HIGH CARBON STOCK APPROACH

HCSA PEER REVIEW REPORT

Company Name: Asia Pulp & Paper

HCS Assessment Area: Riau Region Group 3

i. *PT. Bina Duta Laksana (BDL)*
ii. *PT. Mutiara Sabuk Khatulistiwa (MSK)*
iii. *PT. Riau Indo Agropalma (RIA)*
iv. *PT Satria Perkasa Agung KTH. Sinar Merawang (KTH SM)*

25 April 2022

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. Alex Thorp from Ata Marie led the HCS assessment.

b) **Was the HCS Team Leader a Registered Practitioner?**
   Yes, Alex Thorp from Ata Marie.

c) **Were at least two (2) HCS team members Registered Practitioners?**
   Yes, there were 2 Registered Practitioners in the team members: Alex Thorp and Dadan Setiawan

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/).**
   Not applicable. Assessment prior January 2015.

Questions for peer reviewers

(Peer Review Panel: Jules Crawshaw)

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:

These assessments were done in the early days of HCS and the methods were being trialled at the time. It is slightly unfortunate that the company has left it until now to have the report reviewed as the reviewer has to review the assessment against guidance that wasn't available at the time. Additionally, HCV and HCS have become a lot more detail orientated in the last 5 -7 years. For example, the HCVRN will not accept multiple concessions such as this to be grouped into a single report. The reason being that with such large assessments all the information gets summarised to the point that it loses its relevance.

The major findings are, with social, is that the reviewer believes that the required social groundwork has been done. However, the work was not properly documented, and this lack of documentation is reflected in this report. Only very general information has been provided and lacks evidence to support the statements that were made.

The HCV assessments are also extremely general, and the management and monitoring recommendations do not give the company clear guidance to focus their efforts. Once again this was typical of the assessments that were done in 2014.

The overwhelming comment that the reviewer has - is that the way the information has been presented does not do the work that various people have put into this study justice. For example, maps have been put in the wrong section and the reviewer suspects the wrong version of shapefiles have been provided (see comments later in the review). In general, the presentation of the information makes this study hard to interpret.

Another major finding is that there was no HCS plot work done in PT RIA, as such the reviewer does not believe that this concession can be grouped into this study.

Reviewers Recommendation:

1. Based on the assessment at that time Within each Region, the HCS Assessment was only conducted in undeveloped areas with plantation development potential, referred to hereafter as the "Area of Interest" (AOI) and defined as follows:

AOI = Total Concession Area less the Developed Area

Where the Developed Area = existing plantations plus infrastructure

The final AOI polygon for each concession is the result of an iterative process between TFT and APP wherein any errors or anomalies identified during the course of the assessment were highlighted and discussed before any revisions were made. Anomalies encountered were commonly small pockets of plantation not included in the development area, or small pockets of non-plantation located inside the plantation area.

2. Follow the recommendations made in the report below.

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: Alex Thorp and Dadan Setiawan are both registered HCS practitioners. The rest of the team have a lot of relevant biodiversity / field work experience

Reviewers Recommendation:
No recommendations

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: Certainly nothing should be re-done. However, the reviewer predicts that these landscapes and the communities have changed a lot since 2014.

Reviewers **Recommendation:**

1. Review the assessments with up to date land cover maps.
2. Provide a commentary on the implementation of the HCS area between 2015 and 2021.The reviewer appreciates the company's response below. It would be good to also hear about progress with protecting the areas for conservation.

Company's Response:

Protection and monitoring of areas for conservation areas we have explained in Chapter 10.3 in the Summary Report along with activities that we have done e.g. CCM, etc.

UMH	Kode Plot	Carbon Ton/Ha				
		Tahun 2016	Tahun 2017	Tahun 2018	Tahun 2019	Tahun 2020
PT. Mutiara Sabuk Khatulistiwa - Gaung Kiri	MSK-GKR-HK01	152,5	160,9	223,5	162,86	166,1
	MSK-GKR-HK02	190,1	227,0	249,0	228,63	231,4
	MSK-GKR-HK03	256,7	183,5	254,7	253,01	183,8
	MSK-GKR-HK04	132,3	127,0	134,4	229,04	208,2
	MSK-GKR-HK05	222,8	247,0	71,3	98,26	134,9
	MSK-GKR-HK06	125,4	158,8	147,3	183,19	190,4
	MSK-GKR-HK07	292,7	371,0	265,2	281,08	75,5
	MSK-GKR-HK08	184,4	173,3	215,2	168,12	151,9
	MSK-GKR-BT01	70,4	68,4	158,4	83,53	85,1
	MSK-GKR-BT02	81,7	50,0	94,0	57,28	64,8
	MSK-GKR-BT03	71,3	75,1	58,7	45,51	55,4

2. Social Issues (4 hours)

Please review Section 3 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 3.1 adequately represent and explain the community engagement, FPIC processes, and participatory mapping activities carried out?

Finding:

1. An important first step is define the affected communities. These are listed in table 7.
2. There is mention of a Social Background Study being undertaken.
3. There was an FPIC team put together, which included company operatives as well as representatives from within the community.
4. For both the affected and unaffected communities the companies' plans were socialised. In the case of the affected communities socialisation continued until the community made a decision. After that there was a negotiation and an agreement developed (the consent process).
5. Other activities are also described such as the involvement of the community in the "Desa Makmur Peduli Api" programme and the socialisation of the RKT.
6. There is mention of participatory mapping being undertaken. Based on the discussion of the methods, which involved many different parties and many elements were mapped, it appears the PM was very thorough.
7. Examples of FPIC are provided but these are dated 2021 and the HCS survey was undertaken in 2015. The relevant FPIC has to be done before the survey not after the survey

Reviewers Recommendation:

