explaining the importance of HCV-HCS conservation.
3. To establish signboards and socialization of the boundaries of HCV-HCS areas.
4. To involve local communities, government, neighbouring companies, NGOs to collaboratively managing HCV-HCS areas.
5. To establish induction and socialization about HCV-HCS conservation and the area and boundaries to the contractors of land clearing and planting.
6. To supervise the land clearing activities especially in areas near and/or adjacent to the HCV-HCS areas.
7. To develop and socialize SOP for Orangutan encounters.

B. Monitoring activities
1. To monitor the condition of conservation area and the condition of the markings periodically.
2. To evaluate the management plan.
3. To provide documentation of socialization activities with stakeholder.
4. To monitor the progress of land clearing conducted by contractor/third party.
5. To carry out regular patrol.
6. To monitor growth of vegetation in reforestation/revegetation areas.
7. To monitor the quality of water using water monitoring points (inlet and outlet) with visual observation and laboratory test periodically (at least every 6 months).
8. To monitor the sediment thicknes in all tributaries within PT SHP concession periodically.

9. To monitor the condition of infrastructure (civil engineering building).
10. To record the number of landslide or high erotion locations.
11. To record number of fire incidents with documentation and official report.
12. To monitor the presence of RTE species regularly.
12. To record any occurrence of hunting of wildlife and degradation of natural habitat.
13. To monitor condition and record the disturbance (if aplicable) of the secondary forest (lowland dipterocarp forest ecosystem) in Korong Sakai Village (ID67), Korong Duhung Village (ID69), and Korong Biye Parik (ID73).
14. To monitor the sedimentation reates at water quality monitoring location periodically.
15. To monitor chemical application in plantation adjacent to river and riparian.
16. To monitor the boundary of HCV area at least once a month.

Based on the above recommendations and the conservation area threat assessment, a plan of management and monitoring activities has been developed as presented in Table 36.

Table 50. Conservation area management and monitoring plan

HCV	Threats	Management	Monitoring	PiC	Time Plan
1	Decreasing of diversity RTE species due to community hunting	• Make sure No Hunting of RTE species by Staff, Worker, and communities include the migrants through socialization of company's policy. • To take measures in collaboration with the authorities (e.g. police, BKSDA/conservation agency, forestry police/polhut) when there is violations (e.g. hunting of RTE species). • Establish signboards and provide socialization to the local communities about protection of RTE Species and law on the violations (i.e. Constitutions No. 5 Year 1990 Article 40 Paragraph 2 about stipulation of violations of protection of protected species). • Collaborate with local communities, government, neighbouring companies and NGO's in the context of collaboratively management of HCV areas to stop hunting activities. • Conserve the habitat by permanent and clearly marking HCV areas and periodically conducted regular patrol (every six months) in the RTE species habitat. • Socialization of protected RTE species to the communities and worker periodically (every six months). • Socialization to the community and worker periodically (every six months) to report presence of RTE species, example: If there is found an existence of Orangutan. • Develop SOP Orangutan encounter (i.e. initial measure to self-protection and avoid attack, to report to sustainability team and plantation management upon encounter, to coordinate with authorities and conservation agency when conflict/hunting is identified or necessary). • Develop SOP for RTE Species (i.e. initial measure to self-protection and avoid attack, to report to sustainability team and plantation management upon encounter, to coordinate with authorities and conservation agency when conflict/hunting is identified or necessary). • Facilated PerDes in Forest of Sungai Sakai and near Sungai Biye related with Sustainable use in Conservation Area.	• Record any occurance of hunting, and the habitat decreasing. • Regular patrol every six months. • Regularly checking the existence of RTE species every six months. • To regularly check perception of the communities and workers about Orangutan and other RTE species (especially those that tend to be considered as pest and trade animals) every year.	Estate Manager and EHS.	Start from 2020
	Decreasing or	• Protect HCV Area in hill areas collaboratively with local communities.	• Monitor the area boundaries and	Estate	Start

