



Society for Conservation Biology

## Marine Section

### **CONSERVATION SMALLGRANTS PROGRAM**

**Project Title:**

Assessment of Local Perceptions and Community-Based Conservation  
Strategy for Dolphins in Eastern Nigerian Inshore Atlantic

Project leader/Awardee:

**Folaranmi Dapo BABALOLA**

**Founder, Save Sahara Network**

Country: **Nigeria**

Final Report Submission: **12 May, 2017**

## PROJECT RATIONALE

Bonga, *Ethmalosa fimbriata*, is found in coastal shoaling pelagic clupeid of tropical West Africa. It constitutes most of the artisanal fish landings and caught in Nigerian coastal and inshore waters. Artisanal purse seine fishery for bonga started in Nigeria in 1970s by migrant Ghanaian fishermen and largely replaced the gill net fishery that had been operating for decades. The new fishery have much higher catch rates, a wider area of operations, and other characteristics that make it very successful from the point of view of increasing bonga catches. However, this new fishery has an unwanted outcome: often the schools of bonga are detected, and eventually encircled together with large pod of dolphins. Unknown numbers of Bottlenose dolphin (*Turdiops truncate*) and Common dolphin (*Delphinus delphis*) have been reported to be taken by foreign pelagic trawlers and in coastal gillnets.

The study assessed bonga purse seine fishing practices with implications on dolphin inshore. Specifically, the project is expected to document implications of bycatch capture activities on dolphin in coast of Easter Nigerian Atlantic as well as assess local strategy of dolphin conservation with the view to raising awareness on the need for conservation of dolphin in tropical marine water.

## METHODOLOGY

The study was conducted at Ibagá fishing community (Fig 1) located in Akwa Ibom State, southern Nigeria. The community is located at the Eastern Nigerian Atlantic sea port where fishing dominates major occupation of the people. Purposive sampling technique was adopted for selection of bonga purse seine fishermen. Structure questionnaire was administered to the fishermen through one-on-one and focus group discussion. In-depth interview was conducted for selected key informants among the fishermen. The fishermen were sampled at the shore after they have returned from the fishing trips, especially when they were carrying out repair of their nets. On getting to a group of fishermen at the shore, the boat owner or head of the fishermen is first identified. This then proceeded with explanation of the project rationale and permission to conduct questionnaire administration and interview of the fishermen.

Prior to questionnaire administration and interview, pictures of cetaceans, containing different types of dolphins, shark, and whale, were shown to the fishermen. The reason for showing the pictures to the fishermen is to confirm if they actually know dolphin and can identify it among the aquatic animals. Also, this is to serve as guide to the fishermen and make sure they are providing right information.



**Fig 1: Ibagá Fishing community, Akwa Ibom State**

## RESULTS

### *Artisanal Purse Seine fishery*

Artisanal purse seine fishery in Nigeria is an unregulated type of fishing dominated by Nigerian and migrant Ghanaian. The fishermen use Watsa boats (Fig 2) made from locally sourced wood and powered by 40 to 75 HP outboard gasoline engine attachment. Each of the boats has a name given by the owner and well decorated with colour paints and flags. The type of gear used is by the fishermen is Purse seine with floats (Fig 3). The purse seine nets used have a body mesh size of 25mm and bunt mesh size of 15mm. Length of the net is between 450 and 500m.



**Fig 2: Watsa boats used for the Purse Seine Fishery at Ibagba fishing port**



**Fig 3: Net and floaters used by the Purse Seine fishermen on the Atlantic Ocean**

The fishermen carry out fishing activities at onshore, nearshore and offshore depending on the season of the year. Before embarking on fishing trip into the Atlantic ocean, the fishermen usually load their boats with the fishing nets, drums of gasoline for the engine, and other fishing materials (Fig 4). The boats normally have a captain and on the average between 15 and 20 fishermen. Fishing is normally carried out from Monday to Saturday, while Sunday is resting day. This means that the fishermen carry out fishing 6 days per week from early in the morning around 5am to afternoon or evening that the fishermen return with their catch. In

addition to Sundays which are used for resting, the fishermen, of which majority was Christian observed holiday during festivity periods observed by Christian faith. Depending on the quantity of catch, two or three operational sets are made per trip in inshore water.