1. The FPIC discussion is extremely general and only focuses on methods with no description of the findings. A brief description of the FPIC findings is necessary. There is now a discussion on FPIC findings, which is things like "Masyarakat menginginkan adanya akses yang lebih memadai terhadap sumber air bersih". This is more the findings of an SIA than FPIC. The assessor expected some discussion of issues of the process that the company went through to get access to land and how this was agreed with the communities.
2. The discussion mentions the companies' plans being socialised. It is necessary to know, "what is being socialised?" (e.g. is it an intention to pay ganti rugi in order to expand the plantation estate). If this is the case this should be clearly stated. Recent examples of FPIC have been provided, but the HCS assessment requires FPIC prior to the survey. Additional information is provided that the company socialises the annual work plan (RKT). Examples are provided below – this information should be added to the HCS report.
3. Table 7 lists "Sebaran Desa Dalam Areal Kajian" – if these are the "Affected Communities" this should be clearly stated.
4. There is mention of participatory mapping being undertaken. The discussion would be improved considerably by showing examples of the completed maps and a discussion of the findings. For example, PM is used as a vehicle for socialising the concession boundaries. Also there is mention of land conflict; however the nature of the conflict needs to be explained; e.g. is it where villages do not agree on their boundaries or where there is a mismatch between the BPS boundaries and the villages' concept of their boundaries. Also potentially conflict may arise where the company develops an area and

then a community member claims to own the area and has not received compensation for the land. It is important to the understanding of the report that land conflict is clearly explained and supported by maps. Below the company now provides more information about conflict mapping. This involved developing "typologies" – the company to provide these typologies with an explanation of each and also their associated conflict map.
5. Additional to the findings of the PM; it is important that it is explained how the data was subsequently used in the HCV / HCS process and for developing the management and monitoring recommendations.
5. The discussion mentions the FPIC was done in a participatory way with all the elements of the community involved *("proses partisipatif dan keterwakilan seluruh elemen masyarakat"*). However, evidence has to be provided to support these sort of statements e.g. showing that a reasonable percentage of the community were involved, that people were from different age groups, involved women, different religions, indigenous people. This is usually done with an analysis of the attendance lists. Just making a general statement is not sufficient.

Company Responses:
The process of socialization and consultation with stakeholders (FPIC) regarding the current HTI Annual Work Plan is a company obligation mandated by the Ministry of Environment and Forestry to be carried out every year. In this socialization, all matters related to the work plan for HTI operations in work areas that have the potential to be affected are conveyed to the village community around the concession (affected community). This includes plans for community empowerment activities, spatial boundaries and concessions, HCV-HCS areas, as well as Non-Timber Forest Products (NTFPs) and their potential. Both parties are open to provide input in the discussion. Regarding community representation, we convey to the Village Head to invite representatives of all elements in accordance with the FPIC SOP.

Regarding land tenure, in 2013-2015 the company carried out conflict mapping in all Forest Management Units with the aim of respecting the rights of indigenous peoples within the concession areas that were granted to the company by the state. The company's mapping approach has resulted in conflict typologies that divide community-managed areas within concessions according to certain typologies in common. More detail on the conflict typologies, please refers to the link as follows: https://sustainability-dashboard.com/people.

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

Finding:
There is mention of a tenure study being undertaken. This included interviews with community representatives about tenurial rights in the area.
The patch analysis process requires "A map of the boundaries and customary land use of local communities, created through a participatory process as

outlined in Module 2 of this toolkit. Forest gardens, 'swidden fallows' and future farm lands that are areas fundamental to meeting basic food security are identified and recorded on maps, both for communal lands and individually claimed and used areas. If these areas are located within the proposed development area for plantation, then they will be enclaved and excluded from being categorised as HCS forest and from plantation development, unless they are negotiated to have a different status as part of the 'give and take' process (see Step 13 of the Decision Tree). Community protected or conservation areas will also be enclaved and integrated into the ICLUP." Consequently all these categories (Forest gardens, 'swidden fallows' and future farm lands that are areas fundamental to meeting basic food security are identified and recorded on maps, both for communal lands and individually claimed and used areas) must be identified.

Reviewers Recommendation:
1. The discussion is only about methods, no findings are mentioned. A discussion of findings should be included in this section with reference to the full LT&LUS in the appendices. There is mention of the conflict mapping process below, this is an element of the LT&LUS – the actual maps should be provided also.
2. Provide the full tenure study in the dataset.

Company Responses:
According to the explanation in section 2.1: Conflict mapping (tenure study) in all Forest Management Units produces a set of typologies of conflict which is then used for the process of negotiating and resolving these conflicts. Where the livelihoods of community who depend on land are prioritized to find solutions for alternative livelihoods. More detail on the conflict typologies, please refers to the link as follows: https://sustainability-dashboard.com/people.

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 land use shapefile has been provided, but it only breaks land use down into 3 categories (see map below). Furthermore it only maps land use over community areas within the concession rather than over the AOI.

This is a case where more information on mapping of land use and garden areas has been provided with version 2 of the toolkit and this has been expanded further with Advice Note 1 (both were released after this assessment was completed).

