

# ITTO REDD+ Feasibility Study

for the **Bilateral Offset Scheme**  
**FY 2012** in Central Kalimantan



# I Project Background

Indonesia has committed to reduce emissions originated from Green House Gasses (GHG) up to the level of 26% by the year 2020. That commitment will make significant contribution into the global mitigation efforts. Major sources of GHG emissions in the country come from landuses, landuse changes and forestry (LULUCF) from the year 2005. Changes the usual business in landuse practices become most potential ways to attain targeted emissions reduction.

The ongoing global dialogues has developed framework of REDD+ as incentives to support both private and public sector for reducing emissions from deforestation and from forest degradation, for enhancing forest carbon stocks, for conserving forest carbon and for sustaining forest management. In the meantime, other mechanism of bilateral carbon offset has emerged as potential option for reducing global emissions in effective manner. The mechanism is built from shared responsibility in mitigating potential impacts of climate change, and it is based on respecting needs of developed countries which often differ from needs of developing countries.

A credible mechanism for bilateral carbon offset between the two governments of Japan and Indonesia is being developed. Supported by a Consortium of Partners, the two countries are developing designs and methodologies for the implementation of bilateral carbon offset. The collaboration has started in the year 2010 and it has continue in the year 2011. The first two phases have resulted into methodology to measure carbon stocks and to monitor the stocks. The collaboration also has developed methodology for mitigation approach by conducting analysis for safeguarding social and environmental impacts for the implementation of bilateral carbon offset.

In the current phase of year 2012, project ITTO REDD+ FS for the Bilateral Carbon Offset FY 2012 in Central Kalimantan will enhance applicability of methodologies being built at the site level into landscape level. The project intends to ensure conformity of the methodology with national standards, in order to increase credibility of bilateral offset mechanism for emission reductions. ITTO project REDD+ FS for the Bilateral Carbon Offset FY 2012 in Central Kalimantan aims to implement, scale-up and ground-truth the REDD+ MRV Methodology and aspects of social safeguard strategies, which have been developed during the REDD+ Feasibility Study for the year 2010 and 2011 at the Katingan Peatland Restoration and Conservation Project site in Central Kalimantan, Indonesia.

## 2 Objectives

1. To enhance the accuracy and credibility of the MRV Methodology;
2. To estimate net GHG emission reduction amounts;
3. To implement social safeguard strategies with pilot village(s); and
4. To ensure the provincial REDD program in Central Kalimantan is developed following the requirement of a robust standard (VCS JNRI), and that the requirements for capacity and data for provincial REDD are understood.

The project involves a consortium of experts and Partners from relevant institutions. The Partners include the R&D Center on Climate Change and Forest Policy of the Ministry of Forestry Indonesia (“FORDA/MoF”), Mazars Starling Resources (“Starling”), Yayasan Puter Indonesia (“Puter”), Terra Global Capital (“TGC”), Hokkaido University (“Hokkaido”), PT. Rimba Makmur Utama (“RMU”) and International Tropical Timber Organization (“ITTO”).

## 3 Scope of activities

1. Stratification of peat forests
2. Full Stocks Carbon Analysis
3. Estimation of Emission Factors and Net Emission Reductions
4. Participatory Community Mapping
5. Development of Sustainable Agroforestry Systems and Husbandry Practices
6. Jurisdictional Nested REDD



