



Panel on Identifying HCS and Reducing
Deforestation
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Faizal Parish

Global Environment Centre

Co-chair RSPO Emission Reduction Working Group

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Why are GHG emissions important to RSPO?

- Emissions of GHG lead to Climate change which has a major negative impact on health of planet and people
- Climate change-related extreme events have severe negative impact on Oil palm sector
- Oil palm sector has been identified as significant contributor of GHG in the past.
- RSPO is committed to work towards reducing emissions of GHG in the oil palm sector
- RSPO adopted P&C 2013 including range of measures to reduce deforestation, conversion of peatlands and GHG emissions.

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Clearance of forests and peatlands for plantation development leads to GHG emissions and haze



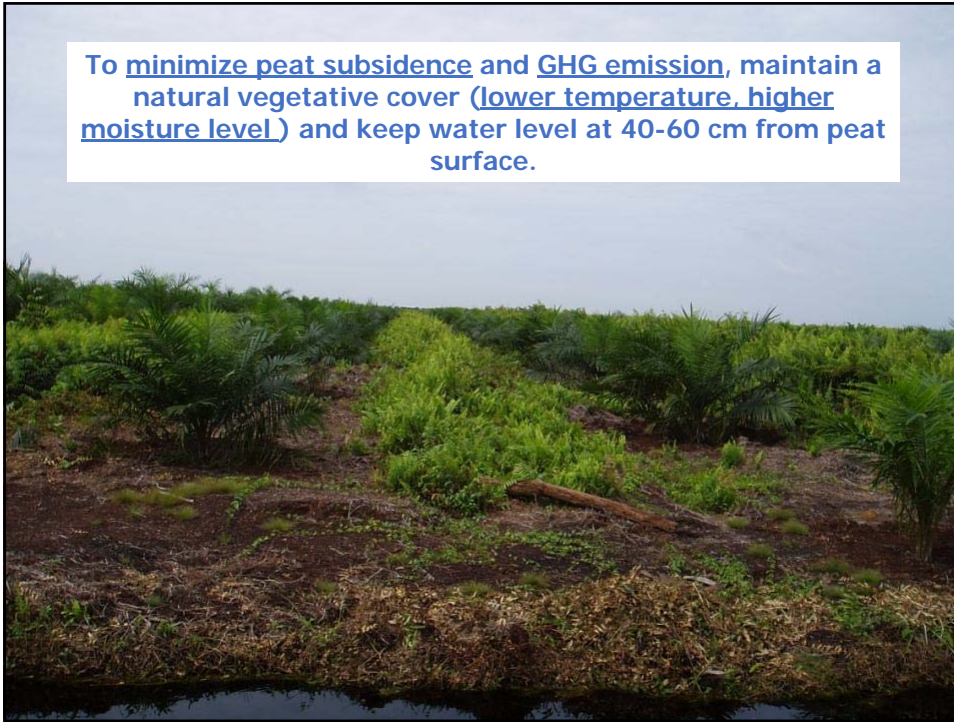
What is RSPO doing to reduce GHG emission? Comprehensive approach

- Criterion 4.3/4 – BMP inc water management in existing OPP on peat
- Criterion 5.6 Plans to reduce greenhouse gases, are developed, implemented and monitored.
- Criterion 7.3 No conversion of HCVA's since Nov 2005
- Criterion 7.4 Minimising development on peat (ROW default max 100ha/plantation development)
- Criterion 7.7 Zero burning
- Criterion 7.8 Carbon stock assessment and plan to minimise net GHG emissions

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To minimize peat subsidence and GHG emission, maintain a natural vegetative cover (lower temperature, higher moisture level) and keep water level at 40-60 cm from peat surface.



