

Minutes of Meeting

Subject : 1st Peatlands Working Group 2 (PLWG-2) Meeting
 Date : March 20 & 21, 2017
 Venue : Capri by Fraser Hotel, Bangsar South, KL

Name	Organisation	Status
Faizal Parish (FP)	GEC	Substantive
Dr. Joshua Mathews (JM)	Bumitama Gunajata Agro	Substantive
Dr. Shahrakbah Yacob (SY)	Sime Darby	Substantive
Marcel Silvius (Mrs)	Wetlands International	Substantive
Dr. Mukesh Sharma (MuS)	Asian Agri	Substantive
Jason Foong (JF)	KLK	Substantive
Chin Kai Xiang (CKX)	IOI Loader	Substantive
Julia Lo (JL)	GEC	Alternate
Lim Sian Choo (LSC)	Bumitama Gunajaya Agro	Alternate
Dr. Arina Schrier (AS)	Wetlands International	Alternate
Javin Tan (JT)	RSPO Secretariat	Secretariat
Devaladevi Sivaceyon (DS)	RSPO Secretariat	Secretariat
<i>Absent with apologies:</i> Jason Hon (JH)	WWF-Malaysia	Substantive

	Item Descriptions	Main Discussion Points	Action Points
March 20, 2017 (Monday)			
1.	Introduction & appointment of co-chairs	<p>RSPO Secretariat gave a short background brief on work completed by RSPO PLWG and the basis of the formation of PLWG-2 with key aim to update both RSPO Manuals on BMPs: i) BMPs for Existing Oil Palm Cultivation on Peat; and ii) BMPs for Management and Rehabilitation of Natural Vegetation Associated with Oil Palm Cultivation on Peat.</p> <p>PLWG-2 is also to look at guidance for regional definitional of peat, specifically relevant to Latin America and Africa region.</p>	

		<p>A round of short introduction by all members of PLWG-2 conducted. The group was informed that Jason Hon, WWF sent his apologies for not being able to participate the meeting due to conflicting schedule.</p> <p>Initial concern raised on the sensitivity of nationality of respective representative sitting on board WG. This is crucial especially on engaging government (i.e. Indonesia).</p> <p>Consensus obtained in appointing and accepted by Faizal Parish (GEC) and Dr. Joshua Mathews (Bumitama) as co-chairs.</p> <p>The meeting agenda further refined by members (Annex 1).</p>	
2.	Endorsement of ToR & signing of RSPO WG Code-of-Conduct (CoC)	<p>RSPO PLWG-2 ToR (Annex 2) is endorsed with minor changes in scope of the WG. All present members signed CoC and hardcopy is kept within RSPO Secretariat.</p> <p>There was mentioned about the importance of landscape approach for peatland management and conservation and the link to potential incentives encouraging the conservation and protection of peatlands.</p> <p>There was recommendation for RSPO members to reach out to smallholder on the importance of conserving peatlands through P&C review.</p>	
3.	Gaps in WG composition & technical experts' appointment	<p>Currently, the group consists of Wetlands International and Global Environment Center (GEC) representing Environmental NGO; and WWF representing Social NGO.</p> <p>Asian Agri and Bumitama, representing Indonesian grower. KLK and Sime Darby representing Malaysian grower.</p> <p>There is a currently no representative from Rest of the World (RoW) and a vacant representation from Social NGO.</p> <p>It was proposed to allow some flexibility of members from RoW to participate in view of the challenges to be present physically due to the long distance and challenges to follow the meeting via skype or call. The key would be to have a liaison person bridging the gap between the WG and the members.</p> <p>As informed by RSPO Secretariat, SIPEF indicated potential participation should flexibility provided in physical presence to meetings.</p>	RSPO Secretariat to approach relevant members to be on-board PLWG-2.

		<p>It was proposed to give flexibility to have more grower members on-board in regardless of its location should there is no take from RoW and in view of the importance of including Indonesian representative from Indonesia. This is to obtain broader experiences shared.</p> <p>For Social NGO representative, Sawit Watch, Bothends, Oxfam and Forest People Program were nominated to be on-board PLWG-2.</p> <p>SY informed that Sime Darby could move its representation to RoW (representing PNG and Africa), and propose to have other member taking over the Malaysian's rep seat. Nomination comes for United Plantation (UP) and Sarawak Oil Palm Plantation Owners Association (SOPPOA).</p> <p>The group agreed that technical expert appointment could and should come in ONLY when it is deeming appropriate based on discussion matter. Observer is allowed as and when appropriate.</p>	
4.	<p>Updates on development of drainability guidance document</p>	<p>There is a request to ERWG previously on the need to provide better clarity and guidance on drainability assessment within RSPO Manual on BMPs for Existing Oil Palm Cultivation on Peat.</p> <p>ERWG agreed and came out with a proposal (Annex 3) with ToR (Annex 4) to engage external consultant to review the practicality of current guidance and explore potential approach (qualitative and quantitative measures), follow by the development of the guidance document.</p> <p>Wetlands International is engaged by RSPO Secretariat through open tender process (ONLY 1 proposal received from Wetlands International) for the consultancy work.</p> <p>AS briefed the group on the workplan and timeline for the consultancy work and is calling for member to join in the pilot testing once guidance developed. FP raised the concern over the tight timeline and proposed to revise the timeline.</p> <p>SY informed that Sime Darby could come in to test the new guideline. The group suggested to urgently reach out to members with i) plan to re-plant on peat and ii) have experiences re-planting on peat through email from RSPO Secretariat to gauge more sharing of experiences and expertise on the subject matter.</p> <p>There are concerns raised over sensitivity of data sharing. The WG agreed to proceed with the approach of Non-Disclosure Agreement (NDA) between member and RSPO Secretariat. Name of member of data shared will not be revealed to the WG.</p>	<p>AS to review the timeline of the proposal.</p> <p>RSPO Secretariat to finalised the contracting process and commence the consultancy work.</p> <p>RSPO Secretariat to reach out to members for sharing of experience and expertise on re-planting on peat and associated drainability assessment conducted or to be conducted.</p> <p>Grower members of the group to share relevant experiences and data with RSPO Secretariat.</p>

		<p>CKS informed the group that IOI plantation is going to carry out replanting on peat in 2 years and he could seek confirmation on how the drainability is to be conducted. However, the model for the drainability assessment is unknown and the area is highly degraded and scatted.</p> <p>Both cochairs then highlights the need for taking into consideration different scenario or field conditions for the application of the model (i.e. small patch, big dome, basin riverine peat, inland peat near coastal line). Another factor to be look-into in future will be the climate change (pro-long drought and intense rainfall).</p>	<p>Members to send relevant reference papers to RSPO Secretariat for group distribution.</p>
5.	<p>Updates on issues discussed and handled over from ERWG</p>	<p>AS briefed the group on two reference papers prepared by ERWG through discussions: i) Impact of Peat Rewetting and Rehabilitation on GHG emission in Peatland Set Aside Areas (Annex 5); and ii) An approach for taking into account off site impacts (Annex 6).</p> <p>MuS raised the caution about the fact that above ground sequestration on peatlands is very small (negligible). AS raised that the idea is to propose potential accounting of emissions offset or reduction from peat rewetting and rehabilitation and/or incentive approach, especially for peatland set-aside areas. There will be need for more discussion on which pool of carbon to be considered (ABG and soil; or just soil); and a need a baseline for verification purposes.</p> <p>AS also raised the fact that discussion would also be needed to discuss on the incentive mechanism and relevant monitoring and verification tool (PalmGHG Calculator?).</p> <p>FP summarised that the reference paper on peat re-wetting would serves as the inputs into two key work scopes: 1) as guidance document to be incorporated into updated BMPs; and 2) incentive mechanism or approach for peatland conservation and protection.</p> <p>AS briefed the group that Criterion 5.1 of P&C (2013) guidance stated that <i>'Environmental impacts should be identified on soil and water resources (Criteria 4.3 and 4.4), air quality, greenhouse gases (Criterion 5.6), biodiversity and ecosystems, and people's amenity (Criterion 6.1), both on and off-site.'</i></p> <p>There were calling for needs to provide guidance for accounting of off-site impact, especially on the hydrological impact due to drainage and/or road or infrastructure development on peatland.</p> <p>MuS raised the complexity for accounting of off-site impacts involving stakeholders outside of the boundary, depending on the natural of the land use and existing management system.</p>	<p>Possible offset accounting and/or possible incentive approach through peatlands rewetting and/or restoration, and off-site impact to be further discussed and potentially incorporate for P&C review.</p> <p>PLWG would definitely need to look at produce guidance for preventing or managing off-site impacts; landscape approach for peatlands management and protection; and peat rewetting approach.</p>

		<p>FP further added that ERWG came to the conclusion of having this as a voluntary guidance for P&C (2013) as there is no specific guidance and requirement for a quantitative measure of off-site impact. However, this matter could be further discussed among PLWG, if this could be further incorporated into next P&C Review. This could be seen as the context and discussion on the possible landscape approach.</p> <p>FP further stressed it is crucial to at least have the guidance on management and mitigation of off-site impacts into existing BMPs, to mitigate potential impacts to and from adjacent inappropriate management on peatlands. Companies need to recognise that perimeter drain and access road (maybe) the key impacts on the surrounding areas, especially is the surrounding areas is conservation areas.</p> <p>It includes the needs to provide guidance on landscape approach for peatland management and protection should it is not taking up through the P&C review.</p>	
6.	Previous peat training conducted through ERWG	<p>AS briefed the group on the feedback received from last week GHG & Peat training in Capri Hotel, KL (March 15-17, 2017) with field visit to Raja Musa Forest Reserve. The training received 40 participants from growers, refinery and CB.</p> <p>Based on the feedback, more information needed on:</p> <ol style="list-style-type: none"> i. Drainability assessment ii. Longer field trip iii. Fire prevention iv. Water management v. Greenhouse gas aspects <p>Suggestions and recommendations:</p> <ol style="list-style-type: none"> i. Outreach to and involvement of SH in the similar aspects ii. Outreach materials for distribution to SH (from refinery) iii. Information about replanting on peatlands iv. More involvement of CB and auditors v. To include traders or processors into the training vi. Train-the-trainer <p>The group feels that ‘train-the-trainer’ could be one of the strategic approach reaching to smallholder for good practices. Specific approach on training modality and materials, specifically for smallholders, could be discussed tomorrow under the communication and outreach agenda item.</p>	To be discussed tomorrow under communication and outreach agenda

