

# HIGH CARBON STOCK APPROACH

## HCSA PEER REVIEW REPORT

*Company Name: AMR I & II*  
*HCS Assessment Area: 12,308.6 ha*  
*24 February 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?**
- b) Was the HCS Team Leader a Registered Practitioner?**
- c) Were at least two (2) HCS team members 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/>).**

## Questions for peer reviewers

*(Peer Review Panel: Neville Kemp)*

*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:** The report was well written and described a well implemented assessment. All data is now complete, and clarifications regarding the FPIC process provided. All aspects have been executed and reported well providing a good proposed ICLUP map of conservation and development.

**Reviewers Recommendation:** No further recommendations

#### 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.**

**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:** No elements need to be re-done or completed, only data requested submitted for review.

**Reviewers Recommendation:** See recommendation in 1.1

## 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 4 adequately represent and explain the community engagement, FPIC processes, and participatory mapping activities carried out?

**Finding:** The report contains quite detailed information about the process carried out by the company to achieve FPIC from community individuals and the community was consulted before field assessment were carried out including participatory mapping.

**Reviewers Recommendation:** None

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

**Finding:** The company has clarified the GRTT and stakeholders present to ensure tenure. Also noted that tenure studies were carried out prior to the HCSA assessment. Stakeholders present during the compensation process (GRTT) implemented by the company are documented in the report and appendices when land is being acquired and involves government officials (village and sub-district) at several stages of the GRTT process to vet and verify land tenure and agreements to ensure that the correct owner is being compensated any land conflicts are avoided. This GRTT process is still on going. The assessors did consult with key stakeholders to ascertain if the Aol contains any areas of traditional communal land ownership. Information from the stakeholder key

informants (eg. village heads and adat representatives) that the Aol does not have any traditional land and that all areas are individually owned and free to sell land.

**Reviewers Recommendation:** No further clarification required with information provided regarding GRTT process and stakeholders involved (documented signed and witnessed statements, agreements, official land certificates, and memoranda.

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:** The report contains basic participatory maps and the process was used to verify existence of any communal land, important lands form the community, areas conserved by the community, riparian areas, areas of existing and planned plantation. Participatory mapping and discussion documented that there was no communal (*ulayat*) land even though undocumented claims were circulating. All informants stated that land was already in individual ownership and that there had not been issues with individual ownership.

The report explains that mixed agriculture and rubber is the main livelihoods and that a mixture of work (plantation worker, plasma owners, rubber tapping and agroforestry products, provide for livelihoods. Subsistence farming where families feed themselves from the land is no longer a characteristic of the landscape. No large areas of agriculture for food could be identified from the satellite images. The 0.5 hectare per person 'requirement' has not been applied and is not particularly relevant here as local communities have highly adaptable livelihoods style taking opportunities where presented. In addition to adaptable livelihoods in a population of >17.600K people living in and around the Area of Interest in 10 villages this threshold is a blunt instrument to not assure food security. Most food is purchased (as per HCV report). Individuals have a better understanding their food security status and together with a FPIC process where individuals have the right to refuse selling land, the community should have taken this status into consideration.

**Reviewers Recommendation:** No further recommendations

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:** The FPIC process for development as well as HCSA approach to take place was documented. As already stated above it was reported by stakeholders that all land is owned individually and owners represent themselves for compensation agreements. There was no documentation of serious

concerns regarding the GRTT process. No concerns were noted about the HCSA assessment itself. The GRTT is still on going and individuals have the right to accept or decline compensation by the company. Development will not proceed until this has been agreed by both parties.

**Reviewers Recommendation:** Land is individually owned and there are no communal lands, Individuals represented themselves. No land compensations were carried out with communities that required representation.

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 test for FPIC is well documented. GRTT land acquisition is based on individual negotiated agreements and the development proceeds when this has been agreed by both parties so any development reflects individual's consent. As stated above, there are still land owners that have not agreed and thus the right to refuse the company and development is demonstrated. While "independent legal representation" is not described specifically, given the context of individual land ownership in this landscape (acquired and cultivated many years ago but without formal ownership until very recently) and an open GRTT process where there are clearly stakeholders involved (including heads of villages and sub-districts / *Kecamatan*) there were opportunities for land owners to seek advice if needed.

**Reviewers Recommendation:** No further clarifications requested.

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

**Finding:** Beyond clarifications above, the FPIC process is suitable in this landscape

**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:** Yes. Detailed summary of the HCV has been provided

**Reviewers Recommendation:** None

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 were completed in 2013 and peer reviewed (judged satisfactory) for the standard at that time (pre-ALS). The results need to be evaluated in the context of practices 8 years ago and are found to be reasonable findings and in line with the Indonesian HCV toolkit methodology although application of HCV 3 was thought to be inaccurate. Small differences in approach were noted between the two reports (eg. HCV 4.2 and consideration of river bank erosion or no consideration given, and identification of HCV 2.3 – representative / landscape species). However, while these reports are likely to be reviewed as unsatisfactory by an ALS quality panel member in their current state, if improved they would not result in significant changes to the spatial extent of HCV identified as potential areas of HCVA have been captured under at least one of the 6 values. Thus improving the quality of HCV reports is inconsequential. Any gaps based on habitat mapping (often a weakness of stand-alone HCV reports will be rectified with the application of HCSA. No specific recommendations are made here to improve 2013 HCV reports, as the reports contain adequate combined areas of all 6 HCVs identified and realistic management and monitoring recommendations.

