

*Full Length Research Paper*

# A pilot survey on retail fish marketing in Juba, South Sudan: Perceptions on motivation and challenges

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Globally, fish marketing is an important income generating activity and a source of livelihood in many communities. In South Sudan, a newborn nation which attained its independence in 2011, no studies have been conducted in this area. This pilot study assessed retailers' motivation towards fish marketing and the impact of some common major challenges affecting their growth. Using non-probability sampling method, 40 fish retailers in Konyokonyo and Custom markets in Juba were interviewed. Responses collected were analyzed using descriptive statistics and theoretical thematic analysis. Almost all retail fish sellers rely on fish marketing as their only source of income and livelihood. In spite of this dependency, the impacts of some major challenges were noted. Chief among them were fish spoilage due to improper handling and high cost of transportation. Alternative solutions and the need for a more thorough investigation have been suggested.

**Keywords:** Fish marketing, retailers, motivation, challenges, Konyokonyo market, Custom market, Juba, South Sudan.

## INTRODUCTION

Fish, as food, is one of the richest sources of animal protein and fatty acids needed by humans and other animals for healthy growth and development. Small-size indigenous fish species that are mostly consumed by poor households in developing countries are a rich source of micronutrients, particularly Iron, Zinc and Calcium needed by children to improve their growth and health to withstand common illnesses (Kawarazuka and Bene, 2011). Globally, the demand for fish as food has been on the rise since 1960s. According to FAO (2016), estimates of the average annual per capita fish consumption was 9.9 kg in the 1960s and increased to 19.7 kg in 2013 worldwide. In the under-developed world, it was 5.2 kg in 1961 and 18.8 kg in 2013. In the low-income food-deficient countries, it increased from 3.5 to 7.6 kg. These per capita fish consumption estimates were influenced by quantity of catch, sources and channels of fish supply to consumers. However,

estimation of per capita consumption of fish require careful attention on the changes in fish population because of its influence on demand and supply of fish (Kurien, 2005). In addition, fish and fish products have significant contributions to local economies of the communities living in remote rural areas (Bene et al., 2009).

In South Sudan, between 12-15% (Fernando and Garvey, 2013) and 17.3% (FAO, 2014) of the total population rely on fish and fish products to feed their families as well as generate income. For some communities or families living in areas most affected by conflicts and insecurity, fishing is a major source of food (FAO, 2017), with fish making their dominant meal on almost daily basis (FAO, 2014). Besides being a major source of food, fish availability plays an important role in marketing and trade (Beveridge et al., 2013). Fish marketing is an important income generating activity

and a source of livelihood to retailers selling fresh and/or dried fish in Juba Town. The forms in which fish are marketed include fresh and dried (e.g. sundried, smoked, salted etc.) products. Both fresh and dried fish sellers share common marketing needs such as good and acceptable fish handling and processing practices as well as information on value-added to fish and fish products (Akpabio and Ekanem, 2008). These marketing needs and support can affect fish supply and related activities in the markets. Marketing of fish and fish products is one of the most important components of the fish value chain and an employment opportunity in the developing world. Fish marketing is also considered a risky type of business due to the adverse impact of seasonal changes in supply of fish and methods of preservation (Udong et al., 2010). Seasonal weather changes have great influence on the economic value of fish marketing in terms of availability and quantity of fish supplied to the local markets.

The above mentioned critical issues or concerns can be overcome by good production and handling practices and increased awareness on sustainable use of fisheries resources, which can contribute to improved supply of fish to the markets and offer employment opportunities for some poor marginalized men and women who mainly rely on fishery as their primary economic activity (Udong et al., 2010). Besides men, women have made significant contributions to fish production and marketing. Women's global recognition in the fisheries sector at both domestic and international levels have been reported and acknowledged (FAO, 2015; Fitriana and Stacey, 2012; Fröcklin et al., 2013; Gopal et al., 2014; Harper et al., 2013; Onyango and Jentoft, 2011; Williams, 2008; Williams et al., 2001). Women are known to be dedicated, flexible and cheaper workers than men. In South Sudan, both men and women sell fish and fish products in the local markets. But the safety of fish handling practices at the landing site and local markets is questionable.

