

The socio-economic impact of fishing on food security in Mogadishu

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Executive summary

In Somalia, Fishing is a highly profitable venture throughout the world; the tuna industry alone is worth \$6 billion globally. Surveys of fishing in Somalia show that there are significant fish stocks off the coast of Somalia and it is considered to be some of the richest fishing grounds in the region. The specific objectives of this study is to inspect Tools and Equipment used for fishing in Mogadishu and to find out Skills involved in fishing in Mogadishu also to shed light on the productivity impact of fishing on food security in the capital of Somalia Mogadishu. The research employed survey research approach thorough a descriptive study. It was also based on quantitative approach while the primary data of this study was collected through questionnaire. The research population was the fisher persons in Mogadishu ant the estimated target population was 90 people. Sample size of 74 respondents was selected by using Slovene's formula. The main findings of this study showed that 100 % of the respondents were Male. This is due to the Somali culture that males are going fishing than women. Fishers in Mogadishu are using nets for fishing. According to the boats, fishers in Mogadishu most of the respondents selected Modern boats 94.6% while 5.4% selected traditional boats. In respect of methods for preservation, freezing are the mostly used fishers in Mogadishu furthermore the most respondents are selected freezing in block of ice as tool of storing fishes. Fishers in Mogadishu 95% have not get training about fishing they still use their traditional ways. Whereas 2.7% get training from the government and 1.4% get from private sectors while 5.4% get from other sectors. Also, all of the respondents agreed for there are high profitable venture through fishing in Somalia and it may contribute reduction of poverty through generation of revenues.

Key words: fishing, food security, Socioeconomic

1. Introduction

1.1. Background of the study

According to the United Nations Department of Economic and Social Affairs (UN-DESA 2009), the world population is expected to grow from the present 6.8 billion people to about 9 billion by 2050, mostly in developing countries (5.6–7.9 billion). With a growing world population and recurrent problems of hunger and malnutrition plaguing many communities, e.g. in South Asia and Sub-Saharan Africa, food security is of major societal and international concern. Fishery resources are an important source of proteins, vitamins and micronutrients, particularly for many low-income populations in rural areas, and their sustainable use for future global food security has garnered significant public policy attention. In the context of variable and changing ecosystems, and despite some progress, the challenges of maintaining or restoring fisheries sustainability and stock sizes, reducing environmental impact and degradation, and improving local and global food security remain immense. (Serge M. Garcia and Andrew A. Rosenberg, 2010)

At present, more than two billion people worldwide, in particular in developing countries, are estimated to be deficient in essential vitamins and minerals, especially in vitamin A, Fe and Zn. Micronutrient deficiencies occurring at particular stages of human life (pregnancy, breast-feeding, childhood) can severely affect health and development, leading in some cases to irreversible effects. Fish can potentially contribute to reducing these micronutrient deficiencies. A few studies investigating this issue have been published in recent years (Be'ne, 2011)

With more focus on the nutritional value of food commodities, fish is acknowledged as a major nutrient-dense animal source food for a significant proportion of the nutritionally vulnerable people, overshadowing that of most of the terrestrial animal foods. In 2010, the quantity of fish produced was twice that of poultry and three times that of cattle (FAOSTAT and FISHSTAT). In 2010, of the 30 countries where fish contribute more than one-third of the total animal protein supply, 22 are Low Income and Food Deficient countries (Christophe Be'ne et al, 2016)

Fish are a particularly important sources of protein for many African countries, and especially for poorer segments of the population and therefore plays an important role in improving Africa's food security and nutrition status. In small island developing states (SIDS), such as

the Seychelles and Mauritius, per capita fish supply is among the highest in the world. Based on the four pillars of food security – utilisation and nutritional value, availability, access, and stability – fish has the potential to provide an important albeit under recognised role in global food security. In terms of utilisation and nutritional value, fish are a key source for protein and micronutrients. In terms of availability, the total world production in 2013 was 160 million ton; with Africa accounting for nine million t. Global trade in fisheries products are worth around USD 130 billion of which Africa holds USD 11 billion³⁰. Rising demand for fish and fishery products has been supplemented with a robust increase in aquaculture, with the World Bank predicting that aquaculture production will be about 93 million t by mid century (NFDS, 2016)

In SSA, fisheries are a source of employment for around 10 million people and the main or only source of animal protein for 20 per cent of the population. Thus, the sector plays a significant role in boosting the availability of food, thereby tackling risks to food security in several agrarian and highly food-insecure countries in the region. For example, in Senegal the proportion of dietary protein coming from fish is as high as 75 per cent (Ndiaye, 2003), in Ghana per capita consumption of fish is 22 kg per year which is equivalent to 15 per cent of protein derived from fish (World Resource Institute, 2001), and in Sierra Leone fish supplies 63 per cent of the total animal protein consumed (Essam Yassin Mohammed and Zenebe Bashaw Uruguchi, 2013)

