




New Planting Procedure - Summary of Assessments

| | | |
|---|---|---|
|  Roundtable on Sustainable Palm Oil |  S I P E F |  |
| NPP Reference Number: | NPP RSPO 781255 | |
| Country of the NPP submission: | Indonesia | |
| RSPO Membership Number: | 1-0021-05-000-00 | |
| Section 1: General Information | | |
| <p>The Batu Kuda Estate was owned by PT Agrincinal and is being purchased by PT Mukomuko Agro Sejahtera. PT Mukomuko Agro Sejahtera is a subsidiary of SIPEF and in fulfilling its commitment to the RSPO is undertaking an NPP. The total area of the management unit is 2049.97 ha. The estate was developed by Agrincinal (another company) between 1998 – 2016, before being purchased in 2020 by PT MMAS. Agrincinal acquired rights to the land by paying land compensation to the original owners.</p> <p>PT. Mukomuko Agro Sejahtera – Batu Kuda Estate located in Tunggang Village, Pondok Suguh District, Mukomuko Regency, Bengkulu Province, Indonesia. Batu Kuda Estate office located in 2° 50' 27.792" S & 101° 28' 58.519" E.</p> <p>Location permit: based on “Keputusan Bupati Bengkulu Utara No.109 Tahun 2002 tentang Pemberian Izin Lokasi untuk Keperluan Perkebunan Kelapa Sawit Kepada PT. Agrincinal” dated 2 December 2002. The area for 2,300 Ha and complemented with map 1:50,000. And subsequently issued with: “Keputusan Bupati Mukomuko No.233 Tahun 2009 tentang Pemberian Izin Lokasi Lahan Perkebunan Kelapa Sawit Kepada PT. Agrincinal”, dated 15 July 2009. The location in the permit is 2,300 Ha; location Tunggang Village, Pondok Suguh District, Mukomuko Regency, Bengkulu Province, Indonesia.</p> <p>IUP: as in “Keputusan Bupati Mukomuko No.140 Tahun 2011 tentang Izin Usaha Perkebunan Budidaya Tanaman Perkebunan kepada PT. Agrincinal” dated 29 March 2011. The permit is for oil palm plantation of 2,300 Ha.</p> <p>HGU: company HGU is in process. Statement letter from Lands Office/BPN “Surat No.158/SP-300.HP.01/III/2022 Perihal Permohonan Pemberian Hak Guna Usaha atas nama PT. Agrincinal terletak di Kabupaten Mukomuko, Provinsi Bengkulu” dated 9 March 2022.</p> <p>Environmental permit: for PT. Agrincinal as per “Surat Pemerintah Kabupaten Mukomuko Kantor Pengendalian Dampak Lingkungan No.660/014/PDL/IV/2006 Perihal Persetujuan UKL-UPL Perkebunan Kelapa Sawit” dated 24 April 2006.</p> <p>An HCV/ HCS assessment has been completed on this estate to enable PT MMAS to comply with RSPO requirements, which necessitates all new oil palm developments to undertake an HCV/HCS assessment prior to development (the overall purpose is to comply with RSPO new planting procedures). This is done to ensure that any HCV area or HCS forest in the assessment area are identified and mapped prior to development, and management and monitoring recommendations are provided to ensure the HCV/HCS present are maintained or enhanced if the project proceeds. Additionally an SIA and ANDAL (Environmental Impact Assessment) have been undertaken over the estate to identify social and environmental impacts of the development and assist in the development.</p> <p>A Land Use Change Assessment has identified remediation compensation required.</p> <p>A Greenhouse Gas Assessment has evaluated several development scenarios and quantified the GHG sequestration associated with each scenario.</p> <p>Areas and proposed time for new planting</p> | | |

| Location | Proposed Time Plan for Development | | Approx. size of clearing |
|------------------|------------------------------------|------|--------------------------|
| | Month | Year | |
| Batu Kuda Estate | January - December | 2026 | 244.46 Ha |

Section 2: Maps

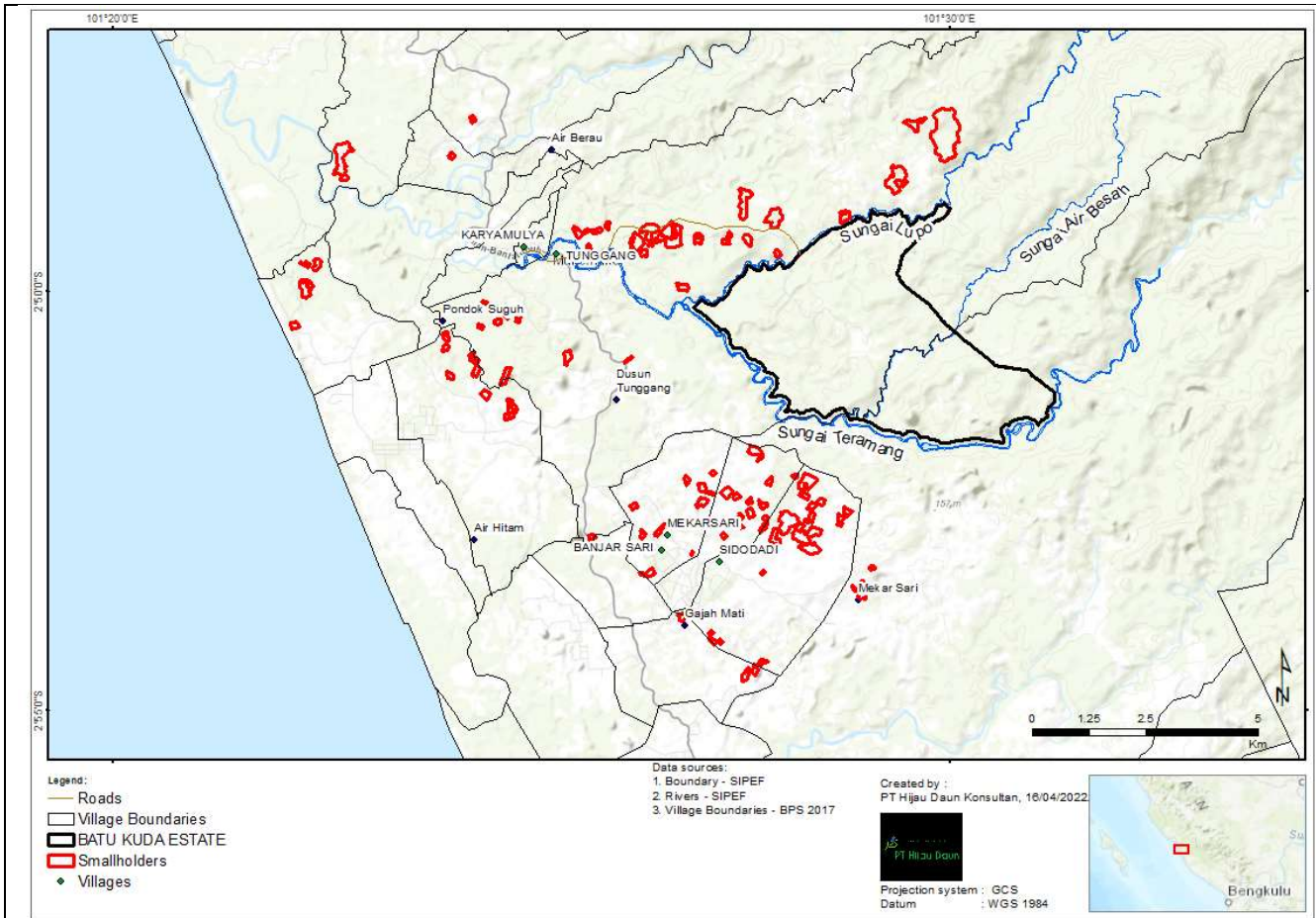


Figure 1. The boundary map of the area owned the company is the Batu Kuda Estate (black border).

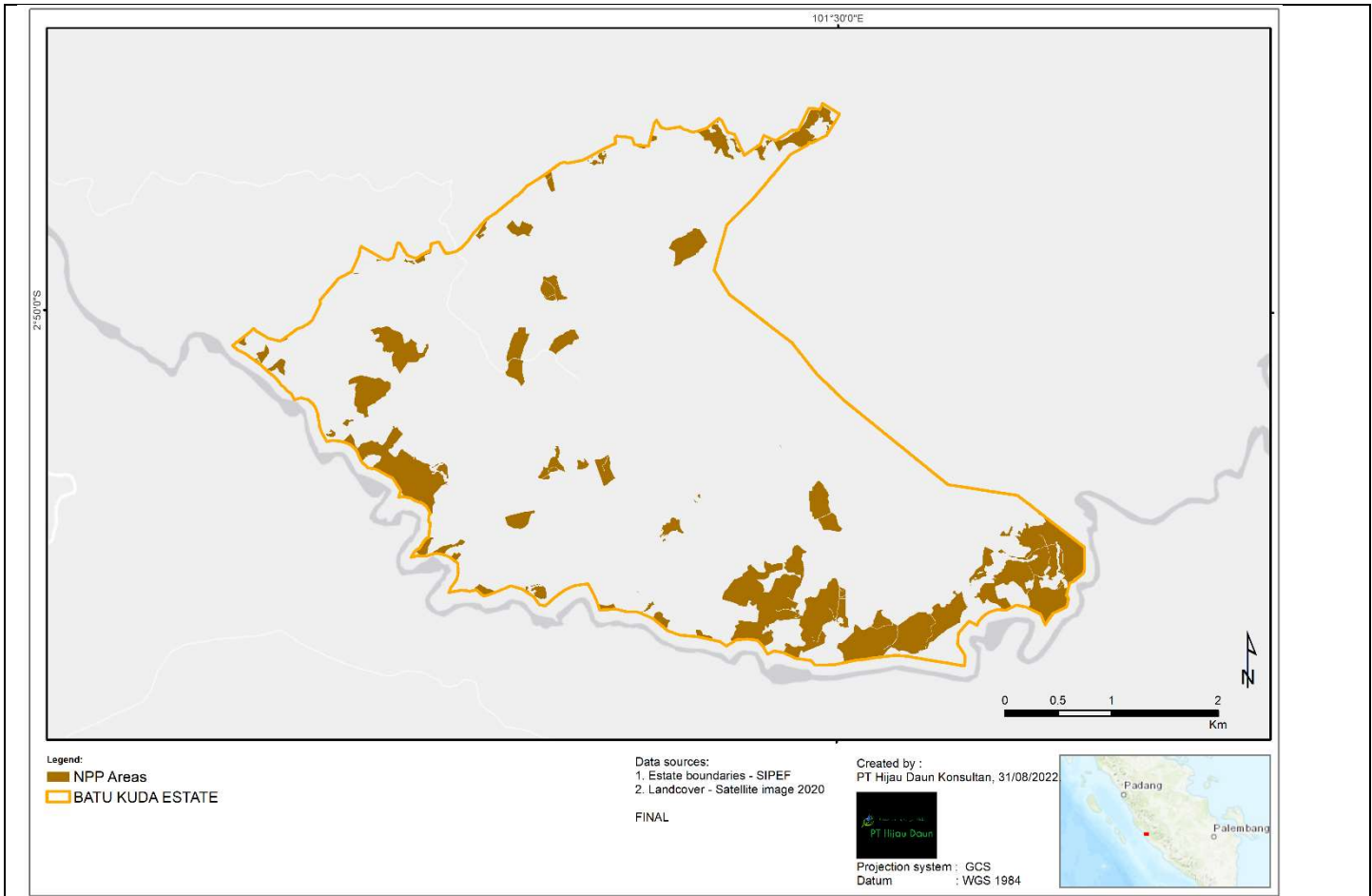
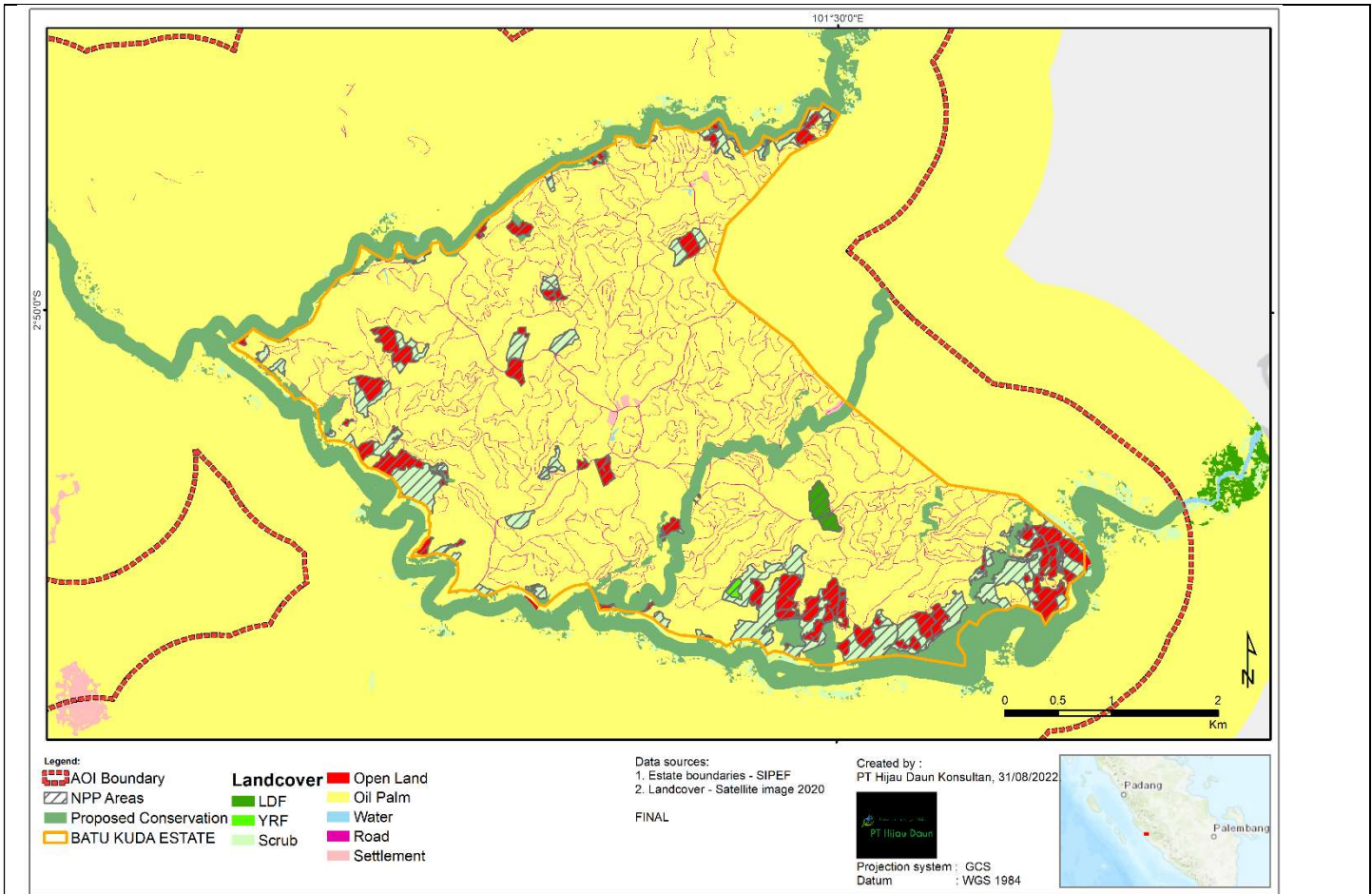


Figure 2. Areas where potential new planting (244.46 ha) may take place in Batu Kuda Estate.



Section 3: SEIA

EIA (UKL / UPL)

Date of assessment: 2006

Name of Assessor: Not stated

Assessor Designation and Company: PT Agrical

SIA

Date of assessment: 22 September, 2021 – 1 October, 2021

Name of Assessor: J Crawshaw, Daryatun Ridwan

Assessor Designation and Company: Consultant / PT Hijau Daun

EIA

Methodologies

Investigated the possible causes of environmental impacts under the following categories :

- Soil Erosion – this was analysed using slope models and working out the erosion potential.

- Water Quality – this was analysed against baselines in the rivers. There are two causes of water pollution. These are pollution from the workers quarters and runoff from the plantation
- Natural flora – this involved making up a species list of the trees present in the river buffers and their relative frequency. These were all pioneer species.
- Wild Animals -
- Livelihoods / Income of local residents

Findings

Slopes – there were areas of slopes > 40% and these can't be planted. Planting of land cover crops and adequate terracing will control erosion on medium slopes.

Water quality – the use of sediment traps on roads and other drainage will control the sediment. The use of septic tanks from the workers' quarters will control domestic waste water.

Natural flora / fauna – development of the plantation will cause changes in the composition. Flora should be maintained in the river buffers and steep areas. This will minimise the effects of the plantation.

Livelihoods / income of local residents – this will be minimised by prioritising local residents for work opportunities. Reminding the residents to use the GRTT payments for productive uses. Ensuring that the GRTT paid is appropriate in order not to cause ill-feeling in the communities. Building and maintain roads that can be used by the communities.

SIA

Methodologies

The SIA identified 13 potentially affected communities of which six were deemed to be affected.

Review of the legality (RTRWP / MoEF)

Scoping Study

The objectives of the scoping study were to identify the project's area of influence, available information and initial stakeholder concerns. This enabled the assessor to identify information gaps, high priority issues and to inform the methodology for the full assessment and the team required.

The scoping study took place in between 22 September, 2021 – 1 October, 2021. This was done by Jules Crawshaw and Daryatun Ridwan. This involved the following activities:

- Travelling around the assessment area in order to understand current land cover and land use.
- Review of the secondary data that PT MMAS had available.
- Interviewing PT MMAS staff and community leaders about the social issues (especially land conflict) that are present (or have been resolved) in the area.
- Confirming the communities' permission to enter the area and undertake studies.
- Confirm that the company's plan to take over management of the estate and to develop further areas has been socialised with the employees and the surrounding community.
- Reviewing the FPIC activities that have already taken place;
- Understanding the results of mapping of land ownership and land use and how this data has been used to negotiate areas for development and conservation with the community.

- Reviewing procedures for communication and consultation with the communities. Reviewing how these procedures were developed. Reviewing documentation of communications that had already taken place.
- Interviewing workers about general working conditions.
- Gather information for HCV 4 – 6 and the HCSA Social Requirements (e.g. Social Background Study) which generally overlap with the requirements of an SIA
- Interviewing relevant parties from the villages and Kecamatan that overlap with the assessment area in order to :
 - o Gather demographic information
 - o Understand the communities’ awareness of plans to convert the estate
 - o Gauge the communities’ perception of the impact of current oil palm development.
 - o Understand economic development and stability
 - o Understand the communities’ access to government services (e.g. education, health, infrastructure)
 - o Gather information on the general background to the area including policies, programs, history / chronology of events, land claims, aspirations and solutions to problems that may have existed.
 - o Understand the dependence of community members on natural ecosystems to fulfil basic needs and identify any important cultural sites.

Table 1. Government organisations that were visited

| Department | Purpose |
|---|---|
| Camat (Sungai Rumbai) | <ul style="list-style-type: none"> - Collaborations and relationship between the Kecamatan with the company. - Questions or comments regarding the purchase of BKDE by PT MMAS. - Find out history or relevant background information about the area. |
| Camat (Pondok Suguh) | <ul style="list-style-type: none"> - Collaborations and relationship between the Kecamatan with the company. - Questions or comments regarding the purchase of BKDE by PT MMAS. - Find out history or relevant background information about the area. |
| Dinas Ketenagakerjaan (Workforce Dept) | <ul style="list-style-type: none"> - Collaborations and relationship between the Dinas with the company. - Questions or comments regarding the purchase of BKDE by PT MMAS. - Find out history or relevant background information about the area. - Find out from a third party about issues relating to the workforce. - Compliance with Government policies and regulations. |

| | | |
|--|--|--|
| Dinas Lingkungan hidup (Environment Dept) | <ul style="list-style-type: none"> - Collaborations and relationship between the Dinas with the company. - Questions or comments regarding the purchase of BKDE by PT MMAS. - Find out history or relevant background information about the area. - Find out from a third party about issues relating to the environment and monitoring. - Compliance with Government policies and regulations. | |
| Dinas Perkebunan (Agriculture Dept) | <ul style="list-style-type: none"> - Collaborations and relationship between the Dinas with the company. - Questions or comments regarding the purchase of BKDE by PT MMAS. - Find out history or relevant background information about the area. Compliance with Government policies and regulations. | |

Workers

Table 2 Number of workers that were interviewed

| Operation | Number | Purpose |
|--------------------|--------|--|
| Plantation Workers | 19 | To discuss general working conditions |
| Clinic | 2 | Discuss the implementation of Health and Safety and the nature of the issues that the clinic was faced with. |

NGOs

Only one social NGO was known this is the NGO Amanah which deals with conflict mediation and community improvement. This is a voluntary organisation and the manager of the organisation was interviewed.

Information Sources

Information to describe the lifestyle and living conditions of people in the Study Area has been derived from both primary and secondary data sources. Primary data includes:

- Social interviews for communities living at each site and
- Key Stakeholder interviews.

Secondary Data

The primary data has been complemented by the following secondary data:

- The 2020 Badan Pusat Statistik data at the Kecamatan and Provincial level; 2020)
- In-house data sets (e.g. Stand Operating Procedures, Grievances or Complaints Register, Employment, health, production and other statistics;
- Land use assessments for each site;
- Land Inventory Documents, Land Sale Documents

Reviewing reports that had been prepared for the existing plantation. This included:

- Participatory Mapping
- HCV and HCS report
- UKL and UPL (Environmental Management and Monitoring Plan)¹

These were particularly important as these gave an insight to how the company would develop new plantations based on its existing track record.