### 3.1 Stratification of peat forests

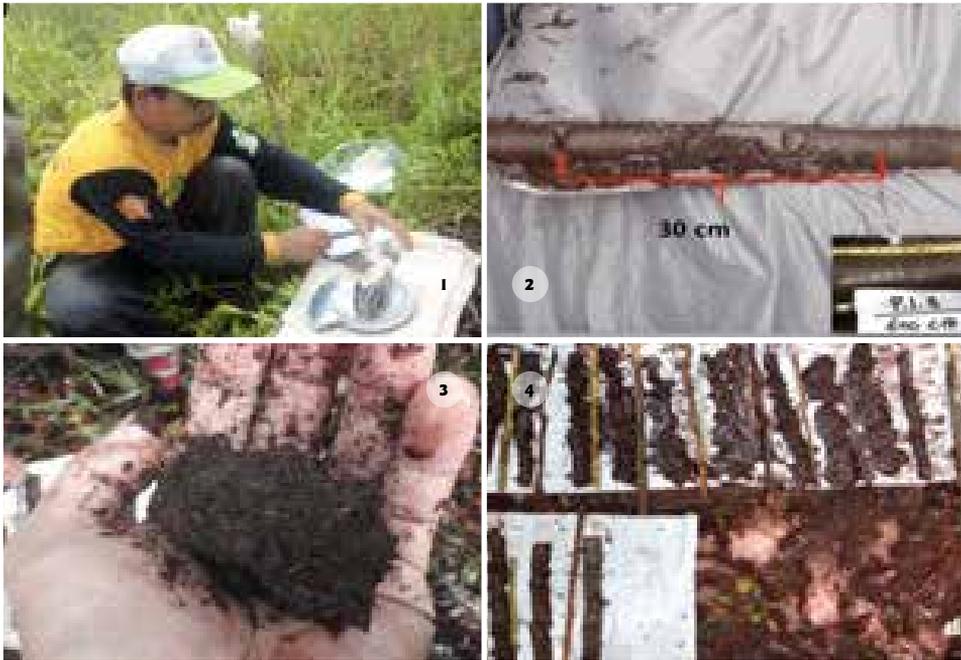
Understanding stratification of forests on peatlands is pre-requisite for estimating carbon stocks and potential emission reductions. Using the Landsat TM5, the previous REDD+FS 2011 stratified the forest into three strata, that include the stratum of primary natural forest, secondary logged over forest, and secondary forest post fire. The ongoing REDD+FS 2012 will work out the strata into more detail to capture representativity of actual forest types at the project location. In order to adopt definition of forest and peat land, the project seeks possibility to use higher resolution of satellite imagery such as GEOEye, Worldview, IKONOS or Quickbird so that higher accuracy and credibility could be attained.

Activities related with peat forest stratification include the following:

1. Stratify the entire Katingan Project area based on different forest and land-cover
2. Groundtruth forest stratification
3. Analyse forest stratification, develop a new stratification system for the Katingan area

Starling will lead the activities supported by Partners from the Ministry of Forestry/FORDA and Hokkaido University.





### 3.2 Full Stock Carbon Analysis

Estimated carbon stocks for both upper and below ground at the project area were already attained by using 17 plots and transect being established during the REDD+FS 2011. In order to produce complete figures on the available carbon stock, the estimated stocks of carbon need to be extrapolated into more detail stratification by using satellite imagery.

Full carbon stock analysis for REDD+ FS 2012 will cover the following activities:

1. Remote sensing analysis of above and below ground carbon stocks in each forest stratification over the entire Katingan project area
2. Groundtruth the remote sensing analysis of above and below carbon stocks in representative areas of each forest stratum, using remote sensing imagery acquired in activity 1 and previously developed methodologies.
3. Estimate total carbon stocks at the Katingan project area
4. Create full biomass and carbon stock maps of the Katingan Project area.

FORDA will co-lead the activities together with Partners from Starling and Hokkaido University.

### 3.3 Estimation of Emission Factor and Net Emission Reduction

The REDD+ FS 2011 defined emission factors, that may be positive or negative, to be accounted for the calculation of net emission reductions and set a scientifically rigorous methodology. In order to estimate net GHG emission reduction potentials from the project, each emission factor and GHG benefits must be quantified according to spatial analyses and equations provided in the MRV Methodology.

The REDD+ FS 2012 on the emission factor will cover the following activities:

1. Determine GHG emission factors (e.g., unit per change in above- and below-ground biomass and peat oxidation);
2. Analyze land use and land cover (LULC) changes;
3. Measure and groundtruth pre-determined GHG emission factors in representative areas of each forest stratum; and
4. Calculate/estimate net emission reductions from the Katingan Project.

