

Roundtable on Sustainable Palm Oil

New Planting Procedure

SUMMARY OF ASSESSMENT REPORTS AND MANAGEMENT PLANS

PT AGRO KATI LAMA (Fase II)

Sumatera Selatan, Indonesia

2021

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LIST OF ABBREVIATION

AKL	PT. Agro Kati Lama
AoI	Area of Interest
BPS	Biro Pusat Statistik
FGD	Focus Group Discussion
FPIC	Free, Prior, Informed & Consent
GHG	Green House Gas
GIS	Geographical Information System
HCV	High Conservation Value
HCSA	High Carbon Stock Assessment
KMD	Kebun Milik Desa (Villages Plantation)
LUCA	Land Use Change Analysis
LHK	Lingkungan Hidup dan Kehutanan
RaCP	Remediation and Compensation plan
RSPO	Roundtable Sustainable Palm Oil
SEIA	Social Environmental Impact Assessment
SIA	Social Impact Assessment
TTI	Tolan Tiga Indonesia
TN	Taman Nasional

1. GENERAL DESCRIPTION AND BACKGROUND

1.1. General Description

PT Agro Kati Lama (AKL) is an oil palm plantation company located in Musi Rawas Regency, South Sumatra Province and part of the SIPEF group of companies (*Société Internationale de Plantations et de Finance*) or also known as PT Tolan Tiga Indonesia (PT TTI) which manages several oil palm and rubber plantations and their processing industries, all of which are on the island of Sumatra, while the tea plantations are in West Java Province. The area of the management of oil palm nucleus plantations, plasma and village plantation (KMD) in the Provinces of North Sumatra, Bengkulu and South Sumatra is 97,305.00 ha¹⁾. SIPEF has been a member of the Roundtable on Sustainable Palm Oil (RSPO) since 2005²⁾ and is committed to sustainable production according to RSPO standards.

An area of 3,090.9 ha is planned for the development of a new oil palm plantation which is an extension of the previous AKL plantation permit (phase I/AKL I). Previously, PT AKL I had obtained a 'Verification Statement' that: "The SEIA and HCV assessment is comprehensive, professional and complies with the RSPO Principles, Criteria and Indicators applicable to new plantings" from BSI Group Singapore Pte Ltd in the 'RSPO Notification of Proposed New Planting', dated 9 March 2012. The area of PT AK Phase II (AKL II) oil palm plantation development is located in Musi Rawas Regency, South Sumatra Province.

Based on the Regional Regulation of the Province of South Sumatra No: 11/2016, Date: 24 October 2016, Regarding the Regional Spatial Plan (RTRWP) of the Province of South Sumatra³⁾, the PT AKL II location permit area is located in part of the residential area (44.2%) and partly in the plantation area (55.7%). The area for the location permit for the new addition of PT AKL Phase II is based on the Decree of the Head of the Investment and One Stop Services of Musi Rawas Regency with No. 75 / KPTS / II / DPM-PTSP / 2018, dated 27 August 2018 for oil palm plantations, covering an area of 3,090.9 ha which is geographically located between 030 15 '09.37"-030 25' 10.25" south latitude and 1020 58 '21.68"-1030 03' 40.12" east longitude. Administratively, the government covers 2 districts and 11 sub-districts/ villages, namely: (A) Muara Beliti District with (1) Muara Beliti Pasar Village, (B) Tiang Pumpung Kepungut District with (2) Rantau Bingin Village, (3) Muara Kati Baru II Village, (4) Muara Kati Lama Village, (5) Muara Kati Baru I Village, (6) Batu Bandung Village, (7) Kebur Village, (8) Kebur Jaya Village, (9) Rantau Serik Village, (10) Lubuk Besar Village and (11) Simpang Gegas Temuan Village. **Figure 2** presents the orientation map and location permit map for PT AKL II.

The area of PT AKL II's additional location permit is in the form of agricultural cultivation land belonging to the community that has been managed (brownfield). PT AKL plans to carry out a series of processes to obtain management rights.

¹⁾ Source: <https://www.rspo.org/file/acop2017/submissions/sipef%20group-ACOP2017.pdf>

²⁾ Source: <https://www.rspo.org/members/156/SIPEF-Group>

³⁾ In <http://jdih.sumselprov.go.id/userfiles/PERDA%20NO.11%20THN%202016.pdf>

Activities that have been and are being carried out by the Company include intensive socialisation and data collection of community lands or preparation of the Compensation for Planting Growth (GRTT) process, as well as environmental and social studies (AMDAL / EIA), Social Impact Assessment, land tenure studies, assessment of High Conservation Value (HCV), High Assessment Carbon Stock (HCSA), Soil Assessment, Land Use Change Analysis (LUCA), and Green House Gas (GHG) Assessment. The management of PT AKL II is committed that in the location permit area, land clearing will only be carried out when the RSPO New Planting Procedure (NPP) process is completed.

Based on the Map of the Function of Forest Areas and Water Conservation in South Sumatra Province, referring to the Decree of the Minister of Environment and Forestry, No: 454 / MenLHK / Setjen / PLA-2/6/2016, it is shown that the HCV assessment area in the PT AKL II location permit area is entirely in an Other Use Area and not included in the peat moratorium area based on the XV revision of the Indicative Map for Suspension of New Permits (PIPIB). **Figure 1** shows the location of PT AKL II with the status of a forest area function.

In terms of physiographic units, the PT AKL II location permit area is within the south-eastern plains and hills unit (RePPProT, 1990). The Land System Macro Scale Map (RePPProt 1990) shows all PT AKL II location permits included in the Muara Beliti (MBI) Land System. MBI is tuff-rocky sedimentary plains that are choppy to undulating with relief (M) rocky shale, silt rock, tuffite, mudstone, siltstone, sandstone, young river alluvium, old sand and gravel, classified as *Tropudults, Dystropepts, Haplortox*.

The area around and within the PT AKL II location permit area is included in the river basin (WS) BPDAS Musi - Sugihan - Banyuasin - Lemau. All rivers in the management unit area discharge into the Beliti River which flows from the south to the north of the management unit. The rivers and channels that cross the PT AKL II location permit area are predicted to be around 70.72 km, covering an area of around 108.67 ha. The largest river is the Beliti River with a width of 30-60 m and a depth of 4-10 m.

The Sumatra Biogeography Unit closest to the AoI area is Kerinci Seblat National Park. It is the largest national park in Sumatra, with important vegetation types including tropical rainforest *Dipterocarp pamah*, low mountain forest, forest and upper mountains dominated by Lauraceae. The closest conservation area to the AoI area is the Kerinci Seblat National Park, which is 37 km to the west. In addition, the protected forest area closest to the AoI area is the Banyuasin Unit I protected forest, which is 16 km in the northwest and the protected forest area in the southwest.

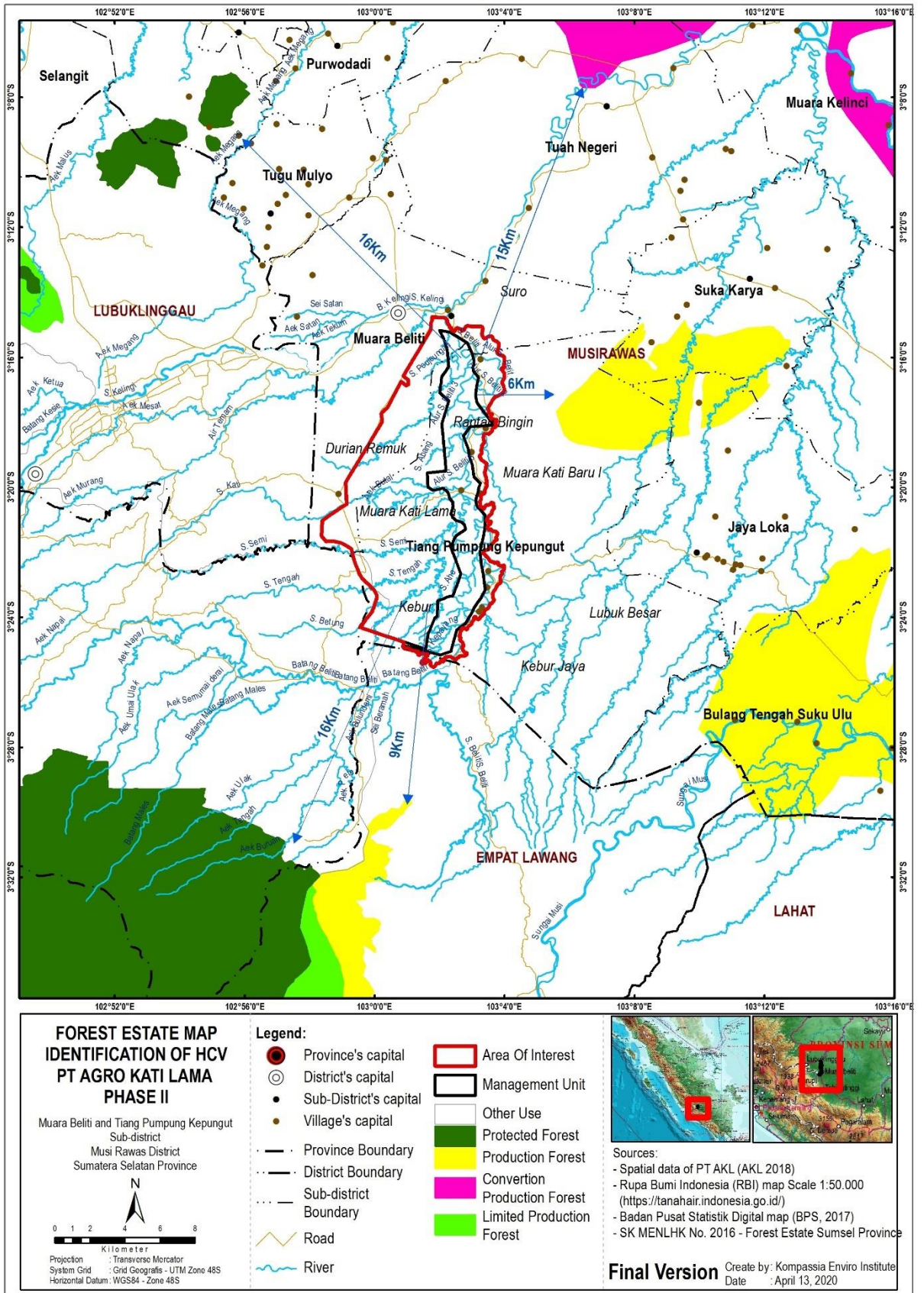
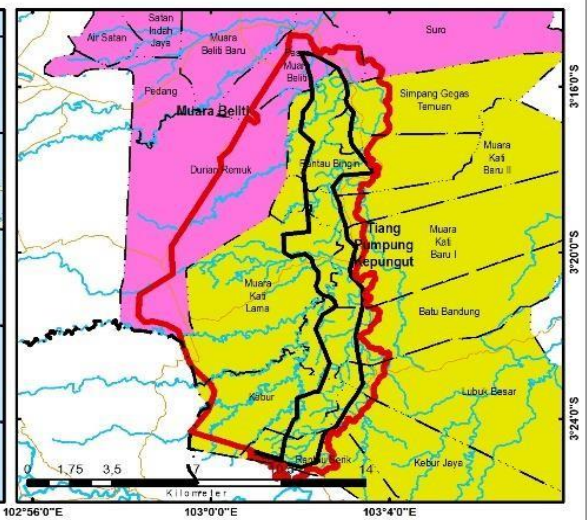
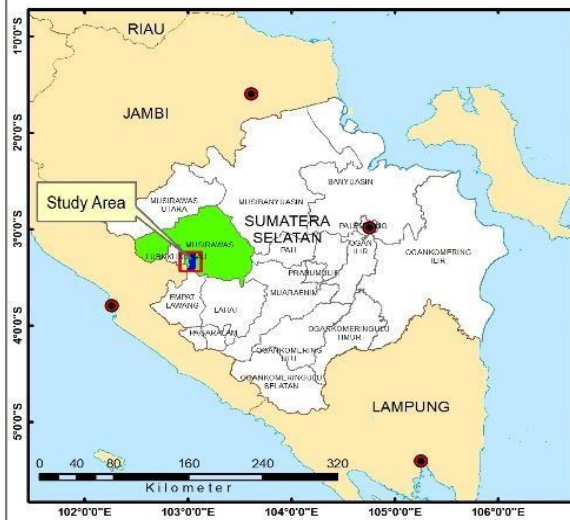


Figure 1. Overlapping PT. AKL II with National Forest map

1.2. Proposed New Planting

From the HCV assessments that have been carried out, HCV 1, HCV 4, HCV 5 and HCV 6 have been identified covering an area of 860.15 ha in the PT AKL II management unit, which includes the presence of two endangered (EN) species, remaining secondary forest, springs, rivers and borders, which are important for the livelihoods of local communities and the existence of ancient sites and tombs. Details of the identified HCV areas can be seen in **Table 32**.

A total of 943.25 ha will be managed as a set-aside conservation area, a combination of HCV areas and HCS areas as determined by approved HCV assessments and HCSA peer review assessments. The total area of PT AKL II which has the potential to be developed into an oil palm plantation is 2,025.87 ha. This area that could be developed will follow the Company's Sustainable Policy and the RSPO New Planting Procedure (NPP). The entire planned planting area is mineral soils, excluding HCV and HCS areas, and does not directly border protected/conservation forest areas. Information on proposed new planting in the PT AKL II area is presented in **Table 1** and **Figure 3**.



**ORIENTATION MAP
IDENTIFICATION OF HCV
PT AGRO KATI LAMA
PHASE II**

Muara Beliti and Tiang Pumpung Kepungut
Sub-district
Musi Rawas District
Sumatera Selatan Province

Legend:

- The nation's capital
- Province's capital
- Province Boundary
- District Boundary
- Sub-district Boundary
- Village Boundary
- Road
- River
- Muara Beliti
- Tiang Pumpung Kepungut
- Area Of Interest
- Management Unit

Projection : Transverse Mercator
System Grid : Grid Geografis - UTM Zone 48S
Horizontal Datum: WGS84 - Zone 48S

Sources:
- Spatial data of PT AKL
- Rupa Bumi Indonesia (RBI) map Scale 1:50.000
- Badan Pusat Statistik Digital map (BPS, 2017)

Final Version Create by: Kompasnia Enviro Institute
Date : April 13, 2020

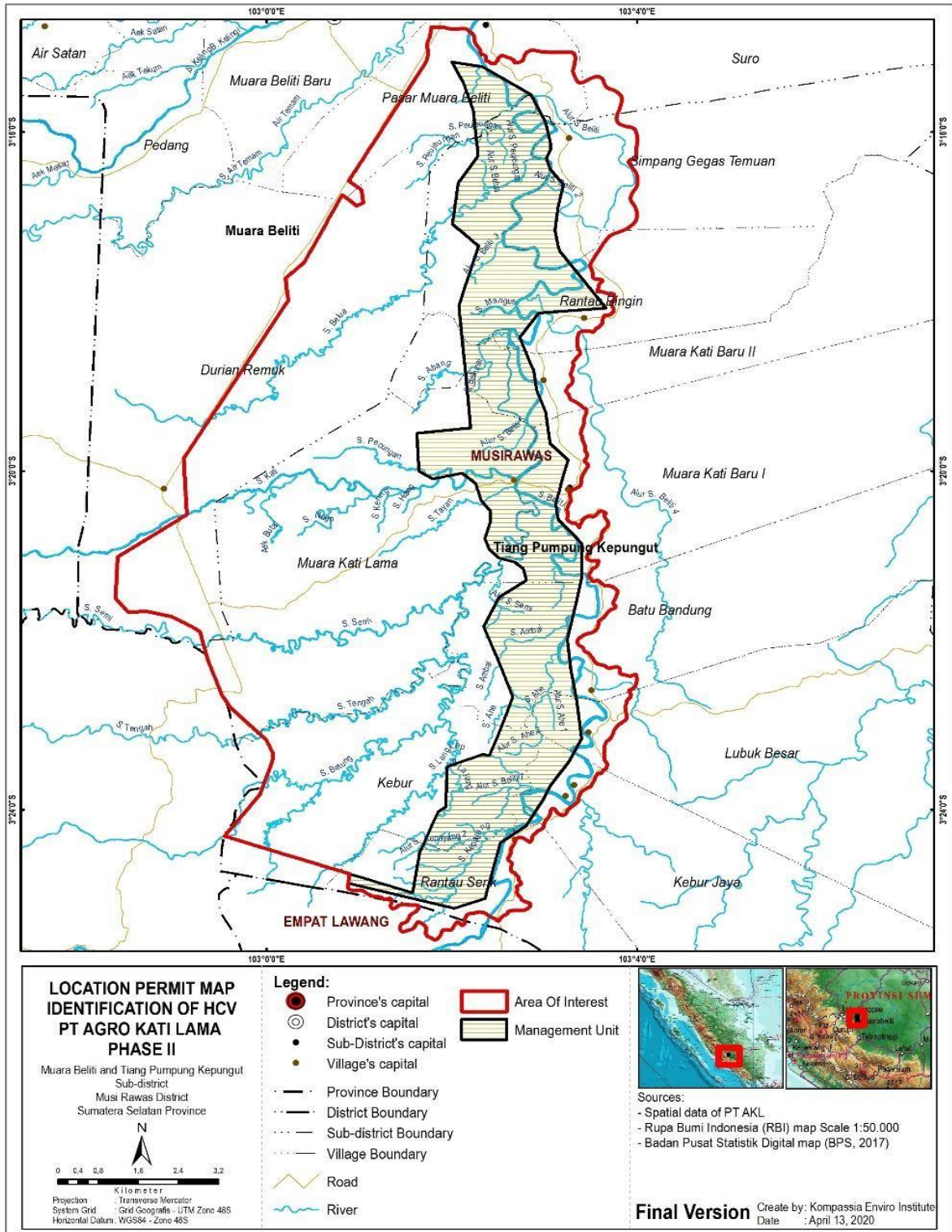


Figure 2. Location Map of PT. AKL II in National and region context

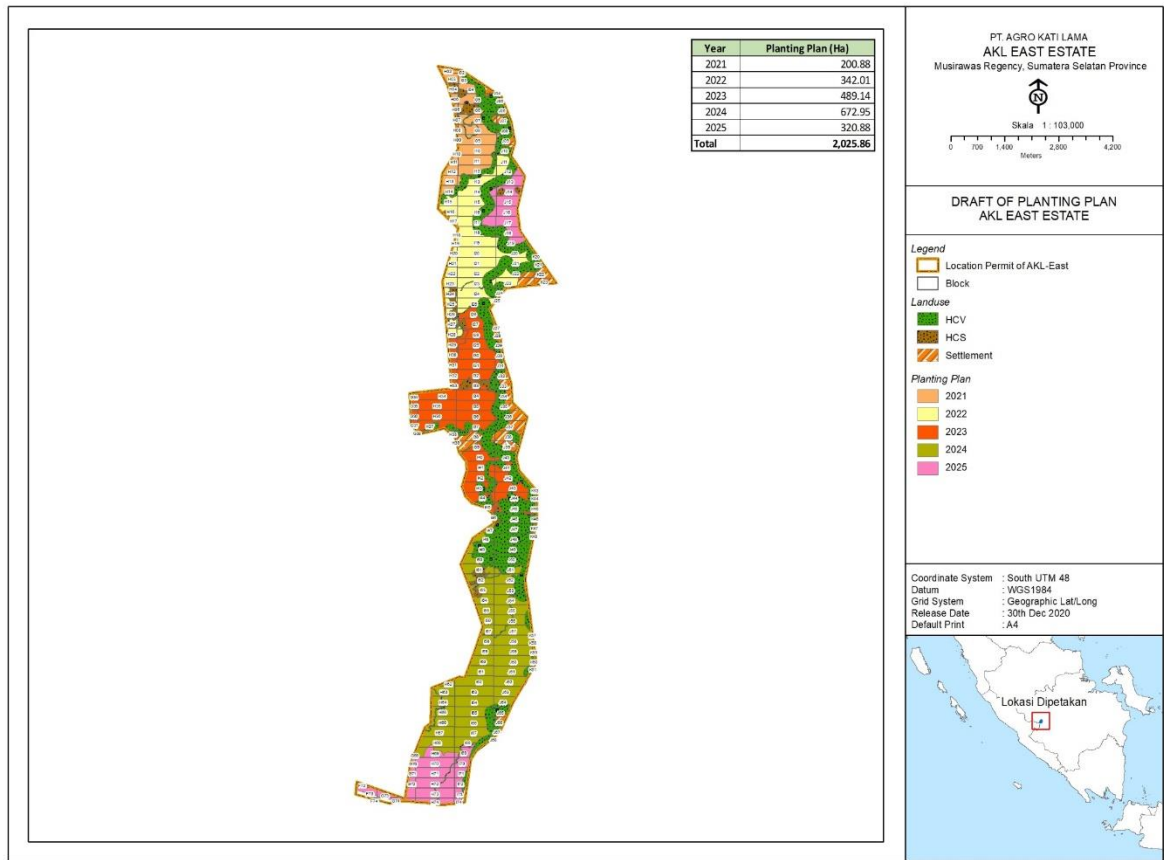


Figure 3. Map of proposed new planting for period 2021 - 2025

Table 1. Proposed new planting of PT AKL II - 2021-2025

New Planting Plan (ha)					Sub total (ha)	HCV/HCS (ha)	Replanting	Mill & Facilities	Total (ha)
2021	2022	2023	2024	2025					
200.88	342.01	489.14	672.95	320.88	2,025.86	943.25	118.16	3.63	3,090.90

2. ASSESSMENT PROCESS AND METHOD

2.1. Social and Environmental Impact Assessment (SEIA)

2.1.1. SEIA Assessment dan Assessor Credential

PT AKL's environmental impact analysis (AMDAL) was carried out by Survindo Link and finalised in April 2020. **Table 2** shows the PT AKL AMDAL drafting team led by Dr Yunofrizal

Table 2. SEIA team and assessor credential

<i>Assessor</i>	<i>Position & expertise</i>	<i>Competency</i>
Drs Yunofrizal	Team leader dan ahli lingkungan	AMDAL B + Certificate of competence
Budi Harlianto, S. Si, MSc	Member - Geofisika expert	AMDAL B + Certificate of competence
Deni Agus Triawan, SSi, MSc	Member - Environmental chemist expert	AMDAL A + Certificate of competence
DR Jarulis, SSi, Msi	Member - Biologycal expert	AMDAL B + Certificate of competence
DR.Ir. Satria Putra Utama, MSc	Member - Socio and cultural expert	AMDAL A
Eka Heriyanto Putra, S. Hut	Member - Drafter	AMDAL A
Fransisca Diah Setyaningrum, ST	Member - Engineering expert	
Ahli Kehutanan/Pertanian	Member - Forestry expert	
Ahli KESMAS	Member - Community Health expert	

2.1.2. SEIA/AMDAL Assessment Methods

The AMDAL Assessment was covered within and surrounding village nearby PT. Agro Kati Lama 2 concession and it had been conducted based on primary data and secondary data. Those primary and secondary data were collected through onsite sampling, survey with purposive proportional sampling; terrestrial studies; stakeholders interview; land use, impact to surrounding community; socio-economic study, health and cultural aspects.

Data collection and reference was made to the national, sector and regional regulations. The assessment data that had been collected should be accurate and reliable so that it could be used to analyze, measure and observe the environmental components which was predicted would be affected by Corporate operational and components of action plan, such as: air quality, water quality, erosion and sedimentation, vegetation, flora/fauna, social – economic, culture, and local community health.

2.2. Social Impact Assessment (SIA)

2.2.1. Social Impact Assessment and Assessor Credential

The implementation of the Social Impact Assessment (SIA) for PT AKL was completed in December 2018 by a team of consultants from PT Koompasia Enviro Institute, led by Sigit B. Setyanto. **Table 3** shows the composition of the drafting team

Table 3. List of Social Impact Assessment Team Personnel at PT AKL II.

Name	Position	Expertise
Sigit Budhi Setyanto	Team Leader	Socio-cultural field
Fadhli	Member	Socio-cultural field
Wibowo A. Djatmiko	Member	Socio-environmental sector
Riswan Zein	Member	Socio-environmental sector and GIS
Harry Kurniawan	Member	Socio-environmental sector and GIS
Ihsan Nur Harahap	Member	Socio-environmental assessor
Jarian Permana	Member	Socio-environmental assessor
Bugi Kurniadi	Member	Socio-environmental assessor
Razi Aulia Rahman	Team Leader	Socio-cultural field

2.2.2. SEIA Assessment Methodology

The SIA study was conducted from December 2018 - January 2019. The methods or techniques used in the Social Impact Identification process consist of:

- 1) **Literature Study:** This method is used to gain an understanding of the social and environmental context of the identification area, carried out at an early stage prior to going to the field, and at the results analysis stage;
- 2) **Dialogue:** This method is used to identify the parties, explore issues that are impacted, explore hopes, ideas and aspirations to find solutions to the issues that occur, carried out through Focus Group Discussions (FGD), meetings both formal and non-formal and with specific topics;
- 3) **Field Observation:** This method is used to understand first-hand facts on the ground which are indications of the occurrence of social issues and impacts;
- 4) **In-depth Interview:** In order to explore and gain a deeper understanding of the issues that arise, in-depth interviews are conducted with selected key figures who become respondents; the choice of respondents is based on the knowledge they have, or the actors or those who have directly felt an impact.
- 5) **Triangulation:** The methods above are carried out in an integrated manner to mutually verify the issues, opinions and ideas that arise.
- 6) **Social-Learning Cycle:** Social Impact Identification is not a one-time linear process but a cyclical process, which functions as social learning processes to respond to environmental changes that occur.

The stages of the Social Impact Identification activities are carried out with the reference to 'A Comprehensive Guide for Social Impact Assessment' (2006).

A. Study preparation and pre-assessment

This activity aims to collect basic information (both spatial and non-spatial information), either in the form of information data sourced from publications (study reports, journals, books, statistical data, etc.) or through communication with parties deemed to have the information, knowledge, or experience related to social issues in the study location (socio-cultural community, community and demographic history, history of social conflicts, regional development, government policies and plans, etc.).

The activities of identifying community profiles, identifying potential key stakeholders, determining the scope of the study, establishing methods, and designing social surveys were carried out through an FGD process which was attended by all team members and led by the team leader. If needed, the team can invite the relevant company or other related parties as a resource.

B. Field Activities

This activity aims to collect data and information and assess social impacts directly in the field. The sequence of activities in the field is as follows:

- 1) **Opening Meeting** | This activity is intended to convey the objectives of Social Impact Identification (SIA), the scope of activities (scoping), compiling a field work team, and agreeing on a schedule of daily activities. In this activity, basic training activities (introduction) were also carried out on the identification of social Impacts: background, aims and objectives, concepts, and how to identify them.
- 2) **Participatory Social and Stakeholders Mapping** | This activity aims to identify: (1) Key parties who will be or have been affected (both positive and negative) or will or have had an impact (both positive and negative) on the presence and operations of the Company or Management Unit, (2) Key parties who can facilitate/support or significantly or potentially hinder the presence and operations of the Company or Management Unit and (3) A portrait of life (socio-cultural and socio-economic) of the community in and around the managed area.
- 3) **Field Observation** | This activity aims to collect and explore information relating to (primary) social impacts directly in the field. The SIA Team will divide itself into three sub-teams, namely: the Socio-Cultural and Community Empowerment Team, the Socio-Economic and Rural Development Team, and the Manpower and Social Relations Team. Each sub-team consists of 2-3 people (involving counterparts from the company and local communities), led by an expert from PT Koompasia Enviro Institute (KEI).
- 4) **Focus Group Discussion (FGD)** | This activity aims to gather information and opinions from participants, as well as clarify, confirm, complete and deepen the temporary findings from the field, in the form of brainstorming discussions on several recorded social issues, both positive and negative.
- 5) **Analysis and identification records in the field** | This activity aims to process and analyse data and information obtained from field activities, to then compile it into an "identification note" containing temporary findings in the field (social issues, prediction of social impacts), drawing conclusions, along with justification or what the argument was, to be submitted to the Plantation Management Unit and Company management. In this activity, the results of interim findings were clarified and data/information was still needed.
- 6) **Closing Meeting** | This activity aims to convey interim results in the form of brief information on social portraits, social issues, and prediction of social impacts to the Management Unit. The purpose of this activity is so that the Company Management Unit gets the main substance of the identification results and can follow up on important or urgent matters, not having to wait until the Social Impact Identification Result Report is complete.

C. Social Impact Identification, Analysis and Prediction

This activity aims to process and analyse more comprehensively and in depth all results from the field and confirm, clarify, revise, on special cases based on the opinion of the Company or the Management Unit. The results are then presented back to the Management Unit for input and improvement. The social impact analysis and prediction activities were carried out at the PT KEI Studio in Medan.

Meanwhile, if necessary, presentations/exposures can be made at the Company's Management Unit office.

D. Report Writing (*Draft*)

This activity is in the form of a writing workshop, where all members of the SIA Team meet, discuss, study together, and test the results of the analysis and mapping, to then compile a report. Reports are prepared in an accountable and systematic format, and are also coherent and simple, accompanied by visual presentations, so that the plantation Management Unit and the Company can easily read and understand them. The output of this stage is a draft report. Furthermore, the Draft Report was sent to the Management Unit / Company to be examined, given input, and corrected if errors in data and information are found. Subsequently, the Draft Report document was sent back to the SIA Team of PT KEI for improvement.

E. Report Writing (*Final*)

This activity is focused on including relevant suggestions from the Company, and from other parties deemed important to be included as part of the Final Report. The output of this stage is the Final Report.

2.3. HCV Assessment

2.3.1. HCV Assessment and Assessor Credentials

The HCV assessment at PT AKL II was carried out by an independent consultant PT Koompasia Enviro Institute from November 2018 – June 2020, and received satisfactory status in December 2020. **Table 4** shows the composition of the HCV assessment team at PT AKL II

Table 4. HCV Assessment team - PT AKL II

Name	Position	Expertise	Experience
Sigit Budhi Setyanto (ALS15024BS) Full License	Team leader (HCV 5 & 6 expert)	HCV assessor on social- cultural, community capacity building, conflict mitigation, participatory mapping, FPIC, CSR, Soil science, fertilizers and environment	Assessment and verification work in Indonesia, Malaysia and Papua New Guinea. Language: Indonesia, English, Java, Madura and Malay
Rizwan Zen	Member (HCV 4 & GIS)	GIS and remote sensing science and application, HCV assessor mainly for environment services, participatory mapping, natural resource management and forestry	Assessment and sustainability audit in Indonesia, Malaysia, Papua New Guinea and Africa. Language: Indonesia, English, Batak, and Malay
Harry Kurniawan	Member (HCV 4 & GIS)	GIS, HCV assessor for environment services, mapping, and forestry	Assessment and verification work in Indonesia Language: Indonesia, English, Batak, Java, and Malay
Wibowo Agung Djatmiko	Member (HCV 1,2, & 3)	HCV assessor for Ecology and Biodiversity, Expert in Biology,	Assessment in Indonesia and Malaysia. Trainer for HCV 1,2 and

Name	Position	Expertise	Experience
		Dendrology, Forestry, Forest inventory, participatory mapping	3 Language: Indonesia, English, Java and Sunda
Ihsan Nur Harahap	Member (HCV 1,2, & 3)	Assistant for HCV 1 (Ecology, Biodiversity), Forestry and GIS	Assessment in Indonesia, Language: Indonesia, English, Batak and Malay
Fadhli	Member (HCV 5&6)	Assessor for HCV 4 and 5 participatory mapping, FPIC, CS.	Assessment in Indonesia, Language: Indonesia, English, Minang and Malay

2.3.2. HCV Implementation Methods

The HCV assessment at PT AKL II was carried out in conjunction with the SIA (Social Impact Assessment) and HCSA (High Carbon Stock Approach) assessment activities to facilitate the administration of all documents made in one unit and more effective with assigning the functions and responsibilities of personnel for each activity. The timeline for the implementation of activities is presented in **Table 5**:

Table 5. Implementation Schedule of PT AKL II's HCV Assessment Activities

Stage	Purposes	Location	Time line
Pre-field work			
<i>Pre-assessment and Preparation</i>	<ul style="list-style-type: none"> Collect preliminary data and information from the company and identify potential and early indications of the presence of HCV attributes or elements from secondary sources (reports, journals, books, statistical data, base maps) and resource persons. Understand the landscape context of data analysis and spatial analysis. Know conservation issues and potential threats to HCVs Determine the method, survey design, identification team, and timeline for field activities. 	PT Koompasia Enviro Institute Office, Medan	8 - 12 November 2018
Field work			
Scoping	<ul style="list-style-type: none"> Convey the intent, purpose and desired outcome of the HCV assessment plan. Obtain data and information as well as the main problems directly from representatives of the community and government officials. Verify information from the desk study results. Identify the main issues that should be covered during the assessment. Make contact with stakeholders and community representatives, and arrange a schedule for visits to the village. Visit sub-district offices, villages and visits to and around the plantation. 	PT AKL office meeting room Day 1: Visit to Muara Beliti District, Muara Beliti District Market, Tiang Pumpung Kepungut District, Customary Leader, Batu Bandung Village and Simpang Gegas Temuan Village Day 2: Continuing the meeting with leaders of the Muara Kati area (Muara Kati Lama, Muara Kati Baru I and II). A visit to Muara Kati Baru II Village, Lubuk Besar Village, Rantau Bingin	15 – 16 November 2018

Stage	Purposes	Location	Time line
		Village, Kebur Village (Kebur Jaya Village), Rantau Serik Village	
Main Assessment			
Opening meeting, Basic HCV Training and Internal Participatory Mapping	<ul style="list-style-type: none"> • Communicate the intent, purpose and desired outcome of the HCV assessment plan to local management and staff • Conduct a workshop and short training on HCV with management units and local staff • Build Management Unit's understanding of HCVs: background, purpose and objectives, concepts, HCV types, key attributes or elements, and identification methods • Obtain additional data and information regarding the status of development plans and plantation management • Gain support from the Management Unit for the implementation plan 	Meeting room for PT AKL office, Durian Remuk Village, Musi Rawas	19 November 2018
Field Survey	<ul style="list-style-type: none"> • Carry out data collection, field checks and verify the presence of HCV attributes or elements. • Visit government agencies. • Identify and map boundaries indicative of HCV areas. • Interview and triangulate with relevant sources. • Identify threats and potential threats to HCVs. 	<p>The HCV 1, 2, 3 and 4 teams immediately made field visits.</p> <p>Day 1, 20 Nov: Visit to the Office of Licensing, Environmental Service and Plantation Service and continued to Muara Kati Lama Village, Muara Kati Baru I, Muara Kati Baru II and Simpang Gegas Temuan</p> <p>Day 2, 21 Nov: Sharing with members of the DPR (PT AKL office), Rantau Bingin Village, Lubuk Besar, Batu Bandung, Rantau Serik and Muara Kati Customary Chairman</p> <p>Day 3, 22 Nov: Kop. Beringin Jaya (PT AKL office), Muara Beliti Village, Kebur and Kebur Jaya Villages</p>	20-22 November 2018
Closing Meeting	<ul style="list-style-type: none"> • Presentation, sharing and discussion regarding the preliminary results of the HCV assessment to the Management Unit and request incomplete data support 	Meeting room for PT AKL office, Durian Remuk Village, Musi Rawas	23 November 2018
Stakeholder Consultation I	<ul style="list-style-type: none"> • Give presentation, workshop to convey objectives and present the results of the provisional HCV assessment to stakeholders (community leaders, local government, NGOs) • Collect additional information and clarify the presence of HCV attributes/elements and threats or potential threats to HCV. 	Hotel Abadi, Lubuklinggau	23 November 2018

Stage	Purposes	Location	Time line
	<ul style="list-style-type: none"> • Conduct interviews and FGD with additional key parties. • Gather input for the preparation of recommendations and options for an HCV management and monitoring plan. 		
Post – field work			
Analysis and Reporting	<ul style="list-style-type: none"> • Present data analysis and partial results of the HCV assessment in a report according to the established format and systematics that meets scientific, coherent and simple principles so that it is easily understood by the Management Unit and report users. 	Kantor PT Koompasia Enviro Institute	Oktober 2018 – Mei 2019
Stakeholder Consultation II	<ul style="list-style-type: none"> • Present and convey the results of final HCV identification to stakeholders (community leaders, local government, NGOs). • Collect additional information and clarify the presence of HCV attributes/elements and threats or potential threats to HCV. • Gather input for the preparation of recommendations and options for an HCV management and monitoring plan. 	Hotel Abadi, Lubuklinggau	9 Juli 2019
Quality Panel	<ul style="list-style-type: none"> • Inspection and revision process by the HCVRN Quality Panel 	Review by HCVRN Quality Panel	August 2019
		Report revision	March 2020
		Report I revised and sent	30 April 2020
	Additional field visits and consultation and confirmation to villages around the location permit in response to the Quality Panel review	Report II revised	June-August 2020
		Internal review and Report II submission	September 2020

2.3.2.1. Pre-Assessment phase

Pre-conditions that have been met by management unit according to Manual /toolkit issued by HCVRN, as follows:

1. Commitment to environmental and social safeguards
<p>PT AKL as a subsidiary of SIPEF group has a policy that regulate commitment for environment and social safeguards. A complete policy is expressed in “SIPEF SUSTAINABLE APPROACH” and “SIPEF RESPONSIBLE PLANTATIONS POLICY” can be accessed at link :</p> <p>https://www.sipecf.com/hq/sustainability/sustainable-approach/ and https://www.sipecf.com/hq/sustainability/policies/responsible-plantations-policy/</p> <p>the SIPEF group policy states commitments in terms of social and environmental protection, including: “The operations of the SIPEF group are part of a larger natural and social environmental landscape. Long-term relationships are formed between them and the local community. A Free, Prior and Informed Consent (FPIC) process is critical to the long-term success of any new operation. Job and business opportunities become available as operations run smoothly and grow. Regular consultations with communities related to operations will be carried out. https://www.sipecf.com/hq/sustainability/positive-social-impacts/</p> <p><i>“The SIPEF Group recognizes that, in addition to its legal and commercial obligations, it also has a responsibility towards the communities and environment in which the Group operates. The Group is committed to protecting the environment by maintaining healthy and sustainable agricultural policies in accordance with the Principles and Criteria of the Roundtable Sustainable Palm Oil (RSPO), which covers a wide range of environmental and social issues, such as transparency, legal compliance, best agricultural practices, responsible land development. and continuous improvement ”.</i></p> <p>https://www.sipecf.com/hq/sustainability/corporate-policies/</p>
2. Commitment to moratorium on any land clearing or land preparation until the HCV assessment has been completed
<p>PT AKL through the SIPEF group also has a policy written in the 'SIPEF RESPONSIBLE PLANTATIONS POLICY' which states: "Responsible development of new operations" or is responsible for the development of new operations (plantation development). Will be subject to a High Conservation Value (HCV) assessment procedure prior to the Free, Prior and Informed Consent (FPIC) Process of affected communities and following the New Planting Procedure (RSPO NPP).</p> <p>https://www.sipecf.com/hq/sustainability/sustainable-approach/</p>
3. Demonstrated legal right over or permission to explore the location permit and Area of Interest
<p>PT AKL II informed that it had obtained a Location Permit for the Addition of a New Area for Phase II with No. 75 / KPTS / II / DPM-PTSP / 2018 signed by the Head of One Stop Integrated Services and Investment Office of Musi Rawas Regency, Mr. Yudi Fachriansyah, AP. M.Si on 27 August 2018 with an area of 3,090.9 ha of oil palm plantations which are administratively located in (A) Muara Beliti District covers (1) Pasar Muara Beliti Village, (B) Tiang Pumpung Kepungut District covers (2) Rantau Bingin Village , (3) Muara Kati Baru II Village, (4) Muara Kati Lama Village, (5) Muara Kati Baru I Village, (6) Batu Bandung Village, (7) Kebur Village, (8) Kebur Jaya Village, (9) Rantau Serik Village, (10) Lubuk Besar Village and (11) Simpang Gegas Temuan Village. Verification of the implementation permit for the HCV assessment has been carried out by the implementation team, the village government as the community representative has given permission to the implementing team to carry out an HCV assessment.</p>
4. FPIC Process has been initiated with full disclosure of the proposed project with all potentially affected communities and stake-holders , and the process for negotiation and consent going forward has been agreed, with representatives appointed through a fair process

PT AKL II informed that it had carried out a series of informal socialization processes at the local, district and village government levels for plans for developing and managing oil palm plantations. Formally, AKL II's plantation development plan has been consulted in the process of obtaining a location permit to the district government, a government technical team has also conducted a study and provided recommendations on the plantation development plan as mentioned in the location permit. The location of the new permit (PT AKL II) is just east of the previous permit (PT AKL I) which covers the same 7 villages and 2 districts. Relations with all villages and districts are well established regarding the process of land acquisition and the development of PT AKL I's plasma plantations, whose ownership is spread across all PT AKL II villages. Socialization to the community has also been carried out by providing material about plantation development plans. Socialization to the community has also been carried out by providing subjects on plantation development plans.

Initial data and information given by the management of PT AKL II is adequate for the next scoping study with given conditions: (1) the new location permit of PT AKL has been issued and completed with map, (2) PT AKL through the previous project in AKL I has good relation and communication with the surrounding villages, (3) PT AKL I has developed plasma for community in Beringin Jaya cooperative, established on May 2013 refers to legal permit Law Number 0942/BH/VII.4/2013. By the end of December 2017, a 577.00 Ha plasma has been developed. Most of member of the cooperative are villagers included in the assessment of PT AKL II, (4) There is an information from PT AKL stated that new palm oil development plan has been socialized and informed to regional government through government technical team during permit location issuance process on October 2015, and (5) Partially analysis carried out by the assessment team and PT AKL management results the new location permit for AKL II development is excluded from moratorium designation for new development, and that area is located in non-forest state area (other purpose area). Refers to qualification requirement on due diligence components, it is concluded the HCV assessment may continue to Scoping Study phase

2.3.2.2. Scoping Study

The Scoping Study activity began with an opening meeting with operational staff in the field (site area), is carried out by presenting the objectives of the activity, providing an overview and basic analysis of the results of the desk study from the consultant and the process mechanism of the stages of the assessment activities from beginning to end based on guidance from the HCVRN. This is followed by sharing information and questions and answers as well as reviewing documents or information available in the site area. The opening meeting ended by agreeing on a tentative activity schedule, companion, person in charge (PIC), transportation, accommodation and other relevant activities until the Scoping Study activity is complete. This activity is very important so that the consultant and internal staff have the same perception and frequency in carrying out assessment activities to completion.

