New Planting Procedure - Summary of Assessments

NPP Reference Number:	1007/PT BPN/July/2024
Country of the NPP submission:	Indonesia
RSPO Membership Number:	1-0135-12-000-00

Section 1: General Information

KUD Tepian Prima Sawit which is in Tepian Langsat Village, Bengalon sub-district, Kutai Timur district, Kalimantan Timur province, Indonesia, is a smallholders that is a member of the RSPO under its parent company, PT Dharma Satya Nusantara. In its plantation operations, KUD Tepian Prima Sawit has a plantation business permit (Izin Usaha Perkebunan, IUP) collaborate with PT Bima Palma Nugraha and has carried out the Environmental Impact Assessment (EIA/ AMDAL) which has been approved by the government.

KUD Tepian Prima Sawit has plans to develop land for oil palm, with the focus areas for new plantings based on Kutai Timur Head of District decree no. 525.26/K.798/HK/XII/2022, issued date 16 Dec 2022, regarding smallholder establishment area for total 172.33 ha located inside the PT BPN location permit area. KUD Tepian Prima Sawit carried out the NPP mechanism for the first time in 2021. For now, KUD Tepian Prima Sawit will be resubmitting the NPP for the areas that had not been developed at that time, adopt the RSPO NPP guideline 2021. As a part of the process, KUD Tepian Prima Sawit has carried out the integrated HCV-HCS Assessment which also has been stated satisfactory by HCVRN Quality Panel Review, Soil and Topography Study, Land Use Changes Analysis (LUCA) as required in the NPP guideline, Social Environment Impact Assessment (SEIA/ SIA), Green House Gas (GHG) calculator through the alternatives of land clearance and carry out socialization to the surrounding community by applying the principle of FPIC.

The results of each assessment will be displayed in this NPP summary of assessments report.

Since KUD Tepian Prima Sawit decided to continue developing land and carry out the assessment of integrated HCV-HCS, participatory mapping as part of the new planting procedure process, community interest in converting their land into oil palm plantations, whether cultivating their own plantations or collaborating with companies, has increased.

Company Information and Contact Person

Company Name	:	PT Bima Palma Nugraha – KUD Tepian Prima sawit
Company Address	:	Tepian Langsat Village, Bengalon sub-district, Kutai Timur district, Kalimantan Timur province, Indonesia
Type of business	:	Oil Palm Plantation
Capital Status	:	KUD
Geographical Location		0.6744640 N; 117.411590 E (estate office)
Surrounding Entities	North :	Bengalon river
	South :	PT Kaltim Prima Coal (Coal Mining)
	West :	Bengalon river
	East :	Sub-watershed of Bengalon river
Contact person		Agustinus Tri Wibowo

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Website	www.dsngroup.co.id		

PT Bima Palma Nugraha (KUD Tepian Prima Sawit) located in Tepian Langsat Village, Bengalon sub-district, Kutai Timur district, Kalimantan Timur province, Indonesia is developing approximately 178.02 of oil palm plantation based on:

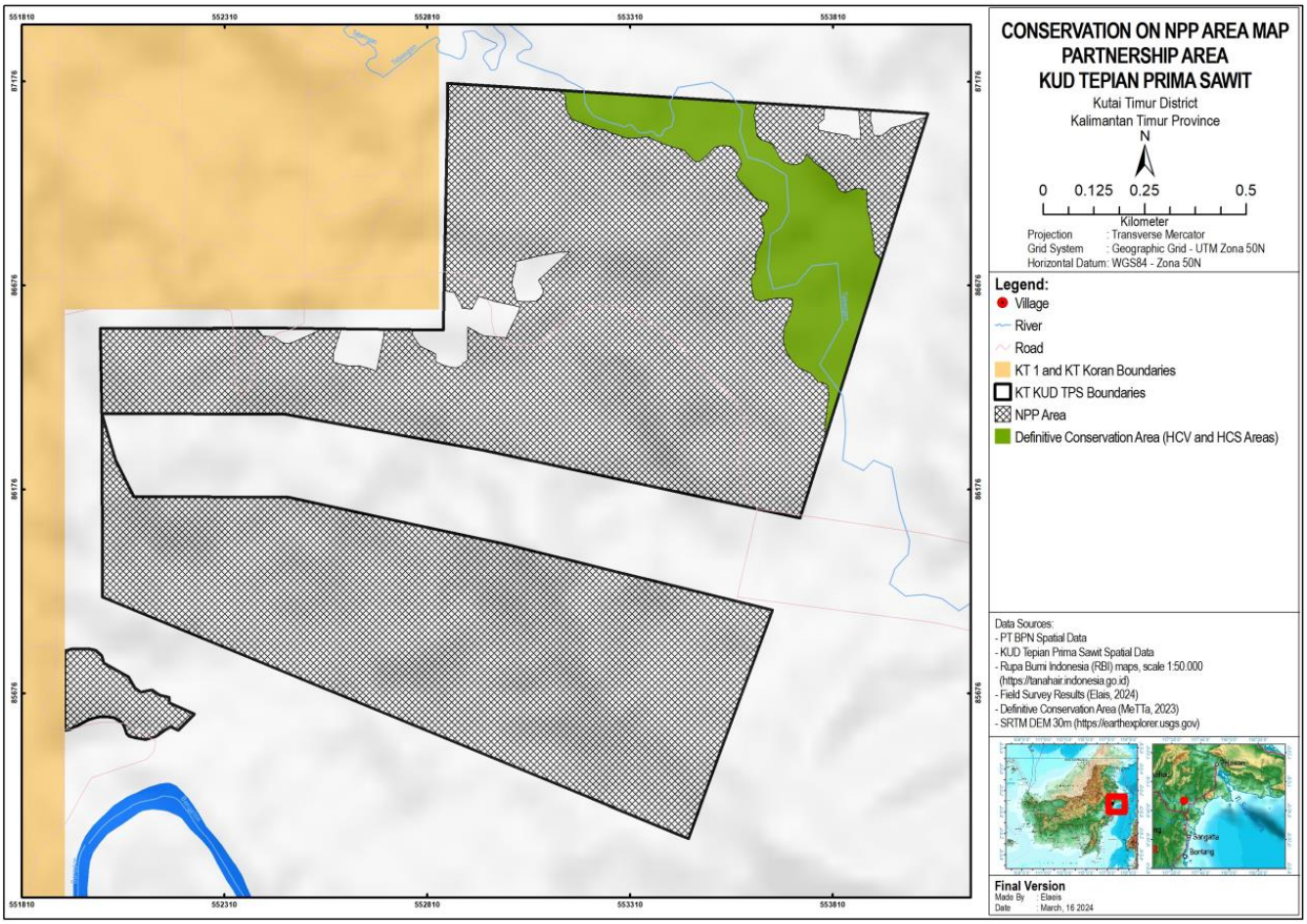
1. Location permit no. 525.26/K.1105/HK/XII/2013 regarding location permit for smallholder development area of KUD Tepian Prima Sawit with total area +/- 172.33 ha, collaborate with PT Bima Palma Nugraha.
2. Permission to undertake plantation activities, document no. 188.4.45/032/Eko.I-II/2015, issued by Kutai Timur Head of District, on 26 Feb 2015 for oil palm plantation development on the land with total ±11661.69 ha, with palm oil mill capacity 60 ton FFB per hours, including build relationship between local community cooperative for oil palm plantation development with smallholder scheme.
3. Designation of Smallholder Area, based on official decree of Kutai Timur district, No. 525.26/K.367/HK/VI/2018 to the KUD Tepian Prima Sawit with total area +/- 1609.06 ha, collaborate with PT Bima Palma Nugraha.
4. Designation of Smallholder Area, based on official decree of Kutai Timur district, No. 525.26/K.798/HK/XII/2022, issued date 16 Dec 2022 to the KUD Tepian Prima Sawit with total area +/- 178.02 ha, collaborate with PT Bima Palma Nugraha.
5. Notarial deed No. 451/BH/DKKT/IX/2006, dated 02 Sep 2006 regarding establishment of KUD Tepian Prima Sawit.
6. Commitment agreement between PT Bima Palma Nugraha (PT BPN) with KUD Tepian Prima Sawit document no.001/BPN-TLS/MOA/XI/2007 to develop scheme smallholder full operate for the Koperasi.

Area and time-plan for new plantings

The proposed new planting area by KUD Tepian Prima Sawit is in the Plantation Permit, which has been agreed by the owners of the land that it will be made available to the company through the FPIC (free, prior, and informed consent). Land development and planting of oil palm will begin by following the procedures of the RSPO New Planting Procedures (NPP), using NPP Guidelines 2021.

Description of Land use				Area	
				(ha)	%
A	Develop Area			0.00	0%
	Infrastructure	0			
B	Conservation			18.06	9%
	HCV - HCS Integrated	18.06			
C	Plan for Development			172.33	3%
D	Palm Oil	5.68		5.68	
	Proposed for New Planting		172.33		88%
	2024	178.02			
			Total Area (A+B+C)	196.08	

Section 2: Maps



Map 1. The Location, Indicative Conservation Land Use Plan of KUD Tepian Prima Sawit and Area Proposed for New Planting

Section 3: SEIA

Environmental Impact Assessment (EIA)

The SEIA KUD Tepian Prima Sawit collaborate with company (PT Bima Palma Nugraha) carry out April 2024. The Social Environmental Impact Assessment of KUD Tepian Prima Sawit was carried out by PT ELAEIS KURNAH AMERTA, which located at Komplek Puri II No 10 LK VIII, Kelurahan Tanjung Sari, Kecamatan Medan Selayang, Kota Medan.

The key consultants conducting these assessments are accredited with the competency certificate which was approved by The National Association of Professional Consultants of Indonesia.

Table 3. Person and Expertise SEIA Team Assessor in KUD Tepain Prima Sawit

Team composition	Name	Specification	Competence certificate
Team Leader	Yanto Ardianto	AMDAL A dan B	Team Leader
Sub Team Physics – Chemistry	Miranty Magetsari Idung Risdiyanto	AMDAL B	Member
Sub Team Biology	Adhy W. Setiawan		Member
Sub Team Leader of social culture-community health	Miranty Magetsari		Member

<u>Assessment Methods</u> (data sources, collection, dates, program and visited places)

The Environmental Management and Environmental Monitoring Effort Document has been prepared in accordance with the prevailing laws and regulations of the Indonesian government. The data collection process was strongly associated with the type of data that were collected. Generally, studies will be conducted based on primary data and secondary data. Primary data were obtained through observation, measurements and field interviews, while secondary data were obtained from the literature collected, either from the company, or directly from related institutions in the study of this area. The methods that were used to collect the data were adjusted with the components that can be studied. The data must be accurate and reliable so that it could be used to analyse, measure, and observe the environmental components which were predicted to be affected and components of action plan which were predicted to give significant impacts to the surrounding environment. The collected data were as follow:

- Physical – Chemical Components (Climate, Air Quality and Hydrology, and Soil).
- Biological Components (Vegetation, Animals, and Water Biota).
- Socio-Economic Cultural Components (Demography/ Population, Social, Economic, Social and Cultural).
- Environmental Health and Public Health Components (Environmental sanitation, public health level, level of public health services).

a. Methods of Significant Impact Estimation

   Determination of the significant impact to the environment caused by the development activities of the plantation and the palm oil mill is only intended as an attempt to estimate the large and important environmental quality changes that are caused by the plantation development activities and the palm oil mill of KUD Tepian Prima Sawit in Tepian Langsat Village, Bengalon sub-district, Kutai Timur district, Kalimantan Timur province, Indonesia. The method of significant impact estimation is by differentiating the magnitude of impact and significance of impact.

b. Estimation of the Magnitude of Impact

Magnitude of impact are measured from the environmental quality changes. The estimation of changes in environmental quality is done by formal and nonformal methods.

i) Formal Methods

Formal methods are used to estimate the impact of parameters whose system characteristics can be identified or estimated by environmental threshold approach at national and regional levels.

ii) Non Formal Methods

Nonformal method is based on the professional judgment of expert(s), logical frame analysis and analogy. This method is used to estimate the environmental parameters whose system characteristics are difficult to identify or estimate by modelling approach such as models and socio-cultural systems.

