

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.

SUSTAINABLE SEAWEED COMPANY – IMPROVING THE MARINE ENVIRONMENT AND THE LIVES OF COASTAL COMMUNITIES

Blue Print builds upon the efforts of the Coast4C
(Philippines)



Problem and practice so far

Coastal tropical reefs and surrounding areas are often exposed to multiple pressures, such as overfishing, destructive fishing and eutrophication, with limited livelihood alternatives for local communities. Plastic pollution can also be a problem, notably from discarded fishing gear which can contribute to ghost fishing. Marine Protected Areas (MPAs) are an established solution to address some of those pressures and help marine biodiversity recover, but MPAs need community buy-in. This can be fostered through the creation of new job opportunities. Grant funding and support from international environmental Non-Governmental Organisations have in the past supported such efforts, but have seldom sufficed to guarantee long-term viability and have often failed to make a direct connection to the MPA performance.

In some coastal villages that previously relied on fishing, seaweed farming has emerged as an important component of a diversified livelihood, however often with limited access to services and mechanisms to manage and reduce risk. It also presents its own sustainability challenges, such as from the use and subsequent loss in the marine environment of Styrofoam used as floating devices, single-use plastic lines and ties, and inappropriate practices that remove/destroy corals.

Blue Natural Capital solution

The BNCFF has been engaging with partners with expertise in both marine conservation and seaweed farming to develop models that integrate commercially viable private sector business approaches with clear ecosystem service benefits. The aim is to deliver improved seaweed farming as a Nature-based Solution that can be complementary with marine conservation efforts and provide sufficient revenues to local communities.

Through a number of measures on-farm that reduce risks and improve yields, that improve and provide transparency around social and environmental impact, that shorten the value chain and aggregate supply through an inclusive value chain that keeps value local and achieves volumes for commodity markets, a new business model emerges. This nature-based approach integrates modernised and more environmentally-friendly farming practices

into the local supply chain. The creation of local places to aggregate and process the seaweed for export improves the ability to deliver a viable product at the right quantity to the market.

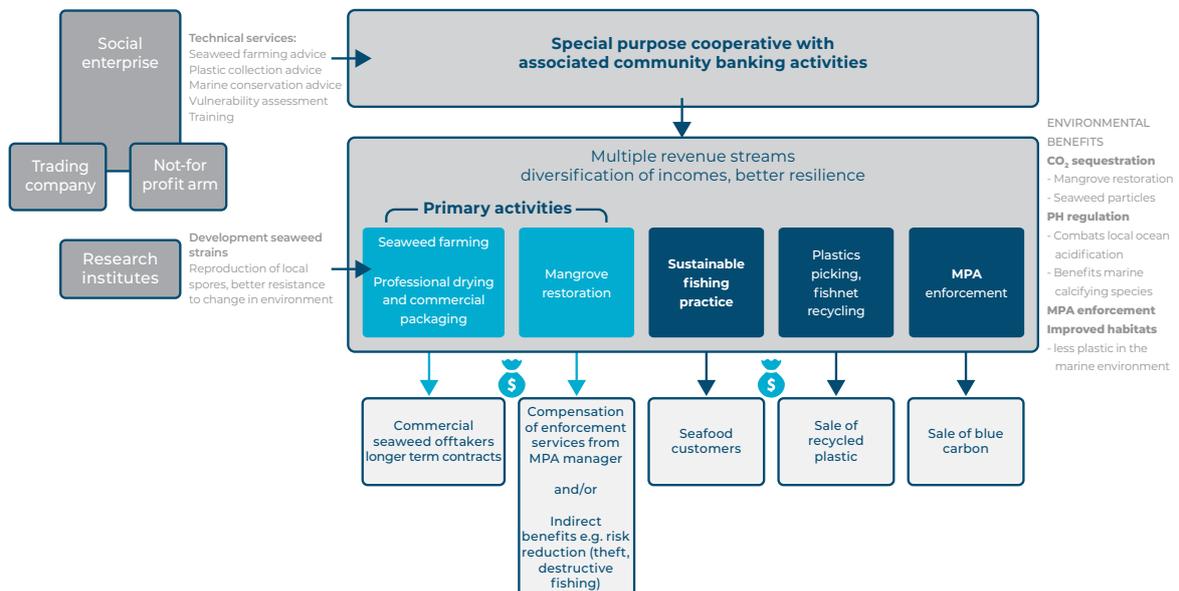
Small local seaweed farms and farmers are also contributing to the overall environment, providing protection to the MPAs through the physical presence of the lines and the use of towers for drying and through appropriate training and information, integrating the seaweed farmers into the guardianship of the area.