FORDA together with Starling will co-lead the activity.

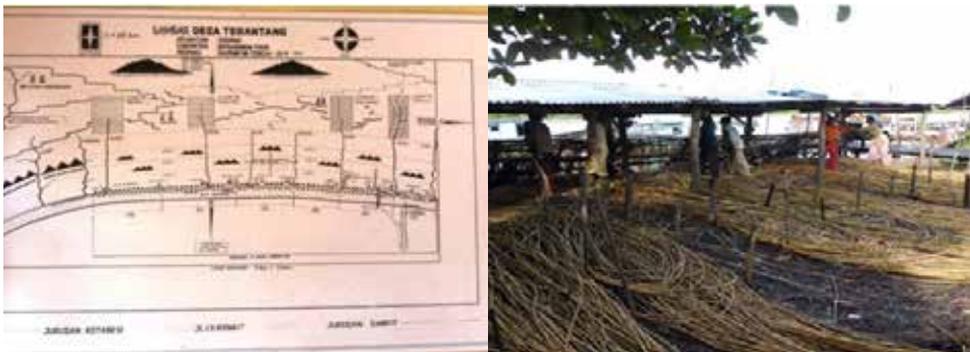


### 3.4 Participatory community mapping

A successful REDD+ project must protect the rights and interests of indigenous peoples and forest-dependent communities. The REDD+ FS 2011 has identified resource-use and livelihoods patterns of local communities around the Katingan Project. In general, most of communities at the Katingan project area practices small-scale farming and agroforestry, and very few practices shifting cultivation. Local traditions and customs (adat) still form a large part of social norms among communities, by which land-use patterns have been shaped. By developing a common understanding of such land-use patterns among all stakeholders, community maps will provide community members with a tenurial platform to better position themselves during negotiation processes, plan and implement REDD+ project activities at the most appropriate locations, and essentially, empower communities and safeguard their social benefits. Community maps produced through this activity will be recommended to serve as a basis for future dialogues on spatial planning at all levels.

1. The REDD+ FS 2012 plans to:
2. Select a pilot village;
3. Conduct a comprehensive social baseline study at selected village;
4. Conduct a series of public consultations, workshops and village meetings to discuss community mapping processes and obtain land-use data;
5. Create thematic community maps based on community agreement; and
6. Present digitalized maps to community members.

FORDA together with PUTER will co-lead the activities



### 3.5 Development of sustainable agroforestry systems and land husbandry practices

The development of sustainable agroforestry systems and land husbandry practices will follow the participatory community mapping process, and thus, the focal villages will be the same as the ones selected for the community mapping activity. This activity aims to develop a new improved agroforestry model, which is locally adaptable, implementable, environmentally and economically sustainable, and consistent with the region's low emission development strategies.

REDD+ FS 2012 plans to:

1. Conduct focus group discussions with farmer groups in the same focal village;
2. Develop sustainable agroforestry systems (e.g., improved crop selection, cropland allocation, land tillage/cultivation methods, pest control, intensification and irrigation);
3. Improve land husbandry practices (e.g., fertilizers including manure, mulch, compost and other mineral supplements, erosion/flood control, and soil rehabilitation);
4. Create a practical module on sustainable agroforestry systems and land husbandry practices to disseminate among local farmer groups

FORDA together with PUTER and Starling co-leads the activity together with Hokkaido University



