



Inputs accesses to Fishers in Lake Koka, Oromiya region, Ethiopia

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Abstract: Background and Objective: Access to inputs and the way the information reached to the inland fishers is a matter for the sake of adopting or not adopting the technologies as well as the information generated from research centers. The study examined to analyze fisheries' access to inputs in Lake Koka. **Materials and Methods:** Raw data collected from four landing sites of Lake Koka by National Fishery and Aquatic Life Research Center, was used. Then the data was analyzed using simple descriptive statistics in STATA software. **Results:** Based on the findings of this study, it was concluded that, the majority of the respondents had access to inputs such as information and advisory services from the government/ development agents and woreda experts/. Regarding to boats and gears they had access from the nearby cities and Addis ababa even if the inputs costs them higher than their expectation and capacity. They are also use traditional way of preservative methods. They use leaves. They have no access to modern preservative methods like ice or refrigerators. **Conclusion:** the inputs the fishers use like boats and gears was relatively expensive and also the preservative methods they used were traditional. So, there is a need to reach to them by research institutes with modern technologies.

Key words: - Advisory service, fishery, inputs, development agents, woreda experts

1. Introduction

The agriculture sector in Ethiopia which hosts an immense amount-73 percent of the population of the country shows a marginal decline to the contribution of the GDP of the country. But still it is the backbone and a single largest sector in supporting the economy of Ethiopia [1]. The sector is also generating 90 percent of the export earnings and supplying 70 percent of the required raw materials for the manufacturing industry [2].

However, providing adequate food for a rapidly increasing human population is becoming one of the acute challenges in Ethiopia where, besides population explosion, natural and man-made calamities have aggravated the problem [3]. So the country faces high level of food insecurity which labels it under one of the hungriest countries in the world with Global Hunger Index (GHI) of 29.1 in 2018 which is still serious [4]. For this drought and other related disasters can be taken as a reason that triggers the increase in vulnerability to food insecurity as well as to the undermined livelihoods. On the other hand, limited opportunity for diversification of income sources and unemployment stated as the others triggers for the aforementioned problem faced by the country.

In addition to increasing food production from land agriculture, it is necessary to sustainably exploit the aquatic ecosystems to contribute towards the effort of food security by virtue of their high productivity. Ethiopia's fish resources could undoubtedly offer one of the solutions to the problem of food shortage in the country [5]

Fishes contribute fatty acids and omega 3 that are necessary for the development of the brain and body for young, infants and pregnant [6]. It is also one of the important sources of employment and livelihood for millions of world wide. Fishes are richest type of food with the highest protein quality, vitamins, micronutrients like zinc, iron, calcium etc. [7].

Since Ethiopia is a land locked country, the growing fish demand has largely been met through inland capture fishery and extensive aquaculture-reservoirs. [8]. Ethiopia's annual fish production from water bodies (there are about 14 major rivers, 25 major lakes

and 14 major reservoirs in Ethiopia) is around 94500 tons, while fish demand is projected to increase from 95000 tons in 2015 to 118000 tons in 2025. There are not less than 200 fish species in Ethiopia. But only few are commercially important in the country. This is because of consumer preference, lack of awareness by fishers, lack of awareness by extension agents and policy makers on the diversity and potential use of some species [9] Different studies had been conducted on Lake Koka but lack to address in evaluating access of the fishers to inputs.

Therefore the focus of this study is to evaluate the access of fisheries to inputs in Lake koka, Ethiopia.

Methodology

The study was completed by two teams: data collection (four individuals) and data entry (three individuals). Two main target groups were identified in this study: fishers and traders (whole sellers and retailers).

The work for this study consisted of three main stages: planning, data collection and data entry.

Planning:

The study team carried out the following activities during the planning stage:

- The study team leader made presentation on value chain analysis to the rest of the team
- The team designed and drafted (in English) two questionnaires to be used in the study-one for fishers and one for traders
- The study team tested and revised the questionnaires-
- The team discussed and agreed on a detail activity and travel schedule and finalized

Sampling Population

The total population size of this research was 60. both fishermen and cooperative, are the sampling population.

Sample size Determination

60 fishermen were selected from the total population using random sampling technique. It was prepared questionnaire for the fishermen and cooperative leaders were interviewed.

The sampling Techniques

Random sampling techniques utilized to the respondents. This gives equal chance for each and every fisher men cooperative and user of fish in the community.

Data collection

Data collectors were organized into two groups. One is to interview the fishers and the other is to interview the traders at the landing site as well as at the nearby city where they run their business. The data was collected from both primary and secondary data sources, primary data obtained by open and close ended questionnaire was applied to the fishermen and cooperative men was interviewed. The secondary data were obtained from different written documents (Journals, Books and internets) and woreda agricultural offices.

Focus group discussions (FDG) were undertaken to identify the major value chain process and problems or challenges in the process that face the main actors in the respective lakes. Nine focus group discussions (FDG) were conducted with 45 fishery cooperatives management members to explore their views.

Data entry and analysis

The response to the questionnaires was entered into STATA. Each completed questionnaires were reviewed and checked by the corresponding interviewer and the assigned person for this purpose. The data was then analyzed to generate the outputs presented in this report. The data were analyzed using tables percentage and figures.

Overview of the lake Koka.

Lake Koka found within the rift valley less than 100 kilometres from Addis Ababa is an artificial lake built in 1960. It is an expanse of freshwater that supports the lives of over 15,000 people. Lake Koka is one of the lakes in the East African Rift Valley. For years, it

has served the population as the only source of clean drinking water, freshwater fishing and water for irrigation. At present, the lake has been delivering about **625 tonnes of fish per annum**. In the lake, tilapia, **African cat fish** and common carp are **commercially important species** that has been produced.