This summary is based on the experiences of a BNCFF supported project. The Blue Print serves as a broader example of how this vision - to integrate marine protection and seaweed farming – can be delivered, outlining both the challenges but also the possibilities.

BNC business model

The primary revenue stream in this model derives from achieving more favorable buying agreements due to aggregation, transparency and quality. Greater quantity can also be achieved through the shortening of the value chain and providing enabling conditions for more fishers to turn to seaweed farming, thus increasing the scale of the

activity. Whilst margins will need to remain thin, the increased profit pool helps achieve depth and breadth in scale, as well as rendering the value chain more efficient. This requires upfront investment in business processes, locations, equipment and training, and at the individual farmer level for the provision of quality seaweed strands and appropriate



equipment. A key aspect of the business model is therefore the ability to deliver working capital to individual farmers.

The business model is based around significant community engagement and training, both in terms of the seaweed growing and processing, but also around the role of the business in a complimentary approach to coastal conservation.

As local communities move to nurturing seaweed farms, they also fish less and engage in plastic collection which can then be sold into the recycling

chain, providing further income. As communities also support MPA enforcement, new income streams are generated and MPA management and maintenance costs are reduced.

Revenue enhancements can be achieved through localised biorefinery processing of seaweeds for multiple markets, or by considering additional streams such as the generation of blue carbon credits from the conservation and the restoration of key local ecosystems such as mangroves or the seaweed farms themselves.

Blue impacts and safeguards

In general, the positive impacts include climate change mitigation and adaptation, ecosystem conservation, climate adaptation, business impact mitigation and social impact.

Positive impacts of the project on people and livelihoods

By training local seaweed farmers in improved and ecological seaweed farming practices, family livelihoods are improved through increased yields and price, as well as reduction of existing risks.

Most important is the shortening of the value chain that increases value share of the farmers, as well as localised processing. Collected seaweed is assembled, dried and sold once commercial quantities (between 20 and 24 tonnes) are produced. Through direct contact with world-leading purchasers of seaweed it can be ensured that quality standards are met. Access to multiple markets through biorefinery processing close to source can also add value and use the totality of the seaweed biomass. Additional efforts to develop new seaweed strains based on sexual reproduction of local wild spores in cooperation with leading scientists also help to further improve yields with better returns for local farmers and increase climate suitability and disease resistance. Access to microinsurance protects the seaweed farmers against weather-driven harvest losses, providing additional financial resilience to local communities.

Positive impacts of the project on nature

By increasing the size of MPAs and area under protection, based on special plans endorsed by communities, and locating seaweed farms nearby, biodiversity and fish biomass can recover. BNCFF support can be used to help fund such work, for instance by financing guardhouses which, together with marker buoys, patrol work and equipment, ensure that these areas are effectively enforced whilst supporting seaweed production by acting as a platform for guarding and tending farms, and for drying seaweed. The seaweed farming zones act as an additional buffer for the MPAs (e.g. from eutrophication) as well as offering further fish and seahorse habitats whilst locally reducing ocean acidification.

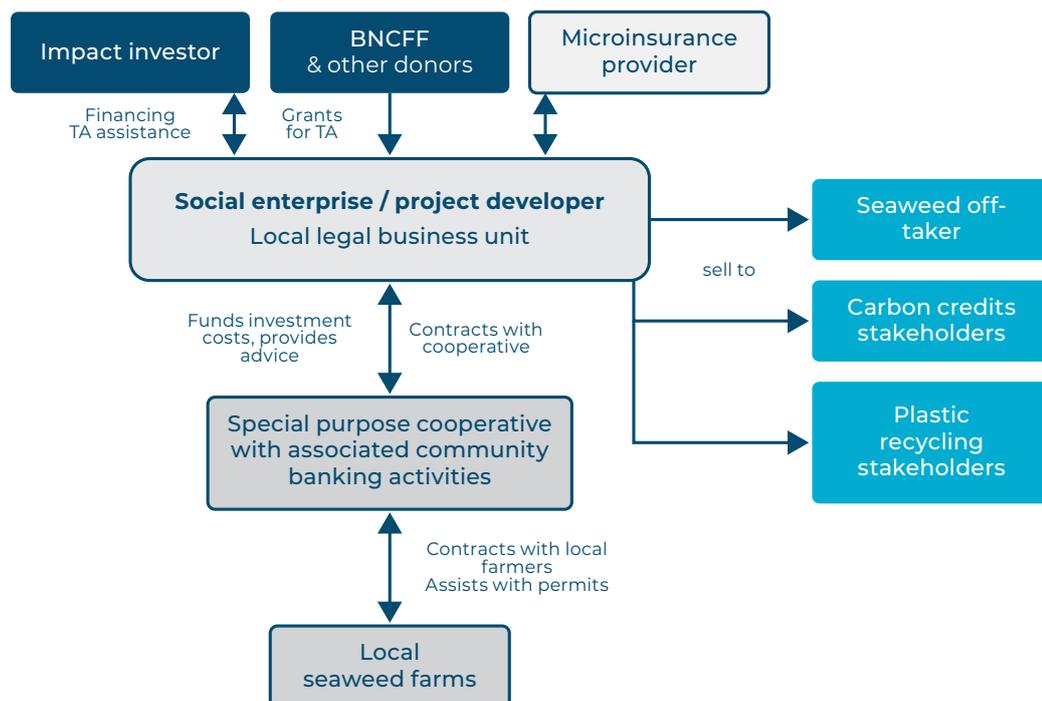
Positive impacts of the project on governance, transparency and opportunity