To simplify the estimation of the magnitude of impact, the approach of environmental quality assessment scale is used in matrix filling. This scale is ranged from 1-5. Based on this assessment, environmental quality is differentiated as: excellent (5), good (4), fairly good (3), bad (2), and very poor (1).

c. Determination of Significant Impact Characteristics

The assessment of the significant impact characteristics was in accordance with BAPEDAL decision Number: KEP-056 of 1994 on Guidelines Regarding Significant Impacts size. Meanwhile regarding the impact evaluation, significant impacts are classified into two categories: important and less important. Characteristics of impact are divided into two groups, negative impacts and positive impacts. It will be regarded as negative if the changes/impact estimated gets adverse towards the environment, and it is positive if the changes/ impact estimated gives benefit to the environment.

d. Methods of Significant Impact Evaluation

The significant impact evaluation explores "holistic causative" against expected environmental components that are affected. Thus, interaction matrix is used as a supporting tool. Interaction matrix between activity components and environmental components contains magnitude of impact and significance of impact. This significant impact evaluation will conduct careful and thorough study of the primary impacts (positive / negative) and secondary impacts (positive / negative), and other derivative impacts on the environmental and activity components.

The study of the important source of impact and hypothetical impact can identify the key issue that needs to be managed. The results of the important impact evaluation are also expected to assist the decision-making process in the selection of a viable alternative plan that considers environmental aspects of the proposed area.

Summary of Assessment Findings

The development of oil palm plantation and palm oil mill of KUD Tepian Prima Sawit in Tepian Langsat Village, Bengalon sub-district, Kutai Timur district, Kalimantan Timur province, Indonesia raises the awareness of the environmental impact on the physical-chemical, biological, and social, economic, cultural, and local public health, both positive and negative impacts. In the implementation of plantation development, one of the main considerations is the preservation of the environment, to ensure sustainable development.

Plantation activities were predicted to impact the environment; thus it needs to be explored in depth including the four phases of activities: Pre-Construction Phase, Construction Phase, Operational Phase and Post-Operational Phase.

a. Pre-construction Phase

At this phase, there may be a change in attitudes and perceptions and containing social unrest, due to the socialization and boundary demarcation, also land acquisition.

b. Construction Phase

The identified activities that will be carried on this phase could be the mobilization of heavy equipment, manpower recruitment, land clearing, construction of facilities and infrastructure, seeding and planting, maintenance of immature plants, mill construction and wastewater treatment plant, construction of water channels and roads. Those activities will have impacts as follows; decrease in air and water surface quality, increase in noise level, land & forest fire potential, decrease in the diversity of flora and fauna species, and change in attitudes and perceptions as well as the decrease in public health. The positive impacts include increase in job and business opportunities and increase in people's income.

c. Operational Phase

At this phase the identified activities could be nursery, FFB harvesting and transport, mobilization of heavy equipment and maintenance of oil palm trees. The magnitude and significance of impact that need attention at the operational phase are the decrease of air quality and increase in noise level, increase in job and business opportunities, increase incomes, change in attitudes and perceptions, decrease in public health in the study area.

d. Post-Operational Phase

There will be labor dismissals, demobilization of heavy equipment, reforestation, and revegetation, and land handover to government and community which will have significant impacts; decrease in air quality, increase in noise level, decrease in local income, change in attitudes and perceptions, and community unrest.

Changes in some aspects of the environment (abiotic, biotic, social, economic, cultural, and public health) due to these activities in Tepian Langsat Village, Bengalon sub-district, Kutai Timur district, require a further efficiency in the utilization of available natural resources, optimizing the management, and monitoring efforts which needed to be integrated into all components of the integrated business.

The magnitude and significance of impacts that will be managed and monitored in the Environmental Management Plan and Environmental Monitoring Plan based on the results of the impact evaluation are: 1) Physical-chemical environment components including air quality, surface water quality, and forest fires potential; 2) Social culture and public health components including social unrest, job and business opportunities, perceptions, local income, and public health level.

Environmental management of the environmental components that are experiencing fundamental changes, both positive and negative as an effect of the oil palm development plan of KUD Tepian Prima Sawit will be carried out in three approaches: technological, socio-economic-cultural and institutional.

The implementation of environmental monitoring is carried out by KUD. The environmental monitoring reports will be submitted annually to the technical adviser of the government agencies.

Social Impact Assessment (SIA)

The Social Environmental Impact Assessment of KUD Tepian Prima Sawit was carried out by PT ELAEIS KURNAH AMERTA, which located at Komplek Puri II No 10 LK VIII, Kelurahan Tanjung Sari, Kecamatan Medan Selayang, Kota Medan. The team is as follows:

Table 4. SIA Team Member and Expertise in KUD Tepain Prima Sawit

No.	Name	Position	Expertise
1	Yanto Ardianto	Team Leader	Social economic & stakeholders' engagement, and FPIC expert
2	Miranty agetsari	Team Member	Social mapping & community development expert
3	Idung Risdiyanto	Team Member	GIS & land use specialist

	Adhy W. Setiawan		

Methodology

This assessment uses a qualitative and quantitative approach. A qualitative approach will produce the descriptive data regarding oral and written information also the behaviour of the observed object. Thus, it can describe the reality of an event and show the quality of the object of assessment. The quantitative approach is used to measure the observed object through the indicators or criteria that have been determined in the assessment so that it can provide a measure of the object of the assessment.

1. Data Collection(s)
   Primary and secondary data will be used in this assessment. The primary data was obtained through survey and consulting activities using the Rapid Appraisal Method, as follows:
   - Focus Group Discussion (FGD). This method is a qualitative data collection technique designed to obtain information on people's wants, needs, perspectives, beliefs, and experiences regarding social problems, social conditions, and social impacts of company activities. The purpose of conducting FGDs is to explore specific issues and collect data regarding public perceptions and views regarding a particular topic so that in the process several discussion-starting questions are used.
   - Direct Observation. This method is in the form of direct observation to see and directly observe the social conditions of the local community. The data that can be collected through this method consists of information on geographical conditions, socio-economic conditions, natural resources, infrastructure, ongoing programs, social interactions, potential conflicts, the role of women, and so on.

   The secondary data was obtained from tracing statistical data, and social and environmental assessment documents that had been carried out in the assessment area.

2. Sampling Technique
   The local communities that were sampled for the assessment were the people in the village who had direct interaction with the company's concession area, which is village inside the concession or directly adjacent village at the time this assessment was carried out.
   This assessment was carried out in a participatory manner by involving community representatives and representatives of the company's internal community as informants. They are individuals or group representatives who have knowledge on the social conditions of the people in the assessment location.

3. Data Analysis

   Descriptive Analysis
   Descriptive analysis is used to find out the pattern of data and information that has been collected, as well as being the basis for further analysis. The qualitative data that has been collected is then grouped based on the theme of the assessment, while the quantitative data that is collected is then analyzed using a central tendency measurement approach to provide an overview of a measure that represents a set of data such as the mean (average) and median.
   In this assessment, descriptive analysis is used to describe project descriptions, community profiles, social impacts and risks, stakeholder analysis, and develop recommendations for social management and monitoring.

Spatial Analysis

There are several spatial analysis functions, namely: classification, network, overlay, buffering, 3D analysis, and digital image processing. In this assessment, a spatial analysis was conducted to assess geographical boundaries, spatial planning, and land use. Spatial analysis is carried out using tools that allow the assessor to review the assessment area in a comprehensive manner.

Livelihood Analysis

The livelihood analysis in this assessment systematically describes the accessibility of livelihood assets and community livelihood strategies in the assessment location. The accessibility of livelihood assets is analysed using the pentagonal asset model which consists of five assets, namely: human capital, social capital, physical capital, natural capital, and financial capital. Meanwhile, the livelihood strategy is analysed using the approach of household socio-economic status and the approach of activities carried out by a community.

Livelihood strategy analysis was carried out descriptively which refers to the definition of livelihood strategy used in this assessment. Livelihood strategies based on household socio-economic status are divided into three, namely: (1) survival strategy is a strategy to meet life needs at a minimum level in order to survive; (2) consolidation strategy is a strategy to meet the needs of life which is reflected in the fulfillment of basic and social needs; and (3) the strategy of accumulation is a strategy of meeting the necessities of life to achieve basic needs, social and capital accumulation. Meanwhile, livelihood strategies based on the activity approach undertaken by the community are divided into two, namely: (1) natural resource-based livelihood strategies (such as agriculture, animal husbandry, fisheries, and so on), and (2) non-natural resource activities (such as livelihood diversification and migration).

Impact and Risk Analysis

Impact analysis was carried out descriptively by identifying and classifying impacts by considering the relationship between environmental, health, safety and socio-economic conditions.

The next stage after impact grouping is done, it is important to determine the significance of the impact by conducting a risk assessment of the impact.

Risks are identified based on the level of consequence of the impact and the level of likelihood of the impact based on the perceptions of community representatives.

Stakeholder Analysis

Stakeholder analysis is a process that systematically develops an objective understanding of which key stakeholders are important to involve and to recognise how much influence and interest they have in a program, as well as setting criteria-based priorities that lead to the development of appropriate engagement strategies.

Stakeholders in this assessment are defined as parties who have an interest, contribute positively and/or negatively, and have direct or indirect influence in the company's operational activities.

Characteristics of the Surrounding Communities

KUD Tepian Prima Sawit is administratively in 1 villages within 1 sub-districts: Tepian Langsat Village, Bengalon sub-district, Kutai Timur district, Kalimantan Timur province, Indonesia.

Socio-Economic

The area of Tepian Langsat Village is very large, namely 205,3294 ha, which is the second largest village area in Kutai Timur district. In 2022, the population in Tepian Langsat Village will be around 9,634 people. This shows that the population density of Tepian Langsat Village is quite low. Tepian Langsat Village consists of four hamlets whose locations are spread out.