Results

Socioeconomic characteristics of the respondents

Input supply

Support service

In Lake Koka the government (woreda experts and development agents of lume woreda) have been supporting the fishermen in terms of providing information like market price, advisory services and production techniques. According to the result 63 % of the respondents were getting the information from woreda experts while 37 % of them do not get any support from the government.

According to the result from the FGD the fisheries do not get any support from the government concerning to the hygienic practices. Regarding to the result from FGD there was great concern about the poor handling of fish after harvest. Because fish activities takes place during the night the fish are kept in the boat **with traditional preservation method** using leaves of a selected tree but no ice. So the fish can be spoiling resulting in reduced fish quality at the point of sale. This implies that the fisheries were not backed with modern preservative technologies and inputs. On the other hand the processing undergone is traditional way and everywhere around the landing site. They do not have shade where they can implement the processing.

If we take the look at the result from the respondents, all of them responded that there was a decline in the production of fish from the lake in the last five years. Even now they are catching relatively small sized fish as compared to the last five years. This is because from the management perspective the lake is in a fragile state.

Gears and Boats

The fish producers do get inputs like gears and boats from Batu market place and sometimes from the capital city of Ethiopia-Addis Ababa. They were using wooden boat

which costs them on average 10683 ETB. Regarding fishing gear used, survey results indicate that 48 % of the respondents use Beach seine, 47 % long lines, 65 % gillnet users and 5 % of them use monofilament.



Fig1. Lake Koka fishers

Fish production

In Lake Koka 60 fishers (all are male but one female) were interviewed. The survey results show that most of the respondents (97 percent) were males. This is due to the fact that fishing is male gender activity in the area and female are engaged only in post-harvest activities.

Regarding the age of sample respondents, all of them were in the active working age group (18 to 64 years old) - Showing that there is ample labour force for the fishing activity. As for educational attainment of the sample respondents, survey results indicate that 65 percent were literate while the rest of them are illiterate. The majority of the respondents (95 %) were married, while only 5 % of the respondents were unmarried.

In this Lake the fishers catch tilapia which accounts about 77 % of the total catch, catfish (15 %) and carp (8 %) and supply all the catches to the cooperatives and the cooperatives sell the whole fish to the traders who come from Adiss Ababa (four traders), Adama (one trader) and Mojo (three traders). The cooperatives add value (fillet) before they sell the

catfish to the traders.

On the other hand they sell directly to processors and consumers who come from the nearby town-Koka.

The cooperative has strong relationship with the woreda. The price of the fish harvested is set with discussion made by the woreda government, the cooperatives and the traders. There is a schedule for the eight traders who are the only traders who do have recognition by the woreda. The cooperative and the traders have memorandum of understanding.

- The cooperative do not sell the harvested fish to others without the knowledge of the traders
- The traders never pass their schedule to take the harvested fish

But there is one cooperative in Lake Koka apart from the other cooperatives, they sell their fish to the brokers who organized themselves around the village. This cooperative is apart from other cooperatives sell their fish five birr lower than the others. B/c the traders do not get them directly.

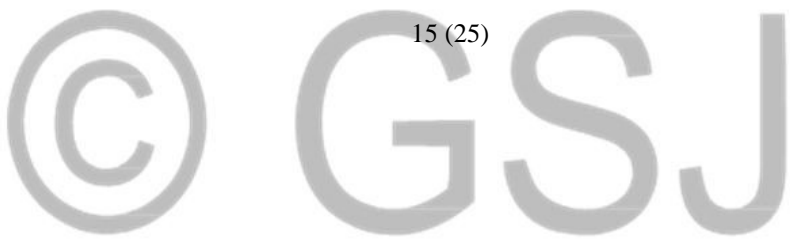
The brokers take the fish and sell to traders and travellers around metoaleka. The brokers are illegal and do give no access to other traders to the entry in the chain. If cooperatives shout to the government, the brokers will robe the nets and boats of the cooperatives. On the other hand, the catfish is the most catches fish in the area. And small sizes of fish than the other sites relatively. Dried fish is processed and come to market at metoa leka.



Fig 2: processing

Table 1. Distribution of respondents on their socioeconomic characteristics (n = 60)

variable	Frequency (%) -fishers
Gender	
Male	58 (97)
Female	2 (3)
Age	
<24	5(8)
25-54	53(88)
55-64	2 (4)
Educational level	
No formal education	21 (35)
1 up to 6 grade	24 (40)
7 up to 10 grade	15 (25)
Marital status	
Unmarried	3 (5)
Married	57(95)
Household size	
1-3	17 (28.3)
4-5	21 (35)
6-8	16 (26.7)
>8	6 (10)
Experience with fishing activity	



1-10	40 (67)
11-20	11 (17)
>20	10 (16)

Conclusion and recommendations

Based on the findings of this study, it was concluded that, the majority of the respondents had access to inputs such as information and advisory services from the government/development agents and woreda experts/. Regarding to boats and gears they had access from the nearby cities and Addiss ababa even if the inputs costs them higher than their expectation and capacity. They are also use traditional way of preservative methods. They use leaves. They have no access to modern preservative methods like ice or refrigerators. According to the result from FGD the cooperative process the fish everywhere in the landing site not in a shade which may enable them to keep the fish processing clean. Few respondents use nationally forbidden gear which is the monofilament which was expected to be the one of the causes for over fishing by some authors.

Significance statement

This study adds to the available knowledge in the study area and also served as a reference point and help future researchers to investigate the best methodologies in addressing the inputs to the fisheries and market integration.

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