

Summary of the HCS assessments conducted in APP's 38 pulpwood suppliers

Background

Asia Pulp & Paper Group (APP) is developing an Integrated Sustainable Forest Management Plan (ISFMP) for each of its 38 supplier concessions in Indonesia. These will combine the results and recommendations from all ongoing assessment work. The assessment works include comprehensive social, peat, High Conservation Value (HCV), and High Carbon Stock (HCS) assessment.

Each Forest Management Unit (FMU) will then develop long-term, tailored action plans. Each integrated plan will form the blueprint for the management of APP's land resource in each supplier concession, in line with APP's FCP commitments. The ISFMPs will equip each supplier with action plans for improved management practices, enabling them to enter into an improvement cycle.

A key component of the ISFMP is the HCS approach. Golden Agri-Resources (GAR) in collaboration with Greenpeace and The Forest Trust (TFT) originally pioneered a methodology to identify natural forest areas. From 2010-2014, processes to define potentially viable areas of tropical forest and to distinguish them from degraded areas from development were trialed in Indonesia, Papua New Guinea and Liberia. These studies combined the carbon storage values of the forest areas, biodiversity conservation, local community rights and livelihoods considerations. The HCS assessment implemented in APP was one of the initiatives. In August 2014, a multi-stakeholder HCS Approach Steering Group¹ was formed to oversee the further development of the methodology and its use in the field. To standardize the methodology, and make it available to other practitioners, in April 2015, the HCS Steering Group published Version 1 of the HCS Approach Toolkit, to be used in further trials and for broader consultation.

In forest landscapes, most concessions which have been selected for plantation development include a mixture of forested, degraded, and open areas (such as

¹HCS Approach Steering Group website: <http://highcarbonstock.org/>

grasslands). The HCS Approach distinguishes different types of vegetation land cover, therefore differentiating natural forest from degraded lands that only have small trees, shrubs, or grasses remaining.

The HCS Approach does not account for below ground carbon content. Please see APP's dashboard section on peatland for more on below ground carbon content.

In the HCS assessments, analysis of satellite images and field plot measurements are used to distinguish four different classes (strata) of vegetation:

- É High Density Forest (HDF, formerly HK)
- É Young Regenerating Forest (YRF) ó formerly Old Scrub (BT)
- É Scrub (SBM) ó formerly Young Scrub (BM)
- É Cleared/Open Land (OL) ó formerly Open Land (LT)

Objective

In APP, the broad objective of using HCS assessments is to support the development of more balanced land use planning in new plantation development. These assessments are one input into the Integrated Sustainable Forest Management (ISFMP) development process. The HCS assessments are primarily focused on the identification of areas of natural forest with high carbon stock, and the generation of recommendations for their subsequent conservation.

Components of the HCS assessment

The HCS assessments were conducted according to four main steps:

1. Preliminary land cover classification:
 - a. Compilation of data and definition of the area of interest (all non-plantation areas).
 - b. Prepare preliminary land cover stratification using remote sensing

techniques.

2. Field work
 - a. Carry out forest inventory to develop estimates of above ground carbon content by land cover class.
 - b. Carry out aerial surveys to crosscheck the preliminary land cover classification.
3. Finalise the land cover classification and carbon stock estimates.
4. Develop recommendations for HCS forest conservation planning within the assessment area following the use of a Patch Analysis Decision Tree. The patch analysis process consists of a set of mechanical steps carried out using GIS software. Starting with the raw GIS polygons of potential HCS land cover classes, this process analyses these polygons based on patch size of the forest area, their connectivity and risk from external factors to generate recommendations for each individual forest patch.

APP's ISFMP HCS patch analysis flowchart below, developed collaboratively between APP, Greenpeace, Ekologika, and TFT, incorporates the key elements of the HCS Approach Decision Tree into the ISFMP process.

The ISFMP process then integrates and reconciles recommendations from all of the various assessments: HCV, social conflict mapping and plantation production assessments (and later peatland management recommendation). The ISFMP HCS patch analysis flowchart follows the HCS Approach Decision Tree, with three key differences:

1. The Decision Tree recommends participatory mapping to identify community land prior to the final HCS stratification. In the ISFMP process this input is largely defined by social conflict mapping that has been implemented in APP's supplier concessions. Furthermore, APP is also committed to implement an FPIC process in the management of its suppliers' plantation forest concession which includes identification of community land rights and participatory mapping.
2. The Decision Tree recommends Rapid Biodiversity Assessment (RBA) prior to final decision making on low and medium priority areas. The ISFMP process incorporates HCV assessment recommendations, which include biodiversity values. Final decisions are made after cross-checking