The main economic characteristics in the study area generally consist of the plantation sector, especially oil palm plantations, the forestry sector and the coal mining sector. Meanwhile, the community's economy is formed by paddy and field rice farming, rubber plantations and secondary crops. The community's economic business that continues to develop is the business of cultivating swallow's nests. Household scale farming and freshwater fishing are carried out to meet their own needs. Trade develops in the district center which includes the Sepaso and East Sepaso Village areas. Basic necessities for daily needs can be found in shophouses or stalls available in each village.

Educational facilities

Educational facilities in Dusun 1 only have elementary schools, while middle and high schools are in the center of Bengalon District. Usually middle and high school students live at the homes of relatives and friends in Bengalon until they graduate from school.

Health Care Facilities

Health services are available in Hamlet 1 in the form of a Pustu. Treatment that cannot be handled by the Pustu is referred to the Puskesmas. The health center is in the capital of Bengalon District, namely in Sepaso Village, which is about 1-1.5 hours from Hamlet 1.

Section 4: HCV-HCSA Assessment; OR

ALS HCV and Standalone HCSA assessment

PT Bima Palma Nugraha has carried out HCV assessments, the first HCV assessment was carried out in 2012 (old management) carried out by an Assessor licensed from the RSPO. The scope of the study was carried out over an area of 13,576.83 Ha consisting of 11,650.9 Ha (HGU Nucleus Estate) and 1915.14 Ha (Smallholders / Cooperative). From the total area of the study, it is known that the total HCV area is 423.16 Ha (HCV, 1,3,4,6).
At the end of 2018, DSN Group acquired PT BPN. After the acquisition, the new management unit carried out a reassessment of the HCV-HCSA for all areas within the scope of certification. HCV-HCS assessment is carried out by an accredited Assessor (ALS 15029IR). The HCV assessment was carried out from 19 December 2019 – May 2020. The HCV-HCS study referred to the 2008 Indonesian HCV toolkit and the 2017 HCV-HCSA Manual HCVRN. The HCV assessment Lead Assessor registered inthe HCV Resource Network Assessor Licensing Scheme, No. ALS150291R. The HCV assessment approved by the HCVRN scheme in the second re-submission on 21 April 2021 with “Satisfactory“, and able to check in the link https://www.hcvnetwork.org/reports/laporan-kajian-hcv-hcsa-terpadu-pt-bima-palma-nugraha-kabupaten-kutai-timur-provinsi-kalimantan-timur-indonesia.

This Assessment is carried out by a team of twelve from Aksenta (PT Gagas Dinamiga Aksenta) and team as follows:

- Team leader and GIS expert

Name	Role	Organisation	Expertise	Experience
Idung Risdiyanto	Lead Assessor (ALS15029IR); HCS registered practitioner	PT Gagas Dinamiga Aksenta	Hydrology, forest ecology, spatial modelling, carbon stock, land suitability, peat survey, watershed management, and soil and water conservation.	Country: Indonesia and Papua New Guinea Language: Indonesian and English

Ryan Karida Pratama	GIS and remote sensing expert HCS registered practitioner	PT Gagas Dinamiga Aksenta	Remote sensing, GIS, spatial analysis, carbon stock, and landuse change	Country: Indonesia and Malaysia Language: Indonesian and English

- Environmental and social experts in the Assessment team

Name	Role	Organisation	Expertise	Experience
Fersely Getsemani Feliggi	Ecosystem service expert	PT Gagas Dinamiga Aksenta	Hydrology, watershed management, soil and water conservation, and spatial analysis	Country: Indonesia and Malaysia Language: Indonesian and English
Resit Sözer	Biodiversity and ecological expert	PT Gagas Dinamiga Aksenta	Wildlife identification, ecology, conservation, management and conflict resolution	Country: Indonesia, Malaysia, and Papua New Guinea Language: English, Dutch and Indonesian
Tedi Setiadi	Biodiversity and ecological expert	PT Gagas Dinamiga Aksenta	Wildlife identification, ecological landscape and ecosystem management	Country: Indonesia and Papua New Guinea Language: Indonesian and English
Rahmat Darmawan	Flora and ecological expert	PT Gagas Dinamiga Aksenta	Flora identification, ecological landscape and ecosystem management	Country: Indonesia Language: Indonesian and English
Miranty Magetsari	Social, economic and cultural expert	PT Gagas Dinamiga Aksenta	Social-economic aspect, social impact management, socio-cultural aspect, and participatory mapping	Country: Indonesia and Malaysia Language: Indonesian and English
Ahmad Arief Hilman	Social and economic expert	PT Gagas Dinamiga Aksenta	Social-economic, tenurial assessment and participatory mapping	Country: Indonesia Language: Indonesian and English
Heidei Putra Hutomo	GIS and remote sensing expert	PT Gagas Dinamiga Aksenta	GIS, remote sensing, spatial analysis and landuse change	Country: Indonesia and Malaysia Language: Indonesian and English
Nurani Hardikananda	Flora and carbon expert	PT Gagas Dinamiga Aksenta	Flora identification, mangrove management, silviculture and carbon stock	Country: Indonesia Language: Indonesian and English
Zakaria Al Anshori	Flora and carbon expert	PT Gagas Dinamiga Aksenta	Identifikasi flora, silvikultur, ekologi hutan, *carbon stock*	Country: Indonesia Language: Indonesian and English
Pungky Alim Febriani	GIS and remote sensing expert	PT Gagas Dinamiga Aksenta	GIS, *remote sensing*, *carbon stock*, perubahan tutupan lahan	Country: Indonesia and Malaysia Language: Indonesian and English

- Forest inventorying team

Name	Position
Ryan Karida Pratama	Team leader
- Nurani Hardikananda - Zakaria Al Anshori	Species Identification technician
Amri Zakaria	Measuring assistant
Rusdi	Plot cleaner
Feri	Hip chain operator
Pungky Alim Febriani	Compass man
Geby	Line cutter

The HCV-HCS Study Area is 14,086 Ha, consisting of 11,650.9 Ha (PT BPN Land Title), 1,921.1 Ha (Partnership Land) and 522.9 Ha (Prospective Partnership Land). The HCV Assessment Report has been submitted to HCVRN which was carried out in several submissions. The 2nd resubmission was carried out on 14 April 2021 and was declared Satisfactory on 21 April 2021. Of the total Study Area of 14,086 Ha, it is known that there is an HCV Area of 743.7 Ha and an HCS of 425.5 Ha. (*The HCS area is entirely within the HCV area). Meanwhile, the total HCV area of from 11,650.9 Ha (Own plantation) is 544 Ha with details, as fllows.

Table. 4 Location and size of the recommended conservation and management areas (HCVMA No Go Area)

ID	Description	Conservation Area Type	Area (ha)		
			HCV	HCVMA 'No Go'	HCVMA 'Go'
1	Koran tributaries (1) and their riparian areas	HCV 4	0.2	1.2	-
2	River Koran and its riparian areas; Koran tributaries (2) and their riparian areas	HCV 1; 3; 4	53.6	61.4	-
3	Koran tributaries (2) and their riparian areas; secondary forest in Koran SG; orangutan buffer	HCV 1; 3; 4; HCS	37.3	37.3	3.6
4	Low-density secondary forest in Koran SG	HCV 1; 3; 4; HCS	9.6	9.6	-
5	Bengalon tributaries (3) and their riparian areas; secondary forest in Koran SG; orangutan buffer	HCV 1; 3; 4; HCS	24.2	24.2	-
6	Secondary forest in Koran SG, orangutan buffer	HCV 1; 3; 4; HCS	16.2	16.2	0.7
7	Low-density secondary lowland forest	HCV 1; 3; HCS	6.5	6.5	-
8	Mengkupa and its riparian area; orangutan buffer	HCV 1; 3; 4	62.6	62.7	97.0
9	Secondary forest as orangutan stepping stone; orangutan buffer	HCV 1; 3; HCS	81.4	81.4	90.1
10	Tebangan and its riparian area	HCV 4	0.9	3.8	-
11	Secondary forest that connects to the outside	HCV 1; 3; HCS	1.3	1.3	-
12	Bengalon riparian area	HCV 1; 3; 4	9.4	9.4	-
13	Tebang Lungun Hill	HCV 1; 3; 4	45.7	45.7	9.6
14	Kesingal Hill 1	HCV 3; 4	11.1	11.1	-
15	Kesingal Hill 2	HCV 3; 4	6.5	6.5	-
16	Kesingal 1 and its riparian area	HCV 4; 5	0.1	0.6	-
17	Kesingal 2 and its riparian area	HCV 4; 5	0.1	0.9	-
18	Secondary forest in Bengalon riparian area	HCV 1; 3; 4; HCS	5.3	5.3	-

19	Secondary forest in Bengalon riparian area	HCV 1; 3; 4; HCS	1.8	1.8	-
20	Swamp area (Bengalon floodplain)	HCV 1; 3; 4	8.1	8.1	-
21	Bengalon tributaries (3) and their riparian areas	HCV 4	0.6	3.4	-
22	Secondary forest in Bengalon riparian area	HCV 1; 3; 4; HCS	10.5	10.5	-
23	Secondary forest in Bengalon riparian area	HCV 1; 3; 4; HCS	54.8	54.8	-
24	Secondary forest in Bengalon riparian area; orangutan buffer	HCV 1; 3; 4; HCS	47.3	47.3	7.1
25	Lake Padang and secondary forest in its riparian area; orangutan buffer	HCV 1; 3; 4; HCS	67.5	69.8	27.5
26	Lake Bual-Bual and secondary forest in its bank; orangutan buffer	HCV 1; 3; 4; HCS	82.3	82.3	7.0
27	Lenggitau and its riparian area	HCV 4	3.0	18.2	-
28	Lenggitau tributaries (1) and their riparian areas	HCV 4	1.7	10.0	-
29	Lenggitau tributaries (2) and their riparian areas	HCV 4	1.5	8.8	-
30	Lenggitau and its riparian areas	HCV 4	1.3	7.7	-
31	Secondary forest at KM102 of Partnership 2 area; orangutan buffer	HCV 1; 3; HCS	11.6	11.6	21.1
32	Secondary forest as orangutan stepping stone at KM93 of Partnership 2 area	HCV 1; 3; HCS	4.9	4.9	-
33	Lenggitau tributaries (2) and their riparian areas; Lenggitau and its riparian area; secondary forest at KM93 of Partnership 2 area; orangutan buffer	HCV 1; 3; 4; HCS	40.9	43.5	40.6
34	Secondary forest as orangutan stepping stone at KM93 of Partnership 2 area; orangutan buffer	HCV 1; 3; HCS	34.2	34.2	18.0
35	Orangutan buffer	HCV 1	-	-	30.7
M1	Benua Tunu burial ground	HCV 6	0.4	0.4	-
M2	Old burial ground and Habib tomb	HCV 6	*	*	-
M3	Tebangan Lembak 2 burial ground	HCV 6	0.02	0.02	-
M4	Tebangan Lembak old village	HCV 6	0.3	0.3	-
M5	Tebangan Lembak old burial ground	HCV 6	0.2	0.2	-
Total HCV Area /HCVMA			**744.6**	**802.8**	**352.9**
HCV Area/HCVMA in overlap with community lands**			**150.0**	**150.0**	**35.8**
Nett Area of HCV/HCVMA			**594.6**	**652.8**	**317.1*****
Nett Area of Proposed Conservation			**743.7********		
% Proposed Conservation Area (nett) against the Assessment area			**5.3**		

Section 5: FPIC

In FPIC Activities, the company uses several methodologies as follows:

- Document Review;
- Interviews;
- Participatory Mapping;
- FGDs and Field Visits.