**Good Water Management
is the key to high peat productivity
and GHG reduction**

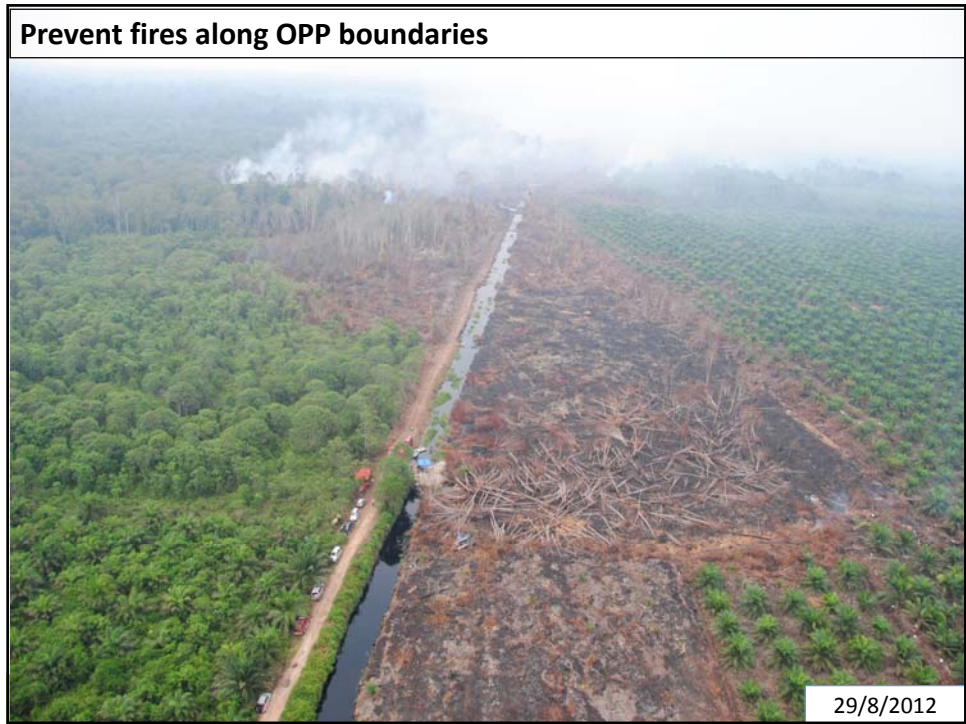
50-70 cm





High level boundary ditch
maintains forest and prevents fire





Implementing Criterion 7.8

- 7.8.1: 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**.

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Criterion 7.8

Main points in guidance:

- Criterion covers plantations, mill operations, roads and other infrastructure
- Growers strongly encouraged to establish new plantings on mineral soils, LCS areas and cultivated areas
- LCS Defined : "as those with (above and below ground) carbon stores, that would be lost by conversion to oil palm, smaller than that which would be sequestered within an oil palm crop and other set-aside areas within the management unit over the period of one rotation.
- HCS not yet defined
- Millers are encouraged to adopt low-emission management practices

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RSPO GHG Assessment Procedure (Carbon assessment tool)

- Carbon stock assessment
 - Above and below ground biomass assessment
 - Peat carbon stock assessment
- Assessment of emissions related to development scenarios
- Balancing of carbon stock, HCV and Community assessments and development requirements
- Selection of optimal scenario
- Development of management and mitigation plan

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Above and below ground biomass estimation prior to development

Step 1: Obtain remote-sensing data of project area

Step 2: Carry out GIS analysis of remote sensing data and stratify land cover

Step 3: Verification of land cover stratification

Step 4: Providing estimates of carbon stocks of above- and below-ground biomass (tonne/ha) for the different strata

- **Step 4a: Use default values for carbon stocks of above- and below-ground biomass (tonne/ha) for the different strata**
- **Step 4b: Estimate above ground biomass in sample plots**

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Soil/Peat assessment

Step 1: Use soil survey results, maps and remote sensing information to determine if peat soils are present

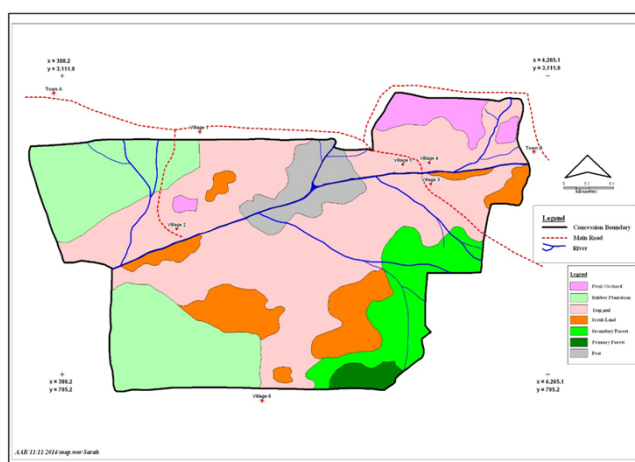
Step 2: If areas of peat soil are present, determine extent of peat area (in ha), average depth of peat (m) and carbon stock of peat