7.	Guidance on regional peat definitions	<p>This agenda item is relevant to Africa and Latin America region. This is based on feedback received from auditors and members to RSPO Secretariat on the challenges in aligning the understanding on what is 'peat' between grower members and auditor.</p> <p>There were some highlights that the definition of peat should be the same as per findings of soil survey. However, there are different terms used within the soil survey leading to a mismatch or different understanding on what is categories as 'peat'. USDA terms is to be used – Histosol.</p> <p>In addition, there are some confusions in term used that may not necessary leads to the term of 'organic soil'. There was a long discussion on all different terms used among members of the group. Hence, there is a need to have standardised guidance provided on what is categories as 'peat'.</p> <p>The key is to know the different types of peat (although the basic principle of the definition would be the same), across different regions. An overview of different definitions of peat to determine what guidance or clarity needed, as there will be hydrological implication.</p> <p>The issue raised is then if members of PLWG-2 have the relevant information on the different definitions of peat across the key palm oil producing region. However, the group agreed that there is a need to provide more guidance and clarity either by definition across region or types of peat. Suggestion to not to go for regional definition of peat but refine RSPO definition based on global definition.</p> <p>The group also feels that there should be some peat expertise within the auditing team to ensure proper information and data is provided in identify if peat is presence within certifying scope of management unit.</p> <p>As a concluding remark from the discussion, the group agreed that there is a need to look at providing guidance on the different types of peat (typology - very significant in characteristic and management requirement).</p> <p>It was suggested to compile information and/or document relating to types of organic soils, and/or definitions of peat (i.e. Organic Soils of Malaysia by MPOC) for next meeting discussion to arrive to one- or two-pager on this matter. Recommendation given also to monitor and cross-check with relevant peatland definition from HCSA toolkit.</p>	<p>RSPO Secretariat to share any case study(s) received from members of stakeholders relating to definition or categories of peat.</p> <p>PLWG members to share all relevant information and/or references to RSPO Secretariat on the types and definitions of organic soils.</p> <p>JM to compile list of definition or ways of categorising organic soils through different sources shared by members.</p> <p>RSPO Secretariat to look up the HCS+ Study annex and HCSA toolkit on the information of peatlands and shared with all members of PLWG.</p>
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8.	Challenges in implementing RSPO BMPs and other issues relating to peatlands	<p>Below lists of challenges and items for updates in relating to peatlands within RSPO Manuals of BMPs:</p> <table border="1" data-bbox="689 185 1653 1123"> <thead> <tr> <th data-bbox="689 185 1164 260">Existing cultivation on peatland</th> <th data-bbox="1164 185 1653 260">Management & rehabilitation of natural vegetation</th> </tr> </thead> <tbody> <tr> <td data-bbox="689 260 1164 316">Drainability</td> <td data-bbox="1164 260 1653 316">Peat rewetting – block technique</td> </tr> <tr> <td data-bbox="689 316 1164 371">Water table management</td> <td data-bbox="1164 316 1653 371">Paludiculture (Re-vegetation)</td> </tr> <tr> <td data-bbox="689 371 1164 427">Landscape management</td> <td data-bbox="1164 371 1653 427">Smallholders and community</td> </tr> <tr> <td data-bbox="689 427 1164 483">Subsidence and flood risk</td> <td data-bbox="1164 427 1653 483">Landscape approach, integrated development and buffer zone</td> </tr> <tr> <td data-bbox="689 483 1164 539">Smallholders (simplified manual)</td> <td data-bbox="1164 483 1653 539">Cost & benefit</td> </tr> <tr> <td data-bbox="689 539 1164 595">CB's</td> <td data-bbox="1164 539 1653 595">Incentive</td> </tr> <tr> <td data-bbox="689 595 1164 651">Paludiculture (Wet agriculture)</td> <td data-bbox="1164 595 1653 651">Active management</td> </tr> <tr> <td data-bbox="689 651 1164 770">Peat hydrology</td> <td data-bbox="1164 651 1653 770">Stakeholders mapping (coordination), needs analysis and participatory planning</td> </tr> <tr> <td data-bbox="689 770 1164 826">Offsite impact</td> <td data-bbox="1164 770 1653 826">Gender aspects</td> </tr> <tr> <td data-bbox="689 826 1164 882">Illegal encroachment</td> <td data-bbox="1164 826 1653 882">Types of natural peatland ecosystem (savannah, grassland, etc)</td> </tr> <tr> <td data-bbox="689 882 1164 938">GHG/mitigation plan</td> <td data-bbox="1164 882 1653 938">Viability and linkages (ecology)</td> </tr> <tr> <td data-bbox="689 938 1164 1058">Definition/classification and delineation of peat</td> <td data-bbox="1164 938 1653 1058">Socioeconomic – engagement with community</td> </tr> <tr> <td data-bbox="689 1058 1164 1114">Compensation and incentives</td> <td data-bbox="1164 1058 1653 1114">Legal and regulatory issues</td> </tr> </tbody> </table> <p data-bbox="571 1142 1774 1283">Concerns raised over RSPO members buying over non-RSPO member peatland cultivated with oil palm. How could RSPO discourage cultivation of oil palm on peatlands outside of RSPO. There is also needs to consider balancing the demand on sustainable palm oil upon drawing a clear-line on what is unacceptable in relation to cultivation on peatlands.</p> <p data-bbox="571 1321 1774 1461">The group feels that the direction of RSPO is to discourage planting on peatlands and encourage good practice management. However, there are cases of which members are being criticised with 'unsustainable' oil in relating to lack of information on good efforts relating to peatlands management, there is a need for this WG to consider an effective verification system for members</p>	Existing cultivation on peatland	Management & rehabilitation of natural vegetation	Drainability	Peat rewetting – block technique	Water table management	Paludiculture (Re-vegetation)	Landscape management	Smallholders and community	Subsidence and flood risk	Landscape approach, integrated development and buffer zone	Smallholders (simplified manual)	Cost & benefit	CB's	Incentive	Paludiculture (Wet agriculture)	Active management	Peat hydrology	Stakeholders mapping (coordination), needs analysis and participatory planning	Offsite impact	Gender aspects	Illegal encroachment	Types of natural peatland ecosystem (savannah, grassland, etc)	GHG/mitigation plan	Viability and linkages (ecology)	Definition/classification and delineation of peat	Socioeconomic – engagement with community	Compensation and incentives	Legal and regulatory issues	<p data-bbox="1774 97 2098 312">RSPO Secretariat to reach out to all members calling for feedback on challenges in implementing RSPO BMPs.</p> <p data-bbox="1774 351 2098 523">Members of PLWG-2 to develop or simplify existing BMPs for independent smallholders.</p>
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		<p>to measure and report against their efforts towards the implementation of BMP or efforts towards sustainable palm oil, both cultivation on peatlands and conservation and protection of peatlands.</p> <p>It is then crucial for the group to come up with strategy to collect information and data on extent and practices relating to RSPO members' cultivation and conservation of peatlands.</p> <p>There is also a crucial need for appropriate terminology (simplified) monitoring and management guidance for smallholder, especially independent smallholders.</p>	
9.	Open discussions	<p>The need to collect data from RSPO members both on certified and non-certified areas, the extent of peatlands, cultivated with oil palm and set-aside. These data can be collected through the recent updated GHG reports both for C5.6 and C7.8. This would mean a need of roughly another 18 months to complete the data collection and is only confined within certified areas.</p> <p>Another option would also be to collect similar data from supply chain members through members' screening process, depending on willingness of members to share such data. There is a need for strategy to approach supply chain members for such data. One of the option would be calling for members to determine the importance of having this data for companies' policy development towards No Peat commitment. There were concerns raised over requesting such data from members, as some members would have already made such data available through audit summary reports.</p> <p>There is also a need to look into the acquisition of peatland and the age of the palm, in determining the verification of the delivering of No Peat commitment. There is also a need to look at the where the liability or accountability falls? Current RSPO P&C requiring such liability to be accounted by member if HCV assessment is not done prior to the development. However, there is concern over if peatlands developed is not classified as HCV and were previously severely degraded.</p> <p>There is a need for guidance in relating to set-aside areas or land bank for conservation. This could be linking to incentive and landscape approach. RSPO Jurisdiction approach would also be beneficial for the group to look into, as a step towards landscape approach for peatland management and protection.</p> <p>Recommendations came to engage consultant for the work of collecting data on peatlands of RSPO members and non-members, for both cultivated and conserved areas. RSPO Secretariat requesting member's assistance in preparing the ToR for engaging consultant. Cochair highlighted</p>	<p>RSPO Secretariat to reach out to members calling for sharing of data relating to extent of peatlands. Also, to check with WRI – on availability of data through its mapping activities.</p> <p>RSPO Secretariat to retrieve previous ToR of similar work on peatlands delineation from GHG WG-2 for reference and sharing standard ToR Template.</p>

		that previous ToR for similar work done through GHG WG-2 could be retrieved as references. RSPO Secretariat also to share the ToR template for all members to contribute.	
10.	P&C Review Discussion	<p>Comments into P&C (2013) to be incorporated for the next review process are captured within the review template shared among members of PLWG-2 (Annex 7).</p> <p>Key comments are:</p> <ol style="list-style-type: none"> i. The need to incorporate <i>landscape approach and participatory planning</i> for relevant assessments (SEIA, EIA), especially on peatlands for effective management minimising negative while enhancing positive social, environmental and economic impacts. ii. The need to move towards ‘no peat’ development; and ‘no fire’. iii. The need to make public soil map and summary table on the extent of peat (planted and conservation set-aside); as well as types of peat. iv. Specific guidance on monitoring and management of peat subsidence, including specific indicators relating to peatlands management and related practices. v. Needs to look at potential guidance and approach for peatland set-aside for conservation (potential incentive mechanism) 	<p>RSPO Secretariat to share the comments compiled with all members.</p> <p>Members to send any further comments to RSPO Secretariat via email.</p>
11.	Communication & Outreach (training, materials, train-the-trainer)	<p>RSPO Secretariat informed the group that existing practice on training is through face-to-face, moving forward the idea is to have online training via RSPO Sustainability College. RSPO Secretariat has engaged Wetlands International in developing online modules based on both RSPO Manuals on BMPs.</p> <p>There are also some factsheets and simplified guidance developed but yet finalised. There is a need for this group to finalise and publish the simplified guidance developed by Wetlands International.</p> <p>The group feels that there is a need to simplify all guidance document and training materials for smallholders, taking into consideration local languages. Based on the series of training provided, there is a need to conduct training based on target-group (company growers, smallholder, auditors, supply chain member etc).</p> <p>For smallholders, the most appropriate approach for training would be field visit. The best would be showing the smallholders of smallholders with existing best practices and management on ground.</p> <p>The biggest challenges would be the availability of site for field training, both for smallholders and growers (i.e. Sime Darby and Kalimantan). This is crucial to have sites identified prior to the</p>	<p>RSPO Secretariat to circulate and finalise the simplified guidance developed by Wetlands International to members for comments.</p> <p>JT and DV to invite RSPO representative from O&E division to attend the next PLWG-2 meeting to discuss communication strategy and plan.</p>

training. It is also recommended to have field training captured as a short video and serves as online training.

It is raised to take into consideration on what would be the practical guidance for practices and/or water management regime for floodplain areas?

Training the trainer approach would require some key consideration on the following:

- i. Who are the second-tier trainers
- ii. Appropriate training materials (full package)
- iii. Ensuring those who are trained is giving training to others

The company is the best target group, as company often have closer linkage with smallholder and is often in better position to provide such training. Hence, there is a need to prepare smallholder specific training materials.