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HCV	Threats	Management	Monitoring	PiC	Time Plan
	degradation of forest on the hills	• Reforestation/revegetation degrarded HCV area.	physical condition of the HCVA every six months. • Record the number of landslides or high erosion locations every six months or more frequent when necessary (e.g. in rainy season)	Manager and EHS	from 2020
2	Decreasing of ecosystem of shrubs and corridor as connecting buffer to the landscape area Bukit Penggur Protected Forest (Hutan Lindung) that indicates the presence of HCV 2	• Making sure the connectivity of Shrubs ecosystem in concession area with the Protection Forest (Hutan Lindung). • Socialize to the worker and local community about the presence of HCV2 in Northern area of concession that botder with Hutan Lindung (Protection Areas). • Reforestaion/revegetation of Degrarded HCV areas.	• Monitor the area boundaries and physical condition of the HCVA through regular patrol every six months or more frequent when necessary (e.g. when there is report of threats)	Estate Manager and EHS	Start from 2020
3	Threatened lowland forest on sandstone	• Protecting Lowland Forest ecosystem in Sandstone areas from Land Clearing activities. • Socialize to local communities to protect RTE species. • Making sure No harvesting/logging of RTE species by staff and worker of PT SHP/PT SSA. • Develop regulation for local communities related with sustainable harvesting of Log need for land owner/local communities.	• Monitor the area boundaries and physical condition of the HCVA area every six months. • Record any occurance of hunting, and the habitat decreasing.	Estate and EHS	Start from 2020

4	Decreasing of water quality in the river	• Civil Engineering Buildings in Landslide area, includes:
		  ▪ Establish *silt pit* (dimension 2 x 1 x 1 m^3) in areas with *rolling-hilly* terrain, both inside plantation block and road sides, to improve water retention and infiltration, and to hold erosion materials.
		  ▪ Establish *gully plug* or *sediment trap* in tributaries of 1-3 m wide.
		• Manual weeding implementation and limited agrochemical application near riparian zone
			• Periodically check the water quality (at least every 6 months) at water monitoring points (river inlet-outlet), both visually and laboratory test. Monitoring of sediment thickness in of all tributaries in the	EHS	Start 2020

HCV	Threats	Management	Monitoring	PiC	Time Plan
		• Reforestation/Revegetation in degrarded riparian zone • Collaborate with local communities, government, neighboring companies, and NGOs in the context of collaboratively managing HCV areas to protect river and riparians	concession permit. • Monitoring the physical condition of civil engineering buildings every six months. • Monitor chemical application activities in a location adjacent to riverbank determined as HCV area every six months.		
	• Decreasing on area and/or landcover quality in catchment area • Potential for Land Conversion	• Monitor LC activities near HCV areas • Revegetation degraded area in water catchment • Collaborate with the local communities, government, neighboring companies, NGOs to protect water catchment *area*	• Monitor the area boundaries and physical condition of the HCVA area every six months. • Monitoring and supervising every land clearing activities by third parties.	Estate and EHS	Start 2020
	Potential of land/forest fire	• Monitor Burning activities of Land farming by Local communities. • Making signboards and Sozialize Company's policy of No Burning in concession areas and state laws upon use of fire for land clearing. • Socialize to the local commuunities about best practice of Land Farming Without Burning techniques.	• Regular patrol every six months. • Documenting the socialization activities with related stakeholder. • Persuasif approach to the local communities who still using burning methods for Land farming activities in formal or informal occasions. • Record number of fire incidents with documentation and official report.	Estate and EHS	Start 2020
5	• Land conversion in the riverbanks and water catchment • Logging activity by local	• Monitor LC activities by third parties near HCV areas by involving Key stakeholder. • Collaborate with the local communities, government, neighboring companies, and NGOs to protect HCV areas related with HCV5 (including monitoring of prohibited activities). • Provide an access for the communities to conduct activities in HCV5 areas.	• Monitor the area boundaries and physical condition of the HCVA area periodically in water catchment area every six months. • Monitoring Land Clearing activities by Third Parties.	Estate, EHS and Humas-CSR	Start 2020