**Fig 4: Fishermen loading their Watsa boat and getting ready to go for fishing.**

On getting to the sea, the fishermen cast the net to circle the school of bonga, then the rope passing through rings at the bottom of the net is pulled aboard the vessel, closing the lower part of the net to form the shape of a “purse”. Some of the ways by which the fishermen know that the net has caught Bonga fish from afar include change in water color, and presence of dolphin and hovering of sea birds struggling to get their share of the catch. The attraction of dolphin to the net for bonga fish makes them vulnerable to incidental capture in purse seine. The dry and rainy (wet) seasons that are available in the study location affect fish availability, hence distance of fishing offshore and hours of fishing per trip. As informed by the fishermen, bonga fish is more available for catch within short distances in rainy season than dry season. On a single trip, the fishermen spent between 10 and 15 hours.

After each fish trip, the fishermen carry out fish maintenance in the form sowing of torn net and separation of tangled nets (Fig 5). Specifically, repair of torn net is very important to the fishermen and sometimes takes time to complete. The fishermen were aware that the status of their net directly determines the quantity of the fish they catch. Tear nets will lead to escape of fish during fishing in the ocean.



**Fig 5: Fishermen carrying out repair of their net**

On fishing restriction, the fishermen informed that they are not allowed to fish near places where there are installations of petroleum companies. Also, there are restrictions on international water belonging to Cameroon. Specifically, the Bakasi Peninsula side at the Nigeria-Cameroon boarder has been considered a restricted area to Nigerians because the international water belong to Cameroon.the area is therefore heavily guarded by Cameroon Navy. Nigerian or Ghanaian fishermen who are caught on this international water are arrested, prosecuted and most of the times have to pay fine before they are released.

### ***Quantity of catches by Purse Seine fishermen***

The fishermen use local measurement to calculate their catches. After a boat arrives the shore, some men (off-loaders) use big basins to off-load the fish (catch) from the boat to already waiting women or men who are the major buyers and wholesaler of the catch. The men that offload the fish were not paid monetarily; instead they were given small portion of the fish from the full-load basin they offload from the boat to the waiting buyers. This means that an off-loader will get equivalent of the small portions of the basin multiply by the number of basins he off-load.

Calculations used by the fishermen to sell the fish at the shore after return from the trip are given thus:

2 big basins by off-loaders = 1 place  
10 places = 1 line

On a good day, a boat can off-load eight (8) to ten (10) lines. But normal catch is around three (3) to five (5) places. Low catch is less than a line (Fig 6). As at the time of this data collection, a place was sold by the fishermen for ₦3,000 to ₦4,000, while a complete line of the fish was sold for between ₦30, 000 and ₦40,000. When the fish are re-sold by the wholesalers to the retailers, the prices go higher. In most cases, the wholesalers take the fish for sale outside Ibagá port.

From the proceeds of the catch, the captain first deducts all expenditures for the trip, such as fuel (gasoline), oil, fees for international water, etc and the remaining money is shared on percentages with the boat owner, captain and the boat crew.



**Fig 6: Side view of a line from a boat arriving at night**

### ***Perceptions about dolphin***

According to the fishermen, dolphin is found in abundance in the high sea and they did not believe that it is an endangered aquatic animal. There are some perceptions and misconceptions about dolphins among the fishermen and community dwellers at Ibagá. Different stories were narrated on dolphin most of which are hard to confirm scientifically. Among the negative perceptions and beliefs of the fishermen on dolphin is that it is a spiritual (and sometimes evil possessed) aquatic animal, and that it brings bad luck to fishermen. Dolphin is believed to have some human resembled features such as blood, blood vein and internal organs. Also, dolphin is believed to be an emotional animal and shed tears (cry) like human. All these features made some people not to eat dolphins.

### ***Killing of dolphin***

The fishermen did not deliberately catch dolphin unless it finds its way into the net during the process of hauling. All the groups of fishermen where sampling was conducted have killed dolphins in the previous years. It was confirmed by one of the groups that they have killed a dolphin around February 2017. Some of the fishermen informed that to catch dolphin, one will need net having bigger mesh size and speed boat with at least 40 HP engine. This same net and boat could be used to catch other bigger fish such as shark, shiny-nose, among others.

When dolphin accidentally enters a net meant to catch bonga and other fish, it normally damage and destroy the net in the process of escaping from the net causing other fish already caught to escape. This is what makes the fishermen tagged dolphin as “enemy of fishermen that bring bad luck”. If the crew was able to drag dolphin caught in their net on board, it is not set free but rather killed and taken to the shore for sale or the flesh is cut into pieces and distribute to people in the community.