In Somalia, Fishing is a highly profitable venture throughout the world; the tuna industry alone is worth \$6 billion globally. Surveys of Somali waters show that there are significant fish stocks off the coast of Somalia—these waters are in fact considered to be some of the richest fishing grounds in the region. Many profitable species live in the waters off the coast of Somalia, data supported by the Sea Around Us Project, which studies the impact of fisheries on marine ecosystems across the globe. Among the more commercially valuable fish currently landed in Somali waters through both inshore and offshore fishing are the tropical spiny lobster, swordfish, and multiple species of tuna (Kaija Hurlburt and Roberta Spivak, 2013)

Somali marine fisheries have the potential to improve income and food security in a region that could benefit greatly from higher levels of both. Somalia is home to approximately 10,000 part-time and full-time fishers, and an additional 30,000–60,000 people are involved in different sectors of the domestic fishing economy (e.g., traders, processors, gear and vessel

manufacturers) (Glaser SM, Roberts PM, Mazurek RH, Hurlburt KJ, and Kane-Hartnett L, 2015).

2. RESEARCH METHODOLOGY

This study was carried out in Mogadishu, Benadir region, Somalia. The research employed survey research approach thorough a descriptive study. It was also based on quantitative approach. The research population was the fisher persons in Mogadishu ant the estimated target population was 90 people. Sample size of 74 respondents was selected by using Slovene's formula.

$$n = \frac{N}{1 + N(e)^2}$$

Where

n = the required sample size,

N= the estimated target population and

e = is the margin error or level of significance, which is popularly known to be =0.05 or 5%.

For this study, N = 90 and so the sample size was calculated as follows;

$$n = \frac{90}{1 + 90(0.05)^2} = 74$$

The sampling procedure of this study was probability sampling procedure particularly simple random sampling. The primary data of this study was collected through questionnaire. Quantitative data analysis was used in this study. Analyses were carried out with the aid of the Statistical Package for Social Sciences, (SPSS Version 22.0). Descriptive statistics was used to describe the data collected in research.

3. RESULTS AND DISCUSSIONS

Table 1 demographic data of the respondents

Gender		
Category	Frequency	Percent
Male	74	100
Total	74	100.0
Age		
Less Than 20	2	2.7
21-30	35	47.3
31-40	27	36.5
Above 40	10	13.5
Total	74	100.0
Marital Status		
Single	14	18.9
Married	60	81.1
Total	74	100.0
Education		
Illiterate	42	56.8
Primary And Secondary	32	43.2
Total	74	100.0
Experience		
1-3 Years	6	8.1
4-6 Years	12	16.2
7-9 Years	8	10.8
Above 9 Years	48	64.9
Total	74	100.0

Table 1 showed that 100 % of the respondents were Male. Considering their respective responses, this is due to the Somali culture that males are going fishing than women. Similar findings were reported by FAO 2014 which revealed that large inequality in terms of boat ownership where only 2% of the boats were owned by women.

According to age group, it was observed that most of the respondents 47.3% were within age

group of 21-30 years followed by age group of 31-40 years 36.5%, above 40 years 13.5% and less than 20 years 2.7%. This result revealed that most of the respondents 83.8% were within age group of 21-40 years, they were juvenile and energetic.

In respect of marital status, more than half of the studied sample 81.1% was married while 18.9% of the respondents were single. This means that married persons have bigger responsibilities than single ones. This may be due to the culture of Somalia that males are responsible for paying the bills of the family. Furthermore, the study described the education level of the respondents and it revealed that more than half of the respondents 56.8% were illiterate whereas 43.2 % were educated. Along with the experience of the respondents, nearly two third of the respondents 64.9% had more than 9 years of experience in fishing, though 16.2% of them had 4-6 years of experience, 10.8% of them had 7-9 years of experience and finally 8.1% of the respondents had experience of 1-3 years.

