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BMPs for Oil Palm Cultivation on Peat

More than 2.4 million ha of oil palm is cultivated on peat— mainly in Indonesia and Malaysia (representing about 20% of oil palm in the SE Asia). Cultivating oil palm on peatland requires significantly more effort and associated costs in comparison to planting oil palm on mineral soils. Increased operational costs for oil palm cultivation on peatlands are a result of additional land preparation works, road/drain maintenance and water management. Cultivation of Oil palm on peat can also lead to significant environmental impacts including GHG emission, subsidence and flooding.

Peat soils are diverse in physical and chemical properties and not all are productive and easy to manage. Considerable skill, planning and implementation of BMPs as well as knowledge and understanding of peat are required to reduce some of the impacts caused by oil palm cultivation on peat while enhancing yields.

The RSPO Peatland Working Group was established in April 2009 to assess the impacts of Oil palm cultivation on peat and to document best management practices (BMPs) for oil palm cultivation on peat as well as in maintaining natural vegetation in and around such plantations. The PLWG has finalized two RSPO manuals on this subject.

To mitigate the negative impacts of existing oil palm plantations on peat, BMPs should be carried out. BMPs on peat can be defined as practices, which result in minimum GHG emissions and subsidence as well as environmental and social impacts while maintaining a high economic yield. The key BMPs described in the manual include:

Water Management: Effective water management is the key to high oil palm productivity on peat. Good water availability and management is important for healthy palm growth and high yield. A good water management system for oil palm on peat is one that can effectively maintain a water-level of 50-70cm (below the bank in collection drains) or 40-60cm (groundwater piezometer reading)

Fertilizer and Nutrient Management: Next to water management, adequate and balanced fertilization is vital for high productivity of oil palm on peat. Due to the high porosity and infiltration rate of peat, minimizing fertilizer leaching is vital for cost efficiency

Integrated Pest and Disease Management: Integrated Pest Management (IPM) on peat should be adopted; guidance is provided for the management of the following pests: Termites, *Tirathaba* Bunch Moth, Leaf-Eating Caterpillars, Rats, Rhinoceros Beetle and *Ganoderma*.

Management of Leaning and Fallen Palms: Palm leaning is one of the major problems of planting oil palms on tropical peat, due mainly to peat subsidence leading to yield reductions of 10-30% Good water management is crucial to minimize peat subsidence and reduce palm leaning.

Replanting Practices: Replanting practices include: assessments of drainage potential and viability prior to replanting, deep planting and compaction), reducing emissions and after-use planning.

Reducing Peat subsidence: The most practical way of minimizing subsidence, once a plantation has been established on peat, is to maintain the water table as high as crop and field requirements permit, maintain vegetation cover and control fertilizer use. In the long term it is important to stop the drainage for oil palm cultivation well before undrainable conditions are reached in areas where the peat layer is underlain by potential acid sulphate soil or is below (or may subside to below) the 5-year flood level.

Conservation, Maintenance and Rehabilitation: Tropical peat swamp forests are a critically endangered category of forested wetland characterized by a high diversity of plant and animal species with unique adaptations to their specific waterlogged and acidic conditions. Oil palm plantations have a role to play in identifying, managing and enhancing river reserves and peat swamp forests that are on and adjacent to their land. These areas need to be conserved / managed and where necessary, rehabilitated.

Fire Prevention and Control: Prevention and rapid control of fires in and around plantations on peat is essential. Prevention is linked to good water management especially prevention the drainage of any adjacent intact Peat swamp forest areas.

Minimization of Green House Gas (GHG) Emissions: GHG emissions can be reduced through water management, fire prevention, soil compaction, fertilizer reduction, mill practices and fuel efficiency.