**Figure:** Tanaman karet yang ditanam (jarak 5 x 5) oleh Pak Darlan (picture by Subarudi, 2012)

### 3.6 Jurisdictional Nested REDD+

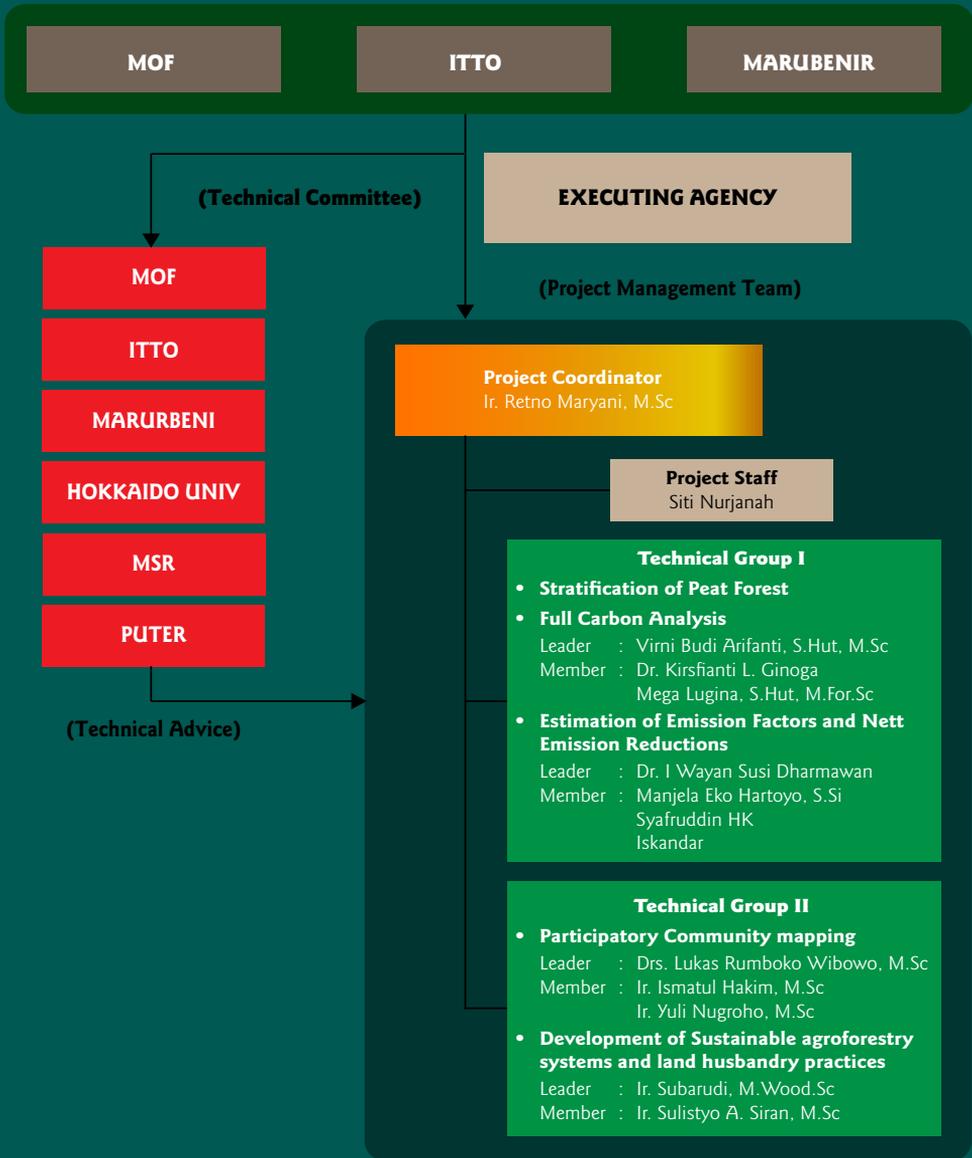
This activity will be lead by the Partner from Verified Carbon Standard (VCS) in collaboration with the government of Central Kalimantan Province. TGC will provide technical and analytical training workshop on jurisdictional REDD+ within the context of Verified Carbon Standard Jurisdictional Nested REDD+ Initiative (VCS JNRI) directly with the government of Central Kalimantan Province.

## 4 Location

The Katingan Peatland Restoration and Conservation Project (Katingan Project) is a reducing emissions from deforestation and forest degradation (REDD+) project on a 203,570 hectares of peat swamp forest in the districts of Kotawaringin Timur and Katingan in the Province of Central Kalimantan in Indonesia. PT. Rimba Makmur Utama (PT RMU) is the project proponent currently in a process of applying for an ecosystem restoration concession (ERC).



# 5 Organisation Structure REDD+ FS2012





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