

# KATINGAN PEATLAND RESTORATION AND CONSERVATION PROJECT

## PDD COVER PAGE

**1. Project name:**

The Katingan Peatland Restoration and Conservation Project (The Katingan Project)

**2. Project location (country, sub-national jurisdictions):**

Mendawai, Kamipang, Seranau and Pulau Hanaut sub-districts of Katingan and Kotawaringin Timur districts, Central Kalimantan, Republic of Indonesia

**3. Project proponent (organization and contact name with email address and phone number):**

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**5. Project start date, GHG accounting period and lifetime:**

Project start date: November 1, 2010  
GHG accounting period: November 1, 2010 to October 31, 2070 (60 years)  
Project lifetime: November 1, 2010 to October 31, 2070 (60 years)

**6. Whether the document relates to a full validation or a gap validation:**

This PDD relates to a full validation.

**7. History of CCB status, where appropriate, including issuance date(s) of earlier validation/verification statements etc.:**

No CCB history, including any prior issuance of validation/verification statements.

**8. The edition of the CCB standards being used for this validation:**

CCB Standards Third Edition

**9. A brief summary of the project’s expected climate, community and biodiversity benefits:**

The Katingan Project seeks to protect and restore 149,800 hectares of peatland ecosystems, to offer local people sustainable sources of income, and to tackle global climate change – all based on a solid business model. The project area stores vast amounts of CO<sub>2</sub>, and plays a vital role in stabilizing water flows, preventing devastating peat fires, enriching soil nutrients and providing clean water. It is rich in biodiversity, being home to large populations of many high conservation value species, including some of the world’s most endangered; such as the Bornean Orangutan (*Pongo pygmaeus*) and Proboscis Monkey (*Nasalis larvatus*). It is surrounded by villages for which it supports traditional livelihoods including farming, fishing, and non-timber forest products harvesting. The project’s expected CCB benefits include:

A) Climate benefits

- Average 7,451,846 tons of GHG emission reductions annually through avoided deforestation and forest degradation, prevention of peat drainage and fires
- Ecological enhancement at the landscape scale through ecosystem restoration

B) Community benefits

- Improved quality of life and reduced poverty of the project-zone communities through a creation of sustainable livelihoods options and economic opportunities
- Stronger community resilience through increased capacity to cope with socio-ecological risks
- Enhanced ecosystem services for the overall well-being of the project-zone communities through ecosystem restoration

C) Biodiversity benefits

- Stabilized and healthy populations of faunal and floral species in the project zone by eliminating drivers of deforestation and forest degradation
- Enhanced natural habitats and ecological integrity through ecosystem restoration

**10. Which optional Gold Level criteria are being used and a brief description of the attributes that enable the project to qualify for each relevant Gold Level:**

The Katingan Project seeks to achieve all climate, community and biodiversity Gold Level criteria.

A) Climate Gold Standard

The Katingan Project provides significant support and benefits to the project-zone communities in coping with and adapting to the expected impacts of climate change in coming years. The project aims to strengthen community and biodiversity resilience through various project activities, including restoration of peat swamp ecosystems and reforestation, climate

resilient infrastructural development, adjustment and diversification of agroforestry and agricultural practices, capacity building for forest management and non-timber forest product development, and the implementation of integrated natural disaster prevention and management systems.

B) Community Gold Standard

The project zone is qualified as a rural area of a high concentration of population living under the national poverty line, and the Katingan Project delivers significant well-being benefits to smallholders/community members. The project seeks to benefit communities through a variety of socio-economic activities which also target the most vulnerable and marginalized community members. This includes the poor, women, elderly and the disabled. These programs are designed to lift the poorest out of poverty by engaging them in community-based business development such as microfinance, women's empowerment, sustainable agroforestry, renewable energy development, and NTFPs. All community programs are designed and implemented through community participation, transparent decision-making processes based on mutual trust, and proper management of project activities.

C) Biodiversity Gold Standard

The Katingan Project is qualified as a Key Biodiversity Area (KBA), and conserves and protects the biodiversity of global significance. The project is expected to generate exceptional biodiversity benefits based on multiple achievement of the criteria defined in the CCB Standards Third Edition. This includes four species considered critically Endangered, 10 considered Endangered, and 31 species considered Vulnerable. For two of these at least, Orangutan and Proboscis Monkey, the project zone is estimated to hold over 5% of the entire global population.

