HIGH CARBON STOCK APPROACH

HCSA PEER REVIEW REPORT

Company Name: SIPEF

HCS Assessment Area: PT Agro Kati Lama II

29 March 2021

Dear peer reviewers:

Thank you for agreeing to review this HCS study. As you know, we are asking you to do a desk review of the material provided and to highlight any concerns you have about the land cover classification, land-use planning, or consultation processes. We have invited you as an expert in your field, and hope that you will bring your own experience and knowledge to this review to help the company improve its study. We are not asking you to provide a pass/fail decision, just to give your honest opinion and suggestions for changes to the company's plans or activities to ensure that the HCS Approach methodology is implemented correctly. Please refer to the latest HCSA Toolkit as reference.

Some of the issues raised in the review may be complicated and long-standing, especially those related to land tenure and historical conflict with communities. It is not within the scope of the review for you to do hours of research and determine who is at fault, or to examine stakeholder activities outside of the particular concession or plantation which is the subject of the review. Rather we ask that you call attention to topics that need further research or more information from the company, to improve community relations in the future or to reassure external stakeholders that the intent of the HCS Approach is being followed.

Background information to be provided by the HCSA Secretariat:

a) **Did a Registered Practitioner Organisation lead the HCS assessment? If not, has the organisation which led the assessment started the process of registration?**
Yes, Ryan Karida from Aksenta led the HCS assessments.

b) **Was the HCS Team Leader a Registered Practitioner?**
Yes, Ryan Karida is a Registered Practitioner.

c) **Were at least two (2) HCS team members Registered Practitioners?**
Yes, Ryan Karida and Riswan Zein are Registered Practitioners.

d) **Was the HCV assessment judged 'satisfactory' (highest rating) by the HCV Resource Network (HCVRN) Assessor Licensing Scheme (ALS)? (See https://hcvnetwork.org/reports/find-a-report/).**
Yes. Satisfactory.

Questions for peer reviewers

(Peer Review Panel: Cynthia Chin and Kimberly Carlson)

The estimated time to complete each section is noted in parentheses.

1. Peer Review Summary (2 hours, Lead Reviewer)

1.1. What are the major findings and recommendations from the peer review?

Please refer to the peer review results in this report.

> **Finding:** This HCS Assessment Report was clearly written and generally followed practices outlined in the Toolkit. Substantial and substantive information was provided to support the report, and the company also provided complete and well-organized material to the peer reviewers. There was only one apparently major issue in this assessment; the patch analysis seems to contain a mistake related to distance of HCS patches from other (HCV) patches. Also, it is important to note that the ICLUP does not include any within concession community lands because the company expects to continue negotiating with community members to acquire these lands. Note that this Report was quite similar to the PT Agro Kati Lama I report, and the reviewer comments are thus also very similar.
>
> **Reviewers Recommendation:**
> 1. Revise the patch analysis so that it correctly deals with distances between patches and HCVs and update the final ICLUP accordingly.
> 2. Address individual reviewer comments below.
>
> *Update: The company fully addressed all major and specific recommendations in their revised report. The assessment patch analysis now appears robust.*

1.2.   Did the HCS assessment team include or have adequate access to relevant expertise to undertake the HCS assessment?
Please refer to Section 2 of the Summary Report.

Finding: Yes, the team had sufficient expertise to undertake the assessment. It included nine core individuals with expertise spanning remote sensing, GIS, carbon stock assessment, plant identification, FPIC, and participatory mapping.

Reviewers Recommendation: None

1.3.   What elements of the HCS Approach still need to be completed in order to create a final land use and conservation plan? Are there aspects which you feel need to be re-done?
Please review Section 10 of the Summary Report and the peer review results in this report.

Finding: Beyond correction of the patch analysis (described above and below) the company still needs to delineate HCS and other conservation boundaries in the field *after* a robust and collaborative consultation with the community regarding the ICLUP and with individual community members who have lands that intersect with the conservation areas. They also need to undertake the steps outlined in Section 9.1.

