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ASSESSMENT OF ORNAMENTAL FISH SPECIES AND FISHING METHODS IN IBIAJEGBENDE, LAGOS STATE, NIGERIA

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ABSTRACT

A study was conducted to identify ornamental fish species and fishing methods employed for the purpose of developing the fishery for international markets. Catches were sampled from 102 landings in Ibiajegbende village in Epe Local Government area of Lagos State during the fishing season that spanned from January to August 2002. Twenty-four fish species, mostly fresh water and brackish water constitute the ornamental fish species assemblage in the area. Some of these fish had seasonal appearance or dominance. Three local fishing gears and methods are employed namely Aso-oro, Iyanmo and Igu. Management strategies to upgrade the status of ornamental fishing from cottage to international level in Nigeria are discussed.

Key Words: Ornamental Fish, Ibiajegbende, and Gear

INTRODUCTION

Ibiajegbende, an important fishing settlement in the Epe Local Government Area of Lagos State is served by a tributary of Osun River whose source is from Oshogbo in Osun State. The fishery of this river is artisanal, and fish are caught with low energy fishing gears like surrounding nets, drag nets, traps, cast nets and hooks and line similar to what obtains in the Imo River estuary, as observed by Keleshie (1989) and Ambrose (1990).

Fishing methods employed all over the world ensure the conservation of species and protection of the environment. In the Philippines, ornamental fish abundance and catches depend on availability of coral reef but in Nigeria, on the availability of shallow and detrital water bottom. This implies that fishing methods employed should ensure the conservation of species and protection of the environment. However Oliver (2003) reported that two thirds (2/3rd) of coral reefs in Phillippines were destroyed by the use of sodium cyanide and dynamite stupefying fishing methods.

Ibiajegbende has fisherfolk involved in ornamental fishing and also the making of special gears for ornamental fishing. This skill has enhanced their catch and improved their supply mechanism to the export market. The fishermen composition comprise of mixture of tribes from the riverine states. They include the Ijaws and Isoko from Delta, Ijaws from Bayelsa and Rivers states and the Yorubas from Ogun, Osun and Ondo states of Nigeria, having migrated from their states of origin in search of better economic status provided by the ornamental fish export trade. This is a common trend among fisher folks as reported by Udolisa et.al (1994)

The ornamental trade, which is dependent on wild sourcing, relies on settlements such as Ibiajegbende for the supply of numerous species. It has therefore become necessary to have efficient fishing gears to ensure sufficiency in supply of the different species. The making of indigenous gears by the fisher folk has been made easy by the readily available supply of palms, vines, canes, reeds, grasses, and bark of trees.

Reed et al (1967), observed that a close examination and understanding of those traditional gears should help those who might try to introduce more modern fishing techniques. This will also assist others in formulating management programs for these fisheries in any area. Also the efficiency of the local fisherman could be improved by the introduction of a few selected types of gear, while noting that some indigenous apparatuses will always be able to compete favourably with most of the introduced ones.

AREA OF STUDY

Ibiajegbende is a small settlement in Igbonla, Epe Local Government area of Lagos state, situated at latitude 6° 37.044N and longitude 4° 2.919E. The settlement is comprised of over twenty-two houses and huts covering an area of about one hectare. It is situated along one of the tributaries of the Osun river, which takes its source from Oshogbo and serve as the main source of fishing activities. The main occupations of the aborigines of the village are farming and fishing. However, during off season when little or no fishing is done, sand mining becomes the preoccupation of both men

and women including young children along side crop farming.

MATERIALS AND METHODS

A study tour of Ibiajegbende was conducted from January to December 2002. Various fishing gears used for ornamental fishing at the settlement were studied. Identification of the trap gears used in the fishery and measurement of the design components were done as described by Udolisa et al (1994). Measurements of gears for ornamental fishing were taken with the aid of a measuring tape. Photographs of gears were also taken. Visual observation of the setting of each type of gear was made. Quantity and types of fish species caught by each gear were weighed in kilograms and identified according to Daget (1954).

RESULTS

The ornamental fish assemblage at Ibi-ajegbenle was mainly fresh water species as shown in Table 1. Three types of local fishing gears used for the capture of ornamental fish were identified amongst numerous fishing gears at location. All the three types were made of natural fibres obtained from abundant plant resources mainly cane. Table 2 shows the catch composition of all three types of gears during study. New gears are made from April-May in preparation for active fishing in May.