Field visits to consult with the district heads, village heads, relevant key community figures (key stakeholders) to explain the detailed HCV Assessment plan and to ask for approval represented by village and district entities. In addition to that, by sampling, 'Initial Participatory Mapping' was carried out in villages that had an important role, such as those with the largest area in the location permit. The activity was continued with a quick visit to the location permit area and its surroundings to observe important locations such as thick vegetation cover, swamps, rivers, mixed gardens and other relevant areas. The initial assessment ends with a closing meeting for discussion of results and requests for documents and relevant information available at the company. The Schedule of Scoping Study Activities at PT AKL II is presented in **Table 6**.

Table 6. Scoping Study Schedule in PT AKL II

Activity	Description	Time
<i>Opening Meeting for information collection</i>	Desk study, document profiling, information sharing and consult to internal staff of I PT AKL II(<i>site area</i>)	15 November 2018
Districts and villages visits include society leaders.	Visits to Muara Beliti district, Pasar Muara Beliti village, Tiang Pumpung Kepungut district, society leader of Muara Kati region, Batu Bandung village and Simpang Gegas Temuan village	15 November 2018
	Meeting and discussion with Muara Kati public figure (covers two villages : Muara Kati Lama village and Muara Kati Baru I village), Muara Kati Baru II village, Lubuk Besar village, Rantau Bingin village, Kebur village (include Kebur Jaya village), Rantau Serik village	16 November 2018
<i>Ground truthing</i> , initial observation for land cover	Field observation within PT AKL II and surrounding	15-16 November 2018

List of relevant initial consultations with external stakeholder of PT AKL II, in districts and villages around PT AKL II's location permit is presented in **Table 7**.

Table 7. List of initial consultations with stakeholders on the Scoping Study in PT AKL II

No.	Name of resource person / Date of meeting	Position / Role & Meeting method	Social Organization/ group	Main concerns and recommendations
1	Dodoy Irdiawan. Date: 15 Nov 2018 Placet: Distric office	District head Methods: Consultation, Sharing, Interview and Initial Participatory Mapping	Muara Beliti District	<ul style="list-style-type: none"> The consultant informed the HCV identification plan inside and outside the PT AKL II permit based on a decree dated 19-23 November 2018 which will involve 6 consultants from PT Kompasnia Enviro Institute. Historical information about Muara Beliti district, which is the main district which was divided into Tiang Pumpung Kepungut District, ethnic Malays from the Sindang Kelingi clan, there is a former palace in Muara Kati, there is a sacred grave of the sultan's family. In-depth information about adat will contact Pak Saman Ali (Chairman of the Muara Kati & Tiang Pumpung Kepungut area), The district welcomes field visits, it is hoped that they will meet with the village government first and when visiting the community it is hoped that they will involve the village so that the stakeholders who will be met are right on target.
2	Iskandar.	Village Head of Pasar Muara	Urban village of Pasar Muara	<ul style="list-style-type: none"> Sharing the history of Muara Beliti and Kati Lama, there is a forest / land area managed by

	Date: 15 Nov 2018 Place: Headman office	Beliti Methods: Consultation, Sharing, Interview and Initial Participatory Mapping	Beliti	<p>the 'Orang Gending' family community located between the Beliti river and the Semi river, entering Muara Kati Baru Village 1.</p> <ul style="list-style-type: none"> • Public information, used to be the place of 'Raden JPA Megeraje'. It is recommended to visit in order to clear its history and ownership, • The hope is that GRTT will involve village entities and witnesses so that there is no 'overlap'. • There is an important grave in Muara Kati Baru I Village, near the suspension bridge there is the sacred grave of 'Putri Dara Putih' and a public grave opposite the Muara • Kati river.
3	Suprani. Date: 15 Nov 2018 Place: District Office	Assistant of governance unit Methods: Consultation, Sharing, Interview and Initial Participatory Mapping	Tiang Pumpung Kepungut Distrik	<ul style="list-style-type: none"> • Informing the plan for HCV identification inside and outside the PT AKL II permit based on the a decree dated 19-23 November 2018 which involved 6 personnel from the consultant PT Kompasnia Enviro Institute. All information will be submitted to the Camat. • Historical information about the district which was a division of Muara Beliti District in 2006, ethnic Malays from the Sindang Kelingi clan (the same as Muara Beliti district). There are still important graves that are still being visited, especially in the Muara Kati area near the river. • The district welcomes field visits, then they will directly meet the village first so that the stakeholders who will be • met are right on target.
4	Saman Ali. Date: 15 Nov 2018 Place: Customary leader house	Customary leader Of Marga Muara Kati & Tiang Pumpung Kepungut Methods: Consultation, Sharing, Interview and Initial Participatory Mapping	Customary leader Of Muara Kati	<ul style="list-style-type: none"> • The Muara Kati Lama area has a long history from the days of the Palembang Kingdom and the Dutch Company era (related to the existence of Lubuklinggau) to the present day. Quite a lot of important places besides the sacred grave. Ethnic Malays from the Sindang Kelingi clan (Muara Kati and Tiang Pumpung Kepungut), there is still land left by the royal family which until now belongs to the family community known as 'Hutan Rame'. The communal land belonging to the custom no longer exists, only 'Hutan Rame'.
5	Ajib, Date: 15 Nov 2018 Place: Village office	Head of Village Representative Body Methods: Consultation, Sharing,	Representatives of the village community of Desa Batu Bandung	<ul style="list-style-type: none"> • There is still land belonging to the royal family called Hutan Rame which is now managed by the family and the community and also a sacred grave that is still visited by the community. The area of potential land is located east of the Beliti river, which is now

		Interview and Initial Participatory Mapping		part of the permit area for PT Gunung Sawit Selatan Lestari. Information will be <ul style="list-style-type: none"> conveyed to the Village Head
6	Erwansyah, Date: 15 Nov 2018 Place: Village Head house	Village Head of Simpang Gegas Temuan Methods: Consultation, Sharing, Interview and Initial Participatory Mapping	Representatives of Desa Simpang Gegas Temuan village	<ul style="list-style-type: none"> Simpang Gegas Finding Village was separated from Rantau Bingin Village in 2009, the village boundaries presented by the consultants based on the 2014 BPS Map, do not match the village boundaries in the field. In Musi Rawas District, the map reference is based on the 'Topdam Map'. In the Beliti River there are still a lot of fish ponds, there are also quite a lot of holes in the name of the pond and then try asking other stakeholders who understand.
7	Endy Firmansyah Date: 16 Nov 2018 Place: Village Head house	Village Head of Muara Kati Lama Methods: Consultation, Sharing, Interview and Initial Participatory Mapping	Representatives of Desa Muara Kati Lama	<ul style="list-style-type: none"> The area of Muara Kati Lama Village is quite large under the PT AKL location permit, it is hoped that later the village development plan will be allocated, because the village center is included in the main zone and the settlements are quite dense. For information on the custom of Muara Kati and Tiang Pumpung Kepungut, you can meet the former Head of Muara Kati Lama Village as a customary elder to get more complete and in-depth information.
8	Sulkan Date: 16 Nov 2018 Place: Village office	Finance Assistant of Muara Kati Baru I Methods: Consultation, Sharing, Interview and Initial Participatory Mapping	Representative of Desa Muara Kati Baru I	<ul style="list-style-type: none"> There is a grave complex for 'Pangeran Haji Mantap', a descendant of the king of Palembang and another family grave, located around the Beliti river. Please correct the map boundaries of Muara Kati Baru I and Muara Kati Lama which have been agreed upon according to the results of the discussion. The area of greater potential is located east of the Beliti river, which is now part of the permit area for PT Gunung Sawit Selatan Lestari. All meeting information will be conveyed to the Village Head
9	Amsari Date: 16 Nov 2018 Place: Village office	Hamlet Head, Muara Kati Baru II village Methods: Consultation, Sharing, Interview and Initial Participatory Mapping	Representative of Desa Muara Kati Baru II	<ul style="list-style-type: none"> There is a sacred grave of Tombak Batu Angin that is still visited. Land potential still exists, it should be understood that the oldest village is Muara Kati Lama, which is divided into Muara Kati Baru I and II, but many of the land ownership of the Muara Kati people is scattered in other villages. The potential area is to the east of the Beliti river, which is now part of the PT Evans Lestari permit area. Information

				<ul style="list-style-type: none"> • will be conveyed to the Village Head
10	<p>Saparudin</p> <p>Date: 16 Nov 2018</p> <p>Place: Village Head house</p>	<p>Village Head of Desa Lubuk Besar</p> <p>Methods: Consultation, Sharing, Interview and Initial Participatory Mapping</p>	Representative of Desa Lubuk Besar	<ul style="list-style-type: none"> • At a glance the map of the location permit in the Lubuk Besar village area is very small and the area can be said to be a residential area, there are production areas but a few and the majority are community rubber gardens that are still tapped. The potential area is located in the east of the Beliti river, which is now part of the permit area for PT Gunung Sawit Selatan Lestari. It is hoped that the • company can partner with village communities to increase the yield of community oil palm farms.
11	<p>Kuswandi,</p> <p>Date: 16 Nov 2018</p> <p>Place: Head of Village Representative Body house</p>	<p>Head of Village Representative Body of Desa Rantau Bingin</p> <p>Methods: Consultation, Sharing, Interview and Initial Participatory Mapping</p>	Representative of Desa Rantau Bingin	<ul style="list-style-type: none"> • Customary forest no longer exists, for the land of the people of Rantau Bingin Village, most of them are located in the east of the Beliti river, some of which have become the permit area of PT Evans Lestari. For residents' crops around the PT AKL permit, rubber plantations are still dominated because they are relatively close to residential areas. There are also oil palm plantations but they are still limited. Information on PT AKL's plans will be • conveyed to the Village Head.
12	<p>Japri,</p> <p>Date: 16 Nov 2018</p> <p>Place: Head of Village Representative Body house</p>	<p>Head of Village Representative Body</p> <p>Methods: Consultation, Sharing, Interview and Initial Participatory Mapping</p>	Representatif of Desa Kebur	<ul style="list-style-type: none"> • It is hoped that if later entering the Kebur Village area, it will involve local community assistants, so that the community will not be excited. The companion will be assisted by people who understand. Information on activities will be informed to the village government.
13	<p>Hamzah,</p> <p>Date: 16 Nov 2018</p> <p>Place: Village Office</p>	<p>Assistant for government of Desa Kebur Jaya</p> <p>Methods: Consultation, Sharing, Interview and Initial Participatory Mapping</p>	Representatif of Desa Desa Kebur Jaya	<ul style="list-style-type: none"> • Village development from the main Kebur Village in 2008. Based on the map presented, the land potential in Kebur Jaya Village is only small because around the river are settlements. The land potential is to the west of the Beliti river into Kebur Village and the Kebur Jaya Village area, whose potential area is to the east of the river, which is now part of the permit area of PT Gunung Sawit Selatan Lestari. Land ownership in the west of the Beliti river still exists because it originated from one village. Information • will be conveyed to the Village Head.
14	<p>Al Fajri</p>	<p>Village secretary of Desa Rantau</p>	Representative of Desa Rantau	<ul style="list-style-type: none"> • Rantau Serik is the farthest village and borders with Empat Lawang Regency. The most

Date: 16 Nov 2018 Place: village secretary house	Serik	Serik	potential land belongs to the people of Kebur Village. The area of Rantau Serik residents is to the east of the Beliti river, which is now part of the permit area for PT Gunung Sawit Selatan Lestari. • Information will be conveyed to the Village Head
	Methods: Consultation, Sharing, Interview and Initial Participatory Mapping		

Results of social fieldwork | Field visits were carried out with the help of village heads, customary leaders, community leaders and company staff as location pointers, a total of 96 respondents / internal stakeholders of PT AKL and externals from government agencies, districts and kelurahan / villages. In the opening meeting, FGD (Focus Group Discussion) and internal participatory mapping involved 8 internal staff speakers from PT AKL.

Respondents visiting local government agencies met with 9 sources. Respondents visiting kelurahan and villages met with 70 sources / stakeholders from 11 kelurahan / villages. For the activity of 'Public Consultation' I was attended by 32 sources / internal and external stakeholders and the activity of 'Public Consultation II' was attended by 44 sources / internal and external stakeholders.

Since the beginning, the HCV identification process has been initiated by requesting approval from the communities represented by village and district entities. During the identification activity there was no resistance from the community groups. Apart from that, since the beginning of the plantation development, PT AKL has always ensured that all activities are in accordance with the principles of FPIC. For the PT AKL phase II plantation development plan, the relationship has been built and it appears that the community does not feel awkward and tense and information sharing is going well. PT AKL II is committed that during the socialization and operational processes there will be no pressure either physically or psychologically, freely in expressing relevant opinions, even if there is no indication of coercion, intimidation, lure or the like (**free**). Previously, PT AKL also prioritized the negotiation process and gave freedom of time to think and continued to help provide information until it was understood (**prior**). Initial information about PT AKL II's oil palm plantation development plan has been adequately disseminated and will continue to be carried out as needed until the community understands (**informed**).

During the scoping study, the consultant had provided adequate information regarding the identification activity plan, about the objectives, timing, implementation team, community involvement in activities as well as information relevant to the identification activities. The initial participatory mapping process has been carried out in the related villages. Initial data and information has been collected internally provided by PT AKL II and externally by village stakeholders include: (1) PT AKL II's plantation plan which is located side by side with the previous PT AKL I location permit and well known by the community, (2) PT AKL has strong relations with the surrounding districts and villages through regular outreach, CSR, land acquisition and plasma plantation development involving the villages teams, (3) The district and village representatives stated that they have received information and socialization related to PT AKL II's plantation development plan and given permission to the consultant to identify HCVs and (4) Some village stakeholders support the development plan since the land acquisition process in previous location permit has been running smoothly good, transparent, procedural and prioritizes negotiations for completion.

Based on the results of the scoping study, the assessor concludes that the assessment can proceed to the full assessment stage with the following considerations:

- 1) There was an initial outreach /socialization from PT AKL II regarding the plantation development plan
- 2) There is agreement from the community represented by the official village entity, namely the Village Head or those who represent to carry out an HCV assessment in the village area
- 3) There is an understanding from the community about the plan for the HCV assessment activities, objectives, timing and the assessment team explained by the assessment team leader during the scoping study.
- 4) Recommendations regarding community involvement in assessment activities and relevant sources for the assessment activities.
- 5) Physically, the study area is generally an area with a flat topography and most of it is managed by the community as a mixed garden, so that it has the potential to be developed into an oil palm plantation. However, there are still a few remaining forests that potential to become HCV areas.

2.3.2.3. Field Survey

Field visits were carried out with the help of village heads, customary leaders, community leaders and Company staff as location pointers, supported by spatial information overlaying supporting reference maps. The total number of respondents was 96 sources/internal stakeholders of PT AKL and external from government agencies, districts and sub-districts/villages.

First Stage | The full assessment opening meeting was conducted on the first day involving relevant PT AKL team members and staff, with the aim of equating perceptions to complete identification activities between all consultant teams and all “persons in charge” of PT AKL. Each field of HCV describes the work plan, the need for companionship, consumption and transportation during the activity, which is followed by the creation of a tentative schedule and plans for an overview of the interim results in 'public consultation'.

In the opening meeting, another FGD and Participatory Mapping were conducted according to their respective field groups, including planning to determine the places to be visited both inside and outside the location permit. In addition, it also dug up information, activities that had been and would be carried out as well as information on key stakeholders who have a role. The basic information that is expected to be attempted to obtain is described in the 'sketch' provided, especially with regard to the accessibility of observation points and other important locations.

Second Stage | Field visits and surveys were carried out by small teams based on HCV areas, divided into: (1) HCV 1, 2 and 3 teams, (2) HCV 4 teams, (3) HCV 5 and 6 teams. After notification at the sub-district level and permission to carry out identification activities from the village/kelurahan, the HCV environmental team immediately carried out its activities. Meanwhile, the social team made visits to Daedah Government agencies related to the identification process, including: Licensing offices, Cooperatives Office, Plantation Service and Environmental Service Office. The total number of respondents in the second phase on a visit to Local Government agencies met with 9 sources.

Third Stage | The HCV 5-6 (social) team conducted visits to the villages, the agenda of the visits being: (1) To repeat the understanding of identification activities, locations of location permits, (2) To obtain information related to HCV starting from land history, status of customary/*ulayat* lands/community, natural resources that are still being used, cultivation management/sources of income, culture, important locations and village development plans and others that are relevant, (3) To draw on a 'sketch map' the locations of important sites related to identification (Participatory Mapping) and (4) Addressing concerns related to identification or future activities with the presence of PT AKL II. The sketch map is made from spatial data to continue the sketch from the scoping study that describes: (a) boundaries, (b) land use such as settlements, production areas, protected areas c) landscapes such as hills, lakes, rivers, (d) important

places such as old villages, graves and historical sites. Social and other information to determine the socio-economic condition of the community as supporting data, includes: (a) History; sub-district/village, ethnicity and sub-tribe, (b) customary/village institutions, names, structures, tasks and functions, methods of 'decision making', (c) Region/place; history of territorial boundaries, history of important locations, landscape information and (d) Governance of customary/village areas (management rules), local wisdom, production areas and protected areas. The total number of respondents found in the third stage on visits to sub-districts and villages was 70 resource persons/stakeholders from 11 sub-districts/villages.

Fourth Stage | The results of the identification activities including information, data, Participatory Mapping, results of interviews and map sketches were analysed and used as a temporary work map and to be presented in a 'Public Consultation' with local government and other relevant institutions. The total number of respondents who attended Public Consultation I in the fourth stage was 32 internal and external sources/stakeholders.

Fifth Stage | The results of all identification activities, including information, data, Participatory Mapping, results of interviews, sketch maps and results of public consultations were analysed and written into a report which was presented in the 'Public Consultation II' of the HCV assessment results. This was to provide final input before submission to the ALS HCVRN Quality Panel. It was attended by stakeholders from villages, sub-districts, government offices and institutions as well as other relevant institutions. The total number of respondents who attended Public Consultation II in the fifth stage was 44 internal and external sources/stakeholders

2.3.2.3.1. Aoi Boundaries

The determination of the wider landscape boundary (Aoi) is based on some considerations, among others:

The determined boundaries of the PT AKL II location permit, (2) The boundaries of the existing hydrological system (watershed or sub-watershed boundaries), (3) the connectivity of forest land cover around the assessment area. Forest cover within PT AKL II location permit basically is fragmented in average and dominated by the production area of community-owned oil palm plantations and other cultivations, (4) Considerations in the unity of management and monitoring of HCV where is the PT AKL II location permit area actually is an additional development of previous AKL I and will be managed in an integrated manner with the PT AKL I permit area. The plantation owned by a neighbouring company is located to the east of the location permit which is bordered by settlements, the Beliti river and the provincial road so that it has no connectivity.

Consideration of the hydrological unit approach in accordance with the Regulation of the Minister of Public Works and Public Housing No: 04 / PRT / M / 2015, Date: 15 March 2015, concerning: Criteria and designation of river areas, following the catchment of some rivers namely Beliti river, Abang, Belua, Kati, Peujeungan, Semi, Tayan, Air Teman and Betung river which are in the River Basin of BPDAS Musi - Sugihan - Banyuasin – Lemau. The water catchment area is Musi watershed, Sub-watershed Beliti with the main river is Beliti River. **Figure 4** presents a wider landscape boundary map / Aoi of PT AKL II along with satellite imagery with an area of 12,380.84 Ha.

The Aoi landscape has various land cover and land use conditions. Satellite images used for land cover analysis in the HCV assessment are Landsat 5 TM, 8 OLI TIRS, Sentinel-2A, and high-resolution imagery from Google Earth. **Figure 5** presents the land cover map in the PT AKL II location permit area and the Aoi landscape and **Table 8** presents a description of the land cover in the PT AKL II location permit area.

Land Use Planning | Regards to the Function Forest State Areas and Marine Conservation in South Sumatra Province which referring to the Decree of the Minister of Environment and Forestry, No: 454 /

MenLHK / Setjen / PLA-2/6/2016, shows that the HCV assessment areas in the PT AKL II and AOI location permits are entirely located in other uses areas (non-forest state areas), and excluded from the moratorium area for peat development (based on the revised XV Indicative Map for Suspension of New Permits (PIPPIB)).

Land System | In terms of physiographic units, the PT AKL II location permit area is within the Southern Eastern Plains and Hills unit (RePPPProT, 1990). The Land System Map (RePPPProt 1990) shows all PT AKL II and AOI location permit areas included in the Muara Beliti (MBI) Land System. Muara Beliti (MBI) is tuff-rock sedimentary plains that are undulating with relief (M) rocky shale, silt rock; tufites, mudstone, siltstone, sandstone, young river alluvium, old sand and gravel, and classified as Tropudults, Dystropepts, Haplortox soils.

Hydrology | The area around and within the PT AKL II location permit area is included in the River Basin BPDAS Musi - Sugihan - Banyuasin - Lemau. All rivers in the AOI area discharge into the Beliti River which flows from the south to the north of the management unit. The rivers and channels that cross the PT AKL II location permit area are predicted to be around 70.72 km covering an area of around 108.67 hectares, while at the landscape level (AOI) the length of the entire water body reaches 196.32 km and an area of 227.55 hectares. The largest river is the Beliti river with a width of 30-60 m and a depth of 4-10 m.

Topography and elevation | Based on the SRTM Digital Elevation Model (DEM) Image with a spatial resolution of 30 meters, the topography of PT AKL II and AOI location permits mostly is located between 50-90 meters above sea level, while the slope classes in the PT AKL II and AOI location permits are dominated by class slopes 0-15%.

Biographical Zones and Conservation Areas | The Sumatra Biogeography Unit closest to the Aol area is the Kerinci Seblat National Park. Kerinci Seblat National Park is the largest national park in Sumatra, with important vegetation types including tropical rainforest Dipterocarp, low mountain forest, and upper mountains forest dominated by Lauraceae. The closest conservation area to the Aol area is the Kerinci Seblat National Park, which is 37 km to the west. In addition, the protected forest area closest to the Aol area is the Banyuasin Unit I protected forest, which is 16 km away in the Northwest and the protected forest area in the southwest.

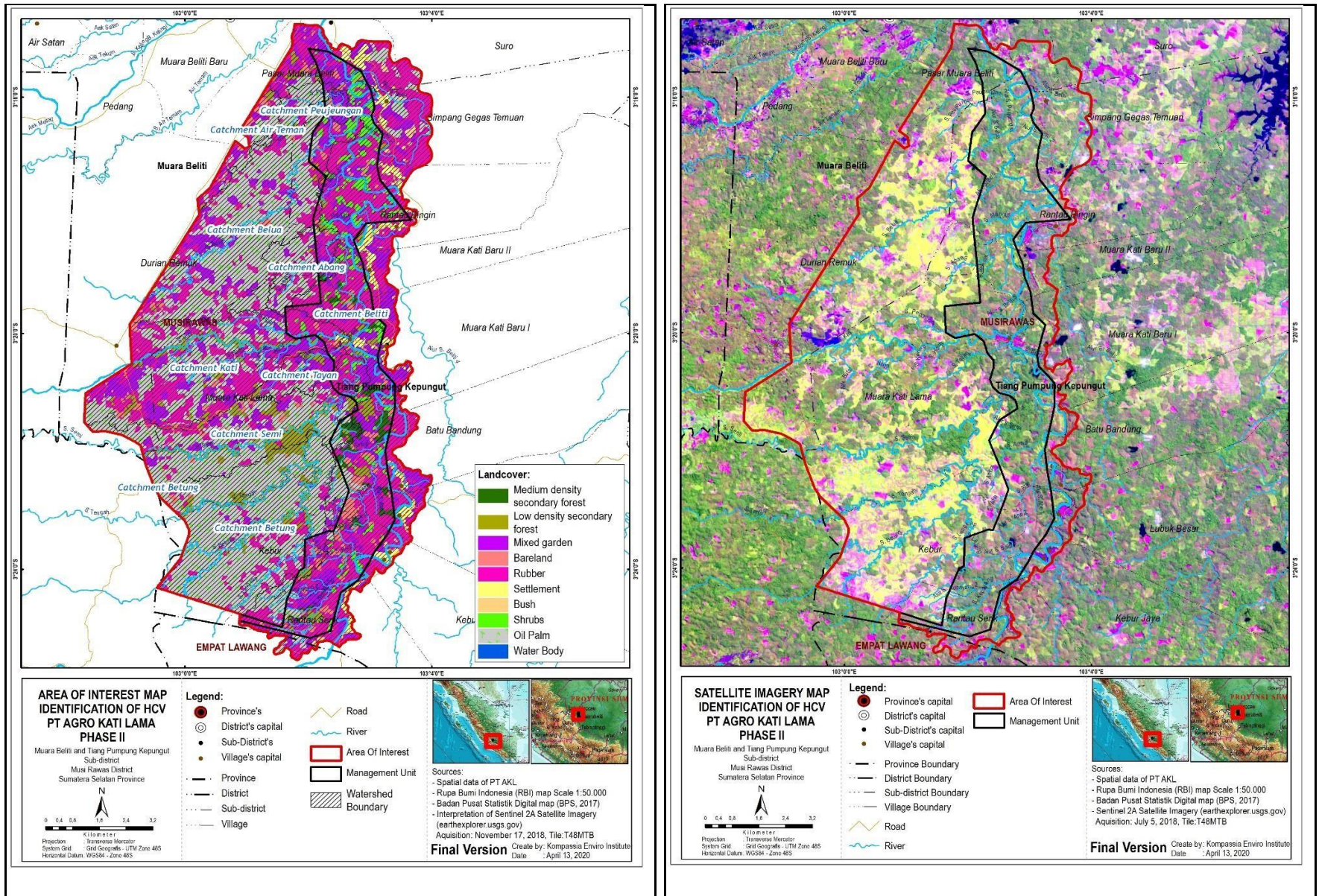


Figure 4. Wider landscape boundary / Aoi (left) and satellite imagery (right)

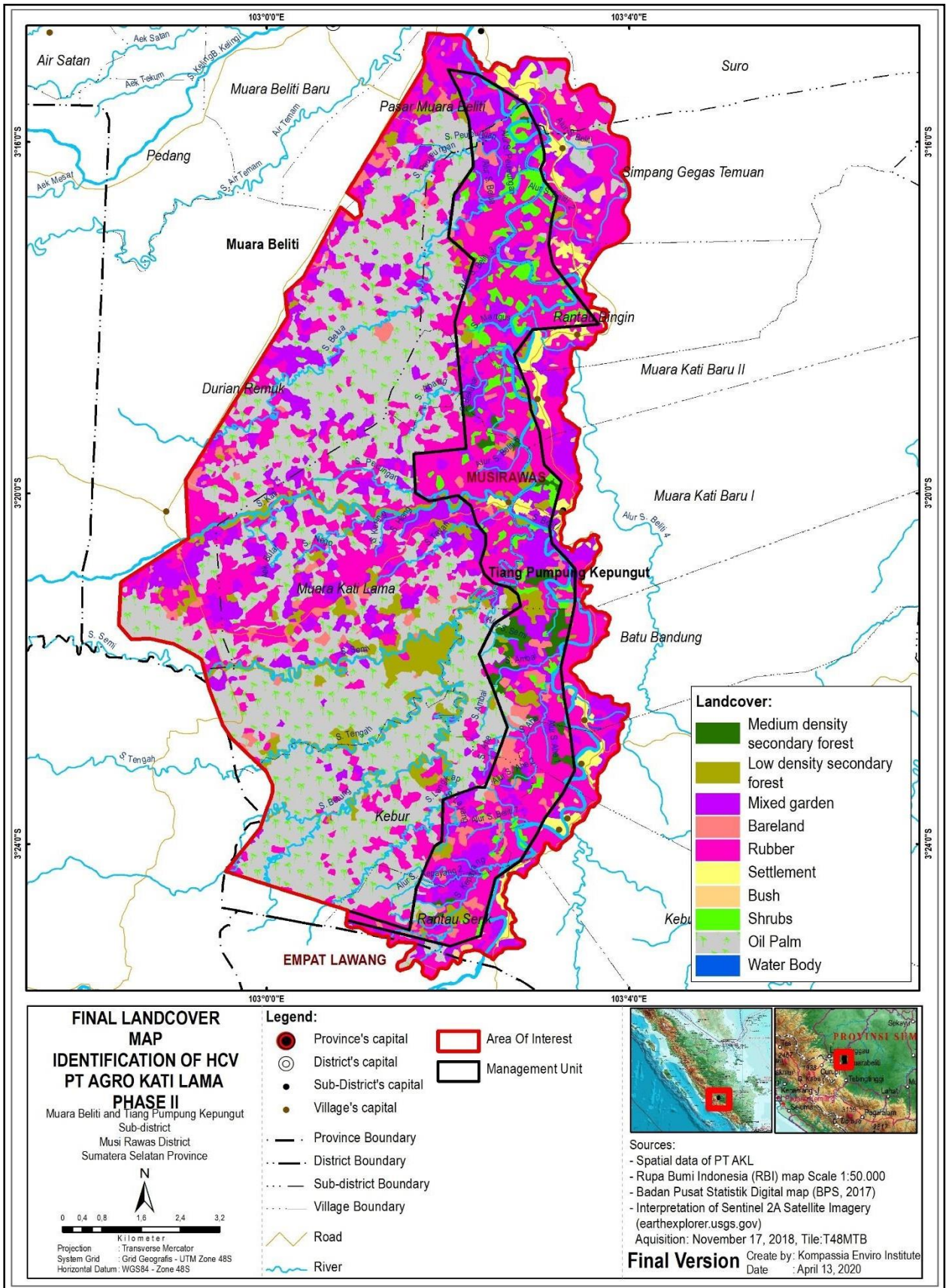


Figure 5. Final land cover in PT AKL II's location permit area and AoI Landscape

Table 8. Description of land cover in the PT AKL II location permit area

No	Landcover class	Indonesian Nasional Standard SNI Definition	Presence in the Management Unit
1	Water body	All naturally occurring water bodies (including natural lakes / ponds, rivers, sea waters, swamps) Water bodies are found in the form of rivers	Water bodies are found in the form of rivers /streams
2	Low density secondary forest	Forests that grow and develop in dry land habitats forming lowland forests, human intervention occurred. The density is 10% -40%..	Low density secondary lowland forest is found in the north of the PT AKL II location permit area. In addition, it is also found on the Beliti riverbanks/ During the HCV assessment session, most of the secondary low-density lowland forest was disturbed, that is, there were logging activities by the local community.
3	medium density secondary forest	Forests that grow and develop in dry land habitats forming lowland forests, human intervention occurred. The density is 41% -70% (moderate).	Secondary lowland forest with medium density is found on the Beliti riverbank which is fragmented with a relatively small area. At the time HCV assessment was carried out, most of the secondary low-density forest was experiencing disturbance, that is, there were logging activities by local communities.
4	Mixed garden	Dry land planted with perennials (trees) combined with annual crops. Perennial crops or trees in question are like fruit trees or other trees, while seasonal plants are like chili and cassava.	Mixed gardens are found on the Beliti riverbank and several fragments in the North and South of the PT AKL II location permit.
5	Bare land	Land without cover, both natural and semi-natural, whose existence is not the result of engineering and / or the result of direct engineering by humans.	Bare land is found in the form of burned land and land cleared by the community for agricultural purposes.
6	Rubbers	Land planted with rubber trees, wide size, homogeneous, and regular cropping patterns, both managed by individuals and companies.	Rubber plantations are the dominant land cover in the PT AKL II location permit area. Rubber plantations were found in the form of small scattered fragments in the PT AKL II location permit area. Rubber plantations are managed intensively by their owners. The only species found was rubber (<i>Havea brasiliensis</i>).
7	Palm oil	Land planted with oil palm in large compact area and having regular cropping patterns, as well as industry-oriented.	The oil palm plantations identified in the PT AKL II location permit are community-owned oil palm area

8	Settlement	Village settlements: Man-made land cover in the form of buildings mainly used for residents in rural areas. Village settlement buildings are characterized by relatively low building density, made of permanent / durable building materials such as walls, roof tiles / concrete / zinc but may also be non-permanent such as wooden walls and hay roofs, and associated by using agricultural land such as rice fields, fields / moor, or mixed gardens and yards. .	The settlements were found in the form of houses for the villagers of Muara Kati Lama village.
9	Copse/bush	The land cover having plants that grow naturally with an average height of 0.5-2 m, some are woody, some are not.	Bush- cover is dominated by fern species such as grass (<i>Dicranopteris linearis</i>) and wire fern (<i>Lycopodium cernuum</i>). Bush cover is an area of former fields that have been abandoned by the community.
10	Shrubs	The vegetation formation or structure is a collection of shrubs with a height of between 50 cm to 2 m, which is dominated by woody vegetation, interspersed with very short trees with a height of <= 5 m. Or: Dry land areas that have been overgrown with a variety of heterogeneous and homogeneous natural vegetation with sparse to dense density.	The area is dominated by low (natural) vegetation. Shrubs cover was found in the form of small scattered fragments sporadically in the PT AKL II location permit area.

2.3.2.3.2. Environmental Field Work

HCV identification in the PT AKL II location permit area uses the Common Guidance for the Identification of HCV (Brown et.al., 2013), the HCV Assessment Manual (NKTRN, 2013) and the Guidelines for Identification of High Conservation Value Areas in Indonesia (Konsorsium Revised HCV Toolkit Indonesia, 2008) as a reference. A step-wise screening approach is used to align the required information according to the reference scale. The reference scale for identification of HCV 1-3 includes global, regional and national levels, then ground-truth is carried out. The implementation of HCV identification includes pre- assessment, field data collection, stakeholder consultation, analysis and mapping of HCVs to report preparation.

Identification of flora and fauna begins with determining the location of the sample at the location to be assessed. Samples were determined by stratified random sampling, while the number of observation points was determined based on expertise judgment by taking into account habitat representation based on unspoiled land cover conditions (such as medium and low-density secondary forest and shrubs) in the study site. The total number of visiting points as a whole is based on habitat representation, but if the availability of information and location descriptions tends to be the same at several observation points in the same habitat type, then the number of points visited is simply observed. At each location, opportunistic scan

sampling was used to identify flora and fauna samples by recording as many flora and fauna encounters as possible in the path traversed by the observer.

Data collection of animal encounters is carried out either directly using the naked eye or using binoculars, or indirectly, usually in the form of sounds and traces left by the animals. Then all animal encounters in the field are validated with several animal identification guidebook references. Each group of flora and fauna will have varying degrees of difficulty in identification, so to assist in determining important areas for flora and fauna as well as the broader ecosystem, approach key species, indicator species or umbrella species will also be used. Especially for flora and fauna groups that have limited adaptability to change, for example, a widely used practice is using bird groups as an indicator of species (*BirdLife International* 2013).

The hydrological and environmental service identification survey was carried out by analysing the area in terms of spatial planning, landscape, topography and watershed location. Furthermore, field surveys and interviews were carried out with respondents at selected locations, namely springs, rivers, river border conditions, land clearing locations and several locations that represented water system conditions in plantations. Based on the description of the method used, the total sampling locations for environmental fieldwork were 80 locations. The use of secondary data and literature can be seen in **Table 9**.

Table 9. Data and information collected and analysed in pre-assessment

HCV	Data and information type	Data source
HCV 1	<ul style="list-style-type: none"> • Study area boundary map • Map of Conservation area of Sumatra (Decree no 863 & 866/Menhut-II/2014) • List of protected flora and fauna (Decree of MoEF Minister no P.20, P.92, and P.106/MenLHK/Setjen/Kum.1/6/2018) • <i>Endemic Bird Area Factsheet: Sumatra and Peninsular Malaya</i> • <i>Important Bird Areas in Asia: Key Sites for Conservation</i> • <i>Key Biodiversity Area</i> • <i>IUCN Red List of Threatened Species</i> ver 2019-1 (IUCN 2019) • <i>Appendices I, II and III, valid from 04 October 2017</i> (CITES 2017) • Ramsar Area in Indonesia • Tiger distribution map of Sumatera (IUCN 2012) • Sunbear distribution map of Sumatera (IUCN 2012) • <i>Sumatra langur</i> distribution (IUCN 2019) • Birds of Indonesia • Birds Fieldguide • Flora species identification key in Sumatera • Satellite imagery of Sentinel-2 (acq. 5 July 2018 and 17 November 2018) 	PT AKL MoEF (2014) MoEF Minister decree No.106 year 2018 BirdLife International (www.birdlife.org) BirdLife International (www.birdlife.org) BirdLife International (www.birdlife.org) IUCN (www.iucnredlist.org) CITES (2017) Ramsar (www.ramsar.org) IUCN (www.iucnredlist.org) IUCN (www.iucnredlist.org) Sukmantoro et.al., 2006 MacKinnon <i>et al.</i> , 2010 Ferry Slik (asianplant.net) USGS (www.earthexplorer.usgs.gov)
HCV 2	<ul style="list-style-type: none"> • Study area boundary map • Map of Forest state of South Sumatera Selatan (Decree no. 784/Menhut-II/2012, dan no 5984/Menhut-IV/BRPUK/2014) 	PT AKL MoEF(2012 & 2014) IFL(www.intactforests.org) Ramsar (www.ramsar.org) BKSDA, 2018

	<ul style="list-style-type: none"> • Map of <i>Intact Forest Landscape</i> (IFL – WWF 2016) • Ramsar areas in Indonesia, • Map of Protected areas of South Sumatra Satellite imagery of Sentinel-2 (acq. 5 July 2018 and 17 November 2018)	USGS www.earthexplorer.usgs.gov
HCV 3	<ul style="list-style-type: none"> • Study area boundary map • Map of Indicatif Moratorium on New Licensing (PIPIB) Revision XIII • Land system map scala 1:250.000 (RePPPProt, 1989) • Ecology Ecosystem of Sumatera.) • Map of Sumatra Ecoregion Satellite imagery of Sentinel-2 (acq. 5 July 2018 and 17 November 2018) Peta Kesatuan Hidrologis Gambut Sumatera	PT AKL KLHK (2019) KLHK (2019) RePPPProt, 1989 (Anwar, <i>et.al.</i> , 1984 , KLHK (2018) WWF, 2012 (www.wwf.org) USGS www.earthexplorer.usgs.gov KLHK (2017)

The process of identifying environmental HCVs is also carried out by integration of certain stages. The resource person provided information on aspects of biodiversity related to the presence of animal and plant species in the identification location, information on changes that had occurred in the landscape and threats to the existence of biodiversity. **Table 10** provides a summary of the consultations with several key stakeholders.

Table 10. List and summary of consultations with key stakeholders regarding the environment around PT AKL II

No.	Stakeholder's name	Position & Role	Entities & Interaction	Main concerns and recommendations
1	Ahmad Zaiz Firdaus,	Internal Staff PT AKL	PT Agro Kati Lama Interaction: PIC	• Sharing information on the survey route, the location of the survey destination, the name of the river, the location of the dense cover, the presence of animals and plants and resource persons from the village who can be found around the identification area.
2	Ahmad Marjani,	Farmer & fisher, villager	Desa Lubuk Besar, Interaction: Consultation, Sharing, Interview,	• Fish information that is often obtained includes: Seluang, Kapiat, Kili, Kebarau, Kepras, Jiho and Baung fish. For Baung fish, it is difficult to find if there are others, but it is more difficult to find more years. All may be due to household waste and chemicals (fertilizers and pesticides) from upstream oil palm farms or plantations.
3	Amrin dan Pasti,	villagers and surveyor	Desa Kebur	• Information on the majority of land cover in the form of mixed old rubber gardens, rubber plants until 1985 were mostly natural rubber. Some of them belong to rich families so that the heirs no longer live in the village, sometimes / it is not routine for them to be

			Interaction: Consultation, Sharing, Interview	tapped using the profit sharing system. However, the current price is not sufficient for the tappers. Apart from rarely tapping and no maintenance, it is quite difficult to tap the path in the garden. • Above 1985, usually new clones of intensive rubber plantations, most of which were still tapped because even though the price was cheap, if tapped alone, they still produced.
4	Supriadi, A. Holik Umar Saro,	Villager, farmer	Desa Muara Kati Lama Interaction: Consultation, Sharing, Interview,	Information has still seen langur groups and quite often seen groups of monkeys and forest cats. If the gibbon is often heard only the sound. People do not seem to consume and rarely hunt animals. Hunting is only done together if there are animals that intrude around the settlement.

2.3.2.3.3. Social Fieldwork

Social Methodology | The HCV assessment in PT AKL II is a 'Rapid and Ex-ante Assessment⁴⁾', which is an assessment with rapid information extracting, and more on predictions based of the changes tendency to occur than on accurate factual data based. The data collection methods used in the social and cultural assessment include: (1) Participatory identification of key elements of current and historical land use forms, the extent of community rights and special customary management areas related to the existence of areas that are still considered important by the community through FGDs at the village or community level and followed by field observation activities to determine the location or position of those lands, (2) Socio- economic studies to explore data and information regarding sources of household income, types of basic needs and ways to meet basic needs and other needs.

Interviews and field observations used purposive sampling method by determining respondents / sources with relevant criteria obtained from a participatory mapping process and complimented by a 'snowball sampling' method. From the interview, the first resource person will be asked to show references to other sources who have relevant information specifications. Sampling in the identification included all villages that were administratively included in the PT AKL II location permit and relevant important stakeholders at the district government level. The number of resource persons is growing and representing the regional level who can qualitatively be accounted for by the representation of stakeholders / social groups.

The process of collecting data and information is carried out by prioritizing the principle of FPIC (Free, Prior and Informed Consent) and gradually through the process of Stakeholder Mapping and Participatory mapping through Focus Group Discussions, and in-depth interviews with relevant key stakeholders to obtain information directly from the community. Stakeholder mapping is carried out in one of the internal opening meeting sessions with company staff to obtain important stakeholder information from nearby villages who have had social relationship with the company. Other stakeholders type was obtained after Participatory Mapping is done in the villages where in-depth interviews will be conducted.

⁴⁾ Colantiano (2008) dalam Aris Bahariyono, *Penilaian Dampak Sosial, TFT, 2016*.

The next stage, to obtain exhaustive information, a focus group discussion (FGD) was held in an adequate and relevant place and interspersed with participatory mapping on the working paper map. Through these processes, data and information on potential areas that might have HCV elements can be determined and mapped spatially. Given the snowball sampling method has a limitation representation of the sampling size to the population, identification process is carried out in all villages, this is also related to the standard fulfilment of the FPIC process which requires assessment of all villages within the location permit area.

Data collection also considers several references and secondary data. Data related to population, demographic, socio-economic and main livelihoods obtained from the latest publication of the Central Statistics Agency (BPS). Other secondary data information such as spatial data related to the distribution of settlements, river networks, watershed boundaries, land systems, peat distribution, geology, DEM-SRTM data and Sentinel-2 imagery as well as information on ethnicity, cultural heritage and others obtained through related websites and other relevant publications. The data and information collected and analysed for the field of social identification are presented in **Table 11**. Field visits were carried out with the help of village heads, customary leaders, community leaders and company staff as road guides / area locations supported by spatial information overlaid with supporting reference maps.

