

**A study of the social and economic impacts of sea urchin  
harvesting in 2002 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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### **Presentation**

One of the components of the *People and the Sea* project involves a case study of sea urchin management in Laborie. The white-spined sea urchin fishery has been a significant activity in Laborie for many years, providing seasonal income to harvesters and traders. The fishery was suspended for several years in the past two decades, in response to drastic declines in stocks. In 2000, it was observed that the population was beginning to recover, with a strong recruitment of juvenile urchins in sea grass beds and near reef areas. Consequently, harvesting seasons were declared in both 2001 and 2002.

Legal and practical arrangements differed significantly between these two harvesting seasons. In 2001, the Department of Fisheries, conscious of the need to supervise and monitor harvests, sought to establish a rotating system among the various communities involved. This system however generated serious conflicts and was quickly abandoned in favour of a single harvesting season for all communities on the island.

In 2002, as part of the *People and the Sea* project, harvesters and project researchers collaborated in monitoring the resource, and the results of this work were used by the Department of Fisheries in selecting the dates for the harvesting season and in determining the conditions of harvest. Two legal harvests actually took place (9-29 September and 23-27 October), and both were marked by the absence of conflict and by a high level of satisfaction among harvesters and other people involved.

Against this background, it was felt necessary to conduct a brief survey to assess the impacts of this activity on the Laborie community. The specific objectives of this study were to:

- assess the social and economic impact of the two 2002 sea urchin harvests on the Laborie community;
- determine the link between the management regime and the social and economic outcome;
- inform future management arrangements.

It was conducted through semi-open interviews in October and November 2002 with 107 people with a diversity of age, sex, income levels, and places of residence.

This report presents the results of this survey, and should provide an adequate basis for the analysis of this experience and the extraction of lessons learned.

### **Results**

The results obtained were as follows.

#### **Age of informants:**

<15	8
<30	38
<45	28
>45	33



Sex

Male: 63

Female: 44

Location: see location mapMain occupation:

Unemployed 50

Fisherman 25

Retired 9

Student 8

Housewife 6

Vendor 2

Factory worker 2

Teacher 2

Road technician 1

Fisheries Assistant 1

Lawyer 1

Informants' relationship with sea-urchins:

Harvester	Processor	Consumer	Trader	Vendor	Nothing
20	20	28	0	2	37

Economic impact of harvests 1 and 2: how many people benefited as harvesters, processors and traders, and estimates of the total number of people and total volume of sales

How sold?	Price	No. of persons involved	Amount sold per day (include weight or \$)	Frequency of sale	Comments
Raw roe	\$30 per pound	7-9	approximately 10-15lbs	Sporadic	sold on request, mainly to customers in Castries. Done as a side activity in the preparation of the koukou (baked)
Koukou/baked sea-egg	\$10	7-9	90-100 sea-eggs	every day	sales shared every day
Baked	\$10	1	15 sea-eggs	every day	performs all duties alone



How sold?	Price	No. of persons involved	Amount sold per day (include weight or \$)	Frequency of sale	Comments
Baked	\$10	4	\$1000	3days per week	sales are shared every 3 days
Baked	\$10	5	\$600	every day	sales shared every day
Raw roe	\$20 per lb.	-	10 -15 lbs per day	On request/sporadic	
Baked	\$8-10	4	\$480	every day	sales shared every day. Boat owner receives \$40 per day, for boat on loan

It is therefore estimated that approximately 100- 120 persons were involved in the harvest at the opening of the first harvest, when sea-urchins could be found inshore, and approximately 30-50 persons towards the end of the season, when inshore stocks were depleted and sea-urchins were only available in deeper waters

Inclusion and exclusion: who benefited, who did not? Were there people who benefited this time for the first time? Were there people who were excluded? Did people from outside the village get involved?

- yes there was much economic impact. (x1)
- people who were not employed got an opportunity to make some money during the harvest.
- more people benefited this time than the last harvest. (x 11 persons)
- the season was open to all. (x1)
- the harvest was better this year as all communities harvested at the same time.
- people from outside the village did not get involved (x7 persons), however there were foreign buyers and consumers.
- boat captains caused the exclusion. They decided who they wanted as their crew.
- bad weather conditions kept many harvesters away.
- last year the Vieux Fort divers took all our sea-egg. However they did not this year. (x1)
- everyone who wanted to make money got involved.
- young unemployed benefited (13-30 years).
- the monies derived from the harvests circulated within the community of Laborie.
- one Captain was able to employ approximately 8 people.
- some people were able to pay their hire purchase commitments at Courts furniture store



- the sea-egg harvest helped fishermen since it was the dull time for pelagic fishing "Mouwèt".

