



## Mayreau Explorers Cooperative:

Creating alternative livelihoods through vertical sea moss farming in the Tobago Cays Marine Park

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CASE STUDY #1: Innovation and best practices in marine and coastal governance and management by civil society in the Caribbean

This case study aims to enhance knowledge about innovations and best practices currently being utilised by civil society organisations (CSOs) and their partners in the Caribbean that can be applied to support conservation, restoration and sustainable use of coastal and marine resources in marine protected areas (MPAs) and marine managed areas (MMAs). It has been developed under the regional project ‘Powering Innovations in Civil Society and Enterprises for Sustainability in the Caribbean’ (PISCES) which is being funded by the European Union EuropeAid programme and implemented over a three-year period (2017 to 2020). PISCES is taking place in ten countries: Antigua and Barbuda; The Bahamas; Dominica; Grenada; Haiti; Jamaica; Saint Kitts and Nevis; Saint Lucia; Saint Vincent and the Grenadines; and Trinidad and Tobago.

## Introduction



*Member of Mayreau Explorers Cooperative showcasing the Eucheema spp. seamoss collection. CREDIT: Philman Ollivierre*

The Mayreau Explorers Cooperative is a civil society organisation officially created in 2015 on the island of Mayreau which is located within the chain of islands of St. Vincent and the Grenadines (SVG). This cooperative was established to improve the economic and social well-being of some 271 people ([2012 Population & Housing Census Preliminary Report](#)) by providing alternative livelihoods for fishers, youths and women residing on the island, which is situated within a marine protected area (MPA) known as the Tobago Cays Marine Park (TCMP).

TCMP was officially declared an MPA in 1997. With 66 km<sup>2</sup> of marine and coastal zones, the MPA includes Mayreau and directly affects the large fisherfolk community here. With the introduction of no-take zones in the MPA, fisherfolk on Mayreau needed to seek out alternative income-generating opportunities. Seamoss farming subsequently became a new source of income.

The seamoss industry has grown significantly over the past few years, as seamoss is being recognised worldwide for its health benefits and nutritional values. Likewise, the

opportunities (e.g. creation of nurseries) are becoming more understood and promoted across the Eastern Caribbean countries, such as in Saint Lucia and Antigua and Barbuda. The [Food and Agriculture Organization](#) (FAO) for example, has been conducting a campaign to boost agricultural productivity and build resilience within St. Vincent and the Grenadines, using seamoss cultivation as a mechanism.



*Seamoss farming being done by the Mayreau Explorers Cooperative currently takes place within Saline Bay (black circle) which is located in the TCMP. CREDIT: Sustainable Grenadines Inc.*

The Mayreau Explorers were first introduced to seamoss farming in 2009 through their interactions with the Ashton Multi-Purpose Cooperative (AMCO) seamoss project on nearby Union Island. It was here that the burgeoning group acquired *Eucheuma spp.* seedlings and began their first trials in Saline Bay

with unofficial permission from TCMP.

With no initial financial support nor market, the fledgling cooperative took advantage of local events such as Mayreau’s Annual Regatta in 2011. Here, they exhibited and sold dried seamoss along with several by-products such as ice cream, rum punch, fudge and drinks which were met with great success. This was the impetus for the group to expand their membership and activities.

In 2014, through the assistance of a local Civil Society Organisation (CSO), [Sustainable Grenadines Inc.](#) (SusGren), the Mayreau Explorers successfully sourced funds through the [United States Agency for International Development](#) (USAID) and [The Nature Conservancy](#) (TNC) under their [Caribbean Marine Biodiversity Program](#) (CMBP) for organisational strengthening and alternative livelihoods. The CMBP-funded project was aimed at improving the production capacity and overall operations by providing relevant training and aiding with



*The vertical seamoss farming system set-up being used by the Cooperative. CREDIT: Philman Ollivierre*

assets acquisition (e.g. ice-cream makers) to sustain the cooperative in the long-term, therefore indirectly positioning seamoss farming on Mayreau as a viable alternative to fishing.

The cooperative has achieved significant progress to date and in 2018, they began exporting seamoss products at an international production level to a client in Miami, USA. In order to meet the increasing demand, the cooperative needed to adjust their seamoss farming method through an innovative modification to the already well-established horizontal farming method. Mr. Philman Ollivierre, a founding member of the Mayreau Explorers Cooperative, conducted intensive research and gained instrumental ideas through networking with other Caribbean seamoss farmers to successfully conceptualise and implement a vertical seamoss farming system.

The Cooperative is the first known entity in the Caribbean to successfully develop and implement vertical farming of seamoss. Additionally, this exceptional innovation takes place within a designated MPA. In 2018, official permission was granted to the Mayreau Explorers Cooperative, with assistance from SusGren, to engage in seamoss farming within Saline Bay.

## Overview of the innovation or best practice

Increased demand for seamoss in mid-2018 would have required the use of the entire Saline Bay, if using the horizontal farming method. This led to the development and implementation of the vertical seamoss farming system. Using the original eleven 25 feet x 30 feet plots with depths of ten to twelve feet for vertical farming, the Cooperative was able to harvest approximately ten times higher yields within a three-month period as compared to the horizontal farming method.

This innovation has also improved efficiency along the production chain in terms of cost and time. The previous horizontal farming system required time for workers to remove wild grass that would usually grow on the ropes and become entangled within the seamoss. With the new vertical seamoss farming system, the entire system is now fully submerged under water, which prevents the growth of this wild grass, thus making this step within the production chain obsolete.

Interestingly, the Mayreau Explorers Cooperative's seamoss is considered to be high quality, according to market standards, which may be due to the strategic location of the farm, being in the TCMP. Saline Bay possesses relatively clean, clear, pristine water, is not located near any land-runoff points and experiences little to no impact from cruise ships, as they do not dock near the shore and are not allowed to dump waste water within the MPA.

Regionally, MPAs could seek to provide an alternative livelihood for displaced fisherfolk through seamoss farming, as many MPAs are located near fishing villages. The new vertical seamoss farming system is much more efficient as it requires less space and produces a higher yield. As seamoss demand increases worldwide, communities from other MPAs could capitalise on these opportunities just as the Mayreau Explorers have done. Likewise, other well-established seamoss farms in countries such as Saint Lucia and Grenada, including those not located within MPAs, could consider slowly phasing out horizontal seamoss farming, as the economic and environmental benefits of vertical farming far exceed their current system.

## Key results achieved



*Seamoss rum punch made and sold by the Mayreau Explorers Cooperative. CREDIT: Mayreau Explorers Cooperative*

1. Improved awareness of seamoss farming as a viable alternative livelihood for Mayreau community members and as an option for reducing their dependence on fishing.
2. Increased seamoss production capacity through implementation of the innovative vertical farming system.
3. Increased business opportunities through developing and bringing new value-added seamoss products to market (e.g. ice-cream, rum punch, soft drinks and a gel that serves as a stabiliser in a wide variety of other products).
4. Improved product packaging, branding and marketing of seamoss products, including through displaying and selling at local events, tourist hot spots, networking events, capitalising on media coverage, and free sampling for potential investors.
5. Enhanced value of seamoss by using it to make new products such as seamoss ice cream, through procurement of fixed assets (e.g. a freezer and an ice cream making machine) with SusGren's assistance, which increased income generation and consequently increased communal net profits.
6. Increased capacity building in quality control – such as hazard analysis and critical control points (HACCP), which is a systematic approach to processing foodstuff in a safe manner while reducing risks – allows for a consistent and high-quality product for buyers.
7. Created jobs for fishers and unemployed residents and provided additional income for individuals (teachers, part-time vendors), water taxi drivers, carpenters, returning diaspora and elderly citizens who assist, when available, with the packaging during high and particularly low tourist seasons.
8. Creation of an artificial nursery which now harbours young spiny lobsters and fish that require shelter and safe harbour from large predators.

## Lessons learned

- Participatory governance tools should be utilised to continuously engage Cooperative members as well as key stakeholders. These key players and beneficiaries should be engaged at all stages (from conception to implementation etc.) ensuring that their contributions are captured in decision-making. This approach will encourage participants to take ownership.
- A designated terrestrial processing space should be formally agreed upon to avoid any potential land disputes.

- Diversification of byproducts and identifying potential customers can generate a more stable income and indirectly contribute to reducing pressure on fisheries while creating a lucrative alternative livelihood option.
- Creative forms of marketing, such as emphasis on visually-appealing branding and memorable names, contributes to the attractiveness of product offerings.
- Intermittent HACCP training should be encouraged to ensure the highest quality standards, as required by international markets, are maintained because team members may change occasionally.
- Knowledge-sharing and networking can be beneficial, as it facilitates awareness of current world trends and aids in refining capacity and operational methods where required.

## Recommendations for others

- Create a business plan to help focus on the specific steps necessary to allow seamoss farming to continue to achieve the short-term and long-term objectives of the cooperative.
- Periodically conduct biophysical testing and monitoring in collaboration with relevant authorities to ensure that no run-off or waste water is being released into the farming area, as seamoss quality is influenced by water quality.
- Engage in networking and collaboration with other local seamoss farmers to pool raw materials (seamoss) and collectively ship to meet demand while reducing shipping and logistics costs.
- Explore value-added products as much as possible to enhance revenue.

## Looking ahead

The Mayreau Explorers Cooperative continues to successfully meet the growing demand for seamoss and seamoss products locally and internationally. In the last quarter of 2019, the cooperative is hoping to increase the number of vertical farming plots in Saline Bay, Mayreau, thereby increasing their seamoss production. They also hope to expand their seamoss product range and acquire a designated space or multipurpose facility that can accommodate processing, manufacturing and storing of seamoss and seamoss products, which would increase productivity and safeguard assets. The cooperative, with the support of SusGren through GEF funding, hopes to train and help other nearby seamoss farmers, by the end of 2019, develop a similar vertical system to increase overall seamoss production in St. Vincent and the Grenadines to meet the increasing demand for seamoss and seamoss products.

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