| HCV	Threats	Management	Monitoring	PiC	Time Plan
	communities in the riverbanks that can be impact to the increase of surface run off • Ressidues from agrochemical applications and erosion results washed out by surface run off • Fish poisoning activities by migrant communities in the watersheds and its surrounding.	• Collaborate with the local communities, government, neighboring companies, and NGOs to protect river and water catchment areas. • Best practices for Palm Oil weeding near the riparian and water catchment. • Develop regulation with local communities related with fish poisoning activities in the river.	• Record the activities of Land Clearing.		
6	Degradation or Removal of HCV5 and HCV6	• Identification of Key Stakeholder related with HCV6. • Collaborate with local communities, government, neighboring companies, and NGOsin the context of collaboratively managing HCV areas. • Permaent and clearly marking the HCV6. • Monitor Land clearing activities by third parties near HCV6. • Develop SOP sytem to the local communities to access the HCV6.	• To make list of Keystakeholder related with HCV6 and documenting communication and collaborative activities with all stakeholder and review every year. • Record, supervise, and monitor the activities of Land Clearing.	Estate, EHS and Humas-CSR	Start 2020
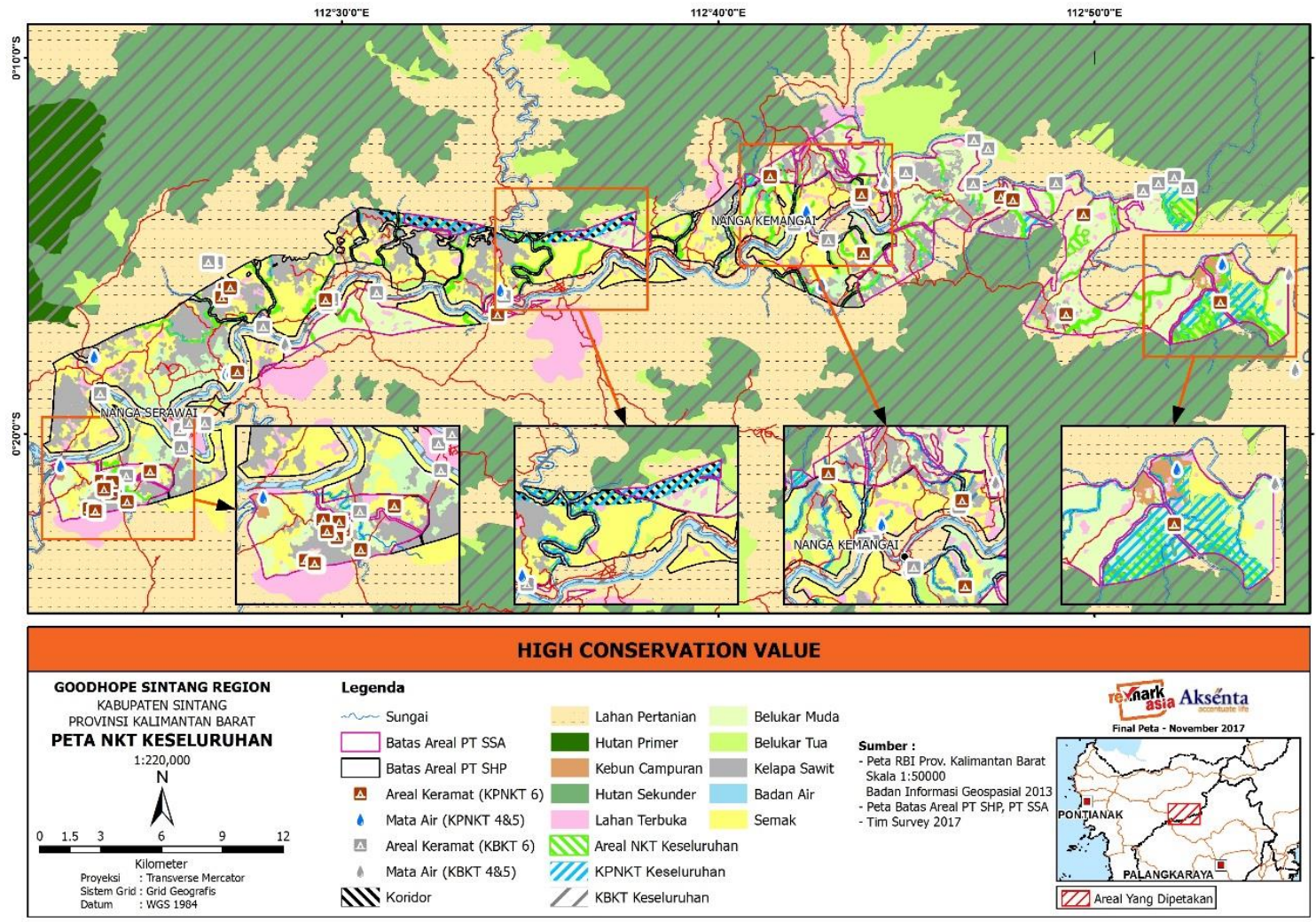
Figure 36. Map showing HCVs and HCVMAs in PT SHP concession and its surroundings

