

HIGH CARBON STOCK APPROACH

HCSA PEER REVIEW REPORT

Company Name: Musim Mas

HCS Assessment Area: PT. Musim Mas

Published Date: 7 November 2018

Background information:

- a) Did a Registered Practitioner Organisation lead the HCS assessment? If not, has the organisation which led the assessment started the process of registration?**

Aksenta was not a Registered Practitioner Organization at the time of assessment, but at the time this report is written, PT Aksenta is already listed as a Registered Practitioner Organization.

- b) Was the HCS Team Leader a Registered Practitioner?**

No, the HCS Team Leader is not a Registered Practitioner. This condition cannot be fulfilled because there was no such scheme yet when Aksenta was appointed to conduct the Carbon Stock Assessment in May 2015.

- c) Were at least two (2) HCS team members Registered Practitioners?**

No, none of the HCS team members are Registered Practitioners. This condition cannot be fulfilled because there was no such scheme yet when Aksenta was appointed to conduct the Carbon Stock Assessment in May 2015.

- d) Was the HCV assessment judged ‘satisfactory’ (highest rating) by the HCV Resource Network (HCVRN) Assessor Licensing Scheme (ALS)? (See <https://www.hcvnetwork.org/als/public-summaries>).**

28	Laporan Kajian HCV, Kabupaten Pelalawan, Provinsi Riau, Indonesia	PT Musim Mas	RSPO NPP	Resubmitted by Iwan Setiawan Provisional	13/11/2015	Satisfactory 2	Click here	29/07/2016
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Questions for peer reviewers

(Peer Review Panel: Kim Carlson and Cynthia Chin)

1. Peer Review Summary

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

Finding:

In general, this HCS assessment was of high quality. The peer reviewers commend the company for being very responsive in their revision process, which addressed the all recommendations for revision.

The company has an FPIC protocol and conducted participatory mapping to identify community land claims in 2017. The SIA and FPIC processes were both clearly described. Over 1500 ha of HCV were identified through the HCV process.

The initial vegetation classification of a 2018 Landsat 8 image appears to correctly identify HCS forests. The patch analysis and decision tree led to conservation designation for all the lands classified as forest or young regenerating forest.

The vegetation classification was conducted several years after the carbon stock field plots were done. Although the carbon stocks may no longer be representative of actual carbon stocks in the landscape, provision of a recent satellite image from the area suggests relatively little land cover change with the area of interest.

Reviewers Recommendation:

The peer reviewers recommend no additional changes to the document.

1.2. Did the HCS assessment team include or have adequate access to relevant expertise to undertake the HCS assessment?

Finding:

Based on the peer review results, the assessment team had enough expertise in HCV and FPIC processes, remote sensing, as well as field work and quantitative methods to assess vegetation and carbon stocks.

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?

Finding:

The report outlines further steps that need to be completed to create a final land use and conservation plan, which include consultation with communities regarding the final HCS map. The reviewers do not feel that any aspect needs to be re-done, given the recent mapping efforts with communities and *via* satellite data.

Reviewers Recommendation:

None.

2. Social Issues

- 2.1. Does the summary provided in Section 3.1 adequately represent and explain the community engagement, FPIC processes, and participatory mapping activities carried out?

Finding:

The company has an FPIC protocol that is represented in the summary report. This starts with preliminary stakeholder engagement, both formal and informal dialogues; and mentions land acquisition and compensation procedures as well as complaint and grievances protocols. Participatory mapping was conducted in 2017 and the results represented in Figure 5.

Reviewers Recommendation:

None.

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

Finding:

There was no mention of a separate tenure study. However, land ownership information can be found on page 18. Most people do not have legal ownership of their land and those who do only possess a lower form of land certificate issued by the head of the local sub-district. Traditional ownership is recognised by planters' right (i.e., those who plant have rights over the land). However, this is not indicative of legal ownership under Indonesian law. No separate land tenure study was deemed necessary as this has been undertaken by the management of PT MM during the FPIC and land acquisition process and continued at the time of operation. This involved a process of identifying the correct owner, mapping their lands and obtaining an SKT (land title) before the payment was made. The FPIC process was conducted by experienced public relation managers.