Recently, Andrew et al. (2017) reported an existing and continuous risk associated with the current fish processing and handling practices in South Sudan. After an evaluation on microbial profile of six sun-dried fermented samples collected from Konyokonyo market in Juba, though limited to quantitative assessment only without qualitative evaluation, their assessment revealed that fish processing and handling are traditionally done in unhygienic way. Such poor and unhealthy practices are risk factors to consumer safety and may in one way or another disrupt fish marketing as well. The impact of poor handling of fish and fish products could be one of the many challenging issues that require careful attention and intervention in fish marketing. Understanding the motivation as well as challenges faced by fish retailers in the local markets in South Sudan and many developing nations is key to

pursuing rigorous socioeconomic and gender related studies in the fish value chain and harnessing relevant information needed by policy makers and concerned stakeholders. The purpose of this pilot study is, therefore, to identify retailers' motivation in fish marketing and the impact of the common major challenges affecting retail marketing of fresh and dried fish products in Konyokonyo and Custom markets in Juba, South Sudan.

## **MATERIALS AND METHOD**

### **Research study area**

Konyokonyo and Custom markets are the two areas of focus in this study. These two major fish-supply markets (Figure 1) are located in Juba town, the capital city of the Republic of South Sudan. Juba is also the main commercial center and city in South Sudan. Konyokonyo market is located in Kator Payam at the Southeastern part of Juba city block, at latitude 4.832494° and longitude 31.608141° near the Nile River. It has a fish marketing section currently undergoing construction with support from the United Nations Industrial Development Organization (UNIDO) sponsored by the Government of Canada, located at latitude 4.831584° and longitude 31.606647°.

Custom market is located in Munuki Payam at the centre of Juba city block, at latitude 4.843082° and longitude 31.582087°. Outside the main fish marketing section, a single shop which sells fresh fish was found operating as part of fish business in Custom market, located at latitude 4.841654° and longitude 31.582975°.

### **Data collection and analysis**

Interview was the primary method used for data collection from fish sellers and government officials in the Statistics Department at the Juba City Council office. The study was conducted from 30<sup>th</sup> January to 10<sup>th</sup> February 2017. During the study period, there was no proper documentation or statistics on the numbers of fish sellers or traders operating in Konyokonyo and Custom markets. Thus, respondents were interviewed on the basis of their willingness to participate in the study.

A preliminary site visit to each market (24<sup>th</sup> and 25<sup>th</sup> of January) was conducted one week prior to data collection, basically to identify potential number (i.e. obtaining consent) of participants to be interviewed. The total number of those who not only expressed their willingness to participate but also encouraged continuous research activities was 53 fish retailers (30 in Konyokonyo and 23 in Custom markets). However, not all of these retailers are currently actively involved in selling fish, though most have fish stalls. A few of them

were staying idle—waiting to rent their fish stalls to newbies coming into fish marketing. About 40 retail fish sellers who have fish stalls and currently selling fish products were then selected, 20 from each market, as a convenient size for the adopted non-probability sampling method of this study.

In addition to lack of register or record that shows the total number of fish retailers operating in the local markets in Juba both at the local and national levels, this method was used because it is convenient, quick and cheap. The questionnaire was designed in the form of opened-and-closed-ended, Likert-scale types, and Trichotomous-choice questions (Krosnick and Presser, 2010; Loomis et al., 1999). This unique combination of questions not only explored retailers' motivation in fish marketing and the impact of the major common challenges limiting their growth but also underscored other issues affecting retail fish marketing in Konyokonyo and Custom markets that have not been listed or covered in the questionnaire. Variables targeted in this study were categorized under four themes: namely demographic characteristics, motivation, challenges and satisfaction. By looking through these themes as a pilot study, it was believed that the role and contribution of fish marketing as a livelihood and income generating activity might overtly capture traders' desire to sell fish and its merit to encourage newbies without undermining gender representation.

These four themes, particularly the challenges, if well-understood, can attract the need for a more thorough socioeconomic research investigation to alleviate the challenges limiting the growth of retail fish marketing and possibly draw more support and services to help fish retailers thrive in the local markets in Juba as well as other parts of South Sudan. The data for this study were collected for a period of five days in each market, from 30<sup>th</sup> January to 3<sup>rd</sup> February in Konyokonyo market and February 6<sup>th</sup> – 10<sup>th</sup> in Custom market. Responses collected from participants were organized and categorized manually and subjected to Theoretical Thematic Analysis, as similarly shared by Braun and Clarke (2006). In this theoretical approach, the analysis focuses more on the narrative aspect linked to the general aim of the study than just description of the data. Tables and charts were used to depict descriptive and comprehensive display of the findings. Additionally, a Garmin GPS Map 60Cx was used to mark the coordinates of Konyokonyo and Custom markets. The coordinates were used to identify the locations of the two markets on the map of Juba town block using ArcGIS 10 software.

