

CASE STUDY

Mangrove Restoration and Coastal Greenbelt Protection

PROJECT OVERVIEW

At a glance

Implementing partner: [Yagasu](#)

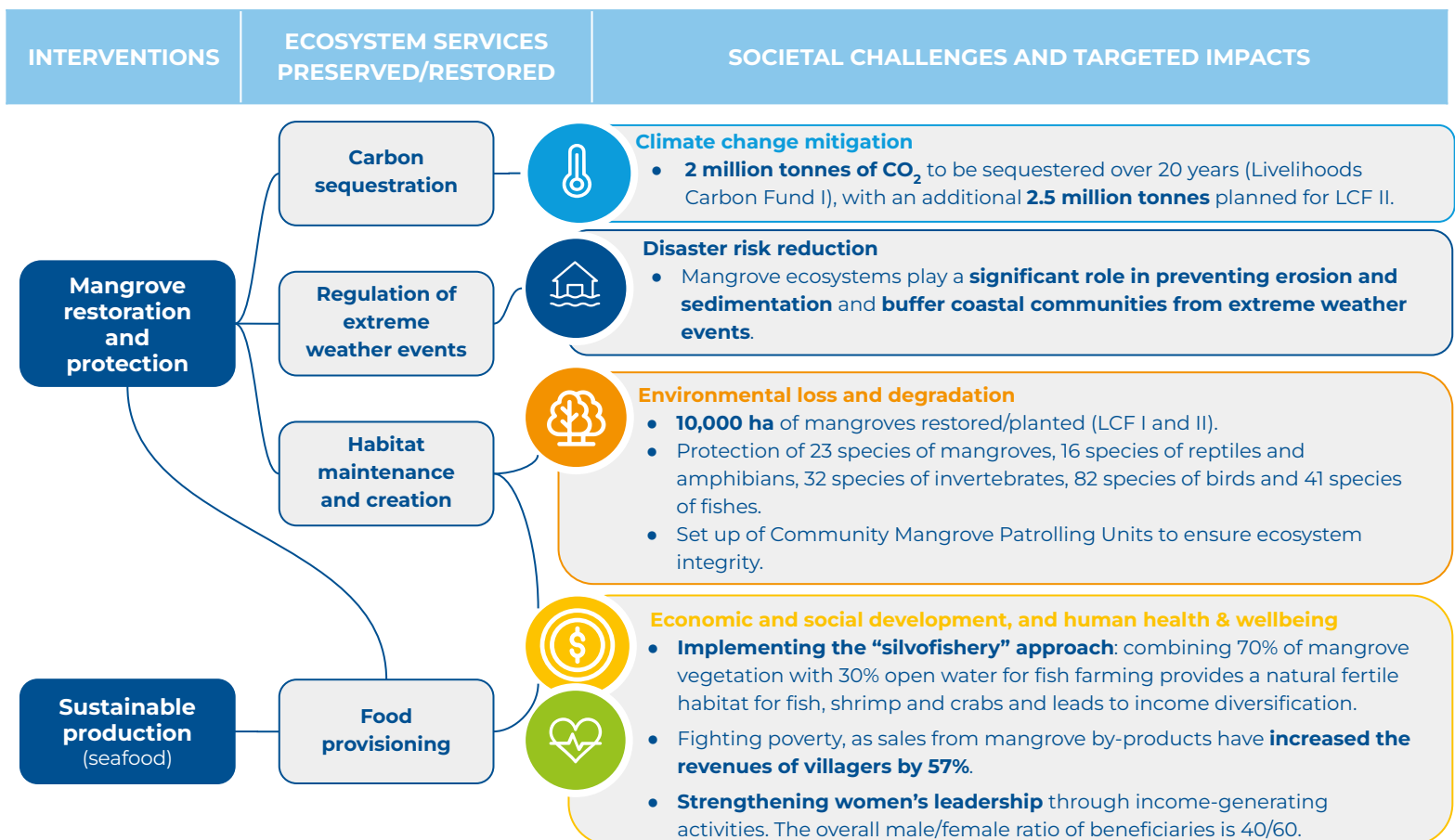
Location: Aceh and North Sumatra provinces (Indonesia)

Timeline: Ongoing since 2011. Funded by Livelihoods Carbon Fund (LCF) I (2011-2015) and II (2019-ongoing), among other investors.