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:

Figure 5 represents the results of the participatory mapping conducted in all six villages in 2017. The map details village boundaries, garden and planting areas, cultivated land, forest and other land uses. The participatory mapping makes reference to areas where food crops are cultivated and grown in the concession and in the respective villages.

Reviewers Recommendation:

None.

- 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:

Both community leaders and community members themselves were engaged in dialogue. The FPIC approach was mentioned as part of the company's protocol in engaging with local communities.

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:

Although the methods and approach of engagement were clearly stated, it was not immediately obvious what the results of the consultations were in terms of people's views. Although not mentioned specifically, it is assumed that the right to independent legal representation was shared as this is a fundamental tenet of the FPIC process.

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:

Overall the approach and methods were clearly stated for both FPIC and SIA processes.

Reviewers Recommendation:

None.

3. Ecological and Conservation Values

3.1. Does the summary provided in Section 4.1 of the Summary Report adequately represent the findings of the HCV study?

Finding:

HCVs 1, 3, 4 and 6 were found to be present by the assessors. HCVMA amounting to about 1,448.47 ha was mentioned. A table of description and justification of HCV has been added to the revised summary report.

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 HCS 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?

Finding:

The descriptions of landscape, social scenario and methods are reflective of the main HCV report. The area is outside of the nearest IBA area, about 30 km away, and was not considered to be of landscape importance. A table of description of threats for HCV areas in PT MM has been added to the revised summary report.

Reviewers Recommendation:

None.

- 3.3. Please review Section 9.2 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?

Finding:

Out of 65 patches in total, the RBA showed 7 high priority patches (HPP), 7 medium priority patches (MPP) and 51 low priority patches (LPP). The HPPs are marked for conservation while 4 MPPS have been shown to have connectivity with HCV areas.

Reviewers Recommendation:

None.

- 3.4. Are the forest conservation management and monitoring activities outlined in Section 10.3 adequate? Do they take into account forests and protected areas outside the concession?

Finding:

The recommendations cover land development plans to protected area management, awareness raising and continuous community engagement as well as collaborations, threat monitoring and species enrichment.

Reviewers Recommendation:

None.

4. Image Analysis

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

Finding:

Yes, the AOI was correctly identified. It covers the PT Musim Mas concession as well as a 5 km buffer around the concession. Justification for this choice was that the buffer covers potential future village development areas. This meets the requirement set out by the toolkit that the AOI includes the development area and broader landscape.

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?

Finding:

The images used were of adequate quality, although resolution and date were not completely aligned with guidelines provided by the current HCS Toolkit. The study used Landsat 8 data from June 12, 2014. Quality was high, as the imagery was nearly cloudless in the AOI. While the image is more than 12 months old, it was collected concurrently with the 2014 carbon stock field assessment from which the land cover classes were developed. The image does not meet the minimum 10 m spatial resolution required under HCSA Toolkit version 2.0, but the report provides a newer 2018 image at 10 m to show the contrast between 2014 and 2018 imagery.

Reviewers Recommendation:

None.

- 4.3. Please do a quality check using the images provided in 6.3. 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?

Finding:

Yes, the initial vegetation classification yields a reasonable representation of land cover apparent in the satellite imagery. The land use classification relied on supervised classification and visual interpretation of Landsat imagery. It seems that the initial vegetation classification properly identifies land covers that tend toward forest (young regenerating forest and what the authors call forest, which is a combination of medium, low, and high-density forest). In Table 9 (which reports land cover areas), the proportional land cover areas look fine. Importantly, these represent the coverage within the concession boundary, not within the 5 km buffer. The overall accuracy is around 88%, although it was derived from only a handful of field plots so the statistical power of the results is not high.