Social groups: were women involved? How? Did they benefit equitably? Why? Factors, constraints and opportunities?

- women were involved on a small scale.
- they benefited equally as men (x 6). They washed sea-eggs, prepared shells "koukou" and vending. ( x 27 persons)
- women were involved in the industry as children; before there were restrictions.
- they benefited as much as men.
- they were not involved in the diving which is the most difficult part of the process.
- do not know/not sure. (x19)
- receipts from sales were shared equally among men and women. (x6)
- respect was given to the women in every regard.

Poverty reduction impact: did the harvests create special opportunities for the poor? How? Factors, constraints and opportunities?

- yes, there were opportunities for the poor. (x25)
- there was the domestic and commercial impact on Laborie.
- the length of time given for the harvests and the inclement weather were constraints. (x33)
- fishermen stopped "looking for fish" and went to "get" sea-eggs.
- unemployed poor young men and women got an opportunity to earn money. (x15)
- people made money in various ways including the rental of spades for burying shells.
- some people cannot dive and are therefore excluded.

Social impact: did the harvest generate conflicts? Did it create social capital/cohesion? Within the community? Between the community and other social groups?

- no conflicts. (x 52)
- yes, there were conflicts but not many. When bags of sea-eggs were left (under the sea) for the next day divers stole them.
- when divers got a "bwa" they felt that it was their territory. This was mainly due to the open access nature of the activity.
- no relations between Vieux Fort and Laborie divers.
- no problems with the Vieux Fort divers. (x23)
- there was greater social capital/cohesion within the community .
- Fèt Chadon brought people together.
- divers would inform others of areas where the sea-eggs were plentiful.
- opening the season island-wide helped to avoid conflicts.



- the meetings which were held prior to the opening of the season helped to avoid conflicts.

Community participation: what was the role of the stakeholders in the community?

- yes, there was community participation. (x30)
- divers helped the Department of Fisheries and CANARI in counting/monitoring the sea-eggs. (x10)
- I am not sure. (x27)
- yes, there was community participation, divers monitored the sea-urchins before the Department of Fisheries came in to do their scientific monitoring.
- the harvesters made sure that they kept the rules/guidelines. (x21)

Factors of "success": what worked this year? Why?

- the inclement weather caused a short harvesting period.
- Laborie kept to the Fisheries guidelines. The people kept to the rules.
- rules and regulations regarding Food and Health were not adhered to adequately.
- Fisheries (Ministry of Health?) was not strict on health with vendors.
- everything worked well. (x39)
- Department of Fisheries should allow for a longer harvesting period ( x24). There were sufficient urchins for further harvesting.
- short harvesting periods can cause indiscriminate harvesting.
- there was the use of scuba equipment. This is not good for Laborie.
- short term extensions to the main harvesting period do not have any legal standing. The extension is not gazetted on time and therefore not law in the Courts.

Possible improvements: what could be done better?

- season should be opened for a longer period with proper monitoring during that time.
- although a longer harvesting period is suggested, the divers do not want the sea-urchins to be over-harvested.
- need to gazette the extension to the harvesting period as per the Laws of Saint Lucia. The extension to the season has no legal basis since it is not gazetted on time.
- the Vieux Fort people created some negative fishing of urchins. This did not happen this year because of the open season for all. This should be continued.
- Department of Fisheries should not use Jounen Kwéyòl to justify an extension to reopen the season. They should consider the economic situation in the country.
- need to have proper monitoring of the urchins by the Department of Fisheries in collaboration with the harvesters in order to educate them, and to get them involved.



- areas with juvenile eggs should be zoned so that there is a continuous cycle for harvesting.
- The Department of Fisheries should revisit the use of calipers for the measuring of harvestable eggs. Some under-sized urchins are as mature as the approved harvestable size.
- The Department of Fisheries should ensure that the harvesters do not use scuba gear since it will cause total loss of the fishery.
- no comments. (27)
- let it stay the same way as this year. (x5)
- regularize the price of sea-egg.
- more notice should be given for the La Fèt Chadon. It was good.
- shells should be buried a few meters above the high tide mark to avoid re-appearance of the of shells during tropical depressions.
- the processing of sea-eggs needs to be done better especially the cleaning of the gonads to avoid the remains of sand.
- training of the processors should be done.
- markets for the sale of sea-eggs should be obtained to avoid strenuous vending.
- there should be a relationship between the amount of harvestable eggs and the number of harvesters.