Secondary open-access data used as background information for this study were obtained from scientific databases using Google Scholar search engine and ResearchGates as well as reports from non-

governmental organizations such as the Food and Agricultural Organization of the United Nations (FAO), World Bank and Famine Early Warning System Network (FEWS-NET) whose activities, in one way or another, support the development of the fisheries sector in South Sudan. Fish sellers, fish traders and retail fish marketing were the main keywords used for collection of secondary data for this study.

## RESULTS AND DISCUSSION

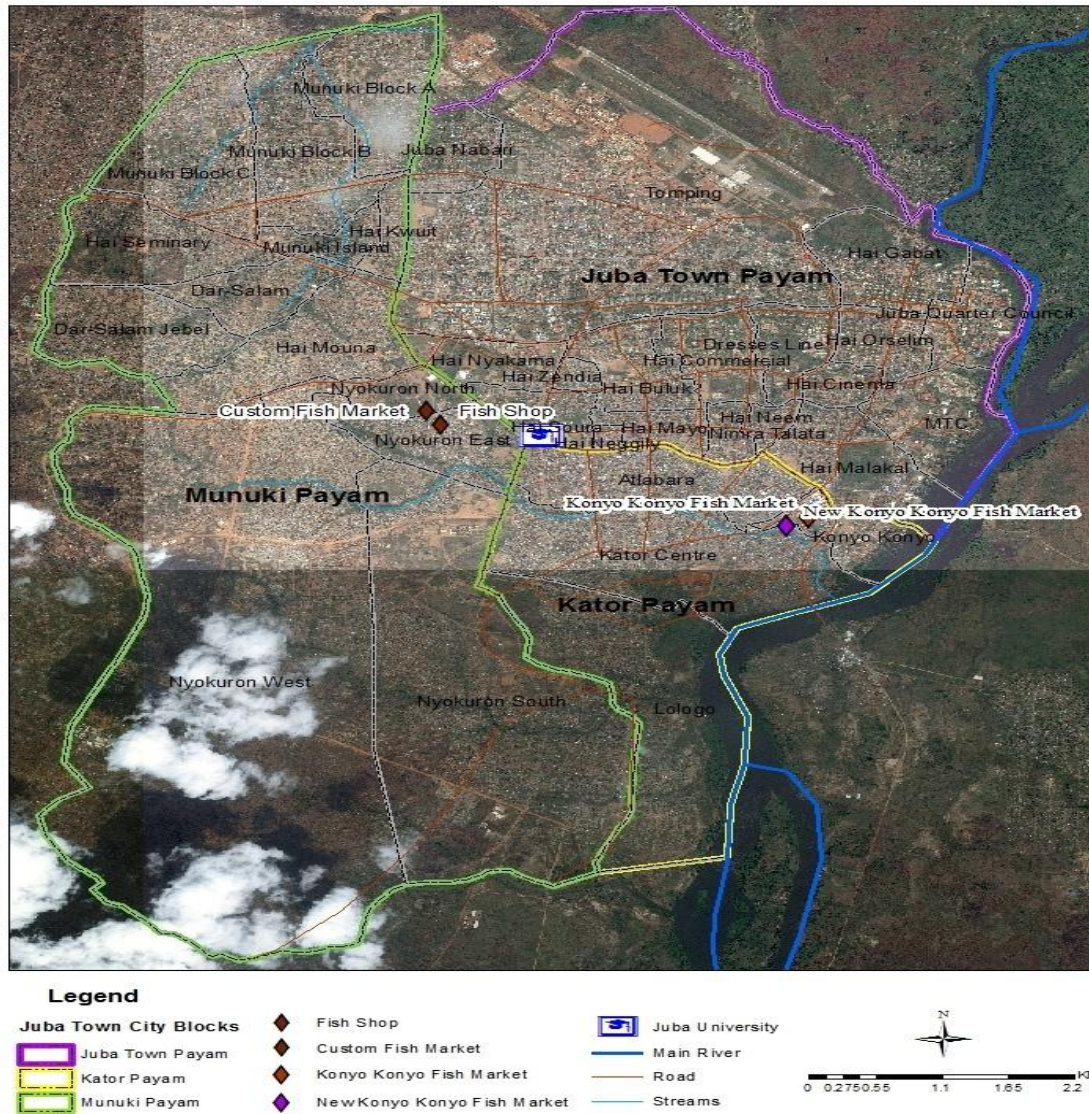
### Demographic characteristics of retail fish sellers

The results of the demographic characteristics of the respondents presented in table 1 shows that majority (82.5%) of the respondents in this pilot study were male retail fish sellers, dominated by South Sudanese nationals (70%). The percentage of female retail fish sellers was 17.5. This shows that retail fish marketing is dominated by men. Women under-representation observed in this pilot study, as similarly reported by Fröcklin et al. (2013), could be attributed to lack of or inadequate attention to issues limiting them from accessing economic resources and competitive marketing opportunities that are sometimes aggravated by their household responsibilities.

Participation of women from the selected convenient sample size currently actively selling fresh fish in Konyokonyo and Custom markets was almost non-existent or very low. Only a single female retail fish seller, a Ugandan national, was found selling fresh fish in a fish shop (Figure 1) outside the main fish selling section in Custom market. According to her, they (Ugandan female fish retailers) had difficult time finding fish stalls to run their fish business within the main fish selling sections inside Custom market and even at Konyokonyo market. The space provided for fish business in the market is limited and cannot accommodate additional or new fish retailers. But having found a shop to operate her fresh-fish business within the boundary of Custom market was all she needed. This female fish retailer is now in her 10<sup>th</sup> year selling fresh fish in Juba.

One possible way to address women's underrepresentation and lack of participation in fish marketing is through expansion of the existing local markets to accommodate additional or new fish retailers. Such an initiative should be supported by a policy framework designed to target and encourage participation of more female fish retailers in the local markets. For instance, gender sensitivity should be exercised during allocation of fish stalls inside the local markets. That's to say, some fish stalls should be allocated exclusively to female fish retailers only. This kind of measure will help protect their privileges to adequately participate in retail fish marketing.





**Fig. 1.** Location of Konyokonyo market, Custom market, and fresh-fish shop in Juba, South Sudan (Source: field data).

Moreover, women can also be supported financially through loans or by providing basic tools they needed to start fish marketing business as part of their economic empowerment, often under an established cooperative or association as well as establishing improved infrastructures to support retail fish marketing. If implemented and enforced, all these policies can potentially protect women involvement in fish marketing and address the existing gender disparity (De Silva, 2011). But this is not an easy task. It requires careful interdisciplinary attention, supportive framework and an effective monitoring system.

Table 1 showed that most of the retail fish sellers in the sampled population can read and write, and communicate well in English, Arabic or other common

local languages of communication. More than 70 percent of them have attended formal education. Only a few did not go to school. Regardless of the unique sampling method adopted and sample size of those interviewed in this pilot study, similar finding was reported by Kamau and Ngigi (2013) in Lake Victoria.

Furthermore, respondents in this study mentioned low family income and instability due to insecurity as some of the major drivers leading to school dropouts. Early marriage, coupled with increased responsibilities to provide basic needs for dependants as a parent, was a common reason among retail fish sellers who did not receive any formal education as well as those who ended up with primary level of education.

**Table 1.** Demographic characteristics of retail fish sellers, their number by type of fish product and months of experience sampled in Konyokonyo and Custom markets.

| Categories     |                     | Fish Sellers at Konyokonyo | Fish Sellers at Custom | Total | %    |      |
|----------------|---------------------|----------------------------|------------------------|-------|------|------|
| Gender         | Male                | South Sudanese             | 15                     | 13    | 28   | 70.0 |
|                |                     | Sudanese                   | 0                      | 4     | 4    | 10.0 |
|                |                     | Ugandan                    | 1                      | 0     | 1    | 2.5  |
|                |                     | Other                      | 0                      | 0     | 0    | 0.0  |
|                |                     | Sub-total                  | 16                     | 17    | 33   | 82.5 |
|                | Female              | South Sudanese             | 1                      | 1     | 2    | 5.0  |
|                |                     | Sudanese                   | 0                      | 0     | 0    | 0.0  |
|                |                     | Ugandan                    | 3                      | 2     | 5    | 12.5 |
|                |                     | Other                      | 0                      | 0     | 0    | 0.0  |
|                |                     | Sub-total                  | 4                      | 3     | 7    | 17.5 |
| Total          |                     | 20                         | 20                     | 40    | 100  |      |
| Age group      | 15-29               | 1                          | 3                      | 4     | 10.0 |      |
|                | 30-44               | 13                         | 11                     | 24    | 60.0 |      |
|                | 45-59               | 6                          | 6                      | 12    | 30.0 |      |
|                | 60 or more          | 0                          | 0                      | 0     | 0.0  |      |
|                | Total               | 20                         | 20                     | 40    | 100  |      |
| Marital Status | Married             | 16                         | 17                     | 33    | 82.5 |      |
|                | Unmarried           | 4                          | 3                      | 7     | 17.5 |      |
|                | Total               | 20                         | 20                     | 40    | 100  |      |
| Education      | No Formal Education | 3                          | 2                      | 5     | 12.5 |      |
|                | Primary             | 10                         | 6                      | 16    | 40.0 |      |
|                | Secondary           | 6                          | 9                      | 15    | 37.5 |      |
|                | Tertiary            | 1                          | 3                      | 4     | 10.0 |      |
|                | Total               | 20                         | 20                     | 40    | 100  |      |

Other means foreign nationalities apart from Ugandan and Sudanese (Source: field data).

### Experience in fish business, type of fish sold and motivation

The length of time retailers spent in selling fish and their level of education are important parameters in retail fish marketing. According to Ali et al. (2008), the more time a fish trader spends in fish marketing, the better she or he will become aware of the working conditions and fit herself or himself into the existing and emerging fish marketing issues and context. Years of experience, coupled with education, are believed to be an illuminating combination that usually helps fish sellers to hold onto fish marketing as their one-and-only source of income (Kamau and Ngigi, 2013) regardless of the daily and emerging challenges. The impact of such a combination of years of experience (Table 2) and level of education (Table 1) could also be the same for participants in this study because 95 percent of them (Table 3) admitted that

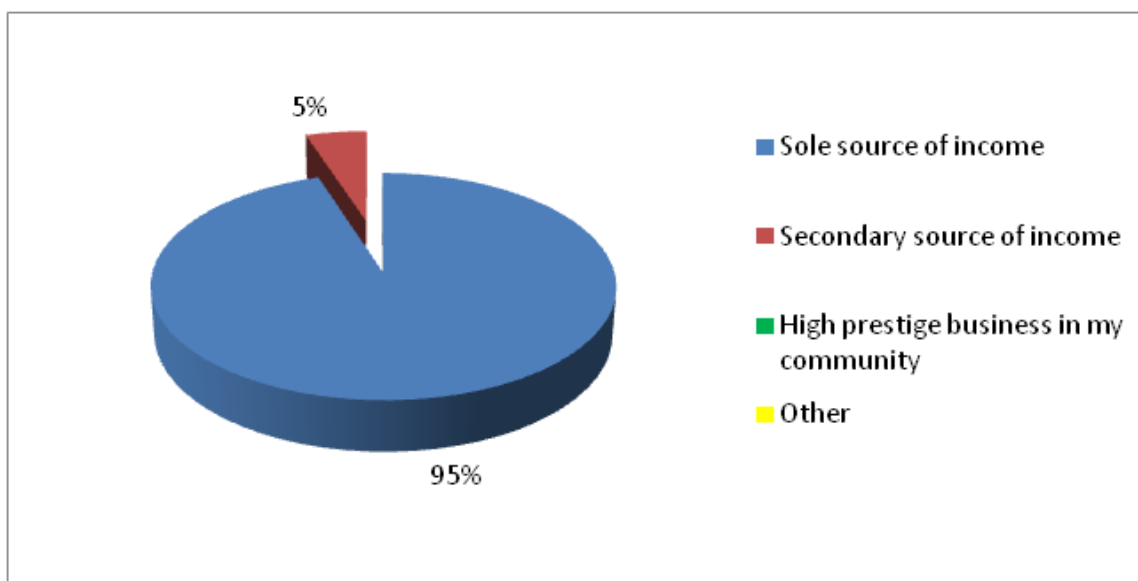
retail fish marketing is satisfactory. In some cases, sale of fish is even considered a satisfactory source of income compared to agricultural crops. This belief holds true for communities living along the Nile River, and for the poorer households in particular, who rely on fish harvest and marketing as an important primary source to support their livelihoods and income (FAO, 2017; FEWS-NET, 2013).

Like in other businesses, there are both common and different interests that motivated people to begin retail fish marketing. In this study, it was prescribed that retail fish marketing can be run as a sole source of income, secondary income generating activity, or high prestige business in the community just like other motivating drivers. As shown in figure 2, more than ninety percent of fish retailers rely on fish marketing as their only source of income. The little profit they generated from

**Table 2.** Number of retail fish sellers by the type of fish product and months of experiences in retail fish marketing.

| Categories        |                    | Fish Sellers in Konyokonyo | Fish Sellers in Custom | Total | %    |
|-------------------|--------------------|----------------------------|------------------------|-------|------|
| Type of Fish Sold | Fresh              | 10                         | 9                      | 19    | 47.5 |
|                   | Smoked             | 5                          | 5                      | 10    | 25.0 |
|                   | Sundried           | 3                          | 2                      | 5     | 12.5 |
|                   | Salted             | 0                          | 0                      | 0     | 0.0  |
|                   | Other fish product | 2                          | 4                      | 6     | 15.0 |
|                   | Total              | 20                         | 20                     | 40    | 100  |
| Experience        | 1-11 months        | 1                          | 4                      | 5     | 12.5 |
|                   | 12-23 months       | 1                          | 0                      | 1     | 2.5  |
|                   | 24-35 months       | 0                          | 2                      | 2     | 5.0  |
|                   | 36-48 months       | 2                          | 2                      | 4     | 10.0 |
|                   | 49 months or more  | 16                         | 12                     | 28    | 70.0 |
|                   | Total              | 20                         | 20                     | 40    | 100  |

“Other fish product” refers to those selling either: fresh and smoked fish products, fresh and sundried fish products, smoked and sundried fish products, or smoked and salted fish products (Source: field data).

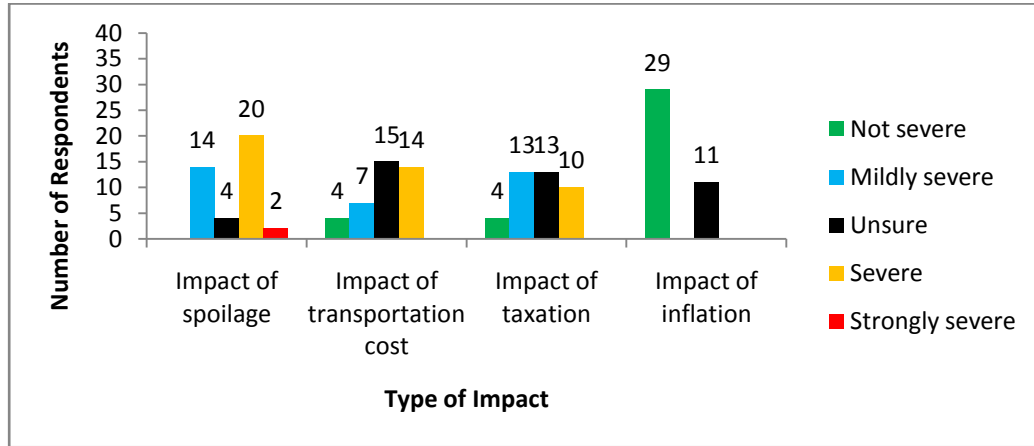


**Figure 2.** Key drivers that motivate respondents to start retail fish marketing (Source: field data).

retail fish marketing was able to support and sustain their family needs. Many of them said they were able to pay their children’s school fees, cater for health services and other basic personal or family needs.

Despite the common belief that all kinds of businesses have losses and gains, some women (i.e. those selling dried fish) believed that fresh-fish marketing has more loss than gain compared to dried-fish marketing. They

also added that fresh fish marketing is associated with a lot of waste management problems. Examples of waste management problems include the need for each retail fish seller to carry his/her waste, mostly resulting from melting of ice and unwanted parts of gutted fish, or simply hire someone to do so. This affects both the physical (i.e. exhausting) and financial status (i.e. expensive) of such a small-scale business venture.



**Fig 3.** Perceptions of respondents on the severity of the impact of spoilage, transportation, taxation and inflation on retail fish marketing (Source: field data).

Moreover, the use of ice in ice-cooler boxes, the only method of fresh-fish preservation in Konyokonyo and Custom markets, implies that the seller should also be physically fit to carry blocks of ice needed to chill his/her fresh-fish stocks, which is also exhausting.

Furthermore, the burden of waste management is encountered daily as most buyers always demand removal of unwanted parts of the fresh fish through gutting and cleaning. These unwanted parts of the fish such as fins, scales and the viscera do increase waste production and the cost of waste management in the market. It is also considered dirty and labor intensive. Unlike dried-fish (e.g. smoked, sundried & salted) marketing, some male fresh-fish retailers sampled in this study also believed that fresh-fish marketing is a male type of business. All female participants selling dried fish also considered fresh fish marketing as men's job. These unpleasant conditions may serve as examples of the tenuous information and argument about the challenges that women traders faced in the market (Gopal et al., 2014). Therefore, this outcome from the current pilot study possibly indicates that men dominate fresh-fish marketing in Konyokonyo and Custom markets, which is a potential gender-based challenge. Although fresh fish marketing was viewed as a labor intensive type of business that requires tremendous amount of physical effort and fitness besides capital, more rigorous research studies on gender representation and participation should be undertaken after this pilot study.

