

THE BANGOS FRY FISHERY OF PANAY ISLAND

by

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Nowhere in the Philippines is the bangos fry industry so closely linked to brackishwater fishpond than in the island of Panay. The fry production along the western coastline alone meets the demand of the 37,000 ha of fishponds distributed contiguously in three major areas, namely: 23,000 ha on the northern section of the island along the coastline of Aklan and Capiz; 5,000 ha on the northeastern coast, all in the Province of Iloilo; and about 600 ha sporadically located on the west coast of Antique. Because of the imperatives of fish farming technology, the bangos fry requirement has more than trebled. Fishpond development in this island has reached its horizontal limit and the government, through the BFAR Regional Office in the West Visayas, is pursuing the vertical pond fisheries production scheme.

In this connection the government, the researchers and the industry are faced with three major challenges: (1) to artificially propagate the sabalo; (2) to improve the bangos fry catching techniques; and (3) to pursue the sabalo stock assessment and conservation.

The bangos fry catch in 1973 as reported by the BFAR Regional Office No. 6 is 27 million. This appears to be a small percentage of the actual catch in this island since in the same year there was no record of the local fishpond industry. So in July 1973 the BFAR Regional Office personnel took the task of evaluating the problems of the industry. It was found out that the occurrence of bangos fry along the west coast of Panay (specifically on the 15 coastal towns of Antique and the Caluya group) is not seasonal. The peak season varies from July to September and from April to September or mid-October. During the 1973 fry season, 72 million bangos fry were recorded as gathered from Panay; in 1974 92 million; and in 1975 the estimate was 120 million.

The study on ecological requirements and bangos fry occurrence is an open field for researchers. At present it appears that there is a direct relationship between bangos fry occurrence and the high tides, the southwest moonsoon and the flooding of the rivers along the west coast of Panay.

The increase in the volume of fry catch in the past two years seems to be due to improved techniques of fry catching. Although the bangos fry produced in Panay could meet the present needs of the fishpond industry in

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the area, the techniques of bangos fry collection should be improved based on the following:

1. The littoral zone of the western coastline of Panay varies from 2 to 10 km from the coast and with depths of 60 to 220 fathoms. The bottom is generally sandy along the deltas of the 63 rivers and streams and generally sandy-mud seawards.

2. Mature eggs of the sabalo are not laid in clusters and its specific gravity is heavier than seawater.

3. Bangos fry is positively phototropic and that it is planktonic during its earlier life stages.

The old method of using the stationary filter net and barricades on or along the mouths and deltas of rivers and the use of the two-man operated seine are bound to be inefficient. A movable device has been designed in accordance with the known characteristics of the bangos fry. The finished device is almost similar to a floating movable sapland^{1/}. The smaller device called baka-baka could be operated by a seven-year old child. The bigger device called "bulldozer" could be operated by one or two men; it is either motorized or moved manually by bamboo poles. It could operate from the shoreline as well as in areas where saplak could be used. These two devices had improved the catch in the traditional areas from 100 to 1000% despite the fact that only 45% of the bangos fry collectors of the area use these devices. The government is promoting its use through organized fishermen's cooperatives and the CB-IBRD small fishermen lending scheme handled by the rural banks.^{2/}

Recently Regional Office No. 6 introduced the use of lights in operating the bulldozer to enable collectors to gather fry during flood tides at night. Light and tides are believed to be contributory factors in catching bangos fry at night when they are not ordinarily caught.

This paper is presented in the hope that researchers will soon find a way of artificially propagating the sabalo. Meanwhile the improvement of techniques in catching bangos fry should be continued. And there should be a complete Seed Bank not only in Philippine waters but in all waters where sabalo are found.

^{1/} Refer to Annexes for diagrams.

^{2/} The CB-IBRD lending scheme is jointly initiated by the Central Bank and the International Bank for Reconstruction and Development.

A C K N O W L E D G M E N T

To Simeon Ventura and Cesar Matulac, fishing gear technologists, Sonia V. Seville, Sr. Fishery Biologist, and member of the staff, Regional Office No. 6 all other fishery biologists whose names could not be recalled.

The Modified "Tangab" or Tidal Set Net

I. Method of Operation

"Tangab" is set on tidal flats during the bangos fry season. The opening of the net faces the wave flow and as soon as enough have been collected, the operator wades the shallow shore waters and detaches the knot at the tapering end and catches the fry with a basin. The collector then wades back to shore, sorts and counts the fry caught. Finally, he stores the fry in earthen jars. The activity is repeated as long as there are bangos fry caught.

II. Prospectus of One (1) unit Modified Tidal Set Net

50 meters nylon screen (fine meshed @ ₱2.50/meter -----	₱125.00
100 pcs. 50 grams lead weight @ ₱1.50 each -----	15.00
60 pcs floats (plastic slippers waste @ ₱0.10 each	6.00
6 meters fine meshed cloth @ ₱25.00/m-----	30.00
1 lb. fine Kuralon twine @ ₱8.00/lb -----	8.00
1 lb. No. 18 Nylon rope @ ₱18.00/lb-----	<u>19.00</u>
Total -----	₱202.00

The Improved "Tangab" or Tidal Set Net

I. Method of Operation

This type of gear is installed permanently along the beach. The opening is facing the direction of the wave action. The bangos fry carried by the waves are then guided by the V-shaped wings towards the pouch or "paduyan". From there, it is scooped with a bowl and transferred to basins for storing and counting. Then the fry are stored in the earthen jars. The system is repeated as long as there are fry entering the pouch.