### ***Eating and uses of dolphin***

Dolphin is eaten by some people, and at the same time dislike but some people. Among the reasons while eating of dolphin was dislike by some people is that the flesh emits a particular “foul odour” that some people dislike. Some of the fishermen who dislike eating dolphin said the animal’s blood resemble that of human blood when cut open. Furthermore, some of the fishermen said dolphin is an emotional animal that shed tears and makes a distinct sound when it is being killed.

The fishermen informed that dolphin’s fin is used in production of a particular gum which is used in repair of the machine used in powering of the boat. Detail information on this could not be obtained as at time of this data collection.

### ***Sale and sharing of killed dolphin***

The fishermen informed that when dolphin is killed and brought on shore, there are some buyers who are ready to buy the flesh. There is no fix selling price for the animal but base on bargain between the fishermen and the buyer. Most of the time, the killed dolphin is not sold whole but cut into pieces. The flesh and other internal organs and intestines of the animal are eaten. After cutting, dolphin’s head is given to the village head as a sign of respect and honour. Dolphin’s flesh is smoked by the buyers as a way of preserving it as well as adding value to increase the selling price to the target consumers.

### ***Prosecution against killing of dolphin***

There is no traditional/local or formal conservation law against killing of dolphin in the study area. Also, there is no protective law or legislation preventing killing of dolphin in the ocean.

## **CONCLUSION**

The study assessed impacts of bonga purse seine fishery on dolphin at the Eastern Nigerian Atlantic. In actual sense, the artisanal purse seine fishery in Nigeria is not regulated with implications on threatened aquatic animals one of which is dolphin. As informed by the fishermen at Ibagá, dolphins are not deliberately catch unless they find their way into the net during the process of hauling. However, there are misconceptions on dolphin among the fisher folks some of which further expose them to danger. Majority of the fishermen considered dolphin as enemy because dolphin tends to destroy nets as they struggle to escape from incidental catch thereby causing other fish already caught to escape. Dolphin that is caught in the net is not set free but rather killed and taken to the shore for sale or share to people in the community.

Although some people do not like eating dolphin due to the “foul odour” of their flesh and emotional nature of the animal, however, dolphin is eaten by some people especially after smoking. There are buyers who are ready to buy the killed dolphin when brought to shore. Also, the community heads partook in eating of dolphins. The fishermen also informed that dolphin’s fin is used in production of a particular gum. The most striking part of this study is that dolphin is not considered endanger animal by the fishermen. There is also no traditional/local or formal protective or conservation law against killing of dolphin in the ocean.

From findings of this study, there is need for proper regulation of artisanal purse seine fishing in Nigeria Atlantic water. The regulation should overhaul the entire artisanal fishing activities on the coastal water body including the gears they use and the type of fish they catch and bring to shore. There is urgent need for formulation of conservation law and imposition of restriction against killing of dolphins and other threatened aquatic animals. After formulation of such laws, this should be accompanied with proper enforcement with corporation of community leaders. Above all, there is need for wide conservation education targeted at dolphins as well as awareness and sensitisation on the true nature of dolphins to correct the wrong perceptions of the fishermen. Since dolphins cause damages to nets during incidental catch, there should be an incentive for the fishermen to facilitate repair of such nets. Also, fishermen should be instructed to return any dolphin that are accidentally caught in their nets rather than killing.

## **ACKNOWLEDGEMENT**

My special appreciation to Marine Section of Society for Conservation Biology for the award of 2016-2017 Small Grant used in carrying out the survey.

### Expenses

INCOMES	Requested (USD)	Actual (USD)	Difference (USD)
SCB GRANT - Granted	690	707	-17
Other income (existing and pending)	0	0	0
<b>EXPENSES</b>			
<b>Equipment</b>			
Digital Camera	90	0	90
Life Jacket	40	0	40
Subtotal	130	0	130
<b>Supplies</b>			
Production of Questionnaire	50	35	15
Consumables (phone calls, internet, printing paper, writing materials etc)	40	55	-15
Subtotal	90	90	0
<b>Project-related travel</b>			
Travelling to study site	150	192	-42
Accommodation and Feeding for 3 for 5 days	140	295	-155
Mobilisation and Sensitisation of fishermen	80	50	30
Sea trips for 2 Researchers	60	0	60
Field Assistants and volunteers	40	80	-40
Subtotal	470	617	-147
<b>TOTAL INCOMES</b>	<b>690</b>		
<b>TOTAL EXPENSES</b>	<b>707</b>		
<b>DIFFERENCE</b>	<b>-17</b>		