### Challenges in retail fish marketing

Retail fish marketing has numerous challenges that can limit its growth. In this study, besides women underrepresentation driven by the aforementioned constraints, four challenges were considered and

categorized as the most common problems facing retail fish marketing. These challenges include spoilage, transportation, taxation and inflation (Figure 3). Among these challenging issues, the impacts of spoilage and transportation were considered the most severe compared to the other two challenges. Bacteriological changes or self-digestion by fish's own enzymes due to inadequate ice or chilling conditions needed for preservation of fresh fish; and breakage of sundried or smoked fish products due to inadequate drying or over-drying, poor handling and packaging during transportation, as well as insect infestations in the storage facilities, are some of the major contributors to fish spoilage. Unhygienic handling of fish in the local markets as reported by Andrew et al. (2017), and exposure of fish products to dust, flies and rain due to poorly designed and unclean fish stalls (Figure 4) and poor means of transportation (Figure 5) are concerns that require innovative or improved approaches to minimize the impact of fish spoilage.

Fish transportation also contributes to fish spoilage in terms of poor packaging and exposure to extreme heat and rainfall. In Juba city, fresh or dried fish products are transported to the local markets by surface (i.e. using boats) and ground (i.e. using trucks, motorcycles etc.). The use of motorcycles, locally known as Boda-boda (Figure 5), for transportation of fresh and/or dried fish is common in Juba and South Sudan at large. Boda-boda fish transportation represents a poor means of transporting fish products as it exposes the products to extreme heat, rainfall and other adverse environmental conditions (e.g., dust etc.). Poor road condition, as one of the major developmental challenges, is another factor hindering fish transportation in the fish value chain in Juba. Fish transportation is also negatively affected by the existence of several check-points (~ 4 to 5 stations) for fish and fish products crossing states'





**Fig. 4.** Type of fish stall use by retailers selling fresh-fish in Custom market (Source: field data).



**Fig 5.** Boda-boda fish mongers transporting sundried fish to local markets in Juba (Source:field data).

borders or cities, in which each check-point collects unrealistic, poorly documented taxes and other unnecessary charges that require further investigation and interventions from both the local, state and national government authorities.

The accumulation of payments made at the check-points, coupled with taxes collected by the City Council and other charges such as those for waste management by the Ministry of Health, are some of the factors that usually contribute to high prices of fish and fish products



**Table 3.** Support-services needed to improve retail fish marketing and business satisfaction.

| Components                             | Variables           | Number | %    |
|--|---------------------|--------|------|
| Financial support from external source | Yes                 | 10     | 25.0 |
|  | No                  | 30     | 75.0 |
| Loan opportunity                       | Government          | 0      | 0.0  |
|  | NGO                 | 0      | 0.0  |
|  | Bank                | 0      | 0.0  |
|  | Private company     | 0      | 0.0  |
|  | Friend              | 2      | 5.0  |
|  | Husband/Wife        | 2      | 5.0  |
|  | Lending circle      | 6      | 15.0 |
|  | None                | 30     | 75.0 |
| Material support obtained              | Other               | 0      | 0.0  |
|  | Government          | 1      | 2.5  |
|  | NGO                 | 7      | 17.5 |
|  | Private company     | 0      | 0.0  |
|  | Association         | 0      | 0.0  |
| Expected support/services              | None                | 32     | 80.0 |
|  | Subsidy             | 0      | 0.0  |
|  | Storage facilities  | 0      | 0.0  |
|  | Reduced tax rate    | 3      | 7.5  |
|  | Fish transportation | 0      | 0.0  |
|  | All if possible     | 31     | 77.5 |
| Business satisfaction                  | Other               | 6      | 15.0 |
|  | Strongly disagree   | 0      | 0.0  |
|  | Disagree            | 0      | 0.0  |
|  | Neutral             | 2      | 5.0  |
|  | Agree               | 16     | 40.0 |
|  | Strongly Agree      | 22     | 55.0 |

Source: field data.

in the local markets. High prices of fresh and/or dried fish products can affect or reduce fish consumption rate and demand, mostly by middle class and poor households living in Juba, as well as other customers or consumers on the outskirts of the town who often purchase fish and fish products from Konyokonyo and Custom markets.

Besides these alarming issues, proper handling of fish and fish products to ensure and provide good quality fish to consumers is important. In addition, provision of transportation using proper means at lower costs require adequate attention and strategic interventions. Furthermore, a two-way communication between stakeholders and concerned authorities is another key element to realize the merit of any potential intervention.

### Sources of support for retail fish marketing and business satisfaction

Concerning the sources of funding (Table 3), all retail fish sellers expressed their frustration for lack of financial support from the local and national government authorities especially the concerned ministries, banks, companies and other institutions. As a result, some retailers have resorted to borrowing money from their husbands/wives, while others depend on informal

Lending Circles. Similar to the Lending Group which is administered by a Lending Institution reported by Huppi and Feder (1990), Lending Circle is a group of people who lend money to each member within a specified time interval at no interest (Quinonez, 2015). Retailers who were part of the Lending Circles strongly believed in its merit.