There is a need for better communication on the key activities and objectives of this group, as well as the key issues relating to peatlands. RSPO Secretariat informed that PLWG and its key activities would be uploaded and announced through RSPO website. Relevant email blast and announcement will be made accordingly, as deemed appropriate by members of the group.

The group will need to, in next group meeting, consider if there is a need to have a peat related session in the upcoming RT15, tentatively schedule on the last week of November 2017 in Bali, Indonesia.

There is also a need for RSPO to outreach and communicate RSPO works and objectives to other key stakeholders, such as government. This including step-up in advocacy and lobbying for adoption of RSPO sustainability principles and approach (i.e. jurisdiction) into national legislation.

RSPO is to promote members' new project or initiative towards protecting or improved practices and management of peatlands. There is a need for the group to get RSPO Outreach & Engagement Department supports in strategizing WG's activities and objectives, as well as members' initiatives.

RSPO Secretariat informed the group that the Outreach & Engagement Department is planning a series of outreach events, reaching out to all stakeholders on RSPO. Topic to be included would be based on request basis. The group requested a representative to present in the next meeting to present its outreach plan for potential synergies with the group works, as well as providing advice on communication strategy on peatland related issues and matter.

12.	Workplan and Budget	Brief workplan developed and to be further discussed with members on budget required via email.	RSPO Secretariat to finalise the workplan with indicative budgets and circulate among members for comments
13.	AOB	<p>Wetlands International presented a video produced on Palm oil production, peatland loss and CO2 emissions, in relating to drainage.</p> <p>Asian Agri present to the group initiatives and efforts in fire management within its concession.</p>	

Annex 1. Revised Meeting Agenda

20th March 2017 (Monday)

Time	Agenda
9.00am – 09.45am	<ol style="list-style-type: none"> 1. Introduction of members 2. Appointment of co-chairs 3. Signing of Code of Conduct Policy Statement 4. Review of Term of Reference & membership
09.45am – 10.30am	5. Nomination of technical experts and/or observer(s)
10.30am – 11.00am	Tea Break
11.00am – 12.30pm	<ol style="list-style-type: none"> 6. Updates on Consultancy for development of guidance on drainability assessment 7. Updates on issues to be discussed (recommendations from ERWG, Peat rewetting; offsite-impact) 8. Updates on peat trainings conducted through ERWG & feedback received
12.30pm – 1.30pm	Lunch
1.30pm – 3.00pm	9. Discussion on approach towards identification of regional definition(s) of peat (Check revised HCS toolkit – if there is any mention of definition of peat)
3.00pm – 3.30pm	Break
3.30pm – 5.00pm	<ol style="list-style-type: none"> 10. Open discussion (i.e. challenges in implementing RSPO Manuals on BMPs) 11. Other issues (i.e. stranded asset(s) – peatland conservation area; incentive; landscape approach) 12. P&C Review (Landscape approach)

21st March 2017 (Tuesday)

Time	Agenda
9.00am – 12.30am	<ol style="list-style-type: none"> 13. P&C Review (timeline) 14. Communication & Outreach (training, materials, train-the-trainer) 15. Develop workplan & budget
12.30pm – 1.30pm	Lunch
1.30pm – 3.00pm	16. Develop workplan & budget (Cont'd)
3.00pm – 3.30pm	<ol style="list-style-type: none"> 17. AOB 18. Date of next meeting

Terms of Reference

RSPO Peatland Working Group 2 (PLWG-2)

1. Introduction

The first RSPO Peatland Working Group (PLWG) was established in 2010 and operated till late 2012. The objectives of the PLWG were to:

- i. Identify the environmental and social impacts related to oil palm plantations on peatlands.
- ii. Identify best practices for managing oil palm plantations on peat soils in order to minimize GHG emissions and enhance sustainability.
- iii. Identify practical methodologies for assessing and monitoring carbon stocks and key GHG emissions from oil palm plantations established on peat soils; and
- iv. Evaluate options and constraints for the rehabilitation of degraded peatlands.

The PLWG produced a number of specific outputs in 2011 and 2012 including:

- a. A review identifying the main environmental and social impacts related to oil palm plantations on peatlands.
- b. RSPO Manual on Best Management Practices (BMPs) for Existing Oil Palm Cultivation on Peat.
- c. RSPO Manual on Best Management Practices (BMPs) for Management and rehabilitation of Natural Vegetation associated with Oil Palm Cultivation on Peat.
- d. Report on practical methodologies that can be to assess and monitor key GHG emissions that originate from oil palm plantations established on peat soils.

It is now five years after the completion of the work of the RSPO Peatland Working group and much further work has been done on peatlands. It is considered that there is a need to re-establish the PLWG to review and update earlier guidance and contribute on other issues.

Development and management of Oil palm plantations on peatlands remains one of the most significant contributors of GHG emissions from the oil palm sector. It also leads to long term impacts related to land subsidence and flooding and contributes to increased risk of fires and associated smoke haze.

2. Main Purpose

To update guidance produced by the PLWG (2010-2012) and provide additional guidance in relation to RSPO P&C 2013.

3. Scope of Work

- Monitor trends in oil palm cultivation on peatlands
- Propose refinement related to peatlands in RSPO tools, standards and guidance (PalmGHG, GHG assessment procedure, P&C 2013, NPP, RSPO Next, auditing etc.)
- Review and analyse the experience in implementing RSPO BMPs on peatlands
- Review and update the guidance in the RSPO Manual on Best Management Practices (BMPs) for Existing Oil Palm Cultivation on Peat
- Review and update the guidance in the RSPO Manual on Best Management Practices (BMPs) for Management and rehabilitation of Natural Vegetation
- Oversee development of Guidance on drainability assessments for peatlands

- Develop additional guidance and explore incentive options on rewetting and rehabilitation/conservation in peatlands
- Provide guidance for smallholder cultivation on peat.
- Guidance on regionally appropriate definition and practices
- Develop or guide appropriate outreach and capacity building programmes related to the BMP manuals.

4. Expected Outputs

- A review assessing trends in Oil palm cultivation on peat and use of BMPs.
- Updated version of the RSPO Manual on Best Management Practices (BMPs) for Existing Oil Palm Cultivation on Peat.
- Updated version of the RSPO Manual on Best Management Practices (BMPs) for Management and rehabilitation of Natural Vegetation associated with Oil Palm Cultivation on Peat.
- New guidance on drainability assessments for peatlands.
- New guidance for existing smallholder cultivation on peat.
- Agenda, process and materials for outreach and capacity development.
- Inputs to other RSPO processes

5. Meeting Frequency

Members of this working group expected to meet once every four to six months.

6. Composition

It is proposed that the group comprises approximately 12 members, comprising mainly specialists in plantation and peatland management proposed primarily from Growers (Indonesia, Malaysia and Rest of the World) and Environmental and Social NGOs. In addition, (as with the first PLWG) some independent peatland experts may be invited to join/ provide inputs.

There will be two Co-Chairs, one each selected from growers and environmental NGOs.

All members should have technical skills in one or more of the following disciplines, peatland assessment and management, peatland restoration, peatland water management, oil palm cultivation on peatland, soil science, agronomics or corporate social responsibility. The working group will rely mainly on the experience of the technical staff of RSPO members. However other research institutions or technical experts may be invited to participate, at the recommendation of the working group members if they bring specific expertise in the disciplines mentioned above.

7. Role of secretariat

Secretariat should support the working group and facilitate interactions with the members and stakeholders. The secretariat will also oversee the preparation of commissioned studies and other work.

8. Active Period

It is proposed that the working group undertakes its work in the period January 2017 to December 2019.

ERWG Discussion Paper

Proposal for Next Step in Relating to Updating and/or Development of Guidance on Peatland Drainability Assessment

Background

Current drainability assessment guidelines provided in the RSPO Manual on Best Management Practices (BMPs) for existing oil palm cultivation on peat refer to 'van den Eelaart, 2005': a Draft Version (09-04-2005) of (not peer reviewed and not published) text from the personal website of Adriaan van den Eelaart (<http://www.eelaart.com/index.htm>).

Feedback received from RSPO members that there is a need for a clearer step-by-step guidance on how to conduct drainability assessment. In the 9th ERWG meeting, there was a suggestion proposed by Wetland International (WI), however, there was concern over the feasibility and cost-effectiveness of the proposed suggestion. Hence, members of ERWG requested WI to conduct a simple analysis on the gaps of existing guideline and propose a way forward, taking into consideration the cost and practicality of such.

Below are the results proposed:

For the qualitative analyses (analyses 'by monitoring the field')

- i. What: Improve the current BMP asap, or add in a separate guidance document, the guidance on the Qualitative assessment (by monitoring the field) of the current drainability:
 - a. Determine what the important content should be of this guidance and agree with ERWG:
 - i. Explanation and illustration on what exactly drainability is, and which factors determine the drainability in a plantation, (+what is visible and can be determined *by eye*, what is invisible and should be measured)
 - ii. Explanation on short- term and long term consequences of reaching the drainability limit
 - iii. Examples + pictures
 - b. Analyse the guidance (in Powerpoint) developed by Dr Lim and distributed by Mukesh and determine which parts can be used for the qualitative guidance.
 - c. Make this guidance completely compliant to the P&C and refer to other (RSPO) documents

Who: external expert/consultant (analyses and preparing document), and ERWG (review and improvements)

For the required quantitative analyses, we can choose for the next step, or directly go to step 3.

- ii. What: research on the applicability of the Duflow model (current BMP) for the calculation (the quantitative part) of the time that it takes to reach (two cycles away from) the drainage limit drainage limit: can we use the Duflow Model for this calculation (applicability, error, significance etc). Outcome:

- a. Yes, we can use this model (which I do not expect based on a quick analyses).
 - i. Then improve the current BMP so that it is usable for growers:
 - 1. Improve text
 - 2. Illustrations and examples
 - 3. Make sure that the 'whole story' is in this guidance (time that it takes to reach 'two cycles away' from the drainage limit)
 - ii. Test the model with at least 5 growers on applicability and outcome
 - iii. Plan training for growers etc etc

Who: Model developer (Netherlands, WUR) or specialist/master student and ERGW (tests)

- iii. What: Further develop a quantitative guidance document based on the draft by Wetlands International:
 - a. Determine gaps in current draft
 - b. Comply to P&C and provide clear guidance on the following steps:
 - i. Assessment of the drainage limit based on the distance to the closest water body and including tides.
 - ii. Assessment of the thickness of the peat layer and thickness of the peat layer above the drainage limit
 - iii. Assessment of the soil subsidence rate OR the use of a conservative and science-based default factor for the soil subsidence rate (foot note: 'conservative' means a 'relatively high rate', in view of the need for precaution and based on internationally peer reviewed published science)
 - iv. Assessment of the period of time that it takes to reach the drainage limit
 - c. Test with growers
 - d. Determine the format+location of this guidance
 - e. Implement/include in trainings/workshops etc

Who: external expert/consultant (analysis and completing guidance), ERGW (tests)

Terms of Reference

Development of guidance for peat drainability assessments for complying with Indicator 4.3.5 of Criterion 4.3

1. Objective

To develop practical and detailed step-by-step guidelines for a peat drainability assessment to determine the long-term viability of the necessary drainage for oil palm.