Reviewers Recommendation:

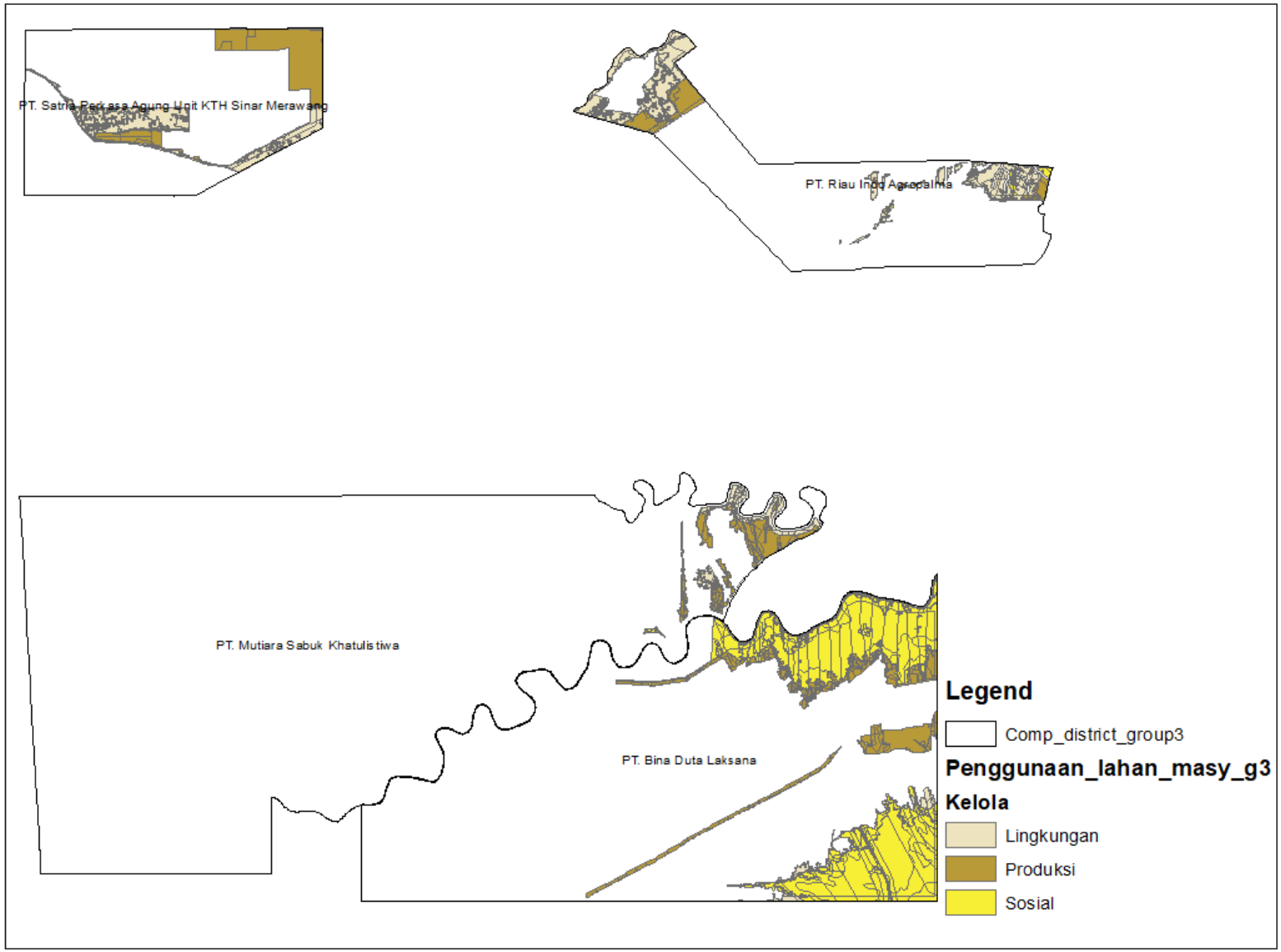
1. In order to be compliant with the current toolkit and associated guidance land use has to be mapped over the whole AOI (which includes a 1 km buffer). In the social requirements of HCS it is stated "Participatory mapping is undertaken jointly to plot the full extent of customary rights and uses, including farmlands, forest fallows, hunting, fishing and gathering areas, reserves, sacred sites and collective territories." Consequently a participatory map must be provided with a sufficient level of detail. Other details mentioned in the report, such as conflict areas must be mapped.
2. Advice Note 1 section 4 provides guidance on the analysis required to ensure the information complies with the food security requirement. Information about the local populations and the associated amount of land available is required. Note below that the company states that they are only required to comply with their license conditions. However, Note 1 section 4 only requires an analysis and discussion in relation to the food security requirement. HCSA does not require their members or companies undertaking an HCSA to necessarily set aside area for food security.

Company Responses:

The AoI in the HCS study by Atta Marie at that time was the entire undeveloped area within all APP supplier concessions in the Riau Region (17 FMU). The total area assessed is 333,136 Ha of the total concession area of 761,420 Ha. The HCS study did not include 1 Km buffer. Therefore, if it is currently added, it will bias the data because it is carried out by different interpreters.

Minimum requirement of 0.5 per person for future garden areas is not a mandatory requirement for HTI to comply as HTI operates based on license issued by the Government (Ministry of Environment and Forestry/MoEF) therefore in order to respect local community rights, the Company conduct conflict mapping as mentioned in Section 2.1 above.

In order to support local community livelihoods and their food security, APP supplier concessions in collaboration with village community implement the community empowerment programs. Community allows to extract and manage the NTFPs inside the Tanaman Kehidupan Zone, e.g fish from the canals-rivers, planting paddy, vegetables, and other food staples.


PT. Satria Perkasa Agung Unit KTH Sinar Merawang
PT. Riau Indo Agropalma
PT. Mutiara Sabuk Khatulistiwa
PT. Bina Duta Laksana
Legend
Comp_district_group3
Penggunaan_lahan_masy_g3
Kelola
Lingkungan
Produksi
Sosial

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: Consultation is mentioned with the affected communities. However, it is not mentioned how the affected communities are identified in this study.
It is mentioned that the FPIC team was formed from community representatives ("membentuk tim perwakilan FPIC desa/dusun"). However it is not mentioned how these representatives were selected.

Reviewers Recommendation:
1. State how the affected communities were identified. It is stated in the report "Areal masyarakat yang dilibatkan dalam kegiatan FPIC meliputi desa-desa yang berada di sekitar konsesi". Note that the HCS defines affected communities as "This includes all communities and inhabitants in the AOI who may be affected by the operation, and who may have land and user rights in the area". It would be better to use the exact definition as currently people with land and user rights in the area are not necessarily included.
2. Provide records of consultations. This must include minutes of meetings and associated attendance lists.
3. State clearly how the community representatives were selected. It should be stated clearly in the report that the representatives are selected by the community – currently the phrasing is ambiguous.