TABLE 1: THE LIST OF ORNAMENTAL FISHES IN IBI-AJEBENLE AND THEIR COMMON ENGLISH AND LOCAL NAMES

S/N	Scientific Names	Common English Names	Common Local Names
1.	*Alestes nurse*	Silversides	Paraffin
2.	*Calamoichthys calabaricus*	Reed Fish	Reed fish
3.	*Chrysichthys nigridigitatus*	Silver Catfish	Aluminium Catfish
4.	*Ctenopoma kingsleyae*	Climbing perch	Bush fish
5.	*Gnathonemus abadii*	Mormyrids/Trunkfish	Abadin
6.	*Gnathonemus petersii*	Mormyrids/Trunkfish	Longnose
7.	*Gymnarchus niloticus*	Trunk fish	Aba
8.	*Hepsetus odoe*	African Pike	African Pike
9.	*Heterotis niloticus*	Bony tongue	Aruana, Slapwater
10	*Hyperopisus bebe*	Mormyrops	Whalenose
11.	*Labeo pseudocoubie*	African carp	Blue fish
12.	*Malapterurus electricus*	Electric Catfish	Electric fish
13.	*Marcusenius ihuysi*	Mormyrid/marble cat fish	Mable knife
14.	*Mastacembelus argus*	Spiny eel	Marble spiny eel
15.	*Mormyrus rume*	Elephant snout fish	Dolphin
16.	*Pantodon buchholzi*	Freshwater flying fish	Butterfly fish
17.	*Papyrocranus afer*	Feather back	Feather back
18.	*Phago loricatus*	Pike	Pike
19.	*Physailia pellucida*	Glass catfish	Glass catfish
20.	*Polypterus ansorgei*	Sail fin	Mudfish
21.	*Schilbe mystus*	Butter fish	Dibawe
22.	*Synodontis eupterus*	Catfish	Network
23.	*Tilapia spp*	Tilapia	Tilapia
24.	*Xenomystus nigri*	African Knife fish	Knife fish

Three ornamental fishing gears were identified during this study and these were:

TRAP 1: ASO ORO (UGHOGHO)

This is a long conical device made of cane and raphia (fig 1). The cane serves as bars of the trap while the raphia serves as ropes in linking the cane in a closely knitted manner. It is used to catch all types and sizes of fish whose opercula do not expand e.g. *Tilipia* spp. and *Synodontis* spp. It is set along the flow of the current in the mouth of the river tributary.

A fence made of wooden sticks and raphia which is reinforced with mat is installed in the waterbody tied to land and held down by sand

bags. The Aso-Oro is then secured tightly to the fence and set along the flow of water current. Size of traps vary with observed sample having the following dimensions, length 7.8m, middle part 0.88m, cod end 0.30m, and the circumference 1.3m. The aso-oro is used from May to July.

Fig. 1

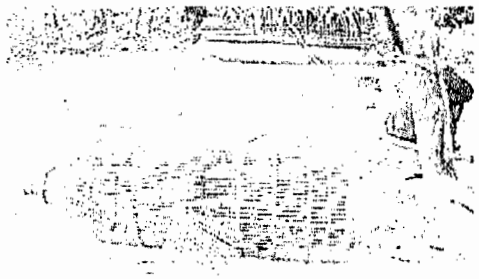
METHOD OF OPERATION

Trap is set facing the flow of water current with opening set to face down. Fish coming from the warmer lagoon water on swimming to the fence are not able to get through and are automatically swept into the opening of the trap by current. Fish are then pushed down the conical end of the trap making exit impossible. Trap when hauled into canoe is emptied by untying rope at the cod end.

TRAP 2: Igu (Uge)

This trap is made of cane and raphia just like aso-oro trap earlier described. It is however different as it has non return valves in series at its entrance. It also has an opening with lock for removing fish as in figure 2. The trap is used to catch juvenile fishes and it is set facing the water current (anti-current). The observed gear has length of 1.76m and circumference of 1.74m. This gear is used all year round for fishing activities.

