

The Blue Natural Capital Financing Facility (BNCFF) supports the development of sound, investable Blue Natural Capital (BNC) projects with clear ecosystem service benefits, multiple income streams and appropriate risk-return profiles.

This Blue Prints Series outlines the business models and illustrates the investment structure of a selected number of Nature-based Solution (NbS) projects. See [here](#) for other Blue Prints.

# MANGROVES CONSERVATION AS A CARBON ASSET: PROTECTING HABITATS AND EMPOWERING COMMUNITIES

Example: Hak Pengusahaan Hutan Concession  
(Kuba Raya District, West Kalimantan)



## Problem and practice so far

Across East Asia, some 3.4 million hectares of mangroves and tidal marshes have been logged, diked and converted to other land uses (particularly settlements, agriculture and aquaculture). The massive loss in natural habitat and biodiversity also comes with a big climate change price tag. Mangrove degradation has led to CO<sub>2</sub> emissions in the order of 6,000 Million Metric tonnes (MMt), and has caused lost sequestration benefits of 20 MMtCO<sub>2</sub> annually<sup>1</sup>.

The pattern of destruction has slowed in some areas but grown in others. Indonesia still loses more than 10,000 hectares of mangrove forest annually. In addition, many forests suffer from increasing degradation. The pressure on mangrove is exercised both by legal ('planned') and illegal ('unplanned') means. Many pristine mangrove forests are licensed for private logging.

Among the consequences of continued deforestation and degradation are not only high emissions and high – and often irreversible – biodiversity loss, but also increased vulnerabilities of coastal communities to erosions, floods, tsunamis and more. Livelihoods depend on the shelter that mangrove forests offer and the rich fish nursery grounds that they provide. The more mangrove forests disappear, the more difficult it becomes for coastal communities to make ends meet. Alternative income streams – from logging or aquaculture – often do not prove sustainable and invariably benefit some community members to the detriment of others.

---

<sup>1</sup> Applying IPCC default values for tidal wetland soil carbon from 2013 IPCC Wetland Supplement

## Blue Natural Capital solution

The Blue Natural Capital solution consists of purchasing an active license for logging (*Hak Pengusahaan Hutan* or “HPH”) covering 18,000 hectares (ha) of peat and (mostly) mangrove forest. Under a blue carbon revenue model, the area can be converted from selective logging and conserved using forest patrols to protect the habitat against exploitation.

Local communities will benefit as custodians (forest patrols) as well as by using the mangrove forestry reserve sustainably, namely through beekeeping and honey production.

## BNC business model

The solution provider, Forest Carbon, a foreign-owned private firm based in Indonesia, purchases the operational rights associated with the HPH license valid for another 33 years. Once the contractual framework with the current concession owner has been established, there is a possibility to purchase additional adjacent concessions to extend the protected area across more 38,000 ha. The project would protect threatened species with a high conservation value and prevent progressive degradation of the entire concession through:

- Forest patrols to reduce illegal logging, wildlife threats and shrimp pond development;
- Fire response teams to mitigate fires in drier inland areas;
- Hydrology and forest cover monitoring by deploying sensors and remote sensing tools; and

- Biodiversity protection by tracking population trends and promoting growth through specific interventions, particularly for threatened species.

