



# GHG Assessment Procedure for New Development



RSPO would like to thank:

- i. Members of RSPO Emission Reduction Working Group
- ii. RSPO member companies that participated and provided comments in the application of previous Procedure
- iii. Olam Palm Gabon who contributed the original data which was used to develop hypothetical scenarios for optimum and sustainable new planting design.
- iv. Musim Mas who contributed example maps and tables (for illustration purposes) within this Procedure.

# GHG Assessment Procedure for New Development -----

RSPO GHG Assessment Procedure for New Development is meant to be used as guidance to identify and estimate the corresponding expected carbon stock fluxes (above and below ground) and GHG emissions associated with the resulting land cover change to oil palm, peat drainage (if appropriate) and emissions from mills and operations can be estimated and development plans adjusted to avoid areas with high carbon stocks and minimize net GHG emissions associated with new plantation development.

A calculator, known as New Development GHG Calculator, was also developed to assist the estimation of GHG emissions.

The GHG assessment can be conducted by the grower or by an independent consultant, with relevant competencies (refer Box 1) demonstrated; and must have been prepared based on carbon stock assessments and field verification conducted no more than three years prior to the submission of the NPP.

## Box 1. Assessment Competencies

The assessment team should:

- i. Have knowledge of carbon emission accounting methodologies for above and below ground carbon stocks including peat.
- ii. Have experience in verifying land cover maps and/or conducting carbon stock assessment in agriculture and/or forestry sectors.
- iii. Have experience and expertise in using remote sensing technology to estimate carbon stocks

## Public Reporting, starting 1st January 2017:

Starting 1st January 2017, public reporting of GHG emissions assessment for new development is mandatory incorporated into RSPO New Planting Procedure (NPP 2015). The reporting framework of GHG emission assessment for new development should be guided by Chapter 6 of RSPO GHG Assessment Procedure for New Development, Version 3.

The compliance for scheme smallholders is the responsibility of the company that is managing the scheme. There is no mechanism in-place at this time for the independent smallholder to comply with Criterion 7.8.

This latest version of RSPO GHG Assessment Procedure for New Development (Version 3, 30<sup>th</sup> October 2016) will supersede all previous versions of RSPO GHG Assessment Procedure. All GHG Assessments for new development submitted starting from 1<sup>st</sup> January 2017 must use this version of the RSPO GHG Assessment Procedure for New Development. Assessments submitted prior to 1<sup>st</sup> January 2017 may use this guidance on a voluntary basis.

# Overview

The order of the chapters in this GHG Assessment Procedure follows the steps of a GHG assessment for New Development. It starts from the first step of stratifying land cover and land use through satellite image analysis, all the way through to the development of an optimal new plantation development plan that takes into consideration of minimising GHG emissions.