Table 2 Tools and Equipments used for fishing in Mogadishu

EQUIBMENTS USED FOR FISHING		
Category	Frequency	Percent
Hooks	29	39.2
Nets	45	60.8
Total	74	100.0
FISHING BOATS		
Category	Frequency	Percent
Traditional Boats	4	5.4
Modern Boats	70	94.6
Total	74	100.0
METHODS FOR PRESERVATION OF FISH		
Category	Frequency	Percent
Freezing	72	97.3
Salting And Drying	2	2.7
Total	74	100.0
TOOLS USED FOR STORAGE		
Category	Frequency	Percent
Refrigerated Storage	19	25.7
Freezing In Block Of Ice	55	74.3
Total	74	100.0

Table 2 showed that 60.8% of the respondents were using nets and 39.2 % were using Hooks that means most of the fishers in Mogadishu are using nets for fishing. According to the boats, fishers in Mogadishu most of the respondents selected Modern boats 94.6% while 5.4% selected traditional boats.

In respect of methods for preservation of fish shows that the most respondents are selected Freezing. This emphasized by having 97.3% are selected freezing for preservation while 2.7% salting and drying. That means freezing are the mostly used fishers in Mogadishu. Furthermore, this table describes tools used for storage the most respondents are selected freezing in block of ice. This emphasized by having 74.3% are selected freezing block of ice for storage while 25.7% salting and drying. That means freezing ice are the mostly used for fishers in Mogadishu.

Table 3 Skills involved in fishing in Mogadishu

HAVE YOU EVER TRAINED IN FISHING?		
Category	Frequency	Percent
Yes	7	9.5
No	67	90.5
Total	74	100.0
WHICH ORGANIZATION PROVIDED YOU THE TRAINING?		
Category	Frequency	Percent
Government	2	2.7
Private	1	1.4
Others	4	5.4
No Training	67	90.5
Total	74	100.0
WHICH KIND OF EDUCATION DID YOU LEARN THIS SKILL?		
Category	Frequency	Percent
Formal Education	3	4.1
Informal Education	71	95.9
Total	74	100.0

Table 3 shows that the most respondents are said no for the question about their training. This emphasized by having 90.5% are had not got training in fishing ever while 9.5% got training. That means fishers in Mogadishu mostly have not got training about fishing they still use their traditional ways. According to the organization provide the training the most respondents have not got training in fishing. This emphasized by having 90.5% are had not got training in fishing ever and 2.7% got training from the government and 1.4% got from private sectors while 5.4% got from other sectors. That means fishers in Mogadishu mostly have not got training about fishing they still use their traditional ways. Furthermore, table 3 shows that the most respondents are selected informal education. This emphasized by having 95.9% are had informal education while 4.1% had formal education. That means fishers in Mogadishu mostly had informal education about fishing and still use their traditional ways.

Table 4 the productivity impact of fishing on food security

FISHING IS HIGH PROFITABLE VENTURE THROUGH SOMALIA		
Category	Frequency	Percent
Yes	74	100.0
FISHIER PRODUCT CONSTITUTE MAJOR PORTION OF ANIMAL PROTIEIN IN PEOPLE'S DIET		
Category	Frequency	Percent
Yes	74	100.0
FISHING MAY CONTRIBUTE REDUCTION OF POVERTY THROUGH GENERATION OF REVENUES		
Category	Frequency	Percent
Yes	74	100.0

The table 4 shows that all of the respondents 100% agreed and just said yes for there are high profitable venture through fishing in Somalia and fishier product constitute major portion of animal protein in peoples diet and also most of the respondents 100% selected yes that fishing may contribute reduction of poverty through generation of revenues.

4.Conclusion

The key findings of this study is that fishers in Mogadishu most of the respondents selected Modern boats 94.6% while 5.4% selected traditional boats. In respect of methods for preservation, freezing are the mostly used fishers in Mogadishu furthermore the most respondents are selected freezing in block of ice as tool of storing fishes. Fishers in

Mogadishu 95% had not got training about fishing they still use their traditional ways. Whereas 2.7% got training from the government and 1.4% got from private sectors while 5.4% got from other sectors. Also, all of the respondents agreed for there are high profitable venture through fishing in Somalia and it may contribute reduction of poverty through generation of revenues. This study showed that 100 % of the respondents were Male; this is due to the Somali culture that males are going fishing than women.

5. Recommendation

Based on the findings in this study, the researchers provide the following recommendations based on the objectives are forwarded:

- ❖ To establish national and regional fish agencies to develop regional for economic enhancement
- ❖ To build up the formal education of the fishers and provide them skillful training
- ❖ Introduction of fish detector device technology for enhancing quantity of fishing with a short period
- ❖ To set up community awareness program for the motivation of the domestic uses of fish and fish products.
- ❖ The Federal Government of Somalia's Ministry of Fisheries and Marine Resources have to encourage fishermen cooperatives establishment.
- ❖ To evaluate and investigate fish quality in the aspect of export chances
- ❖ To start up small and large factories for value added and export stimulation

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