The asessement was carried out by team which have the area competencies regarding FPIC respectively. The team as describes follows:

Team Lineup	Field
Yayan Saryani (Team Leader)	- Communication and Community Development (KPM) - FPIC, participatory mapping and Land Tenure Study - Social practitioners, CSR/CD, Social mapping, PRA, SIA, and conflict management - HCV Criteria 5 and 6
Yoni Elviandri (Member)	- FPIC, participatory mapping and Land Tenure Study - HCV Criteria 5 and 6
Miranti Magetsari (Member)	- SIA, FPIC, participatory mapping and Land Tenure Study - HCV Criteria 5 and 6
Priyo Dwi Utomo (Member)	- Land Cover Mapping and Analys

For the first step, the company formed a Survey Team, this team consisted of company staff who handled social management, conflict management, agronomy, GIS, environmental planning, and other related divisions. In FPIC activities and other socialization activities, the company's survey team will be assisted by public relation team formed by the village government, whose function is to become a liaison between the company and the local community/community. The FPIC process was cinducted on March 2024.

The references and guidelines used as references in conducting the FPIC assessment, are as follows:

a. Free, Prior and Informed Consent Guide for RSPO Members, RSPO Human Rights Working Group 2015. Endorsed by the RSPO Board of Governors meeting on November 20, 2015 in Kuala Lumpur.
b. UN Declaration on the Rights of Indigenous Peoples, on FPIC (art. 32), Lands and Territories (art. 20 and art. 26), Indivisibility and the right to restitution and rectification/compensation (art. 10, art. 28), Representation (art. 18, art.19), consent based on adat (Article 3, Article 4, Article 5, Article 33 and Article 34).
c. FPIC in National Law includes :
    - Article 18 B (2) Second Amendment of the 1945 Constitution, The Staterecognizes and respects the unity of customary law communities and their traditional rights as long as they are still alive and in accordance with thedevelopment of society and the principles of the Unitary State of the Republic of Indonesia, regulated by law. Article 28 I (3) of the Second Amendment to the 1945 Constitution, Cultural identity and rights of traditional communities are respected in line with the development of the times and civilization.
    - MPR Decree No. IX of 2001 on Agrarian Reform and Natural Resource Management, in article 4 with regard to agrarian reform and natural resource management must be implemented in accordance with the principles, in letter j reads, "recognizing, respecting and protecting the rights of indigenous peoples and the nation's cultural diversity over agrarian/natural resources".
    - Article 2 (4) UUPA. The right to control from the state mentioned above, the implementation of which can be authorized to regions, swatantras and customary law communities, as needed and not contrary to the national interest, according to the provisions of government regulations.
    - Article 6 of Human Rights Law No. 39/1999. In order to uphold human rights, the differences and needs of indigenous peoples must be considered and protected by law, society and government. The cultural identity of indigenous peoples, including customary land rights, is protected in line with the times.

The agenda/sheduled, activity and location of the asessemnet is desribes as follows.

Activity Stage	Activity Details	Time	Location
Preparation Stage	- Coordination & confirmation to the company regarding requests for initial data on the Tepian Prima Sawit KUD area (documents and spatial data)	5 - 7 March 2024	Elais Kurnah Amerta Office

	- Collecting secondary data including related reports, journals, books, statistical data, thematic maps		
Field Activity Stages	- Opening meeting with PT BPN management and KUD Tepian Prima Sawit - Development of a visit schedule - Social assessment and data collection - Interviews, Focus Group Discussions, and participatory mapping with key stakeholders, representatives of farmer groups and affected communities. - Socio-cultural field check - Field data compilation and team coordination	12 – 16 March 2024	Meeting Room of PT Bima Palma Nugraha Office of KUD Tepian Prima Sawit Tepian, Langsat Village
Closing Meeting	- Present interim results on field findings	March 2024	Meeting Room PT Bima Palma Nugraha
Analyze and draft report	- Preparation of draft FPIC report	April 2024	Elais Kurnah Amerta Office

Although the compensation process has finished and plantation areas are fully owned and managed by the company, they keeps negotiated agreements with affected parties which are prepared through consultation and consideration of the impacts arising from mill and plantation activities, including legal, economic, and social implications of palm oil operations. The agreement is recorded in several documents below:

1. *Analisis Dampak Lingkungan Hidup (ANDAL) Perkebunan Kelapa Sawit dan Pabrik Minyak Sawit PT Bima Palma Nugraha, January 2008*
2. *Surat Keputusan Bupati Kutai Timur Nomor : 2003/15/DPMPTSP-PPNP/SKKL/XII/2021 tentang Perubahan Kelayakan Lingkungan Hidup.*
3. *Laporan Kajian HCV-HCSA Terpadu PT Bima Palma Nugraha , February 2021*
4. *Laporan Kajian Dampak Sosial (Social environment Impact Assesment) PT Bima Palma Nugraha, April 2024*

Based on interview with the community of Tepian Langsat Village, there is no land conflict. The FPIC process was done the company compensated the community land. Record of compensation was in place, and accessible. As explained above, during land compensation, based on community explanation no intimidation happened, the community freely to mention the enumeration price of the land and vegetation. The first socialization of KUD Tepian Prima sawit related to its operational to the community around the company in April 2024.
FPIC process have been showed by evidence of land compensation process, for examples; Letter of Land Delivery (included attachment of land position & boundaries), Citizenship Card of landowner and Payment Receipt by company to landowner. There is summary of land compensation process within this period (2023-2024).

The evidences of FPIC assessement such as FGD, interview discusion amongs stakeholder and participatory mapping was recorded in the documentation and attendant list. The inteview was carried out, such as :

- Interview with the management of BUMDes Tepian Bina Bersama;
- Interview with Tepian Langsat resident and also works at PT BPN
- Interview with land tenants in the study area
- nterviews with residents who have worked the land around the study area (participatory mapping)
- Interview with prospective plasma farmers Partnership V,
- Interview with the Head of RT and plasma farmers Partnership IV,
- FGD with Elderly Farmers Group
- Interview with the village secretary of Tepian Langsat
- FGD with TPS cooperative management
- Visit to KUD TPS Office

There are a few of attendant list regarding the FPIC assessment, such as:

- Atendnat list of SEIA review at the KUD office on March 13, 2024 and attended by 3 participants of KUD member.
- Atendnat list of SEIA review at Tepian Langsat Village office on March 13, 2024 and attended by Village Secreraty and Office of Tepian Langsat Village Staff.

- Atendnat list of SEIA review at KUD office on March 13 & 14, 2024 and attended by 6 board and member of KUD.
- Atendnat list of SEIA review at Tepian Langsat Village on March 13 & 14, 2024 and attended by 10 villagers, included the community head (Rukun Tetangga/RT).

Section 6: Soil and topography

The team that prepared the Soil and Topography document for Oil Palm Plantation Development in the KUD TPS partnership area is PT Elaeis Kurnah Amerta which is an Independent Consultant with team members presented in bellow:

Position	Name	Expertise
Team leader	Ryan Karida Pratama	Soil Expert and Watershed Hydrology and Climate
Member	U'un Maliun Hawa	Watershed Hydrology Expert, GIS, and Remote Sensing
member	Heidei Putra Hutama	Watershed Hydrology Expert, GIS, and Remote Sensing
Quality Control	Idung Risdiyanto	Hydrologist, Climate, Soil Expert and GIS

Assessment Timeline

Activity	Time	Location
Pre-Study - Request for KUD Area data Tepian Prima Palm (documents and spatial data) - Collect secondary data	March 4-8, 2024	Elaeis Office
Data Analysis and Processing - Analysis of land data and verification of supporting documents - Analysis of topographic data and verification of supporting documents	March 11-15, 2024	Elaeis Office
Preparation of reports	March-April 2024	Elaeis Office

Literature Study

Literature studies were carried out from the desktop study stage to writing reports on various documents sourced internally from PT BPN, as well as externally obtained in print and electronic form. All literature used is used as a reference in this assessment.

Internal documents used include the integrated High Conservation Value (HCV) - High Carbon Stock (HCS) Assessment report at PT BPN and the results of the KUO TPS partnership area conservation area delineation for initial identification of areas that potentially have marginal soil conditions, vulnerable soils, steep areas, and the presence of peat (Table 3).

Land legality documents were also provided to support the reporting process. External documents included scientific journals, books and newspapers, as well as the latest RSPO New Planting Procedure (NPP) (2 021) as a reference for conducting the assessment and identifying the requirements that need to be submitted, including the management plan. The complete literature sources referenced in the assessment process can be found in the Bibliography.

Spatial Analysis

Spatial analysis was conducted on secondary data supporting soil and land topography information, as well as other important supporting information. Internal secondary data has been provided by PT BPN since the desktop

study stage, including the integrated HCV-HCS assessment document and the results of the conservation area delineation in the KUO TPS partnership. In addition, there are secondary data sourced from external parties, including basic and thematic maps from various sources, including land system maps that include the distribution of soil type associations, geology, and DEM-SRTM data as a source of topographic and slope information.

The spatial data was analyzed using ArcGIS 10.8. Spatial analysis was not only conducted at the desktop study stage but also after verification through field studies.

RESULTS

Land

The distribution of soil types in the KUO TPS partnership area can be analyzed based on their associations in the land system map (RePPProT 1991). All soil types in the study area are mineral soils. The KUO TPS partnership area is organized by soil type associations (i) Tropodults; Dystropepts; Eutropets (ii) Dystropepts; Tropodults; Humitropepts, (iii) Eutropepts. The Tropodults; Dystropepts; Eutropets soil type association dominates the KUO TPS partnership area, which is as follows 672.6 ha (62.8%).

Tropudults soil type is a soil that has undergone advanced development, has a deep solum, is highly weathered, fine texture, low pH, and rather poor to poor drainage. Meanwhile, dystropepts soil types are slightly weathered soils, not yet developed, slightly fine to fine texture, poor drainage, and have low levels of base saturation. Physically, these soil characteristics indicate that the KUO TPS partnership area has a moderate to high risk of erosion and in some areas has the potential to be flooded.

