



Survey of Hausa Traditional Fish Fence Usage in Zamfara, North-West Nigeria

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Abstract: Artisanal fishing is a traditional occupation that exists among the Hausa people of Zamfara state, North-West Nigeria. This is made possible due to the presence of water resources which vary both in form and size. The region is blessed with six (6) rivers that traverse through it. These rivers are tributaries that emptied their volume of water into river Niger. These rivers become filled up with water during the rainy season and sometimes overflow their banks so much so that the floodplain areas of the state become over flooded, including the lakes that are found around Shikafi, Bakura and Gummi areas. The notable lakes in Zamfara include the Tafkin Jenna in Zurmi, the Nato in Bakura, the Saru Lake in Gummi and the Kalale Lake in Dangulbi of Maru Local Government. These lakes aside, the state is blessed with other smaller lakes and manmade water reservoirs, notable of which is the Bakalori dam of Maradun. The availability of these fishing grounds made it possible for a section of the population to engage in artisanal fishing as a means of sustenance for their livelihoods. The Zamfara fishermen make use of numerous techniques to enhance their catch. This paper is an attempt to explore the techniques of fishing fences, especially their type, construction and efficacy in enhancing catch. Through surveys and trips to selected fishing grounds, the paper concludes that traditional fishing fences form part of greater ways by which the fishermen enhance catch, especially during the dry season when the lakes' water level has drastically reduced in volume due to the elapse of rain coupled with the effects of dry winds of the Winter (Harmattan) season which sets in around November through to February of each year.

Keywords: Fish, Fence, Traditional, fishing, Appraisal.

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1.0 INTRODUCTION

Zamfara state is situated in the North-West geo-political zone of Nigeria. It is one of the thirty-six states in the country. It was carved out of the former Sokoto state in 1996 by the military administration of the then Head of state, late Major General Sani Abacha. The state is made up of fourteen (14) Local Government Area Councils with Gusau as the state capital. The state is majorly situated along the

Savannah region but has proximity to the Sahel region, especially in the Northeastern part where it shares a border with the Republic of Niger. The State receives a moderate amount of rainfall with intermittent drought which sometimes leads to low-level rainfall distribution which often affects its drainage system that in turn results in the drying up of both the manmade and natural lakes with which the state is endowed.

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The state's drainage consists of several rivers and streams. The River Bunsuru is found around the Zurmi area of the state. River Gagare flows around the Kauran Nomoda-Shinkafi axis. There is also the Sokoto River which flows in a stretch around Gusau, Bungudu, Maru, Maradun and Bakura parts of Zamfara. River Zamfara however flows, stretching around Anka, Bukkuyum and Gummi. River Ka flows in the southern part and passes through southern Bukkuyum around the Gadan Zaima area and stretches westward into several villages in Danko Wasagu Local Government of Kebbi state, then traverses to villages in Gummi Local government area of Zamfara state. Though these rivers serve as tributaries to the River Rima, some streams also abound, which also in effect, serve as tributaries to the main rivers that cross the state. Notable of these streams are the Bobo stream around Talata Mafara which is a tributary to river Sokoto, 'Yar Anka stream found around Anka which empties its water into river Zamfara and the Walali stream that traverses around Gwashi, Adabka, Daki Takwas, Gwalli, Bardoki and Gayari. Walali stream empties its water content into river Zamfara at a confluence called Sagi, situated in between Dakawa and Matseri villages in Gummi Local Government of the state.

The rainy season reaches its peak around August and September in the state. This is the period in which rains become frequent and heavier. During this period, the rivers and their tributaries become over-flooded with water such that river banks become overstretched which leads to flooding. The flood water extends and fills the available lakes both natural and manmade. This brings about the abundance of juvenile fish into the lakes due to the low current nature of the water. It breeds and reproduces in the lakes and stagnant waters. During this period, the fishermen used fishing gear like hooks and line, the seine net and other local traps like the *gura*, *mali*, *Unduruttu* also called *Tilimba* around Bakura, and a host of other traps to catch the fish in commercial quantity.

However, during the dry season when the dry Harmattan winds blow over the entire state, the rivers become dry except in a few parches where the rivers are deep. The volume of water which is also collected in the lakes during flooding, recesses significantly low such that the lakes become shallow with little tides. It is at this period that the resident fishermen employ the technique of constructing different types of fish fences to improve bumper catch.