Company Responses
Affected communities are people living in villages around the concession who are directly affected by the HTI operation process. In the selection of community representatives, we convey to the Village Head to invite representatives of all community elements in accordance with the FPIC SOP.

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: Regarding whether the "views of the community were reflected in the plans and implementation of the plantation". With the current information provided it is not clear whether this was the case or not. The description of FPIC describes the "methods" not the outcomes. There are a few wishes of the community mentioned but these are couched in very general terms. For example "Masyarakat menginginkan adanya akses yang lebih memadai terhadap sumber air bersih" – it is not clear whether the community is asking the company to ensure the river water is drinkable or whether they want a water reticulation system within the village.

There is no mention of the customary owners being made aware that they have the right to say no to development nor being made aware that they have the right to independent legal representation.

Reviewers Recommendation:
1. Provide information from the FPIC meetings (e.g. minutes of meetings). As an example of the sort of issue that might arise; often communities / government want assurance that riparian buffers will not be developed. The company could explain that riparian buffers are conservation areas based on the HCV assessment, as such the operations of the company and the wishes of the community are aligned. Examples are provided in section 2.1 "This includes plans for community empowerment activities, spatial boundaries and concessions, HCV-HCS areas, as well as NTFPs and their potential." Of FPIC related issues. To further strengthen this, the company could provide evidence in the form of minutes of meetings where these issues were discussed and agreed upon with communities.
2. If the community was indeed informed that they had the right to say no and to independent legal representation this should be added to the report. Company FPIC SOPs and minutes of the meetings should be included as evidence.

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

Finding: Based on the description of the methods, it appears that the company has done the FPIC work quite thoroughly. However, what is lacking is any associated documentation. Consequently, the reviewer can't verify anything

Reviewers Recommendation:
1. Provide specific information about FPIC that occurred prior to the HCS assessment. This should involve documentation of particular issue with communities and the agreed outcomes. Information about the RKT is provided in 2.1, however, as previously mentioned this would be strengthen by a specific example e.g. how the company used social techniques, supported by a chronology to address land conflict issues.
2. List the affected communities and describe how these communities were determined. Provide a map of the village locations.

Company Responses
Tenurial studies as mentioned in Section 2.1 above using social techniques/approaches to engage-map the conflict typologies within affected communities inside and surround the concessions areas. We use to verify the subject and the object of the conflicts and then find out the resolution options for both

sides responsibly.

3. Ecological and Conservation Values (4 hours)

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

Finding:

The major problem with this section is that the way the data is presented is very difficult for a third party, who is unfamiliar with the sites, to understand / interpret. Explaining the results of HCV assessments is not easy, but more use should be made of landcover maps.

MSK

A table of the findings is provided (Table 9). However, this does not seem to be particularly accurate. For example HCV 1.3 is not mentioned, whilst there are a lot of species observed that meet the criteria of HCV 1.3. There is no associated description of the findings. There is a map provided which is labelled "Peta sebaran lokasi NKT di area Izin Lokasi PT MSK (Grup 3", however there are no HCV areas mapped.

BDL

A table of the findings is provided (Table 10). This table is not accurate – HCV 1.3, 5 and 6 are not mentioned in the table even though in the original report these HCVs are present. Additionally without associated maps the reviewer cannot interpret the discussion and understand where and why the HCVs are mapped. There is a map of BDL provided but it does not have the HCVs mapped.

RIA

A table of the findings is provided (Table 10). A very similar situation to BDL with HCV 1.3, 5 and 6 being present but not mentioned in this table. A map of PT BDL is provided (although it is incorrectly labelled – "Peta sebaran lokasi NKT di area Izin Lokasi PT MSK (Grup 3") and has no HCVs mapped.

PT KTH –SM

A table of the findings is provided (Table 10). A very similar situation to BDL with HCV 1.3, 5 and 6 being present but not mentioned in this table. A map of PT KTH is provided and has the HCVs mapped.

Reviewers Recommendation:

1. In its current format the mapping of the HCVs in the report is very difficult to understand. The reviewer suggests a more effective way of communicating the HCV findings would be to step through each HCV which is present and provide a landcover map with the associated HCV superimposed. Following this a paragraph explaining why the HCV had been mapped over the mapped area. As a final map, provide a map of the complete extent of all the HCVs. This would require a lot of maps, but it would clearly communicate the extent of the HCVs and the rationale for mapping

the HCVs. The maps requested are put in annex 2 of this report. It was suggested that these maps be placed in section 4 of the summary report with a discussion pertaining to each HCV map.

Company's Response:
Noted, we have put those maps in Section 4 of the Summary Report along with HCV table information before these maps.

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?

The HCV Report can be found in the SharePoint.

Finding:
All the HCV reports predated the ALS, therefore none of them have been reviewed.