Table 11. Data and information collected and analysed for the field of social identification

HCV	Type of data and information	Data source
HCV 4	Water catchment boundaries map	Environment and Forest Ministry/ KLHK (2017)
	Land system map	RePPPProt (1990)
	Rivers network map	Geospatial Information Agency (2017)
	Peat Hydrologic Unit map	Environment and Forest Ministry/ KLHK (2017)
	Hotspot data	https://firms.modaps.eosdis.nasa.gov https://global.forestwatch.org
	Digital Elevation Model 30 meter, SRTM	USGS (www.earthexplorer.usgs.gov)
	Erosion risk level	Forest and Natural Conservation Research and Development Centre (FORDA), Bogor.
	Satellite imagery of Sentinel-2 (15 July 2018)	USGS (www.earthexplorer.usgs.gov)
	Satellite imagery of Landsat 8 OLI TIRS (10 Sept 2017)	USGS (www.earthexplorer.usgs.gov)
	Rainfall measurement data	PT AKL
	EIA Documents	PT AKL
	SIA document of PT AKL I	PT Sonokeling Akreditasi Nusantara
	HCV identification document of PT AKL I	PT Sonokeling Akreditasi Nusantara
	Settlement distribution map	Geospatial Information Agency (2017)
	<i>Common Guidance for the Identification of HCV (Brown et al., 2017)</i>	https://hcvnetwork.org/
	<i>Common Guidance for the Management and Monitoring of HCV (Brown et al., 2018)</i>	https://hcvnetwork.org/
HCV 5	Settlement distribution map	Geospatial Information Agency (2017)
	Musirawas District in Figure 2018	BPS Musirawas (2018)

	Muara Beliti district in Figure 2018	BPS Musirawas (2018)
	Tiang Pumpung Kepungut district in Figure 2018	BPS Musirawas (2018)
	SIA document of PT AKL II	PT Kompas Enviro Institute (2018)
	SIA document of PT AKL I	PT Sonokeling Akreditasi Nusantara
	HCV identification document of PT AKL I	PT Sonokeling Akreditasi Nusantara
	Ethnicity and Fam	https://joshuaproject.net/people_groups/14529/ID
	Regional Development Work Plan 2019	The Government of Musi Rawas District
	<i>Common Guidance for the Identification of HCV (Brown et al., 2017)</i>	https://hcvnetwork.org/
	<i>Common Guidance for the Management and Monitoring of HCV (Brown et al., 2018)</i>	https://hcvnetwork.org/
HCV 6	Settlement distribution map	Geospatial Information Agency (2017)
	Musirawas District in Figure 2018	BPS Musirawas (2018)
	Muara Beliti district in Figure 2018	BPS Musirawas (2018)
	Tiang Pumpung Kepungut district in Figure 2018	BPS Musirawas (2018)
	SIA document of PT AKL II	PT Kompas Enviro Institute (2018)
	SIA document of PT AKL I	PT Sonokeling Akreditasi Nusantara
	HCV identification document of PT AKL I	PT Sonokeling Akreditasi Nusantara
	Nationality, Tribes, Religions and Languages of Indonesian	BPS, (2011)
	World Heritage sites	UNESCO (www.whc.unesco.org)
	<i>Common Guidance for the Identification of HCV (Brown et al., 2017)</i>	https://hcvnetwork.org/
	<i>Common Guidance for the Management and Monitoring of HCV (Brown et al., 2018)</i>	https://hcvnetwork.org/

Results of social fieldwork | PT AKL management has always ensured all activities are in accordance with the principles of FPIC during the plantation development. There is a good relationship and common perspective between the company and community regarding AKL phase II plantation development plan. The community did not feel strange and tense when facing company management in dialogue and information sharing session was running well. PT AKL II is committed that during the socialization and operational processes there will be no pressure either physically or psychologically, freely in expressing relevant opinions, even if there is no indication of coercion, intimidation, luring or the like (**free**). Previously, PT AKL I also prioritized the negotiation process and gave freedom of time to think and continued to help provide information until it was understood (**prior**). Initial information about PT AKL II's oil palm plantation development plan has been adequately disseminated and will continue to be carried out as needed until the community understands (**informed**).

Summary of Interview and Discussion | The summary of consultations with key stakeholders includes:

- 1) Customary land or communal land in the area around the PT AKL location permit is no longer available, informants from all villages stated that it does not exist because most of the community land had long been owned privately / by family and had long been traded, but there are still large

- family lands from the kingdoms of the past that are still used and maintained and seemingly still being maintained by the community.
- 2) The main livelihood of the family is currently mostly obtained from working as daily laborers in oil palm plantation companies.
 - 3) People now rarely doing rubber tap and maintain their rubber plantations even though it has been a mainstay source of family livelihood for a long time. The selling price of rubber latex in the last decade has fallen / is very cheap, the working time is not proportional to the value of its output to meet family needs. Now some of the rubber plantations have been converted into oil palm plantations, some are left to resemble forests and some are just cut down for timber.
 - 4) Villagers that have been related to PT AKL stated that for the land acquisition (GRTT) process related to the previously planted area of PT AKL I, it could be said that there were relatively no obstacles and problems, if there were problems it could be resolved properly.
 - 5) The community's expectations for PT AKL II include: (a) always coordinating with the village in the GRTT process especially not to apply to land adjacent to a river, (b) determine the width of the river by involving the village and the community, (c) collaborative managing with the community; it is hoped that reforestation on the river banks should be enriched with multi-function tree species that could provide important values for the community in terms of the environment and economy. (d) CSR support is expected to also help the community's important needs and increase the economic value of the community, and (e) PT AKL II is expected to immediately conduct more in-depth socialization at the community level so that they will have better understand on the GRTT procedures and processes and others including understanding the plasma management and cooperative.

Table 12 presents a summary of the consultations with key stakeholders from local government agencies, districts and villages.

Table 12. Summary notes of consultations with key stakeholders at PT AKL II

No.	Stakeholders name /Date of meeting	Position & Role	Entities & Meeting Method	Main concerns and recommendations
1	<ul style="list-style-type: none"> • Ir Hj Kamila, • Patrisius Sapt • Rosadi Anwar, • Sumardi, Date: 20 Nov 2018 Place: Office	Secretary Ass. for Infrastructure Ass. For Coaching Ass. Farm Business	Plantation Service, Kab. Musi Rawas Methods: Consultation, Sharing, Interview & Participatory Mapping	<ul style="list-style-type: none"> • In the RPL&RKL (Environmental Management Plan and Environmental Monitoring Plan), it is hoped that the recommendations from this HCV Identification can also be used as a reference, so that the RPL and RKL reports are an integrated activity of the two environmental studies.
2	Hermerudin Yanuar Saleh Elmiyana S Date: 20 Nov 2018 Place: Office	Head Office Ass. Environmental Staff	Environmental Service, Kab. Musi Rawas Methods: Consultation, Sharing, Interview & Participatory Mapping	<ul style="list-style-type: none"> • The permit is a former PT Sriwijaya Agro Sejahtera permit that was withdrawn because the area was considered sensitive, many were equivalent to a river which immediately became a residential area. It is hoped that the company will be extra careful, everything is carried out in accordance with legality and laws and later this report can be a reference together with the AMDAL document.

3	<ul style="list-style-type: none"> • Yudi Fachriansyah • Andi Permana, • Vivin Destyana, <p>Date: 20 Nov 2018 Place: Office</p>	<p>Head Office Ass. Of Services Secretary & Ass. Of Planning</p>	<p>Office of Investment & Licensing Service, Kab. Musi Rawas</p> <p>Methods: Consultation, Sharing, Interview & Participatory Mapping</p>	<ul style="list-style-type: none"> • The maps are really made with clear references so that the results can be used by the related parties / agencies, because the map is so off the mark it will have an impact and even conflict. This is especially true when it comes to residential areas or production areas (community farms).
4	<ul style="list-style-type: none"> • Rusdianto, • Mulyoto, <p>Date: 20 Nov 2018 Place: Office</p>	<p>Head of Supervision & Inspection Staff</p>	<p>Office of Cooperatives and Small Businesses, Kab. Musi Rawas</p> <p>Methods: Consultation, Sharing, Interview & Participatory Mapping</p>	<ul style="list-style-type: none"> • The development of plasma farmer farms is expected to be reported annually so that they know the development, there is no need to wait for the completion of the development so that they know the progress every year. • The plasma farmer cooperative must also report separately as a plasma farmer cooperative entity, while PT AKL at the development stage needs updating because the plasma farmers will be issued a 'Decree' by the Regent Head.
5	<ul style="list-style-type: none"> • Darhan, • Manali, • Malani, • Endi Yuliansyah, • Ririn Safitri, <p>Date: 20 Nov 2018 Place: Village Head house</p>	<p>Village Head Ass. of governance Hamlet Head Secretary Villager</p>	<p>Representative of Muara Kati Lama village</p> <p>Methods: Consultation, Sharing, Interview & Participatory Mapping</p>	<ul style="list-style-type: none"> • Muara Kati Lama village has a very large area of origin, so it has been developed into 3 villages, namely: Muara Kati Baru I, Muara Kati Baru II and Desa Durian Remuk. • There is a large public grave near the mouth of the Beliti River and the mouth of the Kati River. The 'sacred grave of the Gending people' is the grave of a hero in the Dutch era and his grave is still being treated and visited. • The main livelihood in the Muara Kati area is rubber products, the falling price of rubber, so the hope is for PT AKL to be given skills training based on the potential of existing natural resources such as the use of rattan or the use of rivers for fish farming to increase family income. • Adat in the Muara Kati area can meet Mr. Alisun Taken currently living near PT Xylo (Desa Simpang Gegas Finding). • Based on the map presented, please allocate a residential development area according to the village plan, such as land on the side of the road and around the village at least there is a distance.

				<ul style="list-style-type: none"> For the socialization and GRTT process, PT AKL (including in phase I) has done quite well, where PT AKL staff conducted socialization to homes and provided contacts if they needed further information. The land measurement process is done by submission and is not binding for the GRTT process. PT AKL is quite patient in waiting for the GRTT decision from the land owner.
6	<ul style="list-style-type: none"> Ripai Tanzilal Suican <p>Date: 20 Nov 2018 Place: Village Head house</p>	<p>Village head Secretary Ass. Of Finance</p>	<p>Representative of Muara Kati Baru I village</p>	<ul style="list-style-type: none"> Sacred graves, public graves and settlements make sure not in GRTT because it is a place of life and death for people. The condition of Pangeran H. Mantap's grave is quite well maintained. If it is used as an HCV area, please contribute to better maintenance. Based on the map presented, please allocate a residential development area according to the village plan, such as land on the side of the road and around the village at least there is a distance.
			<p>Methods: Consultation, Sharing, Interview & Participatory Mapping</p>	
7	<ul style="list-style-type: none"> M. Sidik Burhan Zawari Amsari Aliansah Pam <p>Date: 20 Nov 2018 Place: Village Head house</p>	<p>Village head Hamlet Head III Hamlet head II Secretary Hamlet Head I</p>	<p>Representative of Muara Kati Baru II village</p>	<ul style="list-style-type: none"> Protected forest areas and customary forests are no longer available, for the Beliti river there is a suspension bridge which functions as a means of transportation, mainly access to agricultural production. Lubuk in this village is very much anonymous. Sources of clean water for the community come from drilled wells and dug wells and there are also residents who use river water which functions as a washing place and toilet. In the map please allocate a residential development area according to the village plan
			<p>Methods: Consultation, Sharing, Interview & Participatory Mapping</p>	
8	<ul style="list-style-type: none"> Erwansyah Ezwar Gusti Ardiyansyah Sutardi <p>Date: 20 Nov 2018 Place: Village Head house</p>	<p>Village Head Secretary Land owner Member of Village Representative Body</p>	<p>Representative of Simpang Gegas Temuan village</p>	<ul style="list-style-type: none"> Simpang Gegas Temuan village is a development of Desa Rantau Bingin, the village boundary of the consultant based on BPS 2014 is not accurate because the reference is Topdam Map. The majority of community rubber plantation areas are cultivated. The community's water sources are drilled or dug wells and some people also use river water for washing and toilet as well as clean water sources. The river is also a place for people to find fish, at certain times they can also sell a lot
			<p>Methods: Consultation, Sharing, Interview & Participatory Mapping</p>	

				<p>of produce, but generally for their own family consumption. There are many Lubuk in the river and cannot be named and rarely do you know the names.</p> <ul style="list-style-type: none"> In the map provided, please allocate a residential development area in accordance with the village plan discussed
9	<ul style="list-style-type: none"> H. Hamzah. <p>Date: 21 Nov 2018 Place: PT AKL office</p>	<p>Regency DPRD member, Kabupaten Musi Rawas & Former Village Head of Durian Remuk</p>	<p>Representatif of Muara Kati & Tiang Pumpung Kepungut community</p> <p>Methods: Consultation, Sharing, Interview & Participatory Mapping</p>	<ul style="list-style-type: none"> Appreciation to PT AKL who is patient enough in negotiating land acquisition (GRTT), the problem can be resolved properly and now the local workforce involved is around 80% of the residents from the surrounding villages (both staff and workers). PT AKL has carried out socialization and the GRTT process is quite good, land measurement will be carried out if the land owner submits a request and even though the measurement results have been documented, all of them are not binding for GRTT. All land decisions depend on the land owner. Plasma plantations have been developed, it is only hoped that each village entity will have a plasma plantation, when I was the 'village head' I had allocated plasma plantations on behalf of and for the village. Partnership gardens with villages are important so that there is income for village development
10	<ul style="list-style-type: none"> Nazarudin M.Hatta Asik Gani <p>Date: 21 Nov 2018 Place: Village Head house</p>	<p>Village Head Ass. of governance Villager / land owner Villager / land owner</p>	<p>Representative of Rantau Bingin village</p> <p>Methods: Consultation, Sharing, Interview & Participatory Mapping</p>	<ul style="list-style-type: none"> The cultivation area is dominated by community rubber farms. There is a sacred grave near the Belua River. There are quite a lot of Lubuk, which are known and have their names in the Beliti river near the Abang river - Lubuk Kasai - near the Jangkang river - Lubuk Ranyah and Lubuk Nyate. Lubuk Ranyah is a large lubuk in the village of Rantau Bingin. In the map presented please allocate a residential development area according to the village plan
11	<ul style="list-style-type: none"> Hamli Saparudin Ependi Yusdi 	<p>Village Head Secretary Villager / Land</p>	<p>Representative of Lubuk Besar village</p>	<ul style="list-style-type: none"> The majority of community lands are in the form of rubber farms and oil palm farms (converted from rubber farms), while the

	<ul style="list-style-type: none"> • Suparto • Irman Saputra <p>Date: 21 Nov 2018 Place: Village Head house</p>	<p>owner Villager / Land owner Ass. Of Finance Member of Village Representative Body</p>	<p>Methods: Consultation, Sharing, Interview, FGD & Participatory Mapping</p>	<p>land in the PT AKL 2 location permit is mostly rubber plantations because it is close to residential areas. For PT AKL Phase 1, the permit area does not enter Lubuk Besar Village. The land potential is in the east bordering PT GSSL.</p> <ul style="list-style-type: none"> • The main livelihood of the village community is now as workers in plantation companies (about 60%). Most of the community rubber farms were neglected due to cheap rubber prices so that there was no maintenance and access to production roads and bridges began to break down, so they had to turn through Kebur Village or Batu Bandung Village. • The crowded forest is an area belonging to the family descended from the village head's grandfather which is managed and utilized by the village community. There is still a sacred tomb
12	<ul style="list-style-type: none"> • Saiful • Hermansyah • Herman • Roi Martin • Ajib <p>Date: 21 Nov 2018 Place: Village Head house</p>	<p>Village Head Secretary Villager / Land owner Villager / Land owner Head of Village Representative Body</p>	<p>Representative of Batu Bandung village</p> <p>Methods: Consultation, Sharing, Interview & Participatory Mapping</p>	<ul style="list-style-type: none"> • Approximately 70% of the land from Desa Batu Bandung is under the AKL I location permit and has been in GRTT during the process and there were no significant problems in the field. The GRTT process has involved the Village Team and the GRTT price offered by PT AKL is higher than the price offered at other companies. • There are about 20 workers from Batu Village Bandung at PT AKL, mostly to PT Gunung Sawit Selatan Lestari (PT GSSL) because it is closer and easier to access • For plasma farmers, PT AKL gets a loan of Rp. 300 thousand / month / Ha for three years and is different from other companies, later when they start producing, they will get 30% per month from the harvest and the rest will be used to pay loan installments as well as operational and plant maintenance costs.
13	<ul style="list-style-type: none"> • Merry • Suryadi • Burhan • Ishak 	<p>Village Head Army / land owner</p>	<p>Representasi of Rantau Serik village</p>	<ul style="list-style-type: none"> • Residents of Batu Bandung, Muara Kati, Kebur and Rantau Serik villages speak 'Cul or COL' and the clan 'Tiang Pumpung

	<ul style="list-style-type: none"> • Al Fajri • Irwandi • Passie • Eko Kuntoro <p>Date: 21 Nov 2018 Place: Village Head house</p>	<p>Village team Hamlet Head Secretary Security SSI/villager Driver / villeger Land owner</p>	<p>Methods: Consultation, Sharing, Interview, FGD & Participatory Mapping</p>	<p>Kepungut'. Cul language is used from Jaya Loka District to the south to Tanjung Uning Village, Muara Saling District, to the north to Tanah Periuk Village, Muara Beliti District and west to Pala Curug Village.</p> <ul style="list-style-type: none"> • The village of Rantau Serik has the Kebur people (local immigrants) and the Deranti people as indigenous people who are now mixed up. • The main livelihoods are rubber cultivation, and coffee, sweet potatoes, cassava and now oil palm. The price of rubber latex is only around Rp. 3 thousand/kg. thus requiring villagers to find other jobs, including working in oil palm plantations. Now around 65% of the families' work for PT GSSL for PT AKL about 10 people only. • PT AKL has officially socialized to the village of Rantau Serik 2 times, if it is informal it is quite frequent.
<p>14</p>	<ul style="list-style-type: none"> • Ali Sun Taken <p>Date: 21 Nov 2018 Place: Customary leader house</p>	<p>Customary leader of Muara Kati Clan</p>	<p>Customary of Muara Kati Clan</p> <p>Methods: Consultation, Sharing, Interview & Participatory Mapping</p>	<ul style="list-style-type: none"> • The role of the customary leader is now only for cultural tradition events, ulayat land is no longer available, only family land remains such as 'Hutan Rame' belonging to the family of 'Pangeran H. Mantap' which is now managed by family communities and village communities. • In Muara Kati Baru I village, near the suspension bridge there is the tomb of 'Putri Darah Putih' (the prince's family) and there is a public grave opposite the lower reaches of the Beliti river. • The socialization and process of GRTT is quite good, land measurement is carried out if the land owner submits a request, even though there is no plan to sell it. Measurement results are documented and provide a sense of security due to clarity for land owners and are not binding to follow GRTT. The decision rests with the land owner. • Suggestion is that the land ownership should be clear, because there is still a lot of land belonging to the family and there are witnesses in the measurement so that there is no overlap in the compensation process.

15	Plasma Cooperative • Rusdianto, • Mulyoto, • Sukirman, Date: 21 Nov 2018 Place: PT AKL Office	Kabid Pengawasan Kasi Pengawasan Head of Beringin Jaya Cooperatif	Dinas Koperasi & UKM dan Koperasi Beringin Jaya (plasma PT AKL) Methods: Consultation, Sharing & Interview	<ul style="list-style-type: none"> • The Beringin Jaya plasma cooperative office is located in the Pasar Muara Beliti district. It still lives in a house owned by a cooperative member. • The annual reporting of the Beringin Jaya Cooperative is not smooth, if it is not successful, the cooperative office can send a letter to the Ministry that the cooperative has failed to comply with the regulations and risks being closed. • The operation of the cooperative is still not optimal because it is still in the pre-harvest planting stages so that it is still limited to do and can be done several days a month, especially regarding the monthly loan waiting period for harvesting for 3 years. • PT AKL is expected to continue to support and assist in the preparation of reports and others for the benefit of the cooperative.
16	<ul style="list-style-type: none"> • Iskandar • Supriyansyah • Pirmansyah Date: 22 Nov 2018 Place: Kelurahan office	Village Head (Lurah) Staff Staff	Representative of Kelurahan Pasar Muara Beliti Methods: Consultation, Sharing, Interview & Participatory Mapping	<ul style="list-style-type: none"> • The area of Pasar Muara Beliti Kelurahan for the production area is already limited, it is hoped that later there will be an additional allocation of residential areas within the location permit area. The area of the permit for 'PTAKL I' was previously reduced due to changes in the designation of the capital city of Musi Rawas in the District and in the Kelurahan Muara Beliti.
17	<ul style="list-style-type: none"> • Hamzah Date: 22 Nov 2018 Place: TNKS Office, Lubuklinggau	Assistant of PPKLH,	Office of Kerinci Seblat National Park Methods: Consultation, Sharing, Interview & Participatory Mapping	<ul style="list-style-type: none"> • National Park 'Kerinci Seblat' in Lubuklinggau with the scope of work in the national park area only, for outside the area there is no monitoring. PTAKL II is located in the development area of the capital of Musi Rawas Regency (Muara Beliti). In my opinion, it is difficult to find special protected animals and plants because the area has been developing into a residential and production area for a long time. Especially in the vicinity of the Beliti river, which was once one of the transportation accesses by river and a densely populated settlement had been built.
18	<ul style="list-style-type: none"> • Suhardi • Hamza • Evi Jonizar 	Village Head Ass of Governance Member of Village	Representative of Kebur Jaya village	<ul style="list-style-type: none"> • The border of Kebur Jaya Village is a suspension bridge and there is 'Pulau Uban' in the middle of the Beliti river.

	<ul style="list-style-type: none"> • Muriza • Mahmud Hasim • Suryadi <p>Date: 22 Nov 2018 Place: Village Head house</p>	<p>Representative Body</p> <p>Land owner</p> <p>Land owner</p>	<p>Methods: Consultation, Sharing, Interview, FGD & Participatory Mapping</p>	<p>The location of the Kebur Village office is in the Kebur Jaya area.</p> <ul style="list-style-type: none"> • The land potential lies in the east of the village to the area of 'PT Gunung Sawit Selatan Lestari' and now about 40% of the families' work on the plantation. • In the map presented, please allocate a residential development area according to the village plan.
19	<ul style="list-style-type: none"> • Umar Hasan • M Nuh • Japri • Sandika • Jum'ati • Hamim • Kiki Yuliana, Yulia dan Tia Monika <p>Date: 22 Nov 2018 Place: Head of Village Rep. Body house</p>	<p>Village Head</p> <p>Secretary</p> <p>Head & member of Village Rep. Body</p> <p>Land Owner</p> <p>Village team</p> <p>Daily worker for PT AKL</p>	<p>Representative of Kebur village</p> <p>Methods: Consultation, Sharing, Interview, FGD & Participatory Mapping</p>	<ul style="list-style-type: none"> • The main village prior to development, bordering the suspension bridge village and 'Pulau Uban' in the middle of the Beliti river. The location of the Kebur Village office is in the Kebur Jaya Village area. • Land potential exists with the condition of the majority of community rubber plantations. Quite a number of workers work for PTAKL • In the map provided, please allocate a residential development area according to the village plan

Information and current issues among the community were obtained through FGD, including those concerning PT AKL: (1) the socialization process and the land acquisition (GRTT) process on the previous location permit which run quite smoothly and the problems been resolved quite well, (2) information of the existing plasma cooperative, (3) information on the location and types of animals and types of wood or plants that are known and used by the community, (4) information related to demographics, ethnicity, education, health, concerns and expectations of the community.

PT AKL II remains committed to providing further outreach until the community understands the plan to develop oil palm plantations. The procedures and SOPs of the company are also informed so that everything runs smoothly and well. Until the end of March 2019, PT AKL II had documented a 'door to door' outreach process to land owners in the PT AKL II new location permit area. The total registered land ownership is recorded as 487 land parcels covering 1,036.82 hectares or about 33.5% of the location permit area of 3,090.9 hectares. The land owners live in 8 out of 11 villages. In the socialization process, it was also explained that PT AKL II asked the land owner for permission to take an initial measurement involving the "village team" and it was hoped that the land owner and his neighbours would also be present to explain the boundaries of the land.

Participatory Mapping | During the consultation and meeting with stakeholders in the villages, it was always carried out Participatory Mapping activities on the sketch map and some information has been obtained about important places for the community and strived to be described in a sketch. The sketches were discussed with the team to try to find these important locations to be mapped. **Figure 6** presents a sketch of the participatory mapping and consultation activities during the assessment, and a map of field work results in the villages surrounding the PT AKL II location permit.

Through the Participatory Mapping activities, some certain information was obtained included: (1) villages and districts covered by the location permit, (2) information on regency road access, village roads, production roads, alternative roads and river access as well as the names of the rivers, (3) information on important places such as secondary forest areas, community gardens, old tombs, cultivation areas, natural resources that are still being used, and (5) information on land ownership and other information.

2.4. Soil and Topography Studies

2.4.1. Implementation of the soil study and assessor credentials

The Soil Mapping and Land Suitability Survey in the PT AKL II area was carried out by the Faculty of Agriculture, Bogor Agricultural University in October 2019. The activity implementation team was chaired by Dr Ir. Heru Bagus B Pulunggono MAgr with team members

Table 13. Soil Assessment Team

Name	Position
Dr. Ir. Heru B Pulunggono, M. Agr	Leader team
Dr Dwi Putro Tejo Baskoro, M.Sc.	Member
Dr Ir Syaiful Anwar, MSc.	Member
Moh Zulfajrin, SP.	Member
Novi Fajriani, SP	Member
Muhammad Sobirin, SP	Member
Adithya Guritno, SP	Member
Mazlan	Member
Rival Hardiawan	Member

2.4.2. Soil survey and topography methodology

2.4.2.1. Soil Survey Methodology

In the preparation activities, a number of data are collected and studied regarding a Topographic Map (National DEM resolution 64 m²), Geological Map (1: 250,000), RePPPOT Land Unit Map (1: 250,000), and Earth Map of Indonesia (scale 1: 50,000). The results of the interpretation of the basic information are written into the Work Map as a reference for field surveys. Soil observation planning in the form of soil observation paths and points are plotted in the Work Map.

Observations are made every 20 ha (at a distance of 400 m x 500 m) to produce a semi-detailed level soil map on a scale of 1: 20,000 so that there will be about 160 drill points. To determine the distribution of soil types in the field, soil profile samples will be observed and taken for analysis. Their numbers are adjusted to the soil variability found in the field, and are taken at each horizon/soil layer. To determine the condition of soil fertility, soil fertility samples are taken at 2 depths: 0 - 30 and 30 - 60 cm, the numbers being adjusted to the soil conditions in the field. Four samples of river water are taken to determine the quality of water for agricultural use.

Considering that the survey area is generally an area with flat land forms, the main survey method used is a grid system, while for hilly areas it is carried out in land units. Soil observations are carried out through drill observations to test soil variation and distribution. Soil profile observations were carried out to represent each type of soil encountered. Soil samples consisted of fertility samples and profile soil samples. Fertility samples were taken from a depth of 0-30 cm and 30-60 cm, while profile soil samples were taken from each horizon/soil layer.

Observation of soil in the field is based on *Guidelines for Observation of Soil in the Field* (Research Institute for Soil, 2004). Observations that were made in the field survey are 162 drill points with

32 soil fertility samples (16 points and 2 depths: 0 - 30 and 30 - 60 cm), 25 soil profile samples (8 points with an average of 4 layers), and 3 examples of river water.

2.4.2.2. Laboratory Analysis for Soil Properties

The analysis used to determine soil properties is routine analysis, which includes analysing the physical and chemical properties of the soil. The physical properties analysed were soil texture, while the chemical analysis included pH (pH H₂O and pH KCl), C-organic, N-total, available P, total P₂O₅ and K₂O, interchangeable bases (K, Na, Ca, Mg), CEC (cation exchange capacity), KB (base saturation), Al-dd and H-dd.

2.4.2.3. Data Analysis and Mapping

Data analysis includes processing field and laboratory data to determine soil fertility, soil characteristics and soil classification, and evaluation of land suitability. Making the map refers to the technical instructions for a semi-detailed soil survey and mapping at a scale of 1: 50,000 by the Centre for Agricultural Land Resources Research and Development

2.4.2.4. Evaluation of Land Suitability

Determination of land suitability classes is carried out in class levels by evaluating the existing main limiting factors. Basically, the land suitability can be divided into 5 (five) classes as follows: (a). Highly suitable (S1), (b) Moderately suitable (S2), (c) Marginally suitable (S3), (d) Currently not suitable (N1), and (e) Permanently not suitable (N2). Furthermore, each land suitability class is evaluated into a land suitability sub-class based on its limiting factors. Land suitability assessment is carried out at each Land Map Unit (SPT), which is the smallest management unit that has the same characteristics. In this study, land suitability assessment for oil palm plants was carried out using PPKS (2008) criteria

2.5. Carbon Stock Assessments and Estimates of GHG Emissions

2.5.1. Implementation of Carbon Stock Assessment and GHG emissions, and Assessor Credentials

The implementation of carbon stock and GHG emission assessment was carried out in May - September 2020. The carbon stock preparation team and GHG emission assessment can be seen in **Table 14**.

Table 14. Composition of the drafting team for the assessment of carbon stock and GHG emissions at PT AKL II

Name	Position/Role	Qualification
Ryan Karida Pratama	Team leader	Hydrology, soil and water conservation, land cover change, remote sensing, GIS, carbon stock assessment, HCS Patch Analysis (Registered Practitioner)
Riswan Zen	Ecosystem, environmental services, and HCS Patch Analysis	Hydrology, forest ecology, watershed management, remote sensing, spatial analysis, HCS Patch Analysis (Registered Practitioner)

Name	Position/Role	Qualification
Heidei Putra Utama	Spatial analysis and mapping	Spatial analysis, <i>remote sensing</i> , <i>carbon stock assessment</i> , <i>HCS Patch Analysis</i>
Zakaria Al Anshori	Vegetation inventory and identification of plant species	Identification of flora, forest ecology, <i>carbon stock assessment</i>
M. Ahda Agung Arifian	Vegetation inventory and identification of plant species	Identification of flora, forest ecology, <i>carbon stock assessment</i>
Priyo Dwi Utomo	Vegetation inventory and identification of plant species	Identification of flora, forest ecology
Sigit Budhi Setyanto	FPIC and Participatory Mapping	Socio-economic, social impact, FPIC verification, socio-cultural, Participatory Mapping
Fadhli	FPIC and Participatory Mapping	Socio-economic, social impact, FPIC verification, socio-cultural, Participatory Mapping
Wibowo Agung Djatmiko	Biodiversity and fauna	Identification of flora and fauna, ecological landscape, wildlife conservation, ecosystem management

2.5.2. Carbon stock and GHG emission assessment methodology

The GHG assessment report was conducted according to the RSPO GHG Assessment for New Development procedure version 3, and combined with a carbon stock assessment based on the *HCS Approach Toolkit 2.0: Putting No Deforestation into Practice*, 3 May 2017. The assessment was followed by the HCS Forest Patch Analysis Decision Tree process according to the above HCS 2017 toolkit.

2.5.2.1. Carbon Stock Assessment Methods and Procedures

Inventory Plots

Each plot contains 2 centralised circular plots with an area of 0.05 ha and 0.01 ha. All trees <15 cm DBH were measured in the smaller sub-plots, while trees > 15 cm DBH were measured for the entire larger plot.

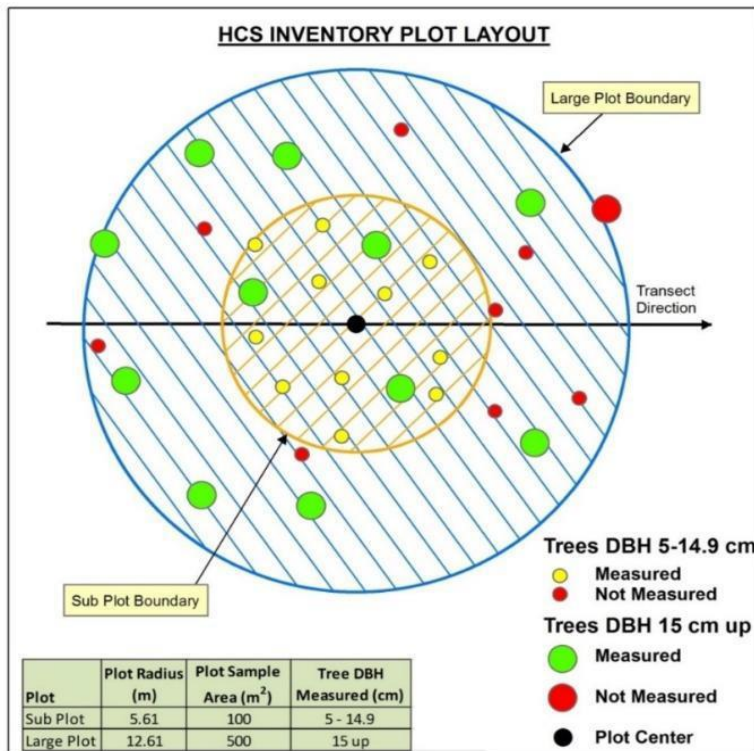


Figure 7. Layout of HCS Inventory plots

Carbon Calculation

The standard method for calculating carbon is to use allometric equations. Parameters calculated are the estimation of total biomass and carbon mass per plot, average strata of total biomass and carbon mass per ha. Also, the average diameter class strata.

Stems per hectare are calculated from the plot size. The equation is:

$$\text{Stems / ha} = (\text{Number of trees in plot}) / (\text{Plot size (ha)})$$

Tree biomass was calculated for living trees with a diameter ≥ 5 cm DBH using the Allometric Equation method. The following equation for wet tropical forest (Chave, et. Al. 2005) is used. This equation relates the diameter, total tree height, and wood density of a particular species to estimate the above ground biomass (AGLB) per tree measured in forest plots. The resulting AGLB is the total biomass of stems, canopy and leaves in units kg.

$$\text{AGLBi} = 0.0776 [\pi D^2 i H] 0.940$$

AGLB = Biomass above the surface (kg)

D = Diameter at chest height/1.3m above surface. (cm)

H = total tree height (m)

ρ = density (gr/cm³)

Chave et al. (2005) found that the tree biomass estimation error was approximately $\pm 5\%$.

Palm plant biomass:

The equation for calculating palm biomass:

Palm biomass (tonnes) = [(specific gravity)/D2 * 40000 * (palm height)]

Where the density of the palm is assumed to be 0.247 tonnes/m³

Carbon content of Palm Trees and Plants

The C fraction of the biomass is calculated in tonnes of carbon (Mg C). The equation used for the emission of carbon content from trees and palms is:

Mass of carbon (tonnes) = biomass * carbon conversion factor

The conversion factor is 0.47 based on IPCC standards.

Carbon Mass per hectare

The carbon mass per hectare in each plot is:

Total carbon (tonnes/ha) = Σ (Tree carbon)/(plot size (ha))

Volume calculations differ from the main plot.

Precision Analysis of Carbon Estimates and Significant Differences

Precision Carbon Estimation

The level of precision expected in estimating carbon stocks is 90% confidence level, with intervals of 10% of the mean carbon stock/ha at each stratum.

The 90% confidence interval (CI) was calculated for each land cover of the calculated carbon mass per ha in each plot using the standard formula:

$$CI = t_{\alpha} / 2 \cdot s / \sqrt{n}$$

Where: t = student's t value

α = determination of the level of confidence

s = standard deviation of the sample

n = sample size

Significant Differences between Strata

Two tests were carried out to assess the significance of the differences between strata:

- 1) The Anova test was used to determine whether there are significant differences between strata for carbon estimation.
- 2) Scheffe's multiple pair comparison test was performed to determine which groups differed significantly. This test is a statistical method for comparing multiple strata.

2.5.2.2. GHG Emission Assessment Methods and Procedures

Net GHG emissions are calculated by adding up the emissions released during the land clearing process, crop production, and also subtracting them from the uptake by plant stands and from conservation areas. The sources of emission and absorption of GHG can be described in **Table 15**.

Table 15. Sources of GHG emissions and sequestration

Source		Emission
Emission	Land cover conversion	CO2 emissions from land clearing
	Fertilisation and transport	N2O and CO2 emissions from inorganic fertilisation and organic matter and their transportation
	BBM consumption	Emissions from fuel
	POME effluent	Methane produced from PKS waste
Sequestration	Oil palm plants	The absorption of CO2 by oil palms includes land cover
	Conservation area	Absorption of CO2 by plant biomass in the conservation area

There is no peat land in areas of PT. Agro Kati Lama 2

2.6. Land Use Change Analysis (LUCA)

2.6.1. Assessor Credential

The LUCA analysis at PT AKL II was carried out by PT Koompasia Enviro Institute led by Riswan Zein, S. Hut, M.Si. The complete composition of the LUCA drafting team was:

Table 16. LUC Analysis Team of PT AKL II

Name	Qualification	Position
Riswan Zein	S. Hut, M.Si (Forestry and PSL)	Project leader
Harry Kurniawan	S. Hut (Forestry)	GIS and field data
Heidei Putra Hutama	S. Hut (Forestry)	GIS and remote sensing
Sigit B Setyanto	Ir. (Land and Social)	Participatory land mapping
Fadli	SS (Social)	Social data aspects
Wibowo A Djatmiko	Ir. MS (Forestry)	Dendrologist and fauna

2.6.2. LUCA methodology

The methods used in the Land Use Change Analysis (LUCA) at PT AKL II include:

- 1) GIS Analysis and Remote Sensing guided by the period of land clearing according to the RSPO RaCP guidelines;
- 2) Review of secondary data and relevant reports, including HCV reports, AMDAL reports, SIA reports, soil analysis reports, HCS report funds;
- 3) Defining land cover strata and vegetation coefficient according to the table 17 below:

Table 17. Land cover strata and vegetation coefficient

Land Cover Type	Description	Vegetation coefisien
Primary forest	Forests that have not been disturbed by humans. This land type was not found.	1.0
Secondary forest	Forests that grow and develop in disturbed dryland habitats	0.7
Agroforestry/ mixed rubber plantations	Dry land planted with annual crops (trees), rubber combined with seasonal crops.	0.4

Rubber plantations	Land planted with rubber trees in the form of wide, homogeneous, and regular cropping patterns, both managed by individuals and companies.	0.0
Open land	Land without cover, both natural and semi-natural, whose existence is not the result of engineering and/or direct engineering by humans	0.0
Oil palm plantation	The land planted with oil palm plants in the form of a wide stretch and a regular cropping pattern, which is industry-oriented	0.0
Settlement		0.0
Bush	The land cover in the form of plants that grow naturally with an average height of 0.5-2 m, some being woody, and some not.	0.0
Scrub	Dry land area that has been overgrown with a variety of heterogeneous and homogeneous natural vegetation with sparse to dense density. The area is dominated by low (natural) vegetation.	0.4
Water body	All naturally occurring bodies of water (including natural lakes / ponds, rivers, sea waters, swamps)	0.0

- 4) Field verification with the following activities: a) validation of land cover data was carried out during ground truthing of 173 points; b) Compilation of information related to the history of land cover, including carrying out Participatory Mapping and document review; c) Identification of possible loss of social HCVs through discussion and interviews; and d) Identification of possible loss of areas prohibited from clearing by RSPO or government regulations such as riparian zones, high slope lands and peat.

2.7. Community Engagement dan FPIC

2.7.1. Implementing the FPIC Process and assessor credentials

The implementation of FPIC is aimed at (1) fulfilling and enforcing the rights of indigenous peoples and/or local communities, (2) respecting and protecting the traditions and customs of indigenous and/or local communities in exploiting their potential and assets, (3) ensuring that the operations of the company in their territory provides direct benefits to indigenous peoples and/or local communities, (4) becoming a prerequisite for company executors to receive compensation and incentives from company operations and (5) Reviewing and updating on social conditions surrounding the latest location permits and implementation of plans management and internal social monitoring of the company. The study was conducted from November 2018 - May 2019. The FPIC Assessment drafting team is presented in **Table 18**.

Table 18. List of personnel from the FPIC Assessment Team at PT AKL II

Name	Position	Expertise
Sigit Budhi Setyanto	Team Leader	Socio-Cultural Field Assessor
Fadhli	Member	Socio-Cultural Field Assessor
Wibowo A. Djatmiko	Member	Social-Environmental Assessor
Riswan Zein	Member	Social-Environmental Assessor and GIS
Harry Kurniawan	Member	Social-Environmental Assessor and GIS
Ihsan Nur Harahap	Member	Social-Environmental Assessor
Jarian Permana	Member	Social-Environmental Assessor
Bugi Kurniadi	Member	Social-Environmental Assessor

Name	Position	Expertise
Razi Aulia Rahman	Member	Social-Environmental Assessor

2.7.2. FPIC Methodology

The implementation of the FPIC Assessment refers to the *Free, Prior and Informed Consent: Guide for RSPO members* (2015) document, which shows the stages of carrying out activities with a flowchart in the community engagement process to obtain approval in line with the RSPO standard requirements.

The activity stages are as follows:

- 1) Pre-implementation to collect preliminary data and information from the Company as well as secondary data to determine the landscape context of both social and environmental issues.
- 2) Community engagement to disseminate plantation development plans and assessment plans that will be carried out later, including HCV, HCS, and SIA. In this stage, contact is made with the community and other stakeholders, and a schedule is arranged for visits to the village. Discussions with stakeholders at the village level were carried out through interviews and initial Participatory Mapping in order to capture issues at the landscape level, and the community's understanding of the current situation and future plans for where they live.
- 3) A workshop was held with the Company to confirm the results of field visits to the community and harmonise understanding of the aims and objectives of HCSA and HCV identification. The meeting also discussed the Company's commitment to the principles of FPIC.
- 4) FGD with the community was to convey the process of planning the HCV, HCS and SIA assessment, activities and outputs, and the role and rights of the community in the assessment process. The information gathered in the FGD included land use, land tenure, water and food security for the community, important sites for the community, as well as issues of concern to the community and hopes.
- 5) Participatory Mapping is carried out jointly with community members and village government representatives to clarify potential HCV and HCS areas resulting from initial community engagement. Additional information on the presence of HCV and HCS attributes or elements was collected. The results of the Participatory Mapping scheme illustrate: (a) Territorial boundaries, (b) Land use such as settlements, production areas, protected areas, (c) Landscapes such as mountains, hills, lakes, rivers, (d) Important places such as old villages, graves and historical sites.

3. SUMMARY OF FINDING

3.1. SEIA Findings

3.1.1. SEIA / AMDAL finding

Based on the results of the forecast assessment of the magnitude of the impact and the important nature of the impact, the environmental components categorized as important positive / negative impacts are as follows:

Pre construction stage:

- Changes of community income
- Changes of community perception

Construction stage:

- Decreasing of air quality
- Increasing noisy
- Increasing of soil erosion
- Increasing of potential of land fire
- Decreasing of water quality
- Decreasing of water quantity
- Changes of vegetation (flora)
- Changes of animal wild (fauna)
- Disturbing of water biota
- Changes of job opportunities
- Changes of community income
- Changes of community perception
- Decreasing road services level
- Decreasing of community health

Operational stage

- Decreasing of air quality
- Increasing noisy
- Increasing of soil erosion
- Increasing of potential of land fire
- Decreasing of water quality
- Disturbing of biota of water
- Changes of job opportunities
- Changes of community income
- Changes of community perception
- Decreasing road services level
- Decreasing of community health

3.1.2. Social Impact Asssessment (SIA) finding

From the results of the Social Impact Assessment (SIA) conducted on the plantation development plan at PT AKL, information was obtained about the positive and negative impacts of a series of plantation development activities on the community, and socially in general.

Table 19. Summary of SIA finding

Activity	Positive impact	Negative impact
Socialisation activities, land measurement and land compensation	<ul style="list-style-type: none"> • Providing learning to the community; the socialisation process, measurement and compensation carried out; the village team and parts of the community get direct learning, related to measurement procedures and land compensation process mechanisms carried out in synergy with a team from the Company and the village team. • Plantation development based on regulations (at least 20% for plasma plantations) will also increase financial assets in the form of community owned plasma oil palm plantations 	<ul style="list-style-type: none"> • Potential to create negative perceptions of development plans, because many other companies have not committed themselves to their plans. If the socialisation does not meet the principles of FPIC, then the community members will be upset. FPIC is the community's right to obtain clear and complete information before (prior) a development investment activity is carried out in their area, and based on the information obtained, they freely express their consent (free consent or reject it). • Land compensation will reduce the land owner's assets (natural assets). In addition, if the condition of the land assets is problematic in terms of boundaries or ownership status, it will trigger conflict
Land Clearing Activities	<ul style="list-style-type: none"> • In the Land Clearing stage, most companies use the services of a competent third party/contractor and use local human resources, which, of course, also becomes a lesson for local residents. • Reliable contractors can predict the damage from land clearing activities according to environmental principles, otherwise they will cause potential environmental pollution of the water and soil 	Incidents of miscommunication between the company and the contractor who sometimes strays into community land areas that have not been measured or compensated for, resulting in potential conflicts
Recruitment of workers	The recruitment of local workers has a positive effect on the Company's existence	Recruitment without selection procedures will cause a negative reaction and the potential for social jealousy in the community
Nurseries, Planting and up-keep	The stages of seeding, planting and maintenance will provide knowledge about pests, plant diseases and other aspects of oil palm cultivation	The local workforce will judge if during planting and maintenance the treatment of the nucleus and plasma plantations is different, but will react positively if they are treated the same.
Road construction	<ul style="list-style-type: none"> • Construction of production roads by contractors who also recruit local workers also provides potential income from wages. 	Poor production roads have the potential to cause high costs or losses due to not transporting FFB efficiently

	<ul style="list-style-type: none"> • Production roads also have the potential to open up or facilitate the accessibility of village roads 	
Harvesting	<ul style="list-style-type: none"> • Gaining knowledge about harvesting methods in cultivating oil palm. • The results of the plasma will provide positive aspirations to the Company as foster father and partner for the results obtained. • Potential future investment from smallholdings. 	The potential will be traded to other parties who have larger capital
FFB Transport	<ul style="list-style-type: none"> • FFB transportation will run well if production roads are in good repair. • There is potential for cooperative plasma businesses to transport FFB 	If the roads are not maintained, public anxiety will be caused about the lack of good road access and also about air quality due to dust

Social Issues and Social Sustainability

For the results of the field visits and consultations with several stakeholders around the plantation and PT Agro Kati Lama Phase II plantation development plan, there are some notes on the following issues:

1. **The land compensation process is running quite well and is conducive with some notes on existing problems** | Most of the speakers from several stakeholders mentioned that at the beginning conflict occurred in the area that was to be compensated by the previous PT AKL, namely PT AKL Phase I, (1). The process of paying land compensation by the Company has been used by land speculators who sell land to residents who are not the original owners. This is the case in villages where the land has been measured by the Company but the original owner does not know about this, because land speculators have sold the land. The land owner demands that the Company resolve this problem. (2) There was a problem of compensation during the process of taking over the land, where a tree planted by someone else was causing damage to the adjoining land. This was due to the unclear boundaries that residents had on their land, as well as the condition of the field which at that time made it difficult to get access to the land. For this reason, the Company, in terms of land compensation, must research the origin of the land more carefully so that it does not occur in the future.
2. **Issues of Plasma Farmers at PT AKL Phase I, they felt that they were not getting enough socialisation and information about plasma** | Most of the resource persons from several stakeholders stated that the plasma cooperative located in the PT AKL Phase I location in the vicinity of the community was not running well. This is because the potential human resources who run the cooperative have not been able to provide good information to the community, so that many questions have arisen, as well as suspicions from the public regarding this cooperative. However, this is due to the lack of training given to new administrators at the plasma cooperative. This has been discussed with the local cooperative

office which is ready to assist by providing training to existing cooperatives so that the managers of these cooperatives are able to run them well.

3. **Issues of overlapping location permits** | From the consultant's analysis, there is an area that has been cleared by the community covering 90.37 ha, which is included in the PT AKL Phase II permit area. The community asked that PT AKL I give assistance with planting on this land so that it could be cultivated by the community. This was a condition for the process of releasing compensation for land in the PT AKL II location permit.
4. **Concerns about declining demand for labour in the future** | Early in the development of oil palm plantations (land clearing, nurseries, planting and maintenance) requires a lot of labour when compared to when it is harvested (around the age of 5 years and over) The community hopes that the Company will start working on an independent program that is labour-intensive and uses local resources, for example strengthening plasma cooperative businesses such as transportation, labour contractors and others in order to accommodate local manpower resources. Or it could strive for independent labour-intensive businesses such as programs that have been launched, for example the partnerships with vilages and other businesses. The crime rate is currently decreasing because many residents work at PT AKL.

3.2. HCV Finding

3.2.1. National and Regional Context

Indonesia with around 17,504 islands divided into 34 provinces is the largest and most populous country in Southeast Asia. In 2015, it was estimated that 55,272.9 thousand people lived on the island of Sumatra, or around 21.6% of Indonesia's population, with 255,461.7 thousand people. Meanwhile, South Sumatra Province has a population of 1,874.9 thousand people or about 0.73% of Indonesia's population in 472.8 thousand families with an area of 19,919.33 km² and 47 islands, or about 1.04% of the total area of Indonesia, which covers 1,913,578.33. km² with 17,504 islands.

In 2013, it was estimated that the forest area in Indonesia was around 82,487,000 ha, ranking 11th in the world and first in Southeast Asia, but currently the annual rate of deforestation is estimated to be the highest in the world ⁵¹. While the rate of deforestation on the island of Sumatra in the quarter century between 1985 and 2007 was more than 12 million ha, the forest cover that was destroyed and now remains is less than 30%. Less than 40% of Sumatra's primary forest was remaining in the 2000s. The rate of deforestation at that time was an average of 2.5% per year, the worst occurring in lowland areas and hilly forests that have high diversity (CEPF, 2001).

Sumatra is the fifth largest island in the world, with a length of 1,800 km and a width of 400 km. Extending in the west from north to south lies the Bukit Barisan mountain range, while the east coast is dominated by lowland forest and swamps. This difference in topography causes differences in the nature of the rivers that flow on the two sides of Sumatra. Rivers that empty on the west coast tend to be short and swift, while those that empty on the east coast are long and winding. Geological history, geographical position, area size, and relatively wet climatic conditions throughout the year have made Sumatra rich in plant species diversity.

5) Belinda Arunarwati Margono, Peter V. Potapov, Svetlana Turubanova, Fred Stolle and Matthew C. Hansen. 2014. Primary forest cover loss in Indonesia over 2000-2012. *Nature Climate Change*. Dalam <http://www.nature.com/nclimate/journal/v4/n8/full/nclimate2277.html>

On the east coast of South Sumatra is the Sembilang National Park which is a fertile area with swamps, mangroves and peat forests, and is also home to Sumatran tigers and elephants, Malayan tapirs and various species of birds. The 35 km long mangrove forest along the coast of the park is very important for fish and shrimp breeding and a source of food for local people. The 83,000 ha of Merang Peat Swamp Forest is also a peat swamp area that provides important carbon. More than 60% of Sumatra's economy comes from the exploitation of natural resources, such as coal, gas, oil and lime mines. South Sumatra province has about half of Indonesia's coal resources and is the third largest exporter of liquefied natural gas in the world. Small-scale mining is estimated to involve around 20,000 gold miners in several areas. Manufacturing and infrastructure continue to increase and it is the third largest sector in Indonesia to obtain permits. Meanwhile, local community farming in the agricultural sector, especially rice (as the main source of carbohydrates) has low and inadequate yields. Small farmers' mainstay commodities such as coffee and rubber do not yet support their livelihoods significantly⁷

South Sumatra also has quite frequent ecological damage / disasters in the form of drought and floods that continue to haunt in every change of season and have damaged important ecosystems such as peat, and the damage of Musi watershed system. Ecological disasters affect the lives of farmers to switch careers into labourers or other careers which often lead to criminal acts due to the loss of their main source of livelihood.

Based on the Regional Regulation of the Province of South Sumatra No: 11/2016, Date: 24 October 2016, regarding the Regional Spatial Plan (RTRWP) of the Province of South Sumatra⁶), the PT AKL II location permit area and the HCV identification area are included in residential areas. From the consultant's analysis, part of the area of PT AKL II's location permit around 1,367.5 ha (44.2%) located on residential areas designation, and the rest 1723.4 Ha (55.7%) located in plantation areas designation. **Figure 8** presents a map of PT AKL II's location permit on the 2016-2030 RTWR map of South Sumatra Province.

Main references used in the HCV assessment are: (1) Common Guidance For The Identification Of High Conservation Values: A Good Practice Guide For Identifying HCVs Across Different Ecosystems And Production Systems, Brown, E., N. Dudley, A. Lindhe, DR Muhtaman , C. Stewart, and T. Synnott (eds.). 2013 (October), HCV Resource Network. Oxford, UK, (2) 'Consortium Revised HCV Toolkit Indonesia, Guide to Identifying High Conservation Value Areas in Indonesia. Tropenbos International Indonesia Program, 2008 for deeper investigation in the context of villages, and (3) Common Guidance for the Management and Monitoring of High Conservation Values. Brown, E. and M.J.M. Senior. 2014 (September). HCV Resource Network. Oxford, UK.

List of legal documents and regulatory permit related to new development area of PT. AKL II as below:

6) Dalam <http://jdih.sumselprov.go.id/userfiles/PERDA%20NO.11%20THN%202016.pdf>

1. Izin Lokasi (Location permit): PT AKL has obtained Izin Lokasi (Location permit) from authority based on “Surat Keputusan Kepala Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu Kabupaten Musi Rawas Nomor 49/KPTS/II/DPM-PTSP/2011, tanggal 18 July 2011 Tentang Pemberian Izin Lokasi Untuk Keperluan Pembangunan Perkebunan Kelapa Sawit Dan/Atau Karet Atas Nama PT. Agro Kati Lama, seluas: 10,500 ha.
2. Izin Lokasi (Location permit): PT AKL II has obtained Izin Lokasi (Location permit) from authority based on “Surat Keputusan Kepala Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu Kabupaten Musi Rawas Nomor 75/ KPTS/II/DPM-PTSP/2018, tanggal 27 Agustus 2018 Tentang Pemberian Izin Lokasi Untuk Keperluan Pembangunan Perkebunan Kelapa Sawit Dan/Atau Karet Atas Nama PT. Agro Kati Lama, seluas: 3,090.9 Ha”.
3. Izin Usaha Perkebunan/IUP (Operational Business Permit) approved by Bupati Musi Rawas Nomor 423/KPTS/DISBUN/2012 tentang Pemberian Izin Usaha Perkebunan (IUP) atas nama PT Agro Kati Lama for areas 10,500 ha.
4. Updated ‘Izin Usaha Perkebunan/IUP’ (Operational Business Permit) with Online Single Submission (OSS) with Ref # no. 8120219042726, dated 01 September 2020.
5. Renewal SEIA - Izin Lingkungan (AMDAL): Approved by “Dinas Penanaman Modal dan Pelayanan Terpadu satu Pintu Kabupaten Musi Rawas No. 503/01/KPTS/DPM-PTSP/VII/2020, dated 07 July 2020
6. Based on overlapping with ‘Peta Kawasan Hutan dan Perairan’ (National Forest Map) as regulated in SK. Menhut no. 454/MenLHK/Setjen/PLA-2/6/2016 which indicated that status of PT. Agro Kati Lama II is non forest area, namely: “Areal Penggunaan Lain / APL”.
7. Based on PIPPB map Rev. XV as regulated in Forestry Ministry Decree no. 8599, year 2018 that PT. AKL II is not located in forest area and peat land.

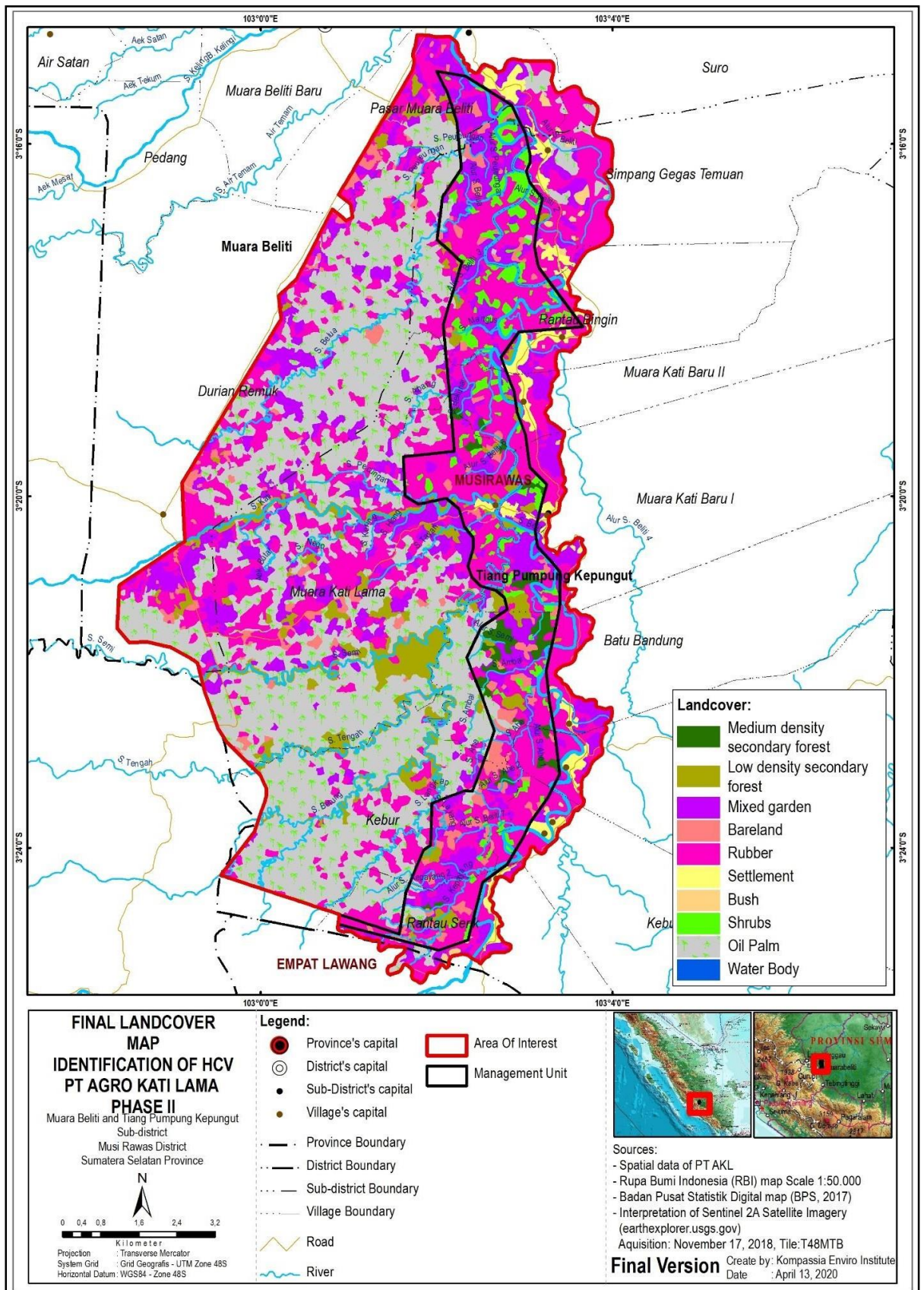


Figure 8. Overlapping PT AKL II area with RTWR Map, year 2016-2030, Sumatera Selatan Province

3.2.2. Landscape Context

Based on the Map of the Function of Forest Areas and Water Conservation in South Sumatra Province, referring to the Decree of the Minister of Environment and Forestry, no: 454 / MenLHK / Setjen / PLA-2/6/2016, shows that the HCV assessment area in the PT AKL II location permit area is entirely in an 'Other Purpose Area' /APL (see **Figure 3** above), and not included in the peat moratorium area based on the XV revision of the Indicative Map for Suspension of New Licences in moratorium areas (PIPIB) (see **Figure 9**).

Forestry areas in the form of: (1) Protected Forest (HL) located in the south at a distance of 16 km and in the northwest, a distance of 16 km. (2) Permanent Production Forest (HP) located in the south, a distance of 9 km, and in the east, a distance of 6 km, and (3) Convertible Production Forest (HPK) located in the north, a distance of 15 km.

The Peat Moratorium Area (PIPIB revision XV) is in the form of Primary Forest located in the Production Forest (HP) and APL in the south, a distance of 32 km, and the southwest, a distance of 13 km (in Empat Lawang Regency), and in the west (Selangit area), a distance of 19 km. The Peat Hydrological Area (KHG) is located in Sungai Rumpit - Sungai Rawas, a distance of 37 km.

The area around and within the PT AKL II location permit area is included in the River Basin (WS) BPDAS Musi - Sugihan - Banyuasin - Lemau. Physically, the study area is located in the Musi watershed, Beliti sub-watershed with the catchment area of the rivers Beliti, Abang, Belua, Kati, Peujeungan, Semi, Tayan, Air Teman and Betung. The main rivers are: (1) Abang, (2) Ahe, (3) Ambai, (4) Bekunai, (5) Beliti, (6) Belua, (7) Kati, (8) Kepayang, (9) Langkap, (10) Layang, (11) Mangus, (12) Peujeungan, (13) Semi and (14) Tayan. All of these rivers discharge into the Beliti River, which flows from the south to the north of the management unit. The total length of rivers, ditches and channels that cross the PT AKL II location permit is estimated to be around 49.17 km, covering around 13.74 hectares.

The climate regime, especially temperature, rainfall, sunshine and humidity, are the physical environments that are important production factors for the development of oil palm plantations. Climate parameters play a very important role in the photosynthetic mechanism of oil palm plants, which in turn determines the height and the low growth, and production of FFB. The map of the results of the Agro-climatic distribution of the Oldeman climate classification indicates that the PT AKL location permit area is type B1, which has consecutive wet months (average rainfall > 200 mm) between 7-9 months and consecutive dry months (average - average rainfall < 100 mm) less than 2 months.

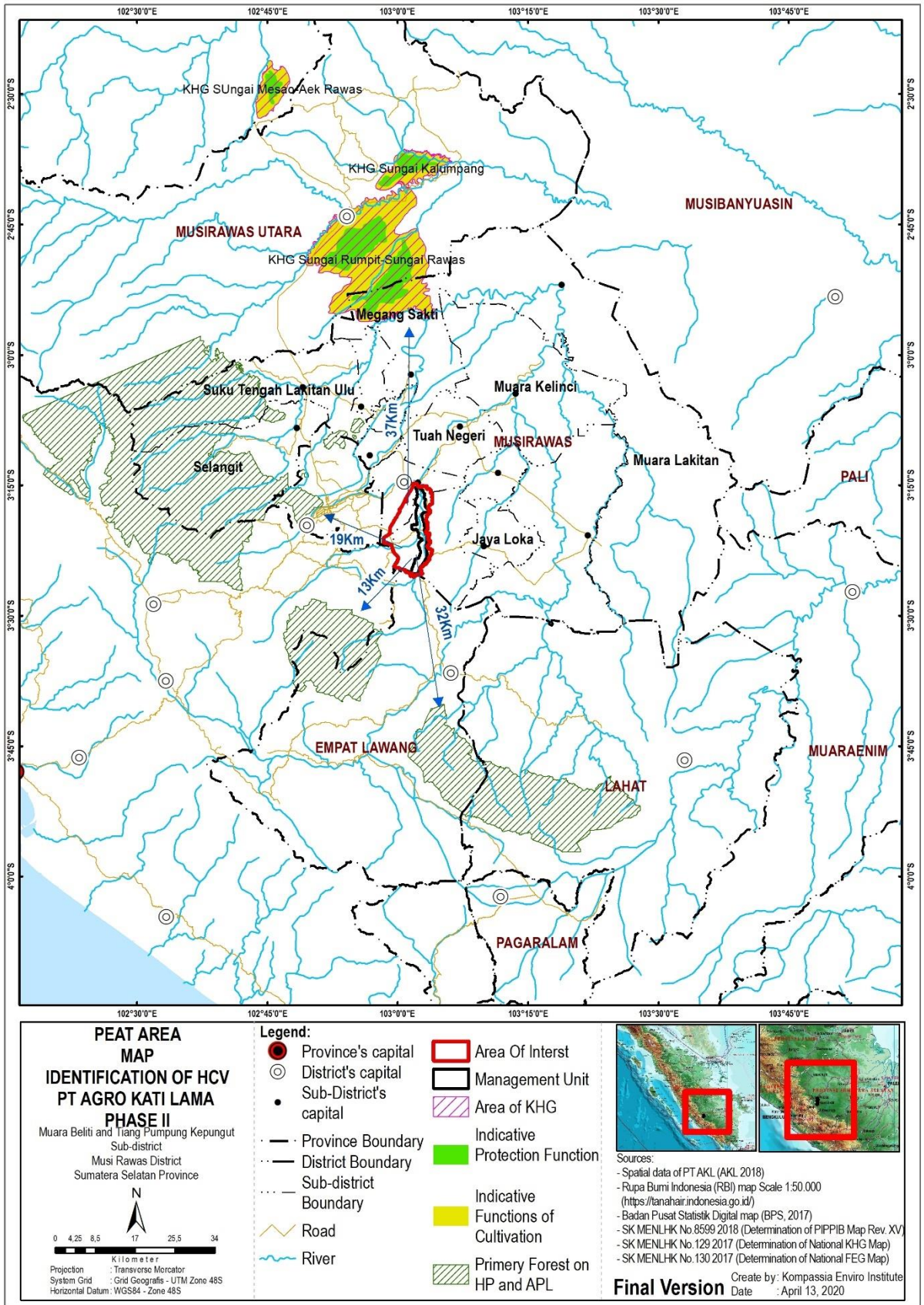


Figure 9. Overlapping PT AKL II Areas with Peat Moratorium Map (PIPIB revisi XV) in

In terms of physiographic units, the PT AKL II location permit area is within the Southern Eastern Plains and Hills unit (RePPProT, 1990), while the area is included in the sub-unit biogeography Sumatra 21a Southern Mainland Sumatra (MacKinnon, 1997). This area is also within the Sumatran Lowland Rain Forests ecoregion (code IM0158) (WWF 2015) shown in **Figure 10**. The ecoregion includes humid lowland forests in Sumatra and its satellite islands, such as Simeulue, Nias and Bangka. The lowland rainforest of Sumatra is one of the most threatened by extinction. Until 1985, this forest was only about a third of its original area. Between 1985-1997 the forest lost an average of 2,800 km²/year. Currently Sumatra's lowland rainforests almost only remain in relatively large national parks and conservation areas (WWF, 2015). The results of the field survey indicate that the landscape area is mostly in the form of cultivated land, which is used by the community. However, in the landscape area there are still patches of areas with natural vegetation land cover in the form of lowland forest with medium density and low density to the south of the management unit.

The closest conservation area is the Kerinci Seblat National Park, which is 37 km to the west. In addition, the closest protected forest area is the Unit I Banyuasin protected forest, which is 16 km in the northwest. In addition, the category of local protected areas that meet the criteria of legislation is the existence of borders of several rivers flowing into the PT AKL II area, such as the Beliti, Abang, Air Teman, Belua, Betung, Kati, Semi, Peujungan and Tayan rivers.

Areas of important biodiversity consist of Key Biodiversity Areas (KBA) (based on WWF data), Important Bird Areas (IBA) and Endemic Bird Areas (EBA) (*BirdLife International*), and Ramsar sites. The area of PT AKL II's location permit is outside the EBA and IBA, Intact Forest Landscape (IFL), Ramsar sites and other conservation areas. The position of the important areas of biodiversity around the Aol area is presented in **Figure 11** with the following explanation:

- 1) The KBA and IBA to the Aol area are in the middle of the Kerinci Seblat National Park (21 km), Mount Dempo IBA area as far as 58 km to the south; and Meranti KBA, which is 84 km north/northeast. Meranti KBA is directly adjacent to Dangku Wildlife Reserve.
- 2) The EBA closest to the Aol area, namely Kerinci Seblat EBA which is 21 km west with the characteristics of a mountainous rainforest habitat. In addition, there is an EBA area on Kaba Hill, 35 km southeast, and the EBA area of Mount Dempo, 58 km south.
- 3) Ramsar Sites: On the island of Sumatra, there are two Ramsar areas, namely Berbak Ramsar sites (Jambi Province) and Sembilang Ramsar sites (in South Sumatra Province). The nearest Ramsar site is inside the TN Sembilang area in Musi Banyuasin Regency, about 206 km to the northeast of the identification location.⁷⁾

The PT AKL II location permit area is outside the last distribution area of the Sumatran tiger (*Panthera tigris sumatrae*), Sumatran elephant (*Elephas maximus sumatranus*), and Sumatran forest goat (*Capricornis sumatraensis*). However, based on the indicative sun bear distribution map published by IUCN, some of the area of the location permit in the north overlaps with the distribution area of sun bears (*Helarctos malayanus*).

7) *Taman Nasional Sembilang ditetapkan sebagai Ramsar Site pada 6 Maret 2011 dengan luas 202.896 Ha, terletak di kabupaten Musi Banyuasin, Sumatera Selatan. TN Sembilang merupakan perwakilan hutan rawa gambut, hutan rawa air tawar dan hutan riparian (tepi sungai), merupakan habitat harimau sumatera (Panthera tigris sumatrae), gajah sumatera (Elephas maximus sumatranus), tapir (Tapirus indicus), siamang (Hylobates syndactylus), kucing emas (Catopuma temminckii), rusa sambar (Cervus unicolor), buaya (Crocodylus porosus), biawak (Varanus salvator), ikan*

However, in reality the northern end of the location permit area is an area that has been inhabited by many people, because it is located not far from the city centre of Muara Beliti, the capital of Musi Rawas Regency (in the RTRW map South Sumatra it is also allocated for the development of residential areas). In addition, the location permit area is in the middle of the distribution area of siamang (*Symphalangus syndactylus*) and langur lutung (*Presbytis melalopos*)

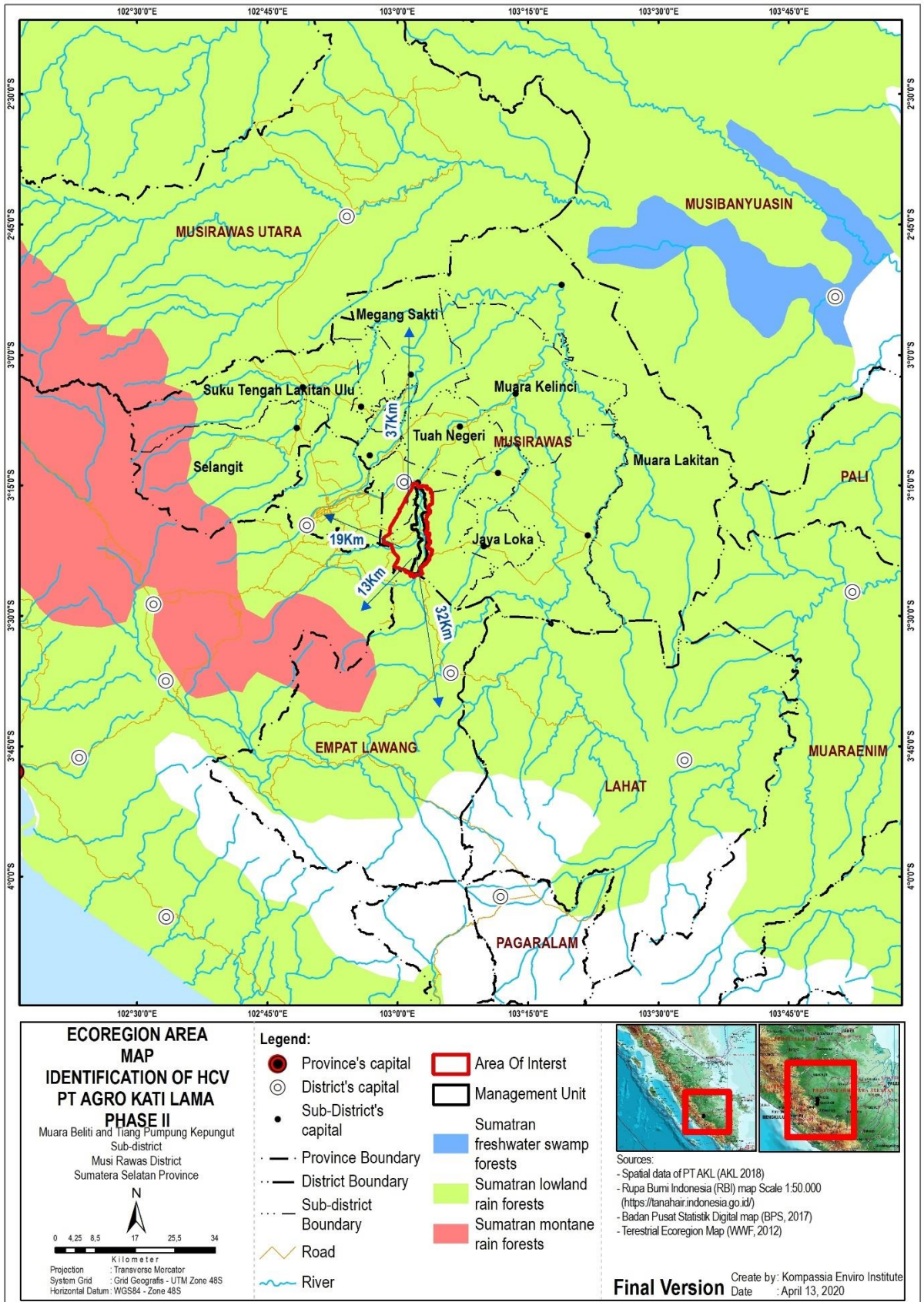


Figure 10. Overlapping PT AKL II with Eco-region Map

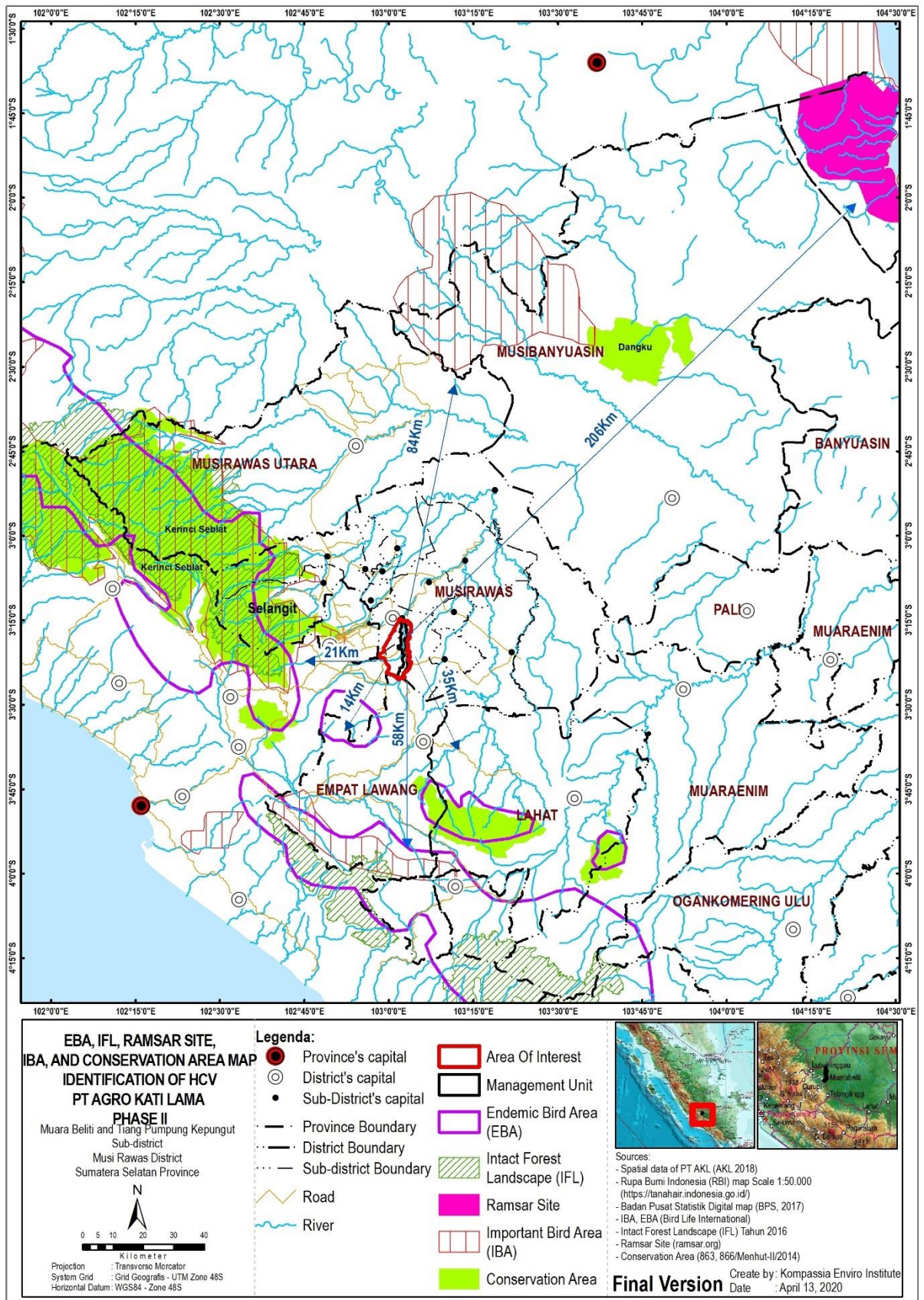


Figure 11. Overlapping PT. AKL II with IBA, EBA, Ramsar Site, IFL dan conservation area map

Based on government administration, the PT AKL II location permit area is in Muara Beliti District and Tiang Pumpung District, Kepungut. Tiang Pumpung Kepungut Sub-district is a sub-district of the expansion of Muara Beliti District. These villages and sub-districts are still dominated by local residents and their surroundings as well as immigrants from West Sumatra (*Orang Padang*) and Javanese (the transmigration UPT) covering an area of 340.27 km² or about 3.1% of the district area with a total population of 17,509 people or about 4.5% of the district population, in 5,089 families, of which around 3,282 farmer families or 56.5% depend on natural resource wisdom.

Altogether there are 12 villages in 2 sub-districts that are included in the PT AKL II location permit, namely: Pasar Muara Beliti Village in Muara Beliti Sub-district, while in Tiang Pumpung Kepungut District there are 10 villages namely: Batu Bandung, Kebur, Kebur Jaya, Lubuk Besar, Muara Kati Baru I, Muara Kati Baru II, Muara Kati Lama, Rantau Bingin, Rantau Serik and Simpang Gergas Temuan. The map of the distribution of villages around the PT AKL II location permit is presented in **Figure 12**.

The majority of the sub-districts/villages around the PT AKL II location permit are dominated by local people who call themselves '*Orang Rawas*' and '*Orang Musi*' from the Muara Beliti Clan and the Tiang Pumpung Kepungut Clan. They speak Malay with the '*Sindang Kelingi*' dialect of the parent clan before it expanded, which is more popularly known as the 'COL or CUL' language and is classified as part of the language family of the '*Orang Melayu*'. Almost all people in the sub-district/village of the 'COL people' community are Muslim and are not familiar with rituals at sacred places with special offerings of objects, plants or animals. Cultural traditions that are still upheld, are especially in the proceedings of ceremonies for weddings, births and deaths.

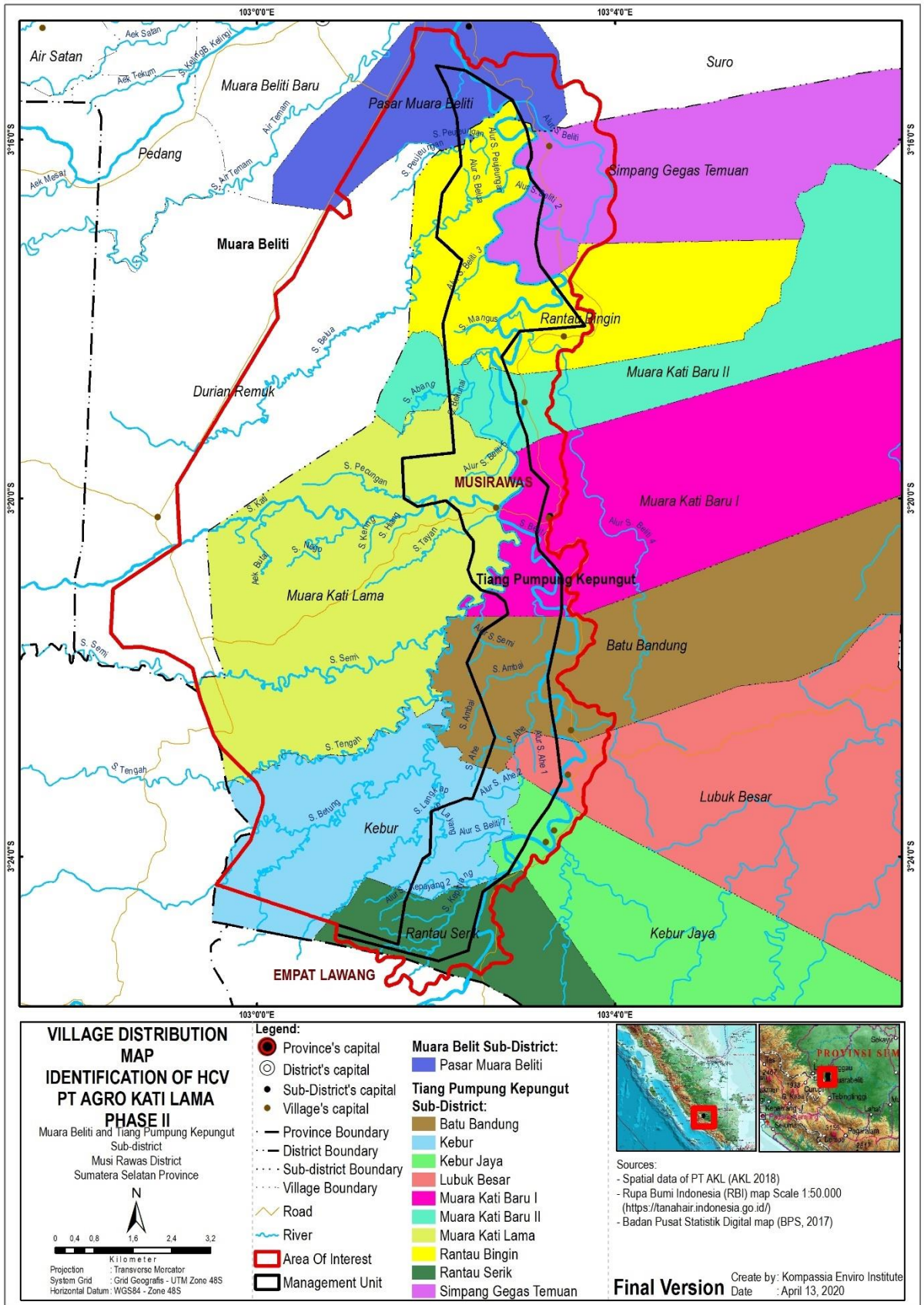


Figure 12. Villages surrounding PT AKL II Areas.

3.2.3. Results of HCV Assessment and Justification

Based on the results of the HCV assessment in the PT AKL II area, 4 types of HCV were found, namely HCV 1, HCV 4, HCV 5 and HCV 6. Summary of findings is presented in **Table 20**.

Table 20. Summary of finding HCV areas in PT. AKL II

HCV	Definition	Summary Description and Justification		
		Identified	Potential	Not identified
1	Concentrations of biodiversity including endemic species, and rare, threatened or endangered (RTE) species, that are significant at the global, regional or national level			
2	Mosaics of large landscape-level ecosystems and ecosystems that are significant at the global, regional or national level, and contain the majority of populations of naturally occurring species capable of surviving in natural patterns of distribution and abundance			
3	Rare, threatened or endangered ecosystems, habitats or refugia			
4	Basic ecosystem services in critical conditions, including protection of water catchments and control of erosion of vulnerable soils and slopes			
5	Places and resources that are fundamental to meeting the basic needs of local people or indigenous peoples (e.g. for livelihoods, health, nutrition, water), identified through engagement with the population or indigenous peoples concerned			
6	Places, resources, habitats and landscapes that have global or national cultural, archaeological, or historical significance, or cultural, economic or religious/sacred values of great importance to local people or indigenous peoples, identified through the involvement of the population or indigenous peoples.			

1) HCV 1 – Species Diversity

Based on the results of the preliminary desktop analysis and scoping study, the identification area has become a cultivated area that has been built into a residential area that has a long history and is available along with adequate infrastructure. The area around PT AKL II is also far from the area of biodiversity concentration, but there are still some that are included in the distribution (Sun Bear (*Helarctos Malayanus*)). In addition, based on field identification, the IUCN RedList database is used as a reference. There are animals given Endangered status (EN) namely lutung hoops (*Presbytis melalophos fluviatilis*) and gibbons (*Symphalangus*

syndactylus); as well as two other species with Vulnerable status (VU) namely the Sumatran slow loris (*Nycticebus coucang*) and the monkey (*Macaca nemestrina*) with the status of Critically Endangered (CR). Meanwhile, there are three types of plant species in the VU category, namely: Pekawai (*Durio kutejensis*), Keruing (*Dipterocarpus trinervis*), and belian (*Eusideroxylon zwageri*). The wildlife habitat that is still quite good and relatively wide is secondary forest cover alternating with old mixed rubber crop near the border between the villages of Batu Bandung and Muara Kati I, which is a forest that remains near the Beliti and Semi rivers. In addition, the condition of the riparian vegetation habitat along the rivers, especially the Beliti, also seems to still support the life of some wild animals.