Reviewers Recommendation: Re-do the patch analysis and then follow the activities outlined in Section 9 of the assessment report.

Update: The company acceptably re-worked the patch analysis in their revised report.

2.   Social Issues (4 hours)

Please review Section 3 and Section 4 of the Summary Report and please also look at the full HCV report (Section 4) for how HCVs 5 and 6 were assessed. The HCSA Toolkit provides more information on the expected quality of community consultation and FPIC procedures.

2.1.   Does the summary provided in Section 3 adequately represent and explain the community engagement, FPIC processes, and participatory mapping activities carried out?

Finding: There are clear matrices indicating social impacts (both positive and negative) as well as current issues and potential problems arising from overlapping boundaries to lack of information shared by the company. The company has also initiated a compensation process using the *Ganti Rugi Tanam Tumbuh* (GRTT) approach. Section 4 details the FPIC and participatory mapping processes. A final participatory map depicts details of community land use in Figure 23.

Reviewers Recommendation: None

2.2.   Has a tenure study been completed and has it been vetted by independent social experts?

Finding: Yes. A tenure study was completed over a 1,036.82ha or 33% of the AOI, in 487 plots of community land over 9 villages.

Reviewers Recommendation: None

2.3.   Is there a participatory land use map and does it contain the key components of community land use including the minimum requirement of 0.5 ha per person for future garden areas?

Finding: A participatory land use map does exist. Although a section on food security is included, this alluded to the fact that community gardens were increasingly unattractive due to low prices and the conventional system was no longer sufficient. It suggested instead that future establishment of a partnership for community plantation by the company might better improve community welfare.

Reviewers Recommendation: Please explain how the unattractiveness of continued dependence on community gardens justifies not looking into the 0.5 ha requirement per pax.

Update: The company has added an acceptable response to clarify why the 0.5 ha requirement per pax was not considered.

2.4.   Is there a record of consultation with affected communities and FPIC processes on the proposed development, the HCS Approach and issues/concerns they raised? Did the community nominate their own representatives?

Finding: Yes. A detailed section was provided, and consultation was done with various representatives and leaders. It is assumed that these leaders are approved and accepted by the communities. A table of target groups was also provided comprising 15 different categories of participants.

Reviewers Recommendation: None

2.5.   Were their views addressed and reflected in the plans and implementation of the plantation? Is there specific reference to the customary owners being made aware that they can say no to the development and they have the right to independent legal representation with regard to their agreements before they sign (to meet the 'prior informed' test)?

Finding: The FPIC process was clear and detailed. There is no specific reference to customary owners being made aware, however the definition of FPIC was detailed and a section on socialisation and seeking for consent was included. Verification and confirmation was obtained to ensure that the communities understood the implications. This implies an active pursuit of FPIC.

Reviewers Recommendation: None

2.6.   What recommendations do you have for any improvements regarding community consultation and negotiation of Free, Prior and Informed Consent?

Finding: Generally a clear and detailed account of community consultation with good documentation of the processes and outcomes, including issues and mitigation recommendations.

Reviewers Recommendation: None

3.   Ecological and Conservation Values (4 hours)

3.1.   Does the summary provided in Section 5 of the Summary Report adequately represent the findings of the HCV study?

> **Finding:** Identified HCVs were clearly tabulated mapped out. The study area is also aligned to the AOI. However, management and monitoring measures were not mentioned.
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> **Reviewers Recommendation:** Please provide a brief summary or tabulation of management and monitoring recommendations, including maps.
>
> *Update: Management and monitoring recommendations were added in Section 5 of the report.*

3.2.   If the HCV assessment was not judged satisfactory (highest rating) by the ALS scheme of the HCVRN (as noted in the introductory information from the HCSA Secretariat – please see page one of this document), please do a cursory review of the HCV report as it relates to HCVs 1-4. Do you have any general comments on the quality of the site description, the analysis of the landscape and national or regional context, or the methods used to undertake the HCV study? Were the determinations of the absence/presence and extent of HCVs 1-4 well-justified? Are the HCV management and monitoring maps accurate?

