A description of the harvest of wild seamoss in Laborie, St. Lucia

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This report is a product of a research project aimed at testing and developing tools, methods and approaches critical to the sustainable development of coastal communities in the Caribbean and other parts of the world. The project, called *People and the Sea: a Study of Coastal Livelihoods in Laborie, St. Lucia*, is implemented by the Caribbean Natural Resources Institute (CANARI) in collaboration with the Laborie Development Planning Committee (LDPC), the Department of Fisheries in the Government of St. Lucia, and a number of governmental and community organisations. *People and the Sea* is funded by the United Kingdom Department for International Development (DFID) under its Natural Resources Systems Programme, and receives technical assistance from the Institute of Development Studies at the University of Sussex in the UK.

The primary focus of this initiative is on testing and developing specific tools and methods in participatory planning, institutional design and sustainable use. *People and the Sea* therefore tests, develops, refines and documents methods that aim at increasing effective participation of stakeholders in all stages of planning and management. It also explores and documents technologies and management tools which can enhance the social and economic benefits derived from the sustainable use of coastal resources, and particularly from the reef fishery, sea urchin harvesting, seaweed cultivation and heritage tourism. At the same time, the project will help to evaluate the impact of participation on the sustainability of resource use and on the livelihoods of people, by identifying and monitoring concrete linkages between institutional and technological change on the one hand, and the well-being of both the people and the reefs on the other. At the end of the project, results will be analysed, documented and disseminated for the benefit of resource managers and policy makers within and outside the Caribbean region.

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A description of the harvest of wild seamoss in Laborie, St. Lucia

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Background

A variety of seaweeds are traditionally harvested for food in the Caribbean. Apparently no historical record exists but the practice has existed in the English-speaking islands of the region at least since the mid-19th Century. By the 1970s the natural stocks of these seaweeds, commonly known as seamoss, had been over harvested in many islands, resulting in rising prices and an informal inter-island trade. Until the 1980s, seamoss was sold mainly in dried form, for household use in the preparation of drinks and puddings. By the early 1990s, however, a number of islands had established processing facilities producing bottled and tinned products and today a number of these are exported to North America and Europe. It is worth noting that this increase in the variety and sophistication of seamoss products has developed at a time when traditional uses of seaweeds for food is declining in most parts of the world.

While documentation of this use has increased recently, it has focused mainly on the development of cultivation of these species. Much less is known about the harvest from natural stocks, despite the obvious importance of those stocks in many islands in the past, and there has been no documentation of the use of seaweeds in the Laborie area. The preliminary assessment of the resources of Laborie Bay, conducted as part of the present project, suggested that seamoss harvesting had contributed to the livelihoods of a number of people in Laborie and nearby communities in the past, but that it had declined in importance in recent years. In order to learn more about the use of this resource, a questionnaire survey was conducted by Juliette Gustave in the villages of Laborie and Piaye.

Survey results

The species

Prior to the early 1990s, the harvest in the Laborie area targeted two species of *Gracilaria*, a group of seaweeds whose identification has been problematic for many years. The first species is commonly known as debilis[1] and the second as crassissima[2], as these were the species names in use at the time that research on seamoss cultivation began in St. Lucia in the early 1980s. Both species contain agar,

[1] Refers to *Gracilaria debilis*. The current recommended name is *Gracilaria cornea,* but some authorities use *Hydropuntia cornea*.

[2] Refers to *Gracilaria crassissima*, also known as *Hydropuntia crassissima*.

which is the thickening or gelling agent responsible for the characteristic consistency of seamoss drinks and puddings.

More recently, cultivation of another seamoss species, *Eucheuma isiforme,* has been established in the bay. This species has been harvested commercially in the Caribbean for some time, particularly in Antigua and Barbuda, but it is now extremely scarce there. It is also harvested in Belize from where seed material was transferred for cultivation trials in St. Lucia and a number of other islands. Plants that break loose from the farm plots are harvested from shallow water or beaches downstream. The thickening or gelling agent in this species is carrageenan.

The harvest and the harvesters

In the past, debilis and crassissima were harvested from most of the nearshore reefs and from many of the reefs further from shore (Fig. 1). These species are found mainly in shallow water, to a depth of about 10m. One of the most important harvest areas was between Sapphire and Piaye, where a number of very shallow reefs are exposed during low tide, allowing the seamoss to be very easily harvested. The same was true for the shoreline at Titwou and at Lilèt Mèl, which could also be harvested from shore. The reefs further offshore were harvested by free-diving.

When seamoss was abundant many people were harvesting full-time for a living and the seamoss business was thriving. Harvesters were often assisted by their children during school holidays and weekends, in order to buy school supplies for the new term. People would leave their homes for days, overnighting on the beaches while they harvested and dried the seamoss. Much of the harvest was sold to buyers from Castries and Debreuil, who exported it to Trinidad. Harvesters recall selling the dry seamoss for 6 to 10 cents per pound, compared with the current price of EC$15 to $20 per pound. For example, a woman who began harvesting at the age of twelve in the early 1940s recalls selling her seamoss for 9 cents a pound at that time.

A woman from the village of Piaye described her involvement in the seamoss business over the past 20 years. In 1980 she moved to Barbados and remained there until 1995. During that time she made frequent trips to St. Lucia to harvest or buy seamoss which she used for her bottling business in Barbados. The business was based on selling to regular customers. After returning to St. Lucia she continued to travel between the islands maintaining the business in Barbados. She is proud to say that her house and almost everything else she owns are all the result of the success of the business. Today she depends on other businesses but still sells seamoss drinks from her shop, using debilis when it is available from wild stocks. Her drinks include linseed as an ingredient, which is not commonly used in St. Lucia but is typical of drinks sold in Jamaica. She feels that cultivation of the species that were once available from natural stocks is a good idea and that young people should be encouraged to get into the business.

Because of the decline in the wild stocks only a few people are still involved in the harvest. At present

some harvesting takes place on the shallow or exposed reefs west of Sapphire, shallow rocks at River Dorée, and at Anse Koton.

A number of attempts have been made to establish seamoss cultivation in Laborie as a means of augmenting the supply. The first trials, in the early 1990s, involved a species of *Gracilaria*[3], but this had limited success as the plants were grown in relatively calm inshore areas where they became fouled by epiphytic algae which trapped silt and made the harvest unusable. GT is cultivated successfully in the rougher conditions on the southeast coast. The problem of epiphytism in Laborie was avoided by cultivating *Eucheuma*, which has a surface texture that prevents the attachment of other algal spores. Figure 1 shows the areas where *Eucheuma* is cultivated and where it is collected outside the farm plots. At present only one family is involved in *Eucheuma* cultivation in Laborie Bay.

Reasons for the decline

A number of reasons were given for the decline of the wild stocks:

- The use of knives for harvesting, resulting in the removal of the plants= holdfasts, leaving no plant base for regeneration.
- When plants are harvested leaving a base to regenerate, other harvesters may remove these bases when they cannot find whole plants.
- Increased pollution of coastal areas from agro-chemicals.
- The construction of the Laborie bypass road led to increased runoff through the village. This and an increase in the number of drainage ravines led to increased siltation of the bays.
- A general decline in reef health.

Some popular perceptions

- Wave action is an important factor in the growth of seamoss.
- The use of knives for harvesting is bad for two reasons. Firstly the removal of the entire plants which cannot regenerate and secondly a plant base regenerates better if the plant is broken rather than cut.
- The quality of gel (i.e. the firmness of gel from a given amount of dried seamoss) from the two wild species, particularly crassissima, is higher than that from the cultivated GT.

Recommendations for the future

The following suggestions were made by informants:

[3]An unidentified species referred to as GT, presently cultivated at Aupicon on the southeast coast.

