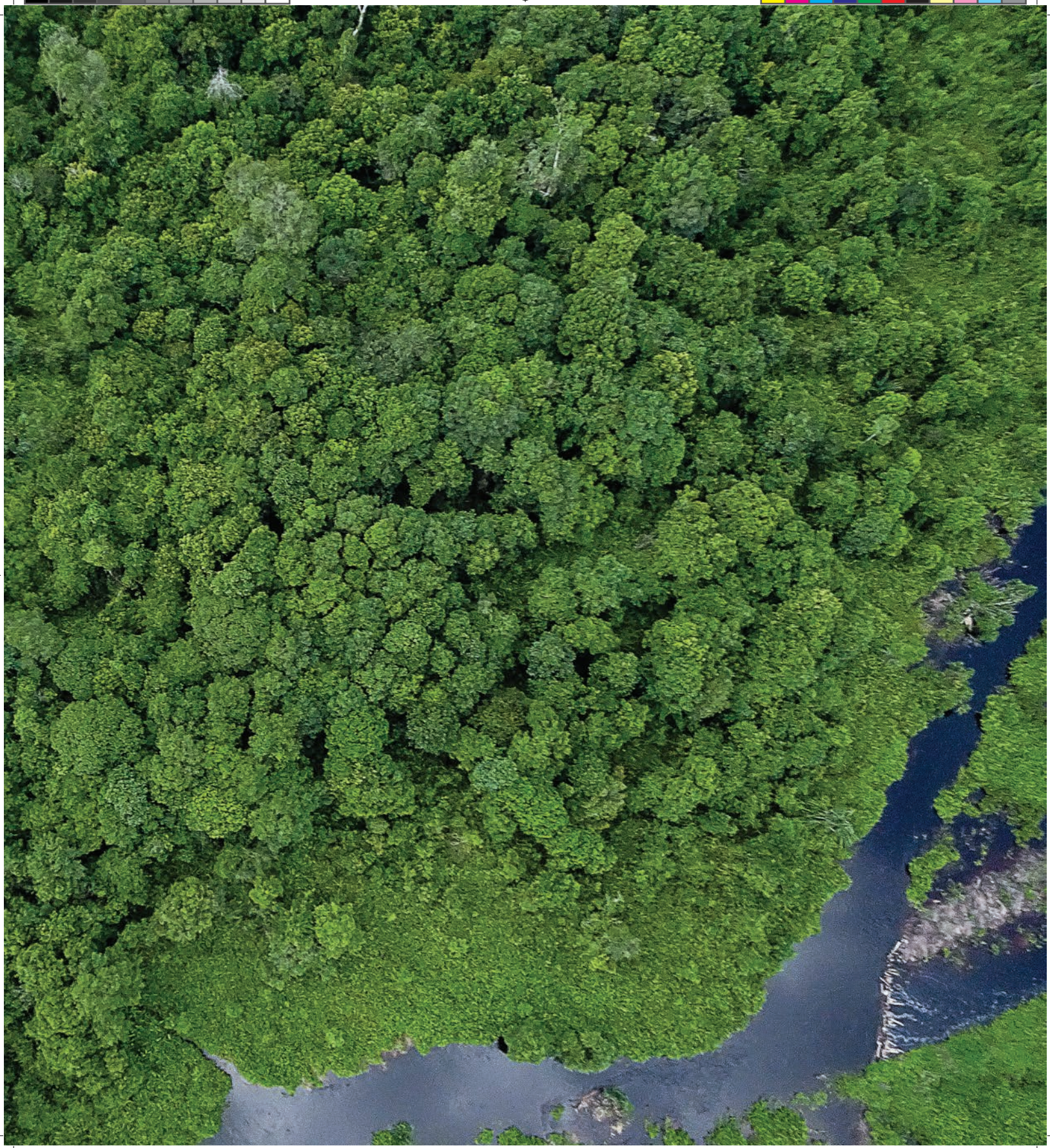


## OVERVIEW

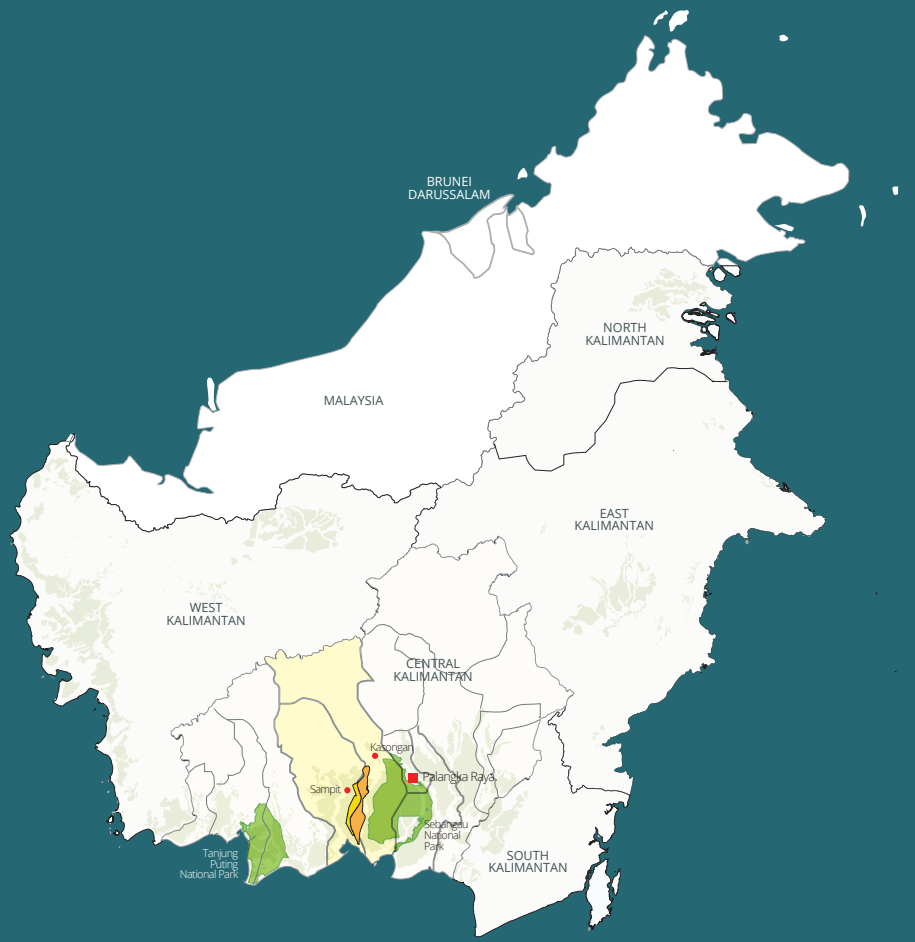
Covering 157,875 hectares of a relatively intact peat swamp forest, the Katingan Mentaya Peatland Restoration and Conservation Project is based on the premise that we can still save large areas of peat swamp forest in Indonesian Borneo, offer local people sustainable sources of income, tackle global climate change – and base this on a solid business model. Our project is defined by a result-oriented, bottom-up and transparent approach to land use and conservation in a part of the world where this is urgently needed.