- Option 2a: Determination of peat carbon stock using default values (2250 tC/ha assuming 3m depth)
- Option 2b: Determination of peat carbon stock using field assessments

Step 3: Calculate the GHG emission resulting from peat drainage upon development by using PalmGHG (9.1 ton CO₂ (or 2.5 t carbon) per 10 cm of drainage per year)

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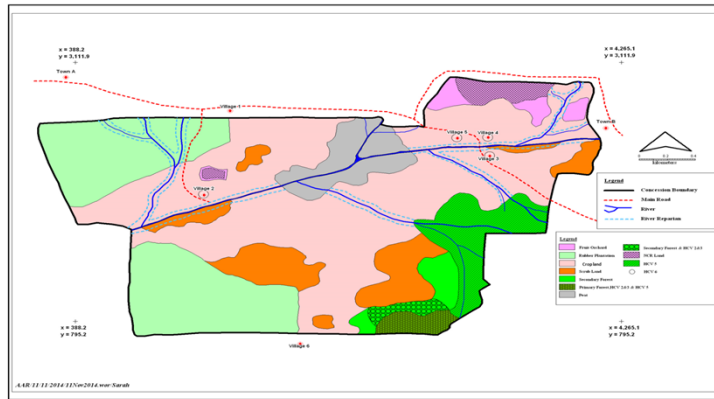
Preparation of carbon stock map



Vegetation type (on mineral soil otherwise specified)	Area (ha)	Assessed carbon above- and below-ground vegetation stocks (tC/ha)
Fruit Orchard	33	70
Rubber Plantation	201	62
Crop land	550	8,5
Scrub land	56	46
Secondary Forest	91	128
Primary Forest	19	268
Swamp forest (on peat soil)	39	128
Settlements	11	0
Total concession area		1000 ha

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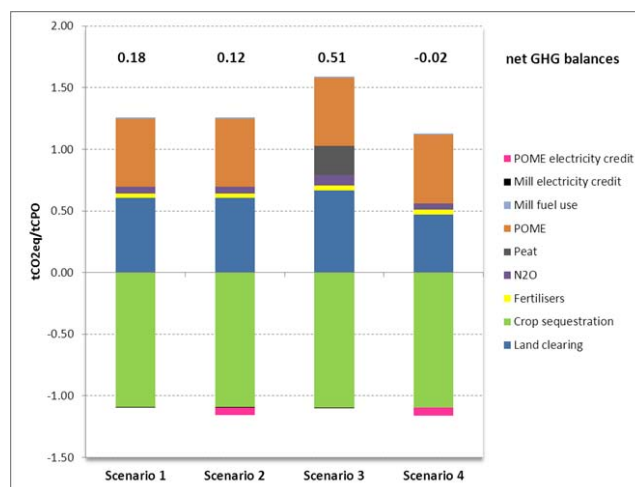
Spatial map integrating results from carbon stock assessment, HCV assessment and community assessment



	Area (ha)
HCV 2, 3 & 5	50
Riparian zone	12
HCV 6 and village settlements	11
NCR (native customary right) land	25
Total	98

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Scenario development



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Developing a GHG emission management and mitigation plan

Step 1: Using PalmGHG to estimate potential GHG emissions associated with new plantation development

Step 2: Selecting optimal development scenario

Step 3: Preparation of management and mitigation plan

Report to RSPO/ERWG

- Assessment process and procedures
- Summary of carbon stock assessment
- Summary of likely GHG emissions
- Summary of Management and Mitigation Plans (Carbon stocks and GHG emissions)
- References

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RSPO Perspective on HCS Approach and HCS study

- RSPO welcomes initiatives by industry to advance the understanding and implementation of measures to reduce GHG emissions
- Believes proposed work is complementary to the Requirements in P&C 2013 and Guidance from ERWG
- Believe assessment of Biomass and soil carbon stocks by 2 initiatives will help enrich knowledge and enable development of regionally applicable defaults and enhanced assessment techniques.
- RSPO and several ERWG members are involved in SC of HCS study and monitoring progress with HCS approach

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