**11. Date of completion of this version of the PDD, and version number, as appropriate:**

Date: August 6, 2015

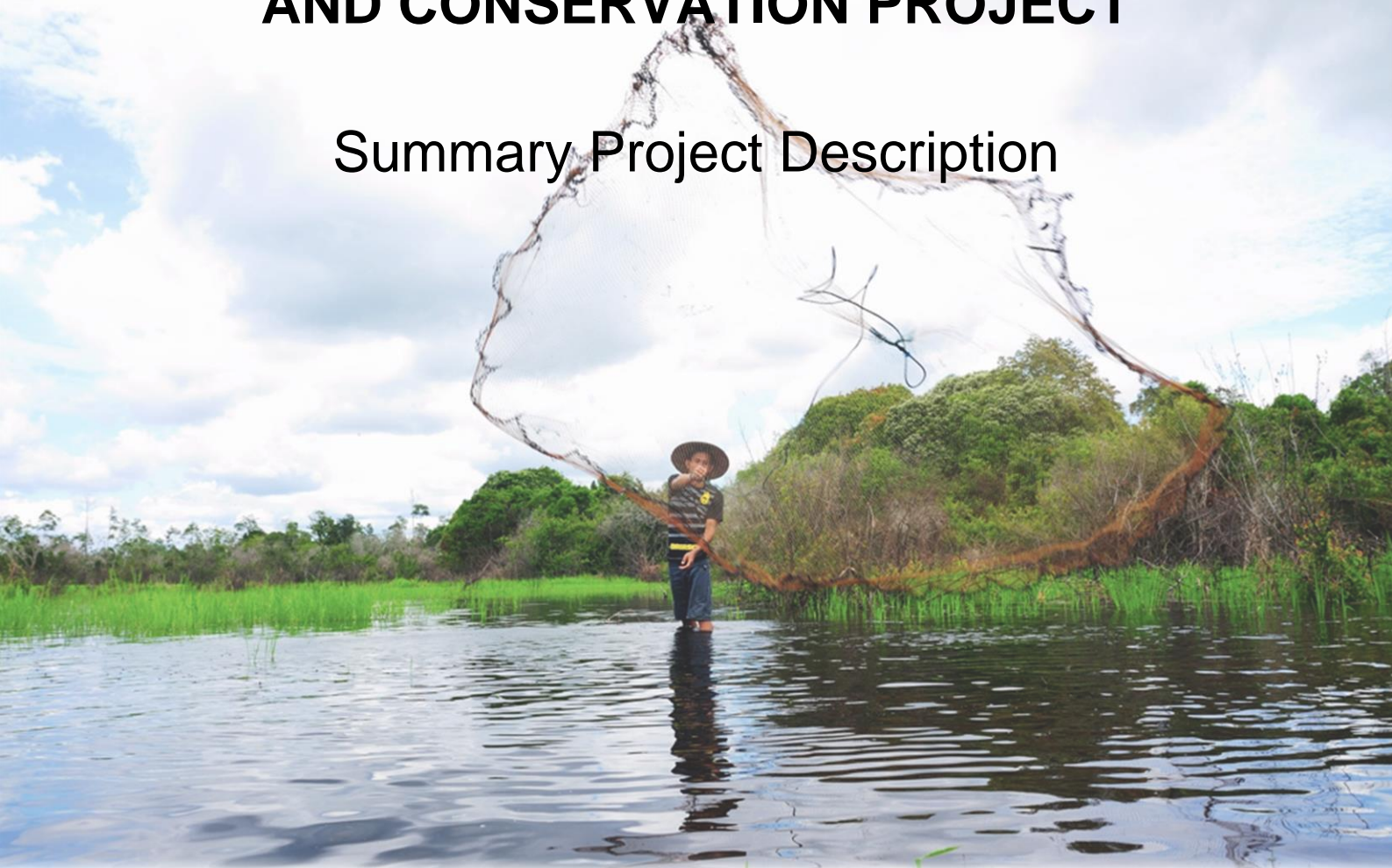
Version: Katingan\_PDD\_v1.1

**12. Expected schedule for verification, if known:**

To be scheduled

# KATINGAN PEATLAND RESTORATION AND CONSERVATION PROJECT

## Summary Project Description



<b>Project Title</b>	<b>Katingan Peatland Restoration and Conservation Project</b>
<b>Version</b>	Katingan_ Summary_PDD_v1.1
<b>Date of Issue</b>	August 6, 2015
<b>Prepared By</b>	<b>PT. Rimba Makmur Utama</b>
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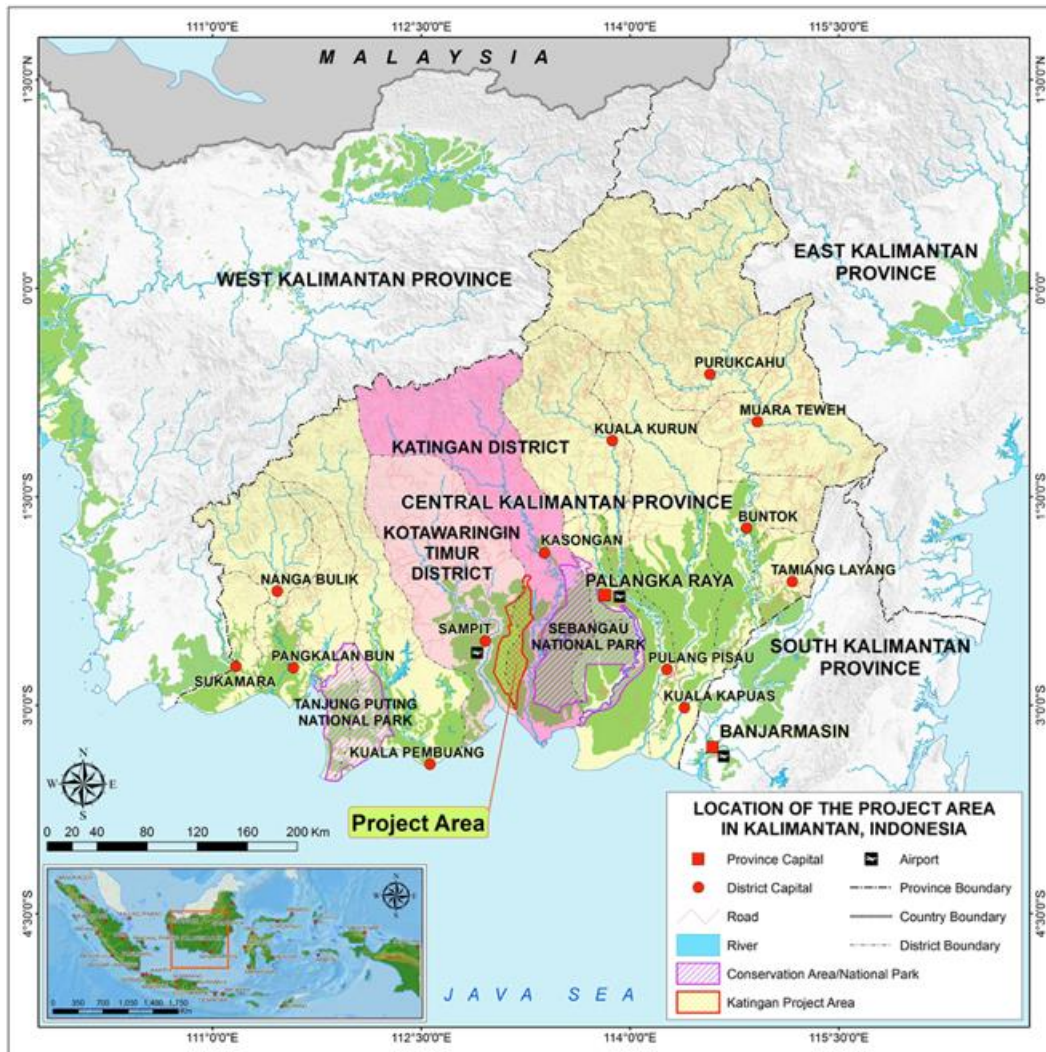
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## 1 SUMMARY DESCRIPTION OF THE PROJECT (G1.4)

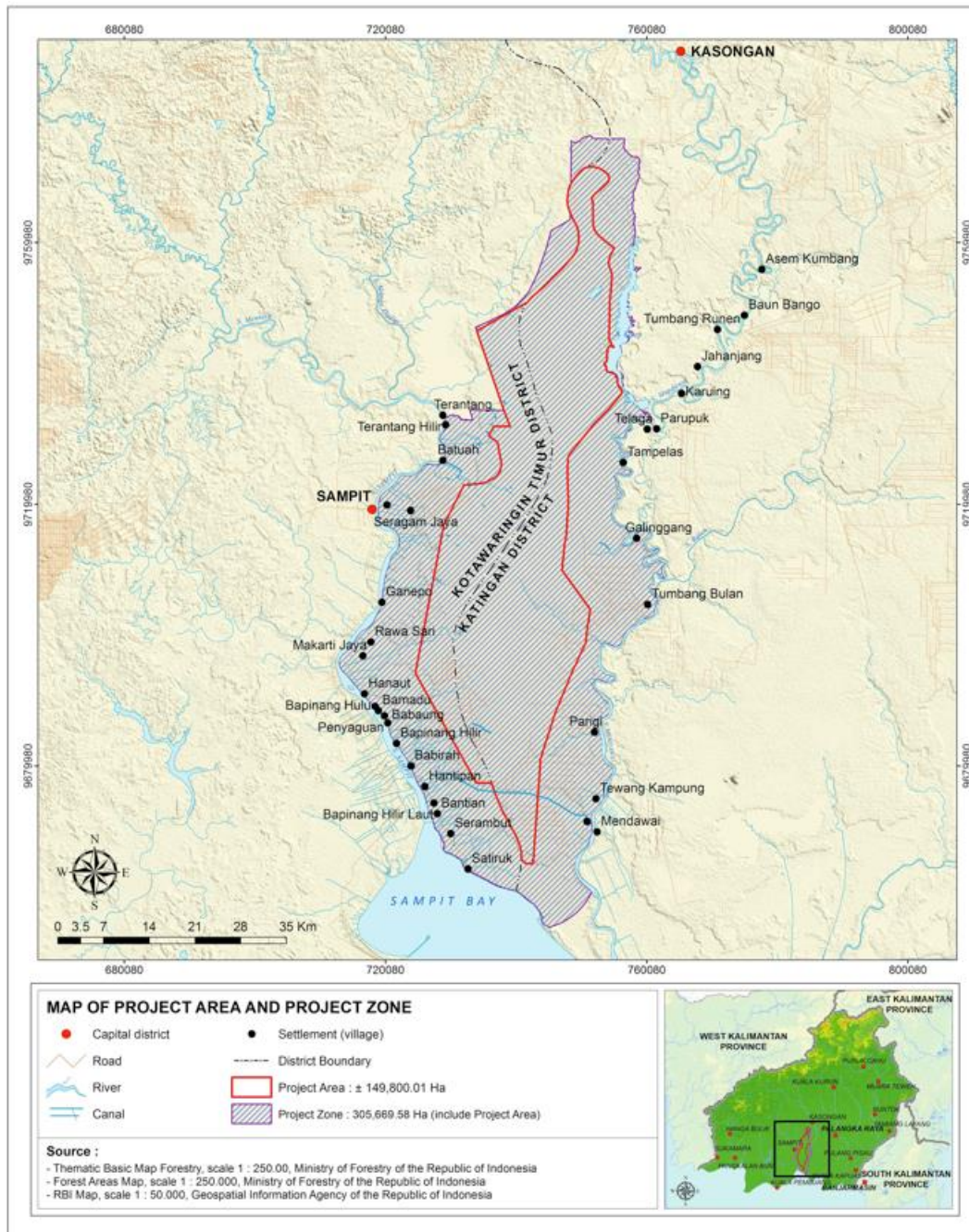
The Katingan Restoration and Conservation Project ('The Katingan Project') is managed by an Indonesian company, PT. Rimba Makmur Utama, through an Ecosystem Restoration Concession (ERC; Minister of Forestry Decree SK 734/Menhut-II/2013). It protects and restores 149,800 hectare of peatland ecosystems, to offer local people sustainable sources of income, and to tackle global climate change. The project lies within the districts of Katingan and Kotawaringin Timur in Central Kalimantan Province, and covers one of the largest remaining intact peat swamp forests in Indonesia (see Map 1).

Map 1. Location of the Katingan Project in Kalimantan, Indonesia



The project area, defined by the ecosystem restoration concession (ERC) license, encompasses 149,800 ha of land with a total perimeter of 254.12 km. The project area is the extent to which GHG emission reductions are achieved and quantified. The wider project zone, covering an area of 305,669 ha, represents the extent of the area in which the wider range of project activities are implemented. This area includes the main river catchments and the land of 34 villages likely to be affected by the project. The location of the project area and project zone is presented in Map 2.

Map 2. The location of the project area and project zone



The project area is almost entirely based on peat soils, and stores vast amounts of carbon, and plays a vital role in stabilizing water flows, preventing devastating peat fires, enriching soil nutrients and providing clean water. It is rich in biodiversity, being home to large populations of many high conservation value species, including some of the world’s most endangered species such as the Bornean Orangutan (*Pongo pygmaeus*) and Proboscis Monkey (*Nasalis larvatus*). Surrounded by villages, the area supports traditional livelihoods including farming, fishing, and non-timber forest products harvesting.

The Katingan Project is designed to ensure that all benefits are real, long lasting, and passed on to local communities, the region, and to the wider State of Indonesia in which it operates. The Katingan Project aims to bring positive change over the next 60 by conserving the integrity of remaining peat



swamp forest, and by playing a crucial role for Indonesia as it sets out to fulfil its emission reduction commitments in the years ahead.