Protecting tropical forest from deforestation and degradation is critical to preventing further climate change. In 2015, peatlands in Central Kalimantan accounted for one-third of the burned area, causing the vast majority of the haze that engulfed Southeast Asia.

The Katingan Mentaya Project protects the peat swamp forest; it does not throw a fence around it and 'close' it. By respecting local land tenure, both legal and de facto, the project holds the basic principle that access to the forest will remain open to those forest-dependent communities that have traditionally used it. This central business model works such that the project's benefits are passed on to local communities, the local area and the country.

At its core, the project is financed by what it achieves in terms of sequestering and avoiding the emissions of carbon dioxide. The project is managed by an Indonesian company, PT. Rimba Makmur Utama, through an Ecosystem Restoration Concession[1].

[1] Minister of Forestry Decree SK 734/Menhut-II/2013; Head of Investment Coordinating Board (BKPM) Decree SK 23/1/IUPHHK- RE/PMDN/2016), granted by the Indonesian Ministry of Forestry




PT Rimba Makmur Utama

## "REDUCING DEFORESTATION AND GROWING ECONOMIC OPPORTUNITIES IN BORNEO"

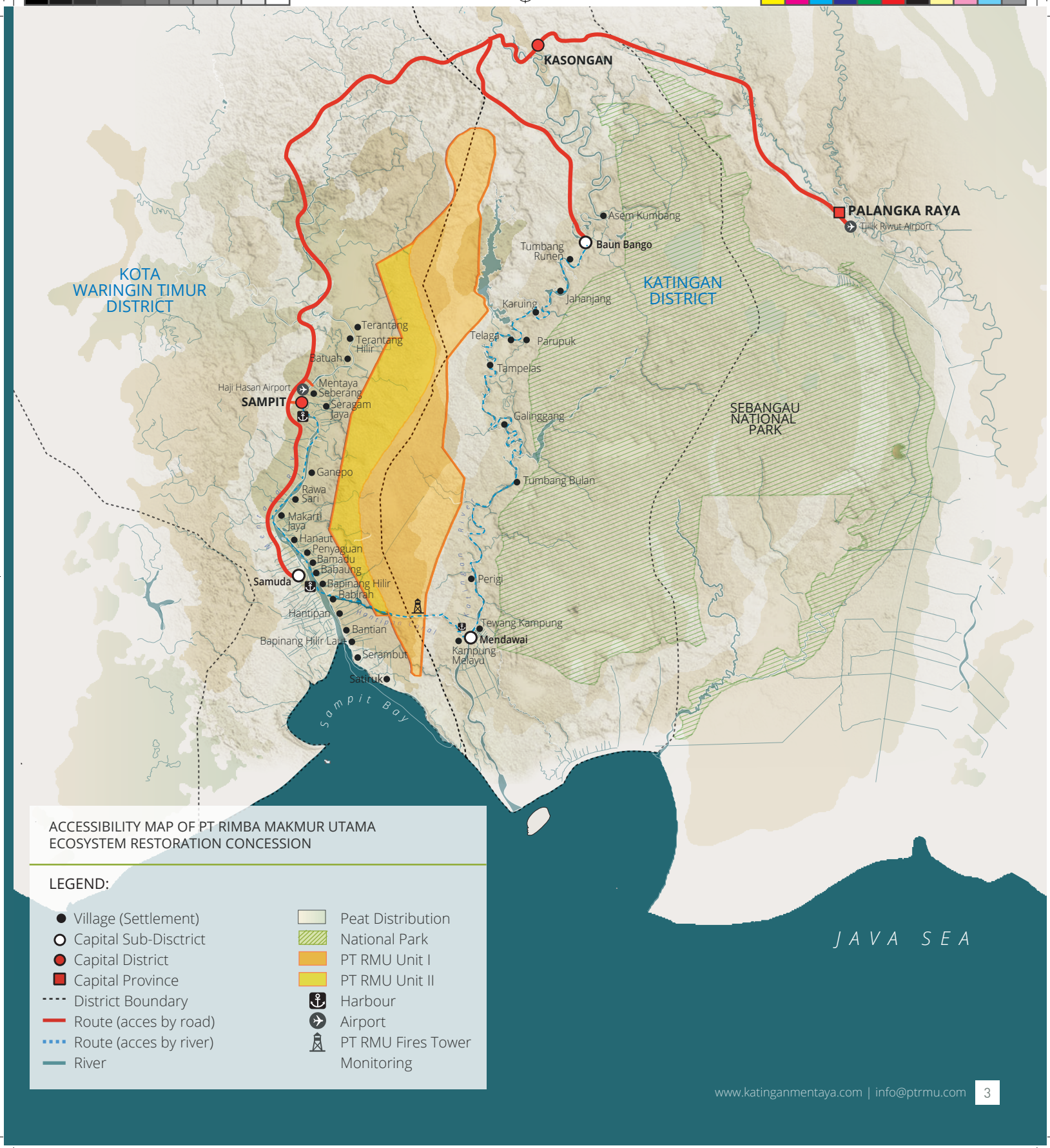
PT. Rimba Makmur Utama is an endeavor to protect and restore a 157,875 hectares peat swamp forest in Katingan and Kotawaringin Timur districts in the province of Central Kalimantan.

Through this project, we aim to reduce carbon emissions, protect biodiversity and create sustainable economic development opportunities that improve the lives of rural communities.

The Katingan Mentaya Project has invested substantial resources into calculating the amount of carbon stored in the concession area and the amount of carbon it prevents to be released to the atmosphere, with a view to issuing carbon credits on the global market.

*"Emission reductions almost 8 million $tCO_2e$ annually, equivalent to taking 2 million cars off the road, or 2 coal-fired power stations"*