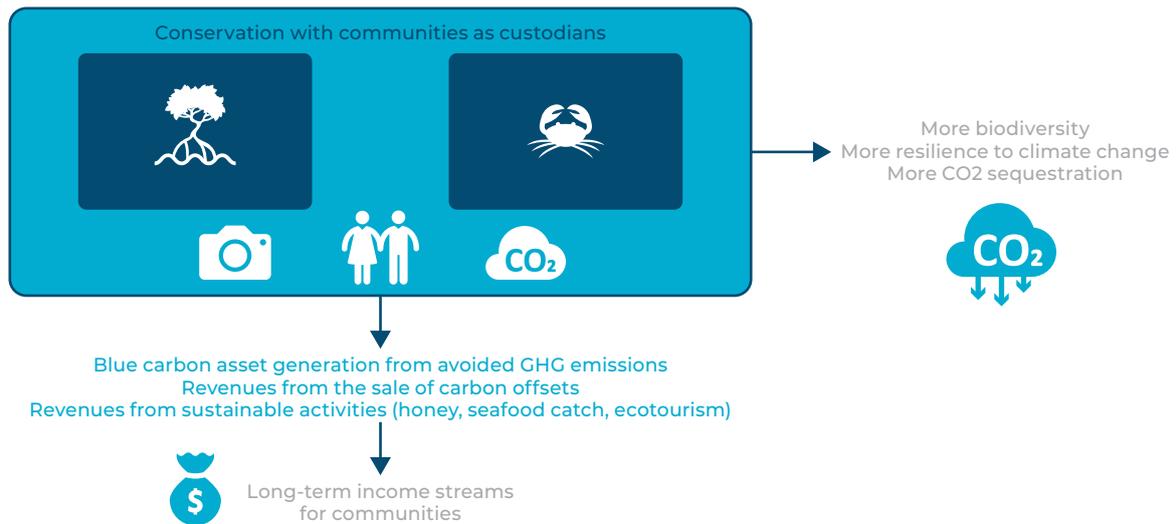
Verra’s Verified Carbon Standard (VCS) has a new module for tidal wetlands under methodology VMD0007 released in September 2020. If brought to market as a blue carbon offset project, the estimated average annual carbon proceeds during the first 10 years are above 350,000 Verified Carbon Units (VCUs).

If the project can achieve credit sales in the range of 85% of all credit production and a carbon price above \$16-18 per ton, the project would hit a break even between year 4 and year 6 under the current acquisition price. A US\$6-8m debt investment would be needed to purchase the project, fund ongoing operations and establish a cash reserve for future operations.

## Blue impacts and safeguards

In addition to the carbon standard biodiversity and community co-benefits are validated and verified under the Verra’s Climate Community and Biodiversity (CCB) Standard. This requires that the project applies, measures and verifies impacts on community development and biodiversity.

Livelihood development also removes degradation pressures on the ecosystem, as local communities can tap into more sustainable opportunities in the form of honey, crab, shrimps and mussels provided by the protected mangrove forest habitat.



Resource conflicts arise in nearly land use scenarios in Indonesia, and the CCB standard ensures that these are addressed equitably, that FPIC is a process to be followed and that the project has a robust grievance mechanism to receive feedback from all stakeholders. The project can also cater to families

dependent on low-impact wood fuel extraction. Jobs lost to logging operations will be replaced by conservation-focused employment as forest patrollers and educational opportunities including teaching and teacher training.

## Blue stakeholder roles and needs

The stakeholder structure is lean and centered around local communities, particularly those identified as forest-dependent for their livelihoods:

- Upon securing the purchase contract, Forest Carbon take over management of the concession hold the concession, develop conservation management plans and VCS and CCB project documentation and organise monitoring, validation and verification.
- Communities of *Kubu* village and *Sui Terus* village (0.5 and 12 km from the concession) will be engaged and employed by the project

in addition to other sustainable use activities (namely beekeeping) and run educational programmes.