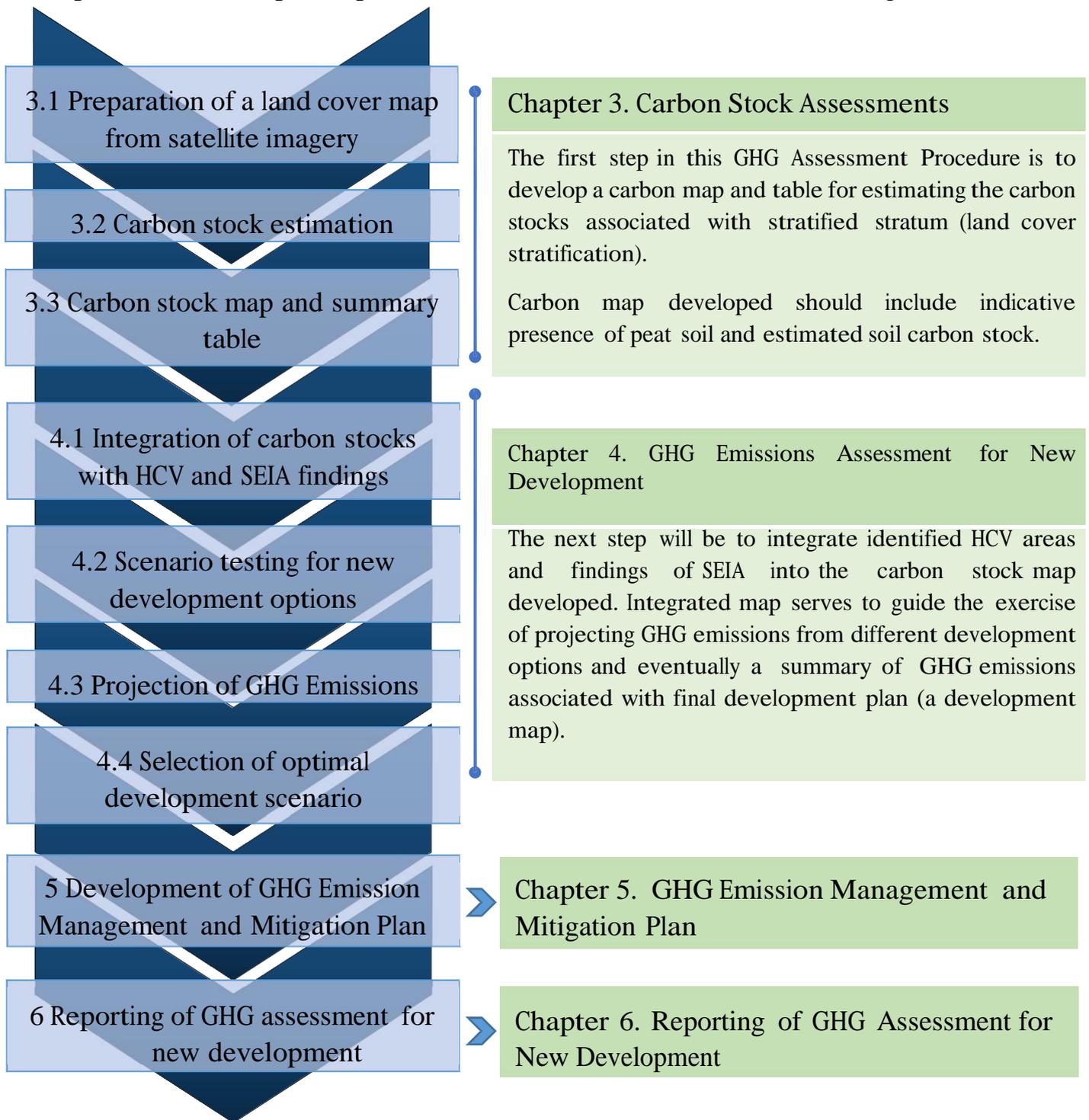


Figure 1. Key Steps in RSPO GHG Assessment Procedure

## Chapter 3. Carbon Stock Assessment

Two key steps:

3.1 Preparation of land cover map from satellite imagery; and

3.2 Carbon stock estimation, to estimate the existing carbon stock in the new development area.

Growers have the flexibility to choose which option (as summarised in Figure 2) to use for land cover classification and carbon stock estimation options, based on a trade-off between the time required and the accuracy of the resulting classification.