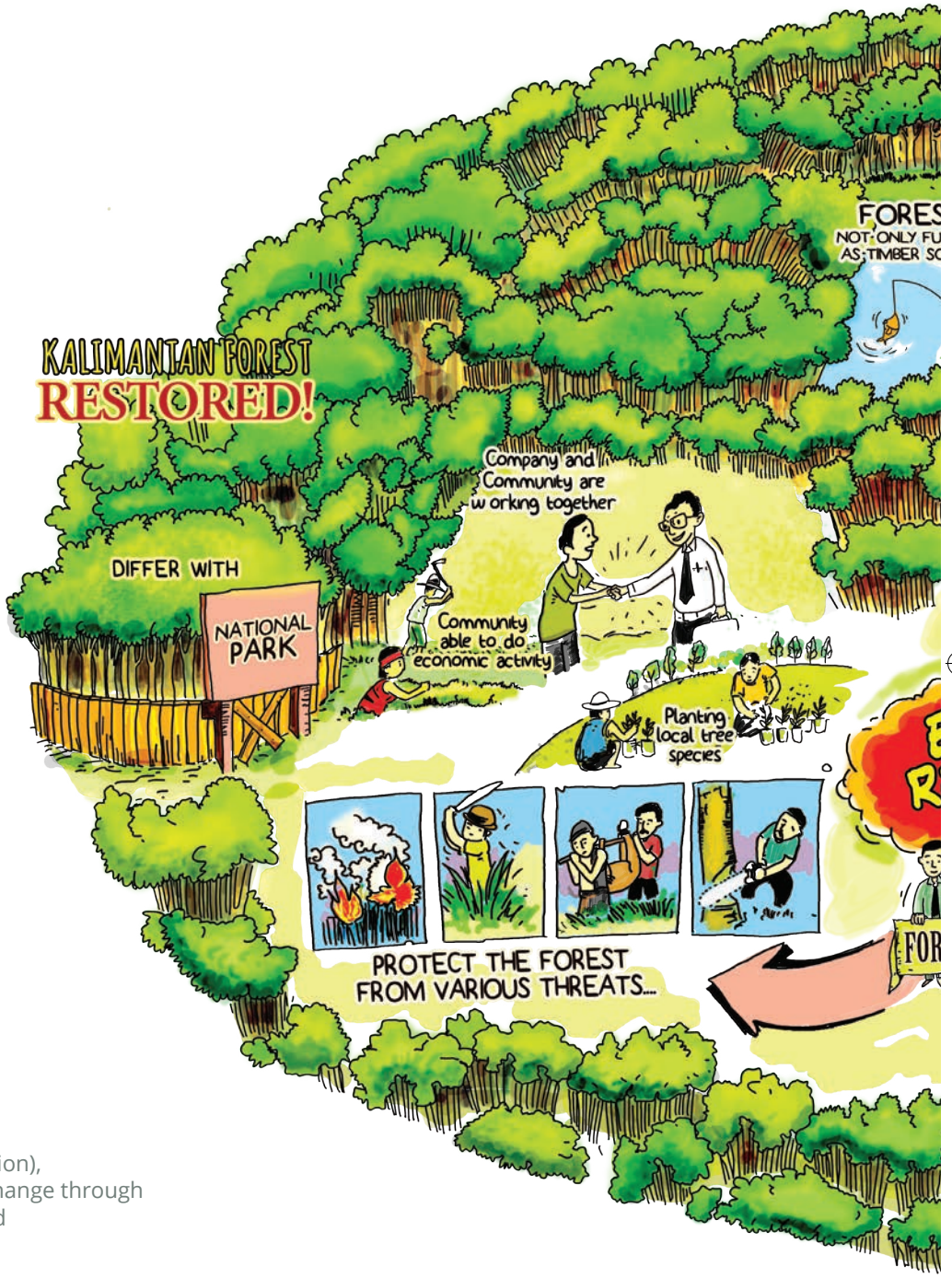
The project is performance-based, in that the proponents only receive funding if the ecological integrity of the project area is maintained, and they succeed in preventing emissions from deforestation, forest fires, and peat decomposition.




ACCESSIBILITY MAP OF PT RIMBA MAKMUR UTAMA
ECOSYSTEM RESTORATION CONCESSION

LEGEND:

- Village (Settlement)
- Capital Sub-Disctrict
- Capital District
- Capital Province
- District Boundary
- Route (acces by road)
- Route (acces by river)
- River
- Peat Distribution
- National Park
- PT RMU Unit I
- PT RMU Unit II
- Harbour
- Airport
- PT RMU Fires Tower Monitoring




"The goal is to develop and implement a sustainable land use model that is aligned with REDD+ (Reducing Emissions from Deforestation and Forest Degradation), mitigating the impacts of climate change through empowering local communities and preserving crucial ecosytems"

# KATINGAN-MENTAYA, WHERE NATURE AND PEOPLE INTERSECT

The project area covers one of the largest remaining intact peat swamp forests in Indonesia – surrounded by villages that depend on the forest and the land to make a living.

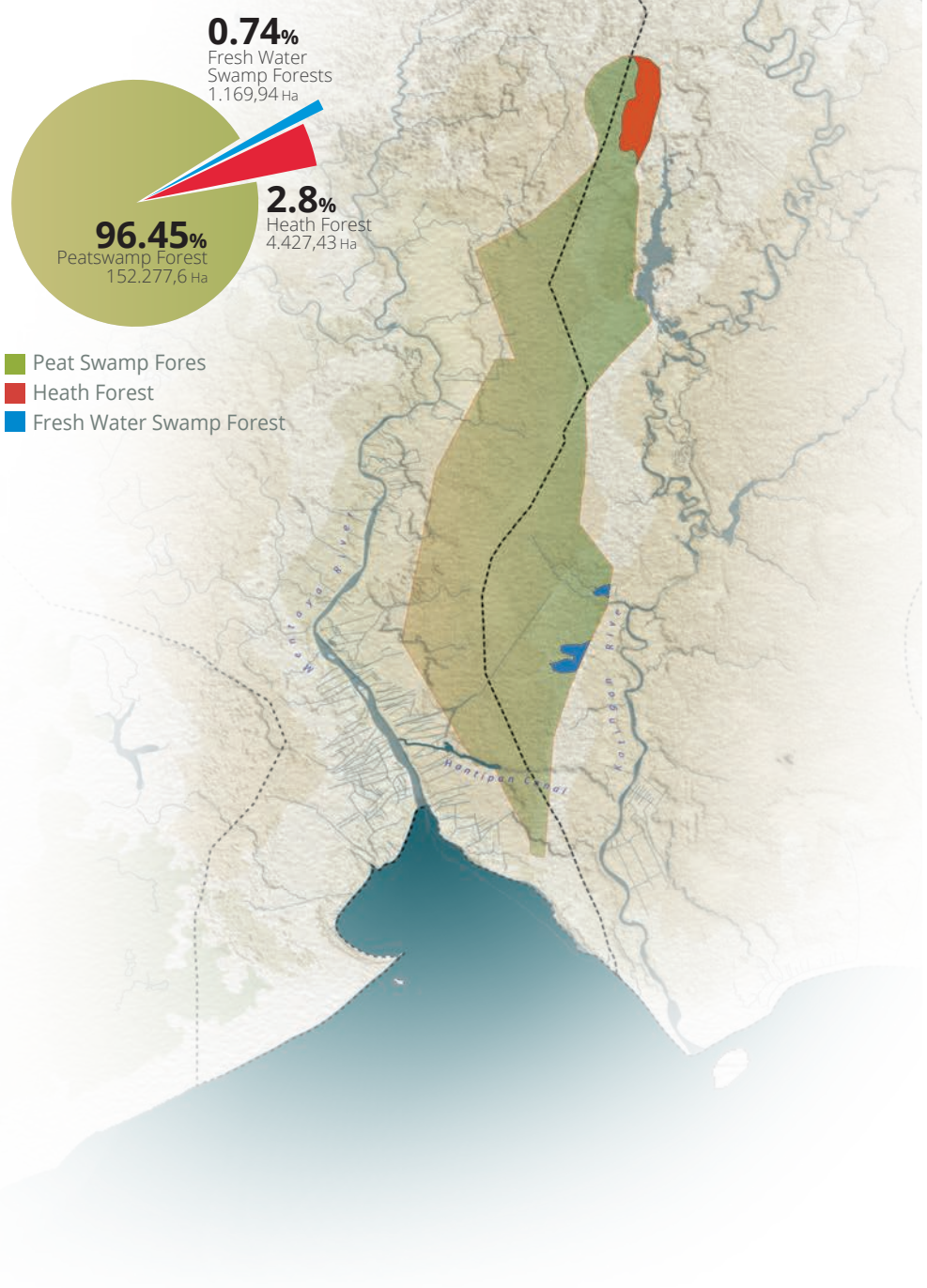
*"An amazing hydrological engine and a colossal store of carbon"*

Peatlands are lands comprise of peat soils, which store vast stocks of carbon – such as the ones in Katingan-Mentaya. In natural conditions, Indonesian peatlands are covered by tropical peat swamp forest and the soils mostly remain wet or waterlogged throughout the year. In this conditions ecosystems are in good balance and capable of preserving large amount of carbon in peat soils as well as in tree biomass. Unlike mineral soils, peat soils are mostly composed of organic matter, and can easily get decomposed and combusted.

