An Innovative Approach to Address Deforestation in the Humid Tropics: High Carbon Stock

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ORIGINS OF THE HCS APPROACH

• Global climate and biodiversity crisis – tropical deforestation for industrial agricultural and tree plantations

• Public concern & NGO campaigns on brands

• Down stream company commitments to ‘No Deforestation’

• HSC was initially implemented as a process to identify “natural forest areas” for conservation and degraded and open landscapes for development

• HSC based on scientific approach to land use mapping and planning – Remote sensing, field plots, conservation science for forest patch analysis

• HSC has evolved to a comprehensive land use planning tool that integrates with other approaches (e.g. HCV, peat, community land use, FPIC)
ORIGINS OF THE HCS APPROACH
The HCS Approach Steering Group established to provide global governance and standardization

Multi-stakeholder approach engaging manufacturing and retail companies, finance sector, governments, smallholders, NGOs, and certification initiatives (RSPO, FSC)
KEY QUESTION: How do we develop industrial plantations in a diverse landscape?
HCSA : THREE PHASES

HCSA is a land use planning tool based on analysis of current vegetation cover and the environmental and social characteristics at landscape level.

Phase 1A
Vegetation stratification / mapping to accurately identify vegetation cover

Phase 1B
Community based environmental and social mapping

Phase 2
Integration of vegetation, social and environmental data and patch analysis

Phase 3
Landscape land use planning based on collaborative approach
HCS APPROACH TOOLKIT

**1A – Mapping of Vegetation Cover**
- Stratification of vegetation cover using remote sensing
- Field inventory
- Final vegetation cover mapping

**1B – Community Based Env and Soc Mapping**
- Establishment of platform for community engagement / agreement on methodology
- FPIC and HCV field work
- Participatory mapping of HCV and land tenure analysis

**2 - Consolidated Mapping and Patch Analysis**
- Preparation of composite of vegetation, social and environmental map
- Identification of development exclusion areas – peat, HCV, community land claims
- Prepare draft land use plan by analyzing forest “patches” based on their size and shape, connectivity, bio-diversity, environmental and social status

**3 – Land use planning**
- Review and finalize land use planning in consultation with communities, Government and stakeholders
- Complete conservation and development plans
- Support community land use plans
A combined unsupervised and supervised analysis of optical data using visual attributes to provisionally stratify vegetation into 6 classes.

Or, alternatively LiDAR to determine vegetation height.
PHASE 1A: Field plots to gather species, height and DBH data to determine Above Ground Biomass

- Community engagement and FPIC process begins to gain consent
- Nested plots measure AGB in trees >5cm DBH
- Carbon estimated using *global* (*Chave et al. 2014*) or locally appropriate allometric
- Alternative plot designs possible

**Vegetation Stratification from remote sensing is calibrated with field plot data to map potential HCS forest areas**
HCS FOREST STRATIFICATION

**High-Density Forest (HDF/HK3)**
Remnant forest or advanced secondary forest close to primary condition

**Medium Density Forest (MDF/HK2)**
Remnant forest but more disturbed than HK3

**Low Density Forest (LDF/HK1)**
Appears to be remnant forest but highly disturbed and recovering [may contain plantation/mixed garden]

**Young Regenerating Forest (YRF)**
Mostly young re-growth forest, but with occasional patches of older forest within the stratum

**Scrub (S)**
Recently cleared areas, some woody regrowth and grass-like ground cover

**Cleared/Open Land (OL)**
Very recently cleared land with mostly grass or crops, few woody plants

HCS threshold

Degraded Lands (Former Forest)
YRF : YOUNG REGENERATING FORESTS
LT: Open Land
PHASE 1A: VEGETATION STRATIFICATION
PHASE 1B: Community Based Environmental and Social Mapping

Collaborative consultation with communities to implement:

• Mapping of communities, community land use, and rights
• Assessment and mapping of High Conservation Values (HCV)
• Community based land use planning under FPIC
PHASE 2: HCS Patch Analysis and Conservation Planning

• Objective is to identify viable forest patches that can maintain or revert to their ecological function as a forest – optimal for conservation, development, and livelihoods.