There are concentrations of biodiversity including endemic species and rare, threatened or endangered species that are significant at global, regional or national levels. **Table 21** provides a summary of the presence of HCV 1 in the PT AKL II location permit.

Table 21. Summary of HCV 1 presence in the PT AKL II location permit

Qualified Situations as HCV 1	Indications
A high overall species richness, diversity or uniqueness	Absent The identification area is a cultivation area dominated by community oil palm plantations and plantation companies and is directly adjacent to the village which is a residential area that has been developed with infrastructures
Populations of multiple endemic or RTE (<i>rare, threatened or endangered</i>) species	Present There is a potency for Endangered (EN) species, namely black-crested langur (<i>Presbytis melalophos fluviatilis</i>) and gibbons (<i>Symphalangus syndactylus</i>); and Vulnerable species (VU), namely the Sumatran slow loris (<i>Nycticebus coucang</i>) and Southern pig-tailed macaque (<i>Macaca nemestrina</i>). No Critically Endangered (CR, Critical) species
Important populations or a great abundance of individual endemic or RTE species	Absent No endemic species and RTE species were recorded
Small populations of individual endemic or RTE species, in cases where the national, regional or global survival of that species is critically dependent on the area in question	Absent No endemic species and RTE species were recorded
Sites with significant RTE species richness	Absent There is no natural ecosystem large enough to serve as habitat for many RTE species.
Particularly important genetic variants, subspecies or varieties	Absent There is no important genetic variants, subspecies or varieties

The existence and area of HCV 1 area is presented in **Table 22** and the map of the existence of HCV 1 in the Management Unit (HCVMA) and the surrounding landscape of PT AKL II is presented in **Figure 13**.

Table 22. Presence and area of HCV 1 Management Unit and in the AoI PT AKL II landscape

HCV 1	Manajemen Unit (HCVMA)		Lansekap Area of interest	
	Ha	%	Ha	%
Beliti river secondary forest	164.19	5.31	178.37	1.44
Riparian of Semi river	35.35	1.14	98.97	0.80
Riparian of Abang river	3.30	0.11	3.30	0.03
Riparian of Ahe river	4.17	0.13	4.17	0.03
Riparian of Ambai river	3.40	0.11	3.40	0.03
Riparian of Beliti river	223.08	7.22	261.07	2.11
Riparian of Belua river	26.17	0.85	26.17	0.21
Riparian of Kati river	10.03	0.32	22.47	0.18
Riparian of Langkap river	0.49	0.02	12.23	0.10
Riparian of Mangus river	1.60	0.05	1.60	0.01
Riparian of Peujeungan river	3.97	0.13	3.97	0.03
Riparian of Tayan river	1.28	0.04	3.42	0.03
Secondary forest of Semi river	-	-	65.22	0.53
Riparian of Betung river	-	-	59.81	0.48
Riparian of Tengah river	-	-	46.88	0.38
Total HCV 1:	477.04	15.43	791.05	6.39
Location of Management Unit / Lanscape:	3,090.90		12,380.90	

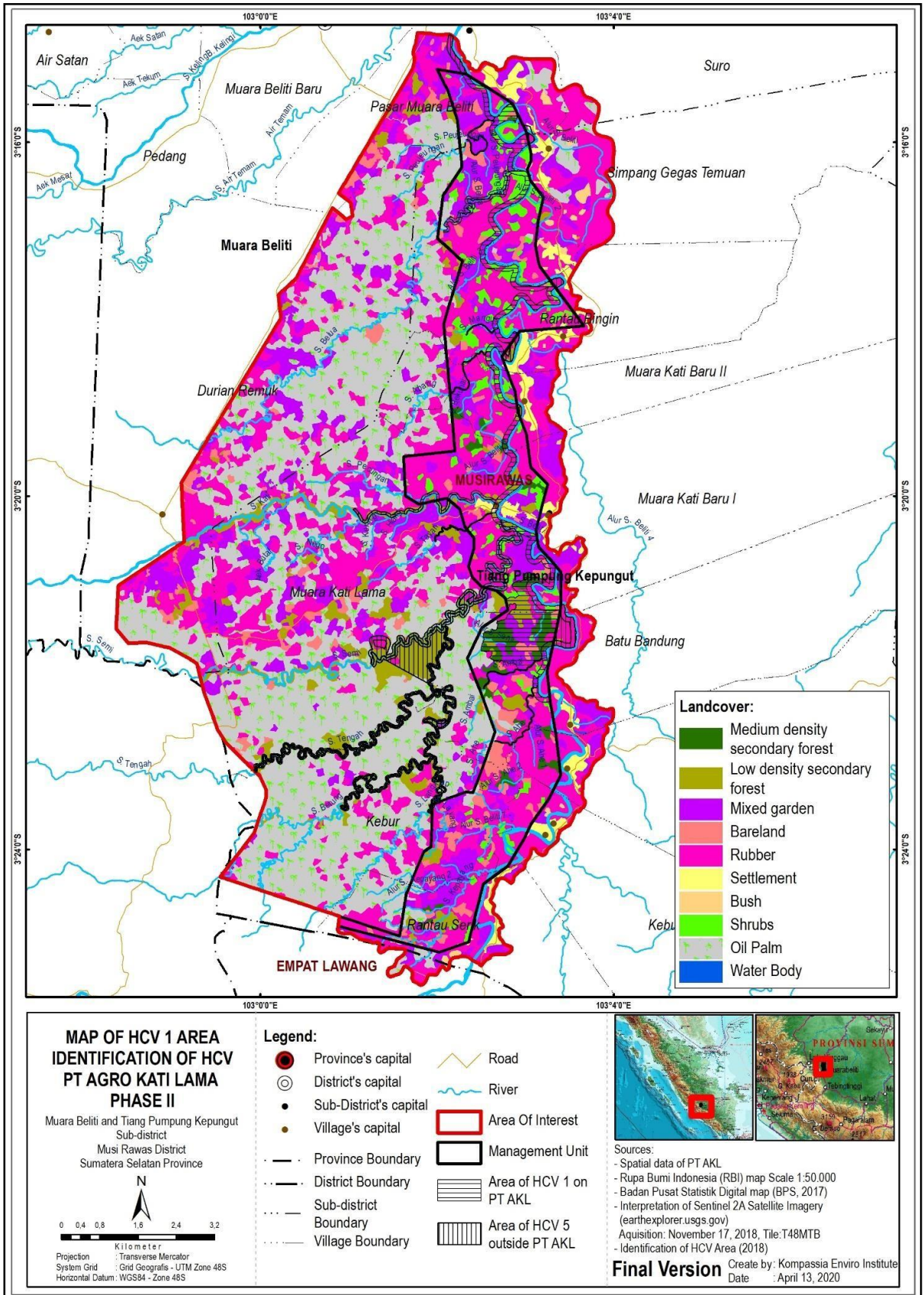


Figure 13. HCV 1 identified in PT AKL II Areas and Landscape of Interest Areas

2) HVC 2 – Landscape-Level Ecosystems and Mosaics

The absence of HCV 2 findings is based on the fact that the PT AKL II location permit area is an area that has been developed, some of the location permits even allocated for residential areas (see RTRW South Sumatra above) in the central village of the capital, Musi Rawas district, Muara Beliti. On the other hand, the villages surrounding the location permit have a long history and have long developed in line with the conversion of forest to land for agriculture, (mixed natural rubber) and oil palm plantations where extensive intact forest cover is no longer found.

Examination of the **Intact Forest Landscapes (IFL)** map, shows that the nearest IFL area is located in the Kerinci Seblat National Park (TNKS) forest area in the southwest of the location permit area, where there is no relatively intact forest cover and it can be important for connecting large forests or other natural ecosystems around it.

No HCV 2 areas are identified. PT AKL II area is not part of a landscape ecosystem, a large landscape containing a mosaic of ecosystems, or an intact forest landscape that is significant at global, regional or national levels. **Table 23** provides a summary of indications for the presence of HCV 2 in the PT AKL II location permit.

Table 23. Indications of the presence of HCV 2 in the PT AKL II location permit area

Qualified Situations as HCV 2	Indications
Large areas (e.g. could be greater than 50,000ha, but this is not a rule) that are relatively far from human settlement, roads or other access	Absent The identification area is in a cultivation mosaic with built-in residential areas that are open and crossed by the national axis road.
Smaller areas that provide key landscape functions such as connectivity and buffering	Absent The identification area is quite far and there is no connection and far enough from the protection buffers area
Large areas that are more natural and intact than most other such areas and which provide habitats of top predators or species with large range requirements	Absent There are no areas that are more natural or more intact

Generally, The PT AKL II location permit is developed area, some of the location permits are even located in the allocation of residential areas in the central district of Musi Rawas district: Muara Beliti. On the other hand, the villages surrounding the location permit are villages that have a long history and have long developed in line with the conversion of forest to land for agriculture, (mixed natural rubber) and oil palm plantations where there is no longer found extensive intact forest cover. Based on the analysis of landscape maps and the identification process in the field, the location permit area and the AOI area are not included in a large forest landscape or important ecosystem mosaic, so it can be concluded that HCV 2 is not found.

3) HVC 3 – Ecosystem and Habitat

Meanwhile, HCV 3 is also not found because the location permit area only consists of the Muara Beliti (MBI) land system. In the 2008 HCV Toolkit the MBI land system is not included as a land system with rare or endangered ecosystems in the lowlands of Sumatra. From the results of field checks, it was found that the vegetation cover in the area was dominated by oil palm, mixed rubber and residential plantations. No more natural forests were found that were still pristine or in good condition, which may be representative or examples of ecosystems that need to be conserved. The endangered ecosystems in the table above, if any have existed before, are no longer found in the location permit area because they have been converted into agricultural lands in the form of oil palm, rubber and mixed plantations, and settlements

No HCV 3 areas are identified. PT AKL II area is not part of a landscape that has rare ecosystems or habitats, or rare, threatened or endangered sanctuaries. **Table 24** provides a summary of indications for the presence of HCV 3 in the PT AKL II location permit.

Table 24. Indication of the presence of HCV 3 in the PT AKL II location permit area

Qualified Situations as HCV 3	Indications
Naturally rare because they depend on highly localised soil types, locations, hydrology or other climatic or physical features	Absent The analysis lists rare and endangered ecosystems in Sumatra, and identify HCV 3 using a precautionary approach, the Muara Beliti land system (MBI) is not included as a land system which have rare or endangered ecosystems
Anthropogenically rare, because the extent of the ecosystem has been greatly reduced by human activities compared to their historic extent,	
Threatened or endangered (e.g. rapidly declining) due to current or proposed operations	
Classified as threatened in national or international systems	

The location permit area is only consisting of the Muara Beliti (MBI) land system. Field results checks shows that the vegetation cover in the area is dominated by oil palm plantations, mixed rubber and residential areas. No more natural forests were found that were still pristine or in good condition.

4) HCV 4 – Ecosystem Services

Based on the findings and analysis, the PT AKL II location permit was identified as an HCV 4 (Ecosystem Services) area in the form of a riverbank area. Based on the provisions in the Presidential Decree No. 32 of 1990 concerning Management of Protected Areas, PP. 38 of 2011 concerning Rivers, the 2008 HCV Toolkit Indonesia, 2013 *Common Guidance* HCVRN, and considerations of scientific principles, most of the rivers in the PT AKL II permit area are categorised as small rivers, so they are given a border area of up to 50 m on either side of the river. The Beliti River, which has a width of 30-60 metres, has a wide drainage area and is the main river so in the PT AKL 2 location permit it is given a border width of up to 100 m. Small channels 2-5 metres wide are still given borders with varying widths of 10-25 m because they

are quite important in the stability of the hydrological system. Meanwhile, the springs in Muara Kati Lama Village are given a 200 meters border. Based on the findings and analysis, in the PT AKL II location permit area. Summary of the presence of HCV 4 in the study area is presented in Table 25

Table 25. Summary of HCV 4 in PT AKL II area

Qualified Situations as HCV 4	Indications
Managing extreme water flow events, including vegetated riparian buffer zones / intact floodplains	Present There are several streams, creeks and streams along with their buffer which have the function of controlling surface water runoff and as natural drainage channels.
Maintaining downstream flow regimes	Present The identification area is located in the Musi Watershed, Beliti Sub-watershed which is near to the upstream area and there are still areas can maintain the function of the hydrological system in the form of river riparian buffer for both large rivers and small rivers / streams that have a role and contribution to river flow fluctuations in the downstream.
Maintaining water quality characteristics	Present Some rivers buffer is already having tree crops and oil palm and shrubs that can function as erosion-resisting cover as well as buffering rivers, streams and channels.
Fire prevention and protection	Present The rivers in the area, especially Beliti River, have a significant role as natural firebreaks, while other rivers can at least provide a source of water to extinguish fires in case of a fire event
Protection of vulnerable land, aquifers, or the fisheries	Present Rivers and streams still provide the function of natural resources as a source of fishes to local communities
Provision of clean water supply; and natural ecosystems that play an important role in stabilizing steep slopes.	Present There are some people who utilize river water at certain times in the dry season. Most of the family's daily water needs are supplied from man-made well, as well as paid gallon water. A small part of community at a certain time still uses river water for cooking. The tradition of river bathing is still widely practiced as well as clothes washing.
Protection against wind, and regulation of humidity, rainfall, and other climatic elements.	Present A natural vegetation cover in the river buffer have a function in regulating the microclimate
Pollination services, for example exclusive pollination of subsistence food crops	Absent No natural ecosystem available to support pollination services, most of the identified areas are mostly mixed rubber, oil palm and residential areas

Presence of HCV 4 (Ecosystem Services) areas is identified as presented in **Table 26**. The map of the presence of HCV 4 in the Management Unit and PT AKL II's AoI landscape is presented in **Figure 14**.

Table 26. Presence and area of HCV 4 area in Management Unit and AoI PT AKL II landscape area

HCV 4	Manajemen Unit (HCVMA)		Lansekap Area of interest	
	Luas (Ha)	%	Luas (Ha)	%
Alur S. Semi	0.01	0.00	0.12	0.00
S. Langkap	0.03	0.00	3.43	0.03
Alur S. Beliti 2	0.03	0.00	0.20	0.00
S. Pecungan	0.04	0.00	0.34	0.00
Alur S. Beliti 4	0.05	0.00	0.19	0.00
Alur Cabang S. Semi	0.05	0.00	0.06	0.00
Alur S. Peujeungan	0.06	0.00	0.06	0.00
Alur S. Belua	0.06	0.00	0.06	0.00
Alur S. Kepayang 1	0.07	0.00	0.07	0.00
Alur S. Ahe 3	0.08	0.00	0.08	0.00
Alur S. Ahe 1	0.08	0.00	0.08	0.00
Alur S. Beliti 1	0.08	0.00	0.11	0.00
Alur Cabang S. Beliti 2	0.09	0.00	0.09	0.00
Alur S. Kepayang 4	0.09	0.00	0.15	0.00
Alur Cabang S. Beliti 1	0.11	0.00	0.11	0.00
Alur S. Kepayang 3	0.11	0.00	0.13	0.00
Alur Cabang S. Kepayang	0.11	0.00	0.25	0.00
Alur S. Kepayang 5	0.12	0.00	0.13	0.00
Alur S. Beliti 5	0.13	0.00	0.13	0.00
Alur S. Beliti 3	0.13	0.00	0.13	0.00
Alur S. Beliti 7	0.13	0.00	0.13	0.00
Sempadan Alur S. Semi	0.13	0.00	1.21	0.01
Alur S. Kepayang 2	0.15	0.00	0.24	0.00
S. Mangus	0.18	0.01	0.18	0.00
Alur S. Ahe 2	0.18	0.01	0.18	0.00
S. Bekunai	0.20	0.01	0.20	0.00
S. Tayan	0.22	0.01	1.20	0.01
Sempadan Alur S. Beliti 2	0.32	0.01	2.00	0.02
Sempadan S. Pecungan	0.41	0.01	3.45	0.03
Sempadan S. Langkap	0.49	0.02	39.80	0.32
Sempadan Alur S. Beliti 4	0.51	0.02	1.88	0.02
Sempadan Alur Cabang S. Semi	0.53	0.02	0.64	0.01
S. Abang	0.53	0.02	1.28	0.01
Sempadan Alur S. Peujeungan	0.59	0.02	0.59	0.00
S. Ambai	0.60	0.02	0.89	0.01
Sempadan Alur S. Belua	0.61	0.02	0.61	0.00
Sempadan Alur S. Kepayang 1	0.67	0.02	0.67	0.01
S. Ahe	0.68	0.02	1.04	0.01
S. Layang	0.70	0.02	0.71	0.01

HCV 4	Manajemen Unit (HCVMA)		Lansekap Area of interest	
	Luas (Ha)	%	Luas (Ha)	%
S. Peujeungan	0.74	0.02	1.48	0.01
Sempadan Alur S. Ahe 3	0.79	0.03	0.79	0.01
Sempadan Alur S. Ahe 1	0.79	0.03	0.79	0.01
Sempadan Alur S. Beliti 1	0.80	0.03	1.12	0.01
Sempadan Alur Cabang S. Beliti 2	0.87	0.03	0.87	0.01
S. Kepyang	0.93	0.03	1.12	0.01
Sempadan Alur S. Kepyang 4	0.94	0.03	1.46	0.01
Sempadan S. Bekunai	1.00	0.03	1.00	0.01
Sempadan Alur S. Kepyang 3	1.07	0.03	1.33	0.01
Sempadan Alur Cabang S. Beliti 1	1.07	0.03	1.07	0.01
Sempadan Alur Cabang S. Kepyang	1.12	0.04	2.46	0.02
Sempadan Alur S. Kepyang 5	1.16	0.04	1.32	0.01
Sempadan Alur S. Beliti 5	1.26	0.04	1.26	0.01
Sempadan S. Tayan	1.28	0.04	7.79	0.06
Sempadan Alur S. Beliti 3	1.29	0.04	1.29	0.01
Sempadan Alur S. Beliti 7	1.29	0.04	1.29	0.01
S. Belua	1.35	0.04	6.90	0.06
Sempadan Alur S. Kepyang 2	1.45	0.05	2.36	0.02
Sempadan S. Mangus	1.60	0.05	1.60	0.01
Sempadan Alur S. Ahe 2	1.80	0.06	1.80	0.01
S. Semi	2.56	0.08	10.16	0.08
Sempadan S. Abang	3.30	0.11	8.21	0.07
Sempadan S. Ambai	3.76	0.12	5.72	0.05
Sempadan S. Ahe	4.31	0.14	6.72	0.05
Sempadan S. Layang	4.45	0.14	4.66	0.04
S. Kati	4.52	0.15	20.35	0.16
Sempadan S. Peujeungan	4.65	0.15	9.45	0.08
Sempadan S. Kepyang	5.89	0.19	7.19	0.06
Sempadan Mata Air	8.37	0.27	8.37	0.07
Sempadan S. Kati	17.34	0.56	93.02	0.75
Sempadan S. Belua	29.64	0.96	151.08	1.22
Sempadan S. Semi	35.35	1.14	163.39	1.32
S. Beliti	93.37	3.02	154.00	1.24
Sempadan S. Beliti	444.79	14.39	716.83	5.79
Alur S. Beliti 6	0.10	0.00	0.10	0.00
Sempadan Alur S. Beliti 6	0.99	0.03	0.99	0.01
Aek Butal		0.00	0.27	0.00
Alur S. Beliti		0.00	0.47	0.00
Alur S. Beliti 8		0.00	0.14	0.00
Alur S. Betung		0.00	0.41	0.00
Alur S. Peujeungan 2		0.00	0.12	0.00
S. Betung		0.00	10.58	0.09
S. Hiang		0.00	0.06	0.00
S. Kering		0.00	0.11	0.00

HCV 4	Manajemen Unit (HCVMA)		Lansekap Area of interest	
	Luas (Ha)	%	Luas (Ha)	%
S. Lebong Koneng		0.00	0.08	0.00
S. Nego		0.00	0.32	0.00
S. Tengah		0.00	8.91	0.07
Sempadan Alur S. Beliti		0.00	4.66	0.04
Sempadan Aek Butal		0.00	2.75	0.02
Sempadan Alur S. Beliti 8		0.00	1.40	0.01
Sempadan Alur S. Betung		0.00	4.05	0.03
Sempadan Alur S. Peujeungan 2		0.00	1.20	0.01
Sempadan S. Betung		0.00	84.55	0.68
Sempadan S. Hiang		0.00	0.64	0.01
Sempadan S. Kering		0.00	1.11	0.01
Sempadan S. Lebong Koneng		0.00	0.76	0.01
Sempadan S. Nego		0.00	3.23	0.03
Sempadan S. Tengah		0.00	46.88	0.38
Total HCV 4:	695.34	22.50	1,634.85	13.20
Location of Management Unit / Landscape:	3,090.90		12,380.90	

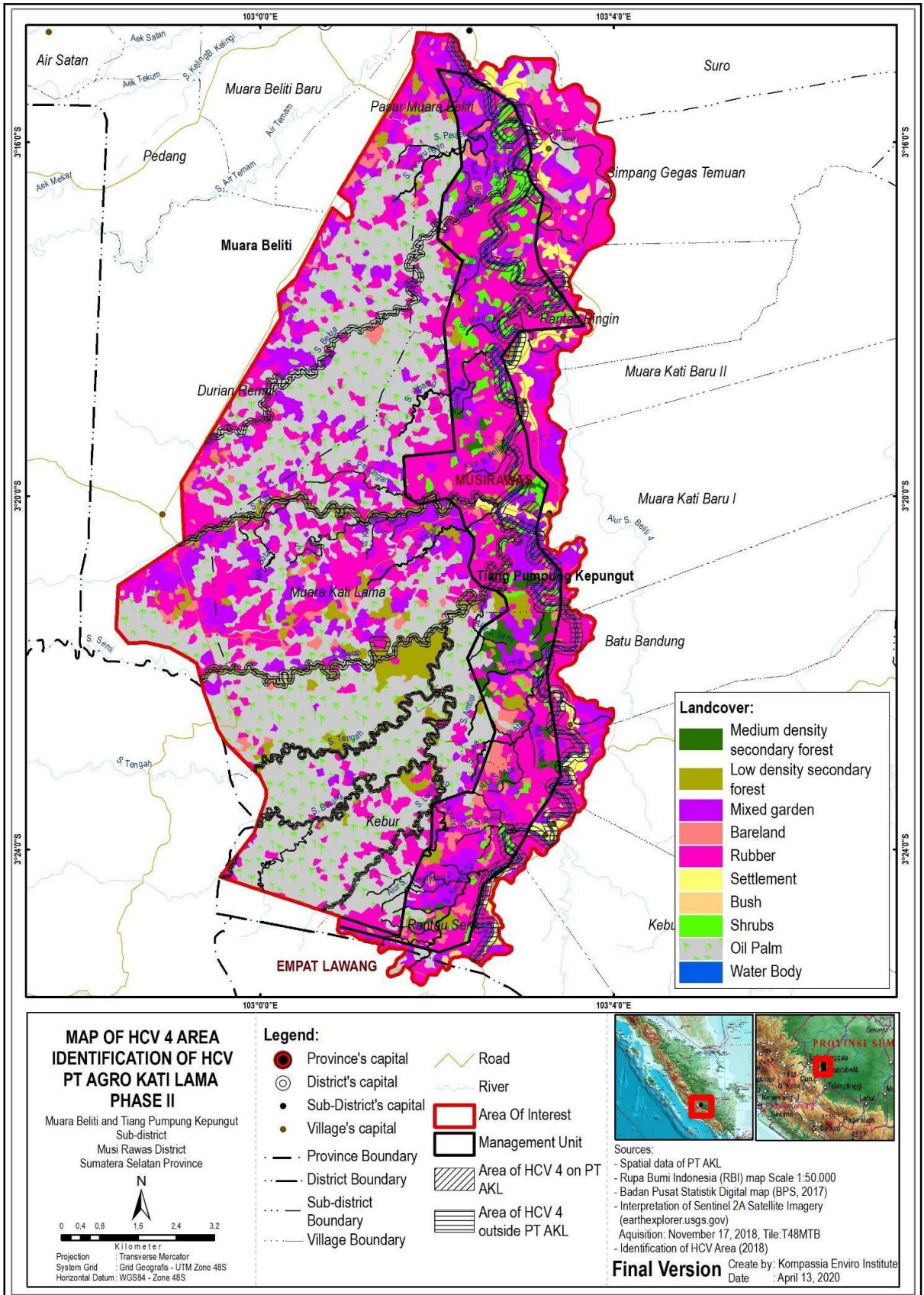


Figure 14. HCV 4 identified in PT AKL II Areas and Landscape of Interest Areas

5) HCV 5 – Community Needs

In the PT AKL II location permit area there are sites and resources that are fundamental to meeting the basic needs of local communities or indigenous peoples (for example as sources of livelihood, protein and water), which are identified through engagement with the communities or indigenous peoples. Based on the results of the FGD, interviews and discussions with several resource persons in the villages around the assessment area, some local communities are no longer dependent on forest resources to meet their daily needs. However, there are still members of the community in the surrounding villages who use rivers, streams and channels as areas for fishing as a source of family protein. River and tributary areas within the location permit area and in the AoI are important fishing grounds for local villagers. Meanwhile, river channels with a width of <2 m are not used for fishing because the water bodies are not permanent, so that fish sources are not available. Several informants from surrounding villages stated that the river and tributary areas are places for fishing, where in each river there is a hole (*lubuk*) where fish gather and lay their eggs. These holes are known by the community and include: (1) Lubuk Besar on the Beliti River, at Lubuk Besar Village, (2) Lubuk Kasai at the mouth of the Abang River (3) Lubuk Ranyah and (4) Lubuk Nyate at the mouth of the Jangkang River, Desa Rantau Bingin, (5) Lubuk Gong at the mouth of the Payang River, (6) Lubuk Lebong Koneng at the mouth of the Pecungan River and (7) Lubuk Kecil at the Tayan River estuary, at Muara Kati Lama Village, (8) Lubuk Tanjung, (9) Lubuk Kabu and (10) Lubuk Gee. Most of the needs for water consumption water, sanitation and toilets are obtained directly from dug wells, some of which are piped using a machine pump. River water is used in the event of a long dry season, because some of the dug wells are dry and people are forced to take water directly from certain rivers. The tradition of bathing in the river is still a habit of some people, women bathing in the river while washing clothes. In Muara Kati Baru I Village, there is a spring that is used by the villagers for drinking water so that it is designated as HCV 5.

A summary of the presence of HCV 5 is presented in **Table 27**.

Table 27. Summary of HCV 5 presence in the PT AKL II location permit

Qualified Situations as HCV 5	Indications
Hunting and trapping grounds (for game, skin and furs)	Absent There are no people who hunt and gather in areas where the majority are cultivated areas. Hunting that is still carried out by a small part of the community is only opportunistic or a hobby. There is no special place for hunting.
NTFPs such as nuts, berries, mushrooms medicinal plants, rattan	Absent Non-timber forest products (PHBK) can be said to have disappeared
Fuel for household cooking, lighting and heating	Absent Energy for family lighting is generally obtained from national electricity grid. Society does not need heating. Most of the people have used government's subsidy gas fuel
Fish (as essential sources of proteins) and other freshwater species relied on by local communities	Present Fish is one of the main protein sources which is quite often consumed besides poultry and beef. Some residents also use their spare time for fishing as a hobby and for additional family consumption.

Building materials (poles, thatching, timber)	Absent Most of the building materials are made from modern building materials such as: cement, iron, mild steel, aluminium, glass, roof tiles and zinc. Building materials are quite easy to buy at the local market
Fodder for livestock and seasonal grazing	Absent There are no seasonal grazing activities, and animal feeds such as grass is obtained from buying or collected from around the yards or oil palm plantations.
Water sources necessary for drinking water and sanitation	Present Family drinking water is generally obtained from wells (dug / drilled) and bottled water, each house has a bathroom for bathing, washing and latrines. However, there are still some Sakai residents who still use river water for toilet purposes
Items which are bartered in exchange for other essential goods, or sold for cash which is then used to buy essentials including medicine or clothes, or to pay for school fees	Absent Oil palm FFB is the community's leading commodity to earn money for buying essential goods and other necessities. In addition, rubber sap still can be sold to add the income.

The presence of HCV 5 areas is presented in **Table 28** and the map of the presence of HCV 5 and HCV 5 management maps in **Figure 15**.

Table 28. The presence and area of HCV 5 in the Management Unit and in the AoI PT AKL II landscape

HCV 5	Manajemen Unit (HCVMA)		Landscape Area of interest	
	Ha	%	Ha	%
Mata Air	0.003	0.00	0.003	0.00
S. Abang	0.53	0.02	1.28	0.01
S. Ahe	0.66	0.02	0.66	0.01
S. Ambai	0.54	0.02	0.54	0.00
S. Bekunai	0.20	0.01	0.20	0.00
S. Beliti	93.37	3.02	154.00	1.24
S. Belua	1.35	0.04	6.90	0.06
S. Kati	4.52	0.15	20.35	0.16
S. Kepayang	0.93	0.03	1.12	0.01
S. Langkap	0.03	0.00	3.43	0.03
S. Layang	0.70	0.02	0.71	0.01
S. Mangus	0.18	0.01	0.18	0.00
S. Peujeungan	0.64	0.02	0.49	0.01
S. Semi	2.56	0.08	10.16	0.08
S. Tayan	0.22	0.01	1.20	0.01
S. Betung	-	-	10.58	0.09
S. Tengah	-	-	8.91	0.07
Total HCV 5:	106.42	3.44	220.87	1.79
Location of Management Unit / Landscape:	3,090.90		12,380.90	

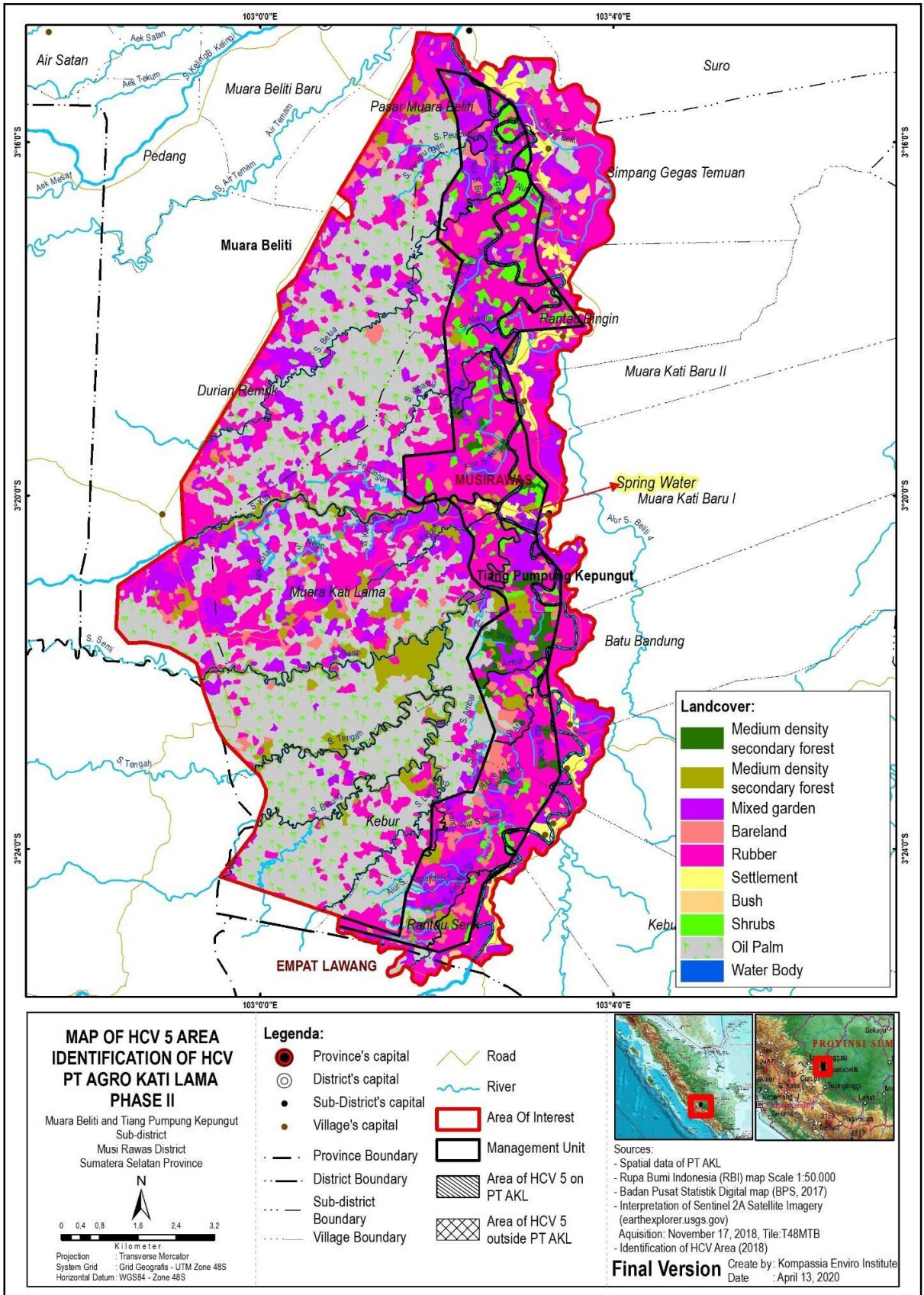


Figure 15. HCV 5 identified in PT AKL II Areas and Landscape of Interest Areas

6) HCV 6 – Cultural Values

Identification of the presence of HCV 6 is based on the *Common Guidance for the Identification of High Conservation Values* (Brown et al., 2017) and to further explore the context of villages still using the guidelines' Consortium Revised HCV Toolkit Indonesia, *Identification Guide High Conservation Value Areas in Indonesia* (Tropenbos International Indonesia Program, 2008) In the PT AKL II area, there are two situations that qualify as HCV 6, namely: 1) Sites with recognised important historical and cultural values, even if they are not protected by legislation, whereas in the vicinity of the location permit area there are still sites that have historical and cultural traditions of high value. They are still visited, cared for and have become symbols of local identity; 2) Religious or sacred sites, burial grounds or sites are no longer used as the location for holding traditional ceremonies, but are still visited by relatives, families and members of the community, as they are still considered to have an important role for local or customary communities. The names of the places, villages and descriptions of the sacred places are presented in **Table 29**.

Table 29. Names of places, villages and descriptions of sacred places around the PT AKL II areas

Village	Place Name	Area	Information
Desa Batu Bandung	Rame Forest	The forest is owned by former Imperial Family/Clan figures. There are timber trees and fruit trees, and some areas have been used as fields.	For a long time, the ownership of the family was maintained and managed, even though it was minimal and was used by the community.
	Imam Pagar Banyu Tomb	The surrounding community farms/ fields are relatively close to settlements.	Tomb of the high priest in the Muara Beliti area and Tiang Pumpung Kepungut (ex-Sindang Kelingi clan)
	Stone Chair	Surrounded by the community farms /field (near the tomb of Imam Pagar Banyu)	The former place for meditation also used by Imam Pagar Banyu
Desa Rantau Bingin	Muara Belua Sacred Tomb	Surrounded by the community farms /fields near the Beliti river	The grave of a respected community figure, in the Tiang Pumpung area of Kepungut
Desa Muara Kati Lama	Penyege Batu Tomb	Surrounded by the community farms /fields, are relatively close to the settlement on the bank of the Beliti River which is opposite the site of the Tomb of Pangeran Haji Mantap	The Sultanate's family grave is still being visited and used.
	Putri Darah Putih Tomb		The tomb of the sultan's daughter, which is still visited and adjacent to the Penyege Batu Tomb, is marked with a banyan tree.
Desa Muara Kati Baru I	Makam Pangeran Haji Mantap Tomb	Surrounded by the community's farms /fields, are relatively close to the settlement on the bank of the Beliti River which is opposite the location of the Putri Darah Putih Tomb	The tomb of the Sultanate and the Imam in the Muara Beliti area which is still being visited and cared for
	Gending Tomb		The Sultanate's family grave is still being visited and used.
Desa Muara Kati Batu II	Tombak Batu Angin Tomb	Surrounded by the community farms s/fields, is relatively close to the settlement on the bank of the Beliti River	Sultanate family graves that are still visited and cared for (relatively close to Gending's grave but in a neighboring village)
Desa Durian Remuk, Kec. Muara Beliti	Sacred Taruding	Surrounded by the community farms /fields, are relatively close to residential areas (included in the Durian Remuk public grave	The graves of respected community leaders are still visited and cared for and used for public burials.
	Public Graveyard Durian Remuk		

Village	Place Name	Area	Information
		area is surrounding and within of PT AKL I & II)	

Indications that will meet the presence of HCV 6 are presented in **Table 30**.

Table 30. Indications of the presence of HCV 6 in the PT AKL II location permit area

Qualified Situations as HCV 6	Indications
Sites recognised as having high cultural value within national policy and legislation	Absent there are no sites recognized by national policies and legislation that have high cultural value.
Sites with official designation by national government and/or an international agency like UNESCO	Absent there is only has one site listed by UNESCO in the tentative list in Sumatra island. The site is called "Kerinci Seblat National Park". The location is very far from the company location permit ⁸⁾
Sites with recognised and important historical or cultural values, even if they remain unprotected by legislation	Present there are sites that have historically and cultural traditions of high value that are still visited, cared for and become symbols of local identity.
Religious or sacred sites, burial grounds or sites at which traditional ceremonies take place that have importance to local or indigenous people	Present The burial ground or site is no longer used as a location for holding traditional ceremonies, but is still visited by relatives, families and some communities and is still considered to have an important role for local or customary communities.
Plant or animal resources with totemic values or used in traditional ceremonies.	Absent There are no traditions / rituals from the ancestors related to traditional ceremonies. The villages in the surrounding of PT AKL II have all adhered to Islam and so all traditional ritual traditions are adjusted to the Islamic religious law.

The presence and area of HCV 6 area is presented in **Table 31** and the map of the presence of HCV 6 in the Management Unit and PT AKL II's AoI landscape is presented in **Figure 16**.

Table 31. Presence and area of HCV 6 Management Unit and in the PT AKL II landscape area

HCV 6	Manajemen Unit (HCVMA)		Lanskap Area of interest	
	Ha *)	%	Ha *)	%
Batu Kursi	0.0004	0.00	0.0004	0.00
Hutan Rame	1.4945	0.05	1.4945	0.01
Makam Gending	0.0303	0.00	0.0303	0.00
Makam Imam Pagar Banyu	0.0266	0.00	0.0266	0.00
Makam Keramat Muara Belua	0.1249	0.00	0.1249	0.00
Makam Pangeran Haji Mantap	0.0061	0.00	0.0061	0.00
Makam Penyege Batu	0.0042	0.00	0.0042	0.00
Makam Putri Darah Putih	0.0013	0.00	0.0013	0.00
Makam Tombak Batu Angin	0.0151	0.00	0.0151	0.00
Keramat Taruding	-	-	1.0065	0.01
Kuburan Umum Durian Remuk	-	-	1.0065	0.01
Total HCV 6:	1.70	0.06	3.72	0.03
Location of Management Unit / Lanscape:	3,090.90		12,380.90	

Note: *) HCV 6 areas included buffer area

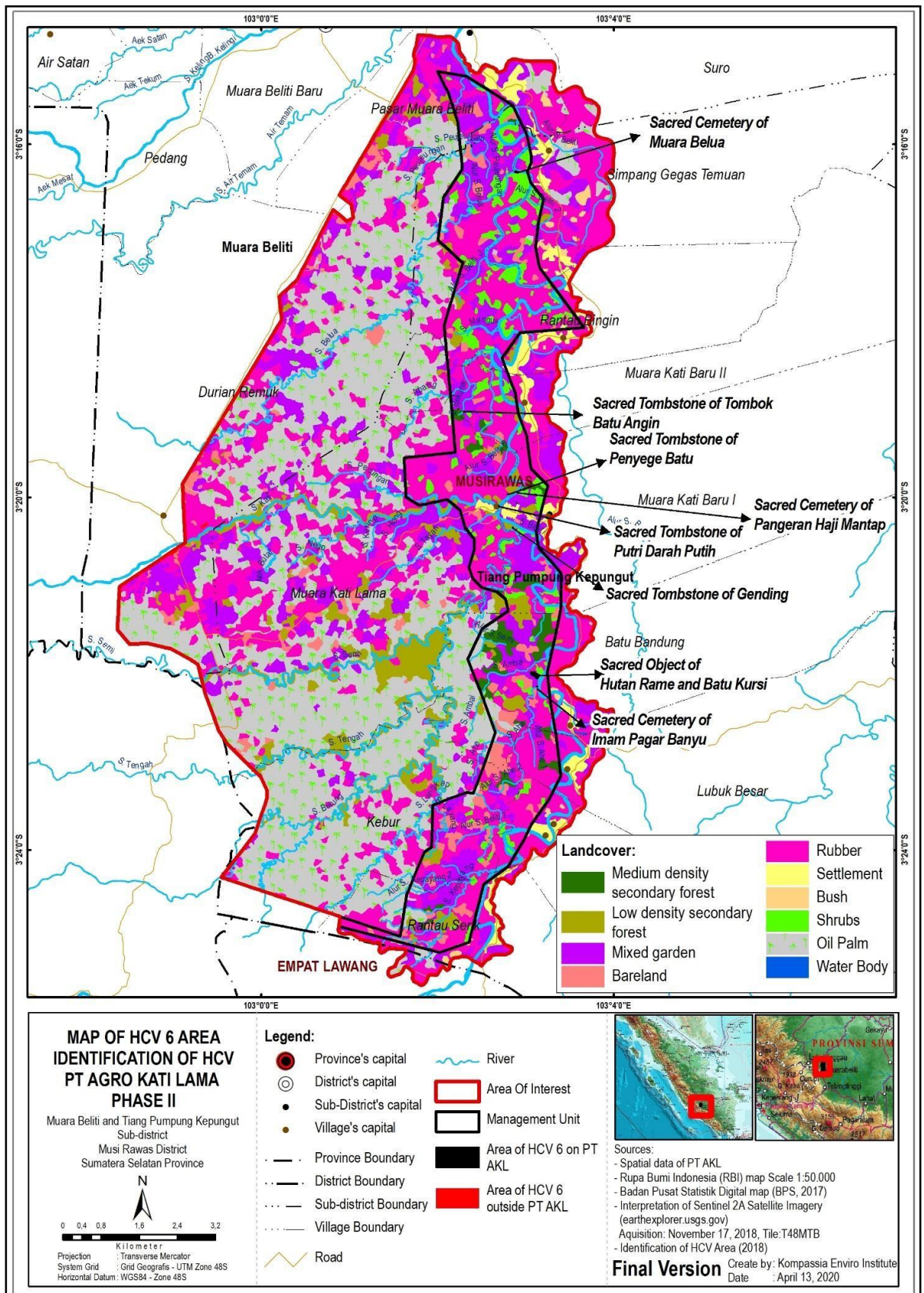


Figure 16. HCV 6 identified in PT AKL II Areas and Landscape of Interest Areas

3.2.4. HCV Summary

In the PT AKL II location permit area, there are four HCV categories, namely HCV 1, HCV 4, HCV 5 and HCV 6. Important elements of HCV 1 identified are two species of endangered species (EN) namely langur simpai (*Presbytis melalophos fluviatilis*) and siamang (*Symphalangus syndactylus*); and two other species with VU status, namely the Sumatran slow loris (*Nycticebus coucang*) and the monkey (*Macaca nemestrina*). None of the flora and fauna recorded has CR status. Important elements of HCV 4 are the management of springs, rivers and river boundaries, preventing erosion and fires. An important element of HCV 5 is a river for drinking water at certain times, for toilets and as a source of fishing grounds. Important elements of HCV 6 are important ancient sites and tombs that are still being visited. Information on the location and area of HCV areas in the PT AKL II AoI location and landscape permit area is presented in **Table 32** and the HCV distribution map is presented in **Figure 17**.