It is in light of the above that this paper attempts to survey the various types of traditional fish fences that usually the fishing population in the state constructs, in an attempt to make substantial

catch both for commercial purposes and the dietary intake needs of their family. Several visits were made both in the early morning hours and late evening to the various fishing grounds randomly selected so that the fishermen are sighted at a time when they make the harvest of whatever fish their gears catch. The selected areas visited include the Nato Lake in Bakura, Saru lake in Gummi, Walali stream/river in Gutsura and Gayari of Gummi Local Government, the Kardaji and Tafkin Danko lakes in Gummi, the river Ka at both Gadan Zaima of Bukkuyum and Maga In Kebbi. The visits avail the researcher the opportunity to meet with the fishermen for information gathering from the source, that is the actual people who engage in the construction of management of the Hausa traditional fish fences.

2.0 What is a Fish Fence?

From the viewpoint of Hausa fishermen, a fish fence is usually a barrier erected across a given fishing area to obstruct the passage of fish away from the intended area to catch it. From the viewpoint of the Hausa fishermen fish fence is erected solely to catch fish that is migrating out of the lake or pond. This is true of the *sankiya* or *saba* fence which is constructed across rivers and streams in which water flows. A Hausa proverb says:

"Ba don kifi mai zuwa ake yin saba ba, don mai dawowa"

It means the *saba* fence is solely not intended for the fish leaving the river but for the one returning into it. In Hausa artisanal fishing, the materials needed to provide blockade for the fish vary. It may be heaps of grasses erected with sticks, grain stalks neatly arranged using locally sourced fibre, maybe logs of tree branches, nets of various mesh sizes may be of use, as well as moulded mud with which barricade is constructed across stagnant water to restrict the free movement of fish within its habitat. A fisherman operating in a water body that has rocks in it employs the use of stones of various shapes and sizes to erect a fishing fence. The material required for fence construction depends on whether the water is stagnant or it flows. Stagnant water may require less heavy materials as compared to flowing water which moves with current or force.

3.0 Types of Traditional Hausa Fish Fence

The Zamfara fishing community has many fish fences which they construct to serve as a barrier to the movement of fish so that it is easily trapped by the use of numerous local fish traps. The nature of the water determines the type of fence needed. Water that flows with force requires a fence distinct from the fence constructed over stagnant and shallow water. In the area under study, the following fence traps were found visible in some fishing areas visited

3.1 Sankiya

Sankiya is a traditional fish fence erected across narrow streams and rivers where water flows with force and moderate tide. Depending on where it is to be constructed, the *sankiya* fence is made using locally sourced materials like corn stalks and logs of wood from strong trees like the *kiry*a tree known as false locust or *Prosopis Africana*, the *marke* tree, chewstick tree scientifically called *Anogeissus leiocarpus*. *Madaci* tree or the mahogany, scientifically called *Khaya senegalensis*. These trees and others similar to them are carefully selected due to their log's hardened and durable nature. These trees do not easily wear out. The bigger part of the logs to be strongly tucked on the ground (bottom of the water) are sharpened using the axe before it is firmly erected in a vertical position. A number of these logs are placed across the entire width of the stream leaving little spaces in between the poles to allow for water flow. To make the fence strong, logs of wood are tightened horizontally both at the top and the bottom of the erected pillars using ropes twined with local fibres like kenaf called *rama* in Hausa or botanically named *Hibiscus cannabinus*. To further strengthen the fence to guard against its collapse due to the pressure of water current, and to make it durable, logs are attached to it at the back for more support. Sankiya made of corn stalks, called *saba* in Kebbi, is usually made at a joint or canal serving as an outlet between a river or stream and a lake adjacent to it. Here the

water current is not as forceful as the river current, hence the use of not-so-strong materials in making this type of *sankiya* fence. In areas where the river or stream has lots of rocks in it, the fishermen resort to the use of small sizes of rocks to construct the *sankiya* fence. The rocks are arranged in stretch heaps across the width of the river. Intermittent gaps are made in the fence to allow for water flow and passage of fish, which most likely goes into a trap set at the other divide of the fence. The type of trap usually set at this type of trap is stronger due to the intensity of the water current. It is called *kirinji*. Is an oblong-shaped trap made from *gezasticks*. It is then supported with a little log to prevent it from drifting. This was sighted around river Ka at Maga, proximate to the border between Zamfara and Kebbi states.