• Incorporates general conservation principles and science on patch size, shape, core area, configuration, and connectivity including adjacent to a concession.
FOREST PATCH EDGE EFFECTS AND ‘CORE’

CONNECTIVITY, STEPPING STONES AND CORRIDORS

Fragments with no connectivity

A cluster of stepping stones is optimal

Stepping stones

A corridor also provides for movement of interior species

DECISION TREE OF HCS FOREST PATCH ANALYSIS
PHASE 2: HCS FORESTS PATCH ANALYSIS DECISION TREE – A) PATCH PRIORITATION
PHASE 2: B) INTEGRATION, CONNECTIVITY, and EXCHANGE FOR OUTPUT OF A PROPOSED INTEGRATED CONSERVATION and LAND USE PLAN
PHASE 3: FINALIZATION OF LANDSCAPE MANAGEMENT PLAN

The Draft Integrated Conservation & Land Use Plan prepared in Phase 2 is then negotiated with local communities and government.

Challenges:

- Achieving legal recognition for HCS forest areas is critical for the long-term protection of HCS forest area, such as through regulations and laws.
- Community issues are most often centered on:
  - Negotiation of community land claims to development and conservation areas
  - Resistance to forest conservation mainly due to lack of incentives
  - Restriction of access to conservation areas for future needs and benefits including food security from conversion and NTFP
- New tools and mechanisms are needed to achieve this collectively with the support of a range of stakeholders in the landscape
PROGRESS – IMPACT, OPPORTUNITIES AND CHALLENGES

• Over 60 assessments to date – 10+ million ha, 5 countries in Asia Pacific and Liberia - over 500,000 ha prevented from deforestation and in process to conservation. Ata Marie has been involved in approximately 80% of these assessments.

• HCSA implemented by all major palm companies and large P&P companies in Indonesia and Malaysia

• Expanding to other sectors and regions – e.g. rubber, bananas, Africa & Latin America

• One unified HCS methodology – HCSA and HCS+ were recently converged

• HCSA supports Low Carbon development, REDD+ emissions reductions, and as a contribution to Intended Nationally Determined Contributions (INDC) for climate change
SUMMARY AND GOING FORWARD

• HCS Approach is a practical land use planning methodology that is now being broadly applied to implement No Deforestation in the humid tropics (mainly Asia Pacific and Africa so far)

• Innovative private sector initiative that can support government commitments to Low Carbon development, REDD+ emissions reductions and INDCs, landscape approaches and achieving sustainable development goals (SDG)s.

• A multi-stakeholder initiative – scientifically based methodology with ongoing research input – many questions still to answer

• Continued development of approach for small farmers, high forest cover regions, integration with HCV, landscape scale assessments, and forest conservation mechanisms.
LESSONS FOR CONGO BASIN COUNTRIES

- HCSA is specifically designed for the planning of industrial plantation development in tropical regions. Therefore HCSA is relevant to the Congo Basin.

- The focus of industrial plantation development is moving from SEA to Africa, including Liberia, Nigeria, Cameroon, Gabon, ROC, DRC.

- The HCSA is potentially a tool to support rational land use planning and industrial plantation development.

- Some elements of HCSA probably need to be re-evaluated in the context of the Congo Basin:
  - The forest landscapes are significantly different in SEA than Africa, significantly more heavily populated / heavily degraded landscapes in SEA.
  - Social-political environment and legal framework is considerably different.
HCS APPROACH TOOLKIT

- HCS Approach Toolkit launched in April 2015
- Designed as a practitioners manual on the methodology
- Available in English, French, Bahasa Indonesia, Spanish and Portuguese
- A review of the toolkit is underway and version 2 is scheduled for publication in Q1 2017
- Ata Marie is involved in the preparation of the remote sensing, field inventory and patch analysis sections
Thank you!

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