Not only are women a key constituency of seaweed farming, the local financing arrangements (which BNCFF had the opportunity to observe) are based on local women-run community-banking decisions that support family structures and community engagement. The new structure implements best practices in corporate governance and will ensure continued transparency going forward.



Blue stakeholder roles and needs

- Project developer:** A private sector entity acting as aggregator and trader (social enterprise) with sufficient expertise and access to funds to manage revenue and oversee seaweed farming activities. It should ideally be well embedded in the local economy as well as regulatory setting notably by having received all necessary permits and have established working relationships and trust with the communities and local stakeholders.
- Public entity:** state, regional or local bodies with the legal authority to issue permits and licenses to operate/reserve sea space and use of land. It is also beneficial to identify the governmental entity that promotes and regulates the seaweed industry, for example Ministry of Marine and Fisheries.
- Local communities for seaweed production channelled through **local cooperatives of seaweed farmers**.
- Client(s)/customers/prospects:** Local or international carrageenan producers to sign off-take agreement of seaweed products.
- Interested investor(s):** impact investors, public bodies and philanthropic partners interested in investing in the project given the potential attractiveness relating to climate change, nature conservation, improving livelihood and emerging markets.
- Other stakeholders:
 - Universities and research institutes** interested in conducting research on the cultivation of seaweed, notably by focusing on the application of various seaweed species as animal feed, the optimisation of seaweed sporing and its cultivation.
 - NGOs** working alongside the project developer with a particular interest in providing technical services relating to seaweed farming, plastic collection, marine conservation, vulnerability assessment and training.
 - Other: **Plastic recycling stakeholders, Carbon credits stakeholders**



Blue investment structure

Given the need to separate the business activities from additional grants-based work around nature protection, such project requires a clear and transparent corporate structure that will allow for impact investment to come in. This is especially true as substantial capital expenditure investments will

be required for the implementation of the business plan.

At the same time, there is need for a local legal entity to handle local employment, contracts and other related issues.

Blue scalability and replicability

The business model is fully scalable and replicable, especially in coastal regions where there is no MPA enforcement and a strong presence of plastic pollution. The technology and project setup are such that multiple farms can be rolled out simultaneously. According to MarketsandMarkets, the seaweed

cultivation market size is estimated to be valued at USD 16.7 billion in 2020 and is projected to reach USD 30.2 billion by 2025, recording a compound annual growth rate of 12.6% during the forecast period, in terms of value¹.

Practical tips

In order for investors to have confidence in the bankability of such projects, it is important to demonstrate the benefits of the cultivation of the seaweed and its potential sales channels, may it be for the sale of eucheumatoids on the well established market of Carrageenan, as well as less mature production such as *Asparagopsis*. The functioning of the technology used throughout the seaweed life cycles will be important to demonstrate. It is also key to illustrate the spill over effects from the farming activity on the conservation of the marine

environment. Having said that, it should not be automatically assumed that seaweed farming will result in positive environmental or social impacts - there needs to be a direct link between seaweed farming and conservation action. Finally, adding revenue streams such as the generation of carbon credits through external verification and auditing will also foster confidence. This notwithstanding, such approach can only be successful if embedded in the local economy as well as regulatory setting.

To learn more about this BNCFB supported project in the Philippines

<https://bluenaturalcapital.org/campaigns/net-works/>

<https://coast4c.com/>



Community. Commerce. Conservation. Climate.

¹ [Seaweed Cultivation Market Size, Share, Trends and Forecasts to 2025 | COVID-19 Impact on Seaweed Cultivation Market | MarketsandMarkets](#)

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.

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