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The flyingfish fishery of St. Vincent and the Grenadines

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Abstract: The flyingfish fishery does not constitute an important or significant component of the migratory pelagic fishery of St. Vincent and the Grenadines. Less than 1 mt is landed annually and this accounts for less than 1% of the total pelagic landings. The estimated annual value of the catch is not in excess of EC\$ 5,000. The pelagic fleet comprises approximately 300 open boats, which target the large oceanic pelagic species from December to August and the schooling inshore small coastal pelagics all year round. Approximately 1,000 full and 500 part-time fishermen are involved in this fishery. There is planned expansion of the fishing fleet but the yield of flyingfish is not expected to increase. Catch and effort data are not recorded and the fishery remains unmanaged.

DESCRIPTION OF THE FISHERY

Fishing techniques, past and present

It is not known for just how long fishermen have been taking the flyingfish in St. Vincent and the Grenadines and the method has not changed over the years. A description of the traditional method of fishing used in St. Vincent follows. Sprat (*Tarantula Pensacola*), small jacks (*Solar crumenophthalmus*), robin (*Decapterus macarellus*), and dodger (*Decapterus punctatus*) are macerated with a machete on a small “mash board” and the material placed in a polythene bag prior to the commencement of the fishing trip.

Several types of boats are engaged in the fishery. On the north and northeast coasts of St. Vincent the type of boat used is called a “logwood” or catamaran (Figure 1). The “logwood” is a 3.5 x 1 m structure made of 5 pieces of dried gumbolimbo or “naked Indian” tree trunk (*Simarouba bursera*) banded together with steel wire strips, a transom or stern piece about 25 x 10 cm and a stout 15 cm metal peg in the bow which is used for securing the anchor rope when fishing in shallow water. The weight of the entire structure is not more than about 15 kg. It is not painted, not registered, and carries no identification marks. The “logwood” never becomes water logged and is very buoyant. The crew consists of a single member who sits upright with extended legs and uses a single blade paddle for propulsion until the vessel is about one mile from the shore (Figure 2). The fisherman’s lower body remains soaked in the water for the entire duration of the trip,

which lasts for about 7 hours. At a predetermined location the “logwood” is stopped and allowed to drift with the current. During this time the “mash” is released into the water at intervals from the transparent polythene bag to attract the flyingfish. When they arrive around the “logwood” and are seen by the fisherman, he throws his line over board. This line consists of a #12 Mustad hook baited with an appropriately small piece of the mash material or of crayfish obtained from the river, attached to a 5.5 kg breaking strain transparent monofilament nylon line. The fish are caught singly and placed in a 30 x 30 x 30 cm “fish box” which has been secured about midship between the fisherman’s legs, and which also serves as a lunch box. Fishing lasts for about 5 hours, from 7:00 am to about 12:00 noon.

Fishermen on the west coast fish predominantly from small “double enders” and “bow and stern” boats, both of which are not more than 3-4 m in length and may be powered by oars or outboard engine (40-45 hp) (Figure 3), and use a type of dip net known as a “callie”, to scoop up the flyingfish when they approach in large numbers. This technique is similar to that used in neighbouring islands and if the “callie” was always taken along in the boats as part of the regular gear, greater use could be made of the flyingfish resource. During the survey of 1985, most fishermen responded positively to the idea of using gillnets to increase their catches, if they could be guaranteed a market (Mahon *et al.* 1986).



Figure 1. The “logwood” or catamaran typically used by fishermen on the north and northeast coasts of St. Vincent for the capture of flyingfish.



Figure 2. Fisherman on “logwood” paddling offshore at the start of a fishing day.



Figure 3. The “double ender” (centre) and “bow and stern” (right) typically used by fishermen on the west coast of St. Vincent for the capture of flyingfish.

Fishing area and landing sites

Fishing for flyingfish takes place off the north and northeast coasts of St. Vincent by one type of vessel (“logwood”) and off the west coast by two types of vessels (“double ender” and “bow and stern” boats). Flyingfish are not taken in the Grenadines. The approximate position of the fishing grounds and locations of fish landing sites is shown in Figure 4.

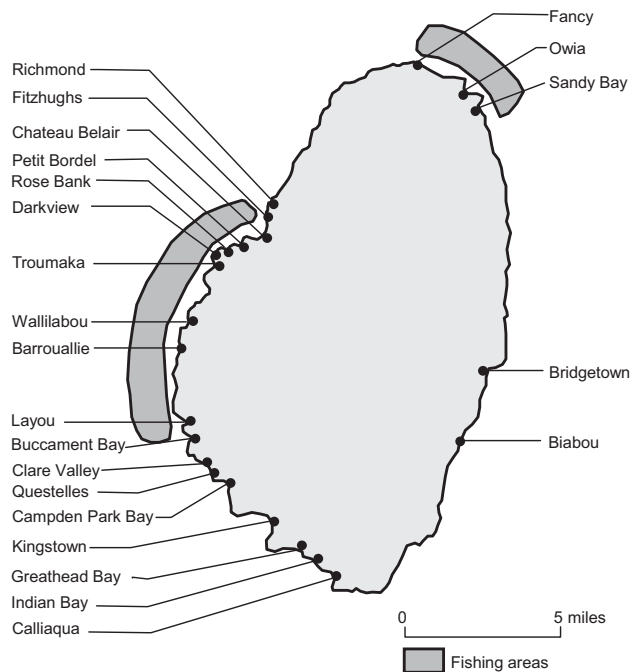


Figure 4. Flyingfish fishing areas and fish landing sites in St. Vincent.