The HCV Report can be found in the SharePoint.

> **Finding:** The HCV assessment has been judged satisfactory by HCVRN.
>
> **Reviewers Recommendation:** Please provide a brief summary or tabulation of management and monitoring recommendations, including maps.
>
> *Update: Management and monitoring recommendations were added in Section 5 of the report.*

3.3.   Please review Section 8.2 of the Summary Report. Was the methodology used for the Pre-RBA and the Rapid Biodiversity Assessments (if any) satisfactory? Did the RBA(s) reveal any significant biodiversity values that should have been captured in either the HCV assessment but were not, or warrant protection?

Note that this is a check of procedures, not outcomes. The HCSA Toolkit provides more information on the expected quality of the RBA and the Pre-RBA.

Finding: The only mention of Pre-RBA stated that it would be considered by looking at the forest cover in the landscape as part of patch analysis. There was no mention of RBA.

Reviewers Recommendation: Please indicate the need or otherwise of Pre-RBA and RBA and provide justification for the decision.

Update: This has been adequately addressed in Section 8.1.

3.4.   Are the forest conservation management and monitoring activities outlined in Section 9.1 adequate? Do they take into account forests and protected areas outside the concession?

Finding: Section 9 is clear and succinct. Recommendations are reasonable and aligned to findings. It also mentioned activities needed before finalising the Conservation and Development Plan, which is useful.

Reviewers Recommendation: None

4.   Image Analysis (6 hours, including land use planning/Decision Tree Section 6 below)

4.1.   Please review Section 6.1 of the Summary Report. Was the Area of Interest correctly identified?

The HCSA Toolkit explains how the AOI should be identified.

Finding: The AOI was a 1 km buffer around the PT AKL concession boundary. Because the concession itself is long and narrow - about 1 km across at points - this means that the area of the AOI was more than double the area of the concession. Given that the landscape is relatively homogenous inside and outside the concession, with no protected areas or apparently intact forests nearby, this AOI is appropriate.

Reviewers Recommendation: None

4.2.   Please review Section 6.2 of the Summary Report. Were the images used of adequate quality, including resolution and date?

The HCSA Toolkit describes the expected quality of the images.

Finding: The company used two Sentinel 2A images, one from November 2019 and one from June 2020. The images were of sufficient spatial resolution (10 m) and were within 12 months of the field vegetation plot work. The earlier image is cloud free in the study area, and the later image has a few scattered clouds in the study area. Thus, they are of adequate quality and within the time frame required by the Toolkit.

Reviewers Recommendation: Please remove the statement about 0% cloud cover, the second (June 2020) satellite image does have some cloud cover. The company may wish to say "low" cloud cover or similar.

Update: The company fully addressed this recommendation in their revised report.

4.3. Please do a quality check using the images provided in 6.2. Was the initial vegetation classification done properly? Do the land cover areas in the tables in Section 6 look reasonable? Are there any obvious errors in classification?

The HCSA Toolkit provides more information regarding the expected quality of the image analysis.

Finding: The initial vegetation classification used 81 training points gathered from visual interpretation of high-resolution imagery available on Google Earth. Classes included low density secondary lowland forest, mixed garden, rubber garden, settlement, oil palm plantation, and water body. The approach used what the company calls an "object based visual interpretation" carried out in eCognition and ArcGIS. I take this to mean that the image was first segmented into discrete objects (e.g., a field) and then those objects were manually classified using the training data as a guide. The classification, as a first attempt, looks reasonable especially in this highly heterogeneous landscape with apparent substantial smallholder agriculture.

Reviewers Recommendation: Provide more details on the segmentation and classification procedure. How was eCognition used to segment the image? Were all objects manually classified via visual interpretation in ArcGIS? If so, how were the training data used?

Update: The edited report indicates that after segmentation, objects were classified in ArcGIS using the training dataset described in section 6.4, which satisfies the reviewer recommendation. In the future, more details on the specific method used for classification would be helpful.