ECOSYSTEM TYPE MAP OF ERC
PT RIMBA MAKMUR UTAMA




Peat Swamp Fores
Heath Forest
Fresh Water Swamp Forest



## Biodiversity Rivaling Other Peat Swamp Forests

Initial estimates suggest that over 4,139 orangutans, 9,789 gibbons and more than 540 proboscis monkeys roam in the area. What this means is that the Katingan populations represent over 5% of the remaining global population of these species, which makes the area critical to their survival in the wild.

*"Over 5% of the global population of orangutans"*

In 2010, scientists with the Katingan Mentaya Project team immersed themselves into the area's peat swamp forests to document the local wildlife. The impressive data they came back with confirmed the global significance of this previously under-researched area. In addition to orangutans, gibbons and proboscis monkeys, the scientists identified:

- 67 mammal species (1 Critically Endangered, 5 Endangered, 13 Vulnerable, and 21 protected).
- 185 bird species (2 Critically Endangered, 2 Endangered, 6 Vulnerable, and 43 protected).
- 49 reptile species (3 Endangered, 3 Vulnerable, and 4 protected).

Considering the large size of the concession area, the remaining Critically Endangered and Endangered species found in the area, in particular the white-shouldered ibis and storm's stork, can be considered potential High Conservation Value species.

Katingan is also home to 312 species of plants, comprised of 219 tree and 93 non-tree species. Abundant tree species include a number of important orangutan foods, and at least six High Conservation Value species, such as the Critically Endangered red balau and the Endangered light red meranti.

## Ethnic Diversity and a Complex Social Tapestry

The ethnic makeup of Katingan is just as diverse as the natural ecosystem. While the majority of communities surrounding the project area are of Dayak descent, the local population now includes Banjar, Javanese, and Madurese people who arrived through successive waves of migration.

Generally, the majority of people here are farmers who make a living from small-scale farming, rice cultivation, traditional fisheries, fruit gardens, non-timber forest products (e.g., gemor, jelutung (a latex producing tree), honey and medicinal plants), and agroforestry (e.g., cash crops including rubber, coconut and rattan).

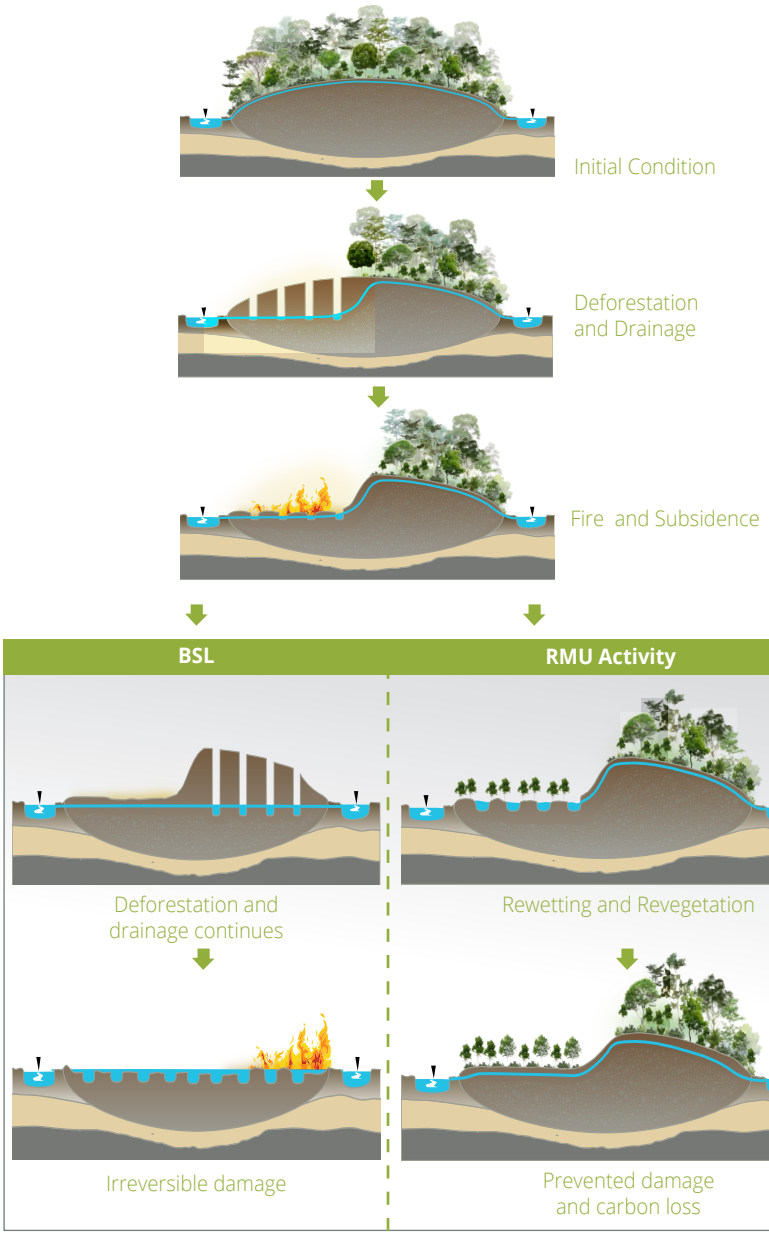
They typically manage and cultivate lands among small farmer groups. As an additional or main source of income, some people run small businesses such as kiosks, warung (small food stalls), swallow nests, boat/taxi operation, or work as laborers for oil palm plantations and mining companies. In some cases, they make a living as illegal loggers. For many people, the cultivation of rattan and rubber trees is among the most important source of income.

## Rivers, the Area's Lifeline and Circulatory System

The rivers in the area play an important role in the livelihoods of local communities and in the economy, as they provide a means for transportation, and a source of drinking water, irrigation for agriculture, bathing, washing, and both subsistence and fishing.

# WHY PROTECT PEAT SWAMPS?

Peat swamp forests are vital to humans, locally and globally. At the local level, peat forests function like sponges, absorbing and storing water, and serving a vital role in managing water in Borneo's lowlands. They function as freshwater reservoirs, stabilizing water levels and river flow, and protecting against seawater intrusion.



At the global level, these forests store massive quantities of carbon accumulated in the peat over thousands of years. The peat forest in Katingan and Kotawaringin Timur also contains significant amounts of carbon.

When humans remove natural forest cover, construct artificial drainage, or both, the microbial decomposition in peat swamps accelerates, soil wetness decreases and and peat soils become prone to fire especially in dry seasons.