2. Background

Indicator 4.3.5 of RSPO Principle & Criteria (2013) is stating that 'drainability assessments shall be required prior to replanting on peat to determine the longterm viability of the necessary drainage for oil palm growing'. This indicator requiring RSPO members cultivating on peat to conduct a drainability assessments prior to replanting to determine the suitability. If the assessment indicates high risk of serious flooding and/or salt water intrusion within two crop cycles, growers and planters should consider ceasing replanting and plans should be in place for appropriate rehabilitation of alternative use of such areas.

In view of the need to provide guidance to RSPO members for ensuring sustainability, the Manual on Best Management Practices (BMPs) for Existing Oil Palm Cultivation on Peat is developed and published in 2013. Current guidance on how to conduct a drainability assessment, including the use of the 'Duflow Model', is captured under Chapter 3.6 (Replanting Practice) of the BMP.

It came to the attention of the RSPO Emission Reduction Working Group (ERWG) that current guidance provided in the RSPO Manual for conducting the drainability assessment is difficult to understand and may be insufficient to fulfil the requirements under indicator 4.3.5.

We seek for a robust and 'easy to understand' guidance on how 'high risk of serious flooding/salt water intrusion within two crop-cycles' can be determined by growers for their oil palm cultivation on peat. To determine the time that it takes to reach the 'point in time' of serious flooding, at least the following variables need to be known:

- i. the drainage limit, considering tidal and seasonal fluctuations of the water table.
- ii. the total thickness of the peat layer and the thickness of the peat layer above the drainage limit
- iii. the soil subsidence rate
- iv. the period of time that it takes for the peat to subside to the drainage limit

3. Expected output

- i. Refined and updated, to provide improved clarity and practical guidance, on existing drainability assessment guidance provided under Chapter 3.6 Replanting Practice of RSPO Manual on Best Management Practices (BMPs) for Existing Oil Palm Cultivation on Peat.

- ii. Analyses of the applicability of the Duflow model for indicating high risk of serious flooding and/or salt water intrusion within two crop cycles, and thus to indicate the potential for replanting.
- iii. Analyses of other approaches (including materials provided by ERWG) that can be used to indicate high risk of serious flooding and/or salt water intrusion within two crop cycles, and thus to indicate the potential for replanting.
- iv. Development of a practical and step-by-step guidance for the application of appropriate method for the purposes of assessing the suitability for oil palm replanting.

4. Guiding Principles

Deliverables required under this ToR:

A robust drainability assessment guideline, Practical to be used on the ground, and testing with grower/users. To come to this robust drainability assessment guideline for assessing the risk of serious flooding/salt water intrusion within two crop cycles, the following deliverables are needed

- i. An analytical report on the applicability of methods, including of 'Duflow Model' for the purpose of assessing the risk of serious flooding/salt water intrusion within two crop cycles
- ii. The identified method shall be:
 - a. Cost effective and practical
 - b. Testing with grower/users for different situation and scenario (e.g. by PLWG members)

5. Timeline:

Report on the review findings and methods identified – within 3 months

Testing with grower/users – within 2 months after the report

Final report – within 1 month after testing

ERWG Reference Paper

Impact of Peat Rewetting and Rehabilitation on GHG emission in Peatland Set Aside Areas

Introduction

In peatland set-aside areas and peatland areas adjacent to the plantation (forest or not-forest) it is important to prevent fires, to minimize emissions and to minimize carbon losses. As required by RSPO, growers shall present management and monitoring actions to maintain, manage or enhance such areas. Outcome of actual monitoring result shall be incorporated during reporting.

If the natural hydrological functioning of a peatland is influenced by drainage, restoration of the hydrological functioning through rewetting is important. A number of ways to restore the wetland hydrology are outlined in the RSPO BMP for management and rehabilitation of natural vegetation associated with oil palm cultivation on peat (e.g. pages 44-47 and 87-89).

Calculation and accounting of (1) sequestration of above ground carbon, (2) avoided peatland emissions and (3) emission reductions may be possible. It depends, amongst others, on the original status of the peatlands which emissions reductions, carbon gains and or/emission avoidances can be achieved.

This reference paper is developed by Wetland International and adopted by ERWG.

Calculations of carbon sequestration and emission reduction after rewetting/conservation/rehabilitation in peatland set-asides and adjacent areas

1. Above ground carbon

a. Sequestration or gain of above ground carbon

By applying good management (pages 43-71 BMP) in forested peatland set-aside areas and areas that are adjacent to the plantation, negative impacts and degradation can be avoided. This may even lead to sequestration of carbon through above ground biomass growth. Also, rehabilitation of peat swamp forests in degraded sites may lead to sequestration of carbon in above ground biomass, and there are other situations where good management may lead to carbon sequestration.

Ways to determine carbon sequestration are:

- Using default values for biomass increase, peer reviewed and internationally approved (TIER 1)
- Using region specific default values for biomass increase from peer reviewed scientific studies (TIER 2)
- Using annual non-destructive measurement-based estimates of biomass increase in the site (TIER 3)

Regional default data is only applicable for set aside areas that represent the forest quality described as in the research where the numbers are extracted from. In principle the ERWG endorses the

proposed defaults (reference!!), but performing own measurements and monitoring in the field is recommended.

Details on how to measure above ground carbon can be found in literature, and specifically in the RSPO paper on “*Methods for determining greenhouse gas emissions and carbon stocks from oil palm plantations and their surroundings in tropical peatlands*” (RSPO, 2013). Implementation of the possibility to calculate above ground carbon sequestration by using PalmGHG will be progressed, but some steps need to be taken.

Example of above ground sequestration

Rehabilitation of peat swamp forest with species with an average sequestration rate of 2.5 tC/ha or **9.2 t CO₂ per year**.

b. Avoided loss of above ground carbon

If a forested peatland that was identified for development and/or logging is protected, conserved and rehabilitated, the forest carbon that is on the peatland is avoided to be lost. Some internationally approved methodologies for carbon accounting deal with avoided losses.

Example of above ground avoided loss

Baseline: oil palm development, time average C stock 64 t C ha⁻¹ (the growers could clear for plantation development)

Set-aside (if the grower decides to set-aside the forest voluntarily): conservation of peat swamp forest, time average C stock 124 t C ha⁻¹

Avoided C loss is 60 t C or **220 t CO₂-eq ha⁻¹ in total**.

c. Emissions reductions from peatlands

If the natural hydrological functioning of a peatland is influenced by drainage, restoration of the hydrological functioning through rewetting leads to emissions reductions. A grower is encouraged to restore the hydrological functioning of e.g. the peatlands set-aside areas to avoid fire, minimize soil subsidence, minimize emissions on-site and off-site. To calculate the emissions reduction after rewetting, different approaches can be used:

- Using default values for emissions or as inputs for emissions calculations, peer reviewed and internationally approved (TIER 1, such as IPCC)
- Using region specific default values for emissions or as inputs for emissions calculations, from peer reviewed scientific studies (TIER 2)
- Using water table measurements and/or soil subsidence measurements for determining emissions and/or direct emission measurement from the site (TIER 3)

Approach: compare the emissions in the baseline (oil palm) with the emissions in the scenario of set-aside and conservation (e.g. wet- and forested peatland).

Example Peatland emission reductions

Baseline: oil palm development, average annual WT -60 cm:

- CO2: 0.91 ton CO2 x 60 cm of drainage per ha per year¹ (*ref RSPO PalmGHG)
- CH4: assumed 0 ton CH4 per ha per year
- N2O: assumed 16 kg N2O-N or 7.4 ton CO2-eq per ha per year

Set-aside: conservation of peatland and rewetting, average annual WT -10 cm

- CO2: 0.91 ton CO2 x 10 cm of drainage per ha per year (ref RSPO PalmGHG)
- CH4: 41 kg CH4-C per ha per year (Table 2, IPCC Wetlands Supplement) = 1.53 ton CO2-eq per ha per year
- N2O: assumed 0 ton N2O per ha per year

In this case rewetting will result in an emission reduction of **51.37 ton CO2-eq per ha per year**.

Annex 1 Defaults that can be used for the calculations of peatland emissions

1. Emission factors for *drained peatlands*

Land use	Emissions CO2	Emissions CH4	Emissions N2O	Source
Oil palm	0,91 ton per ha per year for each cm of drainage	Assumed zero	7.4 t CO2-eq per hectare per year	PalmGHG
Other land uses	IPCC Wetlands Supplement	Assumed zero	IPCC Wetlands Supplement	IPCC Wetlands Supplement

¹ This factor may be adjusted in future depending on additional research

2. Emission factors for rewetted peatlands

Table 1. Emissions of ton CO₂-C ha⁻¹ yr⁻¹ for rewetted organic soils (IPCC 2013).

TABLE 3.1 DEFAULT EMISSION FACTORS (EF _{CO₂}) AND ASSOCIATED UNCERTAINTY, FOR CO ₂ -C FROM REWETTED ORGANIC SOILS (ALL VALUES IN TONNES CO ₂ -C HA ⁻¹ YR ⁻¹).			
Climate zone	Nutrient status	EF _{CO₂}	95% range
Boreal*	Poor	-0.34 (n=26)	-0.59 – -0.09
	Rich	-0.55 (n=39)	-0.77 – -0.34
Temperate**	Poor	-0.23 (n=43)	-0.64 – +0.18
	Rich	+0.50 (n=15)	-0.71 – +1.71
Tropical***		0	

Note: Negative values indicate removal of CO₂-C from the atmosphere. n = number of sites. 95% confidence interval is used to give the 95% range.

* Emission factors for boreal rewetted organic soils derived from the following source material (see Annex 3 A.1 for details): Bubier *et al.*, 1999; Komulainen *et al.*, 1999; Soegaard & Nordstroem, 1999; Tuittila *et al.*, 1999; Waddington & Price, 2000; Waddington & Roulet, 2000; Alm *et al.*, 1997; Laine *et al.*, 1997; Suyker *et al.*, 1997; Whiting & Chanton, 2001; Heikkinen *et al.*, 2002; Harazono *et al.*, 2003; Nykänen *et al.*, 2003; Yli-Petäys *et al.*, 2007; Kivimäki *et al.*, 2008; Nilsson *et al.*, 2008; Sagerfors *et al.*, 2008; Aurela *et al.*, 2009; Drewer *et al.*, 2010; Soini *et al.*, 2010; Maanaviija *et al.*, 2011.