5. Forest Inventory (4 hours)

5.1. Please review Sections 7.1 and 7.2 of the Summary Report. Were the sample plots selected, set up, and measured properly? Please check the inventory plot layout for adequacy.

The HCSA Toolkit describes the expected quality of the forest inventory process.

Finding: Yes, the necessary number of plots was generated for low density secondary forest and mixed garden areas using an approach to estimate the necessary number of plots given an expected variance and necessary confidence value for each land cover class. Interestingly, the company decided to survey more plots than required by this estimate (189 total plots rather than a minimum of 84). Then, the plots were distributed using a combination of random and non-random methods depending on the size of the land cover polygon. The company used a nested circular plot approach with the larger plot being 500 m2. The approach appears robust and rightly focuses on the land cover that is most likely to be confused with HCS forest (kebun campuran). However, I would in the future recommend sampling some areas within rubber and oil palm land use (as identified in the initial vegetation map) as these land covers (if mature) may also be confused with secondary forests. If they are an HCS forest class (misclassified in the initial map) they could have distinct vegetation structure and carbon stocks that are not captured by the survey.

Reviewers Recommendation: In future assessments consider doing an inventory across a wider range of land cover classes that may potentially be confused with HCS forest in initial vegetation classification.

5.2. Please review Section 2.1 of the Summary Report. Was the forest inventory team qualified?

The HCSA Toolkit describes the expected qualifications of the forestry team.

Finding: Yes, the forest inventory team was qualified. It included individuals from the consulting company with experience and expertise in species identification, as well as other individuals from local communities and the company to help with finding and preparing plots for measurement. The full qualifications of the team are provided in the Appendix.

Reviewers Recommendation: None

5.3. Please review Section 7.6 of the Summary Report. Was the allometric chosen adequate?
The HCSA Toolkit provides more guidance on choosing an allometric equation.

Finding: Note that the allometric equation was reported in Section 7.3. The company selected an equation presented by Ketterings et al. 2001, which uses tree DBH and average site wood density to calculate tree biomass and which was calibrated for mixed secondary forests in Sepunggur, Sumatra, Indonesia with DBH ranging from 8-48 cm. The original article states that this equation is suitable for use in secondary forests in Sumatra. Because the forests in this HCS study can be categorized as secondary and/or agroforest, it seems reasonable to use this equation for this HCS study.

Reviewers Recommendation: None

5.4. Please review Sections 7.3, 7.4, 7.5, and 7.7, 7.8 of the Summary Report, and do a cursory review of the forestry data and statistical analysis. Are there any obvious errors in the raw forestry data? Are there any flags where a result does not seem consistent with your rough interpretation of the land cover image? Do the final carbon classes seem accurate given what is known about other forests in the region?
The HCSA Toolkit provides more guidance on what statistical analysis should be used.

Finding: The forestry data and statistical analysis appear robust. The carbon values in each of the focal land cover classes (hutan regenerasi muda/young regenerating forest (YRF), kebun campuran/mixed garden) are statistically separable. They have very similar mean carbon density, which reflects the heterogeneity of these land covers. The results, both carbon densities and land cover classification, align with my interpretation of the land cover image. The carbon densities (45 tC/ha in YRF, 39 tC/h in mixed gardens) are in line with other work in the region that has measured carbon in *younger* agroforests and rubber gardens (e.g., Guillaume et al. 2018 Nature Communications).

Reviewers Recommendation: Next time, it would be helpful if the company could provide the inventory data in a spreadsheet rather than word document format to facilitate review.

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6.   Land use planning (6 hours with Image Analysis above)

6.1. Please review Section 6.4 of the Summary Report. Was the initial vegetation classification map adequately calibrated and adjusted to take into account forest inventory results?

The HCSA Toolkit provides more guidance on how to incorporate the forest inventory results into the land cover map.