- Harvesting should be banned in certain areas to allow the recovery of the stocks
- The restriction of harvesting in protected areas should be well enforced
- People should be educated in correct harvesting methods
- There should be greater control of the amount of pollution from waste coming from the land

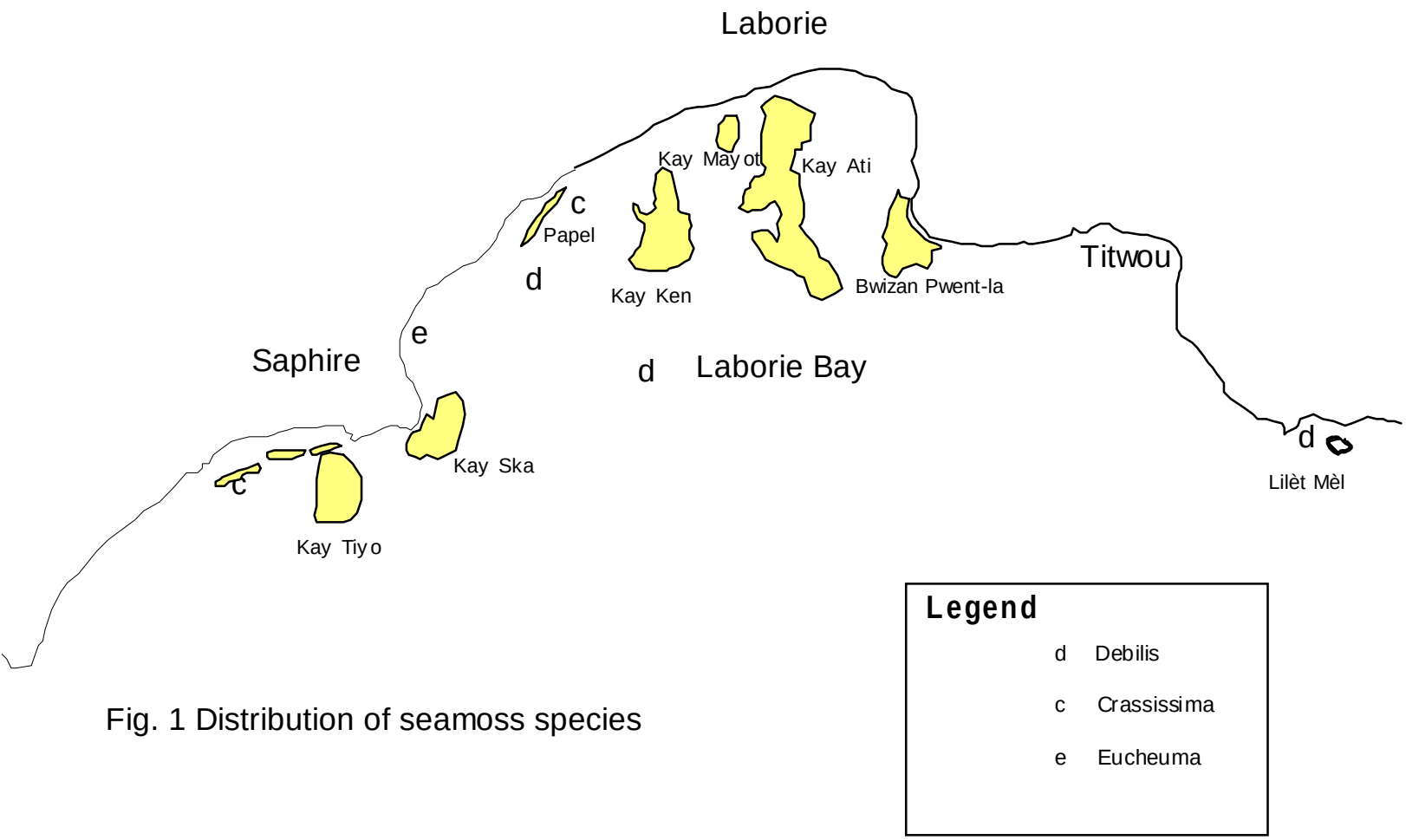

Fig. 1 Distribution of seamoss species