4.3. Management Plan for the Mitigation of GHG Emission

Management and monitoring plan for the mitigation of GHG emission is focused to the implementation of the mitigation scenario and its evaluation. Several aspects to be managed and monitor are as follow:

1. To ensure the protection of conservation area as pool of high carbon stock (following the conservation management and monitoring plan).
2. To ensure the growth of new oil palm crop as new source of GHG fixation.
3. To ensure the amount of fertilizer use is following the scenario selected (maximum amount of fertilizer used in the new plantation is 37,990.2 ton/year).
4. To improve the productivity of the new plantation

In addition to the above aspects, list of activities as part of the management plan to support the effort in GHG emission mitigation were also prepared as presented in table below.

Table 51. Activities in the management plan for GHG emission mitigation

Source of Emissions	Mitigation Approaches	PiC	Time Plan
Land Clearing and Planting (Land Use Change)	• Adopted Zero Burning Land Clearing methods • Adopted and Comply with Procedure and Documentation Required for New Planting in Indonesian Regulation (EIA/AMDAL) and Other Standards (RSPO, ISPO, etc.) • No Land Clearing in areas that identified as HCV/HCS area • Keep the HCV/HCS area as Carbon Stock /sequestration. • Socialization to employees and communities related with conservation and Green House Gas Mitigation programme	EHS Dept and Plantation Dept	Yearly
Heavy equipment for Land Clearing	• Routine Maintanence heavy equipment • Regularly emission test on heavy equipment • 3. Socialization the impact of Green House Gas Emission to the worker	Plantation Dept and EHS Dept	Annually
Degradation of forest	• Rehabilitation of degraded HCV areas including riparian areas. • Routine inspection and patrol to avoid disturbance (especially illegal logging and fires) in forested areas. • 3. Socialization on forest conservation.	EHS Departement and Plantation Dept	Annually
Fertilizer	• Effective fertilizing based on dosages and recommendation from Agronomy Department • Using EFB for mulching programme to reduce inorganic fertilizer usage • No Fertilizing on Rainy Day • No fertilizing on Riparian Zone • Socialization to employee about Company's policy on Fertilizing	Plantation Dept	Yearly
Pesticides	• Actively monitor Pest-Diseases build-up and if so required • Implement an effective control measures in order to minimize the potential loss of yield due to outbreak; • Inspected all blocks first by plantation staff prior to spraying in order to ennable appropriate selection of Herbicides and	Plantation Dept	Yearly