Each associated soil type belongs to several orders based on the United States Department of Agriculture classification, including ultisols and inceptisols. Ultisol and inceptisol are the soil types that dominate the KUO TPS partnership area. These ultisol soil types experience clay deposition in the lower horizon, are acidic, and have low base saturation. Inceptisol is a young soil that has not developed further, so it is quite fertile. Both soil orders are classified as mineral soils (Soil Survey Staff, 2022).

Based on the classification of soils in Indonesia in the Dudal and Soepraptohardjo system (1957), the ultisol soil equivalents are latosol, yellow red podzolic, and gray brown podzolic; the inceptisol soil equivalents are alluvial, latosol, mediteran, brown podzolic, and regosol.

The distribution of soil types is used as a basis for identifying the presence of marginal soils, which are soils with low fertility due to high acidity, low nutrient levels and the presence of organic matter. These soils include acid soils, peat and acid sulphate. Ultisol and inceptisol are the most widespread soil types in Indonesia and are classified as acidic soils, so that their use as plantation land requires fertilization and the addition of humus substances to increase their fertility (Suwardi 2019).

Histosol soils, which are fragile organic or peat soils, are not found in the KUO TPS partnership area. The RSPO New Planting Procedure (2021) defines histosol soils (organic soils) as soils with a cumulative organic layer comprising more than half of the top 80 cm or 100 cm of soil, containing 35% or more organic matter.

Peatlands are known as vulnerable soils because when they experience environmental changes, especially those that cause drainage, their water content and storage capacity will decrease. In addition to losing its water management and flood control functions, drainage also makes peat more susceptible to fire due to its high carbon content (Agus and Subiksa 2008). Based on soil type analysis, there are no peatlands and marginal soils in the KUD TPS partnership area.

Table Wide association of land types in the KUD TPS partnership area

No	Type Association Land	Land Order (USDA 2014)	Type Land	Determination Area Plasma Chamber		Proposed Area KUD TPS Partnership	
				Area (ha)	%	Area (ha)	%
1	Tropodults	Ultisol	Land Mineral	182.7	93.2	672.6	62.8
	Dystropepts	Inceptisol	Land Mineral				
	Eutropets	Inceptisol	Land Mineral				
2	Dystropepts	Inceptisol	Land Mineral	5.0	2.5	188.6	17.6
	Tropodults	Ultisol	Land Mineral				
	Humitropets	Inceptisol	Land Mineral				
3	Eutropets	Inceptisol	Land Mineral	8.3	4.3	209.1	19.5
			Total	**196.1**	**100.0**	**1,070.4**	**100.0**

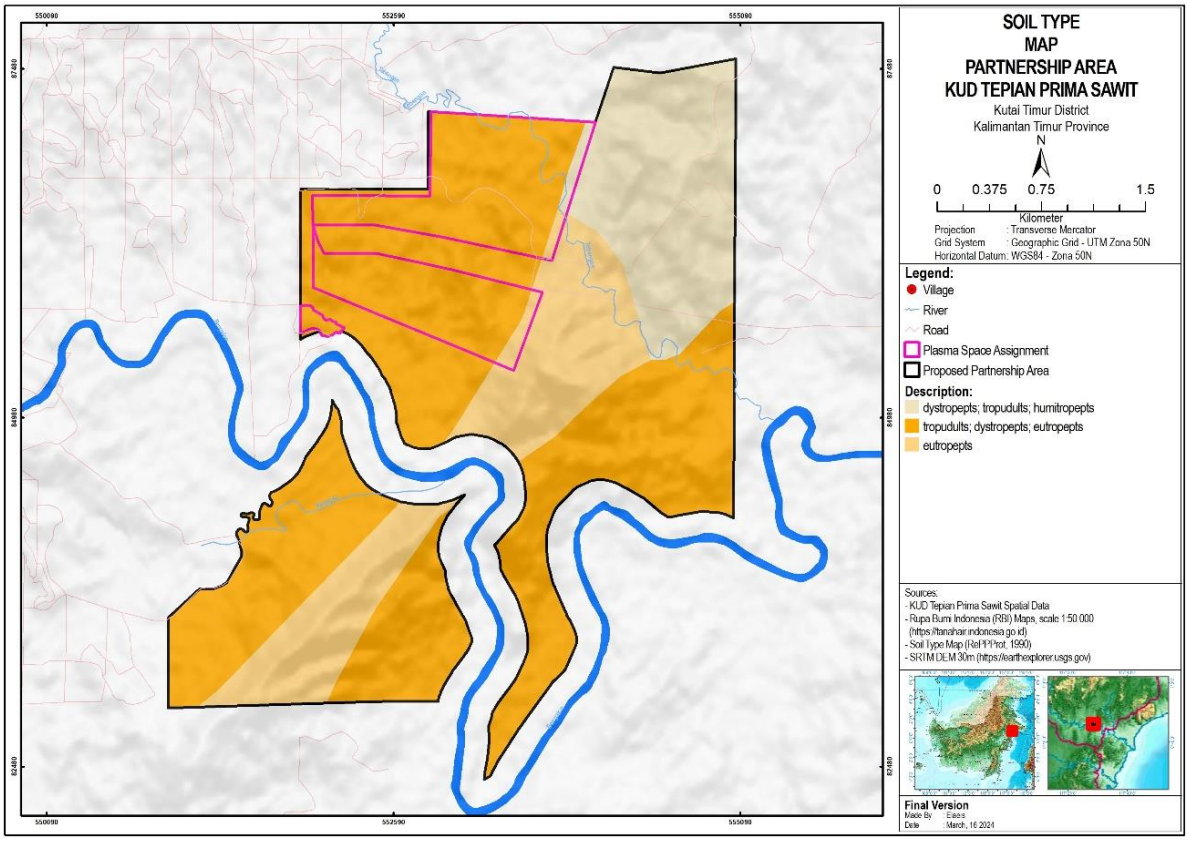


Figure. Map of soil type associations in the KUD TPS partnership area

The physiographic conditions of a land area include not only soil types, but also rock types that make up certain geological formations. The Sangatta Sheet Geology Map shows that the KUD TPS partnership area is composed of Lake Deposits (Qal), Palau Balang Formation (Tmbp) and Balikpapan Formation (Tmbp). Balikpapan Formation (Tmbp) dominates the KUD TPS partnership area of 566.0 ha (52.9%). The Balikpapan and Pulau Balang formations are the main coal-bearing formations in the Kutai Basin. The Kutai Basin is the basin with the second largest hydrocarbon reserves in Indonesia after the Central Sumatra Basin (Maulana, 2016). The Kutai Basin has high economic value because there are many coal deposits of Tertiary age (Winarno et al., 2019).

Topography

The KUD TPS partnership area is mostly located at a low elevation of less than 50 meters above sea level based on SRTM Digital Elevation Model (DEM) data with a spatial resolution of 30 meters. The elevation classes between 0 meters above sea level to 50 meters above sea level dominates the KUD TPS partnership area of 734.4 ha (68.6%).

Slope in the KUD TPS partnership area is evenly distributed in the flat (0-8% slope), gentle (8-15%), and slightly steep (15-25%) land classes. Areas with very steep slopes (> 40% or >21.8°) is insignificant at 31.8 ha or 3.0% of the KUD TPS partnership area. In accordance with the NPP, areas with slopes greater than 25° (46.63%) should be avoided as plantation areas, as land clearing can increase the level of erosion hazard.

Land suitability

In the aspect of new planting, it is necessary to pay attention to the carrying capacity of the environment for the growth and development of a commodity to be developed. This can be assessed through the level of land suitability available. In further analysis, the value of land suitability is denoted by the symbols Sl (highly suitable land), S2 (moderately suitable land), S3 (marginally suitable) and N (unsuitable). Based on its definition, land suitability is the suitability of a piece of land for a particular land utilization type so that it must consider its management aspects (Djaenudin, 2011). More clearly, land suitability is defined as the level of suitability or suitability value of a plot of land for the development of a land-based agricultural commodity of food crops, horticulture, plantations, and livestock, which is determined by the compatibility between the requirements of the land and the land.

Based on appendices 1-6 in the document Technical Guidelines for Land Evaluation for Agricultural Commodities (BBSLDP, 2011) there are ideal conditions for land for oil palm plants, where there are several parameters that are taken into account for land suitability ranging from temperature, water availability, oxygen availability, rooting media, peat, nutrient retention, toxicity, solidity, erosion hazard, flood hazard and land preparation.

Furthermore, the analysis of land suitability in the KUD TPS partnership area was conducted as a desktop study. This means that information on soil physical properties and some other parameters are not involved in the calculation analysis and are categorized as limiting factors. With regard to this, the calculation analysis carried out only focuses on topographic conditions (slope and altitude), and adds the factor of climatic conditions, especially the value of rainfall. The KUD TPS partnership area has been described as being in the altitude range of 0-300 meters above sea level and is dominated by flat to moderately steep slope classes (0-25%). Meanwhile, the annual rainfall value reaches 1,962 mm/year (Aksenta, 2021). When viewed through the references used, then in general the KUD TPS partnership area is at the level of "suitable" land.

Further review results found that most of the proposed KUD TPS area is in the "suitable" category (S1 to S3) with a total area of 1,038.6 ha, while for category N or "unsuitable" only a small portion remains (3 ha). Whereas when viewed from the results of land suitability in the area of the establishment of plasma space KUD TPS, shows the entire area of the establishment of plasma space in the appropriate category (S1 to S3) with a total area of 196.0 ha and there is a category N or not suitable with a very small area of 0.02 ha. The tabulated results of the calculation of the level of land suitability.

CONCLUSIONS

Based on spatial analysis and review of documents, there are conclusions on the study of soil and topography of the KUD TPS Partnership Area, namely:

1. The KUD TPS partnership area is dominated by ultisol and inceptisol soil types. These soils are soil types with moderate acidity, so they need to be managed by fertilizing and adding humus substances to increase their fertility as plantation land.
2. No histosol soil types (organic soils or peatlands) identified at KUD TPS partnership area
3. The topographic assessment shows that there are areas with very steep slopes (>40%) but the size is not significant, at 3% (31.8 ha) of the KUO TPS partnership area. Planting should avoid these areas, due to the potential for erosion if land clearing is carried out.
4. The level of land suitability in the TPS KUO partnership area is generally in the category of suitable (S1-S3) which reached 97%, while for the unsuitable category only ranged from 3%.

Section 7: Greenhouse Gas (GHG)

Purpose

The objectives of the GHG Assessment are as follows:

1) Meets RSPO's New Planting Procedure (NPP) requirement of greenhouse gas assessment.

2) Identify sources of GHG emissions and fixation from new oil palm plantation development plans and operations.
3) Estimating the baseline of projected net GHG emissions from new oil palm plantation development plans and operations.
4) Obtaining alternative scenarios for development plans and operational activities to mitigate GHG emissions in new oil palm plantations.

The carbon stock assessment had been conducted in February 2021 in the HCV-HCSA study by the Aksenta Team. PT Elaeis then conducted a reassessment for this GHG in March 2024 where the information related to carbon stock assessment was quite complete in the study area.