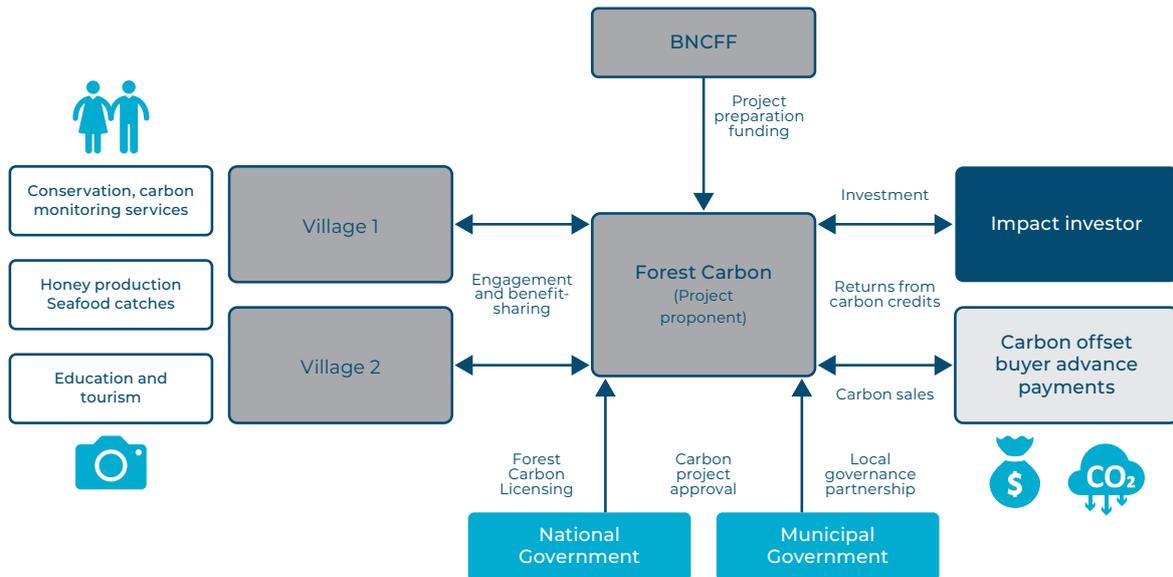
The project uses an existing logging-license, which lasts another 33 years. Government agencies are responsible for carbon accounting through Indonesia's national registration system to prevent double counting in compliance with the Paris agreements. The project must also maintain full compliance with the HPH license requirements and follow the government of Indonesia's permitting roadmap for carbon project development.

## Blue investment structure

Debt investment needs are in the range of US\$6-8m. That amount will cover the purchase of the HPH concession project design and implementation. A consortium of impact investors, led by the IDH sustainable trade initiative, have already taken up interest in the project which continues to engage with the local asset owner. Now focus is on building

a strong environmental and social management system to safeguard engagement with local communities on project governance, benefit sharing and the development of new income streams, namely beekeeping, but also educational and eco-tourism programmes.





Carbon offset sales are the central revenue stream that finance conservation activities through advanced payments on carbon sales or contribute to having the impact investor ready to provide upfront funding against a strong emission reduction purchase agreement.

The initial feasibility assessment of the site was made possible by critical early stage technical assistance

grant funding from the BNCF. This type of early stage support provides a much-needed element of de-risking to small companies looking to secure vulnerable ecosystems and prepare them for investment with limited resources. Early stage project origination funding from organizations like IUCN provide a highly strategic compliment to private sector investment, and create a replicable financing model to protect natural capital.

## Blue scalability and replicability

Very good replication potential exists in several locations in the same region as well as on a global scale.

## Practical tips

The methodology for application here has become available only recently (September 2020). It closes a gap that existed for avoided deforestation and coastal wetland protection in voluntary carbon standards. When before, those habitats were covered mainly in a restoration perspective, the new methodology offers a bespoke instrument to trace interventions and intervention impact for

biomass as well as soil carbon. Project developers are encouraged to combine conservation and restoration to enhance the landscape perspective of habitat protection, address drivers of deforestation and degradation better through targeted buffer zone engagement, and make interventions more affordable, as lower-cost conservation can offset higher-cost restoration activities.

To learn more about this BNCF supported project in Indonesia:  
<https://bluenaturalcapital.org/supported-projects/indonesia/>  
<https://www.forestcarbon.com/>

FOREST  
CARBON

Since its launch in 2018, the BNCFF has become a global brand name in Ocean Impact Finance. After screening over a hundred proposals, it is presently supporting 8 blue Nature-based Solutions pioneer projects with grant funding.

<https://bluenaturalcapital.org/supported-projects/>

The BNCFF is funded by the Ministry of Environment, Climate and Sustainable Development, Government of Luxembourg. The Blue Prints and related capacity building campaign are supported by the UBS Optimus Foundation.

**BNCFF** | BLUE PRINTS SERIES



THE GOVERNMENT  
OF THE GRAND DUCHY OF LUXEMBOURG  
Ministry of the Environment, Climate  
and Sustainable Development

UBS Optimus  
Foundation



**UBS**