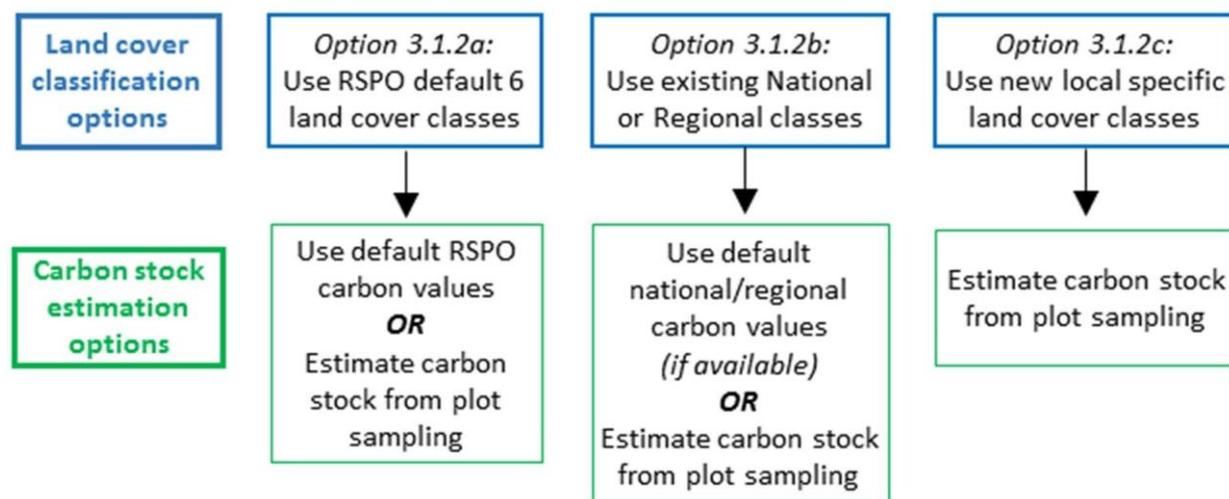


Figure 2. Summary of how choice of land cover classification method relates to carbon stock estimation options

The use of RSPO default land cover classes (Box 2) is the most straightforward option for growers, but may not be appropriate in the following situations:

- If the grower wishes to align carbon estimation with national standards for use in emissions accounting or carbon projects: recommend to use national land cover classes, or
- If PDA contains unusual vegetation types that do not align with RSPO default classes: recommend to use either national/regional land cover classes OR local specific classes (which has best alignment).