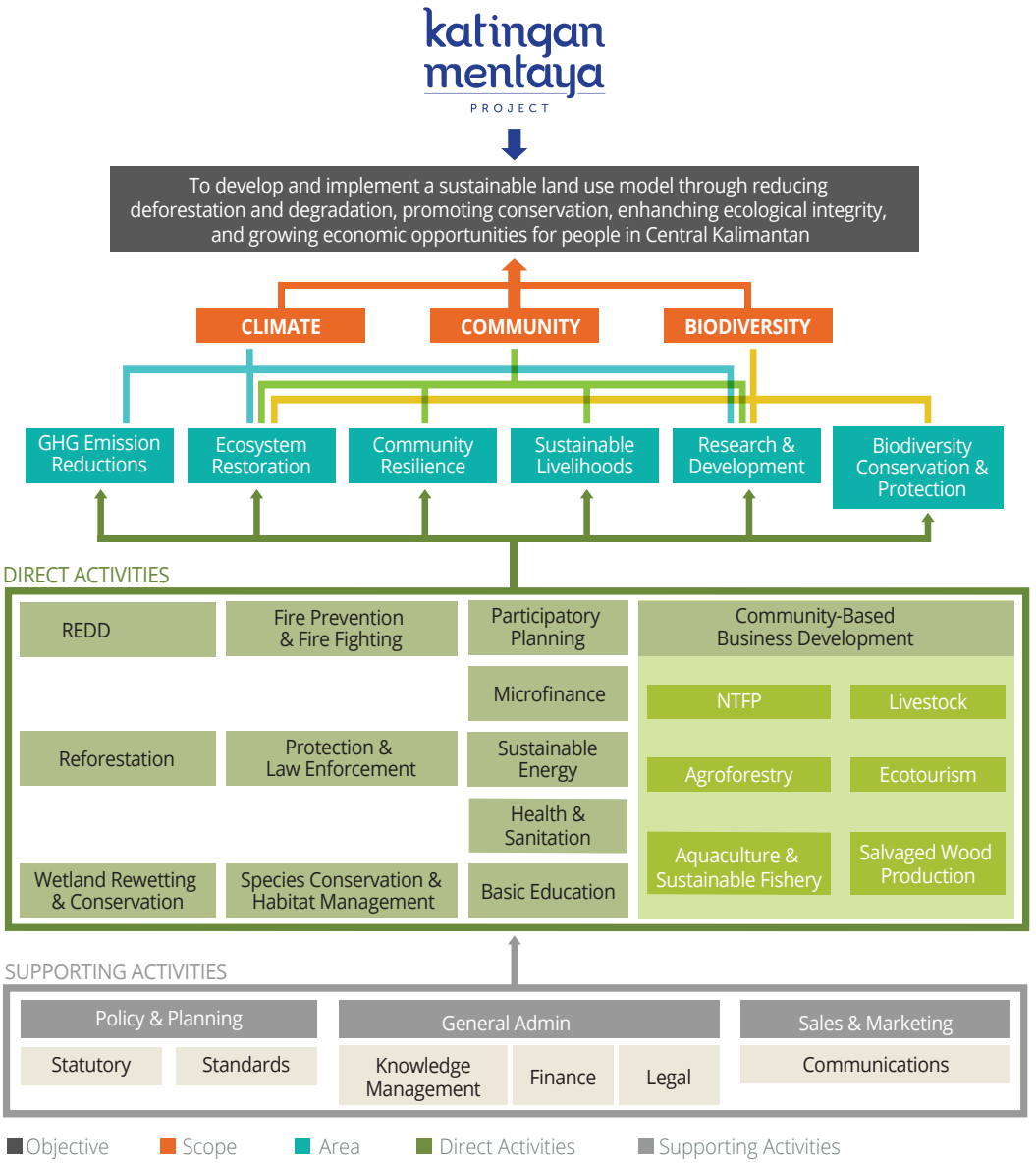
*"In the absence of the project, part or all of the forest area would almost certainly be degraded and converted to plantation forest or non-forest at some point in the future"*

Therefore, the only mean to truly preserve peatlands is by leaving them untouched, keeping their natural forest cover intact and waterlogged conditions. If peat forests are degraded, burnt and drained, then the hydrologic function is lost and the stored carbon is released into the atmosphere in huge quantities, contributing to climate change. Considering land allocation regulations and historical land-use trends in the area, with the absence of the Katingan Mentaya Project, the peatland would most likely be deforested and reclaimed for plantations, partially or entirely, sooner or later.

## KATINGAN-MENTAYA PROJECT: A BLUEPRINT FOR SUSTAINABLE LAND USE

In the spirit of conserving the Katingan Mentaya peatland ecosystem, including its human component, the Katingan Mentaya Project has invested substantial resources into ecosystem conservation and restoration efforts through an Ecosystem Restoration Concession scheme, covering substantial area of Katingan Mentaya peat dome, including its dome summit.

By securing a 157,875 hectares concession of peatland for 60 years, that can be extended further for another 30 years, the peatland has been prevented from future conversions to any unsustainable land use of peatlands. At the same time Katingan Mentaya Project also aims to to restore the integrity of hydrology and ecosystem functionings of the peatland by rewetting and reforesting part of the project area that has been drained and deforested before the project took place in 2010.



## Restoring Peat Vegetation

We are actively restoring vegetation in the heavily degraded in all ecosystem types, covering approximately 9,299 ha. We use local plant species by applying Ecosystem Restoration Silviculture techniques, with the aim to both benefit local wildlife as well as providing economic benefits to surrounding communities. We are also implementing planting trials by using techniques to enrich soil nutrients using organic materials and legume species. In these activities, we involve local communities so that they gain a better understanding of the importance of revegetation while supplementing their income.

## Saving Threatened Species

The Katingan Mentaya Project works to protect the habitat and prevention of unsustainable exploitation of the vast majority of the biodiversity within the project, contributing to avoidance of species extinction, or forced migration. We do this by:

- Monitoring plants and wildlife
- Preventing unsustainable use of wildlife through SMART patrol system
- Protecting and restoring threatened populations and their habitat

In a few cases more specific management may be required, such as when orangutans raid crops grown by villagers. This requires approaches to mitigate the potential conflict with local communities.

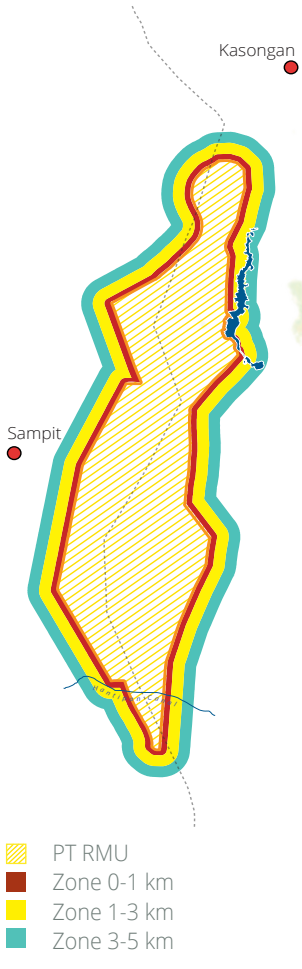
Through collaboration with partners, it is also likely that the project area will be used to support their species rehabilitation efforts. In such cases, careful assessment will be made of suitable locations for the potential release of rehabilitated animals. Any releases will be made in full compliance with Indonesian law and adhering to IUCN guidelines for reintroductions and translocations.

