

St. MARY'S UNIVERSITY
INSTITUTE OF AGRICULTURE AND DEVELOPMENT
STUDIES



**FISH MARKET CHAIN ANALYSIS: A CASE STUDY OF LAKE
TANA FISHERY AMHARA NATIONAL REGIONAL STATE**

BY

Melkam Ayenew

JUNE, 2016

SMU, Addis Ababa

**St. MARY'S UNIVERSITY
INSTITUTE OF AGRICULTURE AND DEVELOPMENT STUDIES**

**FISH MARKET CHAIN ANALYSIS: A CASE STUDY OF LAKE
TANA FISHERY AMHARA NATIONAL REGION**

BY

Melkam Ayenew

Advisor: Maru Shete (Associate. Professor)

A Thesis Submitted to the Institute of Agriculture and Development Studies of St. Mary's
University in Partial Fulfillment of the Requirements for the Degree of Masters of Science in
Agricultural Economics

JUNE, 2016

SMU, Addis Ababa

**ST.MARY'S UNIVERSITY
INSTITUTE OF AGRICULTURE AND DEVELOPMENT STUDIES**

**FISH MARKET CHAIN ANALYSIS: A CASE STUDY OF LAKE
TANA FISHERY AMHARA NATIONAL REGION**

By

MELKAM AYENEW

Board of Examiners

Dear, Institute of Agriculture and Development Studies

Date and Signature

External Examiner

Date and Signature

Internal Examiner

Date and Signature

Advisor

Date and Signature

Declaration

I declare that this MSc. thesis is my original work, has never been presented for a degree in this or any other university and that all sources of materials used for the thesis have been duly acknowledged.

Student Name: Melkam Ayenew

Signature: _____

Name of the Institution: St. Mary's University

Date of Submission: 7 June 2016

ENDORSEMENT

This thesis has been submitted to the Institute of Agriculture and Development Studies of St. Mary's University for examination with my approval as a university advisor.

Advisor's Name

Date and Signature

Table of Contents

| | Page |
|---|------|
| Acknowledgments..... | V |
| ABBREVIATIONS | VI |
| LIST OF FIGURES | VIII |
| List of Annex | IX |
| <i>ABSTRACT</i> | X |
| CHAPTER ONE:..... | 1 |
| INTRODUCTION | 1 |
| 1.1 Background of the study | 1 |
| 1.2 Statement of the Problem..... | 3 |
| 1.3. Objectives of the Study..... | 5 |
| 1.4 Basic Research Questions | 5 |
| 1.5 Significance of the Study | 6 |
| 1.6 Scope and Limitation of the Study..... | 6 |
| 1.7 Organization of the study..... | 6 |
| CHAPTER TWO | 7 |
| LITERATURE REVIEW | 7 |
| 2.1 Market and Marketing Definitions..... | 7 |
| 2.1.1 Market conditions of fish..... | 7 |
| 2.2 Marketing chain | 8 |
| 2.3 Marketing Channel..... | 8 |
| 2.3.1 Marketing Actors | 8 |
| 2.3.2Marketing Efficiency | 9 |
| 2.3.3 Barriers to entry | 9 |
| 2.4 Framework for Evaluating of Marketing System..... | 10 |
| 2.4.1 Market Structure..... | 11 |
| 2.4.2 Market Conduct | 11 |
| 2.4.3 Performance of the market..... | 12 |
| 2.4.3.1 Marketing costs and margin analysis | 12 |
| 2.5 Buyer Specification..... | 13 |
| 2.5.1 Volume..... | 13 |
| 2.5.2 Product Presentation | 13 |
| 2.5.3 Product Labeling..... | 13 |

| | |
|---|----|
| 2.6. Characteristics of fish marketing | 13 |
| 2.7 Review of Empirical Studies in Ethiopia..... | 14 |
| CHAPTER THREE | 17 |
| RESEARCH METHODOLOGY..... | 17 |
| 3.1. Description of the Study Area..... | 17 |
| 3.2. Data Sources and Methods of Collection..... | 18 |
| 3.2.1. Data type and sources | 18 |
| 3.2.2. Methods of data collection..... | 18 |
| 3.3. Sampling Size Determination and Sampling Procedure | 19 |
| 3.4. Methods of Data Analysis..... | 20 |
| CHAPTER FOUR..... | 24 |
| RESULTS AND DISCUSSION | 24 |
| 4.1 Fishery production and marketing constraints in Lake Tana | 24 |
| 4.2 Opportunities of the fishery sub-sector in study area..... | 24 |
| 4.3 Demographic Characteristics of Sample Respondents | 25 |
| 4.3.1 Demographic Characteristics of the fishermen..... | 25 |
| 4.3.2 Means of livelihood | 26 |
| 4.3.3. Access to extension service..... | 26 |
| 4.3.4 Access to market and road infrastructure..... | 27 |
| 4.3.5 Access to and use of credit availability..... | 28 |
| 4.3.6 Problems of fish market..... | 28 |
| 4.4. Socio-Demographic Characteristics of Traders | 29 |
| 4.4.1. Financial Capital of Traders..... | 30 |
| 4.4.2 Market information for trader | 30 |
| 4.5 Structure, conduct and performance of fish market in Lake Tana..... | 31 |
| 4.5.1 Market participants, their roles and linkages | 31 |
| 4.5.2 Fish market structure in Lake Tana..... | 33 |
| 4.5.3. Market conduct of fish market in Lake Tana | 35 |
| 4.5.4. Analysis of fish market performance | 36 |
| CHAPTER FIVE | 40 |
| CONCLUSIONS AND RECOMMENDATIONS | 40 |
| 5.1 Conclusion | 40 |
| 5.2 Recommendation | 41 |
| REFERENCE..... | 42 |

Acknowledgments

First and for most, I would like to thank the Almighty God for giving me grace, provision of knowledge, wisdom and diligence required for the successful completion of the masters program in agricultural economics. I wish to express my profound gratitude to my genial advisor Maru Shete (Associate. Professor) for his endless support and guidance in time of trouble and difficulties. His encouragement and support both in feedback and provision of insight has been invaluable. Thank you Maru Shete for your unreserved, wonderful and precious knowledge sharing that would be indispensable to my life. My thanks also go to Dr. Gommeraw for his valuable comments on my research work.

My special thanks go to Mr. Asseffa Miteka Janko for his help from the beginning to the end of the study period and my family for their kind cooperation. Last but by no means least, I would like to thank all the people who provided me both secondary and primary data, without which the study would not have been materialized at all.

ABBREVIATIONS

| | |
|---------------|--|
| ACP | Africa, Caribbean and Pacific |
| BCLME | Benguela Current Large Marine Ecosystem |
| CSA | Central Statistics' Agency |
| FAO | Food Agriculture Organization |
| FY | Fiscal Year |
| GDP | Gross Domestic Product |
| TGMMp | Total Processor Gross Market Margin |
| TGMMr | Total gross market margin of retailer |
| TGMMw | Total gross market margin of wholesaler |
| TGMMc | Total market margin of collector |
| HH | Household |
| LTFRDP | Lake Tana Fisheries Resource Development Program |
| MOFED | Ministry Of Finance and Economic Development |
| NMM | Net Market Margin |
| SCP | Structure Conduct Performance |
| TMM | Total Market Margin |
| TGMM | Total Gross Market Margin |
| USIAID | United State International Aid |

| LIST OF TABLES | Page |
|---|-------------|
| Table 3.1. Sample distribution of producer..... | 19 |
| Table 3.2. Sample distribution of traders..... | 20 |
| Table 4.1. Demographic characteristics' of producers..... | 25 |
| Table 4.2. Major means of income for fishermen household..... | 26 |
| Table 4.3. Frequency of extension contact..... | 27 |
| Table 4.4. Access to market service..... | 27 |
| Table 4.5. Access to and use of credit availability..... | 28 |
| Table 4.6. Problems of fish market..... | 28 |
| Table 4.7. Socio-demographics characteristics of traders..... | 29 |
| Table 4.8. Financial capital of traders..... | 30 |
| Table 4.9. Source of market information by trader..... | 30 |
| Table 4.10. Type of fish market channel and their description in Lake Tana..... | 32 |
| Table 4.11. major marketing problem of Trader..... | 34 |
| Table 4.12a. who sets/decide the selling price..... | 35 |
| Table 4.12b. who sets/decides the buying price..... | 35 |
| Table 4.13. Marketing margin of traders in different fish marketing channel in Bahir Dar..... | 37 |
| Table 4.14. Magnitude of profit earned by fish actors for each market channel in Lake Tana..... | 39 |

LIST OF FIGURES

| | |
|---|----|
| Figure 2.1 Conceptual framework on Fish Market Chain..... | 16 |
| Figure 3.1 Map of Lake Tana..... | 18 |
| Figure 4.1 Market Chain in Lake Tana..... | 33 |

List of Annex

| | |
|--|----|
| Annex 4.1 Results of SWOT analysis matrix..... | 45 |
| Annex 4.2: Costs..... | 46 |

ABSTRACT

This study is aimed to analyze fish market chain of Lake Tana fishery in Amhara Regional state of Ethiopia. It also identified fish marketing actors and channels by quantifying costs and profit margins in for the different marketing channels. The study collected and used both primary and secondary data. A mult-stage sampling technique was adopted to select household for the study purpose. During the first stage all districts where fishery production is taken purposively and at the next stage about 166 fishermen and 64 marketing actors were selected. The market actors in the survey period were producers, urban collector, retailers, wholesalers and processor. Primary data were generated by individual interview schedules using structured questionnaires. This was supplemented by secondary data collected from different published and unpublished sources. The study analyzed fish market in terms of structure, conduct and performance (SCP). To evaluate fish market performance, cost, profit and marketing margins were calculated for the group of market players in different channels for fish markets.

Keywords: Fish marketing, marketing channels, Structure-Conduct-Performance, Fishery, Lake Tana, Amhara Regional State.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

The share of agriculture in GDP in Fiscal year (F.Y) 2014/15 went down to 38.8 percent from 40.1 percent a year earlier in Ethiopia (MOFED, 2014/2015). Likewise, the sector's contribution to GDP growth rate rose to 24.5 percent compared with 22.3 percent last year (Ibid). In 2012/13, fish landings in Ethiopia were estimated by the Ministry of Agriculture at approximately 29,000 tonnes, the bulk of which (79%) originated from the six main lakes (Tana, Ziway, Langano, Awassa, Abaya and Chamo) and a further 21% from other water bodies (Ibid). According to Africa, Caribbean and Pacific, 2013 this is a significant amount of fish in terms of food security, nutrition, especially for children and the poor, and for rural welfare. The existing production is well below the estimated potential production which ranges from 45,000 to 51,000 tonnes, and these estimates do not take into account the on-going construction of new reservoirs and under-exploited river fisheries. However, the fisheries sector has a very low national profile probably because of its very low contribution (0.02%) to GDP.

The share of total employment generated by fisheries is about 13,200 while the livelihoods of up to 40,000 people are positively impacted upon by the sector. The country has an estimated fish production potential of 51,481 tonnes per annum (FAO, 2014). However, national per capita fish consumption is very low, being a mere 0.20 kg. Comparatively beef is the dominant source of animal protein in the country, and fresh fish is consumed mainly in areas surrounding the Great Rift Valley. Which contains a system of small- to medium-sized lakes? Lake Tana nestling at an altitude of 1,830 m, with a mean depth of 8.0 m, surface area of 3,500 km² and a shoreline of about 385 km, is the largest water body in the country, with fish production potential of 24,900 tonnes per annum (Ibid).

According to Yalew (2012), Lake Tana is one of the few African lakes whose fishery resource is not damaged by the introduction of fish species and major sources of pollutants are absent. Fishing in Lake Tana started around 18th century. Prior to 1986, Lake Tana fisheries consisted only of artisanal, predominantly subsistence reed boat fishery. This type of fishery was limited to the shore areas and targets the native Nile tilapia, *Beso* and *Labeobarbus* using locally-made fish

traps and gillnets (length 15-20 m). In 1986 the Lake Tana Fisheries Resource Development Program (LTFRDP) was started by a Dutch non-governmental organization the Interchurch Foundation Ethiopia (ISE-Urk) in collaboration with the Ethiopian Orthodox Church and the Ministry of Agriculture. The program targeted the poor fishermen around Bahir Dar Gulf area and nearby islands by introducing modern fishing gear and providing motor boats. The Lake Tana Fisheries Resource Development Program (LTFRDP) created new opportunities for the fishers, extending their fishing area from the shore to deeper, offshore waters and, more importantly, to distant river mouths. Moreover, with the increase in catch, fish processing, marketing and net-making activities emerged as