Estimated current flyingfish catch and effort

There is no estimate available from market records of the weight or value of the flyingfish catch and as such the fishery may be considered at present a minor one. The importance of flyingfish as a subsidiary species and the potential for development of a flyingfish fishery was, however, assessed by a survey of the fish landing sites on the main fishing coast (leeward or west coast) of St. Vincent in 1985. Fishermen, market vendors and villagers were interviewed from the following locations: Kingstown Market, Kingstown Bay, Campden Park Bay, Clare Valley, Buccament, Layout, Barrouallie, Wallilabou, Petit Bordel and Chateaubelair. The results of the survey showed that flyingfish are readily available off the west coast of St. Vincent most of the year and are taken incidentally by virtually all the pelagic boats, including the blackfish boats and some of the inshore fleet (Mahon *et al.* 1986).

A potential fishery for flyingfish does therefore exist off mainland St. Vincent although at present the resource is under-utilised, with large oceanic and schooling inshore pelagics being taken in preference. Flyingfish are apparently taken only when they are found congregating in large numbers (e.g. spawning shoals) or on days when catches of the preferred species are unusually low, or during the summer months when the large migratory pelagic species are virtually absent.

Proportion of the total fish catch

It is not possible to present a quantitative assessment of the annual flyingfish catch, but it is known that the proportion of the total fish catch which it represents is fairly small, being recorded under "others" (Morris 1991).

Landed value of catch

The flyingfish catch, particularly in the northern villages, is sold and consumed locally, and contributes to the protein diet of subsistence fishermen and their immediate families. Flyingfish caught by the pelagic fleet near Kingstown passes through the Kingstown Market. It is weighed together with other species such as ballyhoo and gar and thus is not recorded separately on the official data sheets. It is sold at EC\$ 4.40 to EC\$ 6.60 / kg in the Kingstown market or at 3 or 4 fish to a dollar in other coastal areas.

Employment generated by the flyingfish fishery

Mainland St. Vincent has approximately 3,000 full-time and 3,000 part-time fishermen, and approximately 3,000 persons connected with the fishing industry, such as market vendors, boat builders and outboard engine mechanics. Of these very few if any depend solely on the flyingfish, but this species serves as one of the alternative harvestable species during periods of low catches around St. Vincent and is therefore of some importance in helping to maintain a fishing industry year-round. A small number of fishermen (approximately 6) in the northwest (Wallilabou) fish specifically for flyingfish most of the year, and at Chateaubelair further north a few fishermen (approximately 3) make up floating gillnets suitable for flyingfish capture nearshore during the months from June to August when the large pelagic species are not available. Flyingfish species composition and size structure of the catch.

Two species of flyingfish are landed although others e.g. *Parexocoetus brachypterus* have been identified in flight. The two species landed are *Hirundichthys affinis* and *Cypselurus cyanopterus*. The former appears to be more abundant and is landed in larger numbers.

DEVELOPMENT AND MANAGEMENT OF THE FLYINGFISH FISHING INDUSTRY

Catch and effort data collection system

While the data collection system allows for catch and effort data to be obtained, flyingfish landings are not recorded separately and therefore this information is not available.

Recent fishing agreements and negotiations

There are no fishing agreements in place nor are any negotiations in progress. However, vessels of the Barbados fleet have for the last three years been applying for foreign fishing licences. None has been approved.

Recent legislation pertaining to flyingfish

There is no legislation on the statute books pertaining to flyingfish, but the Government may consider recommendations coming out of the various scientific studies being undertaken if such studies indicate that the species taken constitute a shared resource.

Planned future directions for the industry

The population of St. Vincent is increasing at an estimated 2% a year. The amount of protein imported is already high, with official figures at 227 mt. The need for an increase in locally produced protein is therefore clear and with the relatively small land area, much of which is mountainous terrain, an increase in fisheries yield of protein would seem most appropriate. At present about 50% of the fish consumed locally comprises imported canned or dry-salted fish, and the per capita income of local fishermen is very low.

Given the above, a serious attempt is being made to develop and manage the fishing industry in St. Vincent and the Grenadines. Whilst many species may have already been over-exploited (e.g. the shallow reef demersals) (Matthes 1984), the pelagic species probably remain under-exploited. In particular, flyingfish, which is a major component of the total fish catch in neighbouring islands such as St. Lucia, Grenada and

Barbados, is almost certainly under-utilised in St. Vincent and the Grenadines.

Most fishermen agree that flyingfish are abundant offshore St. Vincent and the Grenadines and sometimes close inshore, at certain times of the year. They are observed and caught from October to March and from July to August.

The existing pelagic fleet of approximately 300 open boats (“double enders”, “bow and stern” boats and piroques) already fish in offshore waters where flyingfish are most abundant and have an estimated holding capacity of 450 to 900 kg of fish. Fishermen are already accustomed to handling large beach seine nets from the inshore boats of similar design, so that handling the smaller gillnets suitable for flyingfish capture is not likely to be a problem. The present pelagic fleet with expansion in range and endurance would therefore seem suitable for flyingfish exploitation. Furthermore, the inshore fleet of approximately 500 open boats could exploit the flyingfish found close to shore.

The flyingfish fishery is not of any great importance to St. Vincent and the Grenadines at this point in time, but the Fisheries Division is aware of the possibilities of increasing production. What is needed most at this time for this increased production are market surveys. Appropriate infrastructure addressing processing and storing are already in place.

REFERENCES

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