Project description

Sumatra's mangrove forests have been highly deforested by intensive aquaculture and rice and palm oil production. Mangroves are essential for coastal protection during extreme weather events, such as the 2004 tsunami. The Livelihoods-Yagasu project aims to restore and protect mangroves, recreating a healthy ecosystem and promoting income-generating activities. Having started with mangrove restoration, the project extended its scope to build a coastal "greenbelt corridor" which combines mangroves with forests and fruit trees along the Indonesian coastline. Yagasu operates in two provinces in Sumatra and works hand in hand with local communities to protect local ecosystems and develop additional livelihoods, with a focus on the economic development of vulnerable groups, women and youth. It receives investment for carbon delivery from a range of impact and commercial investors.



Primary beneficiaries

- **Smallholder farmers**, including fisher communities.
- Yagasu places a major emphasis on **women's empowerment** by supporting three women-led interventions on organic batik (traditional fabric from mangrove plants' fibres and dyes), mangrove foods and shrimp paste.

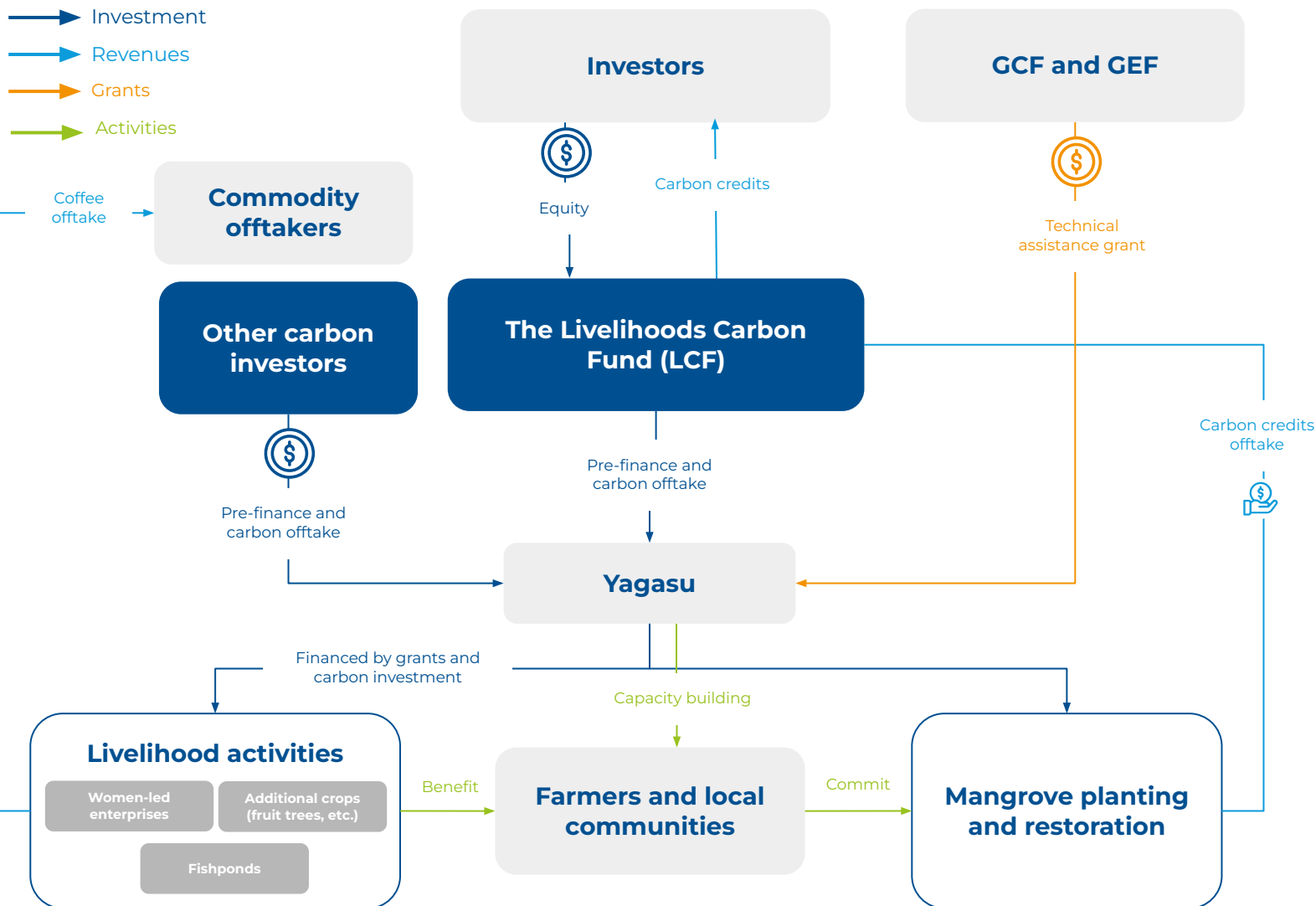
Other stakeholders

- **Investors and payors:** carbon investors (including LCF), GEF, GCF.
- **Enabling parties:** local-level administrators (village and district-level).
- **Knowledge partners:** World Agroforestry (ICRAF), Center for International Forestry Research (CIFOR), LCF investors (Danone, Hermes).