After the fry season, the nylon screen is removed and the rest are left in the beach.

II. Prospectus of one (1) Unit Improved Tidal Set Net

21 pcs. 2.2 meters bamboo poles (small end) @ ₱0.30 each -----	₱ 6.30
2 pcs. full length bamboo @ ₱3.00 each -----	6.00
4 meters fine-meshed nylon screen @ ₱2.50/ meter -----	8.00
2 pcs. earthen jars @ ₱10.00 each -----	20.00
2 pcs. enameled basins -----	20.00
2 pcs. plastic bowl (white) @ ₱1.50 each -----	3.00
1 bundle strip rattan -----	<u>5.00</u>
Total -----	₱68.00

The "Baka-Baka" or Bulldozer

I. Method of Operation

"Baka-baka" is either pushed from behind or towed in front. The fry are guided by the wings into the pouch fitted in the rectangular frame. The bangos fry are then scooped up with a bowl and transferred to basins for sorting and counting and then stored in earthen jars. The gear is provided with a platform at the back portion where the jars, basins and bowls are placed during the operation. Sometimes, a chair is fitted in the platform where the operator sat and moved the gear by means of a bamboo pole.

II. Prospectus for one (1) Unit "Baka-baka" or Bulldozer

10 pcs. full length bamboo @ ₱3.00 each -----	₱30.00
2 meters fine-meshed nylon screen @ ₱2.50/meter -----	5.00
2 pcs. earthen jars @ ₱10.00 ea. -----	20.00
2 pcs. enameled basins @ ₱10.00 each -----	20.00
2 pcs. plastic bowls (white) @ ₱1.50 each -----	3.00
1 bundle strip rattan -----	<u>5.00</u>
Total -----	₱83.00

The Improved "Baka-Baka" or Bulldozer

I. Method of Operation

This gear is operated by one man riding in a raft and by means of a long bamboo pole pushes the bulldozer forward. The V-shaped wings guide the bangos fry to the pouch which are then collected by means of a plastic bowl and transferred to basins for sorting and counting. The fry

are then stored in earthen pots.

Sometimes the contraption is provided with shelter to protect the operator from bad weather. This fry collecting device is, however, used mostly at night with the use of light. This is the most common method of catching bangos fry in Antique. All the paraphernalia needed in the operation are placed on the deck of the raft. This facilitates sorting, counting and storing.

II. Prospectus of One (1) Unit Improved "Baka-baka" or Bulldozer

30 pcs. full length bamboo @ ₱3.00 ea. -----	₱ 90.00
5 meters fine-meshed nylon screen @ ₱2.50/meter -----	12.50
2 pcs. earthen jars @ ₱10.00 each -----	20.00
2 pcs. enameled basins @ ₱10.00 each -----	20.00
2 pcs. plastic bowl (white) @ ₱1.50 each -----	3.00
1 bundle strip rattan -----	<u>5.00</u>
Total -----	₱150.50

The Motorized "Baka-Baka" or Bulldozer

I. Method of Operation

The operation of the motorized bulldozer is similar to the ordinary bulldozer. The difference is on the installation of an inboard or outboard engine in the gear. The advantage of this modification is that it can cover a wider area than the man-operated bulldozer.

Care should be exercised, however, to maintain the desired speed in order to protect the life of the fry caught. Normal operating speed is 1 kilometer per hour. This too, is usually operated at night.

II. Prospectus of one (1) Unit Motorized Bulldozer

1 Briggs & Stratton engine w/ accessories -----	₱1,500.00
5 meters fine meshed nylon screen @ ₱2.50/m--	12.50
30 pcs. full length bamboo @ ₱3.00 each -----	90.00
2 pcs. earthen jars @ ₱10.00 each -----	20.00
2 pcs. enameled basins @ ₱10.00 each -----	20.00
2 pcs. plastic bowls (white) @ ₱1.50 each -----	3.00
1 bundle strip rattan -----	<u>5.00</u>
Total -----	₱1,650.50

BANGOS FRY PRODUCTION IN PANAY

CY 1975	-	120 Million
CY 1974	-	92 Million
CY 1973	-	72 Million

ESTIMATED MONTHLY BANGOS FRY PRODUCTION FOR 1975
IN (000) PIECES

Province	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Iloilo	-	-	-	4,000	10,000	4,000	-	-	-	-	-	-	18,000
Guimaras	-	-	-	1,375	1,700	1,375	-	-	-	-	-	-	4,450
Aklan	-	-	-	690	2,500	710	-	-	-	-	-	-	6,300
Capiz	-	-	13	37.5	52	95	90	43	29	10	4	-	373.5
Antique	-	-	-	13,500	28,600	17,050	9,970	6,040	5,690	4,105	3,400	-	88,355
Total	-	-	13	19,602.5	42,852	24,920	10,770	6,083	5,719	4,115	3,404	-	117,478.5