Standard Procedures

- FPIC and Land Acquisition (*Pelaksanaan Ganti Rugi Lahan*)
- CSR and Community Development.
- Internal and External Complaints
- Staff Recruitment
- FPIC documentation (e.g. agreements, meeting notes and attendance registers)

Much of the information that was provided was cross-referenced against guidelines provided by :

- HCVRN (Brown et al., 2013)
- HCS (The HCS Approach Steering Group, 2017)
- RSPO (RSPO, 2017)

This was done in order to check for gaps in information or procedures.

Primary Data

Community information was collected through a series of Focus Group Discussions (FGD) held in each “Potentially Affected” community. Potentially Affected communities were those villages which either overlapped with BKDE or the smallholders areas.

The assessment was split into three steps, firstly scoping, secondly the Full Assessment, followed by Final Consultations. To minimise the likelihood of the spread of Covid 19 group numbers were kept small.

Scoping - Participants

During the scoping study interviews were undertaken with the following stakeholders:

- Village leaders and ordinary villagers – a lot of importance was placed on getting a cross-section of the community (e.g. farmers, women, religious leaders, young people). The villages were 99% muslim, so it was difficult to get people from other religions.
- Company staff especially those from the Sustainability Department, estate managers, workers
- Camat Pondok Suguh and Camat Sungai Rumbai

It should be noted that an invitation was made just to the village leaders (e.g. Kepala Desa, Kepala Dusun, BPD). The concept was to keep the meetings small to minimise the risk of spreading Covid-19.

¹ There is no AMDAL because the area is less than 5000 ha.

Table 3. Scoping Interview locations and numbers attending

| Date | Activities - Social |
|-------------------------------|--|
| Wednesday, September 22, 2021 | Ds Sidodadi (6) |
| Thursday, September 23, 2021 | Ds Karya Mulya (6) Ds Teluk Bakung (1) |
| Friday, September 24, 2021 | Ds Bumi Mekar Jaya (2) Ds Banjar Sari (3) |
| Saturday, September 25, 2021 | Kecamatan Sungai Rumbai (1) |
| Monday, September 27, 2021 | Ds Mekar Sari (1) Ds Retak Mudik (4) |
| Tuesday, September 28, 2021 | Meeting with NGO Amanah (1) Forestry Office (2) Manpower Office (2) Environmental Service (7) Plantations Office (3) |
| Friday, October 1, 2021 | Kecamatan Pondok Suguh (1) |

Full Assessment - Participants

Initially an invitation was made to particular groups (e.g. farmers, young people, women, religious leaders) with the idea that these groups would be interviewed separately. However, people always came to the same place together and wanted to be interviewed in a single group. Logistically it became too hard to separate people into groups.

Table 4. Full Assessment Interview locations and numbers attending

| Interview | No. Attending | Date |
|--|---------------|---------|
| Desa Mekar Sari / Sidodadi / Banjar Sari | 30 | 30.9.21 |
| Desa Karya Mulya | 23 | 30.9.21 |
| Desa Tunggang | 22 | 5.10.21 |
| Desa Retak Mudik | 23 | 6.10.21 |

Final Consultation - Participants

Initially an invitation was made to particular groups (e.g. farmers, young people, women, religious leaders) with the idea that these groups would be interviewed separately.

Table 5. Final Consultation - Interview locations and numbers attending. The Final Consultation with the villages took place on 8/10/2021 and with Government on 9/10/2021

| Villages | Number Attending |
|---------------|------------------|
| Air Berau | 2 |
| Banjar Sari | 4 |
| Desa Tunggang | 8 |
| Karya Mulya | 3 |

| | |
|------------------------|----|
| Mekar Sari | 2 |
| Pd. Kandang | 3 |
| Pondok Sugu | 3 |
| Retak Mudik | 1 |
| Sidodadi | 2 |
| Sub Total | 28 |
| Government | |
| KPHP | 3 |
| Dinas Tenaga Kerja | 5 |
| Dinas Lingkungan Hidup | 1 |
| Dinas Pertanian | 2 |
| Sub Total | 11 |
| Grand Total | 39 |

Social Data Collection - Community

The consultation with the community members aimed at describing their customary land use and resource rights. The locations and boundaries of the land use and resource rights were filled in on a prepared base map. This mapping process was a vehicle for enabling the community members to use their knowledge of their lands and resources, and explain the underlying system they use to control, own, manage and transfer lands and resources.



Figure 4. Efforts were made to ensure a relevant cross-section of the community was interviewed. People being interviewed at Ds Retak Mudik. In these predominantly Muslim communities it is difficult to get a strong representation from women.

Combined with this, the assessor walked through the estates to gain an understanding of the terrain and the natural landscape that will be converted. Observations were made about the villages, rivers and other natural habitats. This was focused on areas where natural resources were being used.

For the full SIA; questions were prepared for meetings at the village level to understand and evaluate :

- The current situation within the estate. Particularly with reference to :
 - o The communities' awareness of plans to revitalise the oil palm estate.
 - o The communities' perception of the impact of current oil palm development.
 - o Economic development and stability
 - o Access to government services (e.g. education, health, infrastructure)
 - o General background to the area including policies, programs, history / chronology of events, land claims, aspirations and solutions to problems that may have existed.
- the dependence of community members on natural ecosystems to fulfil basic needs and identify any important cultural sites.

Participatory Mapping

Prior to the mapping workshops, satellite images were prepared showing basic geographic features. These were prepared for use as a base map. The base map was compiled from multiple existing sources such as BPS village boundaries. The map was simple, clear and easy to interpret and covered the whole of the geographical area that could be influenced by the proposed development. It was at a scale that is suitable for detailed mapping with individual communities). The base map included the following:

- Prominent geographical features such as rivers, roads, villages and hills which could be easily identified. Similarly natural forest and oil palm crops could be differentiated as a map was produced using natural colours (oil palm and forest have a markedly different texture on a satellite image).
- The location of the proposed development area.
- Legal boundaries of areas under different forms of ownership.

At each village interview the communities were asked to mark up the pattern of their land use in the area. This was to understand the (1) land use in the area, (2) gain an understanding of food security in the area and (3) if there were any resources that were likely to be affected by oil palm development (e.g. hunting areas). An example of the map is provided in Figure 5.

After the communities had marked up the map, the information was transferred to a GIS database so that it could be stored and mapped alongside other datasets.

Camat (Sungai Rumbai)

Dinas Ketenakerjaan (Manpower Agency)

Dinas Perkebunan (Plantation Department) - Kabupaten Serdang Bedagai

Dinas Lingkungan Hidup (Office of the Environment)

KPHP (Kesatuan Pengelolaan Hutan Produksi) Production Forest Management Unit

NGO Amanah

Findings

Project-Induced Change and Expected Impacts

The conversion of BKDE is a brownfields development; largely consisting of replanting an oil palm crop. In the opinion of PT Hijau Daun the impacts are likely to be minimal.

From the results of discussions, interviews, observations and review of documents, the following conclusions and recommendations can be made:

- **Occupational Safety and Health System**, related to the procurement, use and monitoring of management of Personal Protective Equipment (PPE), work equipment, equipment for urgent situations, signs and warning signs, emergency exits, as well as completeness of health facilities and medicines. The observation of PT Hijau Daun was that this was not being comprehensively implemented.
- **Fire prevention and management system** including training, procurement of tools, and formation of an integrated team with the community →
- Facilities and infrastructure for employee housing
- **Management of domestic waste, toxic and hazardous waste (B3) and liquid waste**, including the application of organic fertilizers and chemical fertilizers in the estate. Ensuring these do not leach into rivers. It was often brought up (both by government and the community) that workers' housing was on riverbanks and the workers threw rubbish in the river. This is not true – the workers live an appreciable distance from the river. This incorrect statement needs to be corrected.
- **Socialization to workers** about all benefits provided to workers, including employment contracts, in accordance with applicable regulations. This was often mentioned in the interviews – workers do not clearly understand their benefits.
- Dissemination to the community about the **plantation management plan** and related opportunities for collaboration with the community.
- Protection and good management of **identified conservation areas**. Improving the quality of Conservation Values and maintaining their existence
- **Minimize pollution** in rivers so as not to reduce the ecosystem services provided by these rivers nor spoil the quality of the habitats.
- **Reforestation the river buffer** in accordance with applicable regulations. This also implies applying chemicals at least 50 m from any water bodies, managing waste properly, and planting erosion preventing plants in the river buffer.
- Manage **liquid waste and solid waste** properly, so as not to damage existing conservation values.

- Forbid workers and the community to catch fish in ways that are not environmentally friendly (e.g electro fishing or poisoning the rivers) Forbid hunting protected wildlife.
- Make rules together with the community on **sustainable river management**.
- Protect existing **cultural sites** in order to increase their value so that they can benefit the surrounding community.
- Giving access to the public to visit **natural beauty sites** (e.g. waterfall and Batu Kuda lookout) while still implementing security protocols.
- **Map clearly all High Conservation Values** Areas which identified on the operational map. This will ensure that damage can be avoided due to plantation activities.
- It is very important to build a **harmonious relationship with the local government**, and other parties such as NGOs and academics to be able to improve the values that exist in the area and prevent mismanagement that can have an impact on the performance and image of the company.

Table 6. Main impacts and rating

| Impact | Discussion |
|-------------|---|
| Employment | The estate currently has a workforce of 158 staff. If the estate becomes fully productive (in line with PT MMAS' other estates), the workforce could expand to 290 staff. |
| Roads | Oil Palm requires a lot of truck movements. The current road goes right through the village. This will inevitably give rise to complaints about traffic, noise and dust. However the same road is used by many smallholders who require a good road to extract their fruit. PT MMAS will have to upgrade and maintain this road. On the negative side it will cause more traffic, but the community who require access to this road will benefit. |
| Economy | BKDE with a very low yield would have contributed very little to the local economy. PT MMAS, in due course, should be able to increase yields to 25 + t.FFB/ha /yr. This will have a material positive impact on the local economy with hugely increased revenues and tax payments in the area. |
| Environment | Comparing the environmental impact with the current status of the plantations, where oil palm is planted right down to river banks and agricultural chemicals are applied in what should be buffer areas. The new management will restore riparian buffers. For this reason there is a positive impact on the environment. |

Table 7. Impact explanation

| Rating | Explanation |
|--------|-------------|
| | |

| | |
|--|--|
| | Positive impact |
| | Minimal impact |
| | Minimal impact to a lot of people or high impact to a few people |
| | Impact likely felt right across the community |

Expected Social Impacts

Table 6 lists a range of impacts, both positive and negative. Avoiding the negative impacts and enhancing the positive ones will require management, not only by PT MMAS but also by the community. Therefore, close community / company collaboration is required.

i) Conflict

In general, it could be said that there was a very good relationship between PT Agrincinal and the community. To the point that it appears PT Agrincinal sacrificed their own well-being for the well-being of the community. This can be seen where the community plantations are very productive and the PT Agrincinal plantations are not productive at all.

Now the new management of BKDE is living side by side with the community and the parties have the risk of conflict, because each party or individual has their own different interests. Preventing Conflict can be done with good conflict management. Preventive action is much better than having to resolve conflicts that have already occurred.

PT Hijau Daun lists issues that may become conflicts if they are not well managed. These are based on issues that were brought up in the interviews with the community and other stakeholders.

1. Lack of good communication between the community and plantation managers. This has the potential to cause misunderstandings and suspicions, so that it can cause problems between both parties or various parties. Regular meetings should be held with the surrounding village leaders, even if there are no pressing issues. An example of this is where the community says that the workers compounds are on the riverbanks and the workers throw their rubbish in the river. The community engagement staff could show a map which demonstrates that the workers do not reside on the riverbanks and that the company has a proper waste disposal system.
2. Implementation of labour-industrial relations. The lack of proper industrial relations between managers and workers can lead to conflict between these parties. The non-fulfilment of all benefits that must be provided to workers in accordance with regulations and legislation can become a big issue for the company, the community and the government. Especially if many of the workers are from the surrounding villages. Note there have already been complaints from ex-PT Agrincinal workers regarding their benefits that have not been paid according to their rights.
3. If the company acquires land within the *izin lokasi*, it should be rigorous in the application of FPIC. If the community feels they have been coerced into selling, this will become a potential conflict in the future.
4. There must be a lot of transparency in plasma management and in the CSR programs. These have the potential to cause demands and complaints from the community and government. Openness is very important to gain the trust of the community and other parties.

5. The Employee Recruitment system must be implemented openly and prioritize the local community. Otherwise this will cause social jealousy in society.
6. Unclear concession boundaries have the potential to become land conflicts and conflicts of interest. Therefore, the boundary has to be clearly demarcated and socialised within the surrounding communities.
7. Conflicts with the forestry sector that have not been completely resolved.
8. Traffic through the village of Karya Mulya – currently because of low yields the truck movements through the village is minimal. However if production increases to 25 – 30 t/ha/yr the truck movements will increase considerably. This will cause conflict. Although a new road that by-passes Karya Mulya is planned.

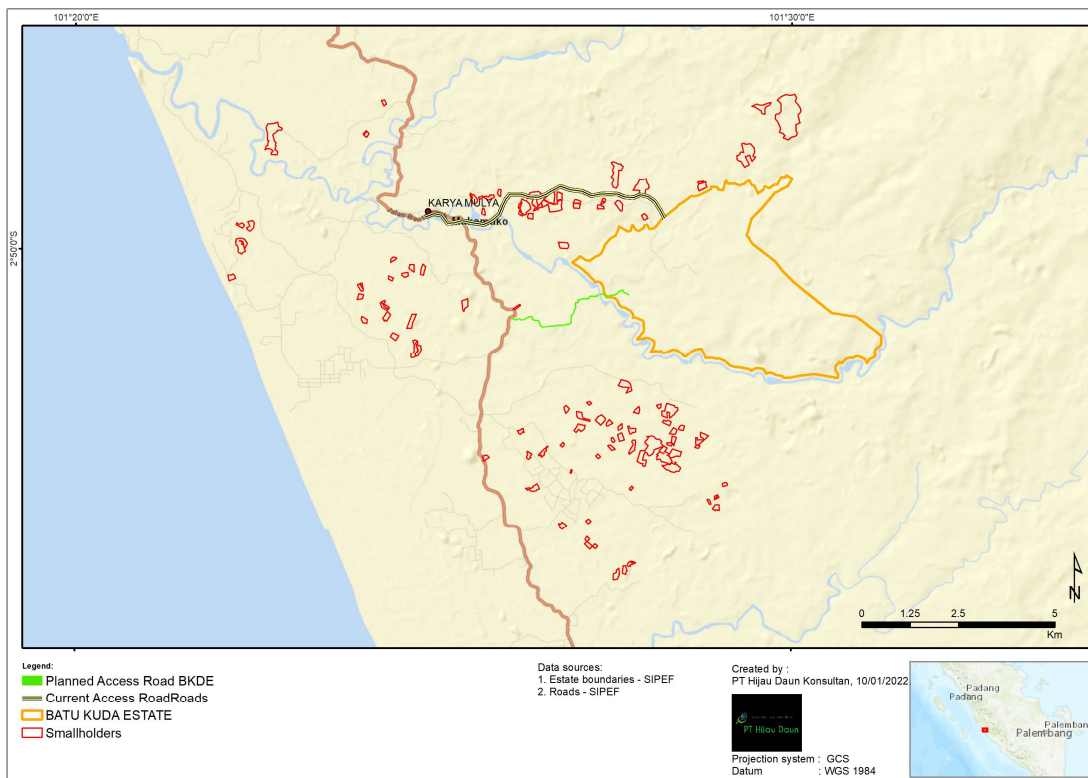


Figure 7. Current Access Road – which goes through Karya Mulya Village. The planned access road by-passes the village.

Section 4: HCV-HCSA Assessment; OR ALS HCV and Standalone HCSA assessment

ALS Satisfactory Date Obtained (ALS HCV & HCV-HCSA assessment):

HCSA peer review completion date and link to HCSA summary report (HCSA website):

<https://www.hcvnetwork.org/reports/integrated-hcv-hcsa-assessment-report-pt-mukomuko-agro-sejahtera-batu-kuda-estate-mukomuko-bengkulu-indonesia-c>

Completion date : June 8, 2022

Name of Assessor: Jules Crawshaw

ALS Number: ALS14006JC

Methodologies

People involved in the process

Table 8. Independent consultants engaged to undertake the integrated HCV-HCSA assessment

| Name | ALS License | Institution | Role | Relevant country experience | Language Proficiency |
|-----------------------------|----------------------------|---------------------------------------|---|--|------------------------------------|
| Julian Crawshaw | Full License ALS14006JC | PT Hijau Daun | Lead Reporter / HCV-HCS Integrated Team Leader (HCS registered practitioner) | Acting as a lead assessor on >20 HCV and approximately 10 HCS assessments | English Bahasa Indonesia |
| Kursani Sumantri | | Indonesian Freelance Consultant | Vegetation Expert | Vegetation expert for > 30 HCV assessments | Bahasa Indonesia |
| Daryatun Ridwan | | Indonesian Freelance Consultant | Social Expert | Social expert for > 30 HCV assessments | English Bahasa Indonesia |
| Ega Oktavianus Putra | | Indonesian Freelance Consultant | Bird and Mammal Expert | Bird and mammal expert that has taken part in many research projects including 3 integrated assessments. | Bahasa Indonesia |

Date of assessment and findings

| Step | Step description | Location | Dates undertaken/scheduled |
|------|--|----------------|---|
| 1. | Contract Signing and project initiation | Office | 14 September 2021 |
| 2 | Participatory Mapping – done as part of the SIA. | Batu Kuda Area | 22 September, 2021 – 1 October, 2021 (also done by the company prior to September 2021) |
| 3 | Compilation of secondary and available primary data, including preliminary stakeholder consultation during a short, initial visit to the license areas (Scoping Study) | Batu Kuda Area | 22 September, 2021 – 1 October, 2021 |
| 4 | Team formation and briefing on project scope | Office | 22 September, 2021 |

| | | | |
|----|--|----------------|--|
| 5 | Planning for fieldwork and agreement on field methods for primary data collection | Office | 14 th – 21 September 2021. |
| 6 | Fieldwork and primary data collection, including direct stakeholder consultation | Batu Kuda Area | 22 September, 2021 – 1 October, 2021 |
| 7 | Development of an SIA (which included a Social Baseline Study and Land Tenure Study) ² | Batu Kuda Area | Done by company prior to September 2021. |
| 8 | Full Assessment, data analysis and interpretation | Batu Kuda Area | 2 October, 2021 – 6 October, 2021 |
| 9 | Preparation of a Draft Findings, including HCVA maps and management and monitoring recommendations (phase 1) | Batu Kuda Area | 6 October, 2021 |
| 10 | Final consultation to report interim HCV findings | Batu Kuda Area | 7 October, 2021 – 8 October, 2021 |
| 11 | Amend the draft report based on the Final Consultation. | Office | October 2021- January 2022 |
| 12 | Submission of the HCV Report to HCVRN | Office | |

Table 9. Area Statement (ha) – areas within the assessment area.

| Area Type | Smallholder Area (ha) | Batu Kuda Area (ha) | Total Area (ha) |
|--------------------------------|-----------------------|---------------------|-----------------|
| HCV1 | 0.26 | 84.58 | 84.58 |
| HCV4 | 0.26 | 97.40 | 97.66 |
| HCV5 | 0.26 | 58.93 | 59.19 |
| HCV6 | | 4.05 | 4.05 |
| HCS | | 23.67 | 23.67 |
| Total Conservation Area | 0.26 | 126.84 | 127.10 |
| Total Developable Area | 350.54 | 1,867.77 | 2,218.31 |
| Total Assessment Area | 350.8 | 2,049.97 | 2,400.77 |

NOTE : The “Total Conservation area is not the sum of the individual HCS and HCV area because there are overlaps.

