

A description of the reef fishery of Laborie, St. Lucia

G. Hutchinson, S George and C. James

September 2000



Caribbean Natural Resources Institute



DFID Natural Resources Systems Programme

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 System 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.

For more information on *People and the Sea*, contact:

Caribbean Natural Resources Institute (CANARI), New Dock Road, Box 383, Vieux Fort, St. Lucia, tel: 758.454.6060, fax: 758. 454.5188. E-mail: canari@candw.lc, or

Laborie Development Planning Committee, c/o Laborie Boys' Primary School, Citrus Grove, Laborie, St. Lucia. E-mail: lbp_sch@candw.lc.

This document should be cited as: Hutchinson, G., S. George and C. James. 2000. A description of the reef fishery of Laborie. CANARI LWI Project Document no. 1. 10pp.

Keywords: St. Lucia, Laborie, fisheries, fishery resources, fishery development, fisheries cooperatives

A description of the reef fishery of Laborie

Gem Hutchinson¹, Sarah George² and Christopher James³

¹Caribbean Natural Resources Institute (CANARI)

²Senior Fisheries Biologist, Department of Fisheries, Saint Lucia

³Fisheries Extension Officer, Department of Fisheries, Saint Lucia

Background

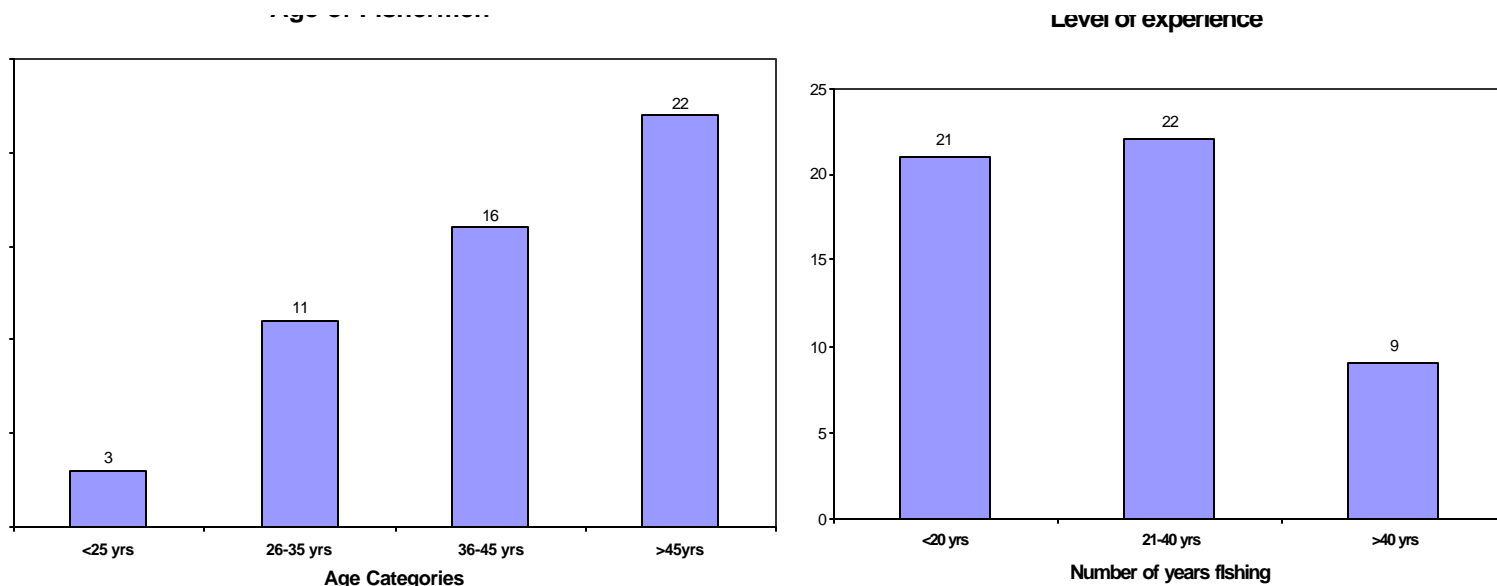
The Laborie reefs are important to both people and marine life and there has been increasing concern within the community that the health of reef areas appears to be deteriorating and the fish population decreasing. In an effort to identify both the possible causes and probable solutions to the problems faced by the reef and reef-based livelihoods, a survey of the reef fishery in Laborie was undertaken. Reefs provide a home for a large variety of species of fish and other marine organisms. The presence of reefs both directly and indirectly affects the lives of people living in the area and reefs are especially important to fishermen of the area (as well as their families) as a means of survival.

