Identifying High Carbon Stock (HCS) Forest for Protection

Towards defining natural forests and degraded lands (formerly forest) in the Tropics

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Introduction

Tropical forests hold large stores of carbon, harbour important biodiversity, and are critical for the livelihoods of many thousands of local communities. The conversion of these forests to agriculture or plantations has made Indonesia one of the largest emitters of greenhouse gases. Companies operating in these industries have come under increasing pressure from their customers to implement transparent and auditable procedures to ensure that their operations and supply chains are not causing deforestation and to minimise their greenhouse gas emissions.

In February 2011, the palm oil company, Golden Agri-Resources Limited (GAR)[1] and its subsidiary PT SMART Tbk (SMART), announced a new Forest Conservation Policy that would minimise its impact on the environment and on people dependent on the forests for their livelihoods. GAR agreed not to develop oil palm plantations on areas that have High Conservation Values (HCV), on peat land and to have a no deforestation footprint i.e. no development of High Carbon Stock (HCS) areas.

GAR and SMART collaborated with non-profit forestry NGO, TFT (The Forest Trust) and Greenpeace in a study to develop a practical, scientifically robust and cost-effective methodology that could distinguish areas with high carbon stock (i.e. forests) from degraded areas with lower carbon and biodiversity values[2]. This briefing outlines the methodology used to identify and conserve high carbon stock areas and explains why this new initiative represents a breakthrough in forest conservation and management.

What is High Carbon Stock and how is it defined?

Forests and trees act as natural carbon stores, but this carbon is released when the trees are felled and the area deforested. The amount of carbon stored within an area of land varies according to the type of vegetation cover, so it is beneficial for developments to take place on areas with low carbon stock.

The HCS approach distinguishes natural forest from degraded lands with only small trees, scrub, or grass remaining. It separates vegetation into 6 different classes (stratification) through the combination of analyzing satellite images and field plots. The Indonesian descriptions of these are: *High Density Forest (HK3)*, *Medium Density Forest (HK2)*, *Low Density Forest (HK1)*, *Old Scrub (BT)*[3], *Young Scrub (BM)*, and *Cleared/Open Land (LT)*.

HCS forest includes the vegetation classes of BT and above (HK1, 2 & 3). The HCS threshold between BT and BM is largely determined by the vegetation structure and density difference, where BT can be described as- *Mostly young re-growth forest, but with occasional patches of older forest within the stratum,* and BM as - *Recently cleared areas, some woody re-growth and grass-like ground cover.*[4] Below this, BM (young scrub) and LT (cleared/open land) would be considered of low carbon stock and potentially suitable for oil palm plantation development.

[1] GAR is the world's second largest palm oil plantation company with a total planted area of 459,500 hectares (including smallholders) as at 30 September 2012, located in Indonesia.

[2] http://www.goldenagri.com.sg/pdfs/misc/High_Carbon_Stock_Forest_Study_Report.pdf

[3] These were found to correspond in Kalimantan, Indonesia to an average carbon of 192tC/ha for HK3, 166tC/ha for HK2, 107tC/ha for HK1, 60tC/ha for BT, 27tC/ha for BM, and for LT 17tC/ha.

[4] For the HCS pilot in Kalimantan, the boundary between BT and BM supported the provisional C threshold that was agreed of 35tC/ha. It is expected that while the vegetation stratification would be equivalent in any humid tropics application, the tC/ha may vary from the 35tC used in Kalimantan.

Trials in other tropical forest regions are underway, but early results indicate the separating of vegetation into 6 classes can be applied generally in the humid tropics. However, the HCS approach is more than simply about carbon as the name implies: it combines biodiversity and carbon conservation, and important social considerations. Further, HCS does not include peat land areas.

For the second stage of the HCS methodology, the identified HCS/forest areas are screened against biodiversity conservation criteria. The objective must always be to preserve and protect ecologically viable areas of forest, so it is necessary to assess the shape, size, connectivity, habitat quality and threats to ensure that it is possible for the conserved HCS area to revert to its natural ecological function as a forest. Social considerations include the current and future land use by local communities, and the free, prior informed consent (FPIC) of local communities, as well as the legal status of the land, the impact of the HCS areas on plantation design and management, and overall monitoring.

The HCS approach is relatively simple, practical, quick and cost-effective, and is a technically sound basis on which to make land use decisions that support carbon and biodiversity protection. However, it is important to note that it was never intended to be rigorous enough or technically sufficient to be used for carbon accounting. It does not account for all *Above Ground Biomass* (AGB), as it just focuses on trees >5cm diameter), or any *Below Ground Biomass* (BGB). So in practice it significantly underestimates total biomass carbon.

What is the significance of the High Carbon Stock approach?

The HCS approach is a breakthrough for plantation and consumer companies who are committed to no deforestation, from development or in their supply chain. It allows prevention of greenhouse gas emissions to sit alongside existing guidance for biodiversity conservation and will help conserve ecologically viable areas of natural forest. It identifies degraded lands on which it is possible to continue the expansion of oil palm plantations, subject to usual legal and FPIC requirements. With many palm oil consuming companies committed to reducing their climate impact and deforestation footprints, the HCS forest approach offers a simple and cost-effective way forward for implementing these commitments.

Identification of HCS areas would also help the Indonesian government fulfill its commitment to reduce the country's greenhouse gas emissions from deforestation because it would indicate which areas should be conserved and which might be suitable for development.

Greenpeace believes that it is critical for the Indonesian government to fully support GAR's initiative by facilitating a framework that enables carbon stock and forest conservation, reviewing and amending forestry regulations as necessary to allow for the conservation of forest within concessions, and insisting on similar requirements across all industries operating in forest areas.

Additionally, this is an unprecedented collaborative effort in Indonesia by GAR, SMART, The Forest Trust and Greenpeace. GAR is providing a clear example in the palm oil industry that serious moves to end deforestation are possible, and it is leading the way for what could become a standard across the palm oil sector and other sectors. The HCS methodology is being trialed elsewhere in the tropics including in Papua New Guinea and Africa, and while the separation of the 6 different classes of vegetation will be replicated, the carbon range that corresponds with each class will vary across regions and biomes.

Greenpeace calls upon all companies in the palm oil production and trade to commit to Zero Deforestation and implement a Forest Conservation Policy that protects forests and peat land areas while also respecting the rights of indigenous people and local communities.

The High Carbon Stock approach outlined above can be used to define and protect the forests within palm oil concessions.

For more information, contact:
pressdesk.int@greenpeace.org

Greenpeace International
Ottho Heldringstraat 5, 1066 AZ Amsterdam, The Netherlands
Tel: +31 20 7182000

greenpeace.org