## **2 PROJECT OBJECTIVES (G1.2)**

The goal of the Katingan Project is to develop and implement a sustainable land use model through reducing deforestation and degradation, habitat and ecosystem restoration, biodiversity conservation, and increasing economic opportunities for the local people of Central Kalimantan. The Katingan Project is designed to achieve this through a series of objectives, considered in turn below:

### D) Climate objectives

- To deliver credible GHG emission reductions through avoided deforestation and forest degradation, prevention of peat drainage and fires
- To enhance ecological values at the landscape scale through ecosystem restoration
- To conduct research and development (R&D) activities as to implement the latest science, research and management practices

### E) Community objectives

- To enhance the quality of life and reduce poverty of the project-zone communities by creating sustainable livelihoods options and economic opportunities
- To strengthen community resilience by increasing capacity to cope with socio-ecological risks
- To maintain and enhance ecosystem services for the overall well-being of the project-zone communities through ecosystem restoration
- To conduct research and development (R&D) activities as to implement the latest science, research and management practices

### F) Biodiversity objectives

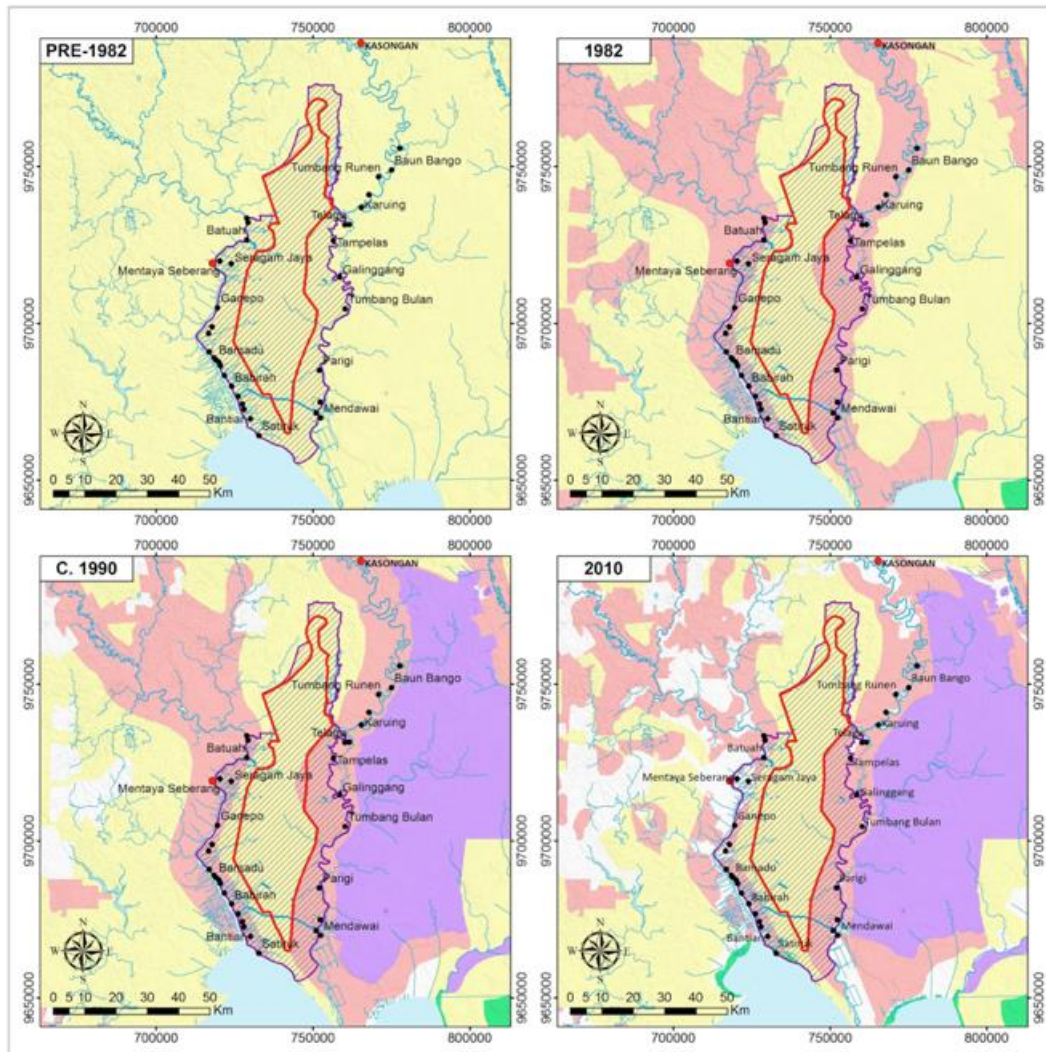
- To eliminate drivers of deforestation and forest degradation and to stabilize and maintain healthy populations of faunal and floral species in the project zone through biodiversity conservation and protection
- To maintain natural habitats and ecological integrity through ecosystem restoration
- To conduct research and development (R&D) activities as to implement the latest science, research and management practices

## **3 CONDITIONS PRIOR TO PROJECT INITIATION (G1.3)**

The land use in the project zone has gone through a rapid transition from intact forest to commercial logging in the early 70s through to the early 2000s (Map 3). During this period, a number of companies were granted licenses by the government to log the interior forests. As the commercial exploitation continued, so the legal land designations evolved. Commercial logging left behind degraded forest along Mentaya and Katingan rivers, which led to the designation of forest estate land for commercial conversion to non-tree crops, coinciding with the booming increase in oil palm in Indonesia. Only the interior forest remained designated for commercial logging.



**Map 3. Historical change in land designation in the region of the project.** Yellow indicates State Production Forest ('Hutan Produksi'); Pink indicates forest designated for conversion ('Hutan Produksi Konversi'); Purple indicates areas designated as conservation areas; Green indicates protection forest ('Hutan Lindung'); and White indicates areas removed from the national forest estate.



By 2010 these interior areas designated as 'production forest' were being earmarked for conversion and already subject to pending commercial applications (for a detailed review of see Section 4.5 of the PDD). Further land status reform was in the pipeline. This saw the retention of the interior forests as production forest, but excised further areas of the 'conversion forest' belt along the rivers from the forest estate, outside of the project zone in particular, in order to reflect the presence of new commercial oil palm plantations.

This is the context within which the Katingan Project was begun. Today, the areas closer to the rivers remain a mix of state forest land slated for conversion, area already subject to commercial plantations, and land either legitimately owned by local villages or at the least being exploited by them.

#### 4 CURRENT LAND USE IN THE PROJECT ZONE (G1.3)

Current land status and use within the project zone is summarised in Table 1 below. There is a greater diversity of land status and land use within the wider project zone compared to the project area.

**Table 1. Land use and status within the project area and zone**

Land cover	Area within project area (ha)	% of total project area	Area within project zone (ha)	% of total project zone
Peat swamp forest	143,095	96%	180,370	59%
Fresh water swamp forest	1,683	1%	7,574	2%
Non-forest vegetation	4,659	3%	78,637	26%
Bare soil	363	<1%	11,273	4%
Plantation	0	0%	27,815	9%
<b>Total</b>	<b>149,800</b>	<b>100%</b>	<b>305,669</b>	<b>100%</b>
Land Status	Area within project area (ha)	% of total project area	Area within project zone (ha)	% of total project zone
Protection Forest (Hutan Lindung)	0	0%	1,442	<1%
Production Forest ( <i>Hutan Produksi</i> )	149,800	100%	205,395	67%
Conversion Forest ( <i>Hutan Produksi Konversi</i> )	0	0%	82,212	27%
Non-Forest Estate (APL)	0	0%	13,156	4%
No-Status/Water Body (Badan Air/Danau)	0	0%	3,464	1%
<b>Total</b>	<b>149,800</b>	<b>100%</b>	<b>305,669</b>	<b>100%</b>

## 5 CURRENT CONDITION AND TYPES OF VEGETATION IN THE PROJECT AREA (G1.3)

The project area is classified into three vegetation types: mixed peat swamp forest; freshwater swamp forest; and non-forest vegetation. Mixed peat swamp forest is by far the most dominant vegetation type, covering about 96.65% of the project area. Figure 1 shows the typical condition of mixed peat swamp forest, freshwater swamp forest and non-forest vegetation, respectively.

**Figure 1. Typical vegetation condition in the project area** (Left: peat swamp forest; Middle: freshwater swamp forest; Right: non-forest vegetation)



## 6 CURRENT CARBON STOCK (G1.3)

The volume of total aboveground biomass and peat carbon stocks in the project area at the project start was quantified to be **14,254,599 ton of carbon (tC)** and **546,767,493 tC**, respectively, and presented in Table 2 and Table 3.