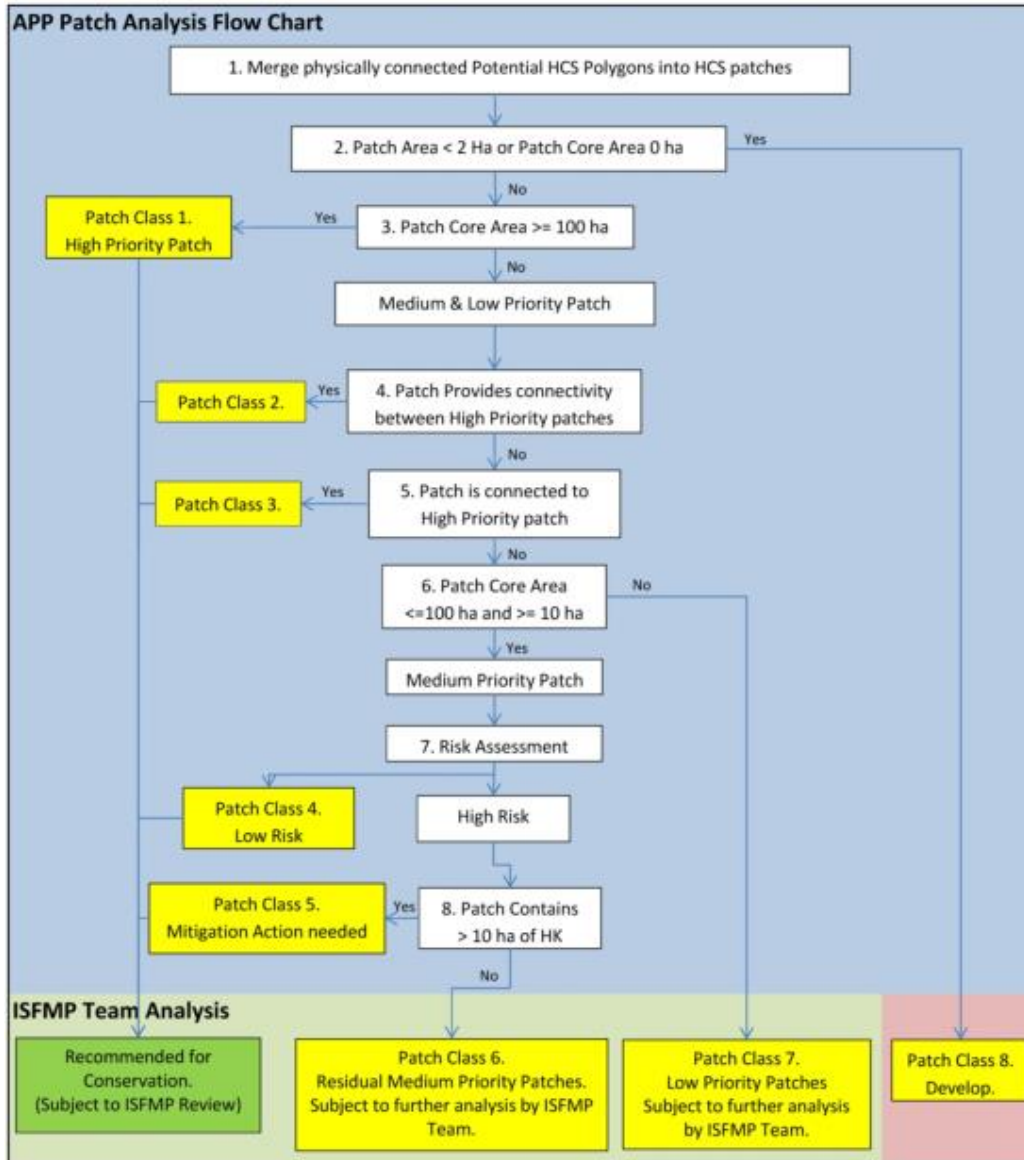


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with the results of the HCV, and where there is non-mutually supportive recommendations, field visit for verifications are conducted.