Table 32. Summary of HCV areas under AoI management unit and landscape PT AKL II's area

Conservation Number	Management Unit (HCVMA)		Management Area/AoI	
	Ha	%	Ha	Ha
HCV 1	477.03	15.43	791.05	6.39
HCV 2	-	-	-	-
HCV 3	-	-	-	-
HCV 4	695.34	22.50	1,634.85	13.20
HCV 5	106.42	3.44	220.87	1.79
HCV 6	1.70	0.06	3.72	0.03
Total HCV*):	860.15	27.83	1,881.07	15.19
Total Manajemen Unit	3,090.90		-	-
Total Manajemen Area	-	-	12,380.90	

Note: *) Some HCVs overlap with others - HCV 1, HCV 4 and HCV HCVT 5

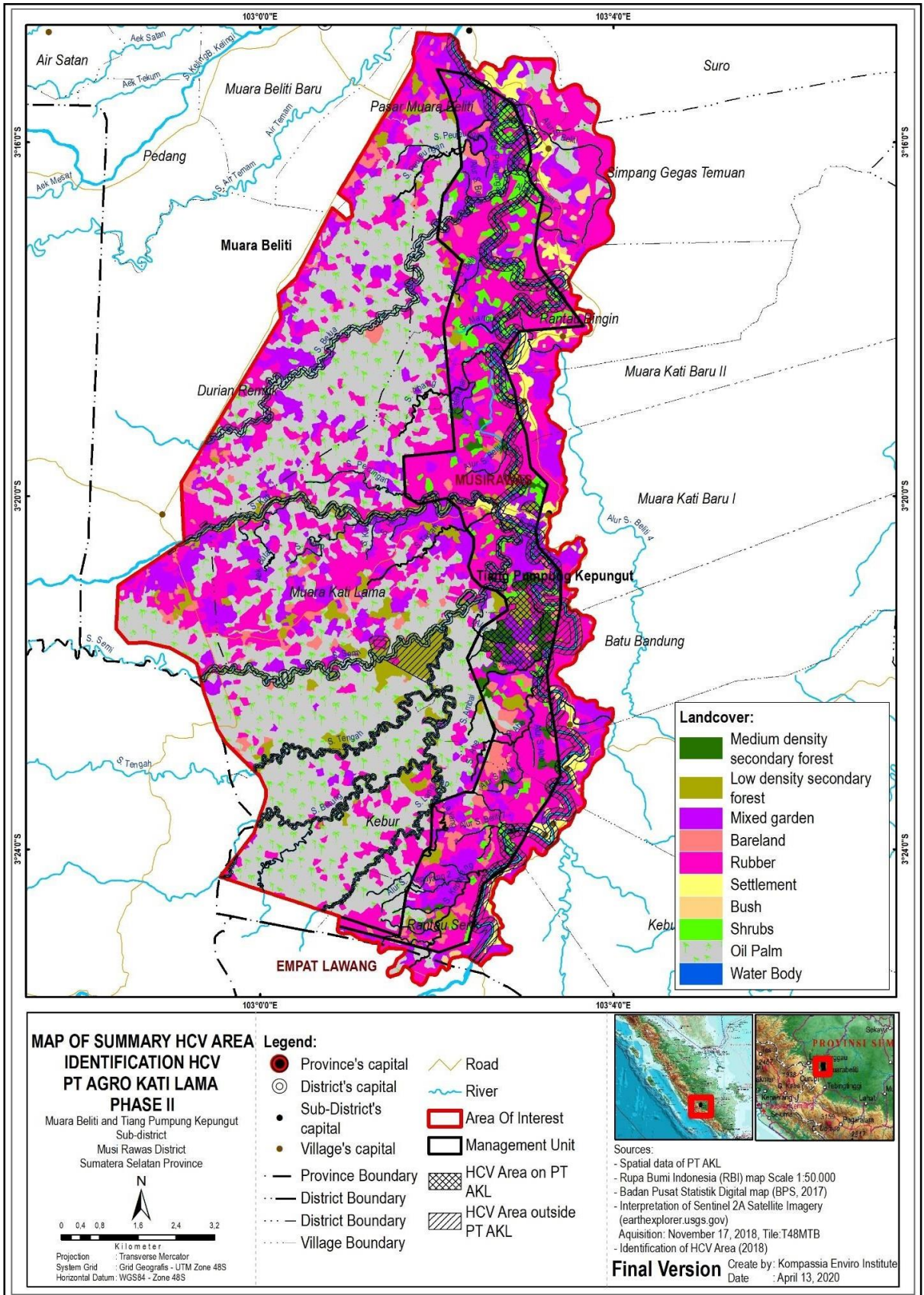


Figure 17. HCVs identified in PT AKL II Areas and Landscape of Interest Areas

3.2.5. Public Consultation

Final consultations and interviews were conducted by inviting representatives from the sub-districts/villages, districts, Government agencies and related institutions to present the results of the final analysis with the aim of obtaining final input. The final public consultation was held on July 10, 2019, the summary notes of which are presented in **Table 33**.

Table 33. Summary of Final Consultations with PT AKL II Key Stakeholders

No.	Name	Position / role & entity	Main concerns and recommendations	Response
1	Patrisius Sapta Arito,	Service staff, Plantation Service, Musi Rawas Regency	<ul style="list-style-type: none"> • It is hoped that the recommendation from this HCV Identification will become a reference in the RPL & RKL (Environmental Management Plan and Environmental Monitoring Plan), so that the activities are integrated from the two environmental studies. • It is hoped that the delineation before opening involves the community/ village team and the GRTT/land compensation process will be carried out properly, transparently, without problems, and be well documented. • Regarding river proportions, the determination must be careful because for the people of Muara Beliti and Tiang Pumpung Kepungut, the residential areas of their villages are on the banks of the river. Based on the law, how many metres are delineated between the village and river boundaries, including village development plans and toll roads. If there are residents who sell their land, which is still within the delineation limit, please do not accept it. • Related conservation area scenario: (a) What will be done by the community along the riverbank? (b) Land designated as HCV and community land that does not want to be in GRTT, can the additions be realised? 	Sigit Budhi Setyanto's answer: Our recommendations for the points: (a) PT AKL can collaborate with related agencies, sub-districts and villages to conduct socialisation and provide information about the importance of rivers and the risk of waste. For internals, it is expected that at every briefing and every relevant meeting, both internal and external, real action will be taken. Encourage external village parties to make 'village rules' or 'village laws' on the use and maintenance of rivers and waste management. In addition, they need to collaborate by encouraging the formation of a team to monitor commensurate areas and river flows. Also together, monitor regularly with adequate documentation. Point (b) This is in the authority of PT AKL, but at least the Company has calculated, and already has a location permit next to it, which has started to produce.
2	Andi Permana,	Service staff,	<ul style="list-style-type: none"> • He was informed that the Palembang - Bengkulu toll road 	Sigit Budhi Setyanto's answer:

No.	Name	Position / role & entity	Main concerns and recommendations	Response
		Office of Investment and Integrated Services. Musi Rawas District	<p>will cross several villages, including: Lubuk Besar Village about 5.2 km, Batu Bandung Village about 1.45 km, Kebur Village about 560 km, Muara Kati Lama Village about 4.1 km and Durian Remuk Village about 3.25 km. For this reason, it is hoped that the Company will coordinate with the Regional Government to obtain certainty of its location so that later the GRIT / compensation process does not overlap.</p> <ul style="list-style-type: none"> • Currently the price of FFB is very cheap, the hope is that by completing the AMDAL, HCV, SIA and FPIC studies for RSPO and ISPO certification and others, PT AKL will be able to increase prices and the surrounding villages will be able to prosper. It is hoped that PT AKL in addition to collaborating in partnerships in plasma plantations also plans for partnerships with community plantations, which are now starting to bloom related to government programs in the Partnership for Community Oil Rejuvenation (PSR). • Will there be M&E from external auditors related to all of this? 	<p>HCV assessment / identification is an initial process that will later become part of operations as well as monitoring and evaluation by the Company. As a member of the RSPO and ISPO, obligations will be audited by external parties regularly, If there is a lack of activity, it will be corrected and if there is a violation the certificate will be revoked. This HCV Identification Document also identifies environmental and social conditions outside the permit area. This identification report will be uploaded on the HCVRN website (the agency that monitors HCV reports) and can be accessed by all interested people.</p>
3	Darhan	Village Head, Muara Kati Lama Village	<ul style="list-style-type: none"> • Regarding the river-compatible rehabilitation plan, it is hoped that trees will be able to provide economic benefits for the community, for example petai, bamboo or other crops of economic value. Regarding the equivalent of a river which is also a residential area for the community, please also pay attention at the Company so that the commensurate environment becomes more sustainable. 	<ul style="list-style-type: none"> • Sigit Budhi Setyanto's answer: Agree, it is hoped that the village and PT AKL can bridge the wishes of the community. With community involvement, it is hoped that there will be a role to play in caring for, developing, and monitoring the condition of the river and river. I agree with the use of rattan, the

No.	Name	Position / role & entity	Main concerns and recommendations	Response
			<ul style="list-style-type: none"> Along the riverbank there are quite a lot of rattan resources that have not been managed and utilised. PT AKL can help use them so that there is additional income for the families and an increase in the creativity of the surrounding villagers. 	<p>company tries to facilitate it.</p> <ul style="list-style-type: none"> Pak Gultom's answer: Record it and consult PT AKL Management.
4	Hamli,	Village head, Lubuk Besar Village	<ul style="list-style-type: none"> The villages affected by the planned main access to toll roads and toll exits are predicted to include Lebuk Besar Village, Batu Bandung Village, Kebur Village, Muara Kati Lama Village and Durian Remuk Village. PT AKL hopes to immediately take the initiative to find out precisely and quickly, because in the history of the village there was once a family and a marriage, and land ownership was not limited to village boundaries, so this needs a quick response. Include me to support the plan of the Head of the Muara Kali Lama Village. To be honest with the falling price of rubber almost every family lacks income. 	Thank you for your input which is noted by the Company.
5	Nazaruddin,	Village Head, Rantau Bingin Village	<ul style="list-style-type: none"> Please pay attention, PT AKL, based on previous experience during the land clearing process, involving the land owners and neighbours and the village team. During land clearing, even though the land map is on the GPS, sometimes in the field neighbouring land is still entered. This needs to be taken into account, because the business is long-term and sometimes it takes a long time - even though it is resolved - because usually the neighbours of the land are still bound by a family or a community. 	Thank you for your input which is noted by the Company.
8	Mrs Yeni Marcia and Mr Mangaraun L. Lumban Gaol	DLH staff, Department of Environment &	<ul style="list-style-type: none"> At the provincial level, South Sumatra is an area that has the potential for a high risk of 	Thank you for your input which is noted by the Company.

No.	Name	Position / role & entity	Main concerns and recommendations	Response
	Methods: Sharing, Consultation and Interviews.	Land, Prov. South Sumatra	<p>getting landlocked. In the dry season, Musi Rawas District also often fires, usually from outside plantations or in community plantation areas which sometimes still burn.</p> <ul style="list-style-type: none"> If from inside the plantation it is usually the result of negligence from workers who during the break, smoke and throw butts away carelessly, this needs serious attention from the within Company. Make sure that every morning meeting/muster is always buzzing about the potential for fire. 	

3.3. Soil and Topography assessment finding

3.3.1. Topography and slope

Based on the SRTM Digital Elevation Model (DEM) image with a spatial resolution of 30 m, the topography of the PT AKL II location permit area is between 0 - 85 AMSL. Information on the physiographic elevation of the land in the PT AKL II location permit area is presented in **Table 34** and the physiographic map of the land in the PT AKL II location permit area is presented in **Figure 18**.

Table 34. Physiographic elevation of land in the PT AKL II's area

Fisiography	Manajemen Unit (MU)	
	Area (Ha)	%
25-30 mdpl	0.60	0.02
30-40 mdpl	60.06	1.94
40-50 mdpl	163.44	5.29
50-60 mdpl	811.35	26.25
60-70 mdpl	924.74	29.92
70-80 mdpl	522.93	16.92
80-90 mdpl	378.13	12.23
90-100 mdpl	199.81	6.46
100-110 mdpl	29.25	0.95
110-120 mdpl	0.59	0.02
120-130 mdpl	-	-
Grand Total:	3,090.90	

Based on the SRTM Digital Elevation Model (DEM) Image with a spatial resolution of 30 m, the slope class in the PT AKL II location permit area is dominated by 0-8% slope class, information on slope slopes in the PT AKL II location permit area is presented in **Table 35** and the slope map presented **Figures 19**

Table 35. Slopes in the PT AKL II's area

Slope (%)	Manajemen Unit (MU)	
	Area (Ha)	%
0-8 %	938.58	30.37
8-15 %	1,216.35	39.35
15-25 %	582.98	18.86
25-45 %	272.30	8.81
>45 %	80.69	2.61
Grand Total	3,090.90	

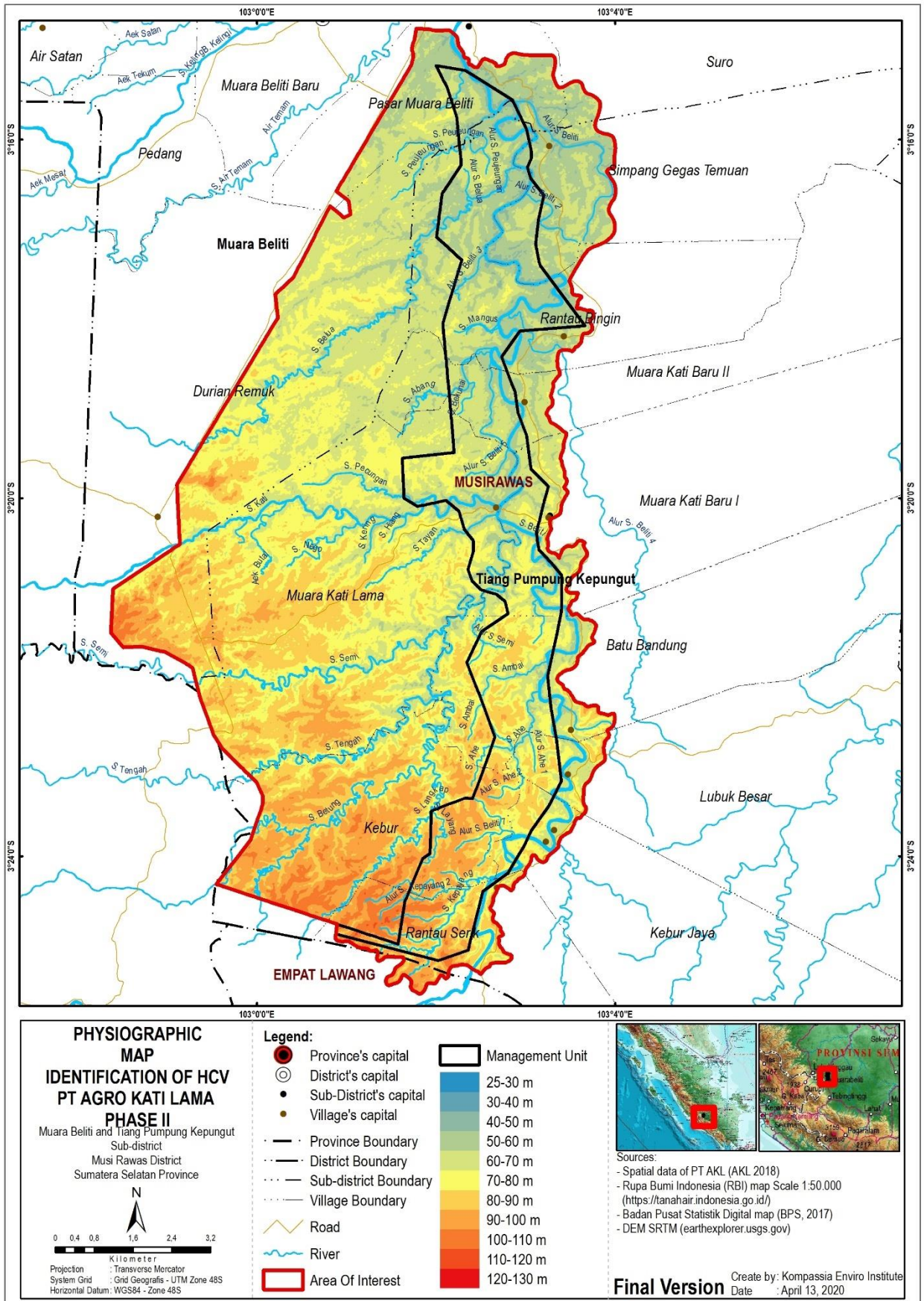


Figure 18. Physiographic map of land in the PT AKL II's area

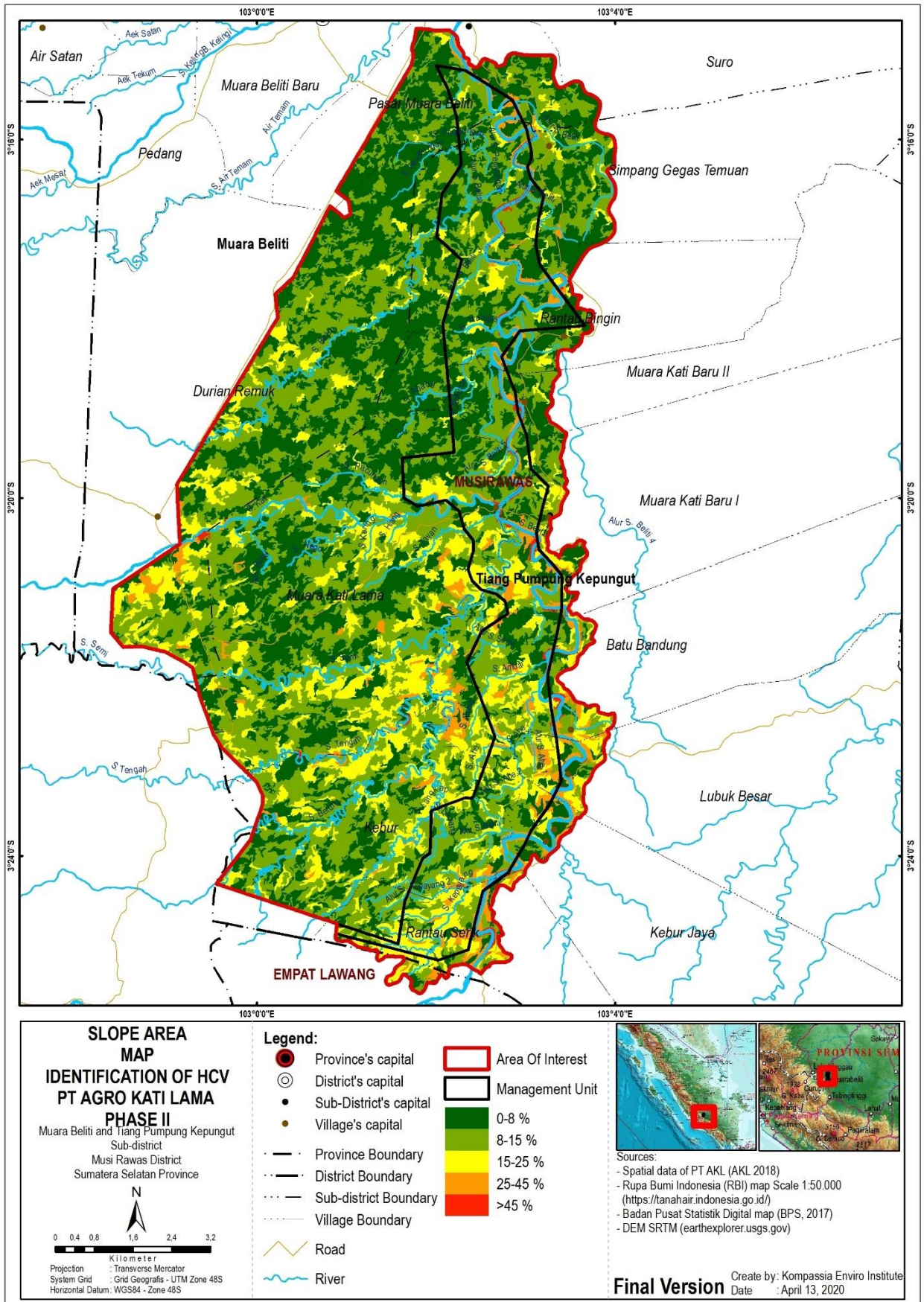


Figure 19. Map of Land Slope in the PT AKL II's area.

3.3.2. Soil Survey

Based on the nature and characteristics data obtained from direct observation in the field, the soils in the survey area are classified into several types of soil using the Soil Taxonomy System (Soil Survey Staff 2014) as shown in **Table 36**.

Table 36. Land Units in the Survey Area Based on Category Level according to the Soil Taxonomy Classification System (Soil Survey Staff 2014)

Soil orde	Type of soil (Great Group)	Soil – Sub group	Type of soil
Entisol	Udorthents	Typic Udorthents	Lithosol
Inceptisol	Dystrudepts	Typic Dystrudepts	Kambisol Distrik
		Aquic Dystrudepts	Kambisol Gleik
		Oxic Dystrudepts	Kambisol Oksik

In the AKL II area, 10 Land Map Units (SPT) can be distinguished as shown in **Table 37** and the spatial distribution is presented in **Figure 20**.

Table 37. Soil Map Units (SPT) in the PT Agro Kati Lama II Survey Area

SPT	Tanah		Relief		Bahan Induk	Luas	
	Dominan	Lainnya	Bentuk Wilayah	Lereng (%)		Ha	%
1	Typic Dystrudepts	Aquic Dystrudepts, Typic Udorthents, Oxic Dystrudepts	Datar/Flat	0 - 3	Tuff dan bahan piroklastik andesitik	88.51	2.82
2	Typic Dystrudepts	Aquic Dystrudepts, Typic Udorthents, Oxic Dystrudepts	Berombak/Rolling	3 - 8		512.98	16.35
3	Typic Dystrudepts	Aquic Dystrudepts, Typic Udorthents, Oxic Dystrudepts	Bergelombang/Undulating	8 - 15		1009.73	32.19
4	Typic Dystrudepts	Aquic Dystrudepts, Typic Udorthents, Oxic Dystrudepts	Berbukit kecil/Hillocky	15 - 30		1212.33	38.65
5	Typic Dystrudepts	Aquic Dystrudepts, Typic Udorthents, Oxic Dystrudepts	Berbukit/Hilly	30 - 45		68.60	2.19
Total						2892.16	92.20
6	Oxic Dystrudepts	Typic Dystrudepts, Aquic Dystrudepts	Datar/Flat	0 - 3	Tuff dan bahan piroklastik andesitik - basaltik	10.53	0.34
7	Oxic Dystrudepts	Typic Dystrudepts, Aquic Dystrudepts	Berombak/Rolling	3 - 8		19.56	0.62
8	Oxic Dystrudepts	Typic Dystrudepts, Aquic Dystrudepts	Bergelombang/Undulating	8 - 15		91.94	2.93
9	Oxic Dystrudepts	Typic Dystrudepts, Aquic Dystrudepts	Berbukit kecil/Hillocky	15 - 30		104.51	3.33
10	Oxic Dystrudepts	Typic Dystrudepts, Aquic Dystrudepts	Berbukit/Hilly	30 - 45		18.28	0.58
Total						244.81	7.80
Grand Total						3136.97	100.00

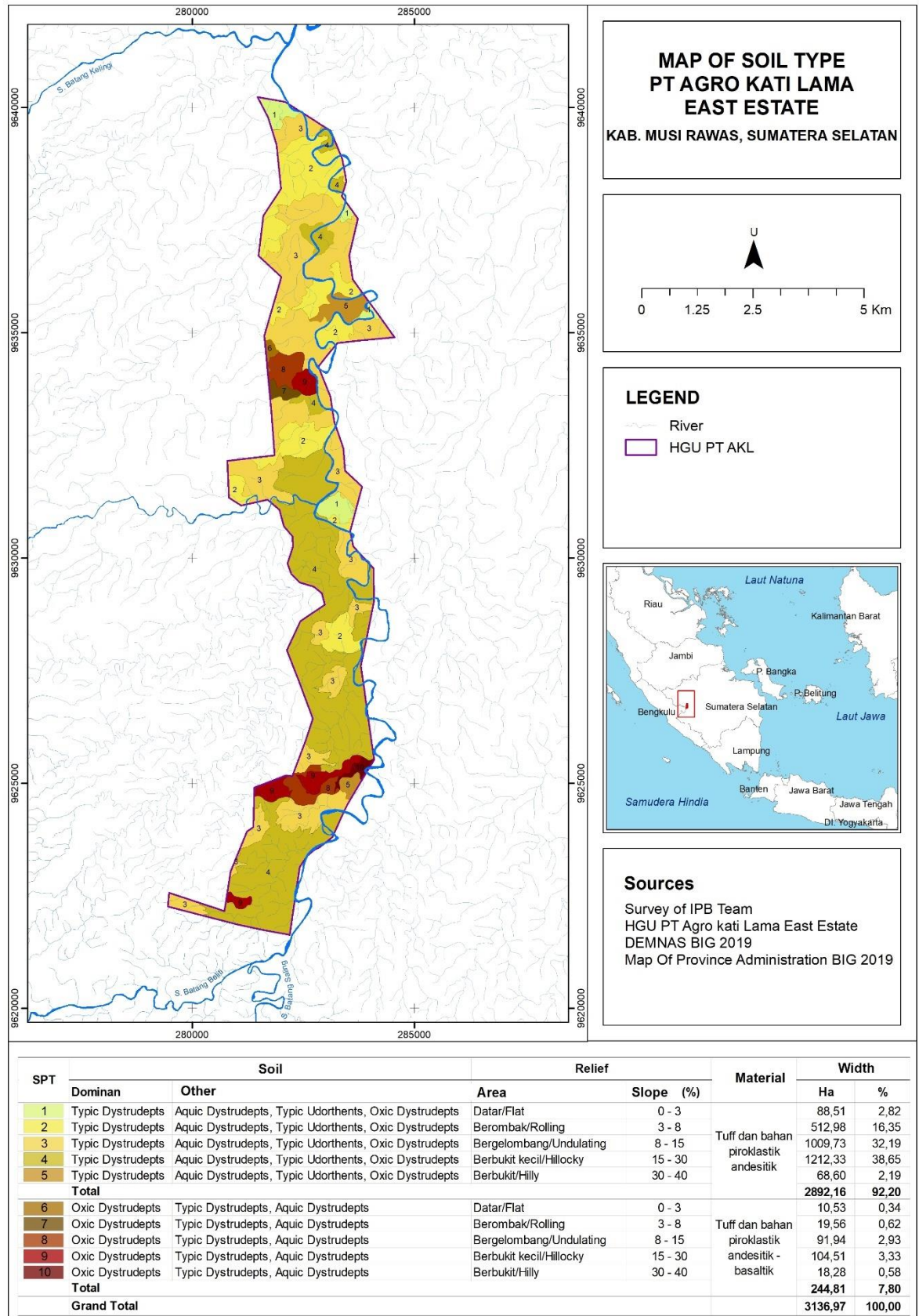


Figure 20. Map of Land Map Units (SPT) in the PT Agro Kati Lama II Survey Area

Land Map Unit 1 (SPT 1)

This SPT is mainly dominated by Macam Soil Typic Dystrudepts, which developed from tuff parent material and andesitic pyroclastic material. Other types of soil found were Aquic Dystrudepts and Typic Udorthents, which also developed from tuff and andesitic pyroclastic and Oxic Dystrudepts, which were formed from tuff parent material and andesitic pyroclastic - balsaltic. The shape of a flat area with a slope of 0 - 3% and a total area of about 88.51 ha or 2.82% of the total survey area.

Land Map Unit 2 (SPT 2)

This SPT is mainly dominated by Macam Soil Typic Dystrudepts, which developed from tuff parent material and andesitic pyroclastic material. Other types of soil found were Aquic Dystrudepts and Typic Udorthents, which also developed from tuff and andesitic pyroclastic and Oxic Dystrudepts, which were formed from tuff parent material and andesitic pyroclastic - balsaltic. The shape of the area is undulating with a slope of 3-8% and a total area of about 512.98 ha or 16.35% of the total survey area.

Land Map Unit 3 (SPT 3)

This SPT is mainly dominated by Macam Soil Typic Dystrudepts, which developed from tuff parent material and andesitic pyroclastic material. Other types of soil found were Aquic Dystrudepts and Typic Udorthents, which also developed from tuff and andesitic pyroclastic and Oxic Dystrudepts, which were formed from tuff parent material and andesitic pyroclastic - balsaltic. The shape of the area is rolling with a slope of 8 - 15% and a total area of about 1009.73 ha or 32.19% of the total survey area.

Land Map Unit 4 (SPT 4)

This SPT is mainly dominated by Macam Soil Typic Dystrudepts, which developed from tuff parent material and andesitic pyroclastic material. Other types of soil found were Aquic Dystrudepts and Typic Udorthents, which also developed from tuff and andesitic pyroclastic and Oxic Dystrudepts, which were formed from tuff parent material and andesitic pyroclastic - balsaltic. The shape of a small hilly area with a slope of 15-30% and a total area of about 1212.33 ha or 38.65% of the total survey area.

Land Map Unit 5 (SPT 5)

This SPT is mainly dominated by Macam Soil Typic Dystrudepts, which developed from tuff parent material and andesitic pyroclastic material. Other types of soil found were Aquic Dystrudepts and Typic Udorthents, which also developed from tuff and andesitic pyroclastic and Oxic Dystrudepts, which were formed from tuff parent material and andesitic pyroclastic - balsaltic. Hilly area with a slope of 30-40% and a total area of about 68.60 or 2.19% of the total survey area.

Land Map Unit 6 (SPT 6)

This SPT is dominated by Macam Tanah Oxic Dystrudepts, which is formed from tuff parent material and andesitic pyroclastic material - balsaltic. Other types of soil that may be encountered are Typic Dystrudepts, and Aquic Dystrudepts, which are formed from tuff parent materials and andesitic pyroclastic materials. The shape of a flat area with a slope of 0 - 3% and a total area of about 10.53 ha or 0.34% of the total survey area.

Land Map Unit 7 (SPT 7)

This SPT is dominated by Macam Tanah Oxic Dystrudepts, which is formed from tuff parent material and andesitic pyroclastic material - balsaltic. Other types of soil that may be encountered are Typic Dystrudepts, and Aquic Dystrudepts, which are formed from tuff parent materials and andesitic pyroclastic materials. The shape of the area is undulating with a slope of 3-8% and a total area of about 19.56 ha or 0.62% of the total survey area.

Land Map Unit 8 (SPT 8)

This SPT is dominated by Macam Tanah Oxic Dystrudepts, which is formed from tuff parent material and andesitic pyroclastic material - balsaltic. Other types of soil that may be encountered are Typic Dystrudepts, and Aquic Dystrudepts, which are formed from tuff parent materials and andesitic pyroclastic materials. The shape of the area is undulating with a slope of 8 - 15% and a total area of about 91.94 ha or 2.93% of the total survey area.

Land Map Unit 9 (SPT 9)

This SPT is dominated by Macam Tanah Oxic Dystrudepts, which is formed from tuff parent material and andesitic pyroclastic material - balsaltic. Other types of soil that may be encountered are Typic Dystrudepts and Aquic Dystrudepts, which are formed from tuff parent materials and andesitic pyroclastic materials. The form of a small hilly area with a slope of 15-30% and a total area of about 104.51 ha or 3.33% of the total survey area.

Land Map Unit 10 (SPT 10)

This SPT is dominated by Macam Tanah Oxic Dystrudepts, which is formed from tuff parent material and andesitic pyroclastic material - balsaltic. Other types of soil that may be encountered are Typic Dystrudepts and Aquic Dystrudepts, which are formed from tuff parent materials and andesitic pyroclastic materials. The area is hilly with a slope of 30-40% and a total area of about 18.28 ha or 0.58% of the total survey area.

3.4. Findings and Results of Carbon Stock Assessment and GHG Emissions

3.4.1. Evaluation of Carbon Stocks

The land for the PT AKL II location permit is entirely mineral soil with a dominant cultivated mosaic. The carbon stock in the young regenerating forest (YRF) stratum is estimated at 44.9 tonnes/ha with a sample size of 53 inventory plots. **Table 38** shows the carbon stock in all land cover.

Table 38. Carbon stock in PT AKL II based on land cover.

Land Cover	Area (ha)	Carbon stock (tC/ha)	Total Carbon Stock (tC)
Continuous forested area	238.4	61.51 ^{a)}	14664.98
Agroforestry/mixed garden	991.0	54.04 ^{b)}	53553.64
Rubber farming	1481.3	75 ^{c)}	111097.5
Oil Palm Plantation	166.5	59.29 ^{c)}	9871.8
Farming	60.0	8.5 ^{c)}	510.0
Settlement ^{d)}	31.8	5 ^{c)}	159.0
Water bodies	121.9		0
Total	3,090.9		

Note:

- a) AGB value based on field measurement during HCS assessment = 44.9 tC/ha, while BGB value is referred to Aalde, et.al (2006) in IPCC Guidelines for National GHG Inventories with root-shoot ratio 0.37
- b) AGB value based on field measurement during HCS assessment = 38.6 tC/ha, while BGB value is referred to Aalde, et.al (2006) in IPCC Guidelines for National GHG Inventories with root-shoot ratio 0.4 (Tropical shrubland forest). The agroforestry is a mixed garden with rubber, pioneer plants (macaranga, vitex, etc), old shrubs and ferns
- c) AGB and BGB based on RSPO default values
- d) Settlement in site is still dominated by fern and grass

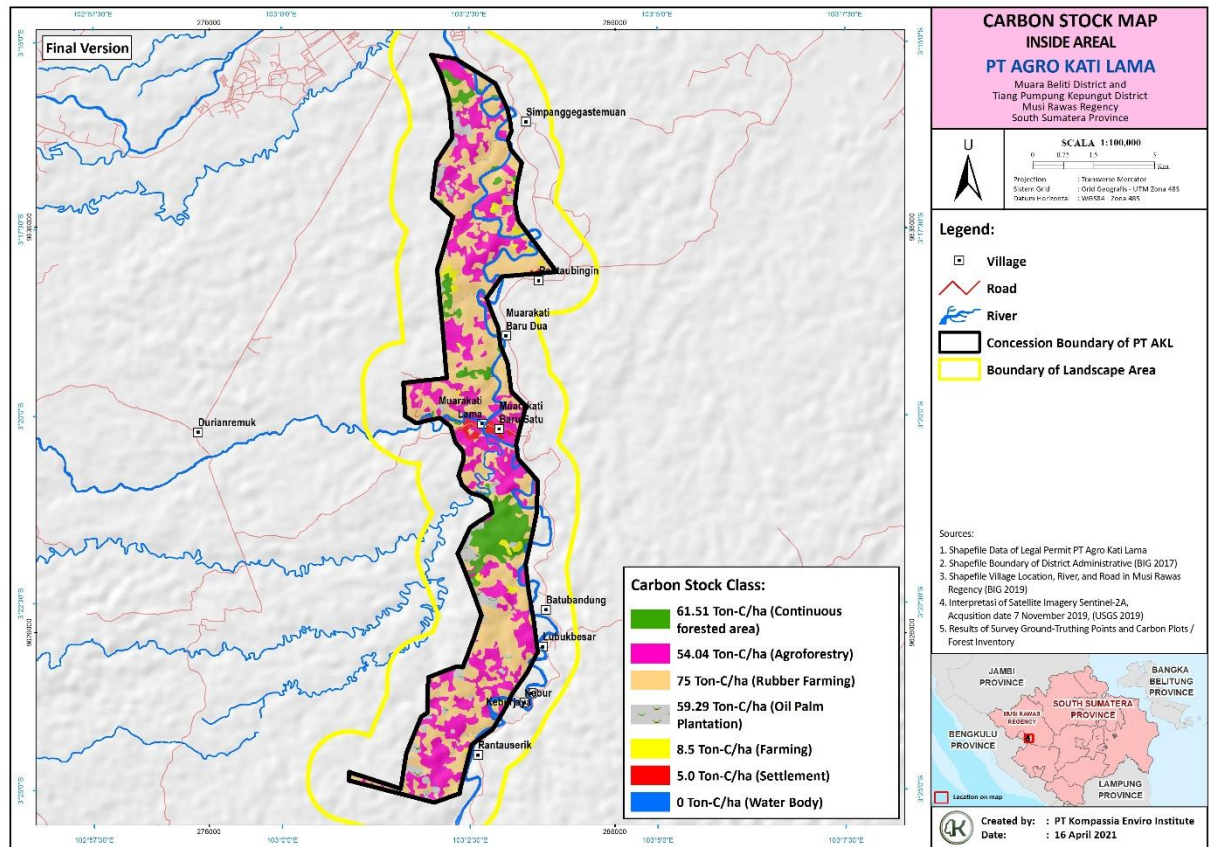


Figure 21. Carbon Stock Map inside PT AKL II

3.4.2. GHG Calculation Results

a) Scenario trial

Two scenarios are established to estimate GHG emissions, namely:

Scenario 1:

all conservation areas including HCV and HCS areas are not cleared for oil palm development. Settlement areas and plasma reserves on planted palms are not reopened. The mill will be equipped with a methane capture facility

Scenario 2:

all conservation areas including HCV and HCS category areas (YRF) are not cleared for oil palm development. However, all areas outside conservation will be cleared and

replanted, including the planted palms. The mill is not equipped with a methane capture facility.

b) GHG emission estimated

Table 39. Estimated GHG emission with 2 scenarios

	S1	S2
Field emissions & credit	t CO ₂ e	t CO ₂ e
Land clearing	19305.33	20351.38
Crop sequestration	-16696.88	-17869.36
Fertilisers	2057.52	2202.01
N ₂ O	1445.80	1547.33
Field fuel	255.21	273.13
Conservation credit	-2358.13	-2358.13
Total	4008.85	4146.36
Mill emissions & credit		
	t CO ₂ e	t CO ₂ e
POME	420.82	4330.47
Mill fuel	735.63	787.29
Purchased electricity	1414.82	1414.82
Total	2571.27	6532.58
Total emissions, tCO₂e (field and mill)	6580.12	10678.9

Scenario 1 was chosen because it would have a significant emission reduction impact both through operations in the field and in factories with methane capture waste processing facilities. This is in accordance with the sustainability policy of the SIPEF group which will not open and develop HCV and HCS / HCS areas, will adhere to the principle of efficiency and foster good relations with the community and will commit to building a factory waste processing facility with methane capture as with other large capacity mills operated by the SIPEF group.