**Reviewers Recommendation:** No further recommendations. Noted that company will incorporate HCV and HCS to manage all conservation areas Previous recommendation for HCV management and monitoring and may wish to;

1. Using more detailed mapping of land cover (from HCS assessment) further delineate potential HCVA / HCVMAs for implementing management actions.

2. Improve and potentially simplified monitoring based on latest Common Guidance documents.

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 patch analysis correctly identified that 16 plots needed pre-RBA checks. The report detailed methodology ~~was~~ carried out. A summary table of these small LPPs with operational constraints, current use by people and biodiversity is presented.

**Reviewers Recommendation:** Table and photos of the condition of patches have been presented in the appendix. No further information required.

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:** Management and monitoring recommendations are adequate for the scale and risk to HCS forests, although some of the recommendations from the HCV assessment could be consolidated into the HCV/HCSA management in future. The PA and HCSA assessment in general considered the wide surrounding landscape adequately.

**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:** Area of Interest used a 1km buffer for immediate connectivity of potential HCS around the development area. And considered corridor functions in a larger buffer The AoI is considered identified correctly in this landscape. The AOI falls into the Low-forested Landscape category.

**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:** Yes. Date was 1 month prior to forest inventories with no cloud cover over the AoI. Image provided was at 20m resolution with bands 11 (short-wave Infrared), 8 (Near Infrared) and 4 (red) to generate vegetation index useful for differentiating vegetation types although 10m resolution is available for 2 bands of the bands for higher resolution mapping.

**Reviewers Recommendation:** 20m resolution is adequate for mapping forest patches in this landscape

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 was reasonably accurate. The mosaic of different aged rubber, secondary growth and mixed agroforestry is extremely difficult to differentiate in many situations through satellite imagery. The assessors produced a reasonable product on which to plan sampling. With the caveat of differentiating between the above-mentioned vegetation types, there were no obvious errors.

**Reviewers Recommendation:** None

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:** Many forest inventory plots were randomly positioned throughout the concession and were complimented with field observations. The report inferred that 56 plots would be needed for young regeneration forest, 28 for mixed agriculture / rubber and 88 for scrub. In reality, 21 were sampled for young regeneration forest, 21 for scrub and 60 for mixed agriculture / rubber. It was explained in section 7.8 (inventory results that the team had difficulty in achieving numbers of plots planned due to the limited size of area. But this may have also been caused by high values of variance applied. Location of plots and number of plots is adequate.

**Reviewers Recommendation:** No further recommendations. The company's response is noted and the reviewer concurs. In this case there is no need for additional plots as sufficient plots were conducted to measure average carbon stock of the strata. Extensive field observations plots are appreciated for improving vegetation classification and mapping accuracy.

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. A resume of qualifications is provided in the Appendices

**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:** Yes. A commonly used allometric equation ( $AGB=0.11.p.D^{2.62}$ ) that was developed for Secondary mineral soil forests in Jambi was applied for all species. This is acceptable.

**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:** All sample plots were reworked and yielded similar estimation of carbon stock. The wood density provided was similar to that on <http://db.worldagroforestry.org/> but rounded. This was not significant to affect results. Plots were reclassified into groups of carbon stock for Scrub, YRF and Agroforestry and therefore was an obvious statistical difference between strata. The Scheffe test carried out by the reviewer gave different results but the outcome was the same - statistically difference between strata. Scheffe values calculated by reviewer were  $p=0.000$ ,  $k-1 = 2$ ;  $N = 102$ ;  $f = 4.71$ ; with:

Pair Wise Differences Between Sample Means			
	Hutan Regenerasi Muda	Kebun Campuran	Semak belukar
Hutan Regenerasi Muda	-	17.6	25.2
Kebun Campuran	-	-	7.6
Semak belukar	-	-	-
Scheffe Comparison Values			
	Hutan Regenerasi Muda	Kebun Campuran	Semak belukar
Hutan Regenerasi Muda	-	32.6	45.3
Kebun Campuran	-	-	6.2
Semak belukar	-	-	-
Significant Differences			
	Hutan Regenerasi Muda	Kebun Campuran	Semak belukar
Hutan Regenerasi Muda	-	TRUE	TRUE
Kebun Campuran	-	-	TRUE
Semak belukar	-	-	-

**Reviewers Recommendation:** No further recommendations. The results by assessors provide the same outcome i.e. statistical difference between strata.

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:** The initial vegetation map was calibrated using field plot data as well as ground observations. Assuming the carbon data was accurately calculated (yet to be reviewed) secondary forest was correctly reclassified as young regenerating forests as no plots exceeded the 71t.C/ha. Some areas originally mapped as mixed agriculture / rubber were also elevated to YRF classes.

**Reviewers Recommendation:** None

- 6.2. 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:** In this landscape, with individual ownership there were no community enclaved lands and community owned lands constituted all other lands apart from develop oil palm. The area is available for development on agreement with owners through the GRTT process. Potential HCS patches were merged correctly with areas outside of the concession which resulted correct calculation of priority patches. 17 patches had connectivity with HCS outside the concession. All patches outside the concessions but within the Aol have been included in the PA to make it easy to understand connectivity and prioritization.

**Reviewers Recommendation:** None

- 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:** The Patch Analysis was implemented well.

**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:** Field verification was used in produce the final vegetation classification before PA. HCS was merged with HCV areas to produce a solid ICLUP that gave small areas of LPPs with no biodiversity importance for development and increased the gross area for conservation around large patches to maximize conservation outcomes. The outcome of the PA is logical proposed ICLUP with reasonable management recommendations.

**Reviewers Recommendation:** None