The GHG asessment was carried out by PT Elaeis Kurnah Amerta, which has team with the expertise background in carbon stock, i.e

Name	Role	Organisation	Expertise	Experience
Idung Risdiyanto	Lead Assessor (ALS15029IR); HCS registered practitioner	PT Gagas Dinamiga Aksenta	Hydrology, forest ecology, spatial modelling, carbon stock, land suitability, peat survey, watershed management, and soil and water conservation.	Country: Indonesia and Papua New Guinea Language: Indonesian and English
Ryan Karida Pratama	GIS and remote sensing expert HCS registered practitioner	PT Gagas Dinamiga Aksenta	Remote sensing, GIS, spatial analysis, carbon stock, and landuse change	Country: Indonesia and Malaysia Language: Indonesian and English
Nurani Hardikananda	Flora and carbon expert	PT Gagas Dinamiga Aksenta	Flora identification, mangrove management, silviculture and carbon stock	Country: Indonesia Language: Indonesian and English
Zakaria Al Anshori	Flora and carbon expert	PT Gagas Dinamiga Aksenta	Identifikasi flora, silvikultur, ekologi hutan, *carbon stock*	Country: Indonesia Language: Indonesian and English
Pungky Alim Febriani	GIS and remote sensing expert	PT Gagas Dinamiga Aksenta	GIS, *remote sensing*, *carbon stock*, perubahan tutupan lahan	Country: Indonesia and Malaysia Language: Indonesian and English

Scope of Study

The scope of the study is the partnership area of KUD Tepian Prima Sawit located in Tepian Langsat Village, Bengalon Sub-district, East Kutai District. This area has been proposed to join the oil palm plantation partnership program with PT BPN. Based on the application letter for Partnership Plantation Development No. 017/KUD.TPS/IV/2023 from the Management of Tepian Prima Sawit Village Unit Cooperative (KUD), there is a request for partnership plantation development in the Tepian Langsat Village area with an area of 1,070.0 ha. In the 1,070.0 ha area, there is land legality that has been issued in the form of East Kutai Regent Decree No. 525.26/K.798/HK/XIII/ 2022 concerning the Determination of Plasma Space for Palm Oil Plantation Purposes of Tepian Prima Sawit Village Unit Cooperative with an area of 172.33 ha.

The Greenhouse Gas Study utilizes a study scope in the form of a plasma area of 172.33 ha (hereinafter referred to as the Study Area). The determination of the scope is based on the land legality that has been issued by the Regent of East Kutai and the potential development of oil palm plantations that will be submitted in the NPP process.

1 Area

Proposed Partnership Area	:	1,070.0 ha
Opening plan for prospective partnership areas	:	172.33 ha
Total Study Area	:	172.33 ha
2 Administration		
Village	:	Tepian Langsat
Sub District	:	Bengalon
District	:	East Kutai
Province	:	East Kalimantan
3 Watershed/Sub Watershed	:	Bengalon watershed, Bengalon Tengah sub-watershed
4 Geographical Boundaries		
North	:	Mengkupa River and Production Forest Area
East	:	PT Kaltim Prima Coal Mining
South	:	Perkebunan Kelapa Sawit PT PN XIII Kalimantan Agro Nusantara dan Pertambangan PT Kaltim Prima Coal
West	:	Perkebunan Kelapa Sawit PT Kutai Bulian Nauli dan PT Anugerah Energitama
5 Astronomical Location	:	0° 38' 53,9" – 0° 48' 54,6" LU dan 117° 19' 0,9" – 117° 28' 30,6" BT

METHODS

Framework

Carbon is the basic building block of organic matter, such as tree biomass and soil organic matter. On the other hand, carbon dioxide (CO_2) is one of the most abundant GHGs produced by human activities. Compared to other GHGs, carbon dioxide has the highest radiative forcing (RF)1 value, thus trapping heat more effectively in the atmosphere (IPCC (2006), Etminan at al (2016)). To compare between GHGs on climatic effect, carbon dioxide equivalent (CO_2 e) in Ton metric is used as the unit of calculation.

The development and management of new oil palm plantations has an influence on the amount of carbon stored, including in the process of processing palm fruit into palm oil (CPO) in palm oil mills. The two main factors that affect the amount of carbon stocks are carbon dioxide emission and fixation factors. Carbon emission factors cause carbon stocks to decrease, while carbon fixation factors cause carbon stocks to increase. Carbon stocks are stored in soil and vegetation, such as oil palm trees and conservation areas. Carbon stocks are dynamic and can change over time. The implementation of best management practices (BMPs) in oil palm plantation management to mitigate GHG emissions can make a positive contribution (credit) to carbon stocks.

Carbon fixation is a natural process in which vegetation or certain organisms absorb carbon compounds from the atmosphere. This process occurs naturally in the growth and development of oil palm plants and vegetation in conservation areas. Carbon fixation takes place through the process of photosynthesis to produce biomass. This process will continue as long as the vegetation is alive. In oil palm plantation management, carbon fixation occurs when the management cycle is completed and continued with replanting for the next management cycle. Proper management of conservation areas to preserve the vegetation within will contribute to the increase of carbon stocks. The vegetation in the area will regenerate naturally.

Carbon emission is the process of releasing carbon compounds into the atmosphere due to certain processes. Each stage of the oil palm plantation business will contribute to GHG emissions, from land clearing to CPO production at the mill. Land clearing in the process of developing new oil palm plantations is one of the main emission factors. This process causes a loss of biomass from the cut vegetation, releasing the stored carbon into the atmosphere. Other sources of carbon emissions come from various operational components of oil palm plantations, such as vehicle fuel use and fertilizer application.

Data Collection

This study uses available data and information to produce estimates of GHG emissions from new oil palm plantations to be developed. The calculation is done using two types of data, namely empirical data and assumption data. Empirical data is data and information obtained from the company's operational records in

managing existing plantations and the results of field surveys, while assumption data comes from references. Assumptions are used to obtain data and information that are not available from the company's operational activity records. The types of data and their collection techniques based on the calculation variables used in the study are presented in Table 2. The results of data collection from relevant companies required as inputs for PalmGHGCalculator V.4 are presented in Table 3. The sequestration value of conservation areas was used as an assumption and obtained from various references (Bernal at al, 2018).

Table 2. Data, data types, and data collection techniques based on each counting variable in the study

Variable	Data	Type	Collection Technique Data	Source
Emissions from Opening	Carbon stocks in each land cover class	Empirical	Data extraction from related study reports that have been done before	Report HCSA assessment (Aksenta, 2021).
land Productivity oil palm plantation Usage fuel in the plantation Usage fertilizer in plantation	Fruit production rate per unit area per year	Empirical	Last year's record of the plantation already exists.	Documentation Company (Table 3)
	Amount of fuel used per unit area per year	Empirical	Last year's record of the plantation already exists.	
	Amount and types of fertilizer used per unit area per year	Empirical	Last year's records of existing plantations.	
Carbon fixation in the area conservation	Conservation area (ha)	Empirical	Data extraction from related study reports that has been done Previous	Report HCSA assessment(Aksenta, 2021)
	Carbon fixation value (tC/ha/year)	Assumption	Literature study	(Bernal at al, 2018).
Absorption carbon in the area plantation New	Plan area new plantation (ha)	Empirical	Data extraction from related study reports that have been done before	Report HCSA assessment(Aksenta, 2021)
	carbon fixation(tC/ha/year)	Assumption	Literature study	Henson I.E. (2005)
Activities operational in factory	OER Percentage KER Percentage	Empirical	Extraction of data from the operational activities of PKS Perdana	Documentation Company (Table 4)
	Fuel use per year POME management Electricity use electricity export (if any) shell export for fuel (if applicable) Application of empty baskets in the field (if applicable) Utilization of compost and percentage of N in compost (if any)			

Table 3. Available data from PT BPN's Partnership Farms

No.	Plan/Forecast/Project	Unit	Description
A	FFB		
1	Estimated FFB yield/ha/year	tons/ha/year	9.51
2	Estimated FFB yield/year	tons/ha/year	1,442.23
B	Fuel		
1	Diesel Usage/year	liters/year	76,097
2	Fuel consumption / year (if used continuously)	liters/year	-

3	Biodiesel usage / year (if any)	liters/year	-
4	Bioethanol usage/year (if any)	liters/year	-
C	Peat (if any)		
1	Is the water table actively managed?	-	No
2	How deep is the water table	-	-
D	Fertiliz		
	Is the fertilizer used imported or local?		Local
1	NPK BRIQUETTES 13.6.27.4	tons/ha/year	0.5346
		tons/year	850.952
2	Rock Phosphate	tons/ha/year	0.0005
		tons/year	0.7660
3	Borate	tons/ha/year	0.0107
		tons/year	17.026

Table 4. Data available at Mill

No.	Plan/Forecast/Project	Unit	Total
1	Estimated OER (Oil Extraction Rate)	%	22
2	Estimated KER (Kernel extraction rate)	%	4.25
3	Solar Usage/year	liter/ton FFB/year	0.66
		liters/year	172,509.25
4	POME diverted to anaerobic pond (conventional)	%	100
5	POME diverted to methane capture (flaring)	%	-
6	POME diverted to methane capture (electricity generation)	%	-
7	Utilization of grid electricity	kWh/year	-
8	Excess electricity exported to employee housing/networks	kWh/year	-
9	Sale of excess PKS for energy production	tons/year	-
10	Empty Bunches sold for power generation	%	-
11	Empty Fruit Bunches applied in the field	%	99.9
12	Empty Bunches processed into compost	%	0.1
13	Empty Bunches Used for Other Purposes (e.g: Materials Fuel Boilers, etc.)	%	-

Remarks: *) OER is the ratio between CPO produced and FFB processed.
**) KER is the ratio of kernels produced to FFB processed.
***) EFB/FFB value is the ratio of EFB (empty fruit bunches) produced to FFB (fresh fruit bunches) processed. Values range from 20-23%

CARBON STOCK

Data Compilation

Information related to carbon stock assessment is quite complete in the study area. A carbon stock assessment was conducted in 2021 in the HCV-HCSA study by the Aksenta Team.

Ground Conditions

The distribution of soil types in the KUD TPS partnership area was analyzed based on their associations in the land system map (RePPProT 1991). All soil types in the study area are mineral soils. KUD TPS partnership area is organized by soil type associations (i) Tropodults; Dystropepts; Eutropets (ii) Dystropepts; Tropodults; Humitropepts, (iii) Eutropepts. The association of soil types in the study area is dominated by Tropodults; Dystropepts; Eutropets. The distribution of soil type associations in the study area is presented in Figure 3. Tropodults soil types are soils that have undergone advanced development, have deep solums, are highly weathered, fine textures, low pH, and rather poor to poor drainage. Whereas dystropepts soil types are slightly

weathered, not yet developed, slightly fine to fine texture, poor drainage, and have low levels of base saturation. Physically, these soil characteristics indicate that the study area has a moderate to high risk of erosion and some areas are potentially flooded.