## Protecting and Securing the Area

A patrol program is implemented to immediately address fire hazards and the protection of flora and fauna. Our fire patrols consist of prevention and suppression of fire spots, both of which can occur in the concession or in its surroundings. Patrols in the perimeter of the concession are carried out especially in areas adjacent to the agricultural land of the communities. Our fire-suppression efforts are a firm commitment and contribution of the company to the surrounding environment and help the local governments in tackling land and forest fires in wild areas.

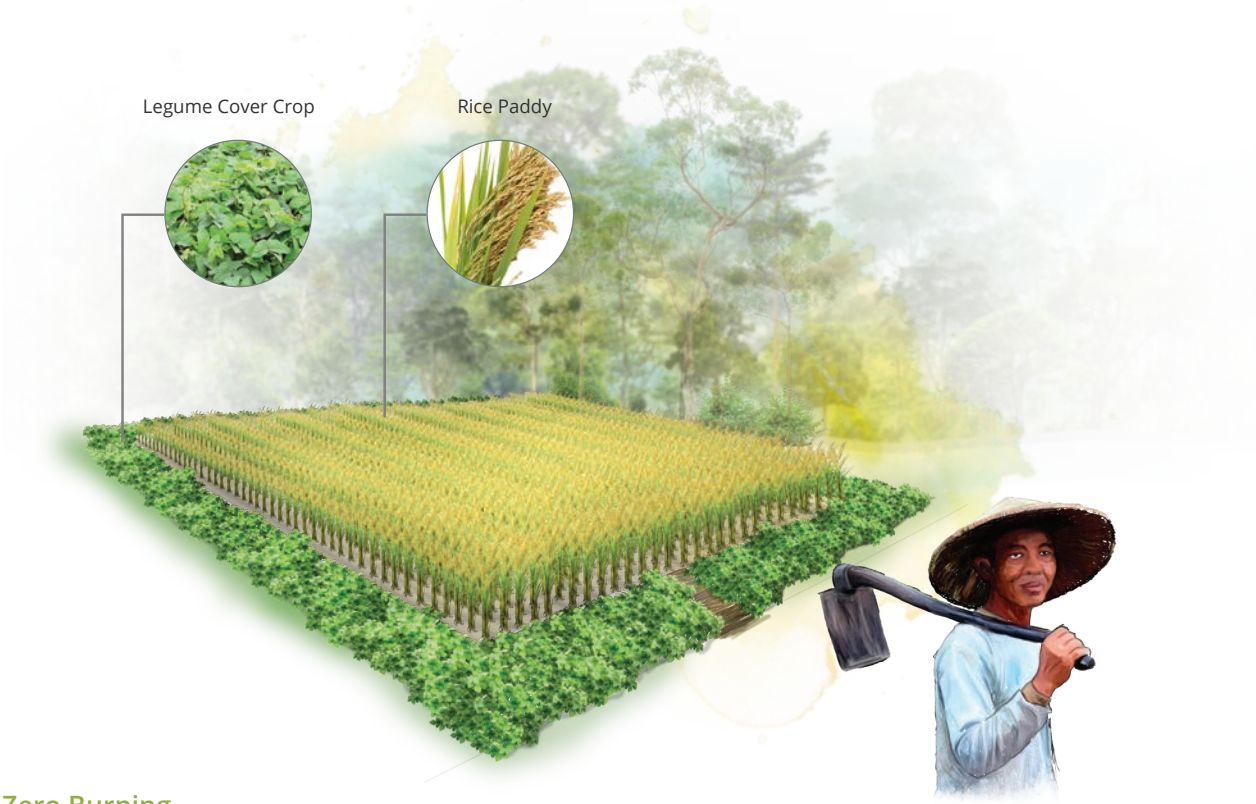
In preventing fires in the surrounding area, the project introduced the concept of "Zero Burning Agriculture" – a technique to clear land for cultivation without burning. Instead it relies on using a cutting / slash system combined with the planting of bean species.

FIRE PREVENTION ZONE MAP OF PT RIMBA MAKMUR UTAMA ERC




| No | Distance | Implemented Tehnical Intervention | Notes |
|---|---|---|---|
| 1 | 0-1 Km | Full scale suppression operation | Operation carry out by RMU Staff and RSA from nearby villages |
| 2 | 1-3 Km | - Checking or identifying initial hotspot (field condition, extend of fire, vegetation type, types of fires, water sources, administrative boundary, road access & potential causes)<br>- Instruction to Community-based fire fighter group (Regu Siaaga Api/RSA) for suppressing the fire (maximizing existing resources)<br>- Build fire break area, to localize fire not to spread to RMU area<br>- Build a temporary post in the burnt area.<br>- Build water well (no water resources available) | Maintain communication and coordination with local government including Muspika "Sub-District-Level Executive Conference" as well as related authorities (BPBD/Regional Disaster Management Agency, the Army, the Police, head of village and related agency) regarding hotspot within their administrative boundary to allow them actively involve in formulating effective prevention and suppression of fire |
| 3 | 3-5 Km | - Checking or identifying initial hotspot (field condition, extend of fire, vegetation type, types of fires, water sources, administrative boundary, road access & potential causes)<br>- Build a temporary post in the burnt area<br>- Active patrol within the burn area to assess the field condition for strategizing further fire prevention if fires moving towards RMU area<br>- Daily monitor of fire movement in the field (updating nearest coordinate, extend of fire and wind direction) | |

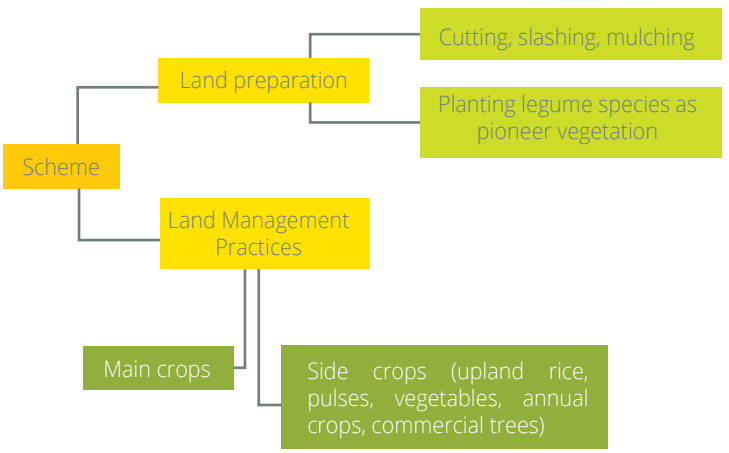
" Policy on prevention and suppression of forest and land fire outside PT RMU concession"

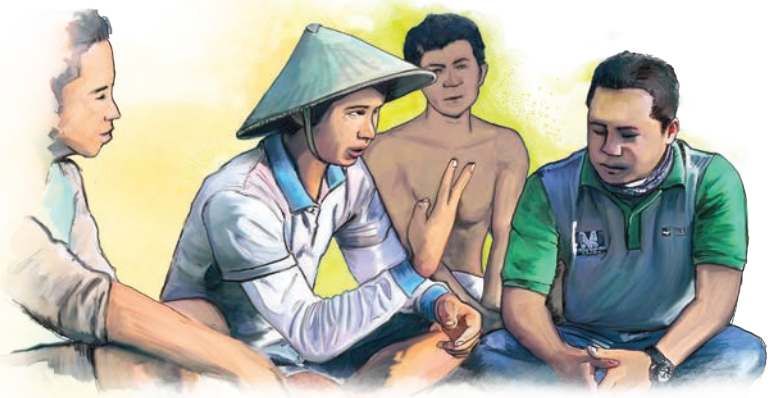



## Zero Burning Agriculture Practice

**Idea:**
Optimizing land utilization by improving its productivity and establishing eco-friendly agricultural practices.