** Emission factor for temperate rewetted organic soils derived from the following source material but is not significantly different from zero (see Annex 3 A.1 for details): Shurpali *et al.*, 1995; Lafleur *et al.*, 2001; Wickland, 2001; Aurela *et al.*, 2002; Schulze *et al.*, 2002; Petrone *et al.*, 2003; Roehm & Roulet, 2003; Billett *et al.*, 2004; Drösler, 2005; Nagata *et al.*, 2005; Bortoluzzi *et al.*, 2006; Hendriks *et al.*, 2007; Jacobs *et al.*, 2007; Lund *et al.*, 2007; Riutta *et al.*, 2007; Roulet *et al.*, 2007; Wilson *et al.*, 2007; Augustin & Chojnicki, 2008; Caganpan & Waddington, 2008; Golovatskaya & Dyukarev, 2009; Kurbatova *et al.*, 2009; Drewer *et al.*, 2010; Waddington *et al.*, 2010; Adkinson *et al.*, 2011; Augustin *et al.* in Couwenberg *et al.*, 2011; Koehler *et al.*, 2011; Christensen *et al.*, 2012; Urbanová, 2012; Strack & Zuback, 2013; Drösler *et al.*, 2013; Herbst *et al.*, 2013; Wilson *et al.*, 2013.

*** For tropical rewetted organic soils where decayed organic material is not oxidised due to saturated conditions.

Table 2. Emissions of kg CH₄-C ha⁻¹ yr⁻¹ for rewetted organic soils.

TABLE 3.3 DEFAULT EMISSION FACTORS FOR CH ₄ FROM REWETTED ORGANIC SOILS (ALL VALUES IN KG CH ₄ -C HA ⁻¹ YR ⁻¹)			
Climate zone	Nutrient Status	EF _{CH₄}	95% range
Boreal*	Poor	41 (n=39 sites)	0.5 – 246
	Rich	137 (n=35 sites)	0 – 493
Temperate**	Poor	92 (n=42 sites)	3 – 445
	Rich	216 (n=37 sites)	0 – 856
Tropical***		41 (n=11 sites)	7 – 134

* Derived from the following source material (see Annex 3 A.3 for details): Alm *et al.*, 1997; Bubier *et al.*, 1993; Clymo & Reddaway, 1971; Drewer *et al.*, 2010; Gauci *et al.*, 2002; Juottonen *et al.*, 2012; Komulainen *et al.*, 1998; Laine *et al.*, 1996; Nykänen *et al.*, 1995; Tuittila *et al.*, 2000; Urbanová *et al.*, 2012; Verma *et al.*, 1992; Waddington & Roulet, 2000; Whiting & Chanton, 2001; Yli-Petäys *et al.*, 2007; Strack & Zuback, 2013.

** Augustin & Merbach, 1998; Augustin, 2003; Augustin *et al.*, 1996; Augustin in Couwenberg *et al.*, 2011; Bortoluzzi *et al.*, 2006; Cleary *et al.*, 2005; Crill in Bartlett & Harris, 1993; Dise & Gorham, 1993; Drösler, 2005; Drösler *et al.*, 2013; Flessa *et al.*, 1997; Glatzel *et al.*, 2011; Harriss *et al.*, 1982; Hendriks *et al.*, 2007; Jungkunst & Fiedler, 2007; Koehler *et al.*, 2011; Nagata *et al.*, 2005; Nilsson *et al.*, 2008; Roulet *et al.*, 2007; Scottish Executive, 2007; Shannon & White, 1994; Sommer *et al.*, 2003; Tauchnitz *et al.*, 2008; Von Arnold, 2004; Waddington & Price, 2000; Wickland, 2001; Wild *et al.*, 2001; Wilson *et al.*, 2009, 2013; Beetz *et al.*, 2013.

*** Derived from the following source material from undrained sites (see Annex 3 A.3 for details): Furukawa *et al.*, 2005; Hadi *et al.*, 2001, 2005; Inubushi *et al.*, 1998; Jauhainen *et al.*, 2001, 2004, 2005, 2008; Melling *et al.*, 2012; Pangala *et al.*, 2012.

ERWG Reference Paper

An approach for taking into account off site impacts

by Wetlands International

Introduction

According to the RSPO P&C 2013, RSPO growers that comply to RSPO's P&C have to identify and assess their off-site impacts in relation to 5.6. This implies the assessment of GHG emissions and carbon stock changes outside the plantation (off-site) as a result of on-site and off-site activities. Reducing any off-site impacts shall be considered in mitigation plans.

This discussion paper describes how RSPO growers could assess their off-site impacts in relation to 5.6 and which off-site impacts shall be considered in relation to Criteria 5.6. Off-site impacts could be a result of peat drainage, fire caused by on-site activities and/or peat drainage but also from construction and infrastructure development.

This discussion paper does not consider the off-site impacts that are related to 'soil and water resources (Criteria 4.3 and 4.4) and 'biodiversity and ecosystems and people's amenity' (Criteria 6.1). This discussion paper is also restricted to the off-site impacts in relation to above ground carbon-stocks and peat emissions.

- A follow-up action for RSPO should be to also develop an approach for assessing off-site impacts from water soil- and water resources (Principle 4.3 and 4.4). Movement of sediments and agricultural pollutants into watercourses may pollute, downstream watercourses and water bodies.
- In the P&C there is no specific mention of off-site impact considerations in the calculation regarding Criteria 7.8. This is something that could be brought into the next P&C (is this a task for the ERWG to discuss?).
- The applicability of PalmGHG for reporting of off-site impacts shall be evaluated. If the current version of PalmGHG does not allow the reporting of off-site impacts in relation to Criteria 5.6, then PalmGHG should be amended such that the reporting of off-site impacts is possible and that growers can comply to Criteria 5.1.

Off-site impacts in relation to Criteria 5.6

For now, the discussion on off-site impacts is restricted to the off-site impacts in relation to above ground carbon-stocks and peat emissions.

In peatlands, off-site impacts are generally drainage related because the on-site hydrology is connected to the hydrology of surrounding areas. A general assumption is that the zone that is directly hydrologically impacted (decreased water table, with highest impact near the drainage canal and gradually decreasing impact further away) is at least 500 meters wide, but the impact can often be up to 2 kilometers depending on peat qualities, drainage depth and subsidence. In the long term peat drainage may have an impact up to 5 kilometers. Consideration of off-site drainage based impacts is particularly relevant where the land-use in the off-site area (e.g. natural forested peatland, conservation area, set-aside area (also of other plantations), and paludiculture) is significantly different from on-site.

Criteria 5.1

guidance to indicators 5.1 – 5.3.

... 'Environmental impacts should be identified on soil and water resources (Criteria 4.3 and 4.4), air quality, greenhouse gases (Criterion 5.6), biodiversity and ecosystems, and people's amenity (Criterion 6.1), both on and off-site'...

1. On-site peat drainage that may lead to off-site impacts:
 - Increased GHG emissions from peat in the surrounding area
 - Increased fire emissions because of indirect peat drainage outside the boundary of the plantation.
 - Die-back of vegetation and reduced sequestration in the surrounding area
2. Off-site activities that are directly related to the plantation development and that lead to off-site impacts.
 - Development of new off-site infrastructure such as roads, ditches, storage etc.
 1. Increased GHG emissions as a result of peat drainage for construction
 2. Increased fire emissions
 3. Increased (illegal) encroachment resulting from increased accessibility by new roads which can result in enhanced emissions and fires.
 4. Losses of above ground biomass carbon by clearance, die-back of vegetation and reduced carbon sequestration because of new drainage.

The degree of off-site impact depends on the width of the bufferzone and the water table in this bufferzone. Defaults could be established for certain bufferzone width's (e.g. 50 meters, 100 meters, 150 meters upto 500 meters). The emissions reduction in the bufferzone within the concession area depends on water table.

There may be pre-existing infrastructure (plantation may not be the 1st impact).

These impacts may occur in the case that the plantation owner develops off-site infrastructure and/or does/did not take sufficient measures to prevent off-site impacts from drainage, encroachment and fire. Impacts can be from drainage and/or from clearance of vegetation.

Assumptions related to off-site impacts in peatlands (both 7.8 and 5.6)

1. If there is hydrological connection of the plantation area with surrounding peatland with a different water table and if no measures are taken to avoid off-site drainage, then the assumption is that surrounding peatland is impacted by drainage in a **0.5 km zone**** assuming a gradual WT between the oil palm plantation and the surrounding (shallow drained or undrained) area. The emissions from this impacted zone shall be calculated from the average water table and/or by default.

**The width of the buffer zone, the zone in which negative effects of surrounding drainage occurs, shall if there is no use of the default as mentioned be determined on the basis of quantitative hydrological modeling, literature references or expert judgment, and usually ranges between 0-5 km

2. If there is hydrological connection with surrounding peatland and measures are taken to avoid off site impacts by means of e.g. a hydrological bufferzone within the concession area, then the assumption is that surrounding peatland is impacted unless water table measurements at the concession boundary have shown that the impact is zero.
3. If there is proven to be no hydrological connection with surrounding peatland (e.g. by blocking of drainage canals on the border of the plantation or a buffer zone within the plantation which has proven to be of sufficient width) then the assumption is that there is no off-site impact in terms of peatland emissions

- Off-site impacts between two (plantation) concessions with similar annual average water table are considered zero.

What to account - and how to account for off-site impacts

- If there is infrastructure developed (mills, roads, ponds, ditches) or other construction outside the concession area, directly related to the plantations activities, the emissions shall be accounted for, based on the size of the area of such development and a scientific justifiable default emissions factor.
- If there is any loss of above ground biomass carbon or peat carbon e.g. (by drainage or fire), or any other GHG emissions which are directly or indirectly related to the activities in the plantation, then there shall be accounted for.

Currently, it is not possible to register and account for of off-site impacts from on-site and off-site activities in relation to Criteria 5.6 in the PalmGHG tool.

Proposed accounting approach for

- CO₂ emission from peat as a result of drainage:

A 500 m wide impact zone around the concession or around off-site infrastructure (on drained peat) is assumed if the land-use in this zone or around infrastructure involves shallow drainage or no-drainage. In this impacted zone peat emissions can be calculated:

- If no measures are taken to avoid off-site impacts.

$$Emission_{CO_2 impactzone} = 0,91 * averageWT_{impactzone} * Area\ of\ impact$$

Where,

$$averageWT_{impactzone} = 0,5 * (annual_averageWT_{oilpalmplantation} + annual_averageWT_{surroundingarea})$$

Average WT's in cm

Area of impact is in ha

$Emission_{CO_2 impactzone}$ is in ton CO₂ ha⁻¹ yr⁻¹)

The water table in the 500 m impacted zone is than assumed the average water table between the oil palm plantation and the surrounding area. By using the EF of 0,91 ton CO₂ ha⁻¹ yr⁻¹ for each cm of drainage and the total area of impacted zone (in ha), the total emission can be calculated.

- If the grower has established a bufferzone inside the concession area

The width of the buffer zone and the depth of the water table in the bufferzone will determine the remaining offsite impacts that need to be taken into account. Creating a bufferzone within the concession area and around off-site infrastructure can significantly reduce the off-site impacts, as the main drainage impact is closest to the drainage channel. For calculations based on water table the approach under (a) can be used. The establishment of default emissions for different buffer zone width will require further literature study.

2. Loss of above ground and below-ground carbon that is related to the plantation and its activities:
 - a. Off-site carbon losses from degradation of above ground biomass as a result of clearance and/or dieback of vegetation because of drainage can be calculated per default as given in PalmGHG (<Mukesh please check>. The area of impact shall be monitored by using satellite imagery. The type of vegetation that is lost can be determined from satellite imagery or can be determined in the field (follow description in the GHG assessment procedures)
 - b. Off-site above ground- and peat carbon losses as a result of fire can be determined by
 - Determination of the total area of the fire scar e.g. from satellite imagery or field assessments.
 - Calculation of the above ground carbon losses based on the vegetation type (from satellite or field assessments) and use defaults for carbon-content per vegetation type (follow descriptions of the GHG assessment procedures).
 - Use an average fire scar depth for peat and calculate peat carbon loss by calculating the volume of peat lost and assuming that the peat contains 50% carbon. (include refs, descriptions following e.g. VCS)
 - c. Off-site above ground- and peat carbon losses as a result of encroachment related to building of roads for access to the plantation (this is a loss of carbon which is directly related to the existence of the plantation which (somehow) needs to be taken into account. Further discussion is needed.

Guidance for avoiding off-site impacts as a result of peat drainage

Establishment of a Buffer Zone

A bufferzone inside a plantation area/within the concession area should preferably designed in such a way that the negative effect of drainage activities that occur inside the plantation area or concession area on the surrounding area is minimised (eg, enhanced drainage, groundwater extraction, and changing water supply). This can be achieved either by an appropriate design (eg, by establishing an impermeable dam, by rewetting peatland surrounded by undrained peatland or by rivers) or by a buffer zone within the plantation. This buffer zone, if employed, should be mapped. The bufferzone-size must be determined on the basis of quantitative hydrological modeling; literature references or expert judgment.

It need to be ensured that the effect of hydrological connectivity with adjacent areas is insignificant (ie, causing no significant alteration of mean annual water table depths in such areas). This buffer zone, if employed, shall be mapped, the width of the buffer zone shall be determined on the basis of

quantitative hydrological modeling, or expert judgment and hydrological monitoring shall be performed.

If a buffer zone is established, water level gauges shall be installed in the plantation area and outside the plantation area to prove that the buffer zone is of sufficient width. The number and spacing of water level gauges shall be based on hydrological modeling or expert judgment. In the case of an impermeable dam, to demonstrate its effectiveness, water level gauges shall be located outside the dam, which may require agreements with adjacent landowners. Significant drainage impacts, if occurring, shall be reported and must be limited to accidents that can be repaired (eg, the breaching of a dam). If off-site impacts are not fully avoided, growers should report off-site future emissions for peatlands (in tons of CO₂-eq for a 0-5 km bufferzone).

Off-site impacts in relation to new development

In the P&C there is no specific mention of off-site impact considerations in the calculation regarding Criteria 7.8. This is something that could be brought into the next P&C (is this a task for the ERWG to discuss?). The following impacts shall be registered and accounted for in relation to 7.8:

1. Expected off-site peat emissions caused by on-site drainage.
2. Expected off-site peat emissions caused by off-site drainage for activities directly related to the plantation (e.g. building of infrastructure such as roads).
3. Expected off-site loss of above ground biomass carbon caused development of the plantation and its infrastructure

Examples of various potential scenario's (these are just examples, we should also create examples from e.g. hydrological bufferzones within the concession area)

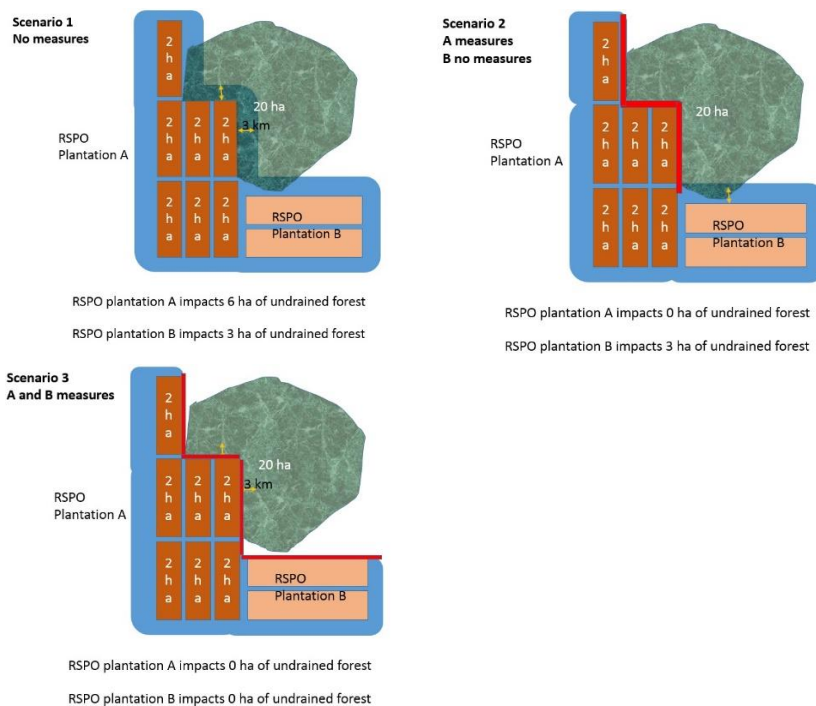
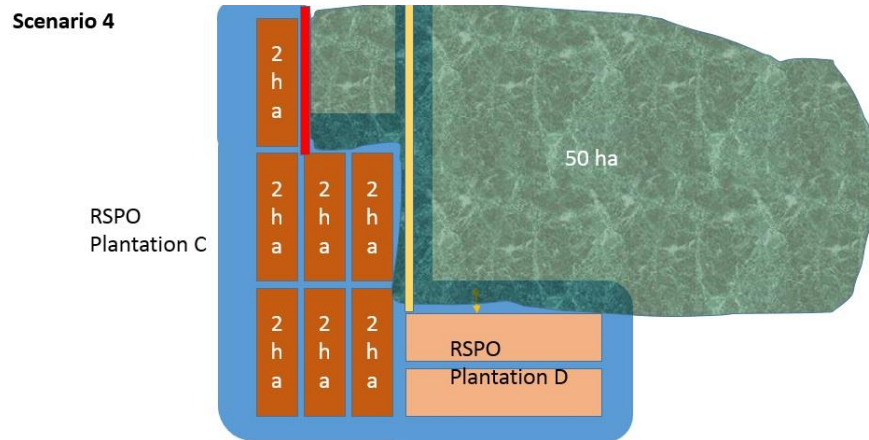


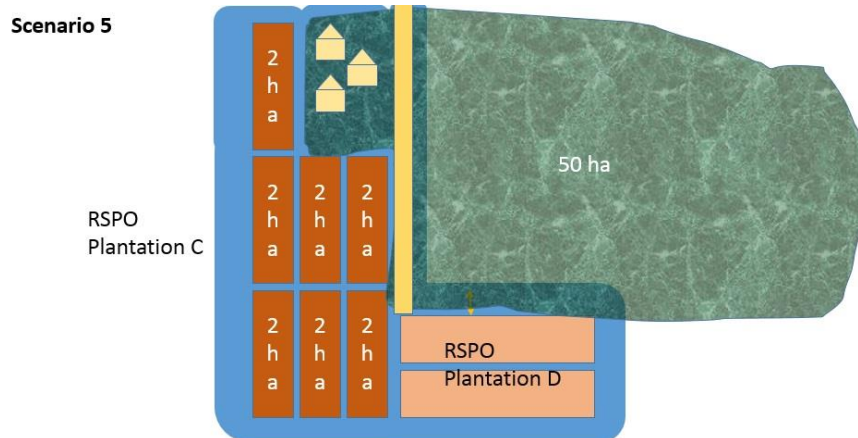
Figure 1. 3 potential scenario's for off-site impacts in the surrounding undrained forest. (please replace the 3 km impact zone by 0,5 km impact zone, we will amend this asap). The red stripes represent a hydrological block.



RSPO plantation C impacts 8 ha of undrained forest by drainage for plantation and road

RSPO plantation D impacts 6 ha of undrained forest by drainage for plantation and road

Figure 2. Potential scenario for off-site impacts in surrounding undrained forest, related to peat drainage and a road that is build to give access to the plantation (yellow). The red stripe represents a hydrological block.



RSPO plantation C impacts 12 ha of undrained forest by drainage for plantation and road and settlements

RSPO plantation D impacts 6 ha of undrained forest by drainage for plantation and road

Figure 2. Potential scenarios for off-site impacts in surrounding undrained forest, related to peat drainage and infrastructure/settlements.

Annex 7. PLWG-2 comments into P&C (2013) Review

No	Principle & Criteria	Indicators/Guidance	Proposed Changes	Remarks
4.3	Practices minimise and control erosion and degradation of soils.	<p>Indicators:</p> <p>4.3.1 (M) Maps of any fragile soils shall be available.</p> <p>4.3.2 A management strategy shall be in place for plantings on slopes above a certain limit (this needs to be soil and climate specific).</p> <p>4.3.3 A road maintenance programme shall be in place.</p> <p>4.3.4 (M) Subsidence of peat soils shall be minimised and monitored. A documented water and ground cover management programme shall be in place.</p> <p>4.3.5 Drainability assessments shall be required prior to replanting on peat to determine the longterm viability of the necessary drainage for oil palm growing.</p> <p>4.3.6 A management strategy shall be in place for other fragile and problem soils (e.g. sandy, low organic matter, acid sulphate soils).</p>	<p>Guidance inclusion:</p> <ul style="list-style-type: none"> - guidance on what is considered or classified as fragile soil - harmonise of all different terms use (fragile soil, problem soil etc) - guidance on monitoring and minimisation of subsidence on peatland <p>Indicator inclusion:</p> <ul style="list-style-type: none"> - specific indicators relating to peatland management (e.g. water level management; fertiliser application) 	<p>Within Annex 2 of P&C (2013) it is noted that RSPO should develop technical guidance on identification of fragile soils for countries without NI.</p>
		<p>Specific Guidance:</p> <p>For 4.3.4: For existing plantings on peat, the water table should be maintained at an average of 50cm (between 40 - 60cm) below ground surface measured with groundwater piezometer readings, or an average of 60cm (between 50 - 70cm) below ground surface as measured in water collection drains, through a network of appropriate water control structures e.g. weirs, sandbags, etc. in fields, and watergates at the discharge points of main drains (Criteria 4.4 and 7.4).</p> <p>For 4.3.5: Where drainability assessments have identified areas unsuitable for oil palm replanting, plans should be in place for appropriate rehabilitation or alternative use of such areas. If the assessment indicates high risk of serious flooding and/or salt water intrusion within two crop cycles, growers and planters should consider ceasing replanting and implementing rehabilitation.</p>	<p>Guidance inclusion:</p> <ul style="list-style-type: none"> - guidance on the results of drainability assessment determining 'unsuitable for oil palm planting' and/or 'high risk' <p>Specific guidance inclusion:</p> <ul style="list-style-type: none"> - made public soil map and summary table on the extent of peat (planted and conservation set-aside); as well as types of peat 	<p>More information needed to assess the impacts of subsidence and drainability assessment.</p>
		<p>Guidance:</p> <p>Plantations on peat should be managed at least to the standard set out in the 'RSPO Manual on Best Management Practices (BMPs) for existing oil palm cultivation on peat', June 2012 (especially water management, fire avoidance, fertiliser use, subsidence and vegetation cover).</p> <p>Techniques that minimise soil erosion are well known and should be adopted, where appropriate. These should include practices such as ground cover management, biomass recycling, terracing, and natural regeneration or restoration instead of replanting.</p> <p>For National Interpretation:</p> <p>National Interpretation (or an RSPO recognised parallel means) will refer to national guidance, and identify the best management practices and appropriate techniques for maintaining soil quality in local conditions, including guidance on soil types, and any appropriate performance thresholds such as maximum acceptable slope gradient for planting</p>		
4.4	Practices maintain the quality and availability of surface and ground water	<p>Indicators:</p> <p>4.4.1 An implemented water management plan shall be in place.</p> <p>4.4.2 (M) Protection of water courses and wetlands, including maintaining and restoring appropriate riparian and other buffer zones (refer to national best practice and national guidelines) shall be demonstrated.</p> <p>4.4.3 Appropriate treatment of mill effluent to required levels and regular monitoring of discharge quality, especially Biochemical Oxygen Demand (BOD), shall be in compliance with national regulations (Criteria 2.1 and 5.6).</p> <p>4.4.4 Mill water use per tonne of Fresh Fruit Bunches (FFB) (see Criterion 5.6) shall be monitored.</p>	<p>Guidance inclusion:</p> <ul style="list-style-type: none"> - guidance on riparian and/or buffer zone identification 	