Box 2: Default RSPO land cover classes

1. Undisturbed forest
2. Disturbed forest
3. Shrub land
4. Grassland
5. Tree crop,
6. Annual/ food crop

## 3.1 Preparation of land cover map from satellite imagery

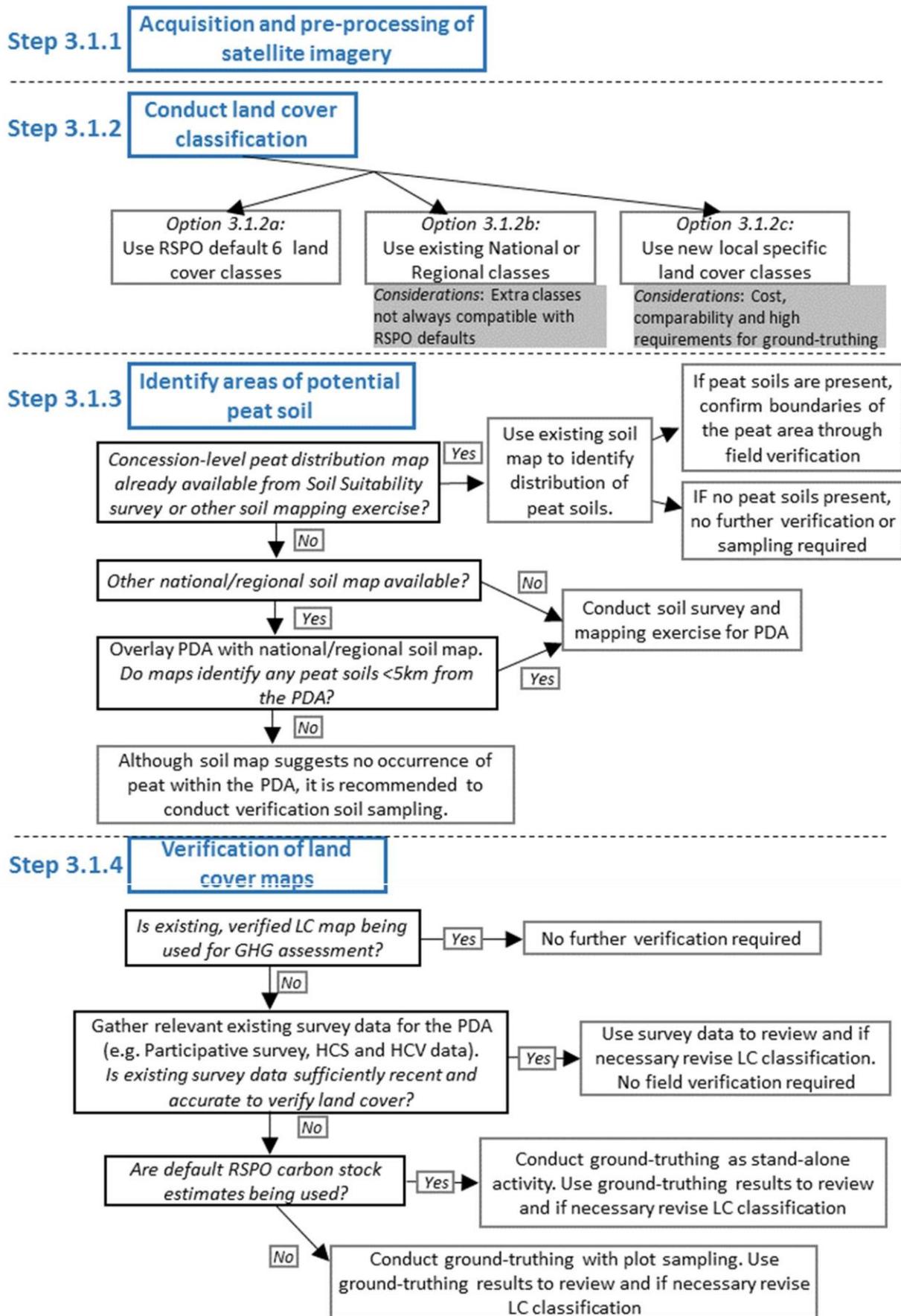


Figure 3. Summary of steps required to develop peat and land cover maps

## 3.2 Carbon stock estimation, to estimate the existing carbon stock in the new development area.

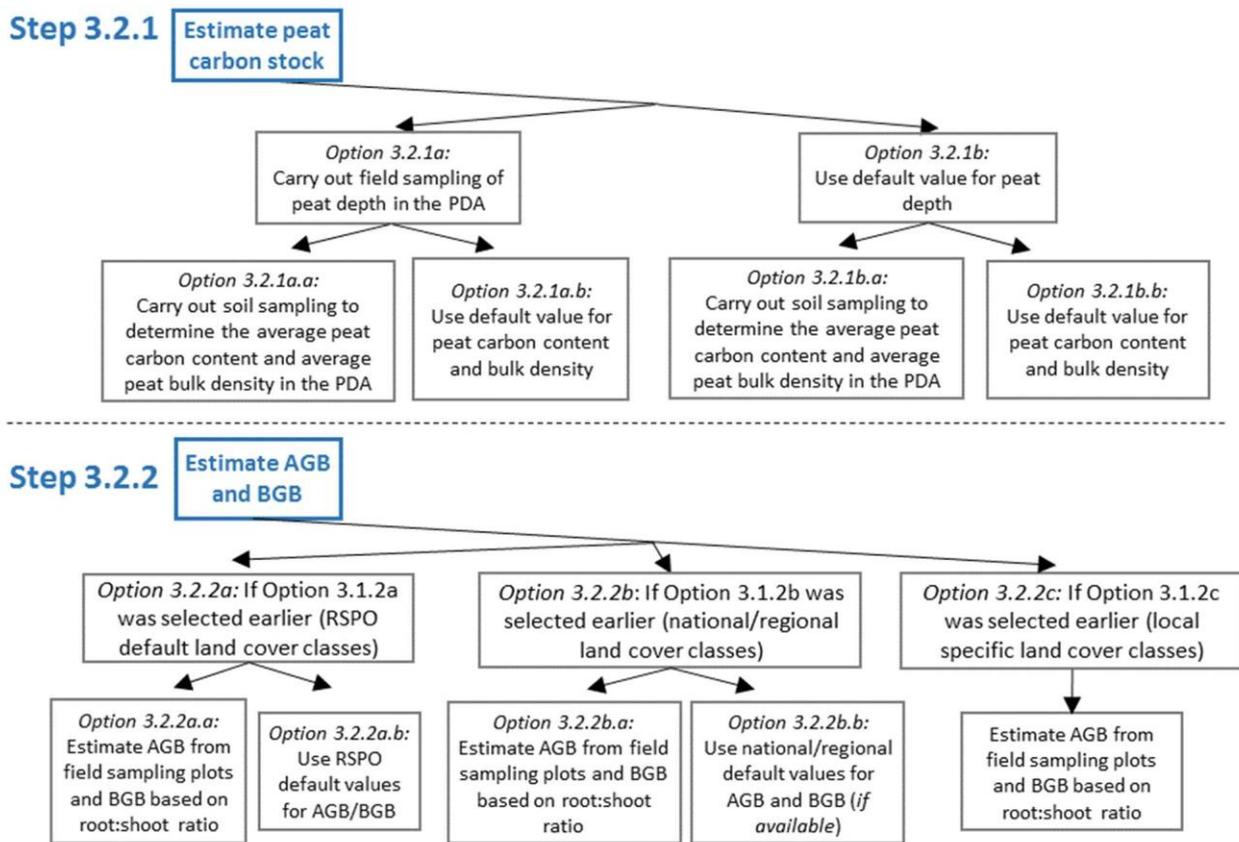


Figure 4. Decision tree showing options for estimating peat carbon stock and carbon stock in AGB and BGB.