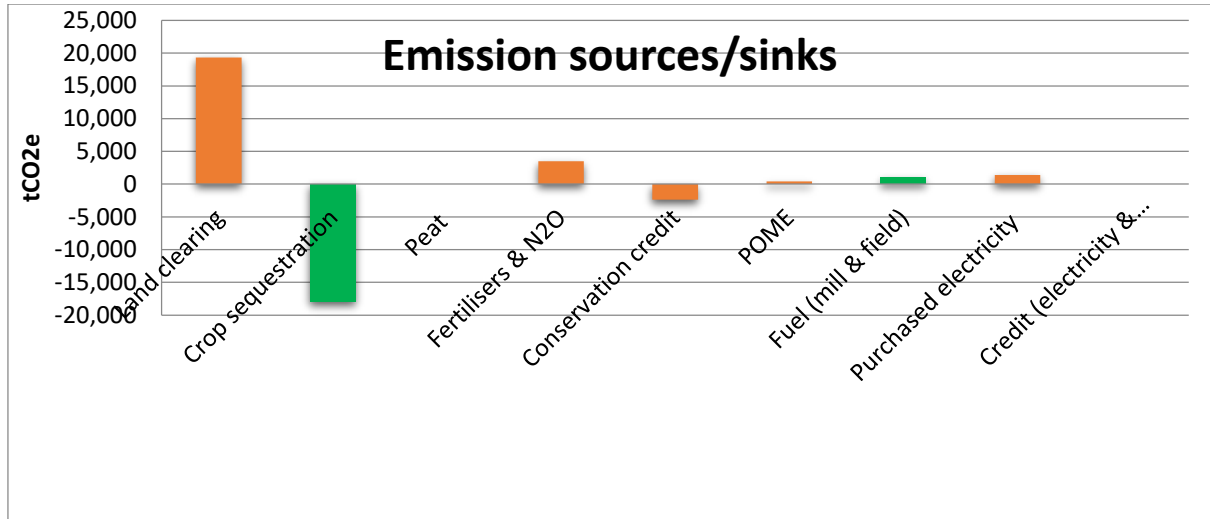


Figure 22. Summary of GHG emission in new planting of PT. AKL II

Scenario of proposed new planting based on Final land cover as table 42 below:

Table 40. Scenario of proposed new planting

Land Use Type	Developed for oil palm (ha)	
	Scenario 1	Scenario 2
Mixed garden	811.10	811.10
Rubber	1,134.80	1,134.80
Palm oil	39.46	157.62
Agriculture	40.50	40.50
Total	2,025.86	2,144.02

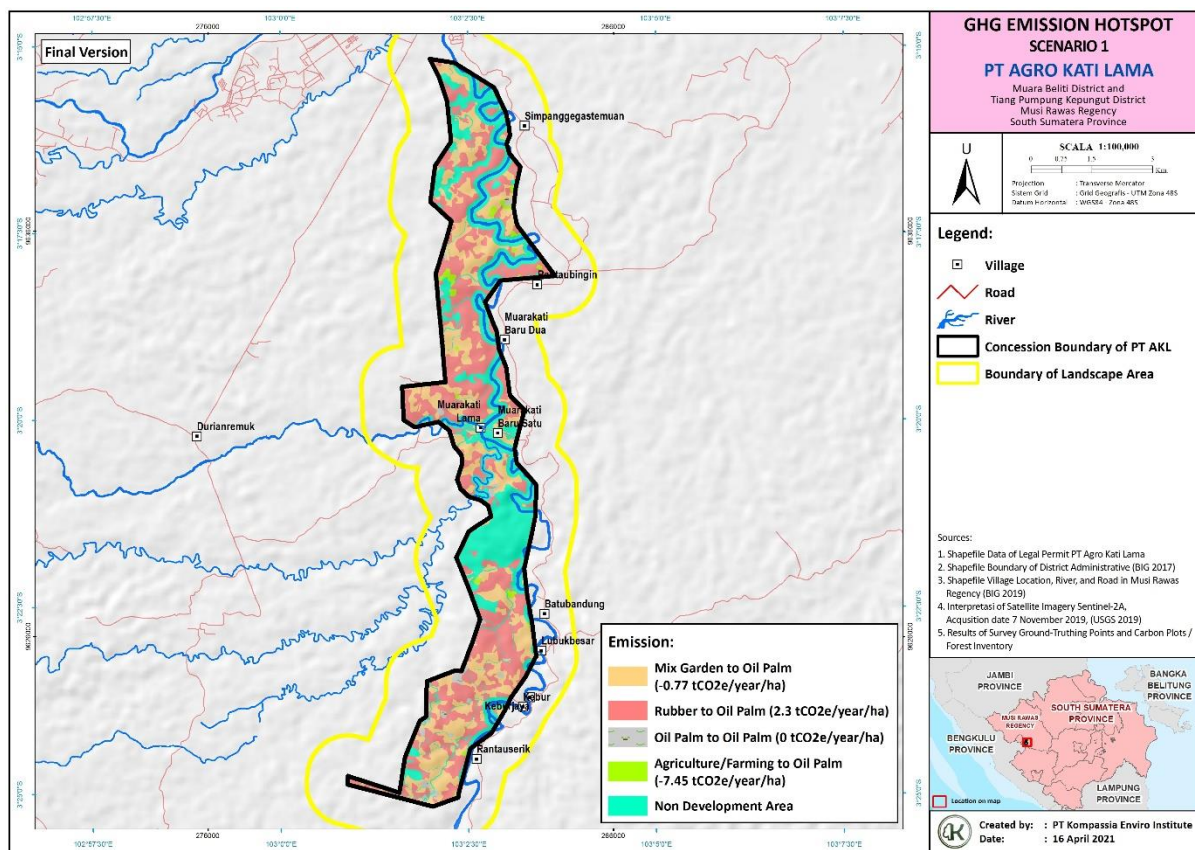


Figure 23. GHG Emission on New Development Plan Scenario 1 PT AKL II

3.5. LUCA Findings

Indeed, on a landscape scale, the location permit of PT AKL II and its surroundings is an area of mosaic cultivation, especially natural rubber plants, to support community livelihoods. Before the development of intensive cultivation, most people relied on shifting cultivation by clearing the forest, burning it and planting it for two harvests of rice, then leaving it behind planted with fruit trees, including rubber, which would be harvested about eight years later. Rubber plants (*Hevea sp.*) arrived in South Sumatra in 1902, brought by the Harrison and Crossfield Company. They were followed by the company 'Societe Financiere des Caoutchoues' from Belgium in 1909 and the United States company 'Hollands Amerikaanse Plantage Maatschappij (HAPM)' in 1910. The Dutch East Indies government at that time did not regulate the opening and exploitation of smallholder rubber plantations, which meant that rubber plantations spread out of control.

The results of the analysis of land cover in the PT AKL II location permit area, the land cover in the form of secondary forest, both medium and low density, and mixed crops decreased from 2005 to 2018. The decrease in land cover of low-density secondary forest from 2005 to 2018 was 39.23 ha; secondary forest with medium density was 66.14 ha; while mixed crops land cover had a significant reduction of 278.96 ha. A mixed crops here is a plot of land controlled and cultivated by the community with mixed plants in the form of natural rubber (*Hevea brasiliensis*), with other horticultural crops including fruits such as durian, duku, forest mango, coffee. There are also several forestry trees including medang, laban and mahang. The agricultural system adopted by the local community is not intensive, but only harvests when it is needed for living needs, so that the mixed crops conditions do not appear to be well maintained. Land changes in reducing the area of land cover are in line with the addition of other land cover areas, such as scrub cover

which has increased by an area of 169.09 hectares; open land cover increased by 122.33 ha; and land cover for oil palm plantations which increased by 104.13 ha. The community tends to convert mainly mixed crops into oil palm plantations, which is triggered by the mosaic conditions of the surrounding land on which oil palm is already being cultivated, including the existence of large plantations. However, not all of them have been successfully converted into oil palm plantations, mostly because of a lack of business capital, so the land has become abandoned and open, while some has turned into bushes.

Satellite images used in the analysis of land cover change are presented in **Table 41**.

Table 41. Satellite Imagery of Land Cover Analysis in the PT AKL II

No	Year	Satellite Imagery Data	Resolution	Date
1	2005	Landsat 5-LT05_L1TP_Path Row 125062	30 Meter	11 October 2005
2		Landsat 5-LT05_L1GS_Path Row 125062	30 Meter	24 November 2005
3	2007	Landsat 5-LT05_L1TP_Path Row 125062	30 Meter	30 August 2007
4	2009	Landsat 5-LT05_L1TP_Path Row 125062	30 Meter	22 October 2009
5	2014	Landsat 8-LC08_L1TP_Path Row 125062	30 Meter	11 April 2014
6	2018	Sentinel 2-A Tile T48MTB	10 Meter	5 July 2018
7	2018	Sentinel 2-A Tile T48MTB	10 Meter	17 November 2018
8	2020	Landsat 8-OLI_Path Row 125062	30 Meter	10 March 2020
9	2021	Landsat 8-OLI_Path Row 125062	30 Meter	23 December 2020

Complete information on the results of land cover analysis from 2005, 2007, 2009, 2010, 2014 and 2018 is presented in **Table 42** and trend graphs in **Figure 24**, and maps of land cover analysis results from land cover interpretation based on the period of a year are presented in series in **Figure 25** to **Figure 29**.

Table 42. Land Cover Analysis Results for 2005, 2007, 2009, 2010, 2014 and 2018 in the PT AKL II area.

Land Cover	2005	2007	2009	2010	2014	2018	2020	2021
Area of Land Cover Management Unit (ha)								
Body of water	106,01	106,01	106,01	106,01	106,01	106,01	106,01	106,01
Secondary Lowland Forest	160,41	155,79	148,66	148,66	138,60	121,18	238,70	237,13
Medium Density Secondary Lowland Forest	199,76	198,01	170,15	170,15	156,92	133,62	0,00	0,00
Mixed Plantation	912,13	879,51	825,84	825,84	731,56	633,17	994,44	984,17
Open Field	120,41	178,32	223,47	223,47	238,12	242,74	0,00	0,00
Rubber Plantation	1416,46	1374,20	1394,95	1394,95	1415,06	1405,23	1,490,96	1,483,35
Oil Palm Plantation	0,00	0,00	0,00	0,00	0,00	104,13	169,02	186,38
Settlement	20,85	20,85	20,85	20,85	20,85	20,85	31,79	31,79
Bush	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Scrub	154,87	178,21	200,97	200,97	283,77	323,96	59,99	61,54
Total	3,090,90	3,090,90	3,090,90	3,090,90	3,090,90	3,090,90	3,090,90	3,090,90

Source: Satellite image interpretation and analysis results, 2020

The trend of land cover change in the PT AKL II location permit area is broken down into: (1) 'Period I' (November 2005-November 2007), (2) 'Period II' (November 2007- December 2009), (3) 'Period III' (January 2010 - May 2014, and (4) 'Period IV' (May 2014 - November 2018).

Period I:

The results of the analysis of land cover in Period I (November 2005-November 2007), at the PT AKL II location in 2005 show it was dominated by rubber plantations with an area of 1,416.46 ha or about 45.83%. The rubber plantations experienced a reduction in area in 2007, to become 1,347.20 ha (44.46%) or experienced a reduction in area of 42.26 ha, which turned into open land and scrub. Meanwhile, secondary forest land cover also underwent less significant changes from an area of 360.17 ha (11.65%) in 2005 to 353.80 ha (11.45%) in 2007, which turned into open land. The decline in the area of rubber plantations and secondary forest was accompanied by an increase in the area of open land, where in 2005 an area of 120.41 ha increased in 2017 by 178.72 ha. The increase in open land was caused by a change in the rubber planting pattern from natural rubber to superior (homogeneous) rubber, so that on some easily accessible land (close to settlements) rubber crops were planted and observed as open land on satellite images.

Period II:

During the period II (December 2007-December 2009) the dominant change in land cover was mixed crops land cover, where in 2007 it was 879.51 ha (28.45%) and in 2009 it became 825.4 ha (26.72%) or reduced by 53.66 ha. Likewise, the secondary forest land cover, experienced a reduction from 353.89 ha (11.45%) in 2007 to 318.81 ha (10.31%) in 2009. These changes were significant for the increase in the area of open land cover, rubber farms and scrub. The increase in the area of open land in Period II was 45.15 ha, the increase in scrub area was 22.76 ha and the increase in the area of rubber farms was 20.75 ha.

Period III:

In Period III (December 2009-May 2014) the dominant land cover change that occurred was mixed crops land cover, where in 2009 it was 825.84 ha (26.72%) and in 2014 it became 731.56 ha (23.67%) or reduced by 94.28 ha. Likewise, the secondary forest land cover was reduced by 23.29 hectares. These changes were significant for the increase in scrub covering an area of 82.80 hectares, an increase in rubber plantation area of 20.11 ha and an increase in open land area of 14.65 ha. Changes in land cover in the PT AKL II permit area occurred in tandem with the economic needs of the community, who converted mixed plantations (mixed natural rubber) into superior (homogeneous) rubber farms in the hope of an increase in rubber production, even though the price of rubber was decreasing. This was done because it had become a culture. The community around the location permit has long been used to farm rubber, so it is difficult for people to switch to other types of agricultural crops. In addition, there is also an increase in coffee farmland, which is identified from satellite images as scrub.

Period IV:

From an urban perspective, it can be seen that the location permit is close to the city centre of the government of the newly developed Musirawas Regency and is an area that is currently developing into a regency capital with increasing land requirements. Therefore, the eastern side of the Beliti River (in the location permit) is very strategic for the land needs for regional development for the Musirawas Regency Government. In Period IV (May 2014-July 2018) the dominant land cover change occurred in mixed crops land cover, where in 2014 it was 721.56 ha (23.67%) and in 2018 it became 633.17 ha (20.48%), or decreased by 98.39 ha, as well as reducing secondary forest land cover by 40.73 ha. This change is significant for the increase in the area of land cover by oil palm plantations, which is a type of land cover that did not exist in 2014, covering an area of 104.13 ha (3.37%) in 2018 with an increase in the area of scrub by 40.19 ha. The issue of oil palm development in the area has caused local communities to start clearing land for oil palm and other agricultural crops in the hope of an increase in the sales value of the land. The

trend of changes in internal community settlements and location permits seems to have been unchanged for about 15 years, remaining at 20.85 ha or 0.67%. In the future, it seems that the oil palm commodity will still be the mainstay of people's livelihoods, especially with the drop in the price of cultivated rubber, which was once their main source of livelihood.

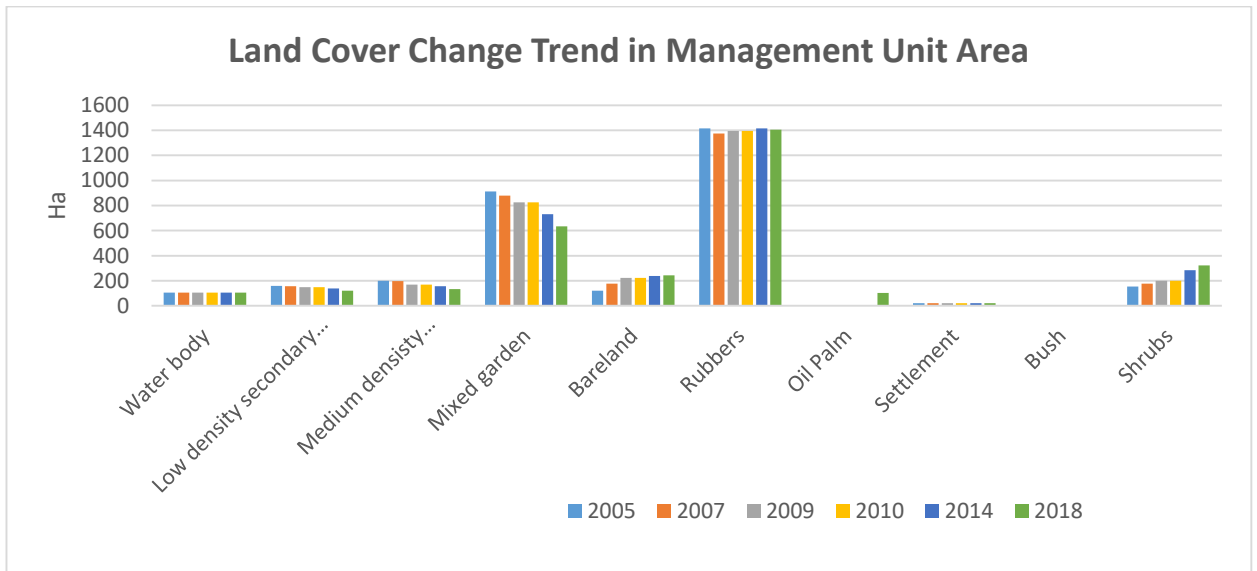


Figure 24. Graph of land cover change trends in 2005, 2007, 2009, 2010, 2014 and 2018 inside the PT AKL II (MU) area

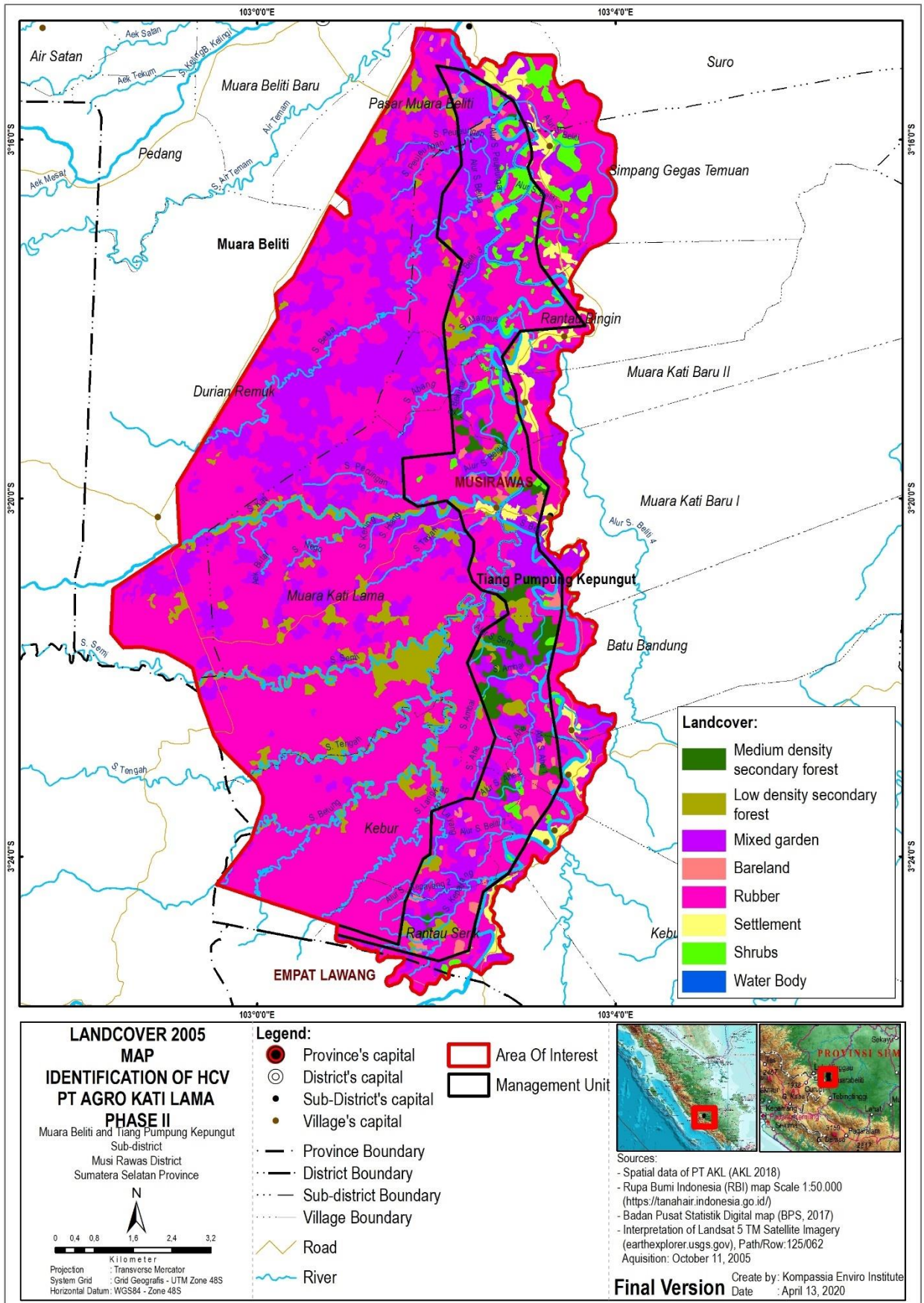


Figure 25. Interpretation of land cover with satellite imagery map, 2005

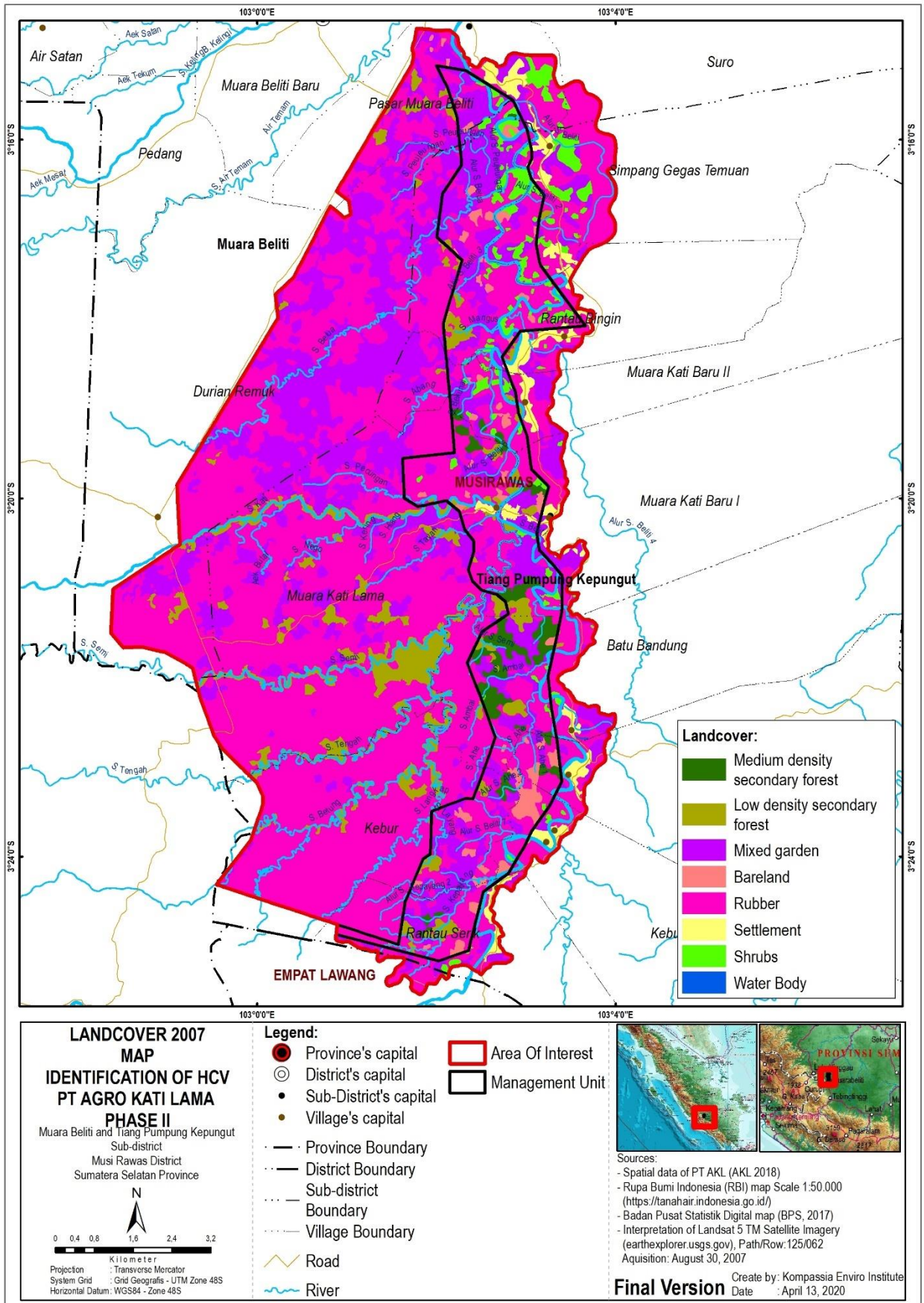


Figure 26. Interpretation of land cover with satellite imagery map, 2007

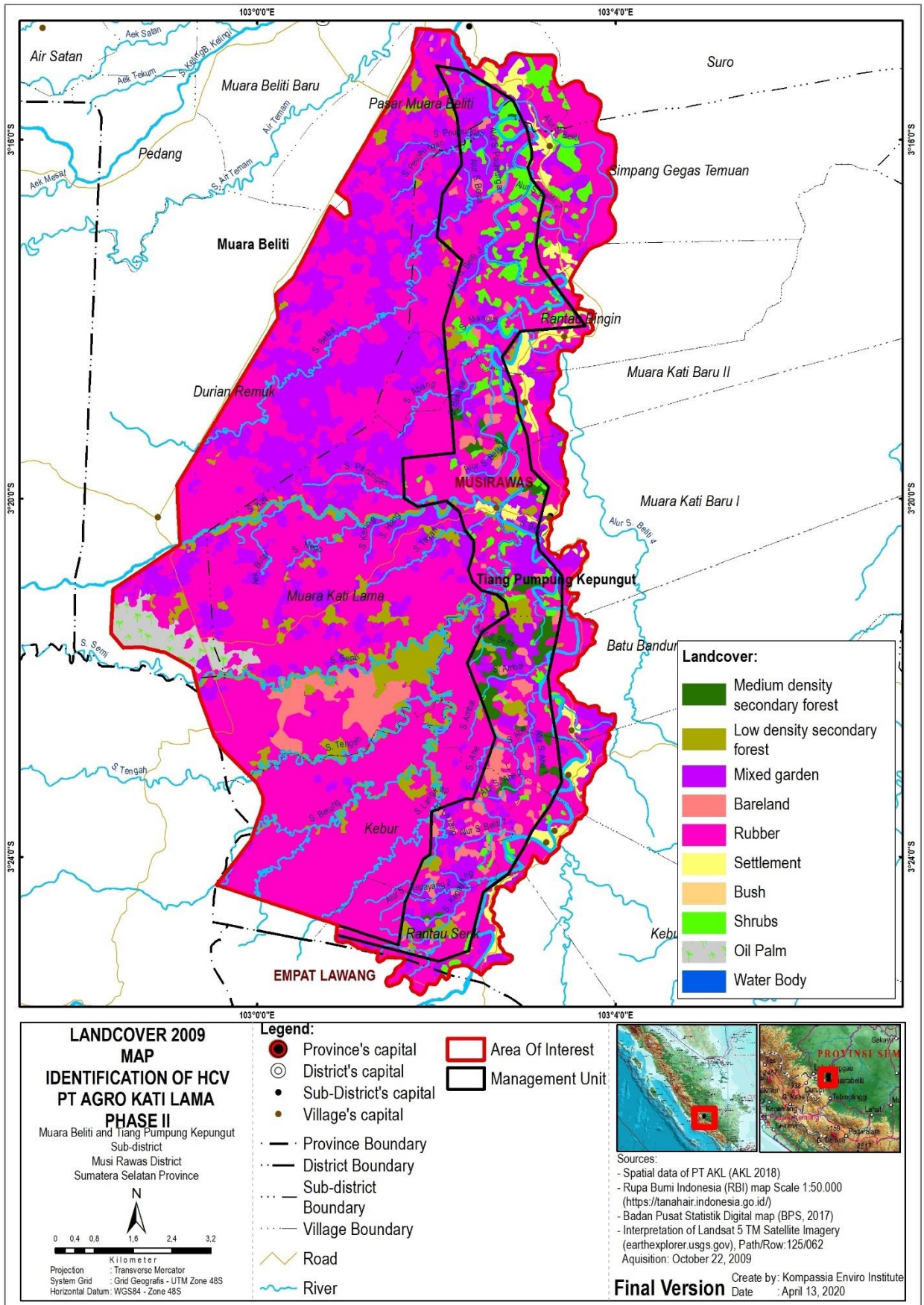


Figure 27. Interpretation of land cover with satellite imagery map, 2009

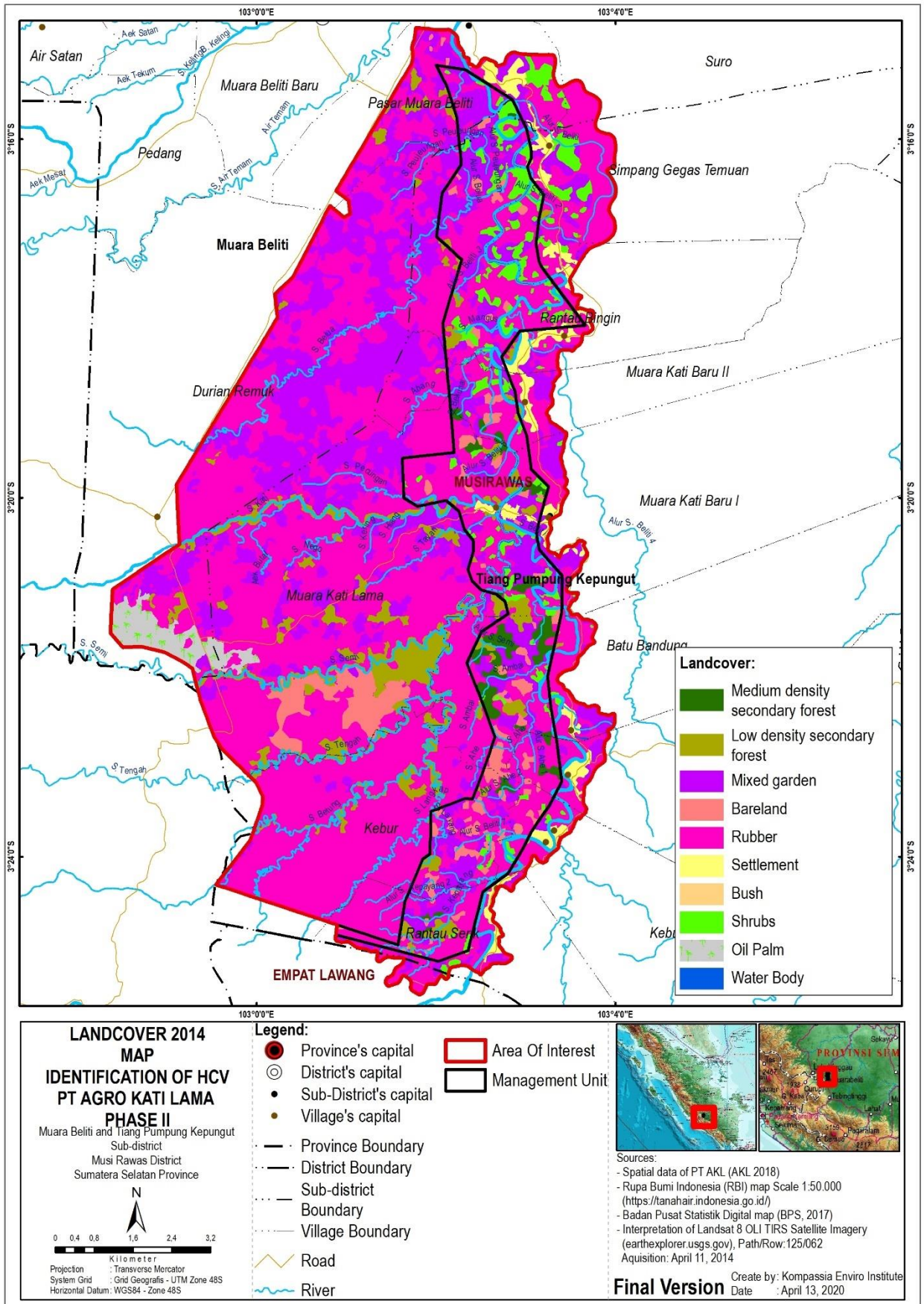


Figure 28. Interpretation of land cover with satellite imagery map, 2014

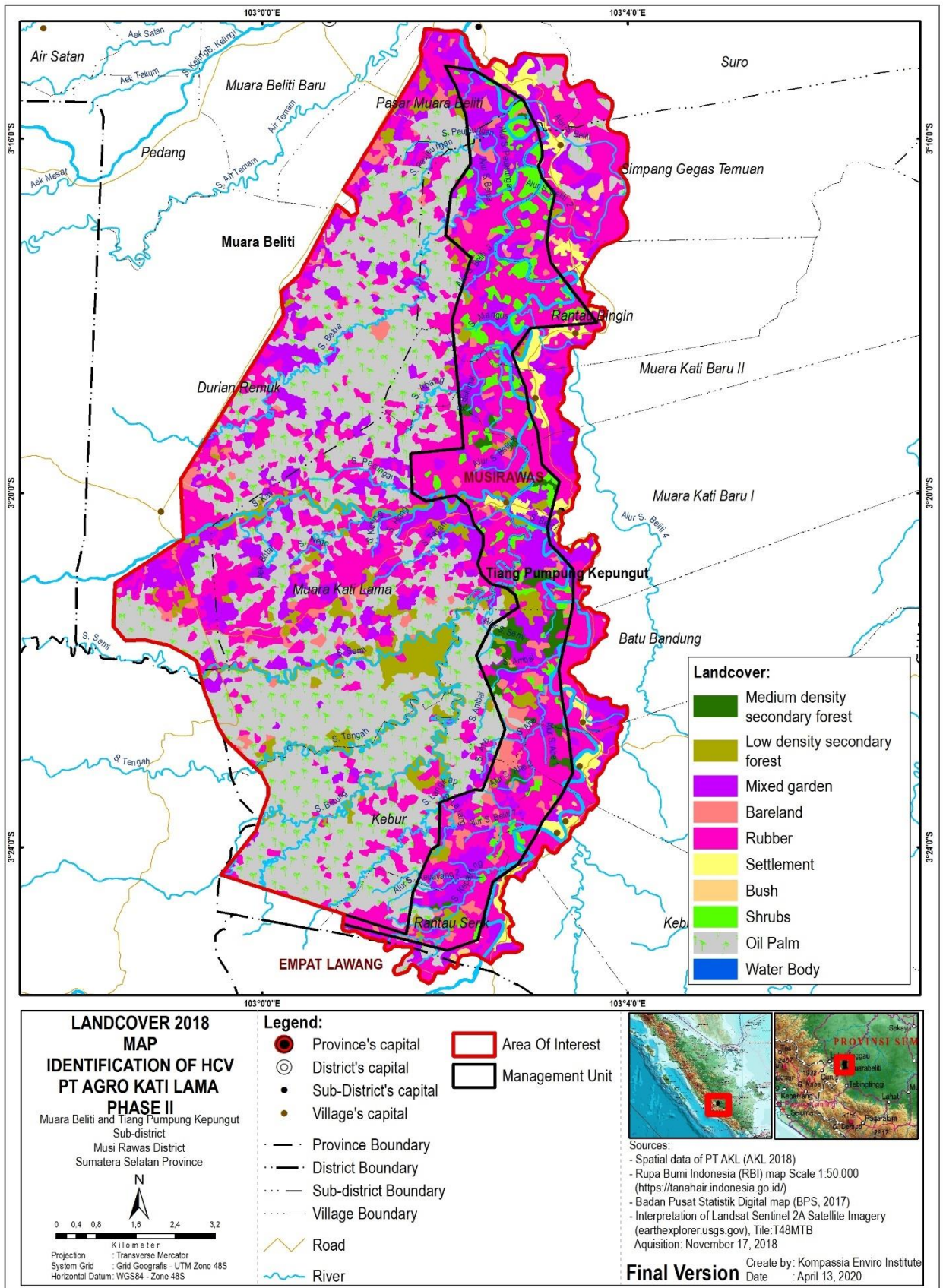


Figure 29. Interpretation of land cover with satellite imagery map, 2018

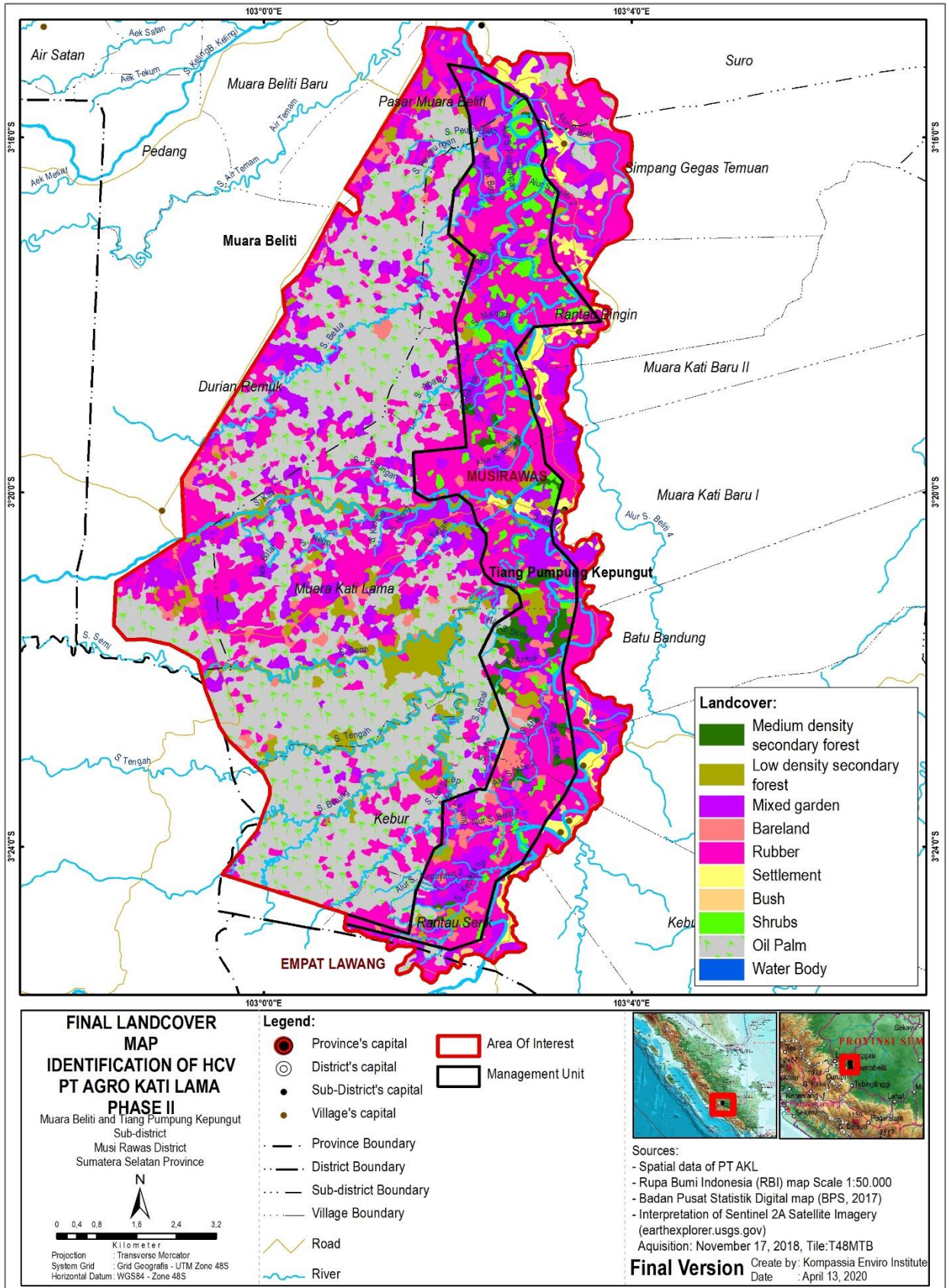


Figure 30. Final land cover classification in PT AKL II

Final landcover classification period between February 2020 and 2021 as figure 30 and figure 31 as below:

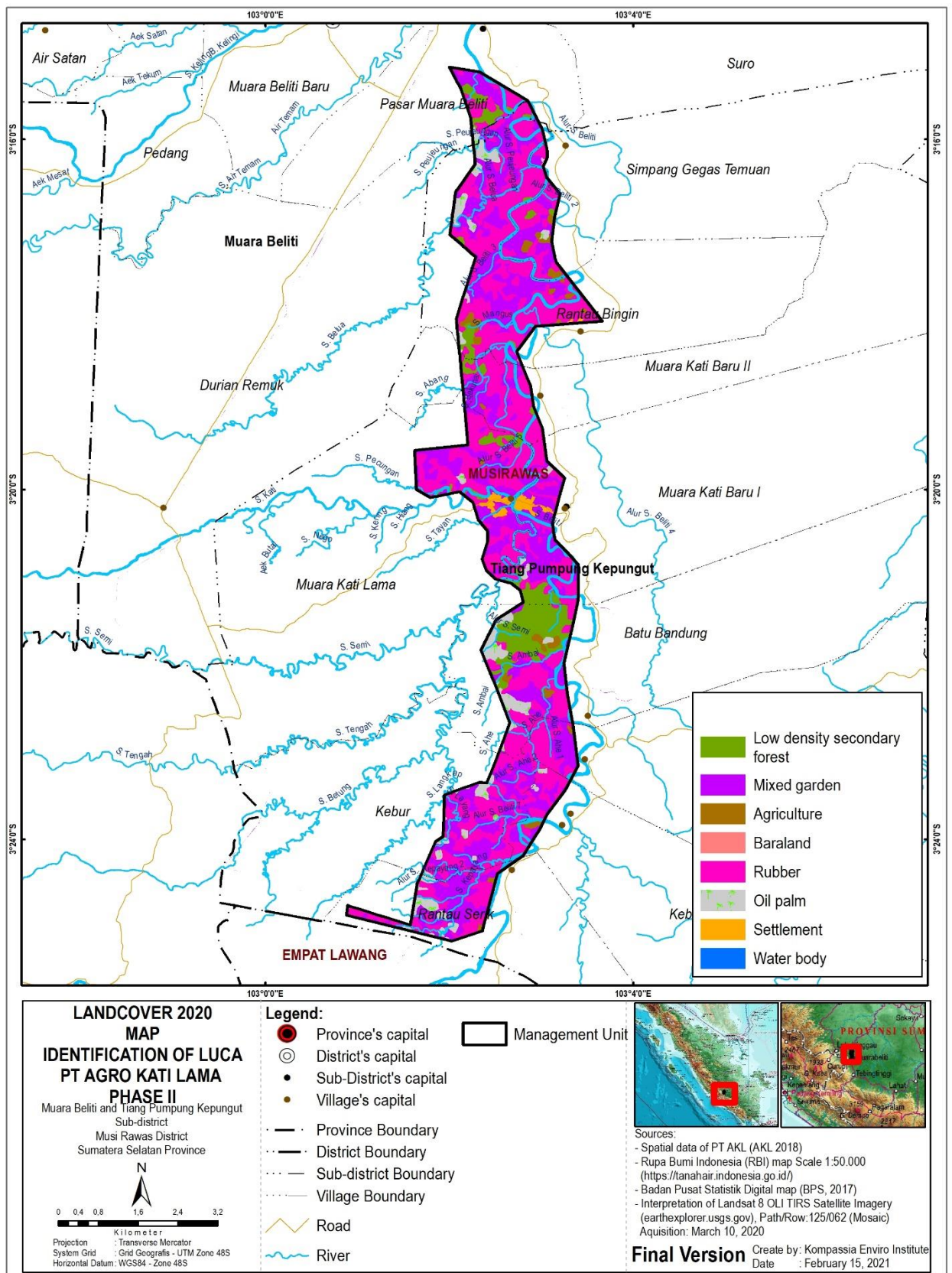


Figure 31. Interpretation of land cover with satellite imagery map, February 2020

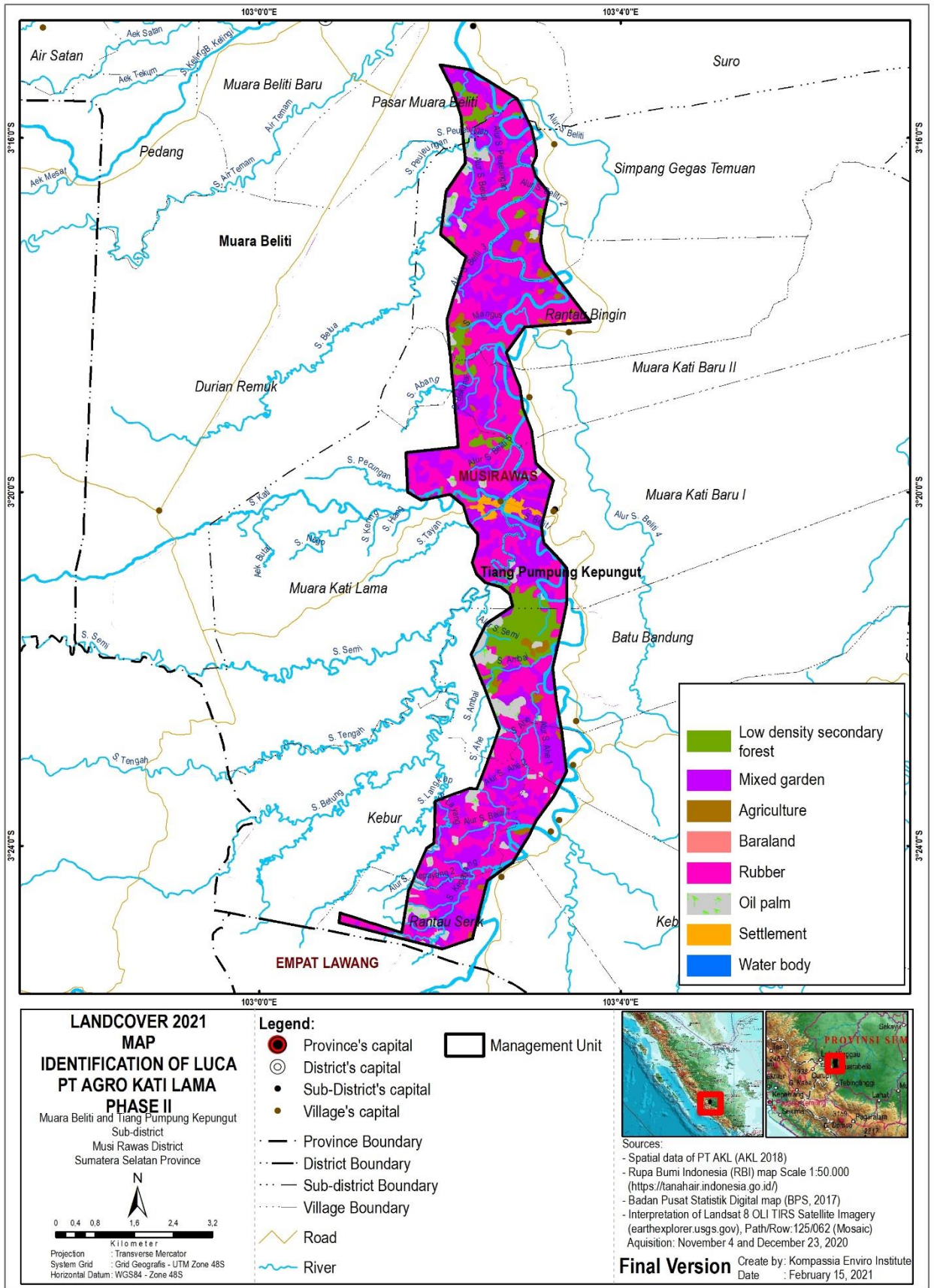


Figure 32. Interpretation of land cover with satellite imagery map, February 2021

3.6. FPIC Process

PT AKL has carried out a series of outreach processes at the local, sub-district and village government levels for plans to develop and manage oil palm plantations. The area for the additional location permit is to the east of the previous location permit (Phase I) with the same 7 villages and 2 sub-districts. A series of outreach conducted by PT AKL on the additional location permit area (Phase II), including: (1) HCV and HCS and SIA (2) SEIA and (3) AMDAL along with RPL and RKL.