² The first page of this SIA is provided in Appendix **Error! Reference source not found.**

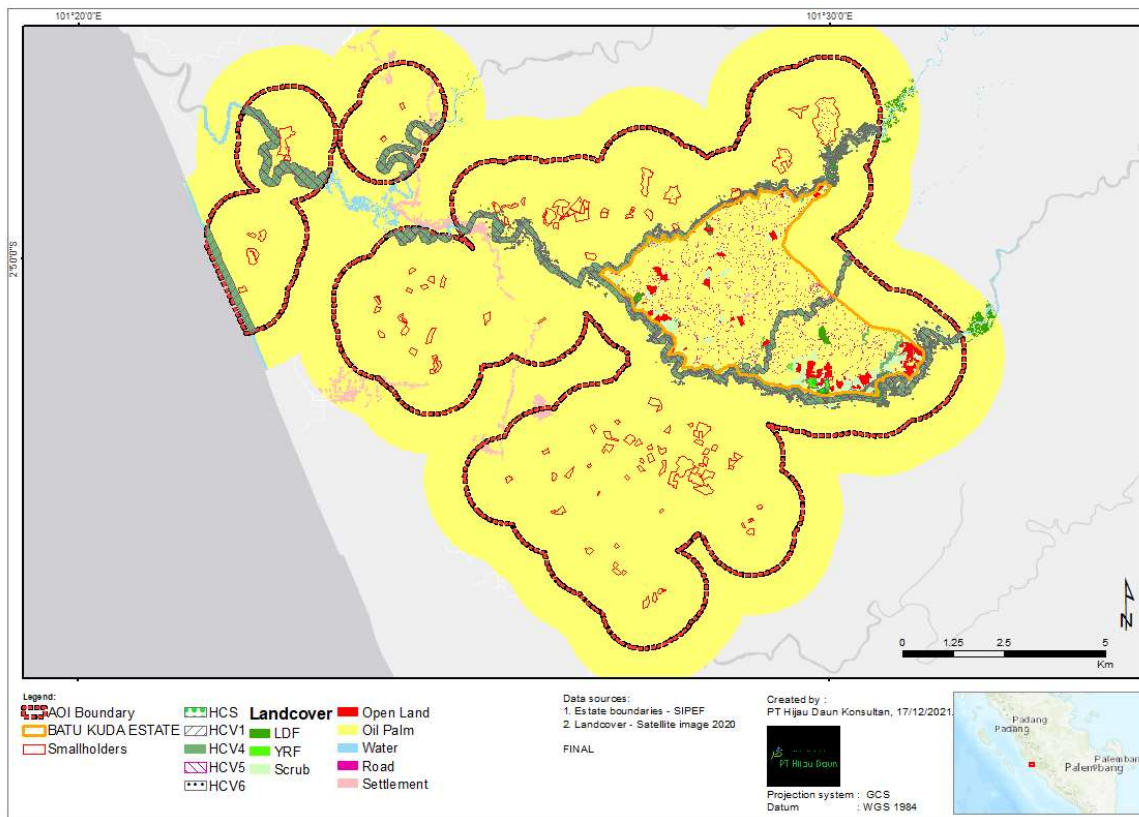


Figure 8. Combines all the HCV and HCS areas. This becomes the total area for conservation

Table 10. Environmental and social values to be conserved

| Environmental and social values to be conserved | Area (ha) where the value is found (inside MU only) | Management areas (ha) (inside MU only) ³ |
|--|---|---|
| HCS forest areas (Value includes forests YRF or better) | 23.67 | 23.67 |
| HCV 1 Value includes : Riparian Buffers Vatica pauciflora Aquilaria malaccensis (gaharu) Crested Serpent-Eagle Black Eagle Spotted Fantail Black-winged kite Gold-whiskered Barbet Black-thighed Falconet Hill Myna | 84.58 | 84.58 |

| | | |
|---|----------|----------|
| <p>Long-tailed Parakeet Malayan Brown Barbet Blue-rumped Parrot Lesser Mousedeer Leopard cat Asian Small-clawed Otter Eurasian otter Small tooth palm Civet Malayan Sun Bear Sunda Pangolin Silvered langur Sumatran Surili Malay tapir Common porcupine Slow loris Sambar deer Common palm civet Colugo Pig tailed macaque</p> | | |
| <p>HCV 4 Overlaps with Forest in LDF condition or better. Overlaps with riparian areas. Steep areas</p> | 97.66 | 97.66 |
| <p>HCV 5 Overlaps with rivers and buffers. Overlaps with forests in condition of LDF or better.</p> | 59.19 | 59.19 |
| <p>HCV 6 Natural beauty spots Graves</p> | 4.05 | 4.05 |
| <p>Total HCV -HCS area (all overlaps removed)</p> | 127.10 | 127.10 |
| <p>Local people's lands⁴</p> | 74.63 | 74.63 |
| <p>Total Area</p> | 2,400.77 | 2,400.77 |
| <p>Total Developable Area</p> | | |

³ HCV Management Areas are areas in a site, MU or landscape for which appropriate management decisions must be taken and implemented in order to maintain or enhance an HCV. Note that the HCV Area and the HCV Management area overlap in this assessment because PT Hijau Daun considers that if an HCV is found, the area that is mapped out as NO GO is the area that is required to maintain that HCV.

⁴ This is available for development with the FPIC of the community.

Section 5: FPIC

Guidance Note: This section is where the information on stakeholder mapping is put and all required information that the building blocks for FPIC have been conducted. References and pictorial evidence are recommended. What are the methodology(ies), people involved in the process, date of assessment and findings?

PT MMAS was in the process of purchasing the estate. As such, any FPIC information was not available however from the results of the SIA the previous owner PT Agrinical had a good relationship with the community and had helped the local community establish their own plantations.

The recent FPIC that had been done was PT MMAS has made a presentation to the community. The company has explained that it is in the process of purchasing the estate and wants to be a responsible manager with respect to the community and the environment. More details about future management will only be able to be released upon completion of the assessment.

“Batu Kuda Estate (BKE) adalah area yang masih dalam proses pembelian oleh PT Tolan Tiga.

PT Tolan Tiga adalah anak perusahaan dari SIPEF Group.

SIPEF, sebagai perusahaan pemilik baru Batu Kuda Estate adalah anggota organisasi Roundtable for Sustainable Palm Oil (RSPO).

Para anggota RSPO telah berkomitmen untuk membudidayakan kelapa sawit selaras dengan lingkungan dan dengan masyarakat yang tinggal di estate dan sekitar perkebunan kelapa sawit mereka.

BKE harus mengerjakan asesmen NKT dan NKS sebagai bagian dari komitmen perusahaan BKE untuk menjadi warga korporasi yang baik.”

The company had obtained permission letters from each of the affected communities to undertake the assessments (biodiversity and social).

At the end of the assessment a consultation was undertaken with the affected communities where the conservation plan was presented to the community and input was sought.

Final Consultation

Generally PT Hijau Daun organises a Final Consultation in one place, so that everyone can share their views. However, covid prevented this and the team had interviews in an open space for the villages. This presentation 28 people attended. Representatives from all the affected communities attended. PT Hijau Daun had 3 separate face to face presentations with Government Departments (11 people attended from 4 departments). The results of these discussions are documented in Table 11.

The letter of invitation was sighted. Other communities that were not deemed to be affected were invited also and they attended. A breakdown of the attendance is in Table 12 - Table 15.

The nature of the presentation to stakeholders was as:

- Overview of proposed development project

- Key steps of assessment process

- Main findings description and justification of HCVs and explain why no HCS forest was identified.

- Maps of areas identified as community lands – where they were inside the estate

- Maps of conservation areas (e.g. HCV, HCS forest)

- Identified threats to social and environmental values

Management and monitoring recommendations

Concerns or issues (with assessment process, findings, operations, etc.)

The Final Consultation took place 7th – 8th September 2021. All the parties were invited that had taken part in the SIA or the integrated assessment. They were informed by letter. The consultation took place in the village office.

The Final Consultation involved explaining HCV and HCS – as well as a discussion of the theory, they key steps were mentioned. At each step a map of the identified value was shown and it was explained why this was deemed to be an HCV area. From there the particular threats to the HCV or HCS area and the associated management and monitoring recommendations. Most of the time was spent discussing results of the assessment.



Figure 9. Top Row : The Final Consultation underway(a combination of a powerpoint presentation and discussion of the participatory maps). The conservation areas mapped also. The develop / conserve areas were discussed one-by-one. Bottom row There was a discussion where questions and comments were taken from the community.

Table 11. Feedback from the Final Consultation

| No | Name / Type of Interview | Position/Organisation / Social Group | Main Concerns / Recommendations | Response |
|---|---|---|--|--|
| Final Consultation with Government 7/10/2021 | | | | |
| 1 | Juni Kurnia Diana / Face to face interview | Head of Dinas Tenaga Kerja (Manpower Dept) | Must pay attention to the distance between the concession and the village, so that the natural resources needed are not disturbed | Noted |
| 2 | M. Rizon | Head Dinas Lingkungan Hidup (Dept of Environment) | <ul style="list-style-type: none"> The concession area is included in the elephant corridor. Have you consulted with KSDA Seblat? | <ul style="list-style-type: none"> Team members, namely Mr. Ega and Mr. Kursani, have consulted with the Elephant Training Center of the KSDA Seblat. |

| | | | | |
|---|--|--|---|--|
| | / Face to face interview | Kabupaten Mukomuko | <ul style="list-style-type: none"> The Air Besah River has been planted with oil palm, have you seen it in the field? Do they use trained personnel for fertilizer application? | <ul style="list-style-type: none"> Yes we have seen it in the field. Currently the oil palm is planted to the river edge. This is unacceptable and the riparian buffer will be restored with natural species in due course. Staff that apply the fertilizers have been trained so as not to cause fertilizers to enter water sources. This involves respecting the riparian buffers |
| 3 | Adnan Buyung / Face to face interview | Staff Dinas Tenaga Kerja | <ul style="list-style-type: none"> Will a CPO factory be built in the Batu Kuda Estate area? If he should contact the Welfare Division in collaboration with Environmental Dept for factory assistance During field activities did the team use local people who are familiar with the local situation? Will the OP planted by PT Agrical be replanted? Is there a possibility of expanding community land? | <ul style="list-style-type: none"> There are no plans to build a factory yet, fruit will be processed in the existing mill. During the activity, the team used the local community and workers from the local community PT Agrical's will be replaced with Agromuko plants. The principle is that if the land is clear and clean without any overlapping areas, then the possibility can happen. |
| 4 | M.Rizon / Face to face interview | Kepala Dinas Lingkungan Hidup Kab Mukomuko | <ul style="list-style-type: none"> Provide input that must be noted about the commensurate gap that was conveyed as wide as 108.9 Ha,⁵ so that it should not be reduced in the future. And how many species will be planted in the appropriate area need to know From the results of the survey in the field, is it known how many species of birds and mammals are in the field, need complete data? What about vegetation? How does PT MMAS Company provide plasma participation which is 20%? Because previously PT Agrical had cleared the forest to become a plasma land. PT MMAS must take responsibility for the problem of violations committed by PT Agrical, there must be intervention in social forestry development. | <ul style="list-style-type: none"> Noted There are three experts who conducted the survey, namely the lead assessor expert on mammals and birds and the expert on vegetation. Because the survey has just been completed, the type and amount of data have not been analyzed. However, because in the field generally it has become an oil palm plantation, there is only a small area of bushes and abandoned fields. Important species found were several gaharu trees, meranti and traces of animals such as sun bears and tapirs. Will not take over plasma land in the forest area. Noted Noted Noted : the company has an existing monitoring team and SOP for HCV management Commitment is maintained in order to maintain certifications |

⁵ This was the initial HCV4 area.

| | | | | |
|---|-----------------------------------|------------------------|---|---|
| | | | <ul style="list-style-type: none"> • According to our monitoring, the area is adjacent to the PT BAT forest concession, and from camera trap monitoring there are still tigers near the concession area. How to avoid conflict with wildlife and it is hoped that it will be maintained and preserved. • Even though PT Agromuko has committed to conservation, who will ensure that this commitment is kept? • The grave site in the Teramang river, is it damaged? Also the Batu Kuda Site? Will there be enrichment of plant species in the conservation area? And tourist spots? • The formula used to calculate the equivalent of a waterfall is 130X the height of the ravine based on UU 41 article 50 paragraph 2, please recalculate the area that must be protected • If the company restricts access to a conservation area, the social effects need to be considered | <p>and good relations with the community.</p> <ul style="list-style-type: none"> • Sites are still in good condition and the management will be improved. • Noted • Noted |
| 4 | Aprin / Face to face interview | Kepala Dinas Kehutanan | <ul style="list-style-type: none"> • Riverbanks where oil palm has been planted must be reforested, including important HCV areas • What if the area to be protected is already controlled by the community? • Is the boundary between the plantation and the forest area clear? How about the plantation that is inside in the forest area (Kawasan hutan). • It is better if there is a community garden area that is included in the forest area (Kawasan hutan), not published, because it will be difficult for the government to restore it. • If there is already a boundary map, please provide it to the office so that a boundary can be made. • Limited funds and personnel from the agency make it difficult to be able to monitor the entire forest area • For the HCV 1 area of 14 ha please maintain it properly, what | <ul style="list-style-type: none"> • Noted • Protected areas that are controlled by the community might be compensated otherwise the community can only do awareness. • Boundaries between plantations and forests have now been mapped and boundaries marked in the field. The plantations that are included in the forest area (Kawasan hutan) have been removed from the concession area. • Noted • Map Noted • Noted • Some of the HCV 1 areas already have community gardens, efforts are being made to compensate. For management recommendations, they will carry out patrol, monitoring and camera trap activities. To reduce the conflict between animals and humans, the company will limit access to this area. |

| | | | | |
|---|---|------------------------------|---|---|
| | | | <p>are the recommendations for this area?</p> <ul style="list-style-type: none"> Do not allow conflicts with wildlife For HCV 4 specifically for waterfalls, access must be opened for the community with strict protocols, so it is not to polluted and damaged | <ul style="list-style-type: none"> For HCV 4, a protocol will be made for incoming visitors |
| 5 | Ibu Weli Sulastri / Face to face interview | Staff Dinas Kehutanan | <ul style="list-style-type: none"> We believe PT Agromuko has a strong commitment to protect the forest, however, because the entire concession area borders the forest, when the plantation is cleared, there will be road access automatically for encroachers. For companies bordering the forest to cooperate with the Dinas Kehutanan in forest security and supervision. | Noted |
| 6 | Apriyansah / Face to face interview | PLT Kadis Pertanian Mukomuko | <ul style="list-style-type: none"> There is an old grave site in the area, how is it managed, does it need a cultural value management permit? For the problem of violations committed by PT Agrinical, please obey the directions from the Government, so that new problems and violations do not occur. Ensure the replacement process for planting and growing is carried out properly, so that it does not cause conflict with the community, the government will continue to monitor it. | <ul style="list-style-type: none"> The site will be preserved, but the management will still be carried out by the descendants. The intention of the company is to help protect the grave site. Noted |
| 7 | Erizezan / Face to face interview | Kabid Perkebunan | <ul style="list-style-type: none"> Proud of PT Agromuko who is willing to carry out surveys and assessments like this, it would be better if other companies can be encouraged to do the same Recommendation For HCV 1, if the community who owns the plantation wants to be compensated, it should be accommodated so that the area can really be protected For the company to also provide guidance to the community about the importance of conservation areas. Will the sloped area be reforested? Sufficiently wide 122 Ha | <ul style="list-style-type: none"> Noted Noted Noted The steep areas and the river buffers will be reforested appropriately. Noted, Crosscheck with the latest RTRWP |

| | | | | |
|---|------------------------------------|-----------------------------|--|---|
| | | | <ul style="list-style-type: none"> Has it been synergized with the new, adjusted Perda on RTRWP? Although it has not been approved by the DPR. However, we recommend checking the new spatial plan. | |
| <ul style="list-style-type: none"> Final Consultation with Communities (Dusun Tunggang, Karya Mulya, Retak Mudik, Mekarsari, Banjarsari, Sidodadi), Camat Pondok Suguh dan Sungai Rumbai, LSM AMANAH 8/10/2021 | | | | |
| 1 | Andi / Group Interview. | Pemdes Susun Tunggang | <ul style="list-style-type: none"> What are the social impacts, global warming and food security, if we all build oil palm plantations? There has been pollution of soil, water and air as well as extreme weather If you look at the area that is green or will be protected, the amount is very small, can it reduce the warming that occurs? The grave site or nature reserve, Sultan Maharaja Batu, is no longer natural. There must be a partnership with the company for the preservation of cultural heritage To date, the company has been disposing of waste in the river, how can this be overcome? | <ul style="list-style-type: none"> HCV/HCSA and SIA assessments are part of the company's commitment to safeguard the environment, including protecting important areas. This is also part of the commitment to minimising global warming. For food security, we know that the Batu Kuda concession has been built for a long time and is not a new plantation, so its impact has been felt long ago. Nothing can stop people from planting oil palm. However, if the community wants to grow food crops such as vegetables, palawija and others, they can coordinate with the company for guidance and other assistance. From the existing HCV area, it is not that big, because this area has been a plantation for a long time. The area to be reforested is an area that has an important value for environmental sustainability. The grave site will be protected by the company in cooperation with the descendants of the dead. PT MMAS has its own procedures for the management of waste and other wastes such as B3 waste, Liquid waste and agricultural chemical waste. PT MMAS will strive to meet all the standards set by the company and the government |
| 2. | Nohsan Saputera / Group Interview. | Community Leader - Tunggang | <ul style="list-style-type: none"> It is expected that PT MMAS will make improvements to the conditions for employees. For example, previously employees were left without electricity for 2 | <ul style="list-style-type: none"> Noted, PT MMAS has labour standards in accordance with government regulations |

| | | | | |
|---|------------------------------|---------------------------------|---|---|
| | | | years, and other facilities were bad, don't neglect workers | |
| 3 | Hendarmin / Group Interview. | Village Leader Desa Karya Mulya | <ul style="list-style-type: none"> • Expectations from the community for the company to participate in improving peoples' lives • The number of unemployed is expected to decrease and the community to become more prosperous • It is hoped that there will be cooperation in assisting the community manage their oil palm plantations, so that the production of community oil palm plantations increases. The company's plantations are 50% more productive than the community's. | <ul style="list-style-type: none"> • Noted, at the moment the company's plantations are more productive. The company has extension officers to assist the community. |
| 4 | Masroya / Group Interview. | Village Head Mekarsari | <ul style="list-style-type: none"> • It is nice that the company pays attention to us as a community, but on the other hand, the community must also support the company because without community support, the company will experience difficulties. • As long as communication is done well, undesirable things will occur. • The community needs guidance and counselling, especially in the plantation sector in order to increase the welfare of the community. • The company must assist the needs of the community, especially supporting facilities, particularly production roads. | <ul style="list-style-type: none"> • Noted |
| 5 | Musliadi / Group Interview. | Staf Camat Pondok Suguh | <ul style="list-style-type: none"> • In connection with the transfer of ownership of the Batu Kuda estate, it is hoped that the company will assist the Kecamatan's activities such as the agenda for the Indonesian Independence Day and others that require large funds. • Don't make the bureaucracy too difficult • The Kecamatan has received assistance for wall construction (around the Balai) and the manager is active | <ul style="list-style-type: none"> • Noted |

At all the final consultation meetings all the attendees agreed to the HCV / HCS areas as proposed. There were no real points of discussion from the meeting itself that caused changes to the outcome. The attendees provided extra information or sought further clarification on various points.

Table 12. Breakdown of the attendance by Age Group for the Final Consultation

| Villages | 20-30 | 31-40 | 41-50 | 51-60 | Grand Total |
|------------------------|----------|-----------|-----------|----------|-------------|
| Air Berau | | | 2 | | 2 |
| Banjar Sari | | 4 | | | 4 |
| Desa Tunggang | 3 | 3 | 2 | | 8 |
| Karya Mulya | | 2 | 1 | | 3 |
| Mekar Sari | | 2 | | | 2 |
| Pd. Kandang | 2 | 1 | | | 3 |
| Pondok Suguh | 1 | | 1 | 1 | 3 |
| R. Mudik | | | 1 | | 1 |
| Sidodadi | 1 | 1 | | | 2 |
| Sub Total | 7 | 13 | 7 | 1 | 28 |
| Government | | | | | |
| KPHP | | | 3 | | 3 |
| Dinas Tenaga Kerja | | 2 | 1 | 2 | 5 |
| Dinas Lingkungan Hidup | | | 1 | | 1 |
| Dinas Pertanian | | | 2 | | 2 |
| Sub Total | 0 | 2 | 7 | 2 | 11 |
| Grand Total | 7 | 15 | 14 | 3 | 39 |

Table 13. Breakdown of the attendance by Religion for the Final Consultation

| Villages | Islam | Christian | Grand Total |
|--------------|-------|-----------|-------------|
| Air Berau | | 2 | 2 |
| Banjar Sari | | 4 | 4 |
| Tunggang | | 8 | 8 |
| Karya Mulya | | 3 | 3 |
| Mekar Sari | | 2 | 2 |
| Pd. Kandang | | 3 | 3 |
| Pondok Suguh | | 3 | 3 |
| R. Mudik | | 1 | 1 |
| Sidodadi | | 2 | 2 |

| | | | |
|-------------------------------|-----------|----------|-----------|
| Sub Total | 28 | 0 | 28 |
| KPHP | 3 | | 3 |
| Dinas Tenaga Kerja | 5 | | 5 |
| Dinas Lingkungan Hidup | 1 | | 1 |
| Dinas Pertanian | 1 | 1 | 2 |
| Sub Total | 10 | 1 | 11 |
| Grand Total | 38 | 1 | 39 |

Table 14. Breakdown of the attendance by Sex for the Final Consultation

| Villages | Male | Female | Grand Total |
|-------------------------------|-----------|----------|-------------|
| Air Berau | 1 | 1 | 2 |
| Banjar Sari | 4 | | 4 |
| Desa Tunggang | 8 | | 8 |
| Karya Mulya | 3 | | 3 |
| Mekar Sari | 2 | | 2 |
| Pd. Kandang | 3 | | 3 |
| Pondok Suguh | 3 | | 3 |
| R. Mudik | 1 | | 1 |
| Sidodadi | 2 | | 2 |
| Sub Total | 27 | 1 | 28 |
| Government | | | |
| KPHP | 2 | 1 | 3 |
| Dinas Tenaga Kerja | 3 | 2 | 5 |
| Dinas Lingkungan Hidup | 1 | | 1 |
| Dinas Pertanian | 2 | | 2 |
| Sub Total | 8 | 3 | 11 |
| Grand Total | 35 | 4 | 39 |

Table 15. Full List of all Final Consultation Participants

| No. | Name | Position | Age | Agama | Sex | Location | Age Group |
|-----|--------------|----------|-----|-------|-----|------------------------|-----------|
| 1 | Adnan, SH | Kasi HI | 53 | Islam | M | Dinas Tenaga Kerja | 51-60 |
| 2 | Hidayat Bidy | Kabid | 46 | Islam | M | Dinas Tenaga Kerja | 41-50 |
| 3 | Jimmi Kurnia | DPMPPTK | 53 | Islam | M | Dinas Tenaga Kerja | 51-60 |
| 4 | M. Rizon | Kadis LH | 44 | Islam | M | Dinas Lingkungan Hidup | 41-50 |

| | | | | | | | |
|----|-----------------|-------------------|----|---------|---|--------------------|-------|
| 5 | Ummul Husnus. S | Kabid | 40 | Islam | F | Dinas Tenaga Kerja | 31-40 |
| 6 | Sri Purwanti | Kasi LH | 39 | Islam | F | Dinas Tenaga Kerja | 31-40 |
| 7 | Aprinsyah | Kadis | 46 | Islam | M | Dinas Pertanian | 41-50 |
| 8 | Erny Lenga | Kabid BUN | 46 | Kristen | M | Dinas Pertanian | 41-50 |
| 9 | Aprilia | Kasi Perlindungan | 41 | Islam | M | KPHP | 41-50 |
| 10 | Weli Sulastri | Kasi Perlindungan | 48 | Islam | F | KPHP | 41-50 |
| 11 | L. Weizzman | KTU | 43 | Islam | M | KPHP | 41-50 |
| 12 | Rustam Effendi | PLT Camat | 46 | Islam | M | R. Mudik | 41-50 |
| 13 | Hidayatul Usuan | Warga | 21 | Islam | M | Desa Tunggang | 20-30 |
| 14 | Bukri | Warga | 41 | Islam | M | Desa Tunggang | 41-50 |
| 15 | Masroyah | Pj. Kades | 34 | Islam | M | Banjar Sari | 31-40 |
| 16 | Baihaki | Warga | 41 | Islam | M | Desa Tunggang | 41-50 |
| 17 | Proptono. W | Warga | 38 | Islam | M | Banjar Sari | 31-40 |
| 18 | Zamhari | Warga | 27 | Islam | M | Desa Tunggang | 20-30 |
| 19 | Alex Sandra | Warga | 18 | Islam | M | Desa Tunggang | 20-30 |
| 20 | Alex Sander | Warga | 25 | Islam | M | Pd. Kandang | 20-30 |
| 21 | Muhammad Sopya | Warga | 38 | Islam | M | Banjar Sari | 31-40 |
| 22 | Junaidi | Warga | 39 | Islam | M | Banjar Sari | 31-40 |
| 23 | Ahmad R | Warga | 47 | Islam | M | Karya Mulya | 41-50 |
| 24 | Irwan | Warga | 37 | Islam | M | Pd. Kandang | 31-40 |
| 25 | Risman | Warga | 27 | Islam | M | Pd. Kandang | 20-30 |
| 26 | Luki | Warga | 25 | Islam | M | Pondok Suguh | 20-30 |
| 27 | Aan | Warga | 58 | Islam | M | Pondok Suguh | 51-60 |
| 28 | Suyono | Warga | 35 | Islam | M | Mekar Sari | 31-40 |
| 29 | Zainul Arifin | Warga | 32 | Islam | M | Mekar Sari | 31-40 |
| 30 | M. Lafrian | Kasi | 40 | Islam | M | Desa Tunggang | 31-40 |
| 31 | Abdul Hadi | Staff | 49 | Islam | M | Pondok Suguh | 41-50 |
| 32 | M. Qomari | Sekdes | 40 | Islam | M | Sidodadi | 31-40 |
| 33 | Zainul M | Ka BPD | 30 | Islam | M | Sidodadi | 20-30 |
| 34 | Mushadi | Kt Camat | 45 | Islam | M | Air Berau | 41-50 |
| 35 | Andi S | Sekdes | 39 | Islam | M | Desa Tunggang | 31-40 |
| 36 | Hendarmin | Pemdes | 39 | Islam | M | Karya Mulya | 31-40 |
| 37 | Novsam S. | Pemdes | 34 | Islam | M | Desa Tunggang | 31-40 |
| 38 | Susanto | Pemdes | 33 | Islam | M | Karya Mulya | 31-40 |
| 39 | Jusmani, SE | Kasi Pemdes | 43 | Islam | F | Air Berau | 41-50 |

Note that there were no attendees from the village Bumi Mekar Jaya. As such PT Hijau Daun arranged for the presentation to be dropped off at the village and input was sought. No feedback was given by the village. A photo and acknowledgement of the receipt were sighted.

Further Consultations with Government

The Consultations with the various government agencies were undertaken at the end of the assessment and were considered final consultations also because the assessor stepped each of the representatives through the provisional results, discussing each HCV and HCS.



Figure 10. Left : Consultation with Dinas Perkebunan (Plantation Dept). Right : Consultation with Dinas Tenaga Kerja and Lingkungan Hidup (Manpower and Environment Dept).

Limitations and consequences

Only a proportion of the community members joined the final consultation and there is a possibility that information was missed. Though the people that did join were the Kepala Desa and BPD who have an obligation to aggregate the opinions and views of their constituency and subsequently report back to their constituency. The company should be mindful of the consequence of this. Subsequent comments and suggestions from people should be taken into account by the company when formalising the ICLUP.

Section 6: Soil and topography

Date of Assessment: September / October 2021

Name of Assessor: J Crawshaw

Assessor Designation and Company: Consultant / PT Hijau Daun

Methods

Secondary Data

Secondary data was either downloaded from the internet or sourced from PT Hijau Daun’s library of spatial data.

| Data Type | Source |
|--|-----------------------------------|
| Digital Elevation Model (which was used to derive slope) | DEMNAS (10 m pixels) ⁶ |

⁶ Badan Informasi Geospasial

| | |
|--|----------------------|
| Soil Type | BAPPEDA ⁷ |
| Landforms and general soil information | RePPPProT |

Primary Data

The secondary data was verified by travelling around the study area to certain points and observing the situation in that area. For example, verifying, at that point, if the area was mapped as being less than 10 degrees slope, was this in fact correct. Alternatively whether areas that were mapped as greater than 22 degrees (40%). Similarly looking at the soil and the landforms in the area to determine whether it matched the description.



Figure 11. An example of in-field verification of slope done with a clinometer.

Additionally, village level interviews were undertaken within and around the assessment area. One of the questions was relating to the soils in the area. In every interview the community was asked about soil fertility and whether there were any soils in the area that were avoided as a result of low yields.

⁷ Badan Perencanaan Pembangunan Daerah

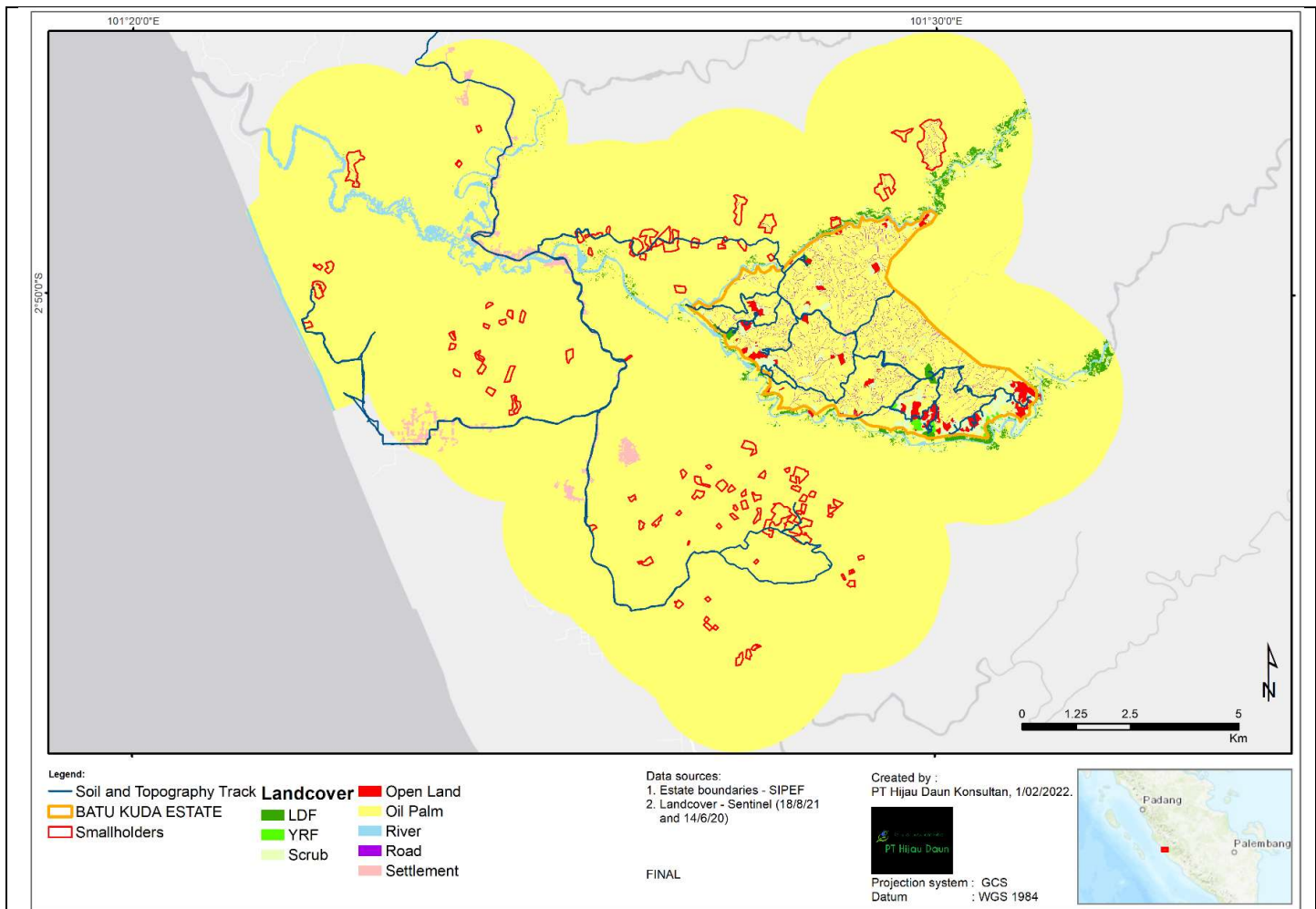


Figure 12. Locations of soil and topography observation points.

Findings

Landforms

A landform refers to a ‘recurring pattern of topography within the landscape’, with specific landforms often associated with specific vegetation associations and/or communities.

The study area is in the “Southern Western Coastal Foothills and Plains” biogeographic region. (Land Resources Department, 1988) this region is tightly confined between the Barisan Mountains and Mentawai Strait. This is a transitional zone comprising a discontinuous strip of alluvial outwash plains and dissected hills, little more than 25 – 45 km wide but 1360 km long.

Table 16. Landforms present in the assessment AOI, (Land Resources Department, 1988)

| Landform name | Description |
|---------------|---|
| Bakunan | Alluvial Valleys <10m amplitude These are minor valley floors within hills. Often these areas are suitable for rice cultivation. |

| | | |
|----------------|------------------------------|---|
| Kajapah | Tidal swamps < 2 m amplitude | Inter-tidal mudflats |
| Maput | Hills 50 – 300 m amplitude | Hillocky – developed over conglomerate, sandstone and mudstone. These extend inland 10 – 20 km before reaching the main mountain ranges. |
| Telawi | Mountains > 300 m amplitude | Hillocky to mountainous outliers from the main Barisan Mountains. |
| Teweh | Plains <50 m amplitude | Low rolling and hilly plains extending inland 10 – 20 km before reaching the main mountain ranges. These are sedimentary soils on stable slopes |

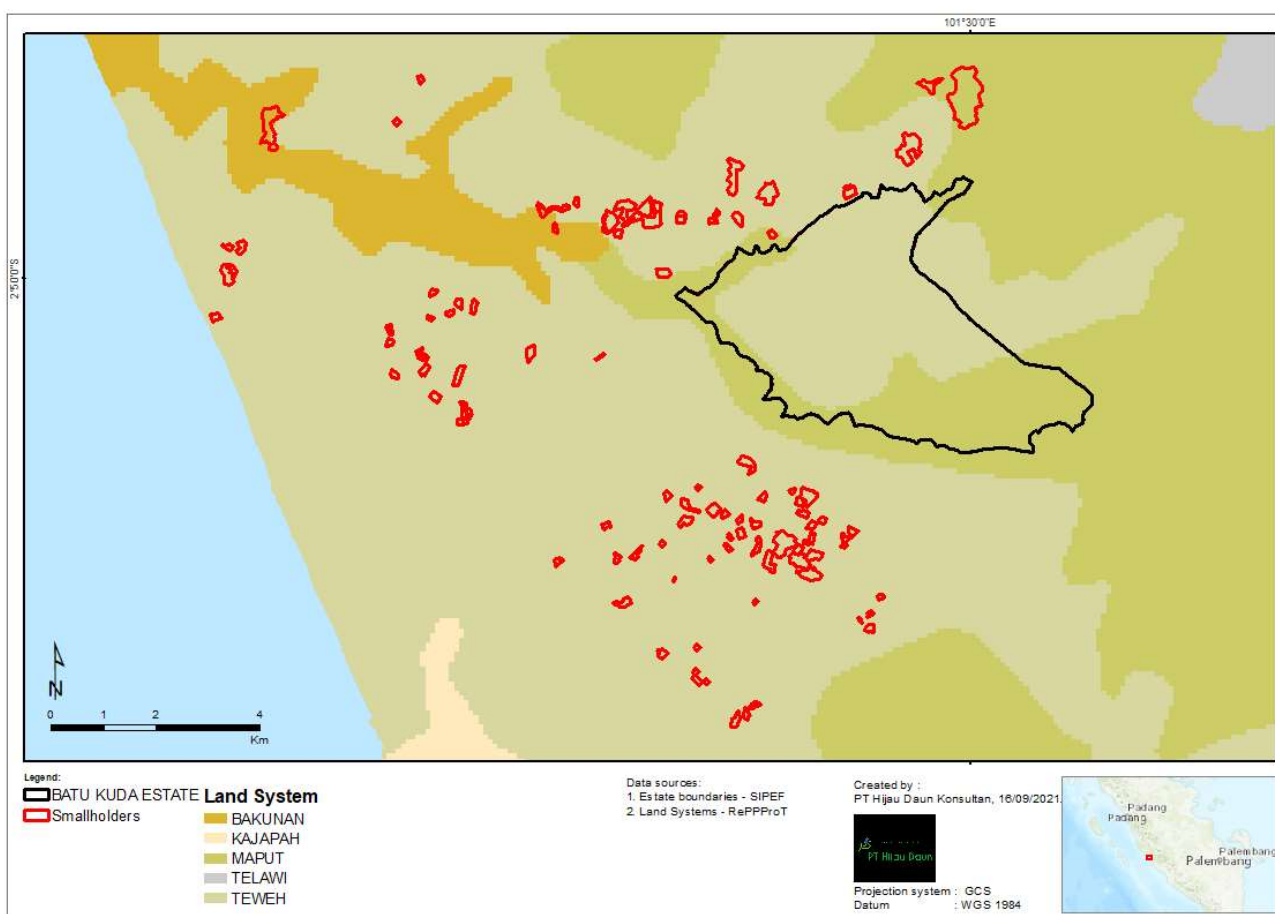


Figure 13. The assessment area overlaps with five land system types which are described in Table 16. (HCV Toolkit, 2008).

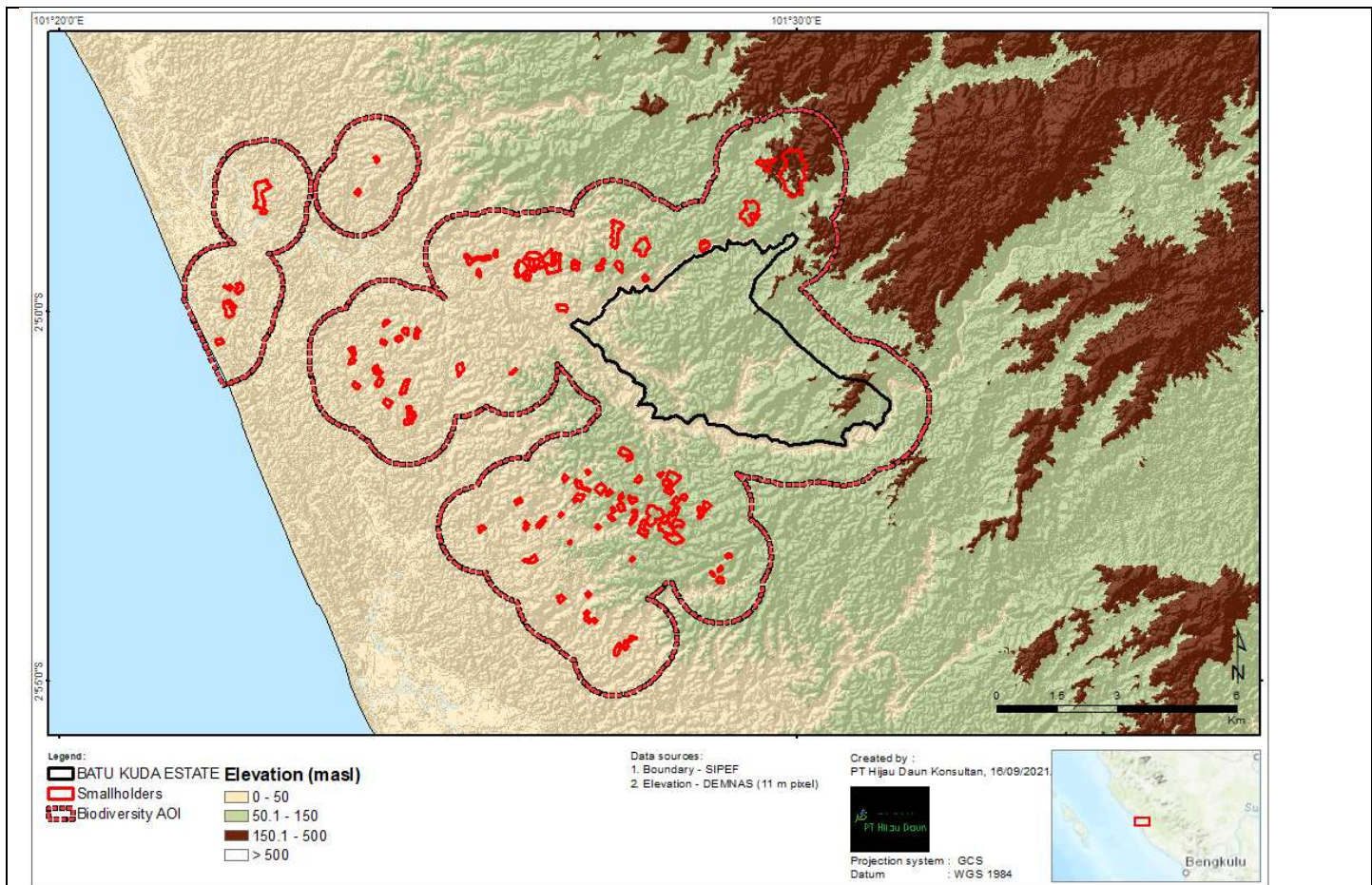


Figure 14. Almost all the assessment area is below 150 masl, therefore can be classified as lowland areas.

Soils and geology

In the Assessment Area most of the soils are Dystrudepts or Paleudults

Soils identified in the area this was taken from secondary data.

Table 17. Descriptions of soils in the landscape.

| Soil Group | Description |
|--------------------|---|
| Dystrudepts | These are the acid Udepts of humid and perhumid regions. They developed mostly in late-Pleistocene or Holocene deposits. Some developed on older, steeply sloping surfaces. The parent materials generally are acid, moderately or weakly consolidated sedimentary or metamorphic rocks or acid sediments. A few of the soils formed in saptolite derived from igneous rocks. The vegetation was mostly deciduous trees. Most of the Dystrudepts that formed in alluvium are now cultivated, and many of the other Dystrudepts are used as pasture. |
| Paleudults | These soils have, within 75 cm of the soil surface, ground water that fluctuates in depth or are artificially drained, and the zone in which water stands or formerly stood has redox depletions with low chroma. These soils are extensive on the coastal plains. The natural vegetation consisted of forest plants. These soils generally are nearly level or gently sloping. Many are used as cropland, |

Source : (KFE.Dystrudepts - DinPuiThai, no date)

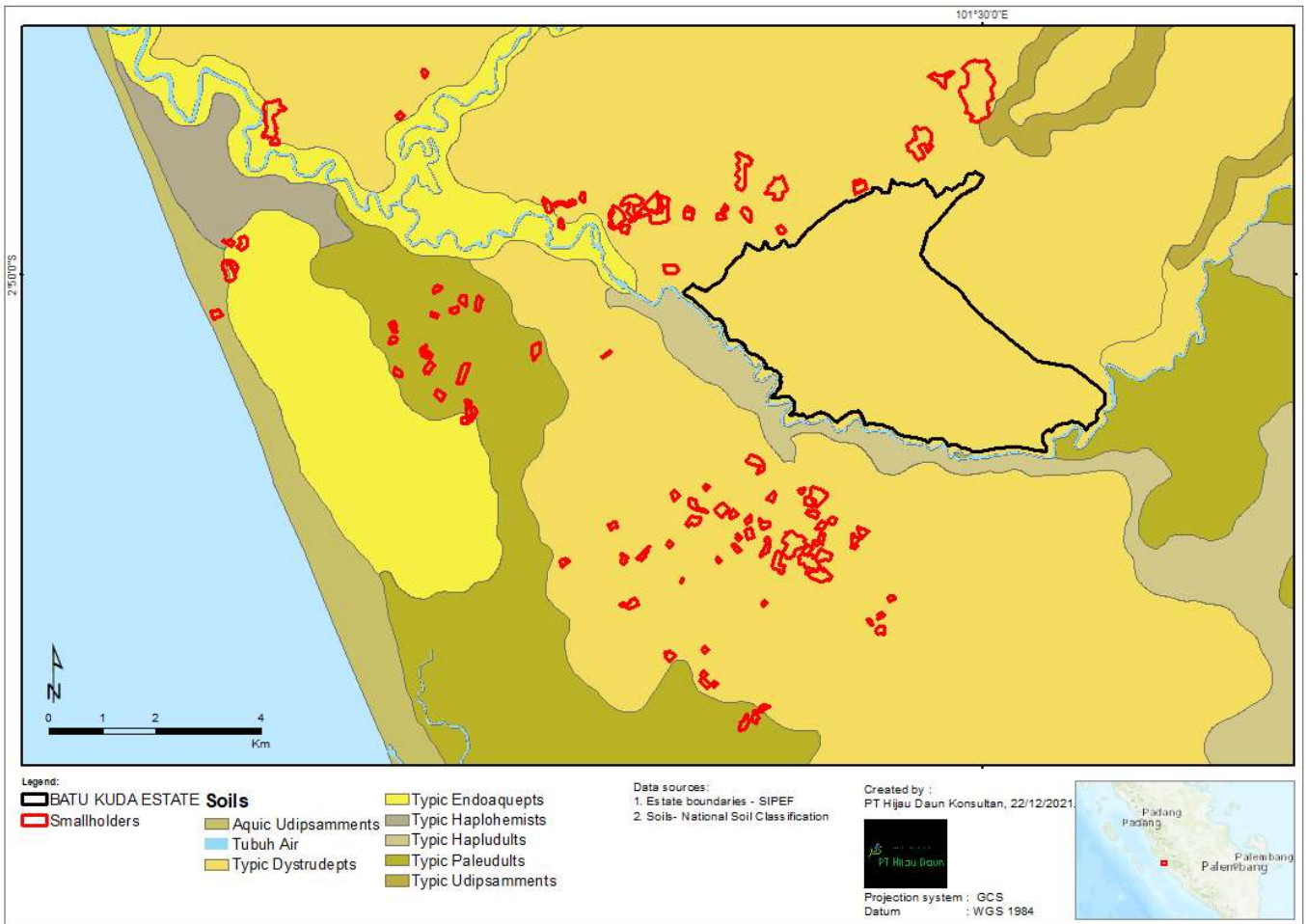


Figure 15. The soils within BKDE and the wider landscape. These are all mineral soils.

Table 18. Criteria and Observations

| Criteria | Description | Observation |
|-----------------------|--|---|
| Fragile Soils | A soil that is susceptible to degradation (reduction in fertility) when disturbed. A soil is particularly fragile if the degradation rapidly leads to an unacceptably low level of fertility or if it is irreversible using economically feasible management inputs. | Based on historical records the surrounding landscape area has been intensively cropped for 30 years and still is described as extremely fertile by both the company staff and surrounding community. In none of the interviews with the community was any mention made of abandoning any areas as a result of unacceptably low yields. |
| Marginal Soils | A soil that is unlikely to produce acceptable economic returns for the proposed crop at reasonable projections of crop value and costs of amelioration. Degraded soils are not marginal soils if their amelioration and resulting productivity is cost effective. | In all the community interviews, it was mentioned that the area could be comprehensively cropped and there was no mention of areas or soil types that were routinely avoided because of low yields. |

| | | |
|--------------------|---|---|
| Peat | A soil with cumulative organic layer(s) comprising more than half of the upper 80 cm or 100 cm of the soil surface containing 35% or more of organic matter (35% or more Loss on Ignition) or 18% or more organic carbon. | There was no peat observed in the area nor was it mapped in any of the soil data sets. See Figure 18. |
| Steep soils | Soils over 22 degrees | No areas over 22 degrees were noted. |

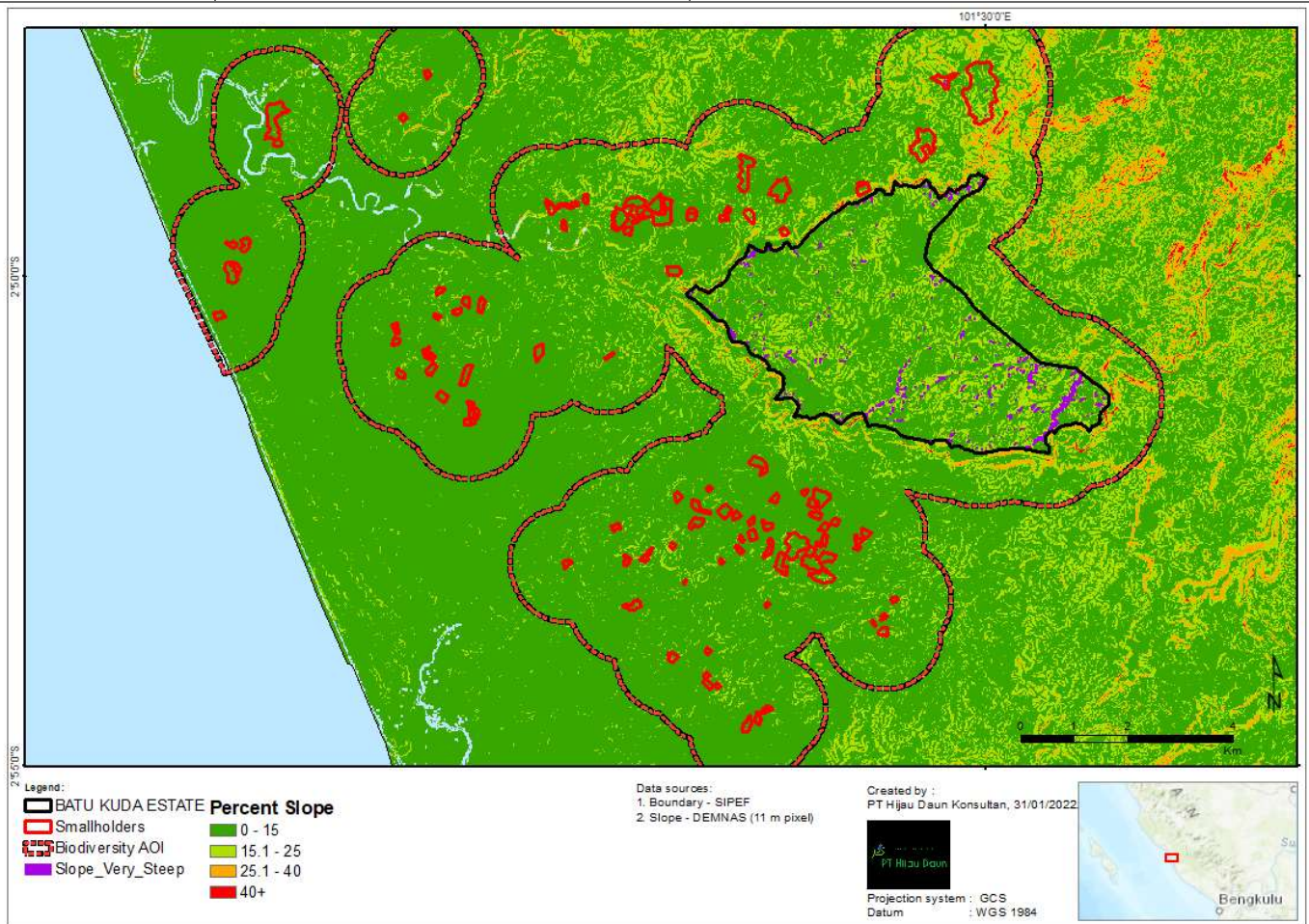


Figure 16. Steep slopes have been coloured purple.

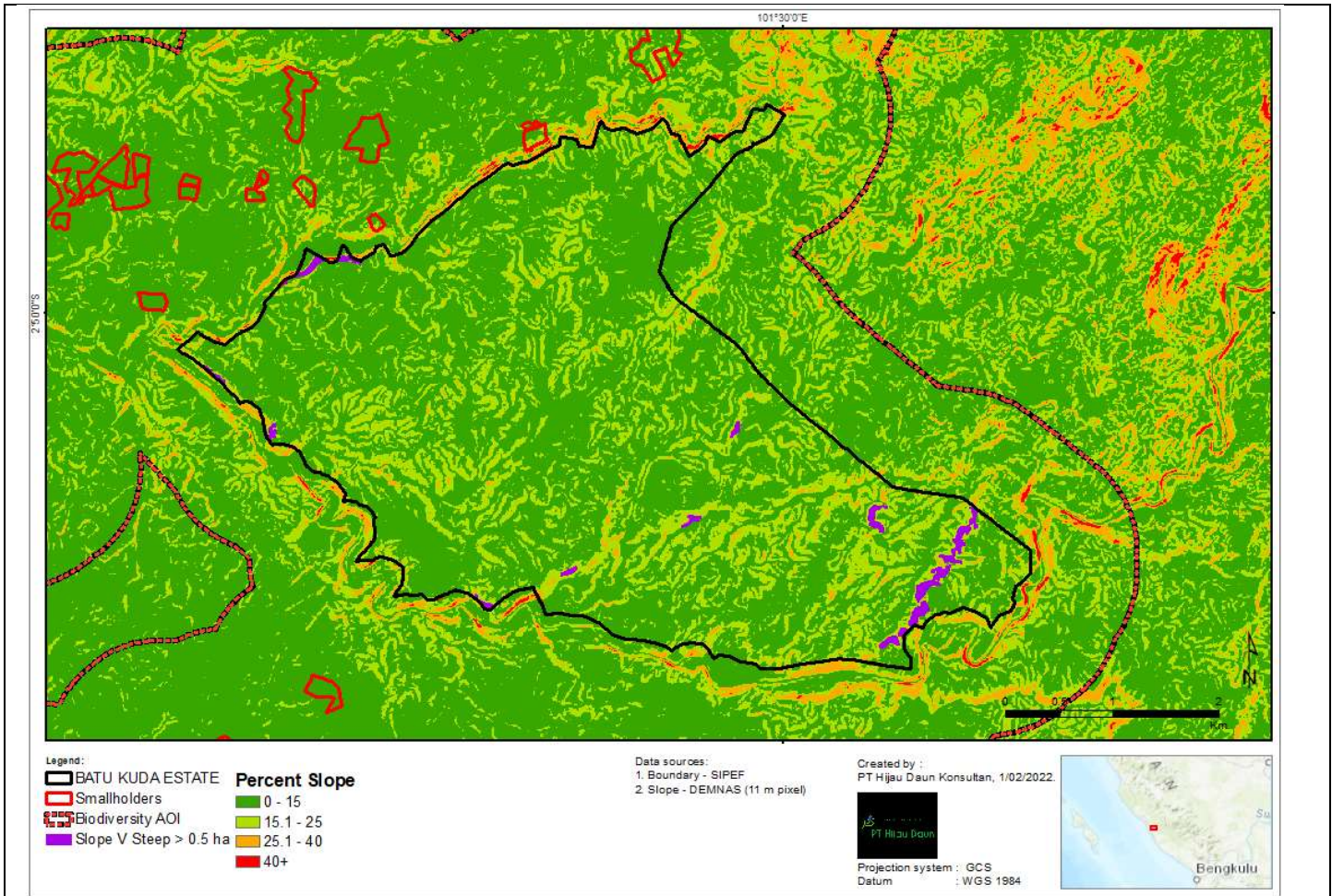


Figure 17. Very steep areas that are greater than 0.5 ha in area.

It was decided that there are a number of tiny areas that are greater than 40%, which would be unmanageable to reserve. Therefore any areas that were greater than 0.5 ha were considered for being reserved for planting. These were subsequently verified in the field using a clinometer.

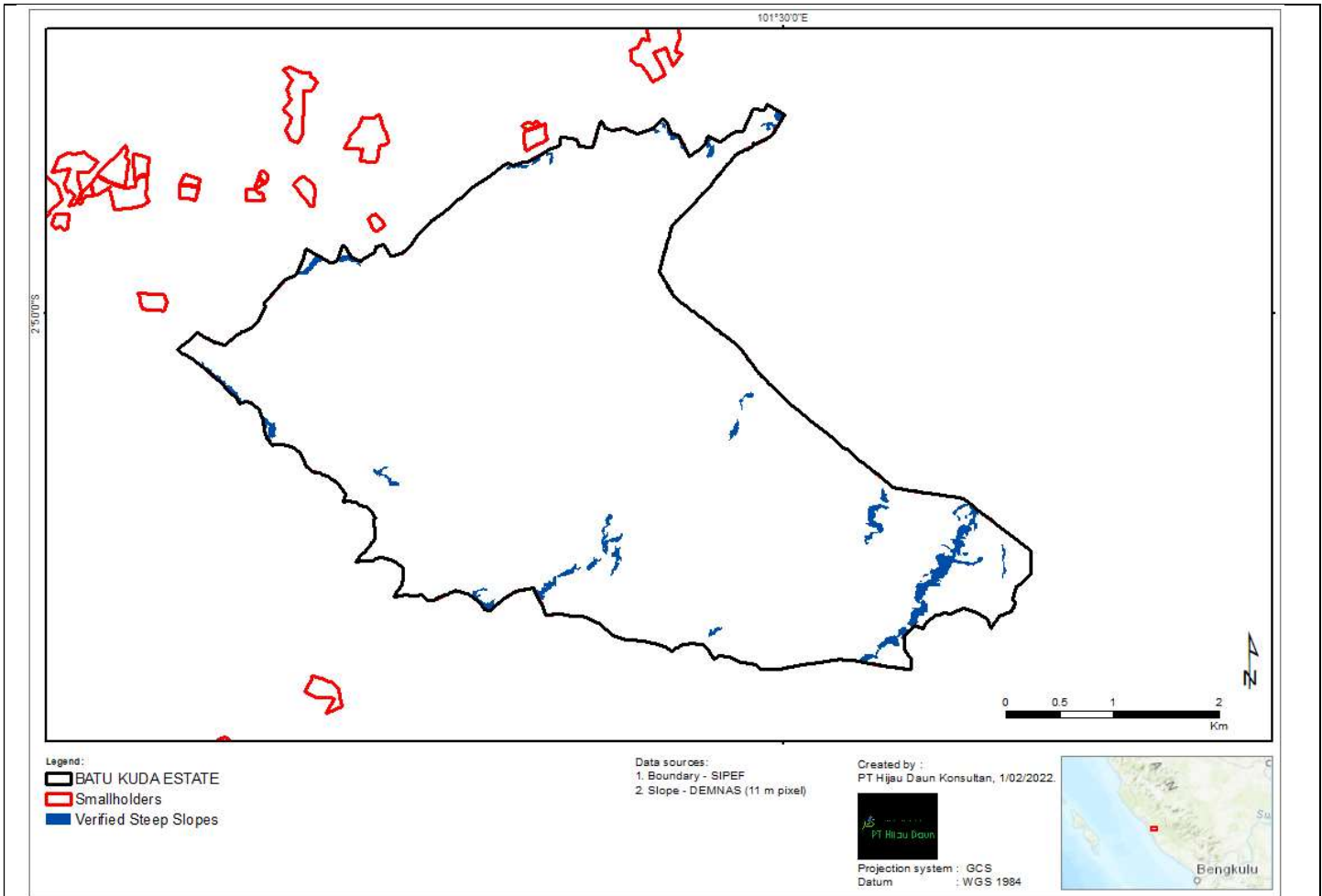


Figure 18. Verified areas that are greater than 22 degrees or 40% slope.

Section 7: Greenhouse Gas (GHG)

Date of Assessment: September / October 2021

Name of Assessor: J Crawshaw

Assessor Designation and Company: Consultant / PT Hijau Daun

Methodologies

The following section has been taken from the HCSA assessment that was conducted in December 2020 as part of SIPEF's commitment to 'No Deforestation'⁸. SIPEF owns Batu Kuda Estate

Image Analysis to create a landcover map

The study areas for this assessment were a series of polygon boundaries supplied to the assessment team by PT MMAS.

⁸ <https://www.sipec.com/hq/sustainability/policies/responsible-plantations-policy/>

At the inception of this project, it was decided that the use of LIDAR was not to be used as other reasonable options were available. Option 3 (pp 5 in Rosoman et al., 2017b) was decided to be the most more feasible approach for the purpose of this study. It was decided that two sources of were to be used for the project;

- 1) Sentinel-2 (available from European Space Agency (ESA))
- 2) Field GPS measurement.

Recent Sentinel 2 was used to gain an understanding of the vegetation present across the broader landscape and was the primary imagery dataset used for land cover classification during the early stages of the project (i.e. preparing for the scoping study and fieldwork

Field GPS measurement was crucial for defining the sample based on field observation and the current condition of the site shown in Sentinel 2. The available high-resolution image within Google are also a key tools in deriving test points for the final accuracy assessment.

Imagery and GPS derived datasets used for this project are shown Table below.

Table 19 Imagery and GPS datasets utilised during this integrated assessment

| Image identifier | Capture date | Resolution (m) | Cloud cover (%) |
|---------------------------------------|---------------------|-----------------------|------------------------|
| Sentinel-2 (primary reference) | 18/08/2021 | 10 | <10 |
| Sentinel-2 | 14/06/2020 | 10 | <10 |

The image dated 18/08/2021 was the primary reference, but the earlier image, which is outside the 12 month window allowed by HCSA, was used to investigate the areas which are covered by clouds. It should be noted that this is a very cloudy area and there are very few cloud free images.

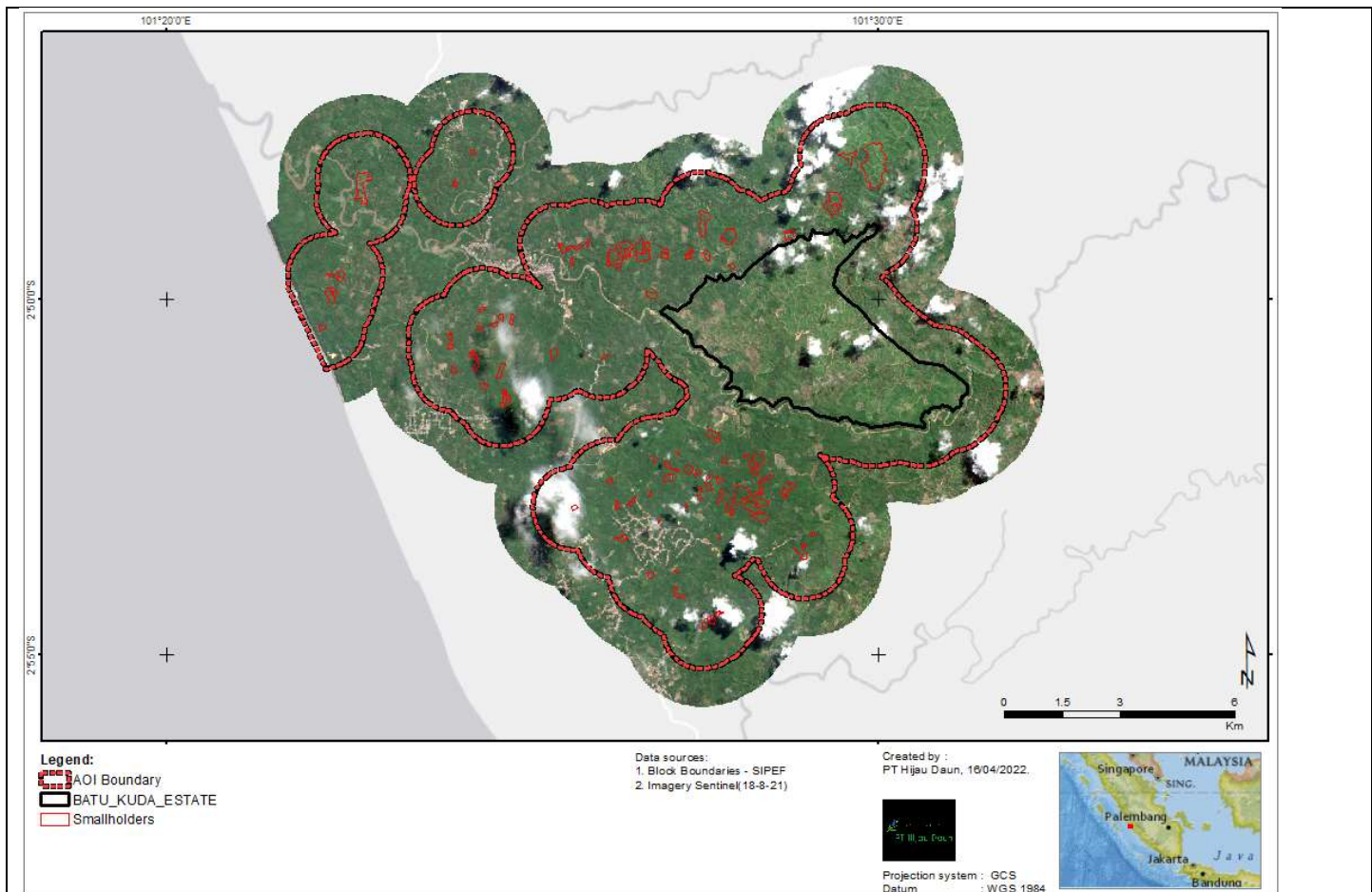


Figure 19. Sentinel Image derived from (18/08/21). Clipped to a 2 km buffer around the smallholders and Batu Kuda Estate.

- *Methods*

PT MMAS was able to provide surveyed data of the oil palm areas in BKE and the smallholders. When undertaking the classification, this was immediately classified as oil palm and no image interpretation was done for these areas. Similarly, BKE was able to provide a shapefile of its roading network. Measurements of the roads showed that the average road was 5 m from the centreline for main roads and 3 m from the centreline for access roads. These areas (roads and oil palm areas) were assumed to be “known” and were not interpreted from images.

- *Pre-processing*

Sentinel-2 was used as main satellite imagery source in this assessment. This satellite imagery is maintained by the European Space Agency (ESA). In addition to data harvesting, google earth engine application was used to develop the atmospheric correction as well as a seamless cloud imagery composite. Vegetation mapping required that the spectral bands (11-8-2) were selected.

The time period that was used for data harvesting as well developing the seamless cloud S-2 imagery was from Jan 2021 to August 2021. The best image was 18-08-21, however this had cloud over part of the AOI (although the cloud is over the area that is “known” to be oil palm). Another older image (14-06-20) was also used, which was completely cloud free. The highest priority imagery was the latest one (18-08-21) and where it was cloudy the previous period was chosen.

The processed image bands were then combined; Band 11 (SWIR), Band 8 (Narrow NIR), and Band 2 (Blue) into a single RGB imagery. The pixel spatial resolution combining 20 m and 10 m respectively. Additionally the combination of (12-5-2) gave a good distinction between oil palm and natural vegetation.

The composite band mosaic was then clipped to the extent of the AOI. Topographic correction (i.e. the artificial flattening of the image to remove the shadow effect of aspect) was performed in the google earth engine. The final image mosaic used for initial classification can be seen above in Map 16.

Two key applications were used to perform pre-processing;

1. Atmospheric correction found in the QGIS image processing software package;
2. The 'composite bands' function in ArcGIS 10.8.1 and

The 'Atmospheric correction converts a Level 1C dataset (i.e. top of atmosphere corrected, orthorectified image) into a 2A dataset, i.e. a bottom of atmosphere (BOA) corrected reflectance product

- *Training sample preparation*

Initial training samples for image classification were prepared based on the assessment team's prior knowledge of land cover in Sumatra.

Training samples sought to create spectrally separate land cover classes, consistent with the requirements of Rosoman et al., (2017a). At the initial stage, no attempt was made to separate High, Medium or Low Density forest types, (as per Table 1 in Rosoman, et al 2017), with the focus being on identifying and separating 'young regenerating forest' and 'scrub'. In fact there was only (at best) LDF or scrub in this landscape. There were small pockets of YRF identified but these were areas that had advanced marginally above scrub. YRF is considered HCS Forest whilst scrub is not considered HCS Forest. Given the threshold for development, Hijau Daun feels that adequate separation between 'young regenerating forest' and 'scrub' is most critical, but often the most difficult to separate spectrally. Other land classes were also defined due to their occurrence across the landscape, these included settlements and oil palm plantations. Training samples aimed to capture between 600 - 1000 pixels, amounting to 0.6 – 1 ha sample for each class.

Sentinel-2 was used as main satellite imagery source in this assessment. This satellite imagery is maintained by the European Space Agency (ESA). In addition to data harvesting, google earth engine application was used to develop the atmospheric correction as well as a seamless cloud imagery composite. Vegetation mapping required that the spectral bands (11-8-2) were selected.

The time period that was used for data harvesting as well developing the seamless cloud S-2 imagery was from 1st September 2020 to 2nd October 2020. The highest priority imagery was the latest one (Dec 2018) and when it was not available or cloudy the use the previous period was chosen.

The processed image bands were then combined; Band 11 (SWIR), Band 8 (Narrow NIR), and Band 2 (Blue) into a single RGB imagery. The pixel spatial resolution combining 20 m and 10 m respectively.

The seamless mosaic tool was used to create a single image mosaic that extended across the AOI.

The composite band mosaic was then clipped to the extent of the AOI. Topographic correction (i.e. the artificial flattening of the image to remove the shadow effect of aspect) was performed in the google earth engine. The final image mosaic used for initial classification can be seen above in Map 16.

Three key applications were used to perform pre-processing;

3. 'Sen2Cor' atmospheric correction toolbox found in the ESA 'SNAP' image processing software package;
4. The 'composite bands' function in ArcGIS 10.5.1 and
5. The 'Seamless mosaic' workflow in ENVI 5.1

The 'Sen2Cor' function converts a Level 1C dataset (i.e. top of atmosphere corrected, orthorectified image) into a 2A dataset, i.e. a bottom of atmosphere (BOA) corrected reflectance product

- *Training sample preparation*

Initial training samples for image classification were prepared based on the assessment team's prior knowledge of land cover in Sumatra.

After segmentation, adequate training samples were developed provide an initial classified image. Initial classification was performed using object based classification, utilising a range of functions found within the ENVI image extraction utility. The output of this process was used to inform aspects of sample design such as sample intensity and plot location. This map is provided in **Figure 24**.

Accuracy assessment

100 points were located using the ArcGIS Create Random Point function. The landcover at each point was classified manually using a higher resolution image ("Planet" with 5 m pixels). This was compared against the supervised classification to get a Kappa statistic of 72.9%. The data is in Figure 21 and the location of the points in Figure 21. Note that the Planet (5 m imagery) cannot be used for image classification because it does not have the crucial short wave infra-red band. It can be only used for manual interpretation.

Table 20. Initial land cover accuracy assessment

| Row Labels | LDF | OP | ROAD | SCR | SET | YRF | Grand Total |
|-------------|-----|----|------|-----|-----|-----|-------------|
| LDF | 1 | 1 | | | | | 2 |
| OP | | 86 | 1 | | | | 87 |
| ROAD | | | 1 | | | | 1 |
| SCR | | 2 | | 2 | | | 4 |
| SET | | 2 | | | 3 | | 5 |
| YRF | | 1 | | | | | 1 |
| Grand Total | 1 | 92 | 2 | 2 | 3 | 0 | 100 |

N 100

Po 93.0%

Pc 74.1%

Kappa 72.9%

Results - Final landcover

The land cover classes that are used for the landcover, are fully described below.

Table 21. Area (ha) of final land cover classes for the study areas.

| Land Cover Class | Area (ha) |
|---------------------------|-----------|
| Low Density Forest | 19.10 |
| Open Land | 106.74 |
| Oil Palm | 1,994.08 |
| Water | 5.98 |
| Roads | 91.91 |
| Scrub | 164.99 |
| Settlements | 4.34 |
| Young Regenerating Forest | 13.63 |
| Grand Total | 2,400.77 |

Table 22. Translation table between assessment land cover classes and RSPO Classes

| Land Cover Class | RSPO land cover | Area (ha) |
|--------------------|------------------|-----------|
| Low Density Forest | Disturbed forest | 19.10 |

| | | |
|----------------------------------|---------------------|-----------------|
| Open Land | Grassland | 106.74 |
| Oil Palm | Oil Palm | 1,994.08 |
| Water | Other | 5.98 |
| Roads | Not to be developed | 91.91 |
| Scrub | Shrubland | 164.99 |
| Settlements | Not to be developed | 4.34 |
| Young Regenerating Forest | Disturbed forest | 13.63 |
| Grand Total | | 2,400.77 |

The area can be broken down by ownership as the company has management control over 1437.66 ha within the Batu Kuda concession, the balance (612.31 ha), is under community ownership. All the smallholder area (350.80 ha) is under community control.

Table 23. Breakdown of ownership by the areas. Within the concession area, a significant proportion of the area is still owned by the community. Outside the concession, all the area is owned by the community.

| Land cover | Concession Area | | Sub Total | Smallholder Area Community Owned | Grand Total |
|--------------------------------------|------------------|-----------------|-----------------|--|-----------------|
| | Company Owned | Community Owned | | | |
| Low Density Forest | 4.25 | 14.85 | 19.10 | 0 | 19.10 |
| Open Land | 34.72 | 72.03 | 106.74 | 0 | 106.74 |
| Oil Palm | 1,237.09 | 414.58 | 1,651.66 | 342.81 | 1,994.48 |
| Water | 3.71 | 1.34 | 5.06 | 0.54 | 5.59 |
| Roads | 71.30 | 14.92 | 86.21 | 5.70 | 91.91 |
| Scrub | 78.16 | 85.54 | 163.70 | 1.29 | 164.99 |
| Settlements | 3.88 | | 3.88 | 0.46 | 4.34 |
| Young Regenerating Forest | 4.57 | 9.06 | 13.63 | 0 | 13.63 |
| Grand Total | 1,437.66 | 612.31 | 2,049.97 | 350.80 | 2,400.77 |

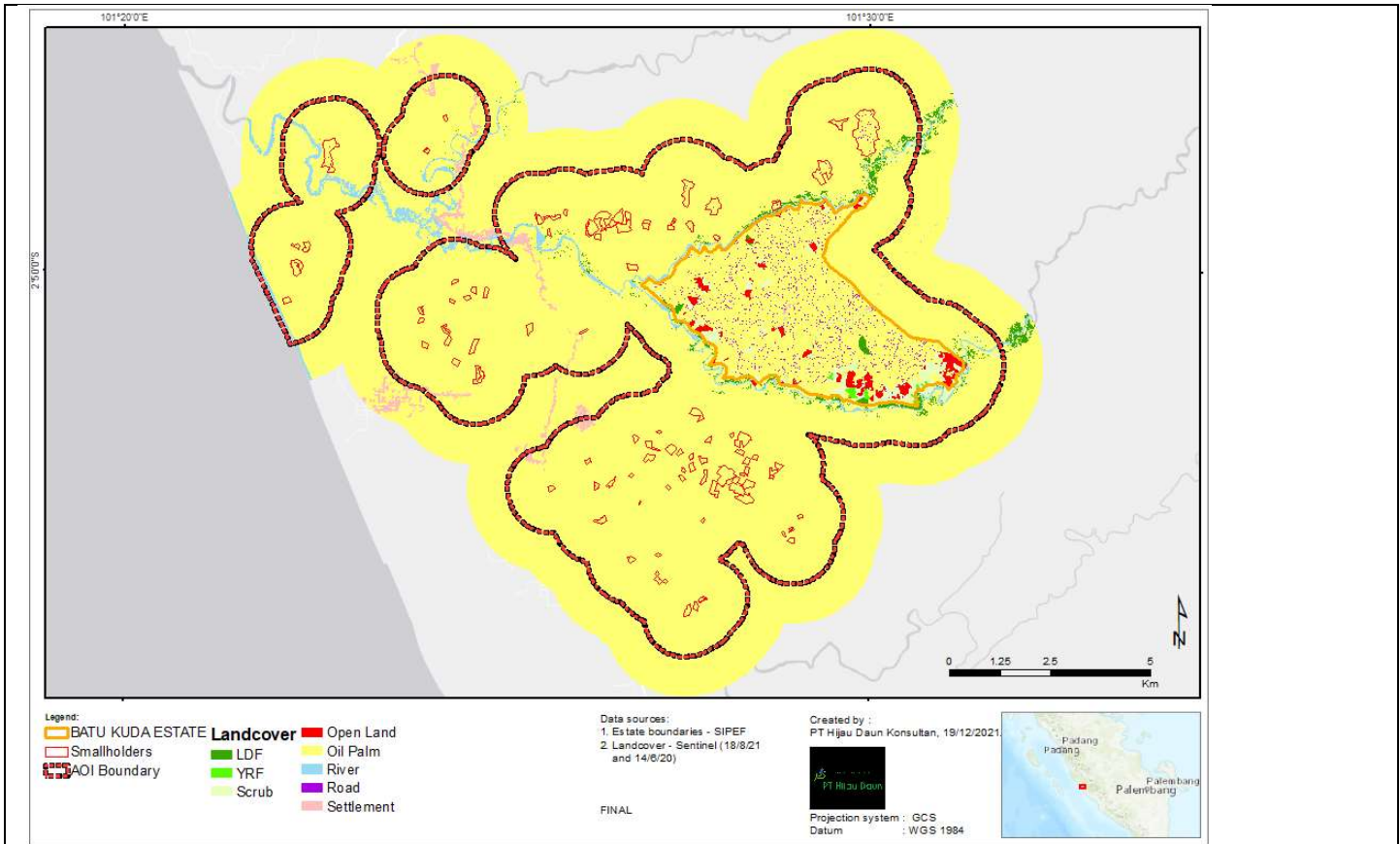


Figure 20. Final land cover map for the Batu Kuda and smallholders study area.

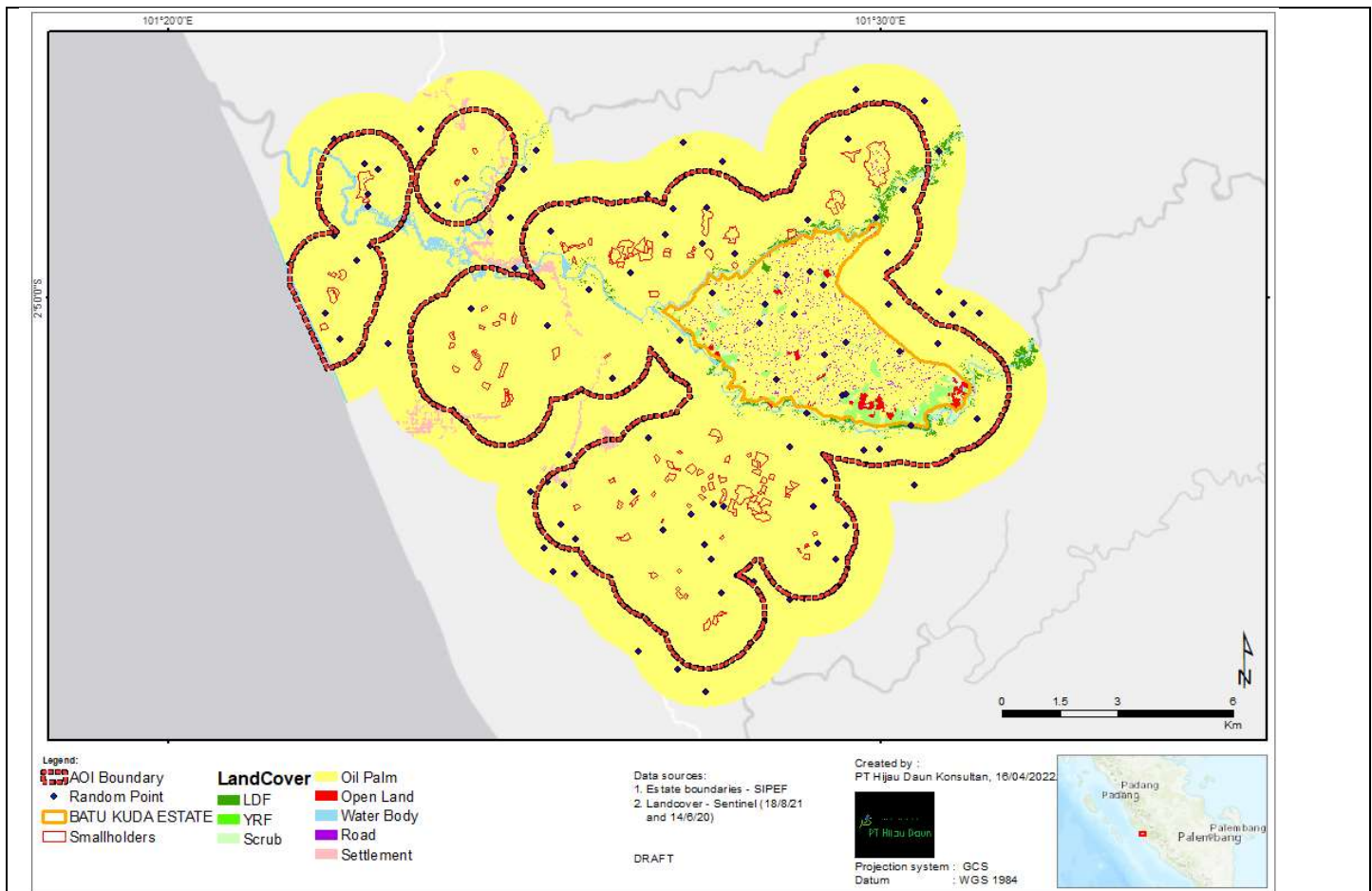


Figure 21. 100 points were located using the Get Random Point function. The landcover at each point was classified manually using a higher resolution image ("Planet" with 5 m pixels). This was compared against the supervised classification to get a Kappa statistic of 72.9%.

- *Ground Truthing*

For this assessment Hijau Daun had a lot of initial data. This included :

- The roading network within the Batu Kuda plantation.
- Surveyed oil palm areas within the Batu Kuda estate and the smallholder areas.

This made up about 90% of the area to be assessed. The roads and the surveyed oil palm were immediately classified as such and no image interpretation was done of these areas as these areas had been professionally surveyed.

Three areas of settlements are located in Batu Kuda Estate (perumahan karyawan)– the assessor followed up with the Estate Manager who knows the area very well and he confirmed that these areas were correctly located on the land cover map.

The areas of bareland that have been classified as oil palm may be large areas of oil palm where many palms have failed and there is a sea of macuna covering it. This is still classified as oil palm.



Figure 22 Example of an oil palm area where the palms have been attacked by termites or similar and survival is very low. It is still classified as oil palm.

Additional ground truthing plots were located in the north east of Batu Kuda to ensure the classification as scrub was correct. Photos show that it is a mixture of scrub, overgrown community oil palm and areas that would have been cleared (by the community) after the classification was undertaken. But from the size of the material left behind it was scrub that was cleared.

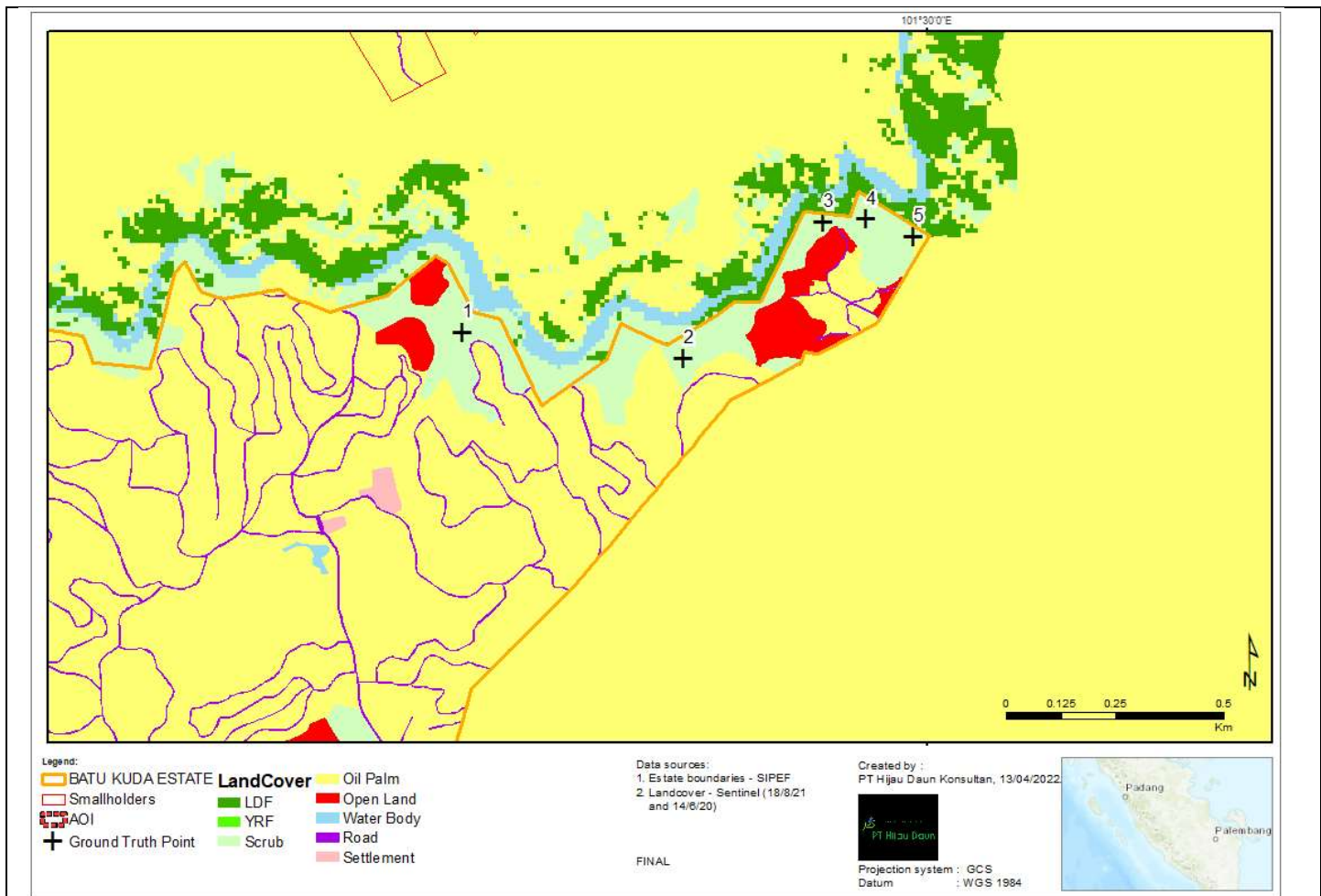


Figure 23. Additional ground truthing points. These areas were classified as scrub and the photos at the ground truthing points shows this to be correct at the time of classification.

In this case, most of the natural areas were on a single face and the assessor could stand on the ridge top and look down over the natural areas. From this ridge top scrub species could be sighted using binoculars and there were a few pockets of LDF that could be reconciled against the satellite image. Normally PT Hijau Daun, would do a scoping survey where they went to predefined points and noted the landcover at that point. However, given the quality of the information available this was deemed unnecessary. Some minor refinements to the landcover were noted based on the ground survey. Examples of this were; noting that the community had cleared a number of scrub areas subsequent to the satellite imagery being taken and that a lot of the oil palm areas had failed, leaving nothing but *Mucuna pruriens*.

The HCS plots were used to refine the land cover map. Note that the HCS methodology requires the assessor to assign vegetation classification to plots in the field (not based in carbon stock) "*Field assessment should take into account not only the conditions within the plot boundaries, but also in the areas immediately adjacent to the plot, when assigning vegetation classification.*" (HCS Approach, 2017)- module 4 pp22. The assessor used observations in plots such as species mix, size and density to assign vegetation classifications NOT Carbon stock. Consequently areas that were not visited during the assessment but had similar spectral signatures to those areas that were visited were given the same classification.

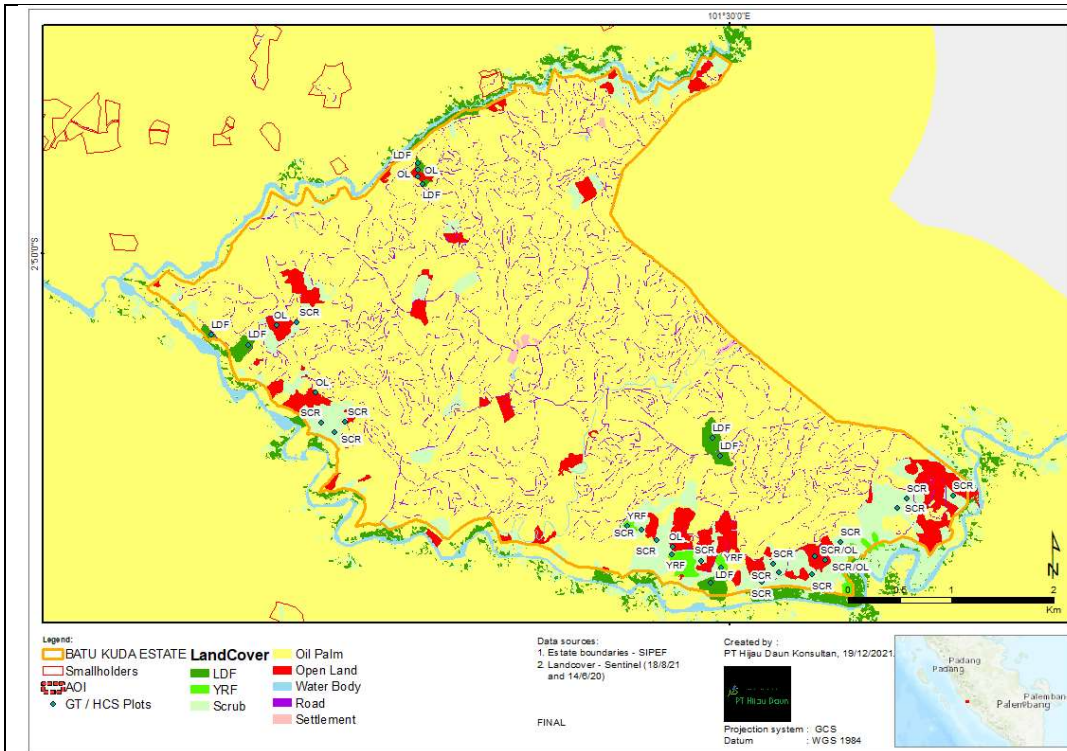


Figure 24. The final land cover map with ground truthing points / HCS plots which were walked to during the Full Assessment.

The final step in the process of generating the landcover map was to undertake an accuracy assessment of the final land cover map. 150 points⁹ were located using the ArcGIS Create Random Point function. The landcover at each point was classified manually using a higher resolution image (“Planet” with 5 m pixels). This was compared against the supervised classification to get a Kappa statistic of 80.3%. The data is in Table 24 and the location of the points in Figure 25.

Table 24. Final land cover accuracy assessment. Along the top is the classification from the landcover and columns are classification done manually off a planet image for particular points.

| Row Labels | LDF | OL | OP | RIV | ROAD | SCR | SET | YRF | Grand Total |
|-------------|-----|----|----|-----|------|-----|-----|-----|-------------|
| LDF | 13 | | | | | | | | 13 |
| OL | | 5 | | 1 | | | | | 6 |
| OP | | | 46 | 5 | | 1 | 2 | | 54 |
| RIV | | | | 22 | 1 | 1 | | | 24 |
| ROAD | | | | | 6 | | | | 6 |
| SCR | 2 | 5 | 4 | 1 | | 20 | | 1 | 33 |
| SET | | | | | | | 13 | | 13 |
| YRF | | | | | | 1 | | | 1 |
| Grand Total | 15 | 10 | 50 | 29 | 7 | 23 | 15 | 1 | 150 |

N 150
 Po 83.3%
 Kappa 80.3%

⁹ Note that 100 of these points were deliberately located in non-oil palm areas. In the previous classification, because there was so much OP in the landscape so many of the points fell in OP areas. Compared with the initial classification the Po has dropped. However, this is not a valid comparison.

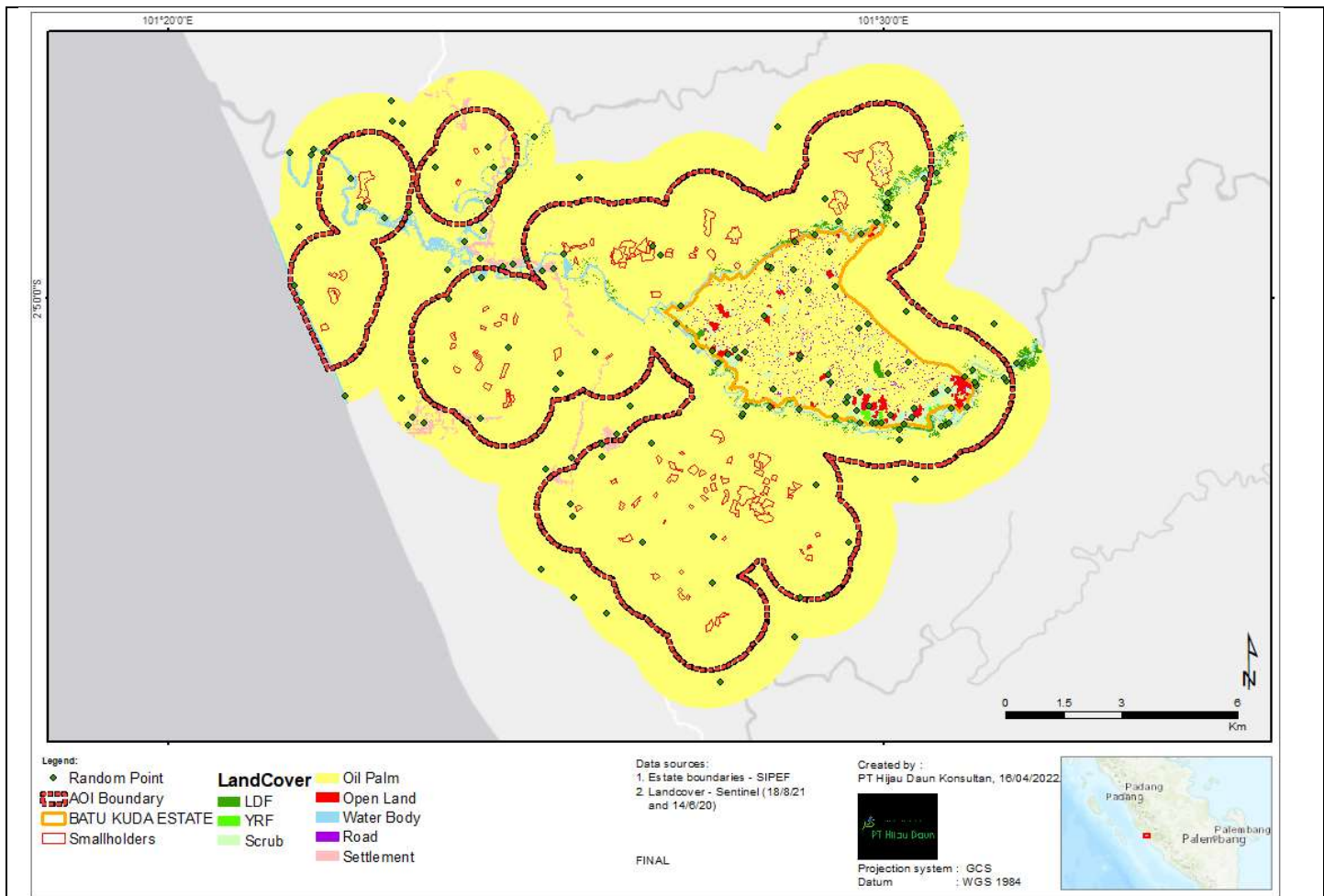


Figure 25. 150 points were located using the Create Random Point function. The landcover at each point was classified manually using a higher resolution image (“Planet” with 5 m pixels). This was compared against the “final” supervised classification (after manual ground truthing) to get a Kappa statistic of 80.3%.

▪ *Land conversion scenarios*

In order to assess the emissions potential of the proposed conversion the net areas to be managed are tested through 3 different scenarios. Each conversion scenario makes a different assumption regarding the type of conservation type which will be retained or converted into oil palm. All of the scenarios assume that there will be methane capture during the first rotation of the oil palm plantation. The scenarios that were tested are described in Table 25.

Based on Table 23, the conversion scenario is only based on the area that is under the company management control (i.e 1,437.66 ha). The areas under community ownership cannot be controlled by the company.

Table 25. Land conversion scenarios. HCVMA = ‘High Conservation Value Management Area’, HCSF = ‘High Carbon Stock Forest’

| Scenario | Description |
|------------|---|
| Scenario 1 | Areas indicated as Conserve are conserved. All developable (non-conservation) areas are developed. Methane capture. |
| Scenario 2 | Business as usual – conservation areas are not implemented. Methane capture. |
| Scenario 3 | All developable areas are developed (including conservation areas). Methane capture. |

The resulting amounts of hectares potentially converted or retained are summarised in the following tables.

Table 26. Summary of conversion scenarios (ha). Preferred scenario is Scenario 1.

| Classification | Scenario 1 | | | Scenario 2 | | | Scenario 3 | | |
|-----------------------------------|------------|------------------------|----------|------------|------------------------|----------|------------|------------------------|----------|
| | Current LC | Conserve / Not Develop | Develop | Current LC | Conserve / Not Develop | Develop | Current LC | Conserve / Not Develop | Develop |
| Disturbed Forest | 32.73 | 8.32 | 24.41 | 32.73 | - | 32.73 | 32.73 | 23.92 | 8.82 |
| Shrubland | 164.98 | 15.23 | 149.76 | 164.98 | - | 164.98 | 164.98 | 86.83 | 78.16 |
| Oil Palm ¹⁰ | 1,994.47 | 37.93 | 1,956.55 | 1,994.47 | - | 1,994.47 | 1,994.47 | - | 1,994.48 |
| Grassland | 106.74 | 1.00 | 105.74 | 106.74 | - | 106.74 | 106.74 | 72.03 | 34.72 |
| Not to be developed ¹¹ | 101.83 | 101.83 | - | 101.83 | 101.83 | - | 101.83 | 101.84 | |
| Grand Total | 2,400.77 | 164.30 | 2,236.46 | 2,400.77 | 101.83 | 2,298.92 | 2,400.75 | 284.61 | 2,116.16 |

Table 27. Results of the greenhouse gas emissions scenario modelling, orange box indicating preferred Development Scenario. Field emissions and sinks assume vigorous growth for oil palm, used by large scale operations. Data derived from RSPO GHG Calculator (RSPO-PRO-T04-003 V3.0 ENG).

| Field emissions & sinks | Scenario 1 | | | Scenario 2 | | | Scenario 3 | | |
|-------------------------|------------|-----------|------------|------------|-----------|--------------|------------|-----------|--------------|
| | tCO2e | t CO2e/ha | tCO2e/tFFB | t CO2e | t CO2e/ha | t CO2e/t FFB | t CO2e | t CO2e/ha | t CO2e/t FFB |
| Land clearing | 1,148.46 | 4.96 | 0.71 | 492.49 | 0.24 | 0.01 | 3,151.31 | 2.83 | 0.11 |
| Crop sequestration | 0.00 | 0.00 | 0.00 | -19,100.93 | -9.36 | -0.31 | -10,408.12 | -9.36 | -0.37 |
| Fertilisers | 14.41 | 0.06 | 0.01 | 421.28 | 0.21 | 0.01 | 819.83 | 0.74 | 0.03 |
| N2O | 10.84 | 0.05 | 0.01 | 2,212.32 | 1.08 | 0.04 | 1,559.92 | 1.4 | 0.06 |
| Field fuel | 34.86 | 0.15 | 0.02 | 160.48 | 0.08 | 0.00 | 108.16 | 0.1 | 0 |
| Peat | - | - | - | - | - | - | - | - | - |
| Conservation credit | -289.98 | -1.25 | -0.18 | -301.70 | -0.15 | -0.00 | -257.75 | -0.23 | -0.01 |
| Total | 918.59 | 3.96 | 0.57 | -16,116.06 | -7.90 | -0.26 | 5,026.66 | -4.52 | -0.18 |
| Mill emissions & credit | tCO2e | t CO2e/ha | tCO2e/tFFB | tCO2e | t CO2e/ha | tCO2e/t FFB | tCO2e | t CO2e/ha | tCO2e/tFFB |

¹⁰ All the oil palm is already planted. The plan is to replant the current crop, which is poor genetic stock and has not been well maintained. This will be done over a 3 year period.

¹¹ Includes roads, settlement and water.

| | | | | | | | | | |
|---|-----------------|------|------|------------------|------|------|---------------|------|------|
| POME | 316.59 | 1.37 | 0.20 | 2,263.33 | 1.11 | 0.04 | 1,027.74 | 0.92 | 0.04 |
| Mill fuel | 1.16 | 0.01 | 0.00 | 116.49 | 0.06 | 0.00 | 19.95 | 0.02 | 0 |
| Purchased electricity | - | - | - | 159.80 | 0.08 | 0.00 | 159.8 | 0.14 | 0.01 |
| Credit (excess electricity exported) | - | - | - | - | - | - | - | - | - |
| Credit (sale of biomass for power) | - | - | - | - | - | - | - | - | - |
| Total | 317.75 | 1.37 | 0.20 | 2,539.62 | 1.24 | 0.04 | 1,207.48 | 1.09 | 0.04 |
| Total emissions, tCO2e (field and mill) | 1,236.00 | | | - 13,576.44 | | | - 3,819.17 | | |
| t CO2e/t CPO | 2.75 | | | -0.82 | | | -0.47 | | |
| t CO2e/t PK | 2.75 | | | - 0.82 | | | -0.47 | | |

Section 8: Land Use Change Analysis (LUCA)

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

Date of Assessment: March 2022

Name of Assessor: J Crawshaw

Assessor Designation and Company: External Consultant / PT Hijau Daun

From land use mapping we categorize the area into 10 classes which are: oil palm by company (OP Company), oil palm masyarakat (OP Masyarakat), cultivated area, open land (OL), scrubs (SCR), Young Regenerating Forest (YRF), low density forest (LDF), water area (RIV), roads (ROAD), settlement (SET).

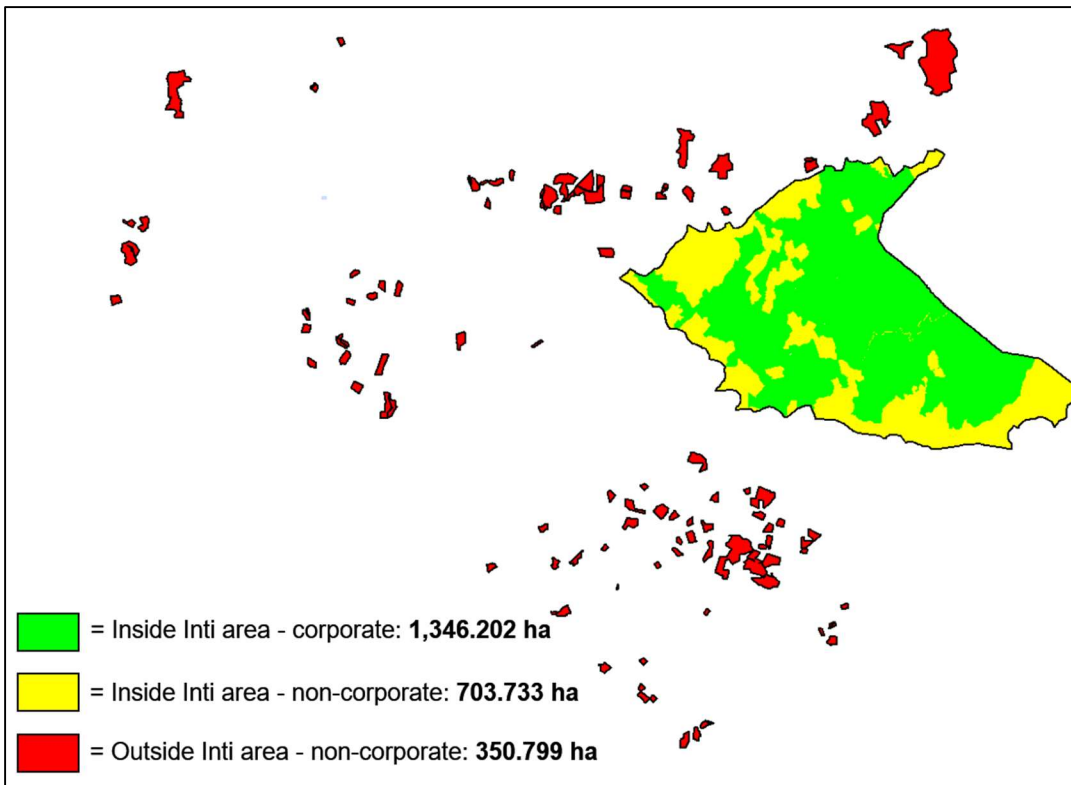
Each land cover class will have coefficient as listed below:

- oil palm by company (OP Company), coefficient 0.0
- oil palm masyarakat (OP Masyarakat), coefficient 0.0
- cultivated area, coefficient 0.0
- open land (OL), coefficient 0.0
- scrubs (SCR), coefficient 0.0
- water area (RIV), coefficient 0.0
- roads (ROAD), coefficient 0.0
- settlement (SET), coefficient 0.0
- Young Regenerating Forest (YRF), coefficient 0.7
- low density forest (LDF), coefficient 0.7

Classification of corporate and non-corporate clearing was based on the information of planted area by corporate and year planting map provided by the company and visual interpretation on imagery. Year planted map provided by Company follow the blocks separated by imaginary grid which used as our reference to identify oil palm, stacking, bareland-land clearing, roads, emplacement which developed by corporate. Whereas non-corporate is often smaller blocks that are less organized and with a less regular design.

All oil palm area which developed by company inside Inti is corporate, balance of the area inside Inti which not developed as oil palm by company is non-corporate. This include oil palm masyarakat, cultivated area and other

landcover which is inside Inti area but outside oil palm area developed by company. For oil palm in Plasma area outside Inti area is non corporate. Corporate and non-corporate clearing can be described on the map below:



Results

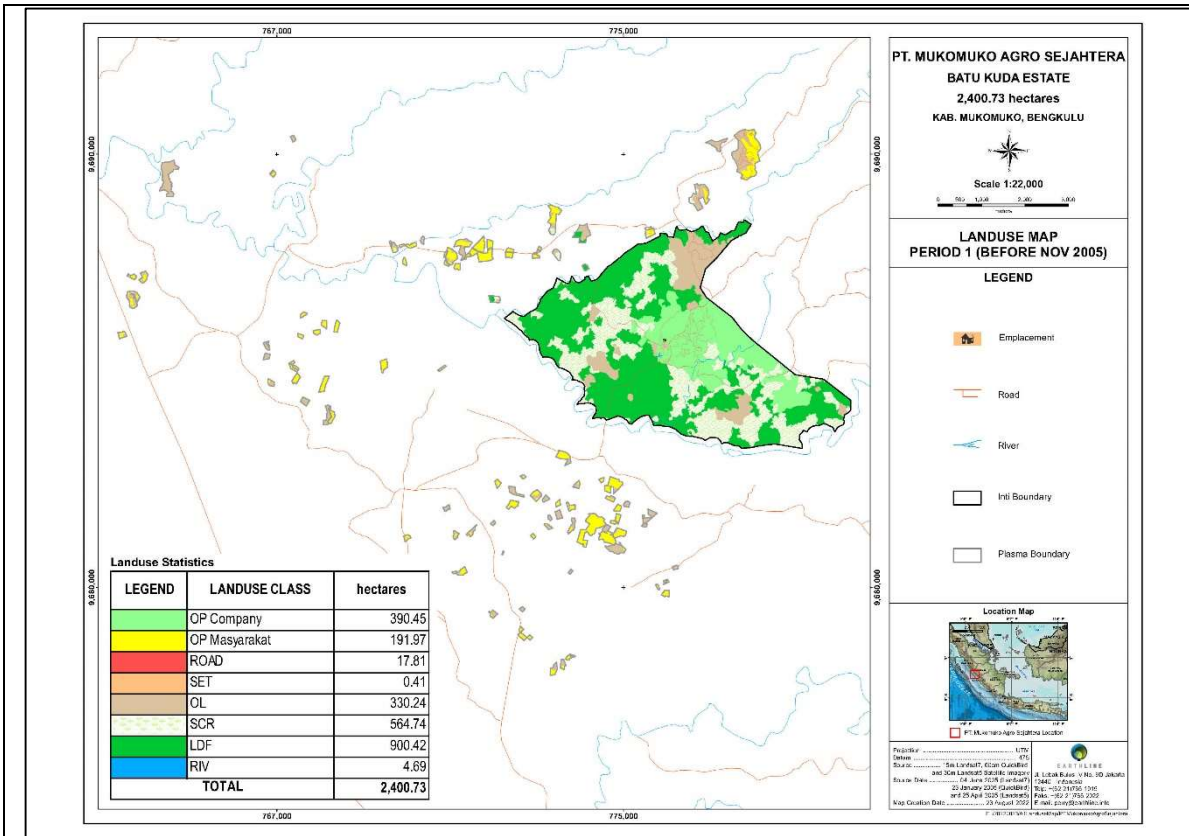


Figure 26. April 2005

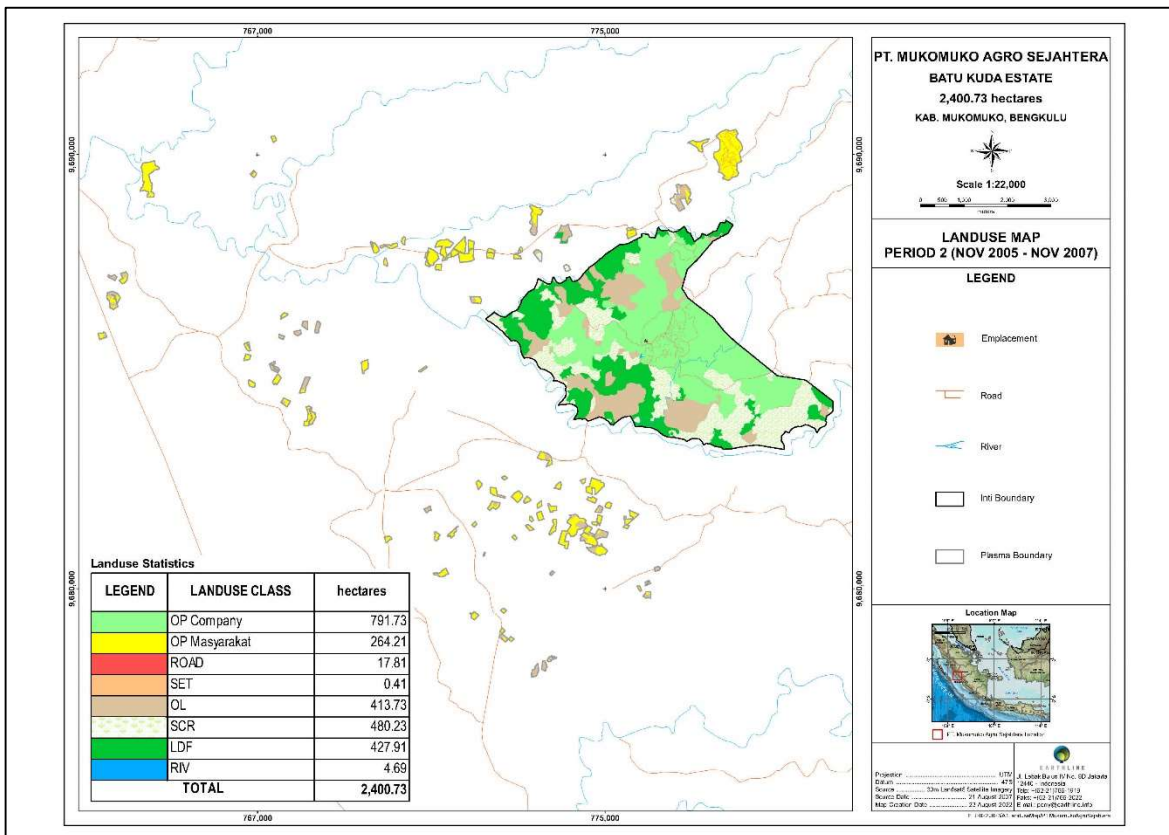


Figure 27. August 2007

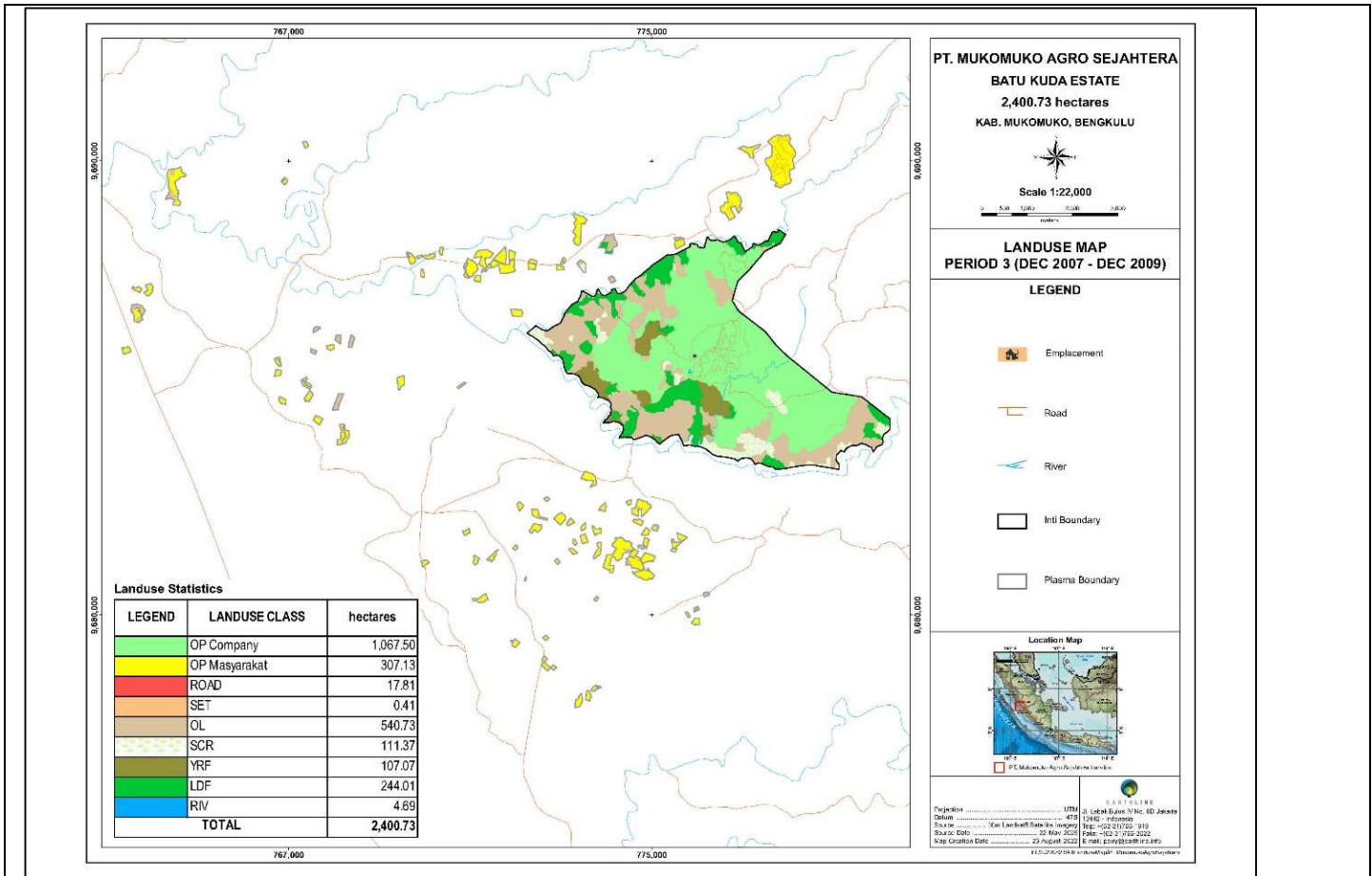


Figure 28. May 2009

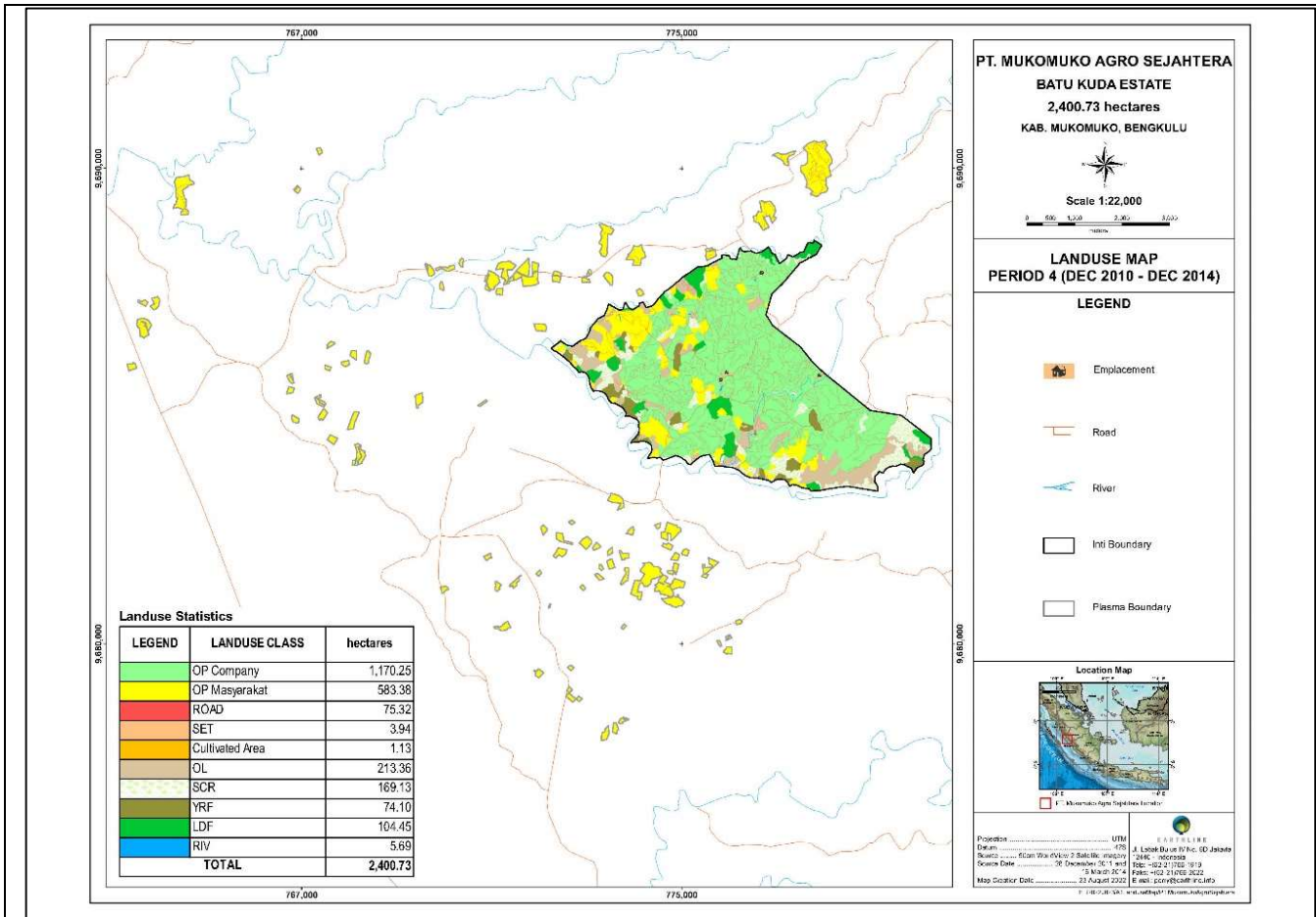


Figure 29. March 2014

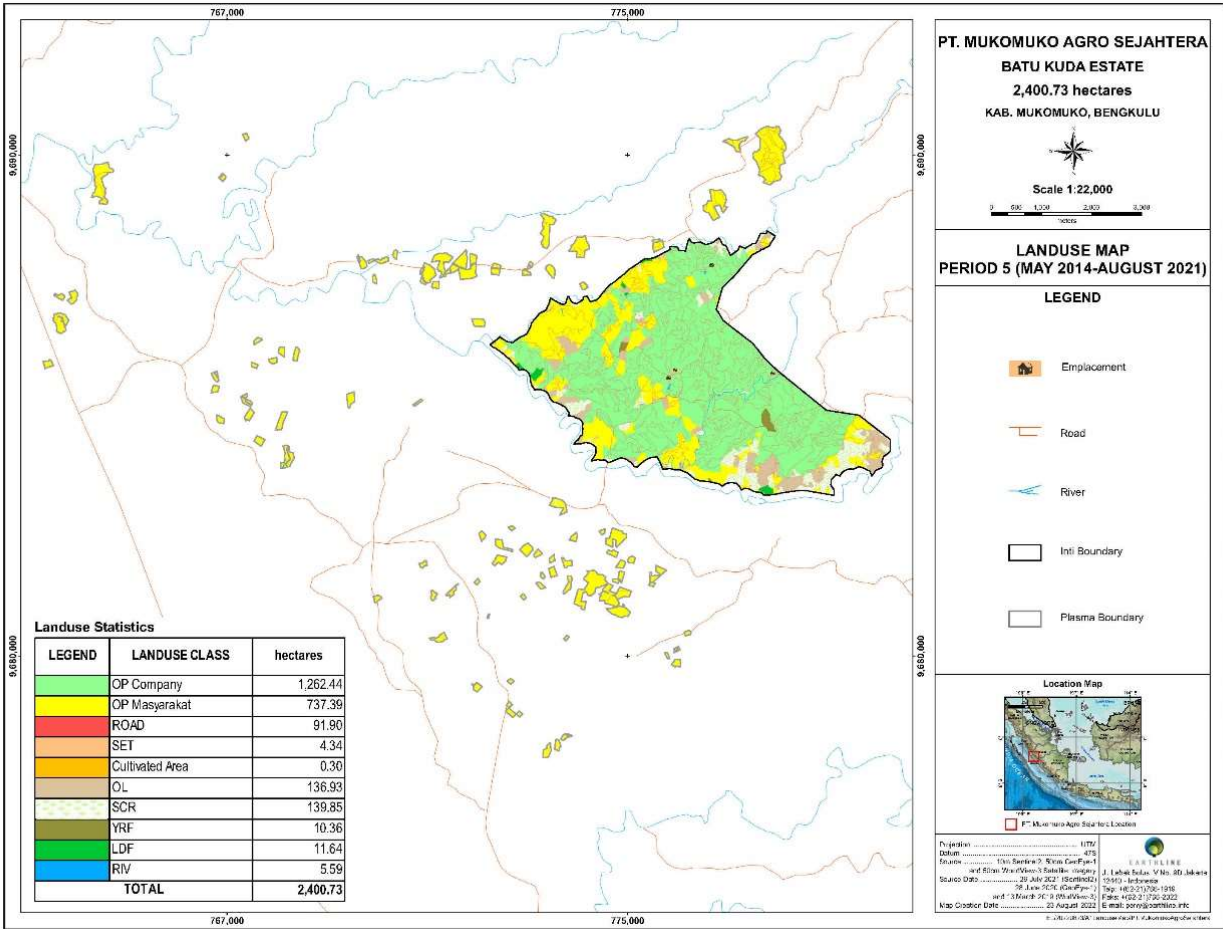


Figure 30. July 2021

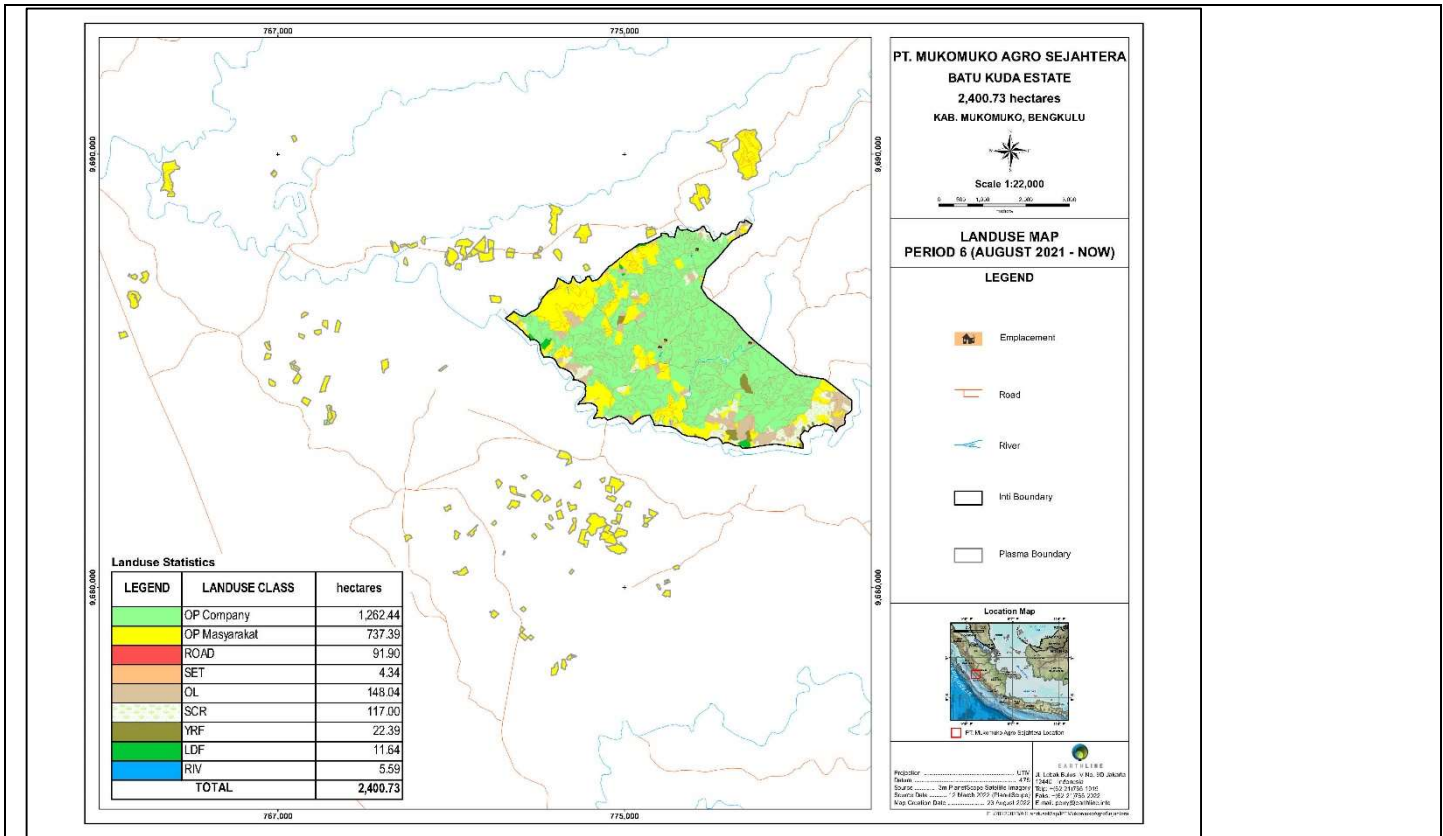


Figure 31. March 2022

Table 28. Raw liability (ha)

| | | Nov 1, 2005 to Nov 30, 2007 | Dec 1, 2007 to Dec 31, 2009 | Jan 1, 2010 to May 9, 2014 | May 9, 2014 to August 2021 | After August 2021 |
|--|-----|-----------------------------------|--------------------------------|-------------------------------|-------------------------------|-------------------|
| One or more land cover classes which fulfill the criterion of vegetation coefficient 1.0 | 1.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| One or more land cover classes which fulfill the criterion of vegetation coefficient 0.7 | 0.7 | 341.31 | 86.79 | 77.19 | 16.65 | 0.00 |
| One or more land cover classes which fulfill the criterion of vegetation coefficient 0.4 | 0.4 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| One or more land cover classes which fulfill the criterion of vegetation coefficient 0.0 | 0 | 309.49 | 232.20 | 130.09 | 87.20 | 0.77 |
| Total (sum of rows) | | 650.80 | 318.99 | 207.28 | 103.85 | 0.77 |

Table 29. Final Compensation Liability (ha)

| Period of clearance | Liability (ha) |
|---------------------------------------|----------------|
| November 1, 2005 to November 30, 2007 | 0.00 |
| December 1, 2007 to December 31, 2009 | 30.38 |
| January 1, 2010 to May 9, 2014 | 26.36 |
| May 9, 2014 to July 2021 | 14.45 |
| After August 2021 | 0.00 |
| Total | 71.18 |


RSPO Note: Please conclude all the findings of the assessment and how this will be translated into a management plan. If there is any known significant issue, the RSPO member needs to acknowledge its existence and ensure it is a priority for the management to address those issues.

The main findings of this assessment are that :

- Batu Kuda is located in an industrial agricultural landscape. Over the last 20 years forestry companies inadvertently assisted the community to comprehensively clear the area for oil palm.
- The estate is in the process of being purchased by SIPEF group.
- The previous owner, PT Agrincinal, had a good relationship with the local community. However, they managed the estate poorly. The whole crop will have to be replanted
- Currently there are 244.46 ha that are available for new planting in the estate. Most of this area has not had land compensation paid yet.
- There is a river, S Air Besah, through the middle of the estate. This will have a 50 m buffer established to the left and right. Currently it has oil palm planted to the water's edge. Trees that attract birds and mammals will be planted in this area with the hope of establishing a wildlife corridor.
- There are a number of steep areas and areas of forest within the estate that will be set aside.
- There are some HCV 6 sites – graves, beauty spots and historical areas that will be set aside from development.
- There are no significant issues associated with this estate (e.g. unresolved land claims).

Section 10: Confirmation of Report

All findings are accepted by the grower company and will be responsible for its ownership and development process for as long as it is within their control.

| | |
|--------------------|---|
| Date of Completion | 10 December 2022 |
| Signature |  |
| Name | Sander Van Den Ende |
| Position | Regional Director Sustainability |