Source of Emissions	Mitigation Approaches	PiC	Time Plan
	equipments to suit the field conditions; • Seek advice from Agronomy Advisor for the used of any new Herbicides that are constantly coming onto the market • Adopted in formulating desirable Pest-Disese control strategy and biological control agents: Introduction of Barn Owl, and adoption of appropriate weed management methods with beneficial plants. • No chemical use in Riparian • Educate and awareness the worker regularly to implement good practices in chemical use activities		
Transport (Harvesting and Maintenance)	• Routine Maintenance for Transportation • Regularly emission test on Transport • Socialization the impact of Green House Gas Emission to the worker	Plantation Dept	Annually
Housing Complex electricity	• Energy conservation campaign.	EHS Dept	Annually
Household waste to Landfill	• Reduce, Reuse, Recycling Programs.	Plantation Dept	Annually
Mill Power: Boiler and Generatorset (Genset) for electricity	• Regularly conducted emission test in Boiler and Genset. • Routine maintanence of boiler and genset. • 3. Using Shell and Fiber from FFB Process as a Fuel to reduce Fossil Fuel Use for Boiler.	Mill Opretaion Dept	Annually
POME (Palm Oil Mill Effluent)	• Digested POME for Land Application to replace inorganic fertilizer (the location of application is around the Mill Location).	Mill Opretaion Dept	Annually

4.4. Management Plan for conservation of marginal soil and water

Management and monitoring plan for the conservation of marginal soil and water conservation is following the management and monitoring for conservation area (HCV 4). In addition, list of activities to support the effort in marginal soil and water conservation were prepared as presented in table below.

Table 52. Activities in the management plan for conservation of marginal soil and water

Mitigation Approaches	PiC	Time Plan
Ensure the affirmation and protection of HCV area in Hilly area, so that it would not change the function of HCV area to palm oil.	Estate Manager and EHS Department	Start from 2020
Implementing best practice of Land Clearing for Palm Oil in Hilly area best on SOP and Planting Palm Oil in slope area with Low potential erosion with TBE< 180 tonnes/ha/year	Estate Manager and Agronomy Dept.	Start from 2020
Use Technical Engineering Practice in Soil Conservation	Estate Manager	Start from 2020

Mitigation Approaches	PiC	Time Plan
(Mechanical and Vegetative)		
Ensure that all of best practice/SOP related with New Planting and LCC management implemented.	Estate Manager and Agronomy Dept.	Start from 2020
No Planting in Steep area with potential erosin (TBE) >180 tonnes/ha/year	Estate Manager and Agronomy Dept.	Start from 2020
Implementing best practice for clearing collecting/main roads in hilly area .	Estate Manager and Agronomy Dept.	Start from 2020
Made signboards for campaign and awareness related with HCV in Hilly area.	Estate Manager and EHS Department	Start from 2020
Sozialisation to the worker Penyuluhan kepada karyawan mengenai fungsi hutan di areal bukit/lereng untuk mengurangi dan mencegah erosi/sedimentasi.	EHS Department	Start from 2020

5. REFFERENCES

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6. INTERNAL RESPONSIBILITY

6.1. Formal Signing Off by Assessors and Grower

This report summarizes the information from (i) Social and Environment Impact Assessment (SEIA), (ii) High Conservation Value (HCV) Assessment, (iii) Carbon and GHG Assessment, (iv) Land Use Change Analysis (LUCA), (v) Soil and Topography Identification, and (vi) FPIC Study. Assessor and grower confirm that findings of the assessments are accurately represented in this NPP report.

Signed for and on behalf of PT Sumber Hasil Prima (Date: 25 February 2020)

Edi Suhardi

Sustainability Director

Signed for and on behalf of PT Remark Asia (Date: 25 February 2020)

Dwi Rahmad Muhtaman

Presiden Direktur

Signed for and on behalf of assessor of LUCA, HCS Approach, and Carbon and GHG Assessments (Date: 25 February 2020)

Bias Berlio Pradyatma

Team Leader of LUCA, HCS Approach, and Carbon and GHG Assessments

6.2.   Statement of Acceptance of Responsibility

Findings of the assessments and management plans as presented in this NPP report is accepted by the Management of PT Sumber Hasil Prima and will be applied in the new development plan.

Management of PT Sumber Hasil Prima

Edi Suhardi

Sustainability Director