<u>MSK</u>
Site Description
The site description of MSK is sufficiently thorough, a suite of maps have been provided which largely rely upon secondary data as well as descriptions of the landcover. This gives the reviewer an understanding of the area, that it is very flat and dominated by swamp / riverine forest, also that there a considerable amount of peat in the area. Similarly there is basic information about the 5 villages in the concession. There did not appear to be a national / regional context section in the report.
Methods
The methods section is quite general. This includes a list of secondary data that was used (which was used in the site description section) and then the primary data. The Primary data was split up into Vegetation, Amphibians and Reptiles, Mammals, Birds and Social / Culture. The description of the methods is very general and did not include maps (there is Peta 1 – but it doesn't have any labelling or associated discussion) of where the various surveys took place and did not provide a discussion of how the results would be used to inform the assessment (e.g. the birds assessment describes how they make a list of birds that were sighted, not how the birds that were present and the locations the birds were present were used to determine whether an area would be considered HCV or otherwise.
HCV 1 – 4

The logic for the mapping of HCV1.1 appears reasonable, however the actual maps are hard to interpret because they are presented with the Fungsi Kawasan as a background, not the actual land cover.
For HCV 1.2 and 1.3 all the areas within the concession are HCVMA but all the areas outside the concession are HCVA. This does not follow the Toolkit. Where values are present and should be conserved, whether they are inside or outside the concession should not make any difference. Furthermore the terms HCVMA and HCVA are defined, but not in terms of management. It needs to be stated clearly whether HCVA is "NO GO" for development and whether HCVMA is the same.
HCV1.4 – OK and the mapping of the HCV is provided over a landcover map.
HCV 2.1 -OK – this is mapped over large connected forest area.
HCV 2.2. – OK – mapped over the interface between peat and mineral soils.
HCV 3 – uses the precautionary approach from the Indonesia HCV TK.
HCV4.1 – based on the location that the whole area is essentially a flood plain – the whole area is mapped as HCV 4.1.
HCV4.3 – a buffer off all areas where human activities are likely to cause outbreaks of fires.
PT BDL and RIA are both done by the same consultant and the comments are very similar.

KTH
Site description
The Site Description is adequate – relying on secondary data, but gives the reviewer the main information about the site, that it is partially developed, the undeveloped area is peat swamp forest. The whole concession is on peat. There are 3 villages that overlap with the concession. There is a lot more generic information provided in this assessment about the influence of government regulations on the management of the concession. The reviewer notes that there are no mapped rivers within the concession, although it is all peat. It could be better explained whether this area is on a peat dome.
Methods
A description of the methods has been made for vegetation, mammals, birds, herps. In all cases, the methodology describes how the survey took place in order to build up a species list. What is lacking is (1) a description / map of where the surveys took place and why those locations were chosen and (2) how the results of the survey were used in order to map the HCVs.
HCV 1 -4
This assessment appears to have a landcover map produced from satellite imagery (fig 7), though this is only mapped to the extent of the plantation. A result of this is that it is hard to understand the mapping of HCVs external to the plantation.
HCV 1 – the mapping of HCV 1 is dominated by the range of tigers, which are extremely wide ranging (which makes all areas, even the plantations HCVA). It would be better to separate this so that HCVA could be understood for other species, particularly vegetation and species that relied upon the presence of intact forest.

HCV2.1 – there appear to be inconsistencies in the logic here, where the text states that HCV 2.1 is not present, but fig 46 maps it as present.
HCV2.2 and 2.3 – mapping and logic appear reasonable.
HCV3 – the analytical approach is applied for the delineation of HCV3 – it is not clearly explained which ecosystem the concession falls within. A table (table 23) of land systems is provided with an associated analysis, but this has to be grouped into ecosystems in order to apply the analytical approach. The INTK requires information to be gathered at the district level and also from stakeholders ("Assessors must also review District level (RTRWK) and national spatial planning maps (TGHK) to consider potential impacts of future land use and vegetation cover change. Additional information from various stakeholders must also be obtained to gain opinions or views on future possibilities of current spatial planning"
HCV4.1 and 4.2 – OK
HCV4.3 – the assessor maps plantations as being intact forest that would spread of fires.

Reviewers Recommendation:
1. In MSK the social section would benefit from a village map. Add a national / regional context section.

2. State whether HCVA and HCVMA are both considered NO GO in terms of development. The company has said below that HCVA and HCVMA are NO GO for development. This should be added to the HCS report but it needs to be further explained; what will happen to all the HTI areas that are HCV (NO GO) areas after they are harvested? Will they be replanted or rehabilitated to their natural state. The answer to this question needs to be stated clearly in the HCS report. Furthermore on areas of HTI which are HCVA, what management would be undertaken that wouldn't be done anyhow (in a non-HCVA HTI area)?
Company's Response: In **No Go** areas which is HCV Area and ex-TPO (ex-production) we are committed to rehabilitation with a restoration approach using natural succession, enrichment and eradication methods. Likewise, the ex-TPO area which is our peat dome area is commissioned to restore peat ecosystems which are reported annually to the ministry of environment and forestry.

3. Map the HCV 1.1 over a landcover map.

4. Explain why forest areas inside the concession are considered HCVMA and those outside are considered HCVA. The Common Guidance 2013 defines HCVMA as "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. For purposes of mapping and planning, it is necessary to distinguish between the locations of HCVs, which may be quite small and sometimes confidential (e.g. breeding colonies of rare bats or sacred trees) and the management areas where appropriate decisions and actions are needed, sometimes over larger areas" – it seems incorrect that the areas within the concessions only provide supporting functions to the HCVA which are located outside the concessions. Anyhow the company's logic should be explained in the HCS report.

Company's Response: We have explained in the summary report document in section 10.3 related to Forest Conservation Management and Monitoring Activities to Be Included in the Conservation and Development Plan.

5. Map all the HCVs over a standard landcover map. Some HCVs use an ecosystem proxy map. This has been done but should be in the HCS report, not the review.
Company's Response: We can't the HCS Report as we are not the authorized party that made it. However, we have put the landcover map in Section 8.1 of the Summary Report.

6. KTH – in the methods section add a description / map of where the surveys took place and why those locations were chosen and (2) how the results of the survey were used in order to map the HCVs (e.g. the vegetation survey required identifying every tree in the transects – it should be stated that the presence of RTE species were used to map the location of HCV areas). The logic for HCV identification should be added to the HCS report.
Company's Response: We already explained in Section 4 of the Summary Report.