Findings regarding land tenure

PT AKL has carried out community land tenure mapping in the study area. The purpose of community land mapping is to identify and record land owners and land uses. It is considered important to determine with whom the FPIC process must be carried out so that agreement is reached. Mapping of land tenure that has been carried out covers an area of 1,036.82 ha⁸⁾ (33.5% of the study area). Land tenure mapping has been carried out on 487 community land parcels from 9 villages around the study area. When comparing the area of the study with the area of land mapping that resulted from community land mapping, there are still 2,054.08 ha of land that has not been mapped or the owner of the land identified. Therefore, when this assessment was carried out, PT AKL was still mapping and identifying community lands.

The land tenure study is conducted using a “door to door” socialisation process to land owners in the study area, using the principle of FPIC (without coercion). PT AKL will follow up on communities who apply for and give permission for land mapping. Community land mapping is carried out by measuring the area of land in the field accompanied by land owners, village teams, company teams, and land owners around the land to provide an explanation of the land boundaries.

Community lands that have been mapped and identified will be followed up with GRTT according to Company procedures. The GRTT process stages implemented by PT AKL are as follows:

1. **Early Advanced Socialisation** | Follow-up socialisation was carried out as a continuation of the initial socialisation that had been done at the village level. Follow-up socialisation is continuing at the community level (either RT, recitation groups, small meetings at farmers' land locations or others).
2. **Further Socialisation with Land Measurement** | This is a continuation of socialisation at the family level, where initial data, land identity and ownership as well as an agreement on initial land measurement have been agreed upon and GIS data for the owner's land has been obtained.
3. **Negotiation Process** | It is a more intense/in-depth socialisation, where PT AKL II has provided the GRTT price value and the complete documents for the GRTT process.
4. **Administrative Process** | It is a socialisation where the land owner has agreed and has completed all the required documents in the GRTT process and is in the process of verification by the “Legal of PT AKL” section as a condition for payment.
5. **Already Paid** | This is the final GRTT process. The funds have been paid and have met the requirements based on state regulations and the PT AKL SOP.

According to the GRTT principle, there is an agreement between the land owner and the Company regarding the options chosen by the community and the amount of compensation.

⁸⁾ Dokumen pemetaan lahan masyarakat PT AKL Update Maret 2020

FPIC process prior to assessment activities

PT AKL has conducted a series of outreach, starting with the socialisation at the district and sub-district/village levels regarding the existence of additional location permits (phase II). Furthermore, the socialisation was carried out at the community/landowner level. Subsequently, there was socialisation related to GRIT with sub-districts/villages and communities/land owners.

In fulfilling the licensing for additional location permits (phase II), PT AKL conducted an HCV, HCS, SIA assessment, and an AMDAL study. All assessments and activities have been socialised to the public. The socialisation of the HCV, HCS and SIA assessments was carried out on November 15-19 2018 at the district and sub-district/village levels, as well as the customary leaders of the Muara Kati Lama area. From the approach process with stakeholders, these stakeholders know that PT AKL II has carried out initial socialisation regarding the plantation development plan. There is an agreement from the community represented by a village official, namely the Village Head or those who represent him, to carry out an HCV assessment in the area of these village communities regarding plans for HCV, HCS and SIA assessment activities, objectives, timing and the assessment delivered by the assessment team during the scoping study, also recommendations regarding community involvement in assessment activities and relevant resource persons for the assessment activities.

Description of community engagement activities and Participatory Mapping

The socialisation and licensing activities carried out by PT AKL related to the HCSA assessment have been carried out and permission has been received from the village head appointed as the community representative. This is proof that the principles of FPIC in implementing HCV and HCSA assessments have been fulfilled by PT AKL. The HCSA assessment team has verified and confirmed with the village head and the community the socialisation and licensing of the HCSA and HCV assessments conducted by PT AKL. During verification and confirmation, the assessment team also asked for community involvement in the HCSA assessment in the study area. Several villages sent representatives to be involved in the HCV and HCSA assessments.

Meanwhile, the socialisation of the AMDAL study was conducted on 4-5 September 2019 at the district and sub-district/village levels, with community leaders, youth leaders, and community observers of the environment. Socialisation and consultation when making AMDAL aimed to obtain suggestions, input, and responses from the community on plans for developing oil palm and rubber plantations and the construction of palm oil mills.

Participatory Mapping and FGD are methods used in the FPIC assessment for HCV and HCSA assessments as well as conducting reviews and updates of the latest studies and activities that have been conducted by PT AKL. All of these activities involve local communities, key stakeholders, and village government institutions that act as resource persons.

First Stage | FGD or consultation was conducted with relevant internal staff to gather information about activities that have been and will be carried out, as well as information on key stakeholders who have an important role. FGDs and internal company consultations were held twice, during the FPIC assessment and during the HCV and HCSA assessments. The basic information obtained is shown in a 'sketch' that can describe location permits, important rivers, adjoining villages, plans for allocation of conservation areas, land that has been cultivated by the community, former logging roads, roads that have been rehabilitated, basecamps, neighbouring companies and other relevant information.

Second Stage | Initial consultation was done with the relevant village head, requesting a field survey permit and compiling a follow-up consultation plan regarding the time, place and key stakeholders who would be expected to attend, and the technical implementation. Prior to conducting visits to villages and sub-districts, initial visits and consultations were conducted with district and sub-district/village institutions to provide information on plans for field activities.

Third Stage | The implementation of Participatory Mapping activities with key stakeholders as the main agenda, is to provide an understanding of the certainty of location permits and concerns that have been expressed in SIA and HCVA. Another agenda is additional important information which is directly depicted in the sketch provided. The results of the Participatory Mapping sketch are presented in **Figure 6**. The sketch made from spatial data depicts: (a) boundaries, (b) land use such as settlements, production areas, protected areas, (c) landscapes such as mountains, hills, lakes, rivers, (d) important places such as old villages, graves and historical sites.

Social and other information to determine the socio-economic conditions of the community to serve as supporting data, include: (a) History; sub-district/village, ethnicity and sub-tribe, (b) customary/village institutions, names, structures, tasks and functions, methods of decision making, (c) region/places; history of territorial boundaries, history of important locations, landscape information and (d) governance of customary/village areas (management rules), local wisdom, production areas and protected areas.

Based on the results of interviews and Participatory Mapping, community lands were found in the study area. The community land was still being used at the time of this assessment. Management of community land is carried out intensively/maximally and managed accordingly. Activities undertaken by the community towards intensive community land management are in the form of cleaning, pulping, fertilising and harvesting, whereas the activities carried out on community land are managed as if it involves only harvesting.

The results of interviews, Participatory Mapping and field checks identified that the community's land, which is managed to the maximum, covers land in the form of rubber plantations and oil palm plantations, while unmanaged land covers land in the form of mixed crops. The results of Participatory Mapping and the area of land used by the community are presented in **Figure 33** and **Table 43**.

Table 43. Area and classification of community land in PT. AKL II

Land Coved SNI*)	Area (ha)	% of concession
Mix Crops (Agroforestry)	991.0	32.1%
Rubber farming	1.481.3	47.9%
Oil palm plantation	166.5	5.4%
Total	2,638.8	85.4%

*Note:: *) SNI 7645-1:2014 Klasifikasi penutup lahan - Bagian 1: Skala kecil dan menengah;*

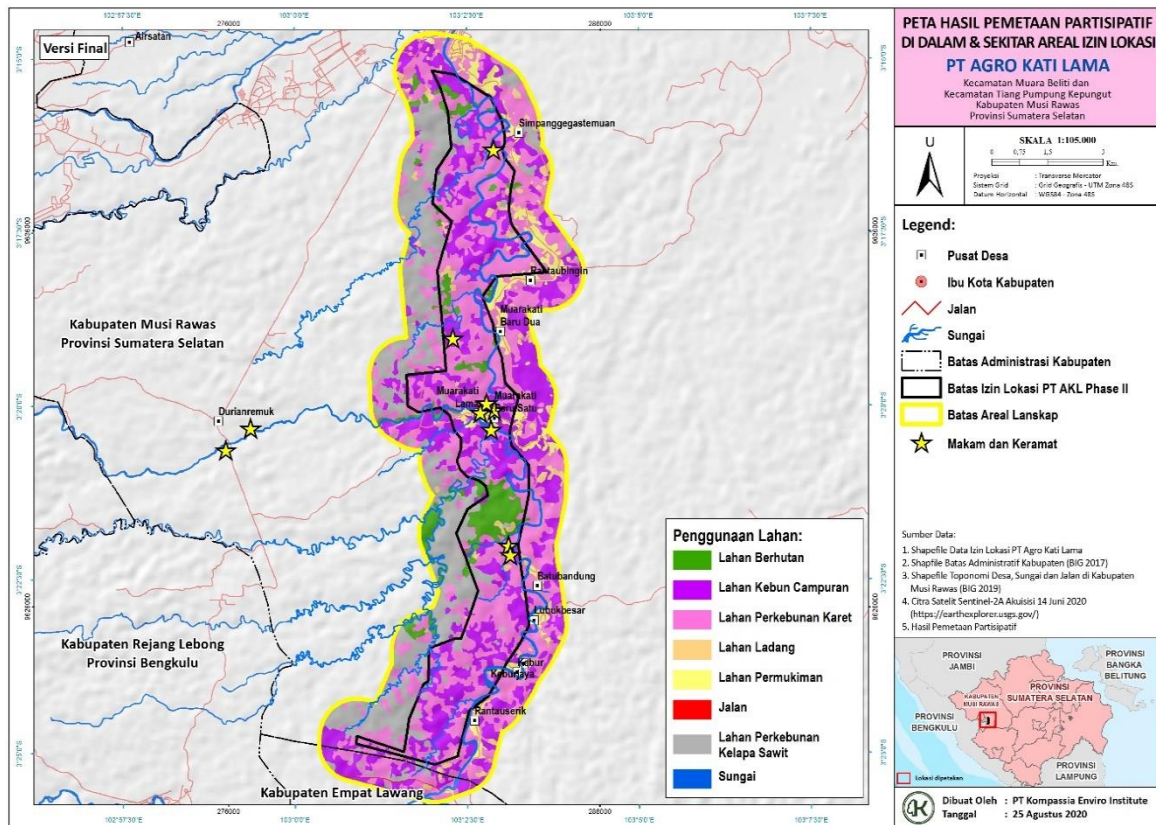


Figure 33. Map of participatory mapping surrounding PT. AKL II

Summary of findings from the community engagement and FPIC processes

Verification of the fulfilment of FPIC principles is carried out in two stages, namely examining company documents regarding socialisation and land acquisition plans and interviews as well as FGDs with communities and village/local government agencies. Below is a brief description of the results of the verification process on the fulfilment of FPIC principles.

Free - refers to this principle, checking and ensuring that the will of the community to release or not release the land they cultivate is completely voluntary. In interviews and FGDs, the community stated that they had never received coercion, threats, intimidation, persuasion, or lures from PT AKL or other parties in the process of socialisation and land acquisition.

The community was given the freedom to make choices, whether to release their cultivated land for oil palm plantation development or not. It can be concluded that the socialisation carried out by PT AKL fulfills the Free element of FPIC.

Prior - refers to this principle, checks and ensures that PT AKL II conducts outreach and asks for permission from the local community before starting its operational activities.

The following is a series of activities that were carried out by PT AKL II before starting the land acquisition and plantation development processes, namely: (i) socialising at the sub-district level, (ii) conducting socialisation at the village level, (iii) taking a personal approach to requesting permission from the community villages assisted by the Village Team, (iv) conducting public consultations on AMDAL, and (v) organising formal socialisation that invited all interested parties. It can be concluded that the socialisation process by PT AKL has fulfilled the Prior element of FPIC.

Informed (Getting Enough Information) - refers to this principle, checks and ensures what information the Company has conveyed to the local community in the socialisation activities that have been carried out so far, and assesses whether the information is complete, objective and accurate so that it can be used as material consideration for the community to make good decisions.

PT AKL II provides information in both formal and informal ways. Through the village government it officially invited the community to attend a meeting which explained the plantation development plan, including the land acquisition procedure (GRTT). Non-formal socialisation was conveyed through PT AKL II team visits to villages (door-to-door) that had land to be released as nucleus plantations. It can be concluded that the socialisation process carried out by PT AKL has fulfilled the Informed element of FPIC.

Consent (Decision of Acceptance or Refusal) - refers to this principle, checks and ensures that the community expresses their approval or refusal to release land to PT AKL II to be developed into an oil palm plantation, based on sufficient knowledge of the possible risks to be faced and the benefits that will be gained.

During the socialisation, PT AKL II gave freedom to the land owners/farmers to decide whether to release their land or not. The community basically agreed to the presence of the Company and was willing to release the land according to the negotiations between PT AKL II and the community. People who released their land have received compensation at a value agreed upon between PT AKL II and the community. Meanwhile, for people who refuse to release their cultivated land because negotiations have not been completed, PT AKL II will respect the community's decision. PT AKL provides access for the community to enter and leave their farms. Up until this activity was carried out, PT AKL II was still continuing the process of approaching, socialising and negotiating. It can be concluded that the socialisation process by PT AKL II has fulfilled the Consent element of FPIC.

PT AKL II has carried out socialisation and permits by means of FPIC related to the implementation of HCSA and HCV assessments, and has been permitted by the community. The assessment team has verified and confirmed the permit with the community. This was done in order to ensure that the communities around the study area truly understand and agree with the series of stages of the HCSA and HCV assessments conducted by the assessment team.

4. SUMMARY OF MANAGEMENT PLAN

4.1. Team Responsible for Development Plans

PT AKL II under the management and policies of the SIPEF group is committed to carrying out management and monitoring functions of this new plantation development plan, following the provisions of the RSPO Principles and Criteria. This is stated in the "SIPEF RESPONSIBLE PLANTATIONS POLICY" which states: "Responsible development of new operations" (plantation development) will be subject to a High Conservation Value (HCV) assessment procedure prior to the Free, Prior and Informed Consent (FPIC) Process of affected communities and following the New Planting Procedure (RSPO NPP). Then it is regulated in the SOP on New Development Areas which contains land clearing procedures going from obtaining a location permit to the land clearing stage.

The team that is responsible for managing and monitoring the impact of the new plant opening activities at PT AKL II can be seen in **Figure 34**

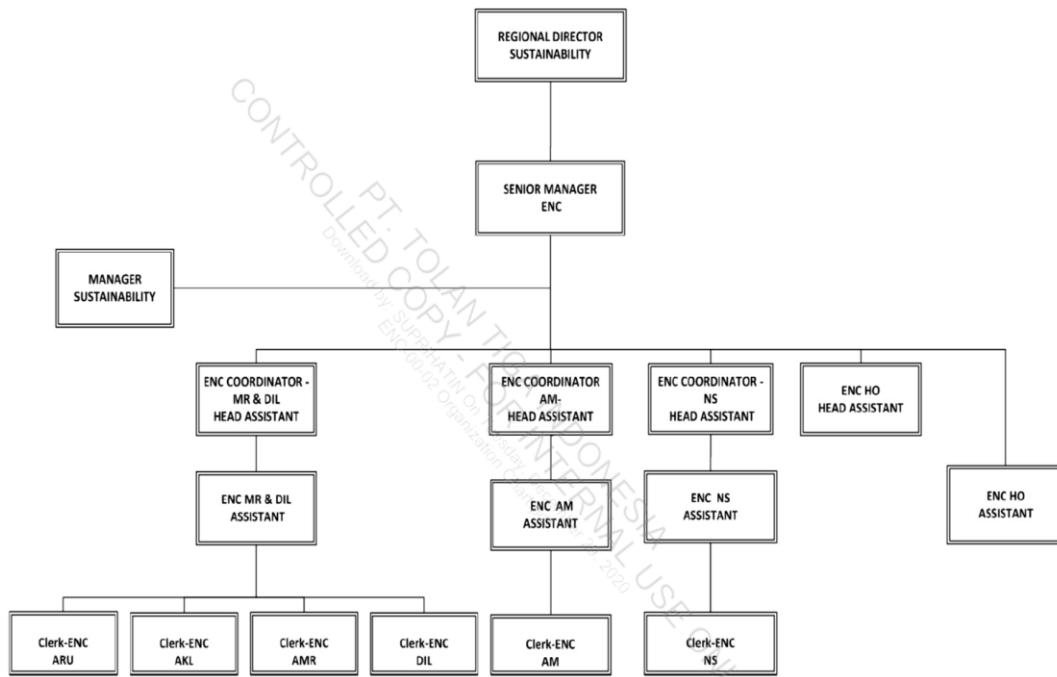


Figure 34. The responsible team for management and monitoring new planting at PT. AKL II

4.2. Management Plan

4.2.1. SEIA Management Plan

SEIA, the Social Management and Monitoring Plan is made based on the results of the SIA, and recommendations for social management and monitoring by the Company are presented in **Table 44**. Meanwhile, environmental impact management as stated in the RKL-RPL document is presented in **Table 44**. In accordance with the adaptive social nature of management principles, all management recommendations must come from the various parties involved in the management of the area where the Company is located.

Table 44. Matrix of social impact management and monitoring plan – PT. AKL II

No.	Social Issues	Current status	Recomendation	Output
1	The indemnity process has been running well and is conducive, but there are several records of problems that have occurred.	<p>1) The process of paying land compensation by the company is being used by land speculators who sell land to residents who are not the original owners. This is the case in villages where the land has been measured by the Company, the original owner does not know about this, and land speculators have sold the land. The land owner demands that the Company resolve this problem.</p> <p>2) The problem of compensation during the process of land eviction where a tree has entered someone else's land, causing damage to the adjoining land.</p> <p>3) Most are caused by overlaps between the boundary for sale and other boundaries. This is due to the unclear boundaries that residents have on their land, as well as the condition of the field, which at that time made it difficult to access that land. This results in the people who own the land around the land expecting to be compensated, as they do not want to participate, even if only as witnesses to the land compensation process, without being given a reward. This in turn results in a shift in land boundaries that exceeds the area that should be on sale and purchased, and affects other community</p>	In the process of compensation for land, the Company and residents must further review the origin of the land. In the process of measuring the land, a village team as well as from the surrounding community must be involved so that there is no conflict about people's land and the boundaries of the village area.	For GRTT from the Company, it is more selective in terms of the origin of the land, who the owner is, and in measuring the land it is required that the village team and others be involved so that there are no more problems regarding the land.

No.	Social Issues	Current status	Recomendation	Output
		lands. So, the Company must renegotiate with the communities whose land was also sold in the compensation process.		
2	Conflict regarding the Plasma Plantation that occurred in PT AKL Phase I	Most of the resource persons from several stakeholders stated that the plasma cooperative located in the PT AKL Phase I location in the vicinity of the community was not running well. This is because the potential human resources who run the cooperative have not been able to provide good information to the community, so that many questions arise. There are questions and suspicions from the public regarding this cooperative. However, this is due to the absence of training given to new administrators at the plasma cooperative. This has been discussed with the local cooperative office, which is ready to assist in providing training to existing cooperatives so that the managers of these cooperatives are able to run them well. For the Beringin Jaya Cooperative, there has been only one Annual Budget Meeting (RAT) for plasma.	<ul style="list-style-type: none"> a. Regarding the plasma that has happened in PT AKL Phase I, it is an example for the future for new management of PT AKL Phase II in the process of managing the Company. The Company must supervise the plasma process and determine the cooperative management to consider their skills in the future, so that the cooperative management runs well and is conducive to administration and finance. b. As well as for PT AKL Phase II, it is better if in the examination of the cooperative it involves an external company in terms of finance, whose purpose is to make the Company apply for a financial loan from the BANK. The BANK will no longer doubt the Company because it has been supervised by the external company. a. The Company provides training to cooperative administrators where trainers are invited from the cooperative office, the goal being that the management of the plasma cooperative is effective, and it must be transparent at the Annual Members Meeting (RAT) for the plasma farmers. 	PT AKL Phase II managers who have dexterous management staff will ensure the smooth running of the plasma process and the Company as the foster father conducts training for cooperative managers, so that their skills in the plasma can increase and matters of conflict regarding plasma can be minimised.
3	Overlapping areas of PT the AKL Phase II Location Permit	There are indications of PT AKL Phase II land that was opened in PT AKL Phase I. There is an area of 90.37 ha that has been cleared by the PT AKL Phase I company but is included in the PT AKL Phase II permit area. For	The consultant's suggestion is that the area that has been planted by the PT AKL Phase I company should be left alone with the planted land not cleared, and cause erosion of the land. It is better to plant conservation types of plants. The problem of overlapping is the main focus of the Company, because later when the RSPO auditor visits the Company	This overlap by the Company is a serious problem that must be resolved by the Company as soon as possible.

No.	Social Issues	Current status	Recomendation	Output
		example, there is an area upstream on the Ambai River that has been worked on by PT AKL Phase I.	and finds that the area has been worked on by PT AKL Phase I it will have a bad impact on the Company. It is better for the Company to fix this situation as soon as possible to prevent it becoming a finding by the RSPO auditors.	
4	Concerns about declining labour requirements in the future,	There are still concerns that the need for local labour will decline in the future.	The company has started working on an independent program that is labour-intensive to accommodate local resources, for example strengthening the plasma cooperative business with transportation, labour contractors and others so that it can accommodate local manpower resources; or strive for independent labour-intensive businesses such as the programs that have already been launched, for example the partnerships of Villages and other businesses; as well as conducting training for local employees for future supply.	The establishment of independent labor-intensive businesses that can accommodate the resources of local residents who are partners of the Company.

Table 45. Matriks of Environmental and social Management and Monitoring in new planting activities at PT. AKL II's area

No	Environmental impact managed	Impact sources	Management	Monitoring	PIC
1	<ul style="list-style-type: none"> • Changes in Public Perception. • Changes in job opportunities • Changes in Community Income 	<ul style="list-style-type: none"> • Land acquisition • Labor recruitment • Land clearing • Plantation Management 	<ol style="list-style-type: none"> 1) Extension: In the pre-construction (preparation) stage, information is needed in the community regarding plans for land clearing for farms, plans for compensation for plants and buildings and recruitment of workers. Outreach is made to the community (village officials, community leaders and representatives of the affected community) about the plantation management system applied and community involvement in such management. 2) People who have lost their main source of livelihood due to land acquisition activities must be given appropriate compensation according to market prices and an agreement between the two parties, so that it can be used to buy replacement land or venture capital investment. 3) Conduct community development programs around plantations and mills through the oil palm plasma program for residents who own land, or other programs arranged jointly between the Company and the community. This is to bring community needs closer to the Company's capabilities such as providing clean water for residents, assistance with making superior seeds accessible to residents, and other assistance according to Company capabilities and residents' expectations. 4) Include village officials, community leaders, sub-district governments and authorised institutions in land acquisition activities, in accordance with the prevailing duties and functions in government and society. 5) Develop service facilities through the Corporate Social Responsibility program of PT. Agro Kati Lama in coordination with local villages such as: repair of village road facilities that are used by the Company and can be enjoyed by the local community in supporting their economy; support for the development of educational facilities for workforce needs; and health facilities to 	<p>Once a year during the pre-construction stage and continued at the construction and operation stage of the plantation and factory</p>	<p>ENC Regional Staff ENC Platation staff Person in charge: ENC Senior Manager</p>

No	Environmental impact managed	Impact sources	Management	Monitoring	PIC
			<p>anticipate workplace accidents and negative impacts that may arise from oil palm plantation activities.</p> <p>6) Proper treatment of the local community through the policy of prioritising local workers and the principle of information disclosure in the acceptance or termination of employment can control negative impacts.</p> <p>7) Improve educational sarpras, especially coaching courses/training, both conducted by companies and those organised by other agencies through the CSR program.</p> <p>8) 8) Improve socio-cultural skills of religion, sports, arts and public health (medical personnel, medical workers, clinics/health centres) through the CSR program.</p> <p>9) Cooperate with the District Plantation Office Musi Rawas to improve the skills of plasma farmers in modern plantations.</p> <p>10) Cooperate with the District Cooperative Office, Musi Rawas to improve the skills of plasma farmers and communities in the field of cooperatives.</p> <p>11) Assist and facilitate the community to establish a plasma plantation cooperative PT. Agro Kati Lama.</p> <p>12) Collaborate with Disnakertrans District Musi Rawas to improve the quality of human resources through courses / training programs.</p> <p>13) Facilitate meetings of members of the plasma plantation cooperative of PT. Agro Kati Lama every year.</p>		

No	Environmental impact managed	Impact sources	Management	Monitoring	PIC
2	Increased Soil Erosion	1. Construction and Repair of Facilities and Infrastructure 2. Land Clearance	<ol style="list-style-type: none"> 1) Make erosion prevention structures that are adjusted to the level of the slope of the soil. 2) Plant cleared land that is not used long term with ground cover crops such as legumes (LCC), for example Calopogonium mucunoides, Centrosema pubescens, Crotalaria or plants specifically planted to protect the soil from the threat of damage by erosion and/or to improve the chemical and physical properties of the soil. <p>Make and arrange drainage channels at the construction site, repair infrastructure and equip it with sediment traps so that the channels function to drain water and capture sediment before entering water bodies/rivers. Sediment traps can be created along drains, water control channels, or natural drains. Sediment traps filled with half the volume of sediment are dredged immediately (usually after high rainfall intensity).</p>	Once a year during the construction stage and continue at the farm operation stage	ENC Regional Staff ENC Plantation staff Person in charge: ENC Senior Manager
3	Decreasing Water Quality and Quantity	Land clearing Nurseries and planting	<p>Water quality management plans for plantation land clearing activities are focused on the source of the impact, namely erosion, as described in the impact of erosion. Besides that, water quality management is carried out as a result of land clearing activities as follows:</p> <ol style="list-style-type: none"> 1) Doing land clearing in stages according to the progress of oil palm planting. Open land that is not used in the long term is planted with ground cover such as legumes (LCC) 2) Runoff water carrying eroded soil particles is managed by building water control channels, checks and sediment traps. 3) Creating retention ponds (embung) and dams as water reserves in the dry season. 4) Do not close natural channels so as not to change the existing surface water flow pattern. 5) Planting ground cover crops immediately after land clearing is carried out to reduce evaporation from open land. <p>In the nursery and planting activities:</p>	<p>Water quality: Once a month during land clearing activities at the construction stage</p> <p>Water quantity: Every 6 months during the construction stage and continued at the plantation and palm oil mill operation stage</p>	ENC Regional Staff ENC Plantation staff Person in charge: ENC Senior Manager

No	Environmental impact managed	Impact sources	Management	Monitoring	PIC
			<ol style="list-style-type: none"> 1) Oil palm nurseries operate in locations that have sufficient surface water reserves, which are capable of supporting the opening of plantations. 2) Waterways or farm land drainage must be equipped with a drainage gate to regulate the ground water level in the land. The water channel is equipped with an embung at certain distances and places for water reserves, especially during the dry months (June - August) 3) Natural channels are not closed, so as not to change the existing surface water flow pattern. 4) Oil palm planting is not carried out on riverbanks (50 - 100 m). The river border area is enriched with local vegetation as a corridor for animals or habitat for food, shelter and habitat for the breeding of wild animals. In this regard, local plant nurseries need to be done to enrich the border land. 		

4.2.2. High Carbon Stock and HCV Management and Monitoring Plan

Management and Monitoring Plans for HCV and HCS areas are intended to provide general guidance to management units in implementing threat protection, maintaining and strengthening the function of areas with HCV and / or HCS areas.

An HCV Management Plan and a Monitoring Plan will also be implemented immediately by considering: (a) Aspects of species protection, including managing conflicts between animals and humans, creating corridors between fragmented habitats, and enriching habitats, (b) Strengthening communication links with neighbouring companies to develop management plans and action plans for HCV protection and (c) Involving local communities, because the interests and benefits of the presence of HCV are the interests and benefits of all parties.

In line with the management of HCV, companies need to build an institutional/management unit by training or recruiting staff with the necessary qualifications to ensure the achievement of HCV management objectives. Staff capacity needs to be strengthened in management identification, monitoring and evaluation, among others: (a) Monitoring training, for example the basics of animal identification, water quality measurement, stakeholder engagement and implementation of procedures and policies already available in the Company.

Threat assessment is carried out by applying the IUCN Threat Classification Scheme approach (based on Salafsky et al., 2008). **Table 46** provides a summary of the results of the threat assessment to conservation value.

Table 46. Summary of threats assessment to conservation value in the location permit in PT AKL II

HCV	Summary of significant value in the study area	Current Threats	Potential Threats
HCV 1	Population of endemic fauna and plant species or RTE species - there are Endangered (EN), and Vulnerable (VU) species.	Hunting of endangered species such as black-crested sumatra langur (<i>Presbytis melalophos fluviatilis</i>) and gibbons (<i>Symphalangus syndactylus</i>); and the vulnerable species Sumatran slow loris (<i>Nycticebus coucang</i>) and southern pig-tailed macaque (<i>Macaca nemestrina</i>).	
			Water runoff carries agrochemical residues
		Logging and cutting of remaining trees and loss of connectivity with potential habitat outside of the identified area	
			Poor cultivation practice by converting river buffer area into cultivated area

		Land fires and micro climates Land fires and micro climates	Land fires and micro climates Land fires and micro climates
HCV 4	Basic environmental services related to water management includes rivers, streams channel, and river buffers	Disposal of household waste into river bodies	Improper agrochemical practices and disposal of household waste cause water pollution.
		Conversion (clearing) of land on riverbanks by landowning communities	Conversion (clearing) of land on riverbanks by land clearing contractors
HCV 5	Existence of rivers as water sources and fishing	Disposal of household waste to river bodies	Improper agrochemical practices and disposal of household waste cause water pollution..
		Conversion (clearing) of land on riverbanks by landowning communities	Conversion (clearing) of land on riverbanks by land clearing contractors
			The development of the Palembang - Bengkulu toll road that crosses rivers in the location permit area has the potential to damage the riparian buffers and water quality
	The existence of springs as a source of clean water.		Clearing on the spring buffer area, and pollution from plantation activities
HCV 6	Presence of places of historical value.		Potential conversion of areas of historical importance
			Damage to sites due to looting and lack of management (omission)

Activities at this the plan stage is presented in **Table 47**.

Table 47. Activities at this is the plan stage

HCV	Threats	Management recommendation	Monitroing recommendation	PIC
HCV1	<ul style="list-style-type: none"> Hunting results to reduced animal populations Decrease in the size and quality of aquatic habitats and terrestrial animal habitats due to felling of trees, land fires, 	<ul style="list-style-type: none"> Conduct socializations to inform the existence of important wildlife at every internal briefing and every relevant meeting both internal and external Reducing chance for animal hunting and preparing alternatives to 	<ul style="list-style-type: none"> Regular monitoring to check the presence of wildlife species in every 3 months Recording any incidents of hunting, and damage or reduction in habitat area 	ENC team and Estate Manager

	<p>and lack of connectivity with the outside potential habitats</p> <ul style="list-style-type: none"> • Wildlife habitat fragmentation • Animal-human conflicts 	<p>meet the needs of the community / workers</p> <ul style="list-style-type: none"> • Maintaining river buffers as corridors to avoid habitat fragmentation • Maintaining the integrity of habitats, including by establishing HCV areas and patrolling security • Establish an environmental team, especially from the local community and training provision, including efforts to manage wildlife conflicts. • Install fire watchtowers 		
HCV4	Riparian river buffers conversion	<ul style="list-style-type: none"> • Conduct socializations and information sharing on the boundaries of the HCV areas and important functions of the HCV at every internal briefing and every relevant internal and external meeting • Collaboration and cooperation with the community, government (from village to regional level), and NGOs in relation to river conservation and protection programs • Establish an environmental team, especially from the local community and training provision for the management and monitoring of water bodies • Socialization and assistance to LC contractors regarding the boundaries of HCV areas to avoid over-clearing 	<ul style="list-style-type: none"> • Documentation of socialization with relevant stakeholders • Monitoring the boundaries and extent of HCV areas regularly. • Documenting the land clearing process 	ENC team and Estate Manager
	Occupation on rivers riparian buffer for production and disposal of production facility waste	<ul style="list-style-type: none"> • Installation of sign boards for restricting or prohibiting the application of chemicals in riparian areas and awareness for spraying workers 	<ul style="list-style-type: none"> • Measuring the sedimentation rate at the location of water quality monitoring • Periodic water quality checking (at least 	ENC team and Estate Manager

		<ul style="list-style-type: none"> • Implementing land-based soil and water conservation activities, such as making water point or terraces (if needed) • Implement of best practice management to maintain water quality such as: maintaining river buffers, prohibit spraying / fertilizing activities close to river areas / water bodies. • Water point making and cover crop to minimize erosion. 	every 6 months) at the water monitoring points (river inlet-outlets), both visually and in laboratory tests	
	River buffers damage	<ul style="list-style-type: none"> • Vegetation enrichment on the riverbanks and degraded steep areas (enrichment with native tree species and/or those with deep and strong roots and thick canopy is recommended) • River banks maintenances that are prone to landslides using civil technical (short-term) and vegetative (long-term) approaches • Maintain the integrity of all areas through area affirmations and security patrols • Marking a clear HCV area boundary and accompany the LC contractors during land clearing 	<ul style="list-style-type: none"> • Monitor on growth of enrichment areas (% growth) • Recording the number of landslide or high erosion locations • Conduct regular patrols every 6 months • Monitoring the boundaries and extent of HCV areas, especially during land clearing • Documenting the land clearing process • Monitor (measure) the quality of river water regularly integrated with UPL (regular environmental monitoring) 	ENC team and Estate Manager
HCV5	Waste and household waste degrades river water quality	<ul style="list-style-type: none"> • Conduct awareness to inform the importance of rivers and the risk of irresponsible garbage disposal at every internal briefing and every relevant meeting both internal and external • Encourage internal village parties to make 'village rules' or village laws on the use and maintenance of rivers and springs 	<ul style="list-style-type: none"> • Documentation of socialization activities with relevant stakeholders • Regular monitoring for HCV areas • Periodically monitoring on river water quality incorporated with UPL (regular environmental monitoring) 	ENC team and Estate Manager

		<ul style="list-style-type: none"> • Encourage the internal village parties and companies to establish a monitoring team for commensurate areas and rivers and springs 		
HCV6	Potential conversion of important areas or destruction of places and sites that are important to the cultural identity of the community	<ul style="list-style-type: none"> • Coordinate with villages and communities regarding places, sites and areas of important value. • Encourage internal village parties and to establish a monitoring team for the existence of sites and areas that have value • Instalments of sign board and fencing (if needed) on the sites with sufficient information of the importance of the cultural value for the community • Conduct socialization and information sharing to school chief and society on the presence of important cultural value sites as well as other type of HCVs • Visitor controlling by collaboration work with village government 	<ul style="list-style-type: none"> • Documentation of socialization with relevant stakeholders • Monitoring the boundaries and extent of HCV areas regularly. • Documenting the land clearing process 	ENC team and Estate Manager

Because the existence of HCV areas also depends on environmental conditions outside the PT AKL II location permit, for example river basin management, cross-sectoral management is also needed. Management and monitoring of HCV requires the collaboration of stakeholders from internal PT AKL II or at the SIPEF group level, the local government with related agencies and village institutions and their communities as well as with other parties involved at the broader landscape level. Strengthening the capacity and mentoring related stakeholders are the main aspects in the management and monitoring of conservation areas. **Table 48** presents the management that applies across sectors.

Table 48. Sectoral recommendation

Conservation Areas	Socialization and involving in conservation management	Capacity building
<ul style="list-style-type: none"> • Delineate the field, verify it, then define it as the definitive map of conservation areas 	<ul style="list-style-type: none"> ○ Internal Company plantations and those managed by the community ○ Communities around the Company (village, sub- 	<ul style="list-style-type: none"> ▪ Conservation area monitoring training (basic identification, water quality measurements and matters related to sustainability)

<ul style="list-style-type: none"> • Create stakes marking the boundaries of conservation areas • Create a marker in the conservation area 	district and relevant general public) <ul style="list-style-type: none"> ○ Government agencies 	<ul style="list-style-type: none"> ▪ Consistent application of standard operating procedures and policies for monitoring conservation areas
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4.2.3. Management Plan for GHG Emission Mitigation

The management plan is aimed at minimising GHG emissions due to the opening and operation of plantations and factories in the future. In general, GHG emission mitigation includes:

- 1) Monitoring of carbon stocks and GHG. Carbon stocks in the form of conservation areas are carried out through satellite imagery and creating permanent plots for observation and analysis of vegetation.
- 2) Regulating the use of fuel in all aspects of plantation operations and supporting activities
- 3) Regulating and controlling fertiliser and pesticide use, including dosage and method of use.

Table 49. Reduction effort of monitoring and mitigation emission in PT. AKL II

Emission sources	Mitigation	Monitoring plan	PIC	Timeline
Land clearance	PLTB policy implementation Carry out an orderly SOP for land clearing and new planting/ replanting Socialisation to contractors to avoid conservation areas (HCV- HCS) Land clearing gradually	Data collection and reports	ENC Dept and Plantation Dept	Annual
Damaged conservation area	Rehabilitation of degraded (disturbed) conservation areas Implementation of the HCV and HCS management plan Extension for protection of HCV-HCS areas	Data collection and reports	ENC Dept and Plantation Dept	Annual
Transportation and heavy equipment	Routine maintenance of vehicles and heavy equipment Training and counseling on how to drive that is efficient and not wasteful of fuel Repair of estate transport roads and limiting vehicle loads Not using a vehicle over 7 years of age	Emission tests for vehicles and heavy equipment Data collection and reports		Annual
Fertiliser	Regulation of fertiliser use and dosage Use of organic matter (empty bed, ash, compost) The efficiency of using fertilisers is only during the dry season. In riparian areas add fertiliser instead of spreading it.	Data collection and reports		

Use of electricity for housing and offices	Education and culture for saving electricity Limitations on the use of electric power every month	Data collection and reports	ENC and General Operations	Every month
Factory operations	Routine maintenance of boilers and generators Use of biomass to replace fossil fuels	Perform emission (air quality) test on chimneys Data collection and reports	Dept. of Factory Operations	Every 6 months
Plant waste	Construct a methane capture facility Make a land application before the methane capture is complete	Data collection, monitoring of waste ponds and reporting of waste profiles	Dept. of Factory Operations	Every 1 month for waste quality Every year for LA and methane capture

5. REFERENCES

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- PT Koompasia Enviro Institute. 2020. Laporan High Carbon Stock Approach Assesment (HCSA) PT Agro Kati Lama Fase II, Kabupaten Musi Rawas, Provinsi Sumatera Selatan. Final Report. Medan.
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- PT. Survindo Link. 2020. Analisa Mengenai Dampak Lingkungan Rencana Perluasan Perkebunan Kelapa Sawit dan Karet serta Pembangunan Pabrik Pengolahan Kelapa Sawit PT Agro Kati Lama. Bengkulu.
- RSPO.2015 Roundtable on Sustainable Palm Oil Remediation and Compensation Procedures Related to Clearance without Prior HCV Assessment. Kuala Lumpur
- RSPO.2016. RSPO GHG Assesment Procedure for New Development, Version 3. Kuala Lumpur.

6. INTERNAL RESPONSIBILITY

The oil palm grower (PT Agro Kati Lama) signs to confirm that the necessary assessments have been done and completed in accordance to the relevant RSPO procedure. The assessors (PT Koompasia Enviro Institute) confirm that the information in the reports has been accurately interpreted in the NPP report.

Signed for and on behalf of PT Agro Kati Lama



Hamdani

ENC Senior Manager

Date: 05 Januari 2021

Signed for and on behalf of PT Koompasia Enviro Institute



Henry Marpaung

Director

Date: 05 January 2021

Acceptance of Responsibility for Management Plan

The outcomes of all assessment reports have been accepted by the Management of PT. Agro Kati Lama and will be applied in developing and managing PT Agro Kati Lama as outlined in the management and monitoring plans presented in this report.

Management of PT Agro Kati Lama



Sander Van Den Ende

Director Sustainability

Date: 05 January 2021

Organisation information and Contact Persons

Contact details of the company are as follows:

Company Name	PT Agro Kati Lama (AKL) fase II
Address	Forum Nine Building, 10 th floor, Jl. Imam Bonjol 9, Medan.North Sumatra
Location for proposed NPP	Sub District of Tiang Pumpung Kepungut and Sub District of Muara Beliti, Musi Rawas District, South Sumatra
Contact Person	Hamdani
Position	EnC Senior Manager
Email	hamdani@sipef.com
Telephone	+62 61-41060020
Status Bussiness Permit	Izin Lokasi (Location permit): Keputusan Kepala Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu Kabupaten Musi Rawas Nomor 75/ KPTS/II/DPM-PTSP/2018, tanggal 27 Agustus 2018 Tentang Pemberian Izin Lokasi Untuk Keperluan Pembangunan Perkebunan Kelapa Sawit Dan/Atau Karet Atas Nama PT. Agro Kati Lama, seluas: 3,090.9 Ha. Izin Usaha Perkebunan (IUP) with NIB no. 8120219042726, dated 01 September 2020
Total areas of proposed new planting	3,909.90 ha