**Aim:**
Improving farmers' livelihood and reducing their dependence on forests, in line with one of PT RMU missions.





## Implementing Cooperation Partnership Frameworks

Our project runs a community development program across 34 villages that is intended to encourage people to take part in the development of ecosystem restoration plans. The program optimizes benefits for the community and other local stakeholders that are expected to have an impact on increasing the income of the target groups. This could eventually reduce activities which are not environmentally-friendly such as logging and conversion for plantations and will contribute to poverty reduction. Community development programs are carried out in two areas, Katingan District administrative (Unit I) comprising of 14 villages, and Kotawaringin East (Unit II), which consists of 20 villages.

In our cooperation with communities, we use three principles: responsibility, transparency and equity We draw an agreement between PT RMU (the project owning company) with the community institution / group (instead of individuals), ensuring that both parties are equally positioned. The cooperation program is based on the village plan drawn up by the communities themselves and accompanied by an independent agency. The program selection is based on the agreement with the community using Penthagonal Livelihood methods, which consider five assets that exist in society, namely human capital, natural resources, financial resources, physical resources, and social resources. After the program is agreed, negotiations are conducted with PT RMU and then legalized in a MoU and Work Agreement.

In general, community development programs consist of:

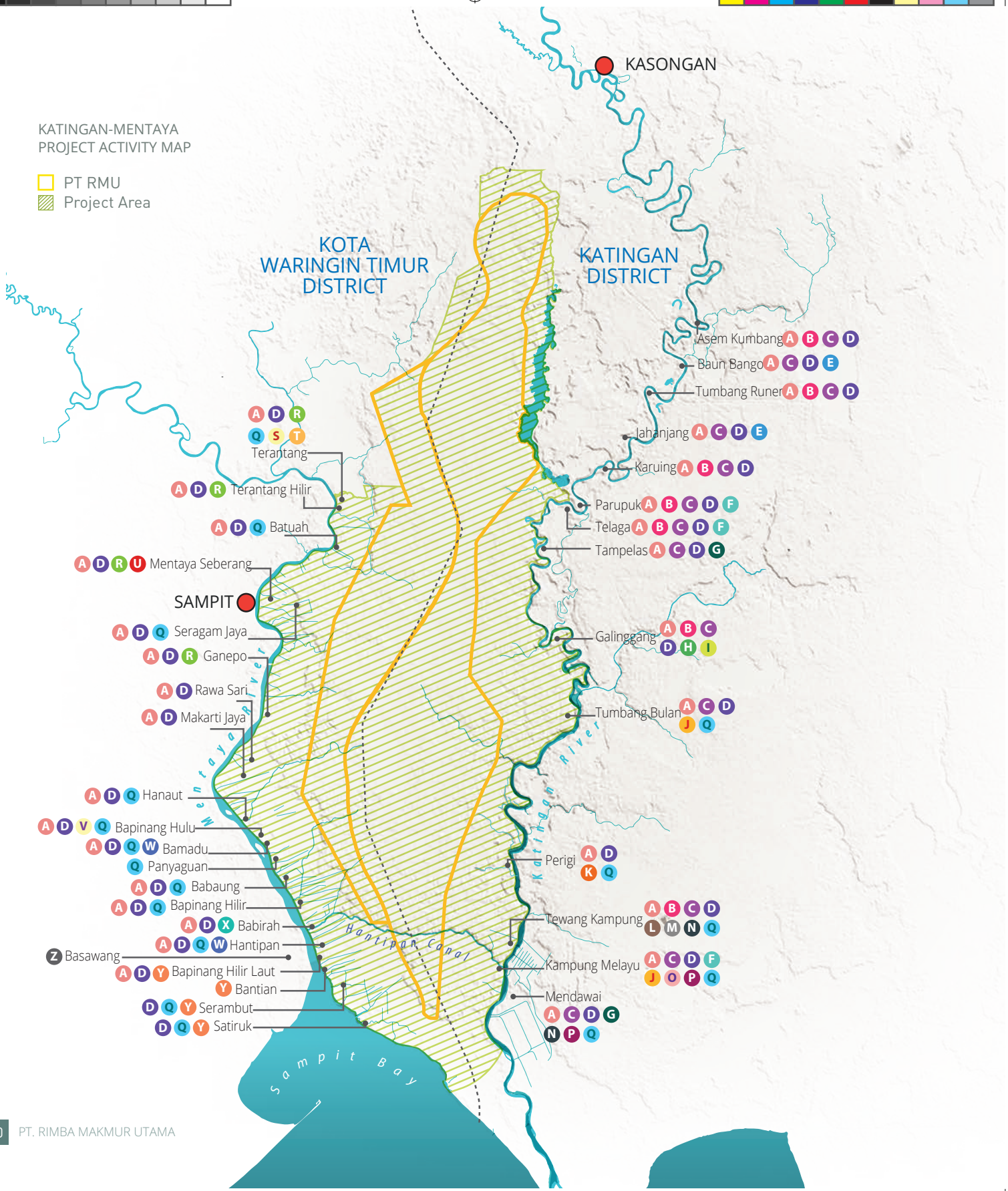
*Inside the concession:*

Implementation of social management area using adaptive agroforestry systems and the development of non-timber forest products.

*Outside the concession area:*

a. The development of acommunity livelihood program which is based on the potential of the village (fisheries, livestock, crops, and agriculture)

b. Programs related to community resilience (such as participatory mapping and village planning, microfinance, education, health and development of alternative energy)



## PT RMU Project Activities

- A Village planning: participatory mapping, village profile, village information board.
- B Empowerment and community development program: Fishery Sector.
- C Sustainable livelihoods analysis.
- D Land and forest fire prevention: Sign board, fire prone map, socialization, and FGD.
- E Empowerment and community development program: Livestock Division.
- F Village nursery training.
- G Empowerment and community development program: Agriculture.
- H Village micro capital.
- I Energy saving light bulb.
- J Empowerment and community development program: KSM savings and loans.
- K Empowerment and community development program.
- L Peatland restoration training program.
- M Socialization of the rights for managed peat area.
- N Wood waste utilization program.
- O Partnership: Social Land Management.
- P Zero burning agriculture: Land Cover Crop.
- Q Fire brigade team.
- R Rattan training.
- S Entrepreneurship training.
- T Agroforestry.
- U Public health improvement.
- V P2LG programs (Peatland Restoration Pilot Program).
- W Jelutung management.
- X Nature conservation agreement.
- Y Providing village information board.
- Z Coconut palm sugar development.

