PalmGHG: scientific peer review and action plan to roll out the RSPO GHG calculator

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PalmGHG
Progress since RT9

Palm products greenhouse gas accounting tool

- Developed by WS1 based on Chase & Henson (2010)
- Based on LCA approach (ISO 14044) and a review of guidelines/tools
- Goal & scope
  - To identify GHG emission hotspots and reduction opportunities
  - To monitor progress in reducing GHG emissions
  - To report for certifications (external e.g. RED, RSPO...)
- Focus: to account the bulk of GHG emissions and carbon sequestration
- Assessment at the mill level (i.e. certification unit)
- Need for flexibility:
  - Default data & field data as often as possible
  - Functional units: tCO₂e/ha, tCO₂e/Crude Palm Oil, tCO₂e/MJ palm biodiesel
  - Physical allocations & credits for exported biomaterial or energy savings
PalmGHG: benefits

- Efficiency in GHG reductions
- Reduce costs
- Robust communication and reporting
- Consistency of measurement
- Scientific leadership

PalmGHG development in 2012

- Update C stock values and peat emission factors from WS3
  - Peat updated; C stocks for 9 previous land uses; CO₂ and N₂O emissions
- Incorporate biofuel calculations for compliance with RED
  - Biograce model incorporated; will need replacement
- Peer review of PalmGHG
  - Undertaken between July-October 2012
- Refine POME emissions calculation
- Post-review development - user friendly, manual
Main Challenges from Peer Review

• LCA (Life Cycle Assessment) specifics
  _ Allocation rules
  _ System boundaries
  _ Sensitivity; uncertainty
• Land Use Change (LUC) and C fixation
  _ Direct vs. Indirect LUC
  _ C fixation in palms and Conservation areas
• Usability and Auditing
  _ Default values used
  _ Ensuring traceability of input data

Implementing PalmGHG
Suggested implementation by RSPO members
PalmGHG implementation steps

1. Identify Hotspots
2. Improvement Opportunities
3. GHG reduction targets
4. Monitor Progress
5. Report

PalmGHG Calculator Implementation

- GHG emission hotspots in the case of mill C1 (Previous land use: shrub/grassland, 25% peat soils in estate)
  - Peat emissions, CH₄ from effluent, land clearing, fertilisers
  - Main difference between estate and outgrowers: peat area
PalmGHG Calculator Implementation

2. Improvement Opportunities

- Opportunities to reduce peat emissions
  - Implement peat Best Management Practices: water table... (5-10%; 2-3 yr)
  - Select peat-free (and low C) areas to expand production
  - Progressively abandon and restore current plantation on peat (43%; 15 yr+)
- Addressing POME methane emissions
  - Capture and combustion with heat and electricity recovery...? (20-25%; 2-3 yr)
- Increasing efficiency of mill, energy recovery...
- Fertilisers
  - Optimise fertilisers for yield increase and reduction of N2O
  - Yield increase tends to reduce overall impact as “fixed” emissions from clearing are divided over bigger output
- Address key knowledge gaps identified!
  - Land clearing history; data from out growers; biomass value for former land uses; etc.

3. GHG reduction targets

- Technological opportunities balanced with GHG reduction opportunity; trade-offs (water quality? Soil quality?); cost; funding opportunities (CDM; Carbon trading schemes; REDD+?...)
- Plan project implementation pipeline
- Step-wise reduction targets
  - More stretchy reduction targets for higher emissions (more low hanging fruit)
  - OK to maintain emissions when GHG intensity is already very low
- Go public!
PalmGHG Calculator Implementation

4. Monitor Progress

• Updating PalmGHG with relevant new data is straightforward
  – Land clearing in current year
  – Fertiliser use and diesel use
  – Changes in POME technology?
  – ...
• Then plot the annual variation in GHG emissions
  → progress against GHG reduction plan

5. Report & Communicate

• Information can be used for company-based reporting
  – Sustainability reports
  – Carbon Disclosure Project?
  – Information requests from stakeholders: customers; regulators
    (e.g. RED; UK Government); investors (e.g. Stock Exchange; Banks); etc.
  – ...
• ... or shared within RSPO for RSPO communications:
  – GHG intensity of CSPO vs. non-certified oil?
  – Effects of certification on GHG emissions?
Outlook
PalmGHG uptake and Next steps

Current PalmGHG Uptake

- 2011 pilot: 8 companies shared their information to test the tool
  - Results shared with the companies
- **New Britain Palm Oil** already used a precursor of PalmGHG to calculate and report their overall GHG footprint (February 2012)
  - Informing their commitment to ‘zero net carbon emissions’
- **REA Holdings** (pilot participants): results of PalmGHG being used to quantify GHG emissions, assess effectiveness of GHG reduction options, and plan reporting of GHG emissions
  - Informing research needs (current study on land use history)
- **AgroAmerica** currently assessing its palm oil GHG emissions
  - Collaborating with key customer strategy (Wal-Mart)
Next Steps

• Training
  – 6-7th December 2012, Kuala Lumpur
  – Express your interest to Melissa.Chin@rspo.org

• Further development of PalmGHG user-friendliness
  – Downloadable vs. Web-based?
  – Reduce chances of error (e.g. checks in input data)
  – Improve consideration of technology options

• Continued development of PalmGHG
  – Update of previous land use values
  – Update default values
  – Mill values for POME generation
  – Consideration of C fixed in conservation areas (with RT-REDD project)

THANK YOU! Questions?

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