Fig. 2



A

B

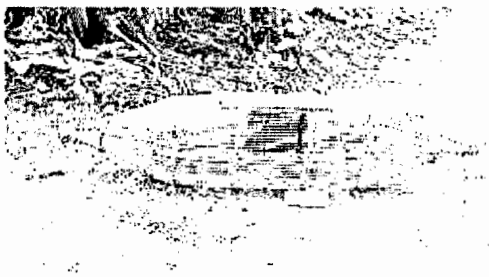
METHOD OF OPERATION:

The Igu is usually used along side the aso-oro and it is set more frequently at the sand bag area to catch fleeing fish from direction of flow of the river. The mouth of the trap has pairs of entangled cane sticks forming cones arranged in series as non return valves. This prevents fish from swimming back to safety out of the trap. The fishes caught in the trap are removed from an opening which is locked when trap is set.

TRAP 3: IYANMO (UWE)

This trap is also made of cane and raphia (Fig.3). It is conical with a length of 4.6m and a circumference of 1.3m. It is used for different sizes and types of fish and set at the mouth of lagoons and rivers after damming. This gear, like the Aso-oro is utilized from May, and stretches on to December.

Fig.3



METHOD OF OPERATION

The conical opening is tied to the dammed end of the river facing the flow of current. Fish from the river are trapped and the strong current retains them at the cod end of the trap. The trap is subsequently removed to prevent escape of fish.

TABLE 2: CATCH COMPOSITION OF THE THREE TYPES OF GEARS

GEAR	YORUBA NAME	ISOKO NAME	USES	SPECIES COMPOSITION	CPUE (KG/TRAP)
1	Aso-Oro	Ughogho	Used for fishes of all types and sizes whose opercula do not expand or open	*Tilapia* spp., *Marcusenus ihuysi* (Marble cat fish), *Synodontis* Spp., *Hyperopisus bebe*	40
2	Iyanmo	Uwe	Used for different sizes And types of fish	*Pantodon buchholzi*, *Gymnarchus niloticus*, *Phago loricatus*, *Ctenopoma kinsgleyae*, *Calamoichthys calabaricus Gnathonemus* spp., *Xenomystus nigri*, *Alestes* nurse	30
3	Igu	Uge	Used for all types and Juvenile fishes	*Gymnarchus niloticus*, *Heterotis niloticus*, *Chrysichthys nigrodigitatus*, *Malapterurus electricus*, *Hepsetus odoe* and *Synodontis* Spp.	20

DISCUSSION

Ornamental fishes have caught the attention of businessmen in Nigeria due to its million dollar value in the export trade. The export trade is however, solely dependent on wild catches which are supplied by local artisanal fishermen as reported by Mbawuike et al (2003). Fish of the Osun River particularly at Ibiajegbende village are caught using dug-out canoes, in addition to the use of local fishing gears. Ornamental fish when caught, must be alive and in prime condition so as to retain their aesthetic values and characters. It is based on these qualities that they are sought for aquarium use. (Verhoef-Verhallen 1998).

Ibiajegbende which is endowed with an array of fish species which serve as food fish and as ornamental when they are in their juvenile stages, has overcome the twin problems of catching those sizes and meeting demand. As the fishermen, having been challenged by the peculiar miniature sizes of this category of fish have devised gears to catch them efficiently. Through the ingenuity of the fisher folk in designing traditional gears for the capture of these groups of fish, supply on demand has also been enhanced. Such that the ornamental fish assemblage of twenty-four (24) species which are mainly of fresh water origin are trapped at different times of the year using either the Aso Oro, Igu or Iyanmo.

Ibiajegbende fisherfolk in order to meet growing market demand have designed these three local fishing gears (Traps) for the effective capture of ornamental fishes. The efficiency of these traps increased supply thereby meeting the demands of ornamental fish exporters from Lagos. Improvement in the design of these gears will further lead to improved efficiency on one hand and subsequently, income for the fisher folk on the other. Inventory of these gears will however need to be made to update present findings.

Fisherfolks of Ibiajegbende, a fishing settlement in Igbonla in Epe Local Government area of Lagos state having been able to solve the twin problem of capturing ornamental fish and meeting demand of exporters efficiently, involve themselves in other activities outside of fishing.

During off-season, when little or no fishing is done, sand mining becomes the main preocupation of the fisher folks including women and children along side crop farming. At the present level of operation, strategies to upgrade the materials used for the gears, provision of more efficient keeping receptacles, good road network to the city and adequate electronic communication provision would enhance the ornamental fishing activities at Ibiajegbende, thus promoting the activities of the fisherfolks to the International Community.

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