Fish catch is made with the use of some fishing traps like the *unduruttu* also called *tilimba* and the mali trap which are placed at the bottom of the fence after placing bait into them. The bait may be made from grain (millet) chaff, and *dusa* moulded after it is mixed with little mud to make it sticky. It is then roasted a little so that it emits a certain odour that will attract fish to it. *Tuwon bula* a local food made from grain may also be used as bait in any of the traps. The traps are visited twice daily, morning and evening to make a harvest of the day's catch.



1a. Sankiya: Front view



1a. Sankiya: Back view



1b. Sankiya of Corn Stalk



1c. Sankiya of Rocks

3.2 Tashi

Tashi is a fish fence constructed across a lake or any fishing ground with shallow stagnant water or water that does not flow. The materials needed for its construction are the grasses that grow in the water like the burugu plant botanically known as *vossia cuspidata*. The heap of grass is bonded to the bottom

of the water using mud and sticks to strengthen it. Slight openings are made within the fence to allow for the passage of fish. It is right at the openings or passages that the fishermen place their traps. Any fish crossing to the other side of the fence gets entangled in the trap. The type of traps in operation on this type of fence are the *unduruttu* and *mali* traps. The traps are inspected twice daily for harvest.



2. Tashi fence (Hedge)

3.3 Ganuwa Fence

Ganuwa is a Hausa word that connotes a rampart or mound around a town. (Bargery, 1934:362) Historically, ancient Hausa cities and towns were surrounded by a wall constructed for security reasons. This fish fence derived its name from this wall. The fact that the fence is constructed using mud may be the reason why the fence is also called *ganuwa* for it is in like manner erected using mud. *Ganuwa* fence is usually erected in lakes and ponds with stagnant but shallow water. Clearance is made of the thorny *gumbi* scrub, *mimosa pigra* or any of its kind in the water to pave the way for the erection of the fence across the width of the entire lake. Mud is then obtained at the bottom of the lake.

Using the mud, a wall is erected a few meters high above the water level. Some logs are attached to both sides of the fence at irregular intervals to provide support and strengthen it to avert easy collapse. Beneath the fence, hollows or gaps are left open to allow for the passage or movement of fish and other aquatic creatures to the other divide of the fence. It is right at those hollow openings that the *tsattsara*, *gura* or even *unduruttu* traps are set so that any fish swimming to the other side of the fence falls into it. At most of the fences visited tilapia fish is the most vulnerable species caught in large quantities. The harvest of the catch is undertaken twice per day by the fishermen.



3. Ganuwa fence

3.5 Labuni

Labuni is usually erected in shallow, stagnant water like a lake or pond. It is another fish fence made of mud. It is almost similar to the preceding *ganuwabut* differences suffice. The two major differences between the *ganuwa* and *labuni* are that later, the hollow allowed at the bottom of the fence is further partially blocked with corn stalks or short sticks, in such a manner that only water will pass through but its narrow nature does not allow for the passage of fish through it. Another difference is that at the top level of the fence, another round-

shaped wall is attached to the main fence. The attached fence is however made in such a manner that a wide ditch is made. The hole is to collect any fish that tries to jump to the other divide of the fence. At the foot of the fence, precisely where the narrow openings are made, traps of *mali* or *unduruttu* a set. Any fish evading the trap may jump to cross to the other side of the walled fence. Thereafter, the it falls into the constructed ditch. In the morning, the hole becomes full of fish which the fisherman harvests. At most times, the tilapia fish forms the major catch.



4. Labuni

3.4 Dumba Fence

Etymologically, the word *dumba* is a Kanuri word which in its origins, means a blockade made to prevent water from flooding into the habitable areas (Kriings, 2000:94). Though the word is derived from Kanuri, the technique was transferred to the Lake Chad area by Hausa fishermen. Presently, amongst the fishing population in Zamfara, North-west Nigeria, *dumba* connotes a fence made of nets erected

in a lake or pool, using sticks as pillars to obstruct the movement of fish to affect its catch using the fish traps as instruments. The fence is stretched over the width of the water using sticks as support pillars that hold the net erect above the water level. Sometimes, the mesh size of the nets used depends on the size of the fish intended for catch. The *dumba* trap is very effective in terms of boosting catch, thereby improving the earnings of the fishermen.



5. Dumba fence.

4.0 Traditional Rights over Fence Construction

Traditionally, not all fishermen have right over fence construction in the lakes and ponds within the research area visited. The control of water resources in each administrative district lies with the traditional authority under the Emir or the district Head where the water is located. The district Head has other subordinates answerable to him. Amongst these subordinate authorities are the *Sarki Ruwa* and *Fadama* as the case may be. These traditional occupational heads who serves as leaders of the fishermen population, holds the right over the construction of fish fence in the waters under their area of jurisdiction. In most of the fences visited, it is the family of those who were originally vested with the rights that construct the fences. It is presently a hereditary affair. The commoners have no right whatsoever to construct fish fences. They may, however, if allowed, assist in the construction process and return, a certain share of the proceeds from fish sales is offered to them as remuneration for partaking in the work. Each spot at which a fish fence is constructed is strictly under the control of the heirs of those who originally possess the right over it. As it is the traditional practice over the years, it does not constitute a problem to warrant misunderstandings and conflicts among the fishermen except for a few reported instances of encroachment which are settled amicably. As to the traditional authority who reigns supreme over the fishermen and the water resources, they are presented with gifts from the catch made at the discretion and will of the fishermen. They are not coerced, nor do they in any way give the gifts under duress.

5.0 Effects of the Traditional Fish Fences

The practice of erecting fish fences in the natural water reservoirs of the area has several depilating consequences on the conservation of the aquatic environment. This is obvious because the fishermen operating the fish fences in this area are not so mindful of the mesh sizes of the fishing gears they use to make catches. Hence, this results in catching smaller sizes of fish including the juveniles, which in effect results in the depletion of the fish population in the habitat in which they operate.

The process of fence construction sometimes involves the removal and use of the natural vegetative cover found in the lakes. This consists of different grasses that thrive in the water. Removal of this green cover openly exposes the water to the bare dry winds of the Harmattan (winter) season. This has devastating effects on the lake as it makes it dry quickly. This therefore devastates both the environment and the fish resources. This becomes glaringly manifest when the rainy season with less amount of rainfall is witnessed. This means that there will be no flooding in which the rivers flood their

banks leading to the dispersal of migratory fishes into the lakes. This brings about significant improvements in the proportion of fish in those lakes. Where there is no flood, the fish population drops significantly in the lakes and ponds. This therefore means less fish to catch in the fishing season, which invariably affects the economy and the food security of both the fishermen and those in the associated crafts.

5.1 The Fishermen's Conservation Effort

The fishermen in an attempt to curbe the menace of the aforementioned effects of their activity and its resultant consequences on their earnings, come up with another practice which to some extent reduces the depletion of fish resources in the lakes they operate. What they do is the construction of wide dug-out wells and or wide ponds in which they nurse fish when the lakes dry up completely. This happens around February and March. They put in fingerlings of different fish species and nurse them by feeding and guarding them against poachers throughout the dry season. However, around May or June, the pond is harvested and bigger sizes of fish are caught and the smaller ones are left in the well or pond until the lake is flooded again, when the fish then disperses into the lake. In the wet season, When the water tide becomes high, all fishermen without exception are allowed to make catches of the fish at the lakes using their gear such as hooks and line, the gill nets and all other legally allowed traps. Unmindful of the fact that they laboured to nurse the fish in the wells and ponds during the dry season, the heirs to fish fence rights do not exercise exclusive rights over who should or should not fish in the lake. Their conservation effort is for the collective benefit of all.

5.0 Research Findings

This research has brought to the open the artisanal practice of fish fence construction and management as it relates to Hausa traditional fishing in Zamfara state, Nort-West Nigeria. The research has vividly realized that fishermen resort to locally accessible materials to construct the fences. This ranges from grasses, sticks, logs of trees, mud, stones and the net, depending on the nature of the fishing area in which the fence is to be erected.

The right over the construction of the fish fence is traditionally not given the sundry fishermen. The right to construct and harness fish resources through the use of fences is vested solely in the traditional leaders of the local fishing industry. This right is usually inherited from parents to their children. Each of them has a particular water body in which the family construct a fish fence. No encroachment is allowed. However, those fishermen who do not inherit the right may benefit from the fish fence by partaking in or offering labour services in its construction. In return, however, they enjoy a certain

stipend whether in cash or in kind for offering their services. Often they are rewarded by way of allowing them to put in place, their traps at the fence, most especially the *ganuwa* fence which used to be long. This, they are allowed throughout harnessing the fishery resources at the fence. It is the resolve of this paper that this magnanimity extended to those fishers who have a traditional right over fish fence construction contributes to the minimal conflicts between the fishers over the non-equitable or exclusive right to fence construction in water resources that supposedly should be common to all.

The paper has observed that the practice of fish fence construction contributes to the degrading of the *fadama* environment. The practice of clearing and utilizing the green cover of the lake or water pond in erecting fences contributes to both depleting the aquaculture and the subsequent drying up of the lakes during the winter. However, conscious of this fact, the owners of the fish fences most especially the *tashi*, a hedge and the *ganuwa* do take somehow, traditional conservation measures for the sustainability of their craft.

CONCLUSION

Zamfara state, one of Nigeria's states situated in the North-West region of the country has an ecosystem that allows fishing activities to take place. The fishermen are majorly domiciled in four Local Government areas of the state, namely Bakura, Gummi, Maradun and Shinkafi. In Maradun, the Bakalori dam provides the enabling ground for fishing activities to thrive in the manmade water reservoir. In the remaining areas, however, fishing takes place in the rivers that traverse through and the lakes and ponds that form the flood plain. It is in the numerous lakes the Local Government were endowed, that the fishers engage in the practice of fish fence construction as a fishing technique to boost their catch, thereby improving their earnings and livelihood.

Highlight how several fish fences that are constructed and managed are made in this paper. They include the *tashi* (hedge), the *sankiya*, the *saba*, *ganuwa* and *labuni*. The fishermen, through the use of these fish fences greatly enhance their catch, thereby supplying the much-needed source of proteins the human body needs for its growth and development. The fishermen through the practice of erecting fish fences, improve to some extent, the food security of the state.

It is the light of the above that the paper wishes to call on the state government to dredge some of the natural lakes the state is endowed with. The lakes are continuously filled up with sand and

other sediments which are brought into them continuously through erosion, which in effect degrade the lakes, and deplete the fish species thereby threatening the livelihoods of the fishing community of those areas. By so doing, more doors of employment opportunities are opened to the people who may include the fish merchants, the food sellers, distributors and merchants of fishing equipment, the farmers and a host of other people who may be directly or indirectly linked with fishing activities.

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List Fishermen Interviewed

1. Alhaji Ibrahim Nabagudu, aged 72. He is the former Sarkin Ruwan Bakura in Zamfara state. He is an astute fisherman, very knowledgeable in artisanal fishing. He was interviewed both at Nato Lake in Gamji and at his residence in Bakura.
2. Fadama Auwal, was aged 78 at the time of the last interview with him. He is the Fadama of Kurfa district. The Saru lake is under his jurisdiction. He passed away a few months after my last interview with him at his Gayari residence situated in the Bajana area of the town. The interview was on Sunday, May, 15th 2023.
3. Fadama Sa'idu, he is aged 41. He is presently the Fadama a Gummi, Zamfara state. He was severely interviewed both at Lake Tsoffi where he operates the *ganuwa* fence and at his residence in Gummi. The last interview held was over the phone on Monday, 30/10/2023
4. Fadama Shehu Falale, the title holder of Fadama, Falale, aged 50. He was interviewed severally at Lake Rauna and his residence in Falale, Gummi Local Government, Zamfara state. The last interview was held on Tuesday, 25/07/2023.
5. Mairuwa Hantsi, the Sarkin ruwa of Maga, jihar Kabi. He was aged 62. He was interviewed at the bank of river Ka, near the border between Zamfara and Kebbi state. The interview was conducted on Thursday, 24th April 2022.
6. Sahabi Kaidaji, age 67. He was severally interviewed at tafkin Danko, tafkin Dandamisa, Kardaji Lake, and at his residence in Kardaji in Gummi, Zamfara state. The last interview was conducted at his residence in Kardaji on Sunday, 19th August, 2023.
7. Sani Mujahid Gayari, a Basarke knowledgeable in the use of *kyataku* a single handheld clap net. He is aged 58. He was interviewed at his residence in Gayari, Gummi Local Government, Zamfara state. He was last interviewed on Saturday, 2nd September, 2023.
8. Umaru Gigam Falale, a fisherman aged 74. He was interviewed at Falale, Gummi Local Government, Zamfara state on Saturday, 17th September, 2022.