		<p>Specific Guidance: For 4.4.1: The water management plan will:</p> <ul style="list-style-type: none"> • Take account of the efficiency of use and renewability of sources; • Ensure that the use and management of water by the operation does not result in adverse impacts on other users within the catchment area, including local communities and customary water users; • Aim to ensure local communities, workers and their families have access to adequate, clean water for drinking, cooking, bathing and cleaning purposes; • Avoid contamination of surface and ground water through run-off of soil, nutrients or chemicals, or as a result of inadequate disposal of waste including Palm Oil Mill Effluent (POME). <p>For 4.4.2: Refer to the 'RSPO Manual On Best Management Practices (BMP) for management and rehabilitation of natural vegetation associated with oil palm cultivation on peat', July 2012.</p> <p>Guidance: Growers and millers should address the effects of their use of water and the effects of their activities on local water resources.</p> <p>For National Interpretation: National Interpretation will refer to national guidelines or best practice and where appropriate include performance thresholds for requirements such as the size and location and methods of restoration of riparian strips or acceptable maximum run-off levels.</p>		
5.1	Aspects of plantation and mill management, including replanting, that have environmental impacts are identified, and plans to mitigate the negative impacts and promote the positive ones are made, implemented and monitored, to demonstrate continual improvement.	<p>Indicator: 5.1.1 (M) An environmental impact assessment (EIA) shall be documented. 5.1.2 Where the identification of impacts requires changes in current practices, in order to mitigate negative effects, a timetable for change shall be developed and implemented within a comprehensive management plan. The management plan shall identify the responsible person/persons. 5.1.3 This plan shall incorporate a monitoring protocol, adaptive to operational changes, which shall be implemented to monitor the effectiveness of the mitigation measures. The plan shall be reviewed as a minimum every two years to reflect the results of monitoring and where there are operational changes that may have positive and negative environmental impacts.</p> <p>Guidance: The EIA should cover the following activities, where they are undertaken:</p> <ul style="list-style-type: none"> • Building new roads, processing mills or other infrastructure; • Putting in drainage or irrigation systems; • Replanting and/or expansion of planting areas; • Management of mill effluents (Criterion 4.4); • Clearing of remaining natural vegetation; • Management of pests and diseased palms by controlled burning (Criteria 5.5 and 7.7). <p>Impact assessment can be a non-restrictive format e.g. ISO 14001 EMS and/or EIA report incorporating elements spelt out in this Criterion and raised through stakeholder consultation. Environmental impacts should be identified on soil and water resources (Criteria 4.3 and 4.4), air quality, greenhouse gases (Criterion 5.6), biodiversity and ecosystems, and people's amenity (Criterion 6.1), both on and off-site.</p> <p>Stakeholder consultation has a key role in identifying environmental impacts. The inclusion of consultation should result in improved processes to identify impacts and to develop any required mitigation measures.</p> <p>For smallholder schemes, the scheme management has the responsibility to undertake impact assessment and to plan and operate in accordance with the results (refer to 'Guidance for Independent Smallholders under Group Certification', June 2010).</p> <p>For National Interpretation: National Interpretation will consider any national legal requirements together with any other issues that are not required by law but are nevertheless important, e.g. independent social and environmental impact assessment (SEIA) for replanting may be desirable under specific situations.</p>	<p>Guidance inclusion: - Indicator 5.1.3, guidance on the nature of the review of the management plan</p> <p>Guidance inclusion: - landscape approach and drainability assessment as required under the mitigation plan and continual improvement (indicator 5.1.3).</p>	This criterion is for existing plantation and it should not include more guidance on activities needed for the EIA, as it will implies retrospective assessment

5.5	Use of fire for preparing land or replanting is avoided, except in specific situations as identified in the ASEAN guidelines or other regional best practice.	<p>Indicators:</p> <p>5.5.1 (M) There shall be no land preparation by burning, other than in specific situations as identified in the 'Guidelines for the Implementation of the ASEAN Policy on Zero Burning' 2003, or comparable guidelines in other regions.</p> <p>5.5.2 Where fire has been used for preparing land for replanting, there shall be evidence of prior approval of the controlled burning as specified in 'Guidelines for the Implementation of the ASEAN Policy on Zero Burning' 2003, or comparable guidelines in other regions.</p> <p>Guidance:</p> <p>Fire should be used only where an assessment has demonstrated that it is the most effective and least environmentally damaging option for minimising the risk of severe pest and disease outbreaks, and exceptional levels of caution should be required for use of fire on peat. This should be subject to regulatory provisions under respective national environmental legislation.</p> <p>Extension/training programmes for associated smallholders may be necessary.</p> <p>For National Interpretation:</p> <p>National Interpretation will identify any specific situations where such use of fire may be acceptable, for example through reference to 'Guidelines for the Implementation of the ASEAN Policy on Zero Burning' 2003, or comparable guidelines in other regions.</p>		
5.6	Preamble	<p><i>Growers and millers commit to reporting on operational greenhouse gas emissions. However, it is recognised that these significant emissions cannot be monitored completely or measured accurately with current knowledge and methodology. It is also recognised that it is not always feasible or practical to reduce or minimise these emissions.</i></p> <p><i>Growers and millers commit to an implementation period until the end of December 2016 for promoting best practices in reporting to the RSPO, and thereafter to public reporting. Growers and millers make this commitment with the support of all other stakeholder groups of the RSPO.</i></p>		
5.6	Plans to reduce pollution and emissions, including greenhouse gases, are developed, implemented and monitored.	<p>Indicators:</p> <p>5.6.1 (M) An assessment of all polluting activities shall be conducted, including gaseous emissions, particulate/soot emissions and effluent (see Criterion 4.4).</p> <p>5.6.2 (M) Significant pollutants and greenhouse gas (GHG) emissions shall be identified, and plans to reduce or minimise them implemented.</p> <p>5.6.3 A monitoring system shall be in place, with regular reporting on progress for these significant pollutants and emissions from state and mill operations, using appropriate tools.</p> <p>Specific Guidance:</p> <p>For 5.6.2: Plans will include objectives, targets and timelines. These should be responsive to context and any changes should be justified.</p> <p>For 5.6.2 and 5.6.3: The treatment methodology for POME will be recorded.</p> <p>For 5.6.3 (GHG): For the implementation period until December 31st 2016, an RSPO-endorsed modified version of PalmGHG which only includes emissions from operations (including land use practices) can be used as a monitoring tool.</p> <p>For 5.6.3: In addition, during the implementation period, growers will start to assess, monitor and report emissions arising from changes in carbon stocks within their operations, using the land use in November 2005 as the baseline. The implementation and for the period 5.6.3 in the implementation period for Criterion 7.2.</p> <p>During the implementation period, reporting on GHG will be to a relevant RSPO working group (composed of all membership categories) which will use the information reported to review and fine tune the tools, emission factors and methodologies, and provide additional guidance for the process. Public reporting is desirable, but remains voluntary until the end of the implementation period.</p> <p>During the implementation period the RSPO working group will seek to continually improve PalmGHG, recognising the challenges associated with measuring GHG and carbon stock.</p> <p>PalmGHG or RSPO-endorsed equivalent will be used to assess, monitor and report GHG emissions. Parties seeking to use an</p>	<p>ERWG to look at the texts changes with the implementation period ended.</p> <p>Specific guidance inclusion: - potential emissions offset through peat re-wetting and/or conservation (credit)</p>	<p>There is a need to consider the mechanism and approach for the accounting of offset (or credit) through peat re-wetting and conservation efforts.</p>

		<p>Guidance: Where practically feasible, operations should follow best management practices to measure and reduce emissions. Advice on this is available from the RSPO.</p>		
7.1	A comprehensive and participatory independent social and environmental impact assessment is undertaken prior to establishing new plantings or operations, or expanding existing ones, and the results incorporated into planning, management and operations.	<p>Indicators: 7.1.1 (M) An independent social and environmental impact assessment (SEIA), undertaken through a participatory methodology including the relevant affected stakeholders, shall be documented. 7.1.2 Appropriate management planning and operational procedures shall be developed and implemented to avoid or mitigate identified potential negative impacts. 7.1.3 Where the development includes an outgrower scheme, the impacts of the scheme and the implications of the way it is managed shall be given particular attention.</p> <p>Guidance: (See also Criteria 5.1 and 6.1.) The terms of reference should be defined and impact assessment should be carried out by accredited independent experts, in order to ensure an objective process. Both should not be done by the same body. A participatory methodology including external stakeholder groups is essential to the identification of impacts, particularly social impacts. Stakeholders such as local communities, government departments and NGOs should be involved through the use of interviews and meetings, and by reviewing findings and plans for mitigation.</p> <p>It is recognised that oil palm development can cause both positive and negative impacts. These developments can lead to some indirect/secondary impacts which are not under the control of individual growers and millers. To this end, growers and millers should seek to identify the indirect/secondary impacts within the SEIA, and where possible work with partners to explore mechanisms to mitigate the negative indirect impacts and enhance the positive impacts.</p>	<p>Guidance inclusion: - landscape approach to be covered through EIA - drainability assessment for peatland</p>	1) Concern over the competency (appropriately qualified) of assessor (social and/or environmental impact assessor)
		<p>The potential impacts of all major proposed activities should be assessed in a participatory way prior to development. The assessment should include, in no order of preference and as a minimum:</p> <ul style="list-style-type: none"> • Assessment of the impacts of all major planned activities, including planting, mill operations, roads and other infrastructure; • Assessment, including stakeholder consultation, of High Conservation Values (see Criterion 7.3) that could be negatively affected; • Assessment of potential effects on adjacent natural ecosystems of planned developments, including whether development or expansion will increase pressure on nearby natural ecosystems; • Identification of watercourses and wetlands and assessment of potential effects on hydrology and land subsidence of planned developments. Measures should be planned and implemented to maintain the quantity, quality and access to water and land resources; • Baseline soil surveys and topographic information, including the identification of steep slopes, marginal and fragile soils, areas prone to erosion, degradation, Subsidence, and flooding; • Analysis of type of land to be used (forest, degraded forest, cleared land); • Analysis of land ownership and user rights; • Analysis of current land use patterns; • Assessment of potential social impacts on surrounding communities of a plantation, including an analysis of potential effects on livelihoods, and differential effects on women versus men, ethnic communities, and migrant versus long-term residents; • Identification of activities which may generate significant GHG emissions. 	<p>Guidance inclusion: - include of landscape approach (on and off-site impacts) - include a summary table for the extent</p>	Should include consideration on the applicability of landscape approach by smallholder