The survey of the reef fishery of Laborie was based on a questionnaire (Appendix 1) developed by Sarah George and Dawn Pierre-Nathaniel of the Department of Fisheries. Interviews were then undertaken with 52 registered fishermen of Laborie by three primary interviewers, Christopher James and Marcellus Edwin of the Department of Fisheries and Gem Hutchinson. Additional assistance was obtained from three summer students attached to the Department of Fisheries: Stacy Lubin, Celeste Stava and Anwar Deterville. Interviews were carried out from July 6-23, 2000, in an informal setting during the daytime along the Laborie shoreline, since this was the most appropriate time and place to meet and interact with the fishermen. Fishermen were either making or repairing fishing gear such as fish pots (traps), had just come in from a fishing trip or were simply relaxing on the beach. Their general attitude was one of co-operation although a few were a bit hesitant at first to talk but eventually relaxed and willingly provided the information. The data (Appendix 2) were compiled by Gem Hutchinson.

Survey results

The fishers

Fishing is a full-time occupation for the majority of fishermen interviewed. Others are part-time, having other forms of employment such as construction work, farming, carpentry, teaching, plumbing, baking and repairing boats. Most of the fish caught is either sold directly to consumers on shore or to the national fish marketing complex. In general, the sale of fish generates over half of the fishermen's monthly income except in a few cases where the alternative source of employment brings in far more money. This was the case for one fisherman who also runs a small restaurant.

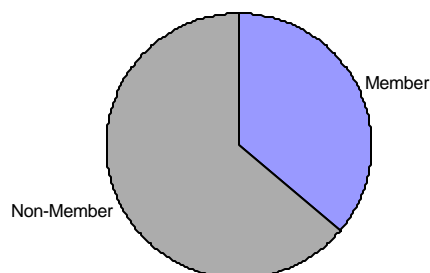


The majority of fishermen are over 36 years old and have been fishing for over 21 years. The survey indicates that opinions vary regarding the possible reasons for the low number of young fishermen, and whether their lack of participation in fishing represents a trend. Some fishermen believe that the young people who do fish are attracted to this activity since it brings in “quick money”, while others believe that few young people fish because fishing requires a great deal of effort and is time consuming and may not be as prestigious as a “white collar” job.

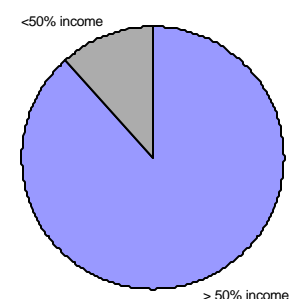
Since fishing is the main source of survival for most Laborie fishermen, some fish year-round within nearshore reef areas and also go “deep sea” fishing from November to June. Others fish within reef areas only during the low season for offshore migratory species such as dolphinfish, wahoo and tuna (June to December). During this period, reef fishing becomes a regular activity for most Laborie fishermen. A very small number prefer fishing offshore during this period (e.g., on the banks for snapper).

Few fishermen interviewed are members of the Laborie Fishermen’s Cooperative (Fig.8). Many indicate that the present board of the Cooperative has refused to accept them as members. Fishermen seemed concerned that the Cooperative had been allowed to weaken over the years.

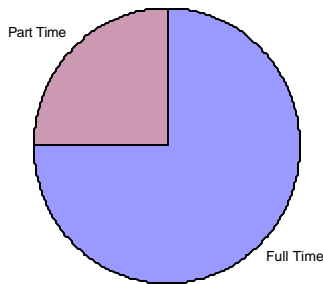
Cooperative Membership



Income Generated from Fishing



Dependency on Fishing

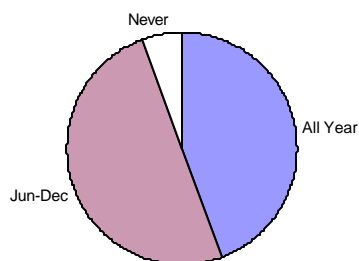


Fishing methods and gear

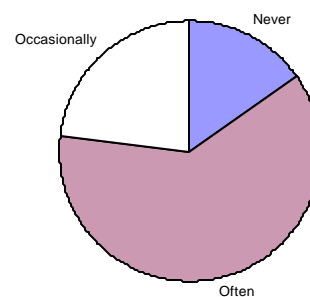
For demersal (“reef”) fishing, fish pots are used by all the fishermen interviewed, constructed from either bamboo or “chicken wire”. Other common fishing gear include handlines, spearguns, trammel nets (the use of these is unauthorised) and trawling lines. According to those interviewed, fishing gear that are rarely used include the gillnet, palang and seine nets. To many fishermen, the gear and methods used 10 years ago have become less common and in some cases non-existent. Examples include the use of: seine nets, vines, locally made rope for tying pots, the bamboo pot, cast nets, local materials for making gear, thicker lines/twine, SCUBA gear, “buchette”, oars and sail as a mode of propulsion, wooden canoes, spearguns, artificial baits, plastic floats, handlines, bamboo floats, bamboo lines and dynamite.