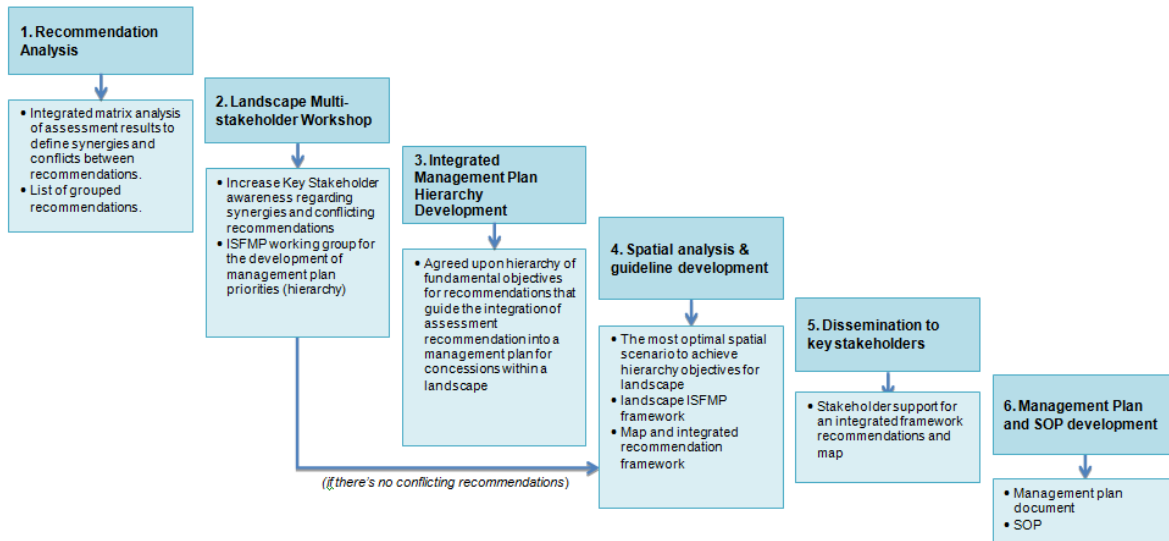
3. The Decision Tree recommends landscape analysis on small patches (<10ha). Again in the ISFMP process, which includes landscape level considerations, these areas will be subject to further analysis by the ISFMP team.

ISFMP HCS patch analysis flowchart



ISFMP Process Chart

Diagram of Process



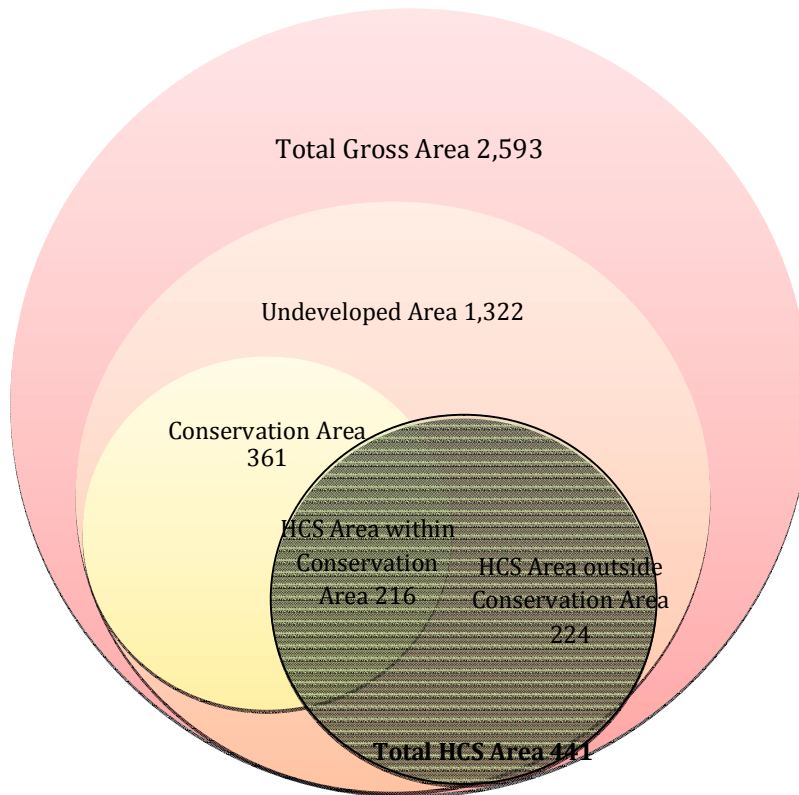
Result

Through the HCS assessments in 38 APP suppliers' concessions, APP and its partners have identified that within a total undeveloped area² of 1,322,831 ha; 441,564 ha are potential HCS forest areas, of which:

- 216,826 ha are situated within existing conservation areas, and;
- 224,738 ha are potential HCS areas to be considered for additional conservation areas under the ISFMP process.

²all areas except for existing company plantations

APP Area Figures (in thousand hectares)


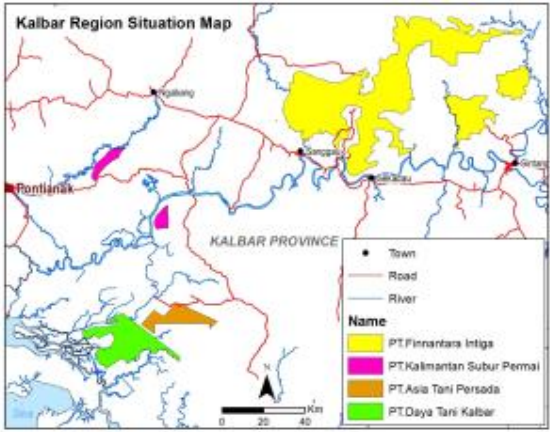
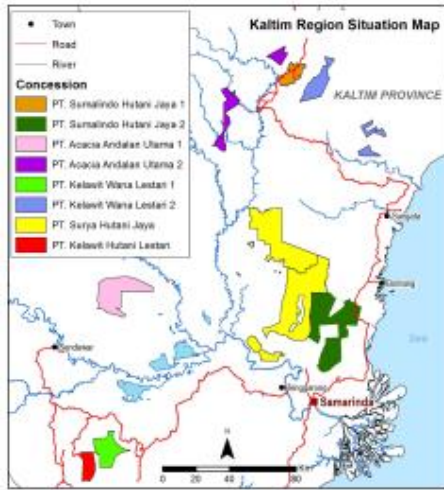


Situation Map and Field Facts

Riau	Jambi	South Sumatra - MuBa
<p>Field Facts</p> <ul style="list-style-type: none"> • 17 Companies; AA dominant • Four critical peat land landscapes (GiamSiak Kecil, Kampar Peninsula, Senepis, Kerumutan) • Kerumutan has the largest area of HCS outside of existing conservation • In other landscapes, HCS scattered and 	<p>Field Facts</p> <ul style="list-style-type: none"> • HCS in WKS fragmented and predominantly associated with riparian conservation areas • Key HCS landscape is RHM Jambi <ul style="list-style-type: none"> ○ The largest single concentration of HCS forest located outside existing conservation area ○ currently at risk from rampant smallholder land clearing 	<p>Field Facts</p> <ul style="list-style-type: none"> • Five companies. • Key HCS Landscapes: <ol style="list-style-type: none"> 1. RHM South Sumatra and TPJ concessions in east of the region. <ul style="list-style-type: none"> ○ Peat Land ○ Threatened by illegal logging 2. The BPP2 concession in west. <ul style="list-style-type: none"> ○ Smallholder rubber and ongoing

associated with existing conservation areas	<ul style="list-style-type: none"> ○ Contiguous forest area up to Bukit Tigapuluh NP 	smallholder land clearing. <ul style="list-style-type: none"> ○ Contiguous with REKI
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Situation Map and Field Facts

<p>South Sumatra –OKI</p> 	<p>West Kalimantan</p> 	<p>East Kalimantan</p> 
<p>Field Facts</p> <ul style="list-style-type: none"> • Low swampy marine-clay terrain 	<p>Field Facts</p> <ul style="list-style-type: none"> • FI concession accounts for 78% of the region 	<p>Field Facts</p> <ul style="list-style-type: none"> • 5 Companies plus 2 additions

<ul style="list-style-type: none"> • Heterogeneous mix of open land, Melaleuca forests, and a range of other land cover strata. • Heavily modified by fires and logging • HCS areas fragmented and dominated by <ul style="list-style-type: none"> ○ YRF ○ High density Melaleuca Cajuputi (Gelang), a pioneer species that usually grows on areas degraded by forest fires 	<p>gross area.</p> <ul style="list-style-type: none"> ○ FI is a mineral soil area dominated by smallholder mixed agro forestry. ○ Limited HCS potential. <ul style="list-style-type: none"> • HCS areas predominantly outside existing conservation zones. • Key HCS Landscapes: <ol style="list-style-type: none"> 1. DTK and ATP in the south. <ul style="list-style-type: none"> ○ Mostly peat land ○ High proportion of HCS ○ HCS dominated by HDF ○ Dry land areas in east of ATP threatened by mining 2. KSP smaller but also contains HDF areas 	<ul style="list-style-type: none"> • HCS is predominantly YRF • HCS largely outside conservation areas
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