		<p>Plans and field operations should be developed and implemented to incorporate the results of the assessment. One potential outcome of the assessment process is that the development may not proceed because of the magnitude of potential impacts.</p> <p>For smallholder schemes, the scheme management should address this Criterion. For individual smallholders, this Criterion does not apply.</p> <p>Where there is no National Interpretation, for land areas greater than 500ha, a full independent assessment will be required. For land areas less than 500ha, an internal assessment using selected components of SEIA and HCV assessments can be used. Where such internal assessments identify significant environmentally or socially sensitive areas or issues, an independent assessment will be undertaken.</p> <p>For National Interpretation: National Interpretation will identify the relevant accreditations for independent experts. National Interpretation will consider setting an appropriate threshold for the size of new plantings, below which an internal assessment is allowed, and above which an independent SEIA is required. This will list negative social impacts (e.g. displacement, loss of the livelihoods of local peoples, etc.) in the national context.</p>		
7.2	Soil surveys and topographic information are used for site planning in the establishment of new plantings, and the results are incorporated into plans and operations.	<p>Indicators: 7.2.1 (M) Soil suitability maps or soil surveys adequate to establish the long-term suitability of land for oil palm cultivation shall be available and taken into account in plans and operations. 7.2.2 Topographic information adequate to guide the planning of drainage and irrigation systems, roads and other infrastructure shall be available and taken into account in plans and operations.</p> <p>Guidance: These activities can be linked to the Social and Environmental Impact Assessment (SEIA) (see Criterion 7.1) but need not be done by independent experts.</p> <p>Soil suitability maps or soil surveys should be appropriate to the scale of operation and should include information on soil types, topography, hydrology, rooting depth, moisture availability, stoniness and fertility to ensure long-term sustainability of the development. Soils requiring appropriate practices should be identified (see Criteria 4.3 and 7.4). This information should be used to plan planting programmes, etc. Measures should be planned to minimise erosion through appropriate use of heavy machinery, terracing on slopes, appropriate road construction, rapid establishment of cover, protection of riverbanks, etc. Areas located within the plantation perimeters that are considered unsuitable for long-term oil palm cultivation will be delineated in plans and included in operations for conservation or rehabilitation as appropriate (see Criterion 7.4).</p> <p>Assessing soil suitability is also important for smallholders, particularly where there are significant numbers operating in a particular location. Information should be collected on soil suitability by companies planning to purchase Fresh Fruit Bunches (FFB) from potential developments of independent smallholders in a particular location. Companies should assess this information and provide information to independent smallholders on soil suitability, and/or in conjunction with relevant government/public institutions and other organisations (including NGOs) provide information in order to assist independent smallholders to grow oil palm sustainably.</p> <p>For National Interpretation: National Interpretation will specify the local or national code of practice or other guidelines that should be followed, or set out what 'good practice' constitutes within the local and national context.</p>		
7.4	Extensive planting on steep terrain, and/or marginal and fragile soils, including	<p>Indicators: 7.4.1 Maps identifying marginal and fragile soils, including excessive gradients and peat soils, shall be available and used to identify areas to be avoided 7.4.2 (M) Where limited planting on fragile and marginal soils, including peat, is proposed, plans shall be developed and implemented to protect them without incurring adverse impacts.</p>	<p>Guidance inclusion: - soil map made public, specific information, such as peat depth, types and extent to be included</p>	soil map and new development areas are made public through NPP document (existing NPP process)

	peat, is avoided.	<p>Guidance: This activity should be integrated with the social and environmental impact assessment (SEIA) required by Criterion 7.1.</p> <p>Planting on extensive areas of peat soils and other fragile soils should be avoided (see Criterion 4.3). Adverse impacts may include hydrological risks or significantly increased risks (e.g. fire risk) in areas outside the plantation (see Criterion 5.5).</p> <p>For National Interpretation: National Interpretation will determine specific controls and thresholds, such as slope limits, listing soil types on which planting should be avoided (especially peat soils), the proportion of plantation area that can include marginal/fragile soils, and definitions of 'extensive', 'marginal', 'fragile', and 'excessive'.</p>	<p>Specific guidance (or indicator) inclusion: - no planting on peatland</p>	Competency of auditor(s) for identifying peat types (technical soil name)
7.7	No use of fire in the preparation of new plantings other than in specific situations, as identified in the ASEAN guidelines or other regional best practice.	<p>Indicators: 7.7.1 (M) There shall be no land preparation by burning, other than in specific situations, as identified in the 'Guidelines for the Implementation of the ASEAN Policy on Zero Burning' 2003, or comparable guidelines in other regions. 7.7.2 In exceptional cases where fire has to be used for preparing land for planting, there shall be evidence of prior approval of the controlled burning as specified in 'Guidelines for the Implementation of the ASEAN Policy on Zero Burning' 2003, or comparable guidelines in other regions.</p> <p>Specific Guidance: For 7.7.2: This activity shall be integrated with the social and environmental impact assessment (SEIA) required by Criterion 7.1.</p> <p>Guidance: Fire should be used only where an assessment has demonstrated that it is the most effective and least environmentally damaging option for minimising the risk of severe pest and disease outbreaks, and exceptional levels of caution are required for use of fire on peat. This should be subject to regulatory provisions under respective national environmental legislation. Extension/training programmes for smallholders may be necessary.</p> <p>For National Interpretation: National Interpretation will identify any specific situations where such use of fire may be acceptable, for example through reference to 'Guidelines for the Implementation of the ASEAN Policy on Zero Burning' 2003, or comparable guidelines in other regions.</p>	<p>7.7.1 (M) There shall be no land preparation by burning, other than in specific situations, as identified in the 'Guidelines for the Implementation of the ASEAN Policy on Zero Burning' 2003, or comparable guidelines in other regions.</p> <p>7.7.2 In exceptional cases where fire has to be used for preparing land for planting, there shall be evidence of prior approval of the controlled burning as specified in 'Guidelines for the Implementation of the ASEAN Policy on Zero Burning' 2003, or comparable guidelines in other regions.</p> <p>Proposed to simplify the indicator to just 'no preparation of land by burning'</p>	
7.8	Preamble	<p><i>It is noted that oil palm and all other agricultural crops emit and sequester greenhouse gases (GHG). There has already been significant progress by the oil palm sector, especially in relation to reducing GHG emissions relating to operations. Acknowledging both the importance of GHGs, and the current difficulties of determining emissions, the following new Criterion is introduced to demonstrate RSPO's commitment to establishing a credible basis for the Principles and Criteria on GHGs.</i></p> <p><i>Growers and millers commit to reporting on projected GHG emissions associated with new developments. However, it is recognised that these emissions cannot be projected with accuracy with current knowledge and methodology.</i></p> <p><i>Growers and millers commit to plan development in such a way to minimise net GHG emissions towards a goal of low carbon development (noting the recommendations agreed by consensus of the RSPO GHG WG2).</i></p> <p><i>Growers and millers commit to an implementation period for promoting best practices in reporting to the RSPO, and after December 31st 2016 to public reporting. Growers and millers make these commitments with the support of all other stakeholder groups of the RSPO.</i></p>		

7.8	New plantation developments are designed to minimise net greenhouse gas emissions.	<p>Indicators: 7.8.1 (M) The carbon stock of the proposed development area and major potential sources of emissions that may result directly from the development shall be identified and estimated. 7.8.2 There shall be a plan to minimise net GHG emissions which takes into account avoidance of land areas with high carbon stocks and/or sequestration options.</p> <p>Specific Guidance: For 7.8.1: GHG identification and estimates can be integrated into existing processes such as HCV and soil assessments.</p> <p>The RSPO carbon assessment tool for new plantings will be available to identify and estimate the carbon stocks. It is acknowledged that there are other tools and methodologies currently in use; the RSPO working group will not exclude these, and will include these in the review process.</p> <p>The RSPO PalmGHG tool or an RSPO-endorsed equivalent will be used to estimate future GHG emissions from new developments using, amongst others, the data from the RSPO carbon assessment tool for new plantings.</p> <p>Parties seeking to use an alternative tool for new plantings will have to demonstrate its equivalence to the RSPO for endorsement.</p> <p>For 7.8.2: Growers are strongly encouraged to establish new plantings on mineral soils, in low carbon stock areas, and cultivated areas, which the current users are willing to develop into oil palm. Millers are encouraged to adopt low-emission management practices (e.g. better management of palm oil mill effluent (POME), efficient boilers etc.) in new developments.</p> <p>Growers and millers should plan to implement RSPO best management practices for the minimisation of emissions during the development of new plantations.</p> <p>Guidance: This Criterion covers plantations, mill operations, roads and other infrastructure. It is recognised that there may be significant changes between the planned and final development area, hence the assessment may need to be updated before the time of implementation.</p> <p>Public reporting is desirable, but remains voluntary until the end of the implementation period. During the implementation period until December 31st 2016 (as specified in Criterion 5.6), reporting on GHG will be to a relevant RSPO working group (composed of all membership categories) which will use the information reported to review and fine tune the tools, emission factors and methodologies, and provide additional guidance on the process. During the implementation period the RSPO working group will seek to further develop and continually improve the RSPO carbon assessment tool for new plantings, recognising the challenges associated with estimating carbon stocks and projecting GHG emissions from new developments.</p> <p>Thereafter growers and millers will ensure that new plantation developments are designed to minimise net GHG emissions and commit to reporting publicly on this.</p> <p><u>Once established, new developments should report on-going operational, land use and land use change emissions under Criterion For National Interpretation:</u> National Interpretation will provide guidance within the national context for national requirements (e.g. high and low carbon stock lands or emission reduction requirements).</p>	<p>ERWG to look at the texts changes with the implementation period ended.</p> <p>RSPO Carbon Assessment Tool to be amended as GHG Assessment Procedure for New Planting; PalmGHG Toll is to be amended as New Development GHG Calculator.</p>	
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