## Fostering Sustainable Alternative Livelihoods

The project also aims to promote the development of alternative livelihoods than can facilitate environmentally sustainable economic and livelihood development in and around the concession area.

### 1. Coconut Palm Sugar

Coconut palm sugar, a traditional sweetener with a long history in Southeast Asia, is produced from the sap of cut flower buds of the coconut palm. We carried out a feasibility study of coconut palm sugar processing business in parts of the project zone, showing a good financial and operational viability for the development of coconut palm sugar processing business in Pulau Hanaut, Teluk Sampit, and Mentaya Hilir Selatan Sub-Districts, District of Kotawaringin Timur. Now, the target is to make Kotawaringin Timur become one of the coconut palm sugar production centers in Indonesia.

*"Producing coconut palm sugar provide better benefits compared to only harvesting the fruit or making copra."*

The producers commonly use wood coconut fiber or other materials as fuel to cook the coconut sap. Currently there is no problem of availability of fuel because coconut husks are abundant. However, to save fuel, maximize combustion and minimize emissions, we helped to design an energy-efficient stove and provided it to the producers.

To start a coconut palm sugar processing business, adequate skills and working capital are needed, both of which are in short supply. In order to solve this issue, we provide training and mentoring to enable communities to produce sugar of the highest standard and also to support financing of the start-up. We also link the producers to the market directly. The coconut palm sugar product is targeted to meet the needs of the local market in East Kotawaringin and also demand of corporate partners.

## 2. Rattan

Rattan remains a popular commodity around the project area: it grows fast and it is resilient. There are 3 main types of rattan: sigi, irit and bulu. Once planted, they typically grow up to 2 m every year, and can be harvested after 5 years. These rattans are soft and flexible, and are usually shredded into ropes to weave mats, baskets, bags and fish traps. Other types of rattan, known as halatung, dahanen and ahas, grow naturally in the wild and have a bigger trunk. They are used as materials to make fish traps or furniture such as tables.

We work in collaboration with the Planet Basket Project, a business initiative that collaborates with rattan craftspeople living around the concession to produce basket that are sold in the UK. The project uses the dark rattan considered waste by the rattan factories and this gives each basket a unique natural colour, and no toxic chemicals or dyes are applied.

## Partners and expertise

We collaborates with a wide range of institutions, both as implementing partners and as sources of technical advice.

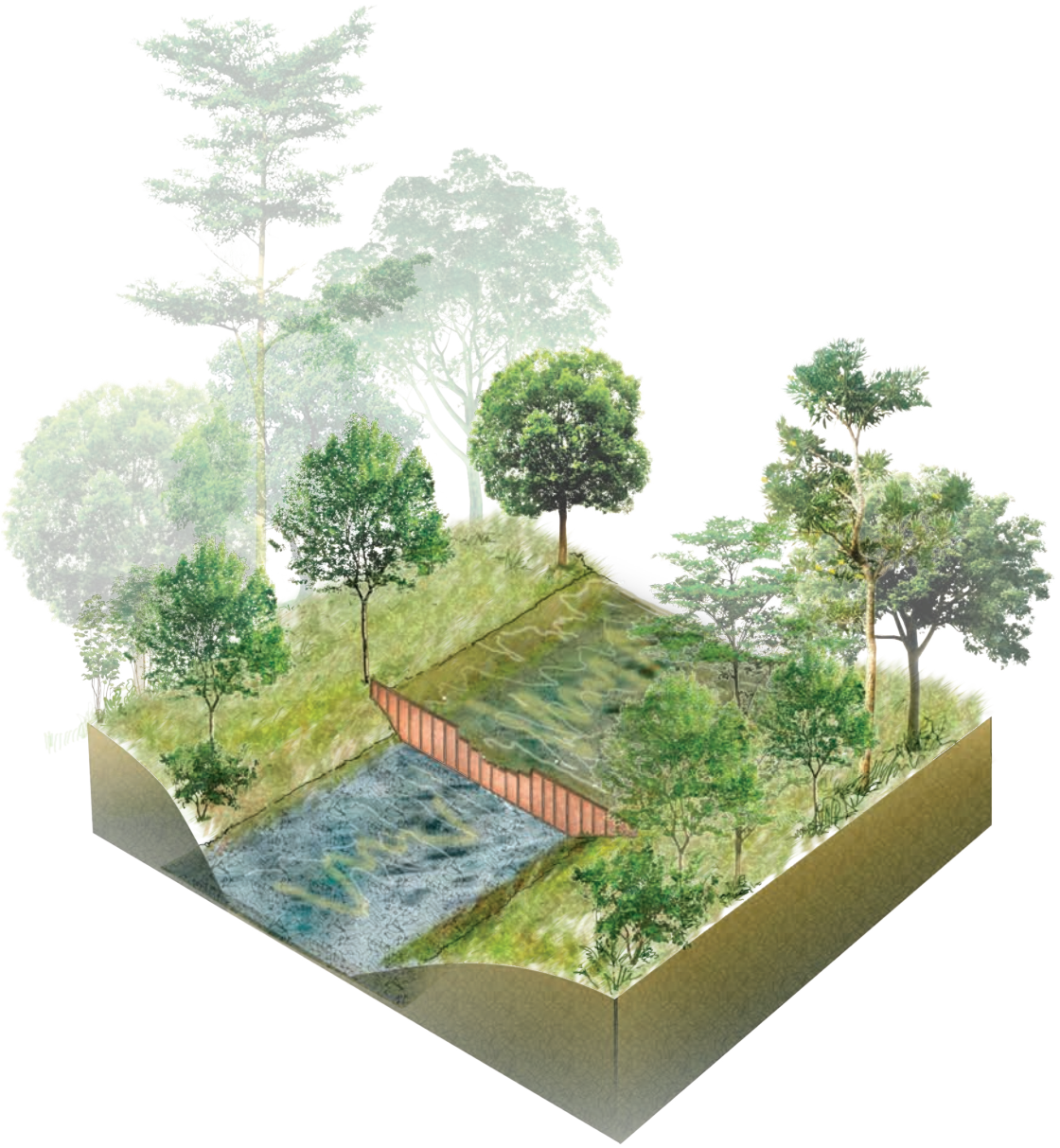
**The main partners include:**

*Permian Global* – an investment firm works on protecting and conserving natural forest to mitigate the impact of climate change.

*Puter Indonesia Foundation* – a local NGO which has a wide-ranging experience in community-based planning process.
*Wetlands International* – an international NGO dedicated to maintaining and restoring wetlands.

A range of other partners assist the project on an issue-based or ad hoc basis, both pro bono and as contracted consultants. Amongst these partners are a range of nationally- and internationally-recognized scientific and technical experts, providing advice on issues such as climate science, community development, practical site management and biodiversity conservation including well-known institutions such as ***CIFOR, USFS***, ***BOSF***, etc. Furthermore, local communities are also considered to be one of the key collaborating experts since they are the source of a wealth of local and traditional knowledge.

"Restoring peat swamp forest for people, biodiversity, and climate"



"Peatland rewetting and conservation for future generations"

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Opportunities
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