Land Cover Condition

The satellite images used in the identification of land cover are Landsat 9 OLI TIRS and Sentinel-2A from the United States Geological Survey (USGS). Sentinel 2A image with a resolution of 10 m resolution and acquisition date of 12 May 2023 was used as the main image to analyze land cover. This study also used Landsat 9 OLI TIRS image of 30 m resolution with an acquisition date of July 2, 2023. The classification of land cover types was carried out based on SNI 7645-1:2014. The results of the land cover analysis are presented in Figure 4.

The identified land cover classes consist of low-density secondary lowland forest, shrubs, bushes, fields, and community-owned oil palm plantations as presented in Table 5. The study area is dominated by shrubs covering 140.0 ha (71.39%). Forest cover is still found in the study area, namely secondary lowland forest with low density covering 17.9 ha (9.13%). This area is located in parts of the Tebengan River border and steep hill areas. The oil palm plantation identified in the study area is owned by the community of Tepian Langsat Village.

Table 5. Types of land cover in the partnership area of KUD Tepian Prima Sawit

Land Cover Class	Extensive	
	(ha)	(%)
Low Density Secondary Lowland Forest	17.9	9.13
Shrubs	140.0	71.39
Bushes	24.8	12.65
Fields	7.7	3.93
Oil Palm Plantation	5.7	2.91
Total	**196.1**	**100.00**

Carbon Reserve Estimation

Total carbon stocks in the study area were estimated from biomass and soil organic matter. In the absence of peatlands, carbon from soil organic matter was not taken into account. There are two sources of carbon from biomass: aboveground biomass (AGB) and belowground biomass (BGB).

Aboveground and Subsurface Biomass (AGB) Land (BGB)

Assessment of biomass-derived carbon stocks is done using a land cover approach. HCSA only calculates AGB carbon stocks for each land cover, so it is necessary to estimate BGB. Estimation of BGB from AGB was done with the RSR (root shoot ratio) parameter of 0.18. Total carbon stock derived from biomass is the sum of AGB and BGB. Based on the type of land cover (Table 6), the highest carbon stock was found in the low-density secondary lowland forest land cover at 57.9 tonsC/ha.

Table 6. Potential carbon stock (tons/ha) in the partnership area of KUD Tepian Prima Sawit

Land Cover Class	Extensive		Carbon Reserve (tonC/ha)			Source
	(ha)	(%)	AGB	BGB	Total	
Low Density Secondary Lowland Forest	17.9	9.13	49.1	8.8	57.9	1
Shrubs	140.0	71.39	23.1	4.2	27.2	1
Bushes	24.8	12.65	5.3	1.0	6.3	1
Fields	7.7	3.93	5.3	1.0	6.3	1
Oil Palm Plantation	5.7	2.91	-	-	38.3	2
Total	**196.1**	**100.00**	**82.8**	**15.0**	**136.0**	

Notes: 1. Aksenta (2021), 2. PALMGHG Calculator RSPO V4

Soil Organic Matter

Carbon from soil organic matter is only accounted for in peat soils. No peat soils were identified in the study area, so there is no carbon stock from organic matter.

Estimated Total Carbon Reserves

The total amount of carbon stock in the study area is estimated at 5,267.4 tonsC. All of the total carbon stocks come from biomass (Table 7). The highest contribution of carbon stocks came from shrub areas with a total of 3,808.0 tonsC and low-density secondary lowland forest areas with a total of 1,036.4 tonsC. The amount of carbon stock value is influenced by the size of the area. The entire low-density secondary lowland forest cover has been designated as a conservation area in the conservation area delineation and demarcation study. Thus, the low-density secondary lowland forest cover cannot be converted into oil palm plantations.

Table 7. Total carbon stock (tonsC) in the partnership area of KUD Tepian Prima Sawit

Land Cover Class	Extensive		Carbon Reserves (tonC/ha)		Total Reserves Carbon (tonC)
	(ha)	(%)	Biomass	Peat	
Low Density Secondary Lowland Forest	17.9	9.13	57.9	-	1,036.4
Shrubs	140.0	71.39	27.2	-	3,808.0
Bushes	24.8	12.65	6.3	-	156.2
Fields	7.7	3.93	6.3	-	48.5
Oil Palm Plantation	5.7	2.91	38.3	-	218.3
Total	**196.1**	**100.00**	**136**	**-**	**5,267.4**

GHG EMISSION ESTIMATION

The calculation of net GHG emissions based on the RSPO New Development Green House Gas Calculator version 4 procedure considers three main aspects, namely GHG emission sources, GHG fixation sources, and carbon credits with the following details:

1. GHG emission sources, originating from new oil palm plantation development activities / existing oil palm plantation management activities and fresh fruit bunch (FFB) processing activities at palm oil mills (PKS). GHG emission sources are as follows:
   - Emission sources from the establishment of new oil palm plantations, namely (i) land clearing (land clearing), (ii) transportation of fertilizers used and land application (fertilizers), (iii) nitrogen oxide (N2O) emissions from the use of urea fertilizer, and (iv) fuel use in plantation operations (field fuel). The difference in GHG emission sources in existing oil palm plantations is that there is no emission component from land clearing. The land is all planted with oil palms.
   - Emission sources from FFB processing activities at the mill, namely (i) emissions from the use of mill fuel consumption, (ii) methane gas emissions from mill effluent (POME), (iii) use of purchased electricity.
2. Source of GHG fixation, only from oil palm plantations through (i) carbon sequestration from oil palm biomass growth (crop sequestration) and (ii) maintenance & protection of conservation areas (conservation sequestration).
3. Carbon credits, which can be in the form of alternative energy sources from biomass production (empty shells and baskets) and methane gas capture.

Information related to input variables in the calculation of GHG emissions from palm oil mills is presented in Table 4. EFB (empty baskets) utilization is used directly for field needs. POME is processed anaerobically so that it can be separated into clear water for PKS domestic needs and dry solid waste. Electricity used does not come from the network (PLN) but comes from the turbine. Diesel fuel needs every year amounted to 172,421 liters/year and gasoline demand of 2,035 liters/year.

GHG Emissions in the Study Area

The calculation of net GHG emissions in the study area used data from the KT Koran (KT1) plantation (see Table 3). The data was used because there has been no planting or operational activities in the partnership area of KUD Tepian Prima Sawit and the location of KT Koran is the closest to the partnership area of KUD TPS. The land area used in the calculation is 196.1 ha which is the potential area for oil palm plantation development.

Information related to input variables in the calculation of GHG emissions is presented in Table 3, such as the amount of FFB production per year, fertilizer use per year, fuel use per year. FFB production is about 15,058 tons/year. The type of fuel used is fuel, namely diesel and gasoline. The amount of diesel used is much more than gasoline. There are three types of fertilizers used, namely Borate, Rock Phosphate and NPK BRIKET 13.6.27.4. Among these fertilizers, NPK BRIKET is the most widely used fertilizer. The results of the GHG calculations are

presented in Table 8. Overall, GHG emissions are negative, meaning that in aggregate (net) the amount of carbon released (emissions) is less than the amount of carbon emitted.

with that absorbed (sink). The larger the negative value, the more carbon equivalent CO2 that is absorbed is greater. Total emissions from plantation activities amounted to -808.17 tons CO2 e/year. Total emissions from palm oil mills are 2.19 tons of CO2 e/year. The net emission is about -805.98 tons CO2 e/year or -4.77 tons CO2 e/ha/year. The ratio of total emissions to fresh palm fruit bunch (FFB) production is -0.50 tons CO2 e/ton FFB, meaning that every 1 ton of FFB produced per year has the potential to absorb the equivalent of 0.50 tons CO2.

The largest source of GHG emissions from oil palm plantation activities on land comes from land clearing activities at 621.50 tons of CO2 e/year. The use of inorganic (chemical) fertilizers and the emission of N2 O equivalent to CO2 produce similar emissions, amounting to 97.50 tons of CO2 e/year and 72.87 CO2 e/year, respectively. Furthermore, the use of fuel by vehicles on land that supports oil palm plantations produces relatively small emissions of only 25.10 tons of CO2 e/year. Fertilizer use activities that cause emissions come from fertilizer application in the field and fertilizer distribution to the fertilizer stockpile location in the plantation. All types of fertilizers contribute to CO2 equivalent emissions during fertilizer distribution to the fertilizer stockpile at the farm. During fertilizer application in the field, only urea will emit CO2. While N2O will be emitted by NPK BRIKET 13.6.27.4 during land application.

Table 8. Estimated number of emissions/sinks per year

Field emissions & sinks	tons CO2e	tons CO2e/ha	tons CO2e/t FFB
Land clearing	621.50	3.68	0.39
Crop sequestration	-1,581.29	-9.36	-0.98
Fertilizers	97.50	0.58	0.06
N2O	72.87	0.43	0.05
Field fuel	25.10	0.15	0.02
Peat	0.00	0.00	0.00
Conservation credit	-43.86	-0.26	-0.03
Total 1	-808.17	-4.78	-0.50
Mill emissions & credits			
POME	2.17	0.01	0.00
Mill fuel	0.02	0.00	0.00
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 2	2.19	0.01	0.00
Netto	-805.98	-4.77	-0.50

Description: Calculation results of PALMGHG Calculator RSPO V4

GHG emissions from FFB processing activities at PKS come from the use of fuel (diesel) for the mill and PKS waste (POME). Emissions from anaerobic POME management amounted to 2.17 CO2 e/year. POME management can be done with methane capture (flaring or power generation) to reduce emission levels.

The source of GHG fixation or absorption comes from oil palm plantation activities on the land, namely the absorption of CO2 by oil palm plants during the photosynthesis process so as to produce biomass (crop sequestration), amounting to -1,581.29 tons of CO2 e/year. In addition, conservation credit from conservation area management amounted to -1,275.23 tons CO2 e/year from land cover in the form of low-density secondary lowland forest.

The calculation results show that there is no source of carbon credit. The company can utilize PKS by-products as an alternative energy source and export electricity production to other parties. Carbon credits will help reduce carbon emissions. Empty baskets (EFB) and kernels produced from FFB processing can be used as PKS boiler fuel. In addition, kernels from PKS can also be sold to outside parties for alternative energy sources.

The amount of GHG emissions compared to the amount of CPO produced will provide information on the efficiency of oil palm plantation activity patterns in reducing GHG emissions (emission intensity). If the emission intensity value is more than 1 (one), it means that the amount of carbon emitted (positive value) or absorbed (negative value) is greater than the amount of CPO produced. Vice versa if the value is less than one. The calculation results show that the emission intensity is around -1.91 tons of CO2 e/ton of CPO, meaning that every 1 ton of CPO produced will absorb as much as -1.91 tons of CO2 e.