### Outputs required as guided by Chapter 3:

- i. Land cover map of the new development area derived from satellite imagery
- ii. (if applicable) Map indicating the location and extent of peat soil
- iii. (if applicable) Carbon stock estimated per ha for peat soil (tC/ha)
- iv. Table presenting carbon estimated per ha (tC/ha) per land cover class
- v. Map and a table summarizing the total development areas (ha) and carbon stock estimated per land cover class
- vi. Carbon stock map of the proposed development area

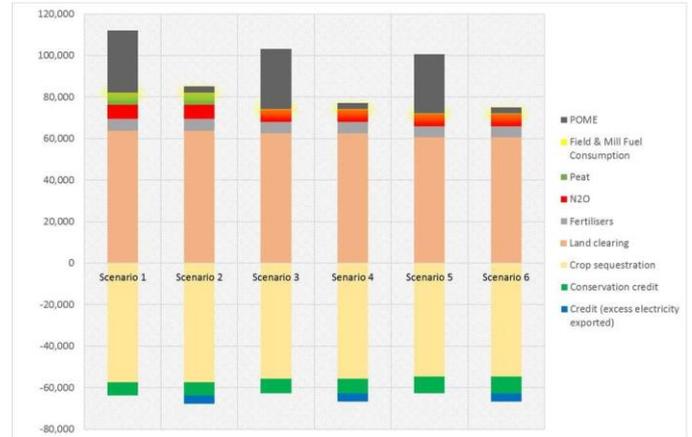
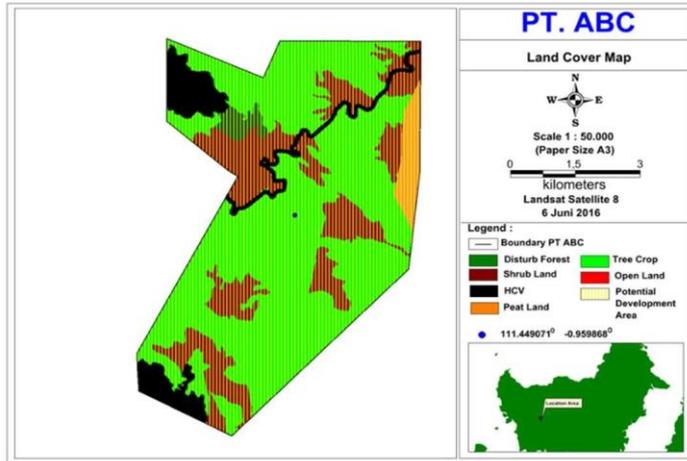
#### Box 3: Compatibility of converged HCSA and HCS+

Converged method as the result of current convergence process could be adopted to comply with parts of the Procedure, as one of the options available in Chapter 3 of this Procedure. Chapter 4 Assessment of GHG Emissions from New Development of this Procedure would still need to be applied.