7. KTH – explain whether this area is on a peat dome and discuss the peat depth within the concession. Below the company describes various categories of peat, which are mapped by the government (Peat Ecosystem Cultivation Function (FBEG), Peat Ecosystem Protection Function (FLEG), and Peat Dome) – these should be added to the report along with maps and discussion of peat depth.
Company's Response: Related to peat dome and peat depth discussion, currently we are still under inventory process of peat following the Ministry (MoEF) Regulation No. 10 Year 2019 concerning Determination Peat Dome Peak and No. 14 Year 2017 concerning Peat Inventory and Establishment. We also put explanation on the regulation in Section 4 of the Summary Report.

8. KTH – provide a map of landcover external to the plantation. The company states that no data is available for landcover external to the plantations. There are satellite images available for that time which could be used for generating a landcover map external to the area.
Company's Response: It is true that historical images could be obtained but expand the AoI is difficult because they have to do backdate analysis without field data at the expand location (relying only on satellite images), then the interpreter is different from the previous one so the data will be biased. The addition of AoI will also change the data and analysis until the results have been reported, especially in the transitional area of the old AoI boundary and its expansion (forest patch, core area, etc.). When this study was conducted, there were no criteria for the analysis to be expanded by 1km, so it was not carried out by the assessor at that time.

9. KTH – explain the inconsistency between the mapping of HCV2.1 as being present, but the text stating it is not present.
Company's Response: HCV2.1 already states in summary report either in the form of description, table, or map. If it is an assessment report, we cannot/do not have the authority to change it again and it has been final since 2015.

10. KTH - group table 23 into ecosystem in order to apply the analytical approach. Reference should be made to the landcover data sets that were used for this analysis. As well as, information from the District level and also from stakeholders regarding the possibility of future deforestation in order to complete this analysis. The company explains its methodology below – which should be added to the HCS report. The methodology does not appear to follow that described in the toolkit.
Company's Response: Base data of ecosystem already consider peatland data from Ministry of Forestry and landcover data set based on consultant interpretation. About possibility of future deforestation regarding of RTRWK (district level), our concession located within national forestry areas which is regulated by the ministry of forestry. The district level will also coordinate with the ministry of forestry in the development of regional spatial planning and if there is already a forestry concession, it will not be contested.

11. Explain why plantation areas have been mapped as HCV4.3 – rom the INTK it states "Other areas that function as fire break or buffer zone must also be protected, including e.g. intact peat swamp forest". The explanation below seems reasonable and should be added to the HCS report in order to aid understanding.
Company's Response: We already explained in Section 4 of the Summary Report.

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?

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: In all cases the LPP that would require a pre-RBA and RBA have been left to "Subject to Further Analysis by ISFMP Team" in table 23. It does not appear that the mapping of these patches has been finalised yet.

Reviewers Recommendation:
1. Finalise the mapping of the LPP based on the pre-RBA and RBA to determine whether they are to be developed or conserved. The company's response is slightly hard to understand, but what the reviewer ascertains is that field checks "have" been done, but the results haven't been updated in the report or the associated data sets. So the recommendation is that the data from the field checks be used to make the appropriate updates.

Company's Response:

The Shapefile data that contain patch analysis and the final outcome (conserve/develop) provided (filename; *Group3_PatchAnalysis_ISFMP_TRp12*). It can show the finalise mapping of LPP that defined whether they are to be developed or conserved. HCS Patches were defined as Kelola Lingkungan (field **Kelola** in attribute table) means to be conserved.

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 management and monitoring measures are reasonable though extremely general. The issue is that this assessment has been done over such an enormous area. The M&M needs to be taken to the concession level and areas need to be discussed at a particular level as the threats to the HCVs will vary considerably – e.g. accessible forest areas will be under considerable more threat of encroachment than isolated areas.

Reviewers Recommendation:
1. The reviewer believes that APP has taken the M&M to a lot more detail in the ISFMP – this should be added to the report (potentially in appendices), with maps of areas that require special focus e.g. where land conflict has to be resolved in order to protect HCVs.

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 area of interest for the HCS assessment must include a 1 km buffer around the assessment area. In this report the AOI is only considered to be the 4 concessions themselves. This must be expanded to include the concessions AND a 1 km buffer around each.

Reviewers Recommendation:

1. Expand the AOI to include a 1 km buffer around each concession. The reviewer doesn't agree with the company's response – historical images could be obtained and the external buffer interpreted, but if the company doesn't want to do this – so be it.

Company's Response:

It is true that historical images could be obtained but expand the AoI is difficult because they have to do backdate analysis without field data at the expand location (relying only on satellite images), then the interpreter is different from the previous one so the data will be biased. The addition of AoI will also change the data and analysis until the results have been reported, especially in the transitional area of the old AoI boundary and its expansion (forest patch, core area, etc.). When this study was conducted, there were no criteria for the analysis to be expanded by 1km, so it was not carried out by the assessor at that time.

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 images used include landsat images dated May and June 2014. The HCS studies were done in January 2015. Landsat images have 30 m pixels. Both the resolution and date are adequate. No information is provided about cloud cover (a picture of one image, dated June 2014, is provided which is far too cloudy to be used for effective classification).

Reviewers Recommendation:

1. Provide information about cloud cover in each of the images that were used.
2. The reviewer assumes the images have been "stitched together" to provide a cloud free image. The resulting cloud free image should be provided.
3. Provide the actual composite images, not pictures of the images

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?

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

Finding: The actual images have to be provided in order for the reviewer to check the resulting landcover classification.

Reviewers Recommendation:

1. Provide the composite image(s) that were used for undertaking the landcover classification.

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: The method described for laying out the plots is the same as that in the HCS toolkit, as such this is satisfactory. Regarding the number of plots and the location of these plots the information provided is that "Survei ini dirancang dengan tujuan mencapai perkiraan cadangan karbon dengan interval kepercayaan 90% hingga 10% dari total cadangan karbon untuk sumber karbon yang ditentukan." This is acceptable but no information is provided about how the number of plots were initially estimated. Additionally the HCS approach requires that there is a significant difference between scrub and YRF.A methodology for determining the number of plots required is provided in Advice Note 1.

Reviewers Recommendation:

1. Provide a calculation of the number of plots required in each landcover class to meet the confidence interval (using the methodology in Advice Note 1). A description of the calculation of the number of plots used in this assessment is provided. It doesn't match Advice Note 1, but this assessment pre-dated AN1.
2. Explain why no plots were located in PT RIA (based on the map in section 7.2). The reviewer doesn't accept that you can add a whole PT to the assessment and not do any field work in that PT. However, it is explained that the company is doing PSP measurements in that PT. The reviewer recommends this PSP data be integrated with the HCS data.

Company's Response:

The PSP data of PT RIA already added into HCS Plot Data and provided (file name; *Group3_Plot_LC_.zip*)

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

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

Finding: Table 17 lists the team's names and their responsibilities, however it does not indicate the main team members' qualifications and experience.
The reviewer assumes this assessment pre-dated the roll-out of registered HCS practitioners so the requirement to have 2 registered practitioners on the team is not relevant.

Reviewers Recommendation:
1. Add a column with the main team member's qualifications and relevant experience. This has been added.
2. Refer the reader to section 10.4 where short biographies of the main team members have been provided. added

5.3. Please review Section 7.4 of the Summary Report. Was the allometric chosen adequate?
The HCSA Toolkit provides more guidance on choosing an allometric equation.

Finding: Five equations are used. These include Basuki (secondary forest or better), Nugroho (secondary forest or better), Solichin (peat), Atamarie (Gelam) and Atamarie (Palms). The final equation for palms should not be included as measuring palms is not included in the HCSA.
The reviewer is not familiar with any of the equations, but the C stocks produced for the landcover types look broadly in line with what one would expect based on the photos provided and the reviewer's experience with similar studies.
In table 17, there are forest descriptions based on the landcover. There is no mention of any melaleuca in the landcover descriptions.

Reviewers Recommendation:
1. Explain where each of the 4 equations was used. It is assumed that Solichin was used in peat areas and Atamarie was used in the melaleuca areas – nevertheless this should be clearly stated. In what situations were Basuki and Nugroho used given that the forest where these equations are applied seems similar. Explain whether the equations were applied on a plot basis or a tree basis (e.g. for a Shorea that was located in a plot dominated by melaleuca, which equation was used). All the information provided below on the application of the equations should be put in the HCS report.
Company's Response: We already explained in Section 7.7 of the Summary Report.

2. Provide a spreadsheet with the plot data in it, detailing which equations were used, also ensuring the formulae are in the spreadsheet.

3. Update the landcover descriptions in table 17 to include the melaleuca.

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?

The HCSA Toolkit provides more guidance on what statistical analysis should be used.

Finding:
No raw forestry data was supplied as such this section cannot be reviewed.

The plot data was grouped and analysed across all four companies. However, no plots were done in PT RIA.

Reviewers Recommendation:
1. Supply the raw forestry data in a spreadsheet. This should be supplied on a tree basis and a plot basis, all the equations should be embedded within the spreadsheet. Additionally, please include the statistical analysis based on the plot data.
2. Provide an explanation of the field work (or other analysis) that was undertaken to determine that the plot data could be validly applied in PT RIA. As mentioned above the reviewer believes the company should integrate their PSP data with the HCS data for PT RIA.

Company's Response:
The PSP data of PT RIA already added into HCS Plot Data and provided (file name; *Group3_Plot_LC_.zip*)

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

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?

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

Finding: No shapefile of the plot locations has been provided so this section cannot be reviewed.

Reviewers Recommendation:

1. Provide a shapefile of the plot locations, ensuring that the classification that was determined at the plot is one of the attributes on the plot location shapefile. The landcover that was assigned at the plot level matches that of the final land cover mapping.

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?

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

Finding:

Participatory Mapping data has been provided (Shapefile - "Penggunaan_lahan_masy_g3") however the data has not been clearly labelled. If the reviewer tries to guess what is the community lands in the shapefile, he will probably do so incorrectly.

Merges – the reviewer checked whether merges have been done correctly – there are many small patches of BT within the HK. Based on the patch analysis process, these areas would be merged into a single patch (See example below).

AMG_LC	ha	HCS_STATUS	N
BT	48.92	3a.Patch core area > 100h	
BT	0.45	3a.Patch core area > 100h	
HK	3533.53	3a.Patch core area > 100h	

Based on the reviewer's checks, these have been done correctly.

Peat

There are many forested peat areas that have not been set aside for conservation. This is incorrect, all forested peat must be set aside. But in the shapefile these have been labelled "No Conservation". Potentially the reviewer has misinterpreted the shapefile, so it would be best to label a column as "HCS outcome"

Region	District	Claims	Conservtn	Soil	AMG_LC	ha	HCS_STATUS	No	HCS_No
RIAU	ASK	no Claims	no Conservation	Peat	BT	0.01	6b.Patch core area < 10ha	7	7
RIAU	ASK	no Claims	no Conservation	Peat	BT	0	6b.Patch core area < 10ha	7	7
RIAU	ASK	no Claims	no Conservation	Peat	BT	0.04	6b.Patch core area < 10ha	7	7
RIAU	ASK	no Claims	no Conservation	Peat	BT	0	6b.Patch core area < 10ha	7	7
RIAU	ASK	no Claims	no Conservation	Peat	BT	0.01	6b.Patch core area < 10ha	7	7
RIAU	ASK	no Claims	no Conservation	Peat	BT	0	6b.Patch core area < 10ha	7	7
RIAU	ASK	no Claims	no Conservation	Peat	BT	0.45	6b.Patch core area < 10ha	7	7
RIAU	ASK	no Claims	no Conservation	Peat	BT	0.35	6b.Patch core area < 10ha	7	7
RIAU	ASK	no Claims	no Conservation	Peat	BT	0.03	3a.Patch core area > 100h	1	1

Core area

There is no core area field in the shapefile – so this cannnot be checked.