Reviewers Recommendation:

None.

5. Forest Inventory

- 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.

Finding:

Yes, the plots appeared to be selected, set up, and measured properly. The team sampled in 11 locations including shrub, cultivated land, and young regenerating forest in 2014 by Aksenta. In addition, 5 forest locations were sampled by PT MM in 2015. They used a random stratified sampling approach based on the 2014 classified satellite image, and the plots seem well distributed across the landscape. At each sample location, they sampled three square 40x40 meter plots (0.16 ha) along a transect of 120 meters, which is a solid approach, although does not align with the Toolkit recommendation of circular plots.

Reviewers Recommendation:

None.

- 5.2. Please review Section 7.3 of the Summary Report. Was the forest inventory team qualified?

Finding:

Yes, the team includes experts in GIS, remote sensing, and vegetation surveys.

Reviewers Recommendation:

None.

5.3. Please review Section 7.4 of the Summary Report. Was the allometric chosen adequate?

Finding:

The main allometric equation only considers DBH, not tree height or wood density, so its accuracy is expected to be relatively low compared to equations that include these components. I could not access the document presenting this equation, so I could not review its accuracy. However, it is almost identical to the Adinugroho (2009) equation ($\text{biomass} = 0.19999 \cdot D^{2.14}$) presented in Krisnawati et al. 2012 (Allometric Models for Estimating Tree Biomass at Various Forest Ecosystem Types in Indonesia). This equation was developed in East Kalimantan for lowland mixed forests and includes trees from 2-24 cm DBH. Therefore, it seems adequate for this work except perhaps for trees with $\text{DBH} > 24$ cm.

Reviewers Recommendation:

None.

5.4. Please review Sections 7.5, 7.6, 7.7 and 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?

Finding:

The forestry data (e.g., species, DBH) seem sound, based on a review of the raw plot data. The carbon values presented in Table 11 also seem reasonable. However, there are some mistakes in the raw data such that the carbon values or the biomass provided do not reflect the allometric equation indicated, which suggests that a different equation may have been used in some cases. In most forested areas, maximum tree DBH is around 30-40 cm, suggesting that these areas have been logged or otherwise degraded. This is consistent with the history of this landscape, which has long been used for plantation agriculture. Forest carbon stock is relatively low (for Indonesia), and is statistically separable from shrub carbon stock.

Reviewers Recommendation:

Next time, please ensure that raw data reports are error-free.

6. Land use planning

- 6.1. Please review Section 8.1 of the Summary Report. Was the initial vegetation classification map adequately calibrated and adjusted to take into account forest inventory results?

Finding:

The initial classification was revised to convert areas initially identified as shrub to cultivated land after field site visits. In addition, by overlaying the shapefiles from participatory mapping, some forested land was re-classified as cultivated land.

Reviewers Recommendation:

None.

- 6.2. Please review Section 9 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?

Finding:

Participatory mapping data were used to identify community lands that should be enclaved. Patches were not merged, although this did not have an impact on the outcome (see response to next question). Core areas seem to be correctly identified. Connectivity analysis also appears to be sound.

Reviewers Recommendation:

None.

6.3. Please review Section 9 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?

Finding:

All forest and young regenerating forest areas were flagged for conservation. High, Medium, and Low priority patches were identified correctly. The Patch Analysis was done according to the HCS Approach Decision Tree.

Reviewers Recommendation:

None.

6.4. Please review Sections 10.1 and 10.2 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:

Yes, the final integrated conservation and land use planning steps were completed. Specifically, the company intends to exclude HCS areas from development plans, raise awareness with local communities, monitor conservation set-asides, and conduct species enrichment plantings. The ground verification was done during participatory mapping in 2017 and 2018 and has already been incorporated into the final HCS map.

Reviewers Recommendation:

None.