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RSPO PalmGHG, ISCC and ISPO GHG Calculator - A Comparative Analysis*

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This paper presents the results of a comparative analysis of three commonly used greenhouse gas (GHG) calculation methodology (referred to as 'calculator' in this paper) by oil palm growers in Indonesia, i.e. the PalmGHG, International Sustainability and Carbon Certification (ISCC) and Indonesian Sustainable Palm Oil (ISPO) calculators. The calculators each have a different calculation approach which depends on the specific requirements of each calculator as it was developed.

The main objective of this analysis is to enumerate each source of emission and the cumulative impacts which affect the final carbon balance using each of the calculators so that differences between the calculators can be analysed. Several examples were used to illustrate the impact of the differences between these calculators.

Testing the calculators using the same input data showed that the result from the Roundtable on Sustainable Palm Oil (RSPO) PalmGHG is generally higher than ISCC and ISPO calculator. This is caused by the different carbon stock and emission factor default values used in the calculators and by the different calculation approach.

Palm oil produced in mills without methane capture has higher GHG emissions than those with methane capture from the palm oil mill effluent (POME) ponds. This is observed in all calculators. Palm oil produced from peat areas has higher GHG emissions than palm oil produced from non peat areas in both PalmGHG and ISPO calculators. Note that ISCC forbids planting on peat and thus the ISCC analysis excludes calculation of peat emission. Peat GHG emissions (CO₂ and N₂O emission) are higher when calculated using RSPO PalmGHG compared to ISPO calculator due to the different default values used by the calculators.

GHG emission credit from the sequestration of the conservation/set aside areas shows that conservation area sequestration can be a significant mitigation factor of GHG emission in the PalmGHG calculator. The larger the conservation area the larger is the sequestration credit. When the conservation area is less than one sixth of the total concession area, the sequestration credit can fully offset the emission from fertiliser. To offset emission from POME, the conservation area needs to be almost half the size of the total area.

Keywords: Oil palm, GHG emission, PalmGHG, ISCC, ISPO.