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INVESTMENT MODEL



How it works

Yagasu's activities are financed through carbon finance in the form of both pre-financing (upfront investment at start of project) and carbon offtakes (payment for carbon credits delivered throughout the project's lifetime). Yagasu also receives grant funding from various public funders to implement adaptation activities. Upfront investments provided by carbon investors finance mangrove planting and restoration projects (which will generate carbon credits) as well as livelihood activities, including supporting women-led enterprises and generating additional livelihoods.

Asset classes: Equity investment in the LCF. Yagasu receives both carbon pre-financing and offtaking, as well as grants focusing on adaptation.

Investment raised: The LCF invests between EUR 2 and 6 million per project before it generates carbon credits. The volume of investment for each supported project is confidential.

Investment term: The project is designed for a contracting period of 20+ years and agreed with the communities and the LCF (10-year contracting cycles with renewal). Each investment follows a split of 70% for planting, 20% for social and economic development and 10% for project management costs.

Revenue streams:

- Carbon credits (delivered to LCF investors as repayment)
- Sustainable commodities (coffee, honey, batik, seafood, etc.)



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KEY SUCCESS FACTORS

The most important success factors are indicated with 

SET-UP & DESIGN

Prioritising livelihoods co-benefits to ensure community engagement

Yagasu identified this factor as the most essential to securing finance, especially in light of an increasing number of investors seeking to comprehensively address SDGs. In addition, securing community buy-in through tangible livelihoods and wellbeing benefits is key to the project's success, as local communities must commit their own lands for long periods of time.

Securing cross-sector partnerships

- Yagasu works with institutions such as World Agroforestry (ICRAF) and the Center for International Forestry Research (CIFOR), whose research focuses on supporting the entire project cycle, including design, financial modelling, carbon accounting and marketing.
- The project cooperates with Danone R&D to test potential mangrove fruit for human safety consumption and further diversify potential revenue streams. Through the Livelihoods Carbon Funds, Yagasu can benefit from the expertise of French fashion house Hermes on processing dye from mangrove trees.
- Yagasu engages with village governments through MoUs, and helps to set up the relevant legal tools to manage carbon sequestration through special village plans. In coastal areas, Yagasu supports regulation for mangrove protection areas.

Managing project size to meet needs and constraints

Some of Yagasu's investors require a minimum investment size in terms of hectares and tonnes of CO₂ avoided/removed. However, Yagasu splits this up into smaller projects to ensure that each project can be managed by the project management unit teams put in place.

Mobilising capacity building & technical assistance grant

Besides carbon investments, Yagasu has secured grants from the Green Climate Fund and the Global Environment Facility, focusing on adaptation work. Capacity-building work is also included in the budget committed by carbon investors, and is used to support Yagasu's consultants and train local villagers in mangrove tree planting and sustainable agriculture.

Combining asset classes and investment terms

Yagasu receives investment from 12 different carbon investors, with varying investment terms, including both pre-financing and carbon credit offtaking. Most of the investment is received as pre-financing (approximately USD 3,000 per ha). As carbon credits are generated over the long term, upfront carbon finance is essential to mitigate risks and cover the costs associated with planting and restoration in the initial years of the project.

Combining revenue streams

Besides carbon credits, the project generates additional revenues from the by-products of the mangroves, such as seafood, coffee, fruit, *batik* and honey, thus increasing farmers' income.

Securing a market

The project has offtaking agreements for both emission reductions and its commodities such as coffee.

Measuring impact

The project uses a management information system to ensure the project's activities are on track. The project's information is digitalised to enable progress measurement on a daily basis. It is certified under the Climate, Community & Biodiversity Standards (CCBS) and includes KPIs linked to the United Nations Sustainable Development Goals. Yagasu is currently developing a monitoring system with remote sensing to make carbon estimations easier.

FEASIBILITY & PILOTING

STRUCTURING INVESTMENTS

REVENUE & IMPACT