Some fishermen pointed out the new forms of fishing as: baited floats and pots, improved boats (that can spend more than a day at sea and are able to fish at night), the use of navigation equipment, baited lines, bottom gillnets and other bottom-set nets, bigger fish pots, conch diving using SCUBA, deep-sea fishing and the use of the “palang” for demersal species such as snapper.

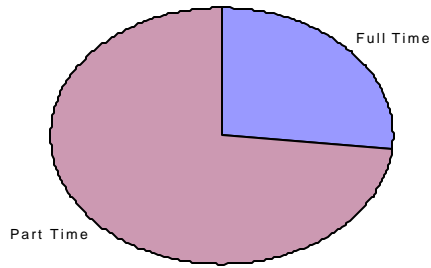
Use of Reef Areas



Use of Piaye to River Doree Nearshore Area



Dependency of Spearfishing

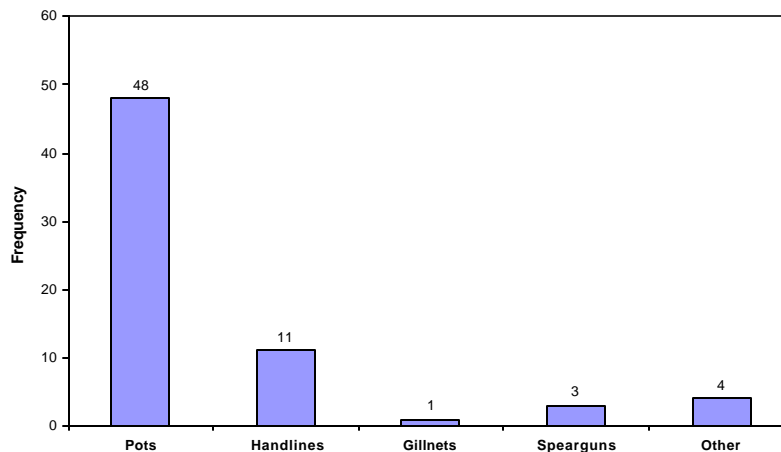


With regard to spearfishing, fishermen had conflicting views. Some suggest that this technique had increased over the years, pointing out that children are often involved in spearfishing particularly during the school vacation periods and that other people spearfish as a part-time job or for leisure. There

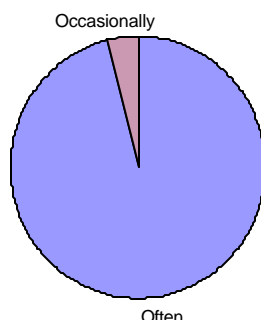
are also those persons who spearfish on a full-time basis. Others believe that the amount of spearfishing has decreased over the years, mainly due to the licence now required by the Department of Fisheries. Spearfishers who operate in the nearshore area adjacent to Laborie come from the village itself or from areas such as Banse, Piaye, Getwinne, Saltibus, Balca, Augier and Black-Bay.

Fishermen reported that, in Laborie, everyone enjoys free access to the fishing grounds but individual fishermen try not to place their fish pots too close to others so as to maximize the catch per haul. As with spearfishing, the fishermen who fish the reef areas around Laborie may also be from other communities within the general Laborie area (e.g., Augier, Balca, River Doreé, Black Bay, Saltibus and Piaye), or from other districts (including Gros Islet, Micoud, Canaries, Castries, Anse La Raye, Vieux Fort, Dennery, Soufriere and Choiseul) and occasionally come from other islands such as Martinique.