Although Lending Circle was regarded as an encouraging saving practice for small-scale businesses, some retailers in this pilot study (i.e. those who did not want to participate in a Lending Circle) were skeptical about their peers' commitment to continue (e.g. often when they receive their turn before others). Because of such an issue and other unknown risks associated with lending circles and loans, other fish retailers who owned fish stalls in the market decided to rent their stalls to newbies or emerging retail fish sellers. This paved way for some few new retailers (~ 18 % in table 2) to start fish marketing in the two markets.

All retail fish sellers in Konyokonyo and Custom markets (Table 3) believed the national government and local authorities have an important role and contribution to improve retail fish marketing in the local markets. Unfortunately since they started this small-scale fish marketing business to the present moment, they have not received any support from the government to help their businesses or at least train them on modern fish

handling techniques to improve their current knowledge and skills. However, some of the retailers were very thankful and appreciative of the technical and material supports provided by Japan International Cooperation Agency (JICA) in collaboration with the concerned national and state ministries to help improve fish marketing in Konyokonyo and Custom markets. JICA managed to provide fresh-fish retailers in the two markets with ice-cooler boxes, overall coats among other materials and simultaneously conducted workshops on the know-how and practical application and responsible use of those materials or tools. But some of the retailers were dissatisfied with the material support. The ice-cooler boxes provided were too small. They cannot accommodate large quantity of fresh fish. Other fish retailers were only discouraged just because the organizers distributing the boxes demanded some payments (~\$75) in return to compensate for the cost of transporting those materials into South Sudan. Most of the fish retailers (i.e. those who received but criticized and those who rejected the material support) believed JICA should have assessed their preferred size for ice-cooler boxes prior to purchasing them, and even distribute the materials free of charge or at least at an affordable price or in instalments for an extended period of time. Besides the support they received from JICA, respondents also appreciated efforts done by FAO and UNIDO to upgrade the fisheries sector in South Sudan.

## **CONCLUSION**

The findings in this pilot study show that retail fish marketing played an important and a major stand-alone income generating activity for the selected sample of retail fish sellers in Konyokonyo and Custom markets in Juba. Almost all retailers interviewed in the two markets depend on retail fish marketing as their only source of income. This means retail fish marketing, if well-supported materially and financially as suggested by the respondents, can become a promising source of livelihood and employment. Unemployed and marginalized groups can also benefit from such business opportunities. Fish spoilage and costs of transportation are the chief troubling issues crippling the growth of retail fish marketing in Konyokonyo and Custom markets. The impact of spoilage reported in this study can possibly be addressed through improved handling and packaging practices supported by suitable insulated ice-cooler boxes during transportation and storage in the local markets at relatively reduced costs. With the shrinking economy and limited job opportunities due to the on-going political instability in South Sudan, it is probable to find more married individuals selling fish in Konyokonyo and Custom

markets than unmarried individuals under a thorough research investigation covering larger sample size. It may depict clearly a potential linkage between demographic characteristics of respondents and their motivation to start selling fish for livelihood and income. Additionally, male sellers are the dominant (>80%) gender category among the samples collected from the two markets. Taking into account the high number of educated retail fish sellers (87.5%), this may reflect a logical claim that most of the male retailers might have turned to fish business as their last resort for livelihood.

Fresh fish marketing is a men type of business as they dominate sales of fresh fish products, linked to the unpleasant situations raised by female respondents regarding physical well-being (i.e. carrying of ice blocks and waste) as well as their belief that fresh fish has more loss than gain compared to dried fish. Such information can benefit new initiatives geared towards supporting and empowering women in retail fish marketing in a sense that, females who are newbies in retail fish marketing should be encouraged to start with dried (i.e. sun-dried, smoked and salted) fish marketing, and decide later whether to start selling fresh fish or not.

In spite of all these alarming issues, it is important to know that proper handling of fish and fish products to ensure good quality of fish to consumers and their transportation at lower cost are important areas of concern that require adequate attention and proper interventions from the government and development partners. As reported by Akpaniteaku et al. (2005), one way government institutions can help improve the fishery sector is to provide loans and subsidies to the production as well as marketing sub-sectors. Furthermore, rigorous or thorough investigation should be conducted to go beyond motivation and common major challenges in fish marketing in order to capture wider perspectives regarding socioeconomic aspects of retail fish marketing, gender and/or other related issues not covered in this study.

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