Finding: Exploration of the shapefiles provided by the company indicates that the initial map was modified based on ground-truthing and forest inventory plots, so that many polygons in the initial land cover map were re-classified to the final land cover. The adjustments resulted in a slight decrease in the total young regenerating forest are in the final map, from about 265 ha to about 238 ha. They included reclassification from low density secondary lowland forest to other classes, and from other classes to low density secondary lowland forest. Within the concession boundary, these changes are directly informed by the ground-truthing and vegetation plots, although it is less clear why areas outside the concession boundary were re-classified. However, these changes were not apparent from the description in Section 6.4 but required analysis of the information provided by the company. Specifically, the summary report states: "Klasifikasi tutupan lahan awal selanjutnya divalidasi untuk mendapatkan tutupan lahan final." However, this does not describe a process of updating a map to arrive at the final version - validation simply tells a user how accurate a classification was, it does not alter the classification.

Reviewers Recommendation: Revise section 6.4 to clarify that polygons were reclassified based on ground-truthing points and forest inventory plot data. Describe how areas with no such data were reclassified (e.g., the areas to the east of the concession were reclassified from low density secondary lowland forest to mixed garden, how was this decision made?).

Update: In the revised report, the company clarified that they updated the classification based on their ground truthing and forest inventory data. It remains unclear how areas with no such data were dealt with, but this is not a major issue.

Please review Section 8 of the Summary Report. Was participatory mapping data used in step one to identify community lands that should be enclaved? Were patches merged correctly? Was the core area correctly identified? Was the connectivity analysis done correctly?

The HCSA Toolkit explain how to merge patches and identify the core area.

Finding: The company states that there are no community lands that would not be compensated and released to the company by community members in the study area.

The shapefile provided for the patch analysis included all steps, which made it difficult to understand whether the steps were correctly followed (e.g., I could not properly calculate patch core area because single patches that spanned the concession boundary were split across the concession boundary). Moreover, the shapefile did not align with the Report. For instance, Patch 33 in the shapefile was marked as 'tanpa inti' / without core even though in the report it was identified as a patch with a relatively large core area:
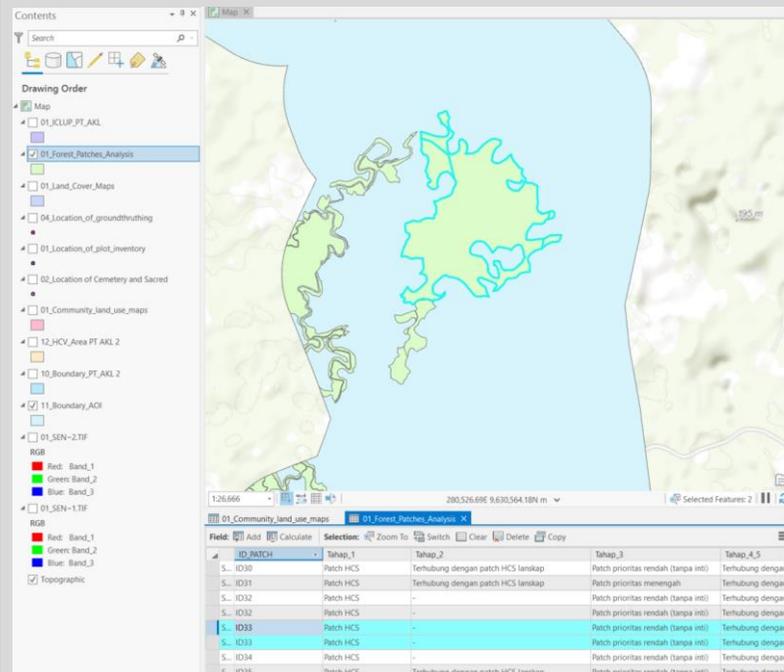
For step 4 and 5, the company states that "All identified HCS patches are connected to HCV areas so that they are designated as HCS conservation areas.". This is not true. There are several patches that are not connected to HCV or HCS areas (in this analysis; perhaps they are connected to the adjacent concession), for instance patches 51, 53, 58, 65, 62, 63 (see figure below). These are all low priority patches and should therefore be considered for development (after an RBA, assuming this is a low forest cover landscape). No give and take process was carried out. In summary, it seems that the core area and distance from other patches were calculated correctly, but that the decision tree was not correctly applied. The result is that there is likely too much area designated as HCS, including small patches that are unlikely to persist over time due to distance from other patches and small size. I recognize that most of these areas fall outside of the izin lokasi boundary, and some fall within the other HCS assessment - perhaps acknowledging this would support the decisions presented here.
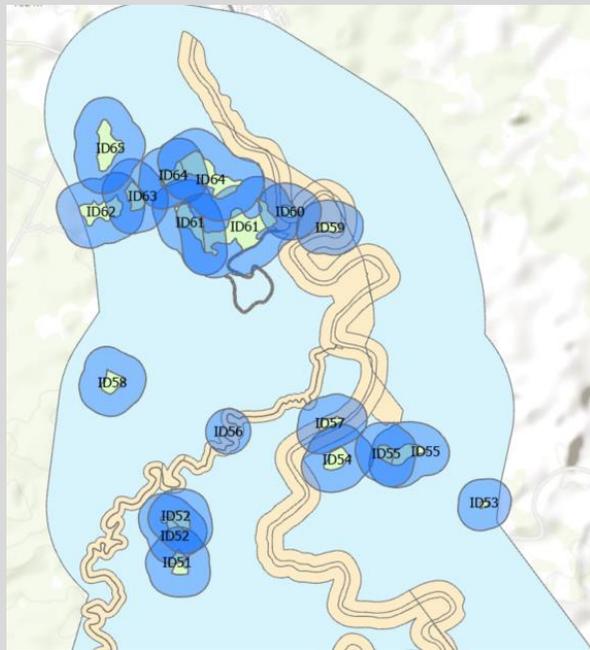
Reviewers Recommendation:

1. For ease of review, in the future, please include a shapefile for each step in the decision tree with information like the core area and the distance to nearest patch in the shapefile attributes for each patch.

2. Please re-do steps 4-13, accounting for the fact that some patches are not connected. This may involve conducting an RBA.

Update: The company re-analysed the patch data and identified three patches that were not connected. After an RBA in these patches, they were classified as indicative develop. The other patches that I thought might be unconnected were connected to HCV areas (riparian buffers around small rivers) not apparent in the first version of the report.

6.3.   Please review Section 8 of the Summary Report, and select a few sample patches to test that the Decision Tree was used correctly. Were the patches correctly identified as High, Medium, or Low Priority? Was the Patch Analysis done according to the HCS Approach Decision Tree?

The HCSA Toolkit explains how to prioritize patches and go through the Decision Tree.

Finding: See comments and recommendations for question 6.2 above.

Reviewers Recommendation: None

6.4.   Please review Sections 9 of the Summary Report. Were the final integrated conservation and land use planning steps completed to maximize the ecological and social viability of the conservation areas (HCV, HCS, peatland, riparian zones, customary forest, etc)? Were the results of the final ground verification (if any) adequately incorporated into the land use plan and final HCS map?

Finding: The company did incorporate HCV and HCS lands into the final ICLUP. There are no peatlands. The company intends to continue negotiating with the community to acquire as-yet unreleased areas and develop the full concession outside of HCV and HCS areas as plantation, because they do not report any community lands in the final ICLUP. They do state that they need to carry out the land acquisition processed based on FPIC for the conservation area, but they do not discuss collaboration with the community around the plan. The list of management and monitoring activities is sound, except that it does not include or refer to development of a grievance mechanism, needed for resolution of possible disputes.

Reviewers Recommendation:

1. The company should not only conduct outreach to the community but also ensure that the community understands and supports the overall ICLUP; in other words, they need to garner support of the community for the plan.

2.The company should develop of a grievance mechanism to resolve disputes that arise with respect to HCS areas or refer to an already-existing mechanism.

Update: The company added the requested steps in their overview of forest management and monitoring activities.