**Table 2. Volume of AGB carbon stock in the project area at the project start**

Strata	Area (ha)	Average AGB C stock (tC.ha <sup>-1</sup> )	Total C Stock (tC)
F0 Forest	144,778	98.38	14,243,741
NF- Non Forest	5,021	2.16	10,858
<b>Total</b>	<b>149,800</b>	<b>-</b>	<b>14,254,599</b>



**Table 3. Volume of peat carbon stock in the project area at the project start**

Strata	Area (ha)	Average peat carbon stock (tC.ha <sup>-1</sup> )	Total carbon stock (tC)
P1L0D0	3,172	2,597	8,043,633
P1L0D1	987	2,124	2,078,712
P1L1D0	141,910	3,738	535,294,904
P1L1D1	354	2,162	764,132
Water body	216	2,685	586,113
Non peat	3,162	-	-
<b>Total</b>	<b>149,800</b>	<b>2,218</b>	<b>546,767,493</b>

## 7 COMMUNITIES IN THE PROJECT ZONE (G1.3)

The project area contains no permanent human settlements. The wider project zone outside of the project area, on the other hand, encompasses 34 village communities and a population estimated in 2010 to be 43,000 people living in 11,475 households [1] [2]. These villages fall under the territorial administration of Mendawai and Kamipang sub-districts of Katingan District, and Seranau and Pulau Hanaut sub-districts of Kotawaringin Timur District (see Map 2). These communities typically make their living from the land and from the rivers, predominantly relying on small-scale agriculture and traditional fisheries. Rice, rubber, coconut, rattan, fruits, non-timber forest products (gemor, jelutong, honey, medicinal plants) and freshwater fish are among the most common livelihood commodities in the project zone (see Figure 2). More details about communities in the project zone are provided in Annex 2 of the PDD.

The Katingan Project will work with the project-zone communities to improve social resilience, and develop sustainable economy and small-scale businesses throughout the life of the project.

**Figure 2. Communities in the project zone**



## 8 LAND RIGHTS AND CONFLICT (G1.3)

The centralistic land tenure policies of the 70's and 80's led to both confusion and conflict among local communities, as lands they had traditionally recognised as their own were designated as lying within the national forest estate and open to commercial exploitation (see Sub-section 1.3.1 of the PDD). As time has passed, the situation has slowly improved, with more and more village land being progressively excised from the forest estate and handed to communities as land tenure and planning practices have improved. Outstanding issues do remain however, particularly within those areas lying between the project area and the rivers, which remains designated as commercial conversion forest. Further land conflict within the wider project zone has also been sparked by progressive waves of transmigration.

The Katingan Project is designed and implemented to fully recognize customary rights and community land tenure, and hence there are currently no conflicts over land between the project and the project-zone communities. For further details see Sub-section 2.2.1 and Section 2.7 of the PDD.

## 9 CURRENT BIODIVERSITY (G1.3)

In total, field surveys identified 67 mammal, 157 bird, 41 reptile, 8 amphibian, 111 fish, and 314 floral species in the project zone [3] [4]. Of these, two species are considered as Critically Endangered, 11 are Endangered, and 31 are Vulnerable [5], while 14 are endemic to Borneo, and 63 are protected under Indonesian law (see Appendix 2 of the PDD for more details). Preliminary estimates also indicate an estimated population of almost 4,000 Orangutan, almost 10,000 Bornean Gibbon and over 500 Proboscis Monkey (Figure 3). These populations all represent over 5% of the remaining global population of these species, classifying the project area as a Key Biodiversity Area by this criteria.

**Figure 3. Oranghutan in the project zone**

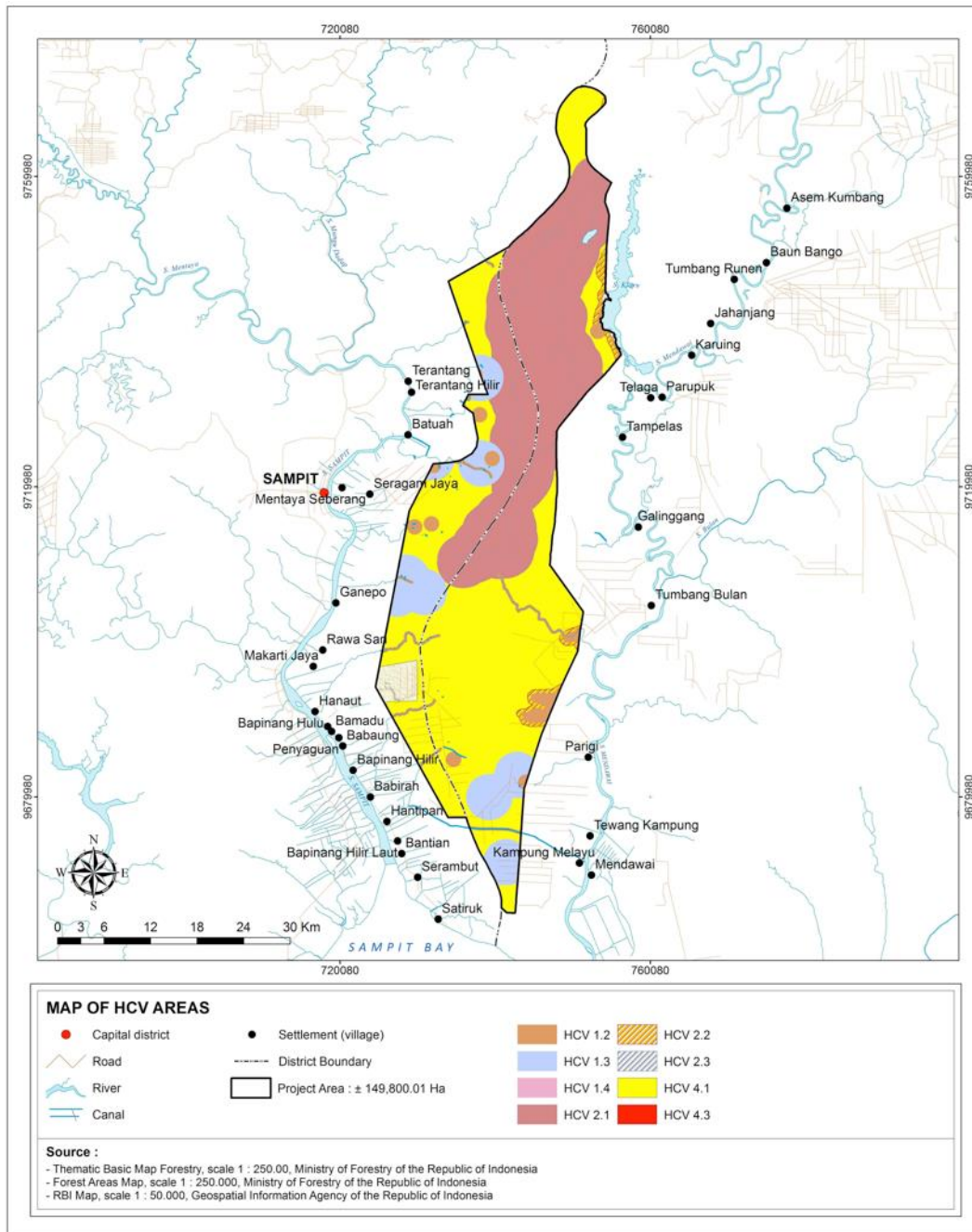


## 10 IDENTIFICATION OF HIGH CONSERVATION VALUES (HCV) (G1.3, G1.7)

A rapid assessment of high conservation value (HCV) areas conducted in collaboration with the Katingan Project by a team from the Indonesian Forest Research and Development Agency (FORDA) identified that the project zone contains all six HCV classes as defined by the HCV forest identification toolkit for Indonesia [6] (see Map 4). A full report of the results are available in the reference [7], and are summarized in Annex 3 of the PDD.



Map 4. HCV areas within the project zone



## 11 STAKEHOLDERS (G1.5, G1.6)

Stakeholder identification was based on social baseline surveys conducted using the following procedures:

### A) Data collection

Data was collected through participatory rural appraisals (PRAs), transect walks, informal discussions, visits to schools, clinics, vendors and social gatherings, as well as semi-structured focus group discussions (FGDs), using standard questionnaires. Each FGD consisted of men and women from different community groups and with different age groups and social status. The Katingan Project also used a unique participatory approach brought by Photovoices International in order to reach out to community groups and document their livelihoods, socio-economic conditions, social dynamics, and

relationships to the surroundings through pictures, and stories about the pictures collected by local village photographers.

B) Triangulation

The crosschecking of information obtained through PRAs and FGDs was conducted by interviewing different people who did not participate in the formal discussions. This was done through casual dialogues and village walks with community members.

C) Data analysis

Data collected through field surveys were analysed with reference to literature, relevant Indonesian regulations and village census in order to identify communities, community groups and other stakeholders in and around the project zone.

D) Results

Table 4 below shows a list of all stakeholders likely to be impacted by and/or involved in the implementation of the Katingan Project. Local communities are further classified by livelihoods, as these are the most common unit of alliance in the local social context. The majority of community group members engage in multiple livelihood activities rather than depending on a single source of income, and thus typically belong to more than one group.