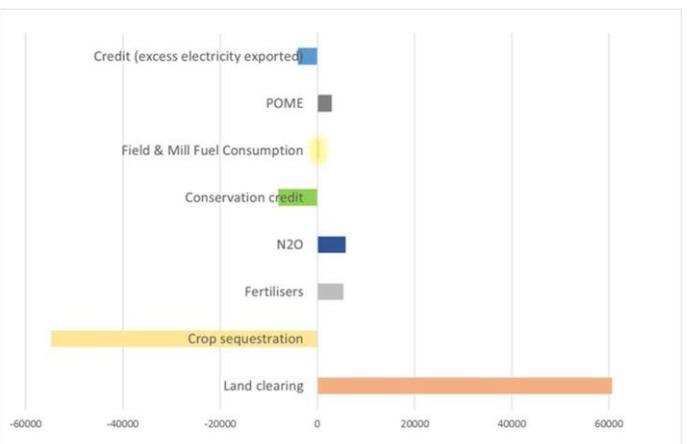
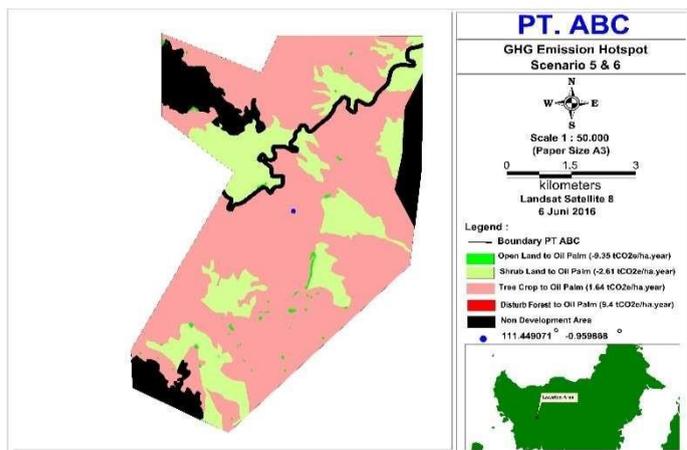
# Chapter 4. Assessment of GHG Emissions

Four key steps:

- 4.1 Development of an integrated map (carbon stock-HCV-social)
- 4.2 Development of development scenarios
- 4.3 Projection of GHG emissions
- 4.4 Selection of optimal development scenario



		S1	S2	S3	S4	S5	S6
Area avoided for development	HCV area	565 ha					
	Other Conservation set-aside	113 ha	113 ha	213 ha	213 ha	312 ha	312 ha
Potential areas for new development	Disturbed forest	99 ha	99 ha	99 ha	99 ha	0	0
	Shrub land	1,620 ha					
	Tree Crop	4,515 ha					
	Open land	36 ha					
	Shrub land (Peat soil)	100 ha	100 ha	0	0	0	0
POME Treatment	Conventional Treatment	Y	-	Y	-	Y	-
	Methane capture	-	Y	-	Y	-	Y



# Reporting Framework

## Assessment process and procedures

- Assessors and their credentials
- Methods and procedures used for conducting carbon stock and GHG assessments
- Team responsible for developing mitigation plan

## Carbon Stock Assessment

- Location maps indicating area of new development at landscape level and property level
- Land cover map of the new development area (include verification process)
- (if applicable) Map indicating the location of peat soil
- Table presenting carbon stock estimated per ha (tC/ha) per land cover class
- (if applicable) Carbon stock estimated per ha for peat soil
- Table summarising the total development areas (ha) and carbon stock estimated per land cover class
- Carbon stock map
- List of references used in the assessment

## GHG Emissions Assessment for New Development

- Summary table and map indicates carbon stock estimated with extent of HCV and presence of peat soil
- Map indicates areas to be avoided and potential areas for new development
- Table and chart summarising GHG emissions associated with development scenarios created
- Provide explanation for the selection of optimal scenario
- Development map and GHG emissions projection chart (final)

## GHG Emissions Management and Mitigation Plans

- Explain measures taken to maintain and enhance carbon stocks within the new development areas.
- Explain measures that will be taken to mitigate net GHG emissions associated with oil palm cultivation & processing in the new development (e.g. methane capture at the palm oil mill, local sourcing of fertilisers, reducing usage of inorganic fertilisers, reducing fuel consumption, rehabilitation of HCS and HCV areas etc.)
- Plan for monitoring the implementation of selected scenario for new development including measures for enhancing carbon stock and minimising GHG emissions

## Internal responsibility

- Formal sign off by assessors and company
- Statement of acceptance of responsibility for assessments.
- Organisational information and contact persons.
- Formal sign off of management and mitigation plans.

## Download:

The GHG Assessment Procedure for New Development will be periodically updated, the latest version of this procedure is available for download from RSPO website at, <http://www.rspo.org/certification/ghg-assessment-procedure>

For further information, please contact:

RSPO Secretariat

Unit A-37-1, Level 37, Tower A, Menara UOA Bangsar,  
No 5, Jalan Bangsar Utama 1, 59000 Kuala Lumpur, Malaysia

Tel: +603 2302 1500

Email: [rspo@rspo.org](mailto:rspo@rspo.org)