CONCLUSIONS

Based on the analysis and calculation of greenhouse gases, there are conclusions to the GHG study, namely:

1. The study area is 172.33 ha of land that has the potential to be cleared for new plantations.
2. Biomass carbon stock in the study area is about 5,267.4 tonsC or equivalent to 26.9 tonsC/ha.
3. Total emissions from plantation activities amounted to -808.17 tons CO_2e /year. The total emission from the mill is 2.19 tons of CO_2e /year. The net emission generated is about -805.98 tons of CO_2e /year (dominant sink status).
4. Carbon credit sources do not yet exist, companies can utilize PKS by-products as alternative energy sources and export electricity production to reduce carbon emissions.
5. Every 1 ton of CPO produced from the contribution of the plantation will absorb as much CO_2e 1.91 tons.

Section 8: Land Use Change Analysis (LUCA)

The LUC analysis for PT BPN – Scheme Smallholder was in place to ensure there is no deforestation due to land development for oil palm plantation. The LUC analysis conducted by external consultant of PT Elaeis Kurnah Amerta and the team as decribe below:

Name	Role	Organisation	Expertise	Experience
Idung Risdiyanto	Lead Assessor (ALS15029IR); HCS registered practitioner	PT Gagas Dinamiga Aksenta	Hydrology, forest ecology, spatial modelling, carbon stock, land suitability, peat survey, watershed management, and soil and water conservation.	Country: Indonesia and Papua New Guinea Language: Indonesian and English
Ryan Karida Pratama	GIS and remote sensing expert HCS registered practitioner	PT Gagas Dinamiga Aksenta	Remote sensing, GIS, spatial analysis, carbon stock, and landuse change	Country: Indonesia and Malaysia Language: Indonesian and English
Heidei Putra Hutomo	GIS and remote sensing expert	PT Gagas Dinamiga Aksenta	GIS, remote sensing, spatial analysis and landuse change	Country: Indonesia and Malaysia Language: Indonesian and English
Pungky Alim Febriani	GIS and remote sensing expert	PT Gagas Dinamiga Aksenta	GIS, *remote sensing*, *carbon stock*, perubahan tutupan lahan	Country: Indonesia and Malaysia Language: Indonesian and English

The assessment was conducted on 8-12 Nov 2019 and 5-19 Feb 2020. The land clearance period assessed was clear since 1 Nov 2005 until Feb 2020 (HCV assessment conducted). Based on email from RSPO compensation date 25 March 2024 state that Based on the disclosure form, PT BPN KUD Tepian Prima Sawit (additional 1070.40 ha) has disclosed no land clearing for oil palm development since November 2005 without prior HCV Assessment (no liability). As such, LUCA is not applicable to this unit.

Table. Time Series of Satellite Imagery used for LUCA

Period	Date of acquisition	Sources	Cloud Cover Inside MU
Before November 1, 2005(baseline)	June 3, 1998	Landsat 5 TM	4%
	May 21, 2005	Landsat 5 TM	2%
November 1, 2005 – November 31, 2007	May 21, 2005	Landsat 5 TM	2%
	October 12, 2005	Landsat 5 TM	20%
	April 22, 2006	Landsat 5 TM	10%
	August 31, 2007	Landsat 5 TM	10%

	April 27, 2008	Landsat 5 TM	5%
December 1, 2007 – December 31, 2009	August 31, 2007	Landsat 5 TM	10%
	April 27, 2008	Landsat 5 TM	5%
	October 23, 2009	Landsat 5 TM	5%
	January 27, 2010	Landsat 5 TM	1%
January 1, 2010 – May 9, 2014	October 23, 2009	Landsat 5 TM	5%
	January 27, 2010	Landsat 8 OLI	1%
	March 11, 2014	TIRS	5%
	July 1, 2014	Landsat 8 OLI TIRS	0%
		Landsat 8 OLI TIRS	
		Landsat 8 OLI TIRS	
May 9, 2014 – April, 2021	March 11, 2014	Landsat 8 OLI TIRS	5%
	July 1, 2014		0%
	August 5, 2021		0%
After the management unit acquired (if relevant)			
	-	-	-
Latest satellite image used for ground truthing	May 12, 2023 July 2, 2023	Sentinel 2A Landsat 9	0% 0%

The resource and methodology applied in this land use changed analysis, amongs other as follows:

Satellite images used in the LUC Analysis

Satellite name	Landsat 5 TM, Landsat 8 OLI TIRS, Landsat 9, and Sentinel-2A sattelite image, Path/Row: 116/059 and T50NNF
Resolution	- Landsat: 30 m - Sentinel-2A: 10 m

List of data and document used in the LUC Analysis :

1. Land clearance progress map (monthly) : Not available
2. Land clearance progress data (monthly) : Not available
3. Planting year map : Not available
4. Planting year data : Not available
5. Land compensation progress map (if applicable) : Not available
6. Land compensation progress data/document (if applicable) : Not available

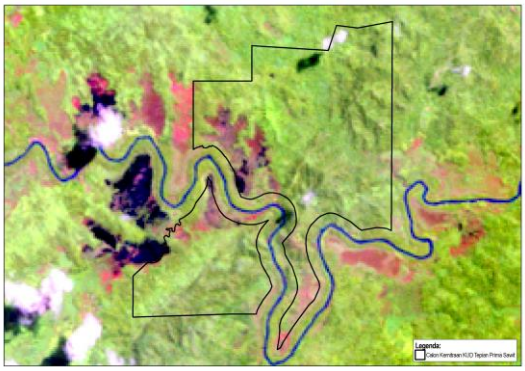
Image processing :

- Radiometric correction : conducted
- Geometric correction : conducted
- Mosaic Processing : not conducted

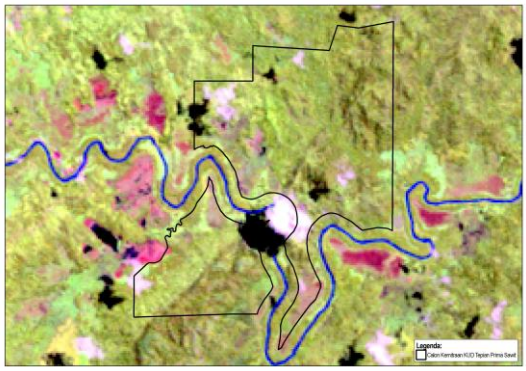
. Image analysis :

- Object based visual interpretation

3.1.1 Pre-processed georeferenced satellite images for entire concession area for each time of clearance period and additional cut-off periods.



November 1, 2005
(Represented by Landsat 5 TM – May 21, 2005)



December 1, 2007
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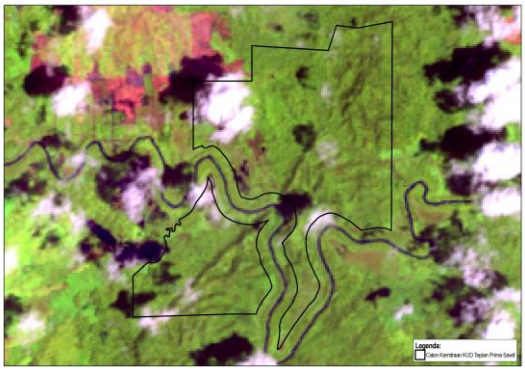

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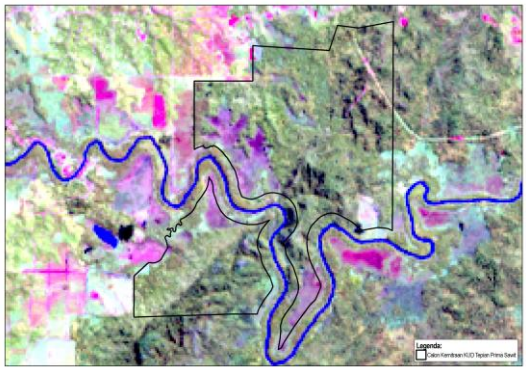
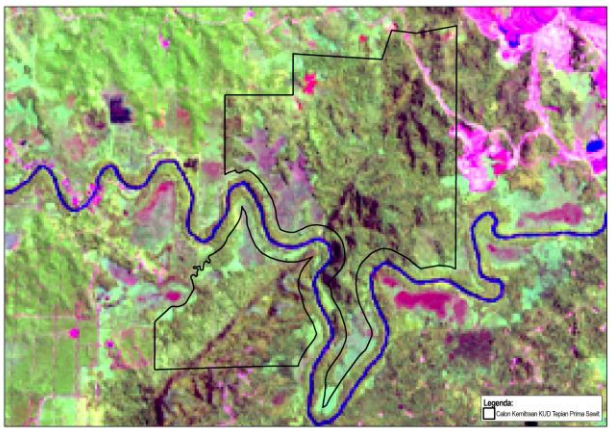
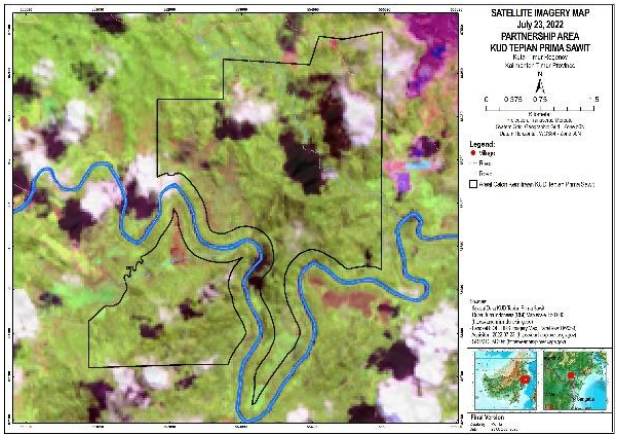


May 9, 2014
(Represented by Landsat 8 OLI TIRS – July 1, 2014)



April, 2021
(Represented by Landsat 8 OLI TIRS – August 5, 2021)



July, 2022
(Represented by Landsat 8 OLI TIRS – July 23, 2022)

Section 9: Conclusions

KUD Tepian Prima Sawit as a subsidiary of PT Dharma Satya Nusantara, which is a member of the RSPO, conducts plantation operations with a commitment to the PT Dharma Satya Nusantara Sustainability Policy and adheres to the required sustainability principles.

This study and assessment in the context of KUD Tepian Prima Sawit plantation operations has been carried out based on the prevailing laws and regulations in Indonesia, as well as international regulations that have been ratified. The study was conducted using a standard toolkit that has been recognised/endorsed by global institutions and the RSPO.

Management and Monitoring of recommendations for integrated HCV-HCS assessment, Social Impact, Land Management, and emissions, in detail, including achievement targets and timelines are written in the Summary of Integrated Management Plan document.
Section 10: Confirmation of Report
This document is the summary of assessment result on Environment Impact Assessment (EIA), Social Impact Assessment (SIA), Integrated High Conservation Value (HCV) – High Carbon Stock HCS), Soil and Topography Survey and Land Use Change Analysis (LUCA) in KUD Tepian Prima Sawit – Tepian Langsat Village, Bengalon sub-district, Kutai Timur district, Kalimantan Timur province, Indonesia and has been approved by the Management. This Assessment result will be applied as one of the guidelines in managing oil palm plantation.

Date of Completion	30 June 2024
Signature	
Name	Agustinus Triwibowo
Position	Compliance & Management System Division Head