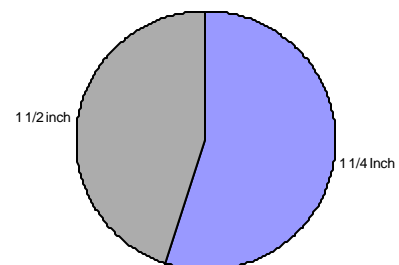
Types of Gear Used for Reef Fishing



Use of Bamboo Pots



Mesh Sizes Used for Fish Pots



Fishing areas and species caught

Fishermen catch a wide variety of fish from the reef area . The most common species (and families) include parrotfish (Scaridae), surgeonfish (Acanthuridae), squirrelfish (Holocentridae). Small species of snapper (Lutjanidae) and grouper ((Serranidae) as well as triggerfish (Balistidae) are also quite common in the catch. Some species have disappeared or are rarely seen in the catch anymore. These include goatfishes (Mullidae), grunts (Haemulidae), angelfishes (Pomacentridae) and sea urchins. The fishermen proposed several reasons why certain species have disappeared from the catch. Some suggest that fish have moved further offshore due to the contaminated water within the “Labatwi” area, or as a result of illegal dynamiting and other forms of nearshore pollution. Some say that spearfishing has caused the fish to migrate further offshore or to disappear. One particular fisherman claims that the fish have become smarter, suggesting a trend towards the evolution of instinct in fish. This fisherman pointed out that when he dives he encounters many shoals of fish despite the fact that other fishermen complain that there are fewer fish now, hinting that the fish are out there but they just do not want to be caught!

Interestingly, the individual reef areas in the greater Laborie Bay (between Black-Bay and Piaye) have been given a variety of names by those who use them :

Go Lou (two locations)	Mirikel	Papèl
Kay Ati	Lilèt Mèl	Kay Nwè
Kay Koko/Kay Kén	Lapo Patat	Twa Lanm
Kay Mayòt	Bwizan Pwent-la	Kay Tiyo
Kay Tòti	La Pas Kawèt	Kay Koupe
Bwizan Kawèt	Lans Chal	Boji
Kay Siwijen	Bwizan Matiwen	Kay Ji
Kay Ska	Ban (continental shelf)	Kay Omombi
Flatland	La Gwan Pas	Go Polit
Bwizan Dènyé	Kay Won	
Koléwa	Bwizèy	

Trends in the fishery

When asked what the main positive and negative changes have been during the last ten years, the following were suggested:

Positive Changes

- Better boats (i.e., fiberglass boats) are available which are easier to use and safer than canoes. The use of better boats and engines allow fishermen to go further offshore or to leave later and return earlier (shorter commuting time) than before and even to go out fishing twice a day.
- The fiberglass pirogues can hold about twice as much fish as the old wooden canoes.
- Better fishing equipment and improved fishing methods are available (e.g., artificial bait, “snap-ons”, GPS).
- Wire is now used to make fish pots and pots can be tagged for ownership to improve security.

- Dynamite is less frequently used as a method for catching fish.
- New fisheries facilities are being built.
- Catch can be sold at the landing site rather than the fisherman having to travel (often walk) further inland to places such as Banse and Piaye to sell fish.
- There is now a ready market for fish (e.g., the national fisheries marketing complex).
- Consumers can now buy fish during all periods of the year.
- The fish caught are larger and there is a wider selection (note: this may refer to offshore fish species, not reef fishes).
- Fishermen can obtain a better catch nowadays and make a better income from fishing.
- Children and young persons are now becoming more involved in fishing. Young persons are now interested in owning a boat.
- The industry as a whole is more organised.

Negative Changes

- A few fishermen still use dynamite for fishing. Dynamiting has made some species less common and has killed many of the small (juvenile) fishes.
- Spearfishers are contributing to the destruction of the reef.
- Poorer quality fish is being sold at the landing site.
- There is no standardised price system (the perception is that the fish marketing complex lowers or raises fish prices at its own convenience).
- Fishermen are not paid promptly by the fish marketing complex.
- Reefs in the Laborie area appear to be dying.
- Fewer fish are found in the area; the fish no longer come near to shore (possibly due to water contamination).
- Reef catches were better before and reef fishes are now smaller in size.
- Pot fishermen now depend heavily on income from the sale of lobsters.
- More fish pots are used and mesh sizes used are too small.
- There is less togetherness among fishermen, much of it as a result of “politics”.
- Fishermen used to co-operate more readily.
- There is a lack of interest by government in investing money back into the fishing industry.
- The fishermen’s co-operative is not reliable and is presently not taking new members. It needs to be reorganized and take on new members.

Fishermen’s suggestions for improvement of the industry

- Fishermen should be further educated by the Department of Fisheries in order to achieve a change in attitude, especially the more traditional and the younger fishermen.
- The fishermen’s co-operative needs to be reorganised.
- The price of fish needs to be regularised.

Other relevant information

- Mesh sizes used to be smaller but now fishermen are more dependent on lobster as it brings in higher monetary returns, therefore pots are built with larger mesh for catching lobsters and less fish are caught.
- School leavers should be targeted to join fishing industry and fishing added to school curriculum.