**Table 4. Stakeholders in the project zone**

Category	Stakeholder	Description
Communities	Project-zone village residents	All groups of people who live in the 34 project-zone villages located adjacent to the project area, and derive income, livelihood or cultural values from the project area. These groups of people are collectively referred as <i>project-zone communities</i> .
Groups	Farmers	Groups of people making a living from traditional farming (e.g. vegetables, rice), fruit gardens and agroforestry (e.g. cultivating and collecting rubber, rattan and/or jelutong).
	Fishermen	Groups of people making a living from traditional fisheries and/or aquaculture.
	Non-timber forest product (NTFP) collectors	Groups of people making a living from collecting non-timber forest products such as gemor, damar resin, rattan, jelutong and meranti saps, honey.
	Loggers	Groups of people making a living from the extraction of commercial timber and selling logs to middlemen or sawmills.
	Sawmill operators	Groups of people processing timber into construction materials
	Miners	Groups of people making a living from excavating gold and/or zircon.
	Water taxi ( <i>kelotok</i> ) operators	Individuals or groups of people providing water transportation services for people in the project zone.
	Middlemen / Traders	Groups of people purchasing products (e.g. household goods, handicrafts, jelutong and rubber saps, raw or half-finished rattan, fish and other agricultural crops) from farmers and fishermen and selling them at markets.
	Hunters	Individuals or groups of people who hunt wild animals (e.g. birds, deer, pig) for commercial purposes.
	Craftsmen	Individuals or groups of people processing wood, rattan, purun and other natural fiber into handicrafts, woven baskets, hats and mats.
Women's KSM groups	Female groups who manage cooperatives and microfinance institutions	
Other Stakeholders	PT. Sampit	A large company located in the city of Sampit, Kotawaringin Timur district, purchasing jelutong, rubber saps, rattan, and gemor from farmers, NTFP collectors, and middlemen.

Category	Stakeholder	Description
	PT. Arjuna Utama Sawit	An oil palm plantation company holding a concession located adjacent to the project zone.
	PT. Ceria Karya Pranawa	A timber plantation company holding a concession located near to the project zone.
	District government	Governments of Kotawaringin Timur and Katingan districts, having authorities in district-level policies and regulations.
	Sub-district government	Governments having authorities in sub-district-level policies and regulations.
	Offsite residents and transmigrants	All groups of people living in villages and cities outside the project zone who derive income and livelihoods from the project area.
	Sebangau National Park	National park located adjacent to the project zone.

## 12 PROJECT PROPONENT (G1.1)

The Katingan Project is developed and managed by the ecosystem restoration concession (ERC) holder, PT. Rimba Makmur Utama (RMU). By collaborating with the project-zone communities and partner organizations, PT. RMU takes full responsibility to manage, finance and implement project activities for the duration of the project. Table 5 shows the project proponent's information.

**Table 5. Project proponent information**

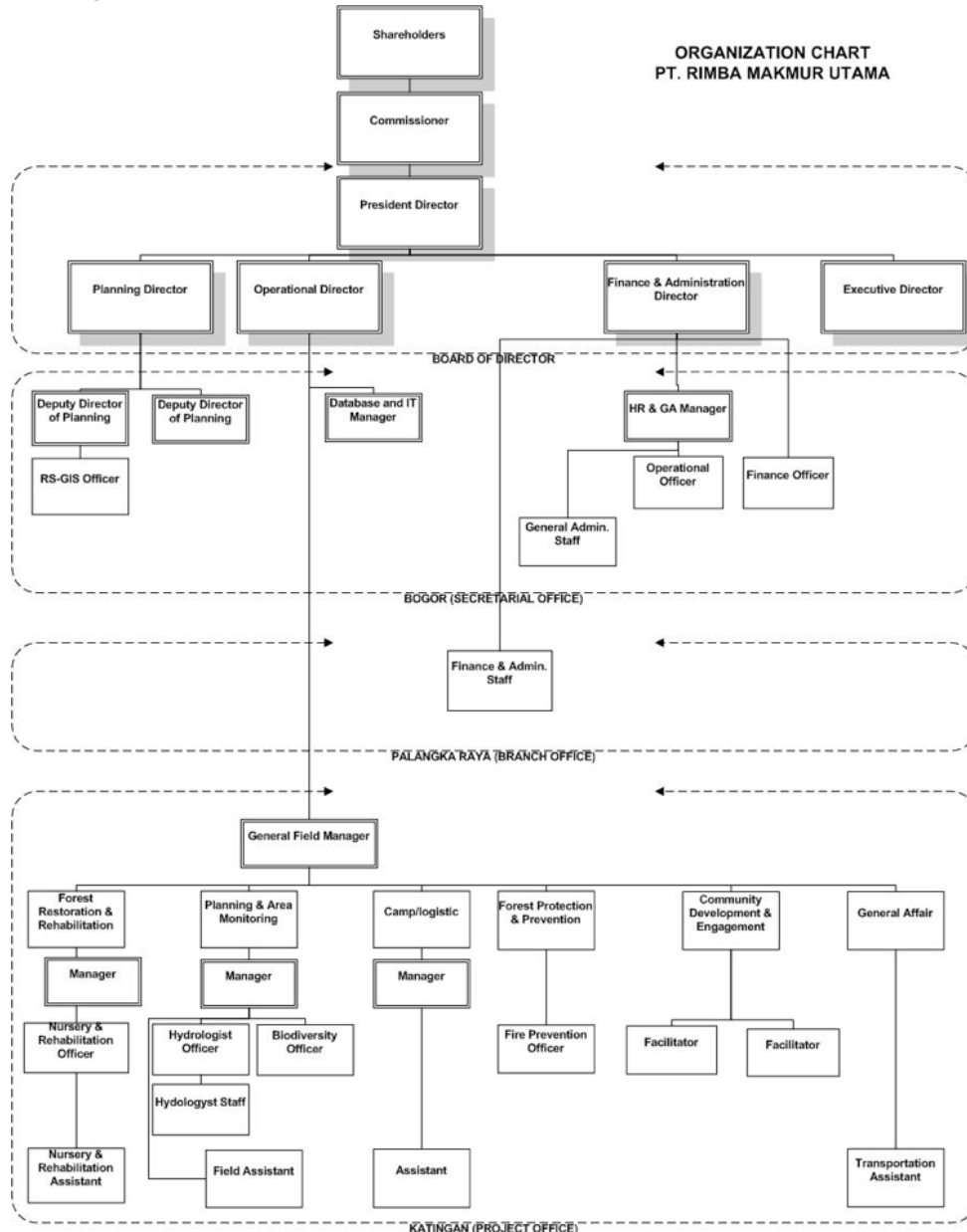
Organization	PT. Rimba Makmur Utama (PT. RMU)
Organizational category	Private company
Contact person	Dharsono Hartono, Director
Address	Menara BCA, Fl. 45, Jl. MH Thamrin No. 1, Jakarta, Indonesia Phone: +62 (0)21 2358 4777; Fax +62 (0)21 2358 4778; Mobile: +62 (0)816-976-294 <a href="mailto:dharsono@ptrmu.com">dharsono@ptrmu.com</a>
Organization's profile	PT. RMU was founded in 2007 with a mission to restore and conserve peatland in Central Kalimantan Province through a land-use permit, IUPHHK-RE, also known as ecosystem restoration concession (ERC). By using the ERC business model, PT. RMU seeks to reduce greenhouse gas emissions within the concession site and generate carbon offset credits under REDD+ mechanisms.
Project management team	<p><b>Mr. Dharsono Hartono, Chief Executive Officer</b> Dharsono is the Chief Executive Officer (CEO) of PT Rimba Makmur Utama, an Indonesia-based company that is developing the Katingan Project. Since 1998, he has worked for multinational companies such as PricewaterhouseCoopers and JP Morgan in New York, handling merger acquisition, debt management and financing and raising capital. His role in PT Rimba Makmur Utama includes managing all the company's activities, especially marketing and financing in the carbon market. Dharsono obtained a bachelor's degree in Operation Research, and a Master of Engineering from Cornell University in Financial Engineering.</p> <p><b>Mr. Rezal Kusumaatmadja, Chief Operating Officer</b> Rezal is the Chief Operating Officer (COO) of PT Rimba Makmur Utama. Before joining PT RMU, he was involved in the Katingan Project as co-founder of Starling Resources where he led the development of the project activities since 2008. He has more than 15 years of experience in natural resource management, community-based planning, forest conservation and sustainable forest management. Rezal is also actively involved in the international REDD+ initiatives serving as an advisory board member to the Climate and Land Use Alliance (CLUA) from 2010 until present, a member of the REDD+ Social</p>

Environmental Standards (REDD+ SES) international standards committee from 2009 to 2013, and a member of Advisory Committee VCS Jurisdictional and Nested REDD Initiative in 2012. Rezal holds a master's degree in urban and regional planning from the University of Hawaii and a bachelor's in City and Regional Planning from Cornell University.

### 13 ORGANIZATIONAL STRUCTURE (G4.1)

The organizational structure of PT RMU (as of June 2015) is shown below in Figure 4.

Figure 4. Organizational structure of PT. RMU as of June 2015



### 14 PROJECT START DATE (G1.9)

Following the VCS definition of start date (the date on which activities that lead to the generation of GHG emission reductions or removals are implemented), the **project start date is November 1, 2010.**



PT. RMU submitted a technical proposal to the Ministry of Forestry in 2008. The application was acknowledged and processed to conduct a partial environmental impact assessment of the project area (the status known as *SP-1*) in 2009, hence blocking any further applications. November 1, 2010 is the date when the Katingan Project commenced field survey activities inside the project area, and it also coincides with the time when baseline emissions would have started, had the project not blocked any further applications by reserving the project area. Therefore, this date will be used as the calculation base for the historical reference period required for setting a baseline scenario, and for the project crediting period as required by the methodological standards of the VCS guidelines.

## 15 PROJECT CREDITING PERIOD (G1.9)

The duration of the VCS **project crediting period is 60 years**, beginning on the project start date of **November 1, 2010** and ending on **October 31, 2070**. The project crediting period is renewable.

The project crediting period is set initially for 60 years, same with the lifetime of the Katingan Project based on the term of the ecosystem restoration concession (IUPHHK-RE) held by PT RMU.

## 16 SECTORAL SCOPE AND PROJECT TYPE

The Katingan Project is categorized as an Agriculture, Forestry and Other Land Use (AFOLU) project under the Reduced Emissions from Deforestation and Degradation (REDD) project category. The project activities are categorized under the VCS as a combination of REDD+WRC<sup>1</sup> and ARR<sup>2</sup>+WRC; specifically as Avoiding Planned Deforestation (APD) and Reforestation (ARR), in combination with Conservation of Undrained and Partially drained Peatland (CUPP) and Rewetting of Drained Peatland (RDP) activities. This is not a grouped project.

## 17 PROJECT ACTIVITIES (G1.8)

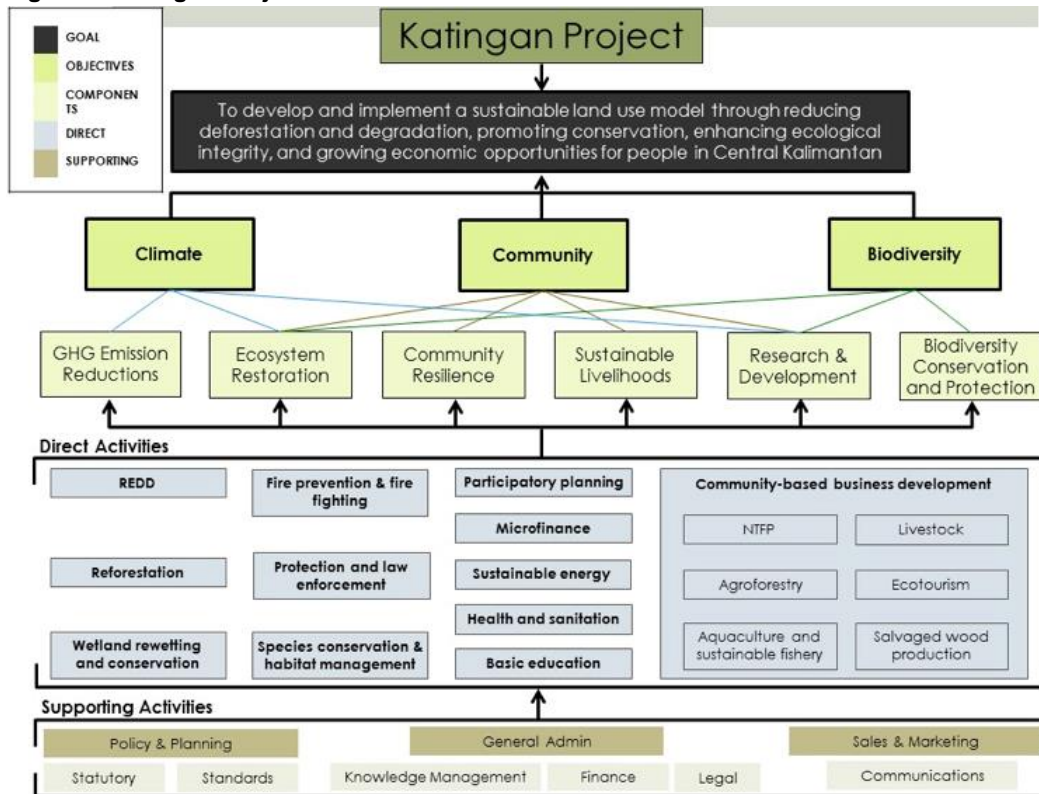
The Katingan Project conserves a vast ecosystem of mostly intact peat swamp forest which would have been converted to industrial acacia plantations in the absence of the project (see Section 4.5 of the PDD for a complete analysis of the project's baseline scenario). All activities are implemented with a full consideration of latest science knowledge and standards, conservation priorities, Indonesian laws and regulations, land tenure, socio-economic needs, and community consultation based on free, prior and informed consent principles. The project activities are listed below, and their causal relationships are shown in the project framework (see Figure 5). The detailed description of each activity is presented in Sub-section 2.2.1 of the PDD.

- A) Avoided Deforestation and peat drainage (REDD + WRC)
- B) Reforestation
- C) Peatland rewetting and conservation
- D) Fire prevention and suppression
- E) Protection and law enforcement
- F) Species conservation and habitat management
- G) Participatory planning
- H) Community-based business development
- I) Microfinance development
- J) Sustainable energy development
- K) Improved public health and sanitation services
- L) Basic education support

<sup>1</sup> Wetlands Restoration and Conservation

<sup>2</sup> Afforestation, Restoration and Revegetation

Figure 5. Katingan Project framework



## 18 COMPLIANCE WITH LAWS, STATUES, PROPERTY RIGHTS AND OTHER REGULATORY FRAMEWORKS (G5)

The Katingan Project is designed and implemented in full compliance with both national and regional laws of the Republic of Indonesia. This includes laws and regulations governing aspects of carbon emissions offsets, REDD+ and ecosystem restoration concession (ERC). In addition the project falls in line with the REDD+ National Strategy developed by the Government of Indonesia. In addition to complying with national and local laws, the Katingan Project will also comply with the requirements of international treaties and agreements.

Furthermore, the Katingan Project recognizes and respects rights of the project-zone communities to lands, territories and natural resources by creating spatially accurate maps that define the agreed extent of village land and the agreed boundary of the project area, and by signing a memorandum of understanding (MoU) with each of the project zone village authorities<sup>3</sup>.

## 19 EVIDENCE OF RIGHT OF USE (G5.8)

PT RMU is the sole concession holder of the project area under Minister of Forestry Decree SK 734/Menhut-II/2013. This license grants a range of rights and responsibilities, of which is included the right to generate and sell carbon offset credits derived from forest and peatland protection and restoration.

<sup>3</sup> So far, 13 villages have signed a MoU, and more villages are expected to follow in due course as agreements are negotiated and finalized.

## **20 TITLE AND REFERENCE OF METHODOLOGY**

The Katingan Project applies the latest version of approved VCS methodology VM0007 (version 1.5) [8], including all applicable modules as detailed in Section 4.2 of the PDD.

## **21 APPLICABILITY OF METHODOLOGY**

All applicability conditions of the VCS methodology VM0007 and its associated modules are met. Detailed explanations are provided in Section 4.2 of the PDD.

## **22 PROJECT BOUNDARY**

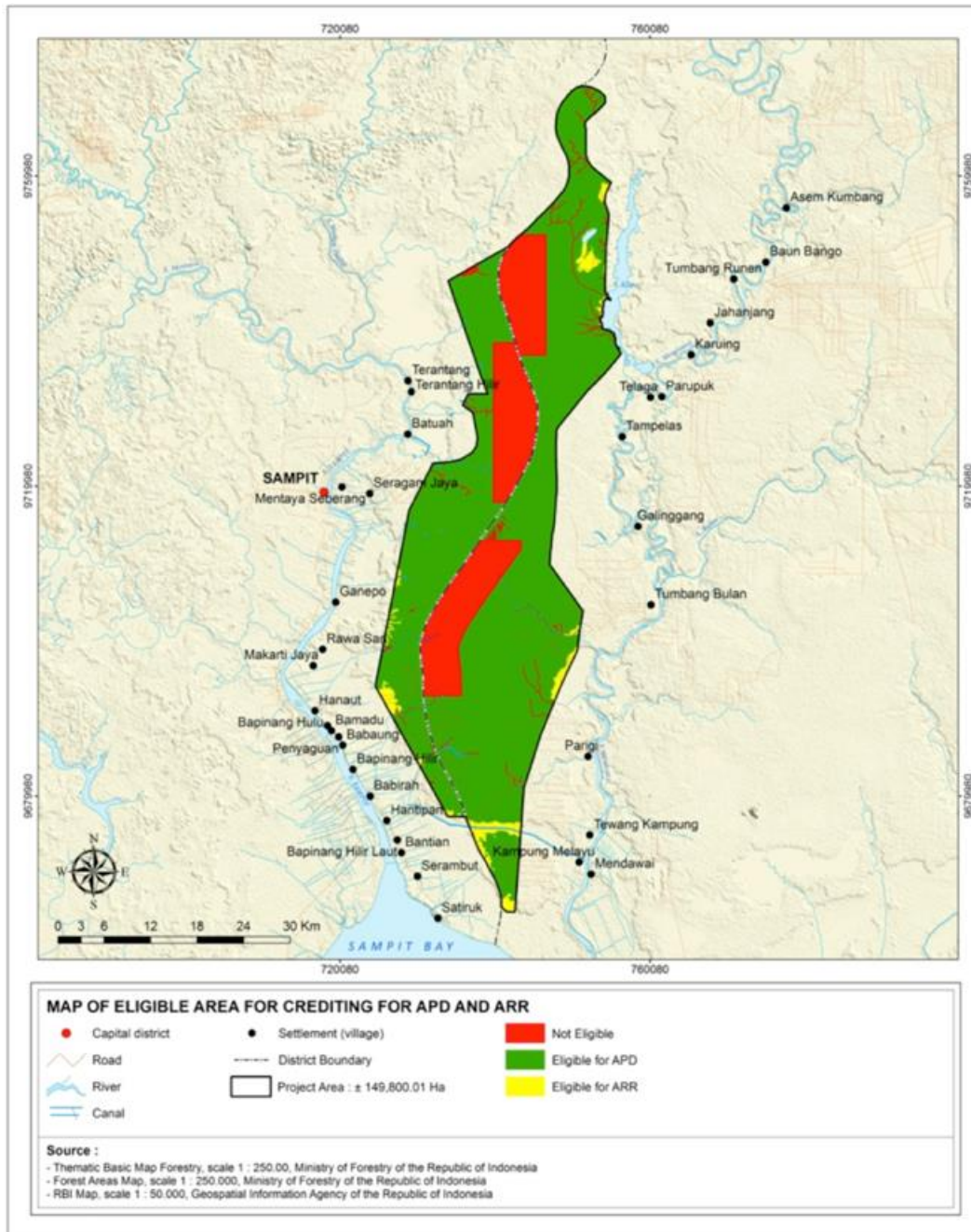
### **22.1 Spatial boundary (G1.4)**

The project area was stratified into discrete units of land that have relatively homogeneous emission and/or carbon stock characteristics (per VCS methodology VM0007 Module X-STR). This includes stratification by:

- Aboveground biomass (AGB) & vegetation types
- Soil types (peat or non-peat soils)
- Peat thickness and peat depletion time (PDT)
- Carbon stock
- Eligible areas for crediting

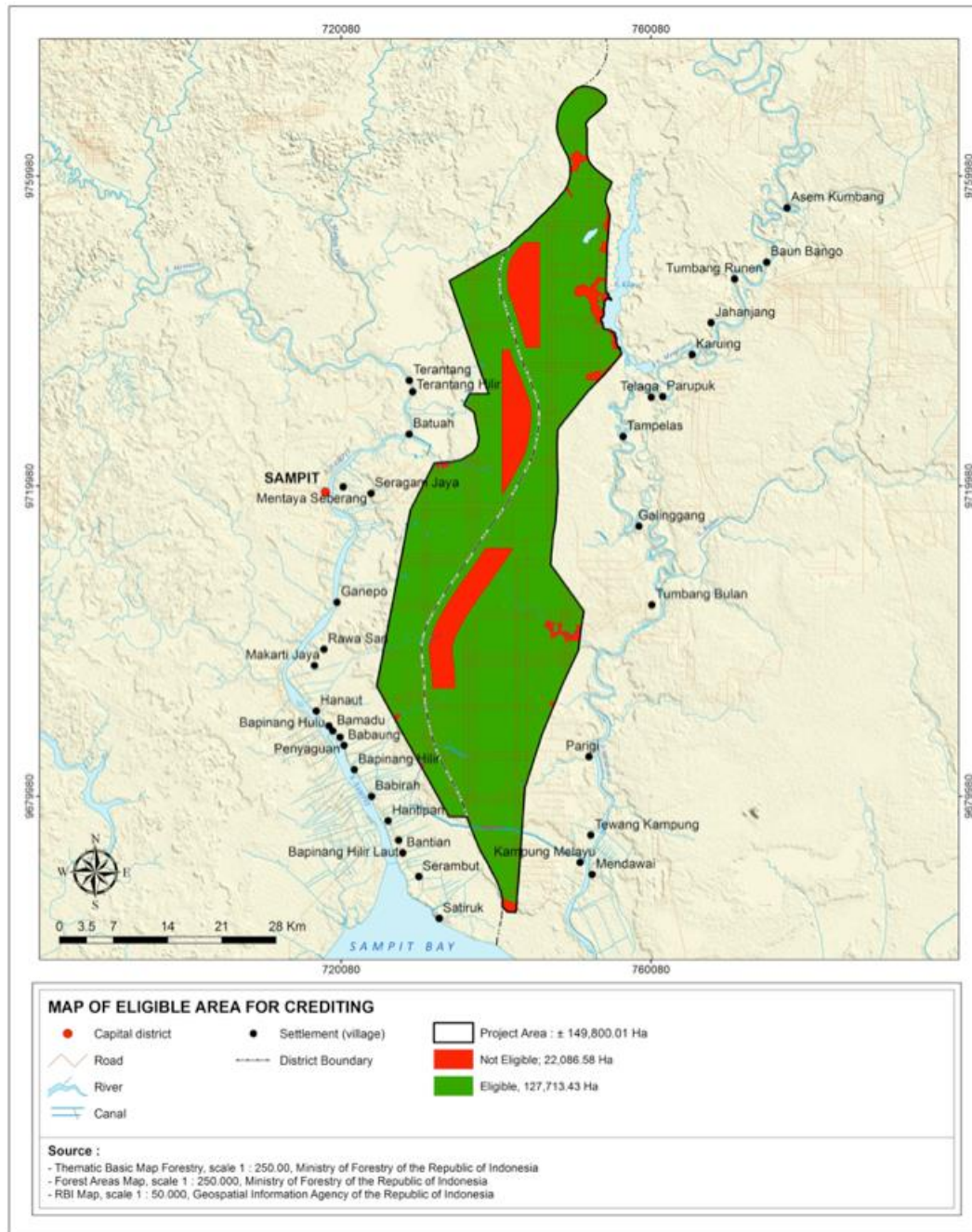
Areas eligible for crediting within the project boundary are shown in Map 5 and Map 6. These areas were calculated based on the stratification analyses of AGB, soil types, peat thickness, PDT, and carbon stock. Based on the spatial analysis, eligible area for the calculation of GHG emissions reductions or removals from REDD and ARR activities is determined as 118,917 ha or 79% of the project area, and eligible area from WRC activities as 127,713 ha or 85% of the project area.

Map 5. Eligible areas for crediting for REDD-ARR project activities





Map 6. Eligible areas for crediting for WRC project activities



## 22.2 Temporal boundary (G1.9, CL1)

The temporal boundaries of the Katingan Project are as follows.

- Historical reference period: August 22, 2000 to October 31, 2010
- Project crediting period: November 1, 2010 to October 31, 2070 (60 years)
- Baseline update period: Every 10 years

## 22.3 Carbon pools

Table 6 describes carbon pools included in the Katingan Project.

**Table 6. Summary of carbon pools**

Carbon pool	In/excluded	Justification
Aboveground tree biomass	Included	Mandatory pool in ARR and REDD project activities
Aboveground non-tree biomass	Excluded	Non-tree biomass carbon pool is expected to increase in the project scenario compared to the baseline, and therefore can be conservatively omitted.
Belowground biomass	Excluded (as accounted for in the peat component below)	Belowground biomass is not distinguished from the soil pool in WRC procedures.
Litter on mineral soil	Excluded	It is conservatively excluded. However, litter carbon pools and their stock changes may be monitored in the future.
Litter on peatland	Excluded	This pool is not mandatory for peatland. As the litter carbon pool is expected to increase in the project scenario compared to the baseline, it is therefore conservatively omitted.
Dead wood	Excluded	This pool is not mandatory for either mineral soil or peatland. As the dead wood carbon pool is expected to increase in the project scenario compared to the baseline, it is therefore conservatively omitted.
Mineral soil carbon pool	Excluded	Carbon stock in this pool is expected to increase more or decrease less due to the implementation of project activities relative to the baseline, and thus conservatively omitted.
Peat carbon pool	Included	Carbon stock in this pool is expected to increase in the project scenario compared to the baseline.
Wood products	Excluded	This pool is mandatory only where the process of deforestation involves timber harvesting for commercial markets.

## 22.4 Sources of GHG emissions

Table 7, Table 8 and Table 9 describe sources of GHG emissions included in the Katingan Project.

**Table 7. GHG sources included in the REDD project boundary**

Source	Gas	Included?	Justification/explanation	
Baseline scenario	Deforestation	CO <sub>2</sub>	Yes	Aboveground biomass losses as a result of deforestation are included
	Biomass burning	CO <sub>2</sub>	No	Aboveground biomass losses as a result of fire are conservatively assumed zero
		CH <sub>4</sub>	No	Aboveground biomass losses as a result of fire are conservatively assumed zero
		N <sub>2</sub> O	No	Above ground biomass losses as a result of fire are conservatively assumed zero
	Combustion of fossil fuels	CO <sub>2</sub>	No	Conservatively omitted.
		CH <sub>4</sub>	No	Conservatively omitted.
		N <sub>2</sub> O	No	Conservatively omitted.
	Use of fertilisers	CO <sub>2</sub>	No	Fertiliser application is higher in the baseline scenario compared to the project scenario. Therefore, it is conservatively omitted.
		CH <sub>4</sub>	No	Fertiliser application is higher in the baseline scenario compared to the project scenario. Therefore, conservatively omitted.

	Source	Gas	Included?	Justification/explanation
		N <sub>2</sub> O	No	Fertiliser application is higher in the baseline scenario compared to the project scenario. Therefore, it is conservatively omitted.
Project scenario	Biomass burning	CO <sub>2</sub>	No	Per VM0007 REDD-MF, CO <sub>2</sub> emissions are excluded but carbon stock decreases due to biomass burning are accounted for as carbon stock changes.
		CH <sub>4</sub>	Yes	If burning occurs in the project scenario it will be accounted for. IPCC combustion factors for CH <sub>4</sub> will be used.
		N <sub>2</sub> O	Yes	If burning occurs in the project scenario it will be accounted for. IPCC combustion factors for N <sub>2</sub> O will be used.
	Deforestation	CO <sub>2</sub>	Yes	If deforestation occurs in the project scenario, it will be accounted for. Values will be calculated using deforestation emission factors.
	Forest degradation	CO <sub>2</sub>	Yes	If forest degradation occurs in the project scenario, it will be accounted for. Values will be calculated using forest degradation emission factors.
	Combustion of fossil fuels	CO <sub>2</sub>	No	Can be neglected if excluded from baseline accounting.
		CH <sub>4</sub>	No	Can be neglected if excluded from baseline accounting.
		N <sub>2</sub> O	No	Can be neglected if excluded from baseline accounting.
	Use of fertilisers	CO <sub>2</sub>	No	Fertiliser application is higher in the baseline scenario compared to the project scenario. Therefore it is conservatively being omitted.
		CH <sub>4</sub>	No	Fertiliser application is higher in the baseline scenario compared to the project scenario. Therefore it is conservatively being omitted.
N <sub>2</sub> O		No	Fertiliser application is higher in the baseline scenario compared to the project scenario. Therefore it is conservatively being omitted.	

**Table 8. GHG sources included in the ARR project boundary**

	Source	Gas	Included?	Justification/explanation
Baseline scenario	Burning of woody biomass	CO <sub>2</sub>	No	Above ground biomass losses as a result of fire are assumed zero.
		CH <sub>4</sub>	No	Above ground biomass losses as a result of fire are assumed zero.
		N <sub>2</sub> O	No	Above ground biomass losses as a result of fire are assumed zero.
Project scenario	Burning of woody biomass	CO <sub>2</sub>	No	Per REDD-MF, CO <sub>2</sub> emissions are excluded but carbon stock decreases due to burning are accounted as a carbon stock change.
		CH <sub>4</sub>	Yes	If burning occurs in the project scenario it will be accounted for. IPCC combustion factors for CH <sub>4</sub> will be used.
		N <sub>2</sub> O	Yes	If burning occurs in the project scenario, it will be accounted for. IPCC combustion factors for N <sub>2</sub> O will be used.

**Table 9. GHG sources included in the WRC project boundary**

Source		Gas	Included?	Justification/explanation
Baseline / Project scenario	Microbial decomposition	CO <sub>2</sub>	Yes	Initially TIER 1 methods (IPCC defaults) will be used for the baseline and project to estimate emissions, later in the project measurements will be performed to develop site-specific emission models, and if needed, in the reference regions for the baseline.
		CH <sub>4</sub>	Yes	Required unless <i>de minimis</i> or conservatively omitted. In this project TIER 1 (IPCC defaults) will be used to estimate CH <sub>4</sub> emissions in the baseline and project.
		N <sub>2</sub> O	No	Excluded as per applicability condition in module BL-PEAT
	Water bodies	CO <sub>2</sub>	Yes	Water bodies comprise about 5% of the drained peatland landscape. DOC values for 'drained' and 'undrained' peatlands (IPCC) are used to calculate the differences in carbon losses between baseline and project. These carbon losses will be expressed in CO <sub>2</sub> -equivalents, and conservatively assumed that all dissolved organic carbon (DOC) will be lost as CO <sub>2</sub> .
		CH <sub>4</sub>	No	It will be conservatively assumed that all dissolved organic carbon (DOC) will be lost as CO <sub>2</sub> and that no CH <sub>4</sub> is being released. Over the long-term, the project will develop a site-specific model to quantify emissions from water bodies based on site specific measurements performed.
		N <sub>2</sub> O	No	Conservatively omitted.
	Peat combustion	CO <sub>2</sub>	Yes	Procedures provided in module E-BPB using IPCC combustion factors for both baseline and project scenario. If peat combustion occurs in the project scenario it will be accounted for.
		CH <sub>4</sub>	Yes	Procedures provided in module E-BPB, using IPCC combustion factors for both baseline and project scenario. If peat combustion occurs in the project scenario it will be accounted for.
		N <sub>2</sub> O	Yes	Procedures provided in module E-BPB, using IPCC combustion factors for both baseline and project scenario. If peat combustion occurs in the project scenario it will be accounted for.
	Combustion of fossil fuels	CO <sub>2</sub>	No	Can be neglected if excluded from baseline accounting.
		CH <sub>4</sub>	No	Potential emissions are negligible.
		N <sub>2</sub> O	No	Potential emissions are negligible.
	Fertiliser application	CO <sub>2</sub>	No	Fertiliser application is higher in the baseline scenario compared to the project scenario. Therefore, it is conservatively omitted.
		CH <sub>4</sub>	No	Fertiliser application is higher in the baseline scenario compared to the project scenario. Therefore, it is conservatively omitted.
		N <sub>2</sub> O	No	Fertiliser application is higher in the baseline scenario compared to the project scenario. Therefore, it is conservatively omitted.

## 23 BASELINE SCENARIO AND ADDITIONALITY (G2.1, G2.2)

The project area is located entirely within state-designated production forest. Without the project, under the business-as-usual scenario, the area would be converted into fast-growing **industrial**



**pulpwood (acacia) plantations.** The Katingan Project is considered additional, and prevents planned deforestation by obtaining full legal control of the production forest area through an Ecosystem Restoration Concession (ERC; Minister of Forestry Decree SK 734/Menhut-II/2013).

The project’s baseline and additionality are demonstrated using the “combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities: Version 1” [9]. A full analysis of baseline and additionality is provided in Section 4.4 of the PDD.

## 24 PROJECT SCALE AND ESTIMATED GHG EMISSION REDUCTIONS OR REMOVALS (CL2.2)

Estimated GHG emission reductions and removals are shown below. The project is categorized as a large project.

Project	No
Large project	Yes

Years	Estimated GHG emission reductions or removals (tCO <sub>2</sub> e)
2011	1,404,330
2012	1,398,752
2013	3,950,285
2014	4,037,205
2015	4,424,832
2016	4,640,182
2017	5,239,509
2018	5,515,287
2019	5,892,227
2020	6,219,617
2021	6,666,469
2022	6,823,628
2023	7,275,262
2024	7,462,232
2025	7,896,374
2026	8,094,746
2027	8,509,039
2028	8,727,679
2029	9,285,238
2030	9,423,876
2031	

Years	Estimated GHG emission reductions or removals (tCO <sub>2</sub> e)
	9,096,606
2032	9,425,608
2033	8,351,267
2034	8,300,658
2035	8,258,380
2036	8,259,888
2037	8,254,357
2038	8,208,700
2039	8,233,633
2040	8,196,342
2041	8,226,215
2042	8,149,872
2043	8,132,722
2044	8,155,212
2045	8,100,459
2046	8,097,548
2047	8,114,120
2048	8,112,153
2049	8,079,863
2050	8,080,873
2051	8,037,521
2052	8,046,742
2053	8,029,369
2054	8,017,338
2055	7,978,032
2056	7,973,987
2057	7,974,344
2058	7,943,670
2059	7,923,838
2060	7,911,214
2061	7,909,534

Years	Estimated GHG emission reductions or removals (tCO <sub>2</sub> e)
2062	7,895,543
2063	7,903,288
2064	7,882,187
2065	7,846,179
2066	7,878,557
2067	7,842,378
2068	7,806,442
2069	7,823,664
2070	7,765,710
<b>Total estimated ERs</b>	447,110,780
<b>Total number of crediting years</b>	60
<b>Average annual ERs</b>	<b>7,451,846</b>

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