Connectivity

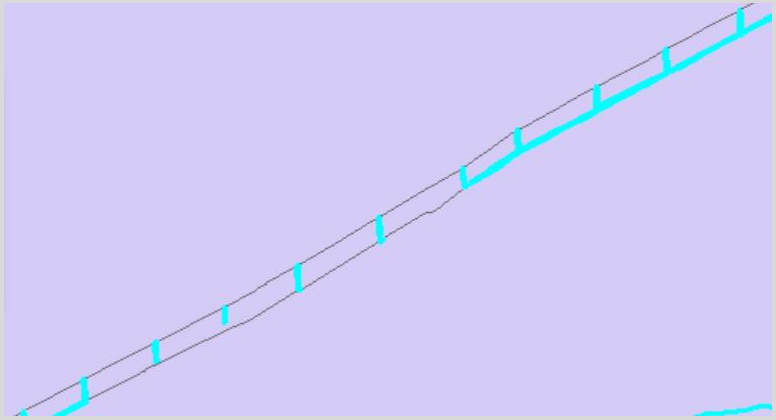
There is no connectivity information in the shapefile – so this cannnot be checked.

Reviewers Recommendation:

1. Clearly label the community land areas in the PM shapefile. The community areas are now provided though the explanation is not available as to what the areas are – certainly there are strange shapes e.g. see below – 5 m wide strips for social? This needs some explanation.

Company's Response: Inside data penggunaan_lahan_masy_g3, field **Kelola** sosial means the area allocated for partnership with the community, managed for the welfare of the community, can be in the form of agroforestry, timber production, non-timber forest production, etc.

5 m wide strips that showed in pic below are road infrastructure on Kelola Sosial (social management) areas, connected with road on production areas.



2. Provide a step by step discussion (with associated maps) of the patch analysis process in section 9 of the report. Below the company has provided a generic description of the patch analysis methodology but what is required is a discussion of each step and the outcome in this assessment
Company's Response: The explanation already put in the summary report section 9.2.

3. Ensure all forested peat areas are set aside for conservation. The reviewer is confused with the company's reply because the company refers to government regulations. However, HCSA is completely separate from legal requirements. At step 1 of the patch analysis, it is stated "areas to be …protected, including: community protected areas, HCV areas if already known (separated by HCVs 1–3, HCV 4 and HCV 5–6), **peatlands of any depth**," So in order to be compliant with HCSA all the undeveloped peat area must be protected.
Company's Response: In industrial forest plantations, we get a concession permit from the government, and the spatial composition of the concession has been arranged (production areas, livelihood areas, and protected areas). Through the ISFMP, we have allocated more protected areas than our obligation, but on the other hand, the progress of the production area is also reported to the government as the responsibility of the permit holder on the areas of state production forest. Therefore, the government has made regulation on which peat areas can and cannot be managed.

4. Label the HCS outcome (Develop / Conserve) in the patch analysis shapefile. This is in a separate file which makes the result hard to interpret.
Company's Response: The Shapefile data that contain patch analysis and the final outcome (conserve/develop) provided (filename; *Group3_PatchAnalysis_ISFMP_TRp12*). HCS patches were defined as Kelola Lingkungan (field **Kelola** in attribute table) means to be conserved.

5. Add the core area of the merged patches to the shapefile and provide a unique number to each merged patch. Provided

6. Add connectivity data to the shapefile. Provided

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?

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

Finding: There is no patch priority information in the shapefile ("Patch_analysis_group3"). This information is provided in section 9.1 of the report, but in order to check it the information has to be in the shapefile so it can be checked spatially.

Reviewers Recommendation:
1. Provide a shapefile which identifies the patches by priority. The patches are identified by priority correctly, but the analysis does not appear to follow the decision tree. E.g. patches with FID 196, 200,201 are LPP but within 200 m of the HPP and when the conservation area is overlaid – they are not highlighted for conservation in the ISFMP – however these patches are for conservation in the table in section 9.1 of the HCS report.

Company's Response:
In the field **Conservtn** contains information which areas are conservation which are not. In that field, conservation means protected areas based on mandatory spatial plan. ISFMP final result information is in the field **Kelola**, there are produksi (means areas that manage for production), sosial (partnership area with the community), and lingkungan (conserved).

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: It appears that all the forested areas within the concessions have been classified as HCS. There is no identification of HCS forest in the 1 km buffer areas.

The way the data has been presented is very difficult to interpret. See recommendations to make the presentation easier to interpret.

Reviewers Recommendation:
1. Present a final landcover map – this should be in section 8 of the report. The map in this section is a patch priority map (which is in the incorrect place). This map is provided in the review report. The reviewer is not sure why the company didn't put it in section 8.
Company's Response: We have put it in the report as recommended by reviewers.

2. Extend the mapping of landcover and HCS to (at least) a 1 km buffer.

3. Present landcover maps of the with the relevant layers (HCV, HCS, peatland, riparian zones, customary forest, etc) separately presented on top of the landcover layer. Present a final map showing conservation / development. These are provided – but not the peat data - which is very important that this be provided.

4. Provide a patch analysis shapefile with a column that summarises the outcome to conserve or develop. This is provided in the ISFMP – but it doesn't match with the results of the patch analysis.
Company's Response: The Shapefile data that contain both patch analysis and the final outcome (conserve/develop) provided (filename; *Group3_PatchAnalysis_ISFMP_TRp12*). It can show the patch analysis and its outcome that to be developed or conserved. HCS Patches were defined as Kelola Lingkungan (field **Kelola** in attribute table) means to be conserved.