Conclusion

Laborie fishermen are concerned about the decline in the reef habitat and the reef fishery. At present many of them depend more heavily on offshore fishing, but there is a clear dependency on the reef during the low season for offshore migratory fish species. The Fishermen's Cooperative is apparently failing to reach the majority of fishers, far less support them. Education of fishermen still remains a need in order to gain more support for responsible fishing practices and marine conservation. Urgent action is needed to address the factors contributing to the decline of the nearshore reef in the Laborie area. Fishermen have an important role to play in sustainable reef management. Mechanisms to allow for fisher involvement should be developed as part of the broader "People and the Sea" project.

There is also need to continue and expand this research, and to compare the results of this survey with the premises and analyses which form the basis of current policies and development plans for the fishing sector.

PEOPLE AND THE SEA

Description of the Reef Fishery of Laborie

We would like to find out about the reef fishery in Laborie and would be grateful if you could help us collect some information. Your name will not be recorded, so the information will just be used to help describe the overall fishery in Laborie, not activities of particular fishermen.

- Are you a part time or full time fisherman? Full-time_____ Part-time_____
- How old are you: <25 yrs_____ 26-35 yrs _____ 36-45 yrs _____
Over 45 _____
- How many years have you been fishing? _____
- Do you mostly sell the fish you catch? Y / N
- If so, does fishing bring in over half (50%) of your monthly income?: Y / N
- If part-time, what do you do for earning the rest of your monthly income: Commercial
Agriculture_____ Subsistence Agriculture _____
Other (specify) _____
- Do you fish nearshore areas (i.e., reef areas) all year-round, or mostly between June and
December?
All year _____ June-Dec _____ Not at all _____
- Do you fish in the nearshore areas (i.e., within 1 mile from shore) between Piaye and
Black Bay? No _____ Regularly _____ Occasionally _____
- Which fishing gear do you use regularly for bottom/reef fishing? (tick ones that apply):
Pots _____ Handline _____ Gillnets _____ Speargun _____
Others (please specify) _____
- What do you think are the most common fishing gears being used by fishermen who
fish the nearshore areas between Piaye and Black Bay?

- What fishing gear do you think are used less often nowadays, compared with 10 years
ago?

- Can you name any "new" forms of fishing being used by Laborie fishermen (i.e., how
have fishing gear and methods changed over the past 10 years?)

- Do fishermen from outside of Laborie come to fish in the nearshore area between Piaye
and Black Bay? Y / N

COMMENTS

APPENDIX

If so, where do these fishers come from? (name the communities, or state whether they are from outside of St. Lucia e.g., Martinique)

COMMENTS

- What species do Laborie fishermen catch from around Saint Lucia (i.e. in any place where the water is 200 feet deep or less)?

TICK THE CORRECT BOX

SPECIES	VERY COMMON	USUALLY CAUGHT	RARELY CAUGHT
Lobsters			
Conch			
Sea Eggs			
Fish (specify)			

- What species are being caught in the nearshore areas **close to Laborie** by fishermen (i.e., between Piaye and Black Bay)?

TICK THE CORRECT BOX

SPECIES	VERY COMMON	USUALLY CAUGHT	RARELY CAUGHT
Lobsters			
Conch			
Sea Eggs			
Fish (specify)			

List the species of fish you find are less common these days compared with 10 years ago?

_____	_____	_____
_____	_____	_____
_____	_____	_____

APPENDIX

How often are bamboo pots used by Laborie fishermen?: Common _____
Used on Occasion _____ Rarely Used _____

- What is the mesh size for most of the fishpots used by Laborie fishermen?: 1" _____
1 ¼" _____ 1 ½" _____
 - Do all fishermen use bamboo pots? Yes _____ No _____. If not, who tend to use them (e.g., age, home location, full/part time, years fishing)?

 - Has spearfishing increased over the past 10 years? Yes _____ No _____
 - What type of fishermen mostly spearfish? (e.g., age, part/full-time, other skills)

 - What communities do spearfishers mostly come from: Laborie _____ Augier _____
Other (specify) _____
 - Give local names for the main reef areas you fish on when fishing in the bays and reefs around Laborie (i.e., between Piaye and Black Bay)

- a) Are there fishing grounds where only **certain** fishers are supposed to get access, or does everyone have equal right to go anywhere they want? All free access _____
Some areas restricted to certain users _____
- b) Give a general description of the system of access/ ownership rights to fishing grounds. _____

Are you a Co-op member? Y _____ N _____

What are the main changes you have seen taking place in fishing during the last 10 years and what do you think have been the causes?

Positive Changes:

Probable Reasons

Negative:

Any other Relevant Notes/Information:

COMMENTS

Interviewer:

Date: