VENTURING INTO MEN'S SPACE: THE WOMEN FISHERS OF NORTHERN GHANA

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ABSTRACT

The study was conducted at Nawuni, in the Northern Region of Ghana to investigate the activities of women fishers along the White Volta, a tributary of the Volta River. Data was collected through the use of a structured interview guide. The results reveal that the fishery is a basket fishery and was dominated by women between the ages of 31 to 40 years (35.7%), with the dominant ethnicity being Ewe. Fishing was their primary occupation and earnings from the sale of fish (GH¢ 157.00 (US$ 10.36) on average daily) were used to provide for their households. The need to have and maintain a livelihood was the motivation for majority of the women (89.3%) to venture into the men's space and become fishers. Almost all the women use specialized baskets with bait to attract small pelagic fish which is dominated by clupeids and schilbeids. The main challenges faced by the female fishers were the high cost and unavailability of fishing gears they needed. Other options for bait preparation to avoid the use of detergent, and population studies of the dominant exploited species (*Schilbei intermedius*) to ensure sustainability of the fishery are recommended.

Keywords: Fishing, gender roles, women, livelihood, basket.

Introduction

Capture fisheries, which may be industrial, semi-industrial, or artisanal refers to all activities and players involved in getting fish from the wild waters to the consumer's table. The wild waters refer to water bodies in the natural environment. Globally, about 40 million players are employed in the fisheries value chain, with 90% of these in artisanal fisheries alone (Siles *et al*., 2019). The fisheries value chain mainly includes construction of canoe and gears, catching of fish, processing the catch, mending the gears, and marketing. Processing the catch may comprise sorting, dressing, and preserving the fish through smoking, frying, salting, drying, among others. The marketed products are mainly raw or processed fish and fisheries supplies such as nets, premix fuel, ice, among others. Each stage of the value chain has associated gender roles that are culturally, socially, and economically prescribed around the world, and these traditional gender roles are followed strictly in fishing communities (Bradford & Katikiro, 2019; Thomas *et al*., 2020)

Women play an extensive role in fisheries, being present throughout the value chain and forming half of the small-scale

fisheries (both marine and inland) workforce globally (Lentisco & Lee, 2014). However, their roles differ from those of men in each sector. In the production sector, women are more likely to fish environments close to home, fishing for non-fin fish organisms, compared to offshore fishing in the case of men where they target fin fish. Women harvest mostly invertebrates and seaweeds close to or along the shore, using methods such as collecting and gathering, collectively referred to as gleaning (Harper *et al*., 2017). In some cultures, they are involved in the mending of fishing gears, after the men return from fishing (Kleiber *et al*., 2015). Catching fin fish is predominately performed by men; women typically are involved in the processing of fish, making them account for only 15% of the production workforce in capture fisheries globally (Siles *et al*., 2019). According to Bradford & Katikiro, (2019), women going out in canoes to participate in fin fish harvesting is considered a taboo in some cultures. The author stated the case of Lake Victoria where it is considered a curse for women to go out on fishing canoes to fish as their presence is believed to negatively affect catch; and successful female canoe owners may face marital issues and even divorce in Kigoma, on the eastern shore of Lake Tanganyika. Even the word 'fisherman' shows gender biases; giving a masculine sense to the act of catching fish until in 1964 when a more gender-neutral description 'fisher" surfaced (Ogden, 2017).

Women account for about 90% of the fish processing workforce globally. Traditionally, processing and marketing are perceived as women's roles, making their livelihood reliant on sustainable fish supply (Lentisco & Lee, 2015). However, as women's key responsibilities in fishing households increased, adding household income provision to the already existing household food security provision, their need to get more from the fisheries in which they were involved also increased. According to Mafimisebi *et al*. (2015) increasing economic and social burden on women to contribute more to household needs has forced them to widen their livelihood activities to improve income and food security. Women started crossing their traditional boundaries and entering open water with canoes to fish for fin fish. As reported by Thomas *et al*. (2020), a high percentage of women fishers (62%) in Fiji harvest fin fish, contrary to their traditionally defined roles. This suggests that gender roles in fisheries is changing as livelihood needs increase.

In Ghana, the narrative of gender segregation in fisheries is not different: men fish, and women process and market; the few women in the production sector glean for invertebrates in shallow water bodies (Amevenku *et al*., 2019). In marine fisheries, the prohibition of women from going to sea is based on the belief that menstrual blood is a taboo to the sea god and women may desecrate the sea if allowed to fish (Adjei & Sika-Bright, 2019). Some women however partner the production by financing the fishing. These women, traditionally referred to as 'Fish Mummies' hold the financial power behind fishing businesses. They may own the fishing canoe, finance the fishing trip and maintenance of the canoe, and have a huge quota in the landed catch; giving them access to fish to process and sell (Akpalu *et al*., 2018). Women's access to fish for processing and marketing is dependent on their ability to invest in a fisherman's business, have a fisherman husband, access credit to buy fish, or belong to a matrilineage (Torell *et al*., 2015). These factors, coupled with traditionally and culturally defined roles limit women's

potential in contributing to fisheries in Ghana. The contribution of women in fisheries has gone unnoticed and underreported despite their importance in global fisheries (Lentisco & Lee, 2014; Ogden, 2017; Siles *et al*., 2019; Tilley *et al*., 2021). The study investigated the activities of women at Nawuni, Northern Ghana, who have decided to break the limitation and go contrary to their traditionally defined roles by fishing themselves and to trade their own fish.

Experimental

Study site

The study was conducted at Nawuni in the Kumbungu District of the Northern Region. Nawuni is located along the White Volta River on Latitude 9°45′1″ North, Longitude 1°10′1″ West, and about 40 km northeast of Tamale, the capital of the Northern Region (Figure 1). The inhabitants are predominantly fishers, fish processors, and fish traders. They also engage in crop farming, animal rearing, and trading (Personal communication).

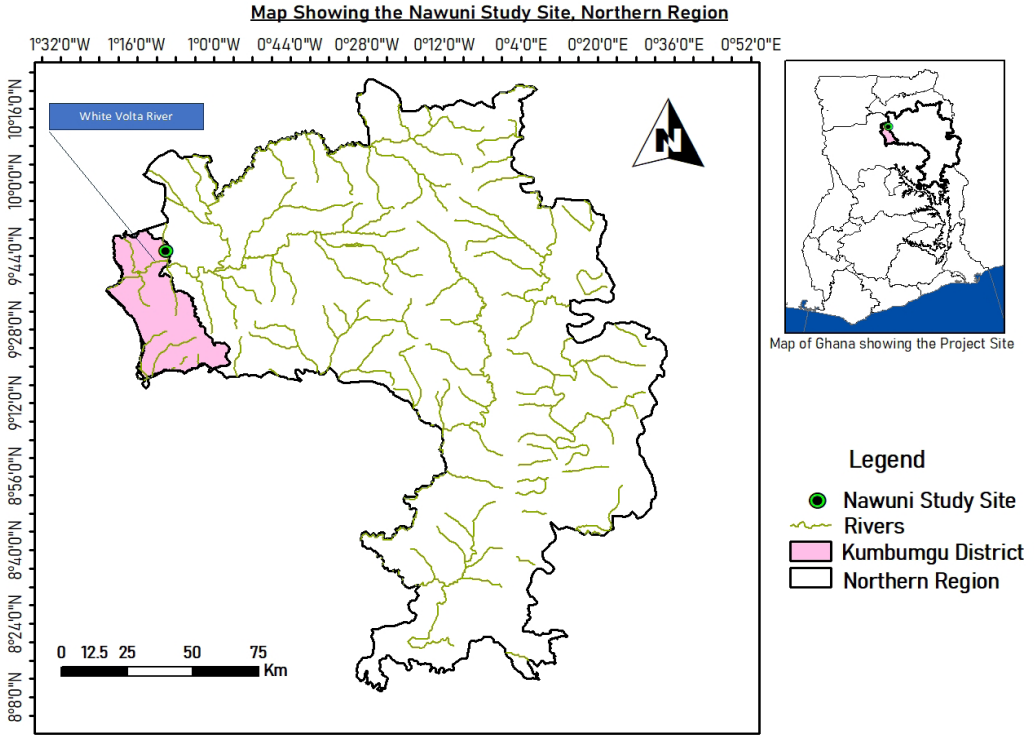

Fig. 1: Map of Northern Region of Ghana showing study site.

Data collection

Female fishers from the Nawuni community were interviewed individually using a structured interview guide. The survey team involved selected and trained personnel. An updated list of fishers was obtained from the fisheries extension officers in the region and

respondents were randomly selected from the list for interview.

The survey was conducted in July 2023 and covered mainly demography, the fishery, processing, marketing, and constraints in fishing. A face-to-face interview was conducted on a total of 31 women fishers using a questionnaire that lasted for about 30 minutes. The questionnaire was pretested on women fishers in other landing sites along the White Volta. Most of the interviews were conducted in the homes of the fishers. The weight of fish per unit price was measured using a weighing scale with a 0.1 kg accuracy. To minimize the margin of error associated with measurement, the weight was taken in five replicates and the mean calculated. Data collected were analysed in SPSS 25 version and Microsoft Excel using descriptive statistics techniques.

Results and discussion

A total of 31 female fishers were interviewed from the Nawuni community on various aspect of their fishing. The age of respondents ranged from 18 years to over 60 years and the most dominant age group was 31-40 years (35.7%) (t = 0.000). Other age groups with significant responses were 18-30 years (28.6%) and 41-50 years (21.4%) groups (t = 0.006; t = 0.01 respectively). The 51-60 years and 60+ years groups were the least represented (7.1% each). The fishery provided livelihood for mainly the youth which formed Ghana's active working class (Awusabo-Asare *et al*., 2013). A similar finding was made by Mafimisebi *et al*., (2015) in a women dominated fishery in Nigeria where majority of the fishers were within the age of 36 to 45 years age bracket.

As shown in Figure 2, majority of the respondents (92.90%) were *Ewes* (*Ewes* are from the Volta Region of Ghana) though the study was carried out in the Northern Region. This observation could be attributed to migration. *Ewe* fishers are mostly the *Anlo* and the *Tongu*, sub-tribes in the *Ewe* tribe. Generally, African fishers are mobile and both inland and coastal fishing have been characterized by migration since time memorial (Failler & Ferraro, 2021). The mobility has been to seek new fishing opportunities (Owusu, 2009) and they migrate with their families. The later author described *Ewe* fishers as 'geographical mobile' and reported that they were the first fishing migrants to settle in Benin in the 1920s .

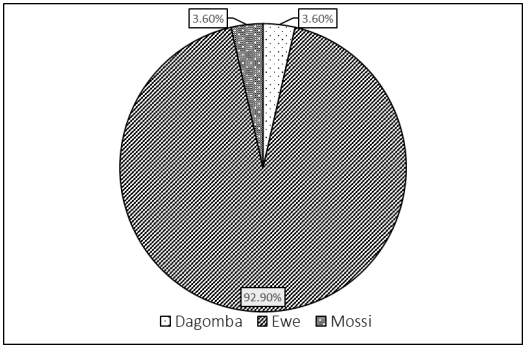

Fig. 2: Ethnicity of women fishers at Nawuni.

Fishing as a livelihood

Fishing was the dominant livelihood option among the women at Nawuni, making up the primary occupation of 92.80% of the respondents and being the secondary occupation of 7.1% of the respondents (Figure 3). Fishing has been reported as an important component of rural livelihood in fishing areas (Amevenku *et al*., 2019) and the choice of fishing as a livelihood in most fishing communities is a result of it being the only available option (Ameworwor *et al*., 2023). This was confirmed by the reasons given by the respondents for choosing fishing over other livelihood alternatives as presented in Figure 4. 'Lack of alternative livelihood' and 'unavailability of farmlands' stood high among

the reasons given, with 'lack of alternative livelihood' accounting for the majority (42.90%). Responses on what motivated respondents to go out into the water to fish further confirmed the contribution of fishing to livelihood provision (Figure 5). The results revealed that the motivation for these women to launch their canoes into the water for fish was the need for a livelihood to earn an income (89.3% of respondents) (t = 0.00). Contrarily, Thomas *et al*. (2020) reported that the main reason women go fishing is to obtain food for their families. This suggests that women fishers may be moving from subsistence fishing to fishing for commercial purposes. It also indicates that women in fishing households no longer only contribute to food security but also to the financial security of their homes.

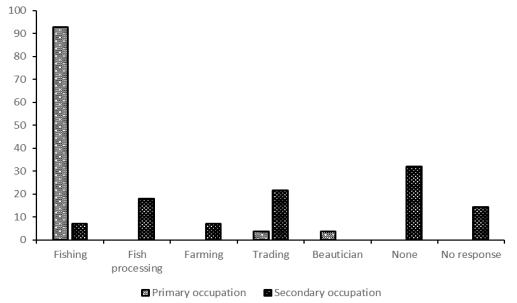

Fig. 3: Variation in the occupation of the female fishers.

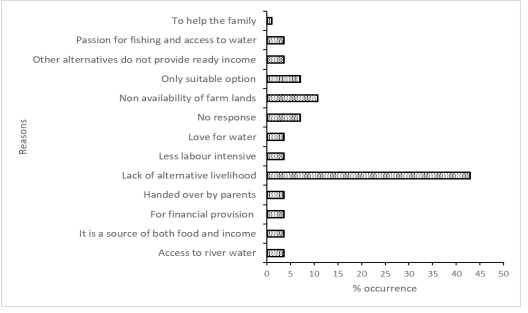

Fig. 4: Respondent's reasons for choosing fishing over other livelihood options.

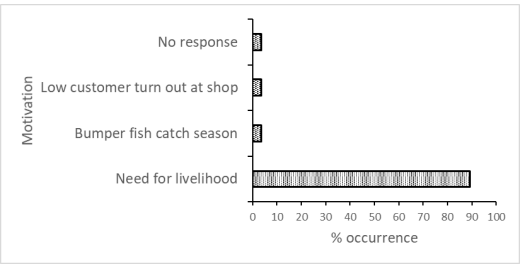

Fig. 5: Motivation of the respondents to fish.

Most of the women interviewed learnt how to fish from a relative (60.70%) (t = 0.00). Small-scale fishing in Ghana has been reported to be a family trade where male children in fishing households are introduced to fishing at tender ages with the expectation to continue the family trade when they get to working age (Ameworwor *et al*., 2023). The results attest that the practice is not only common among male fishers, but also among female fishers. A similar finding was made by Thomas *et al*. (2020) in Fiji where gleaning skills were learnt from mothers, grandmothers, or aunts from a young age. Mafimisebi *et al*. (2015) also reported that female fishers from Ilaje, Ondo state in Nigeria who fish as a minor occupation continue to fish as a continuation of their family line trade.

About 10.7% of respondents have been fishing for one to five years, and 6 to 10 years. Howbeit, a high percentage of the fishers (78.60%) have been fishing for more than 10 years. As people enter fishing at young ages, they remain fishing most of their lives (Ameworwor *et al*., 2023). This was evident among the women fishers at Nawuni where a significant number of the respondents have been fishing for more than 10 years of their working life (t = 0.00).

Fisheries

The women fishers at Nawuni make use of a canoe, a specialized basket, and a bait to fish. The fishing baskets are conically shaped and have two wooden handles attached perpendicular to the base of the basket (Plate 1). The length of the wooden handle is about three times the height of the basket. Kien *et al*. (2016) reported a preferential use of conical baskets for fishing on the Bandama River in Ivory Coast, West Africa. The bait is prepared from *gari* (fried cassava grits), detergent, and fish broth. The broth is prepared using fermented fish and the pieces of flesh and bones are left in it. All the ingredients are boiled together to form a liquid with a thickened consistency. The use of detergent in preparing the bait could pose health challenges depending on the type and quantities used and from cumulative effect. Fishing is done by lowering the basket into the water, adding a handful of the bait into the basket, slightly disturbing the water using the hand, then waiting for the fish to be attracted into the basket (Plate 2). The fisher works from a canoe close to the vegetation fringing the river bank. The basket is lifted from the water and the catch is emptied into the canoe (Plate 3).

Plate 1: Conical fishing baskets used by the women fishers at Nawuni.

Plate 2: A fisher fishing on the White Volta River at Nawuni.

Plate 3: A fisher withdrawing her basket from the water to empty her fish.

The fish species exploited were mainly from the family Schilbeidae, called butter cat fishes. These are small-sized fin fishes with the maximum reported sizes ranging between 12 cm to 19 cm TL for most Schilbeids occurring in Ghanaian freshwaters (*Siluranodon auratus, Parailia pellucida,* and *Irvinea voltae*). Few of the species occurring in Ghana, *Schilbe mystus* and *Schilbe intermedius,* however reach a maximum size of 35 cm to 50 cm respectively (Dankwa *et al*., 1999; Paugy *et*

al., 2003). The dominant species landed was *Schilbei intermedius,* however, they also land clupeids and Synodontis species. The average CPUE (Catch Per Unit Effort) recorded for the fishery was 14.42 kg/day. Harvesting of fin fish by the women in Nawuni suggests changing fisheries gender roles in the wake of increasing responsibility of women to meet their family needs. This is aligned with prior research carried out in Fiji that reported that apart from gleaning for invertebrates, a high percentage of women fishers harvest fin fish from coral reefs (about 62%) and the open ocean (about 15%) which is contrary to their traditional roles (Thomas *et al*., 2020).

The catch was either sold fresh or processed mainly to buyers from nearby communities and cities (53.6% of respondents). Some fishers also sell their catch to both buyers from other communities and in the community market (25%) (Figure 6). These buyers travel from their communities and cities to buy fish from the women at Nawuni. Though women are known to be processors, it was observed that the fishers who process their catch themselves before marketing were in the minority (35.7%), majority sell their catch fresh. This could be attributed to fishers avoiding the extra cost of processing their catch so as to maintain a certain level of profit. It also indicates a shift in traditional gender roles in fisheries. Processing methods used were smoking, drying, frying and salting with majority (70.75%) smoking their fish.

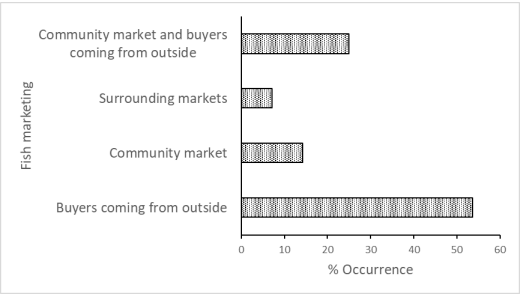

Fig. 6: Marketing sources used by the fishers to sell their catch.

Fishing provides income for the fishers and helps them provide for their families. The unit of measurement for selling the catch was the local *olonka bowl* which gives a mean weight of 5.32±0.21 kg of fish and costs GH¢ 40.00 (US$ 2.64). Majority of the respondents (44.4%) (t = 0.00) earned GH¢ 81.00 to GH¢ 160.00 (US$ 5.35 - US$ 10.56) daily from fishing (Figure 7). Average daily earning from fish sales was GH¢ 157.00 (US$ 10.36). The earnings were spent mostly on general upkeep of their families (67.9%; t = 0.00) which included health, food, education, clothing, etc. Some of the fishers used their earnings specifically for their children's education (25%; t = 0.001). Very few respondents use their earnings only to feed their households (7.10%). These findings are in line with report by Lentisco & Lee (2014) and Bradford & Katikiro (2019) where the authors described women as the main caregivers of fishing households; being responsible for food security and finances

of the family. The ability of the women at Nawuni to fish gave them direct access to fish, thereby increasing their profit margins, and overcoming the limitations associated with accessing fish for processing. Fishing provides significantly high profit to women compared to fish marketing (Mafimisebi *et al*., 2015). It has empowered these women to meet their responsibilities as caregivers of their homes. A key pathway to women empowerment is to increase opportunities for women to earn and control additional income, thereby expanding their decision-making authority (Bryan & Garner, 2022).

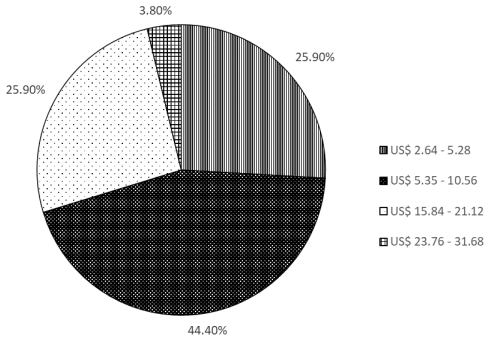

Fig. 7: Daily earnings from the sale of fish catch.

Some challenges were identified in the women-dominated fishery. Major challenges, according to 57.1% of the respondents were high cost of fishing gears (canoe, basket, and bait), and their unavailability (particularly canoe and basket) which make them inaccessible for use. Owning a canoe to fish with was rare among the women fishers. Majority of them (64.3%) do not have their personal canoes and have to borrow from husbands or other owners, or rent. Similar findings were also reported by Bradford & Katikiro (2019) and Thomas *et al*. (2020) where the authors found the cost and unavailability of fishing gears as main challenges facing women fishers. The later author was of the view that barriers to women accessing more expensive fishing gears, and women fishers sharing gears with the owners result in their reliance on the availability of gears to go fishing. Again, Mafimisebi *et al*. (2015) reported that the cost of canoe, paddle, other fishing gears, and bait account for 95.49% of the total cost incurred in fishing by women at Ilaje in the Ondo State in Nigeria, and their main challenges were rising cost of canoes and unavailability of fishing gears.

Conclusion

The fishery at Nawuni served as a source of livelihood to the women in the community, employing mainly the active working class dominated by fishers between the ages of 31 to 40 years. The fishers were mostly *Ewes,* and fishing was their primary occupation. Earnings from sale of their catch were spent on the upkeep of their families. Their motivation to maintain a livelihood kept them going back to the river to fish despite the challenges of the high cost of fishing gears, and their unavailability. The findings attest that traditionally and culturally defined gender roles in fisheries are changing with the responsibilities of women in fishing households. Based on the findings of the study, it is recommended that the fishers should consider other options for preparing bait to avoid the use of detergent, which could pose a health risk from bioaccumulated quantities persisting in the ecosystem and ultimately posing a public health risk. Also, studies on the population dynamics of the exploited species are recommended to inform management strategies that will ensure the sustainability of the women fishery at Nawuni.

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Credit author statement

The corresponding author, Ameworwor, M. Y. was involved in conceptualizing the research idea, methodology, provision of resources, formal analysis, writing of the original draft, and visualization. Mensah, E.T.D was involved in conceptualization of research idea, methodology, provision of resources, investigation, and review and editing. Adakpeya, A. M. and Asabea, Y. contributed to the publication through investigation, reviewing and editing. Asmah, R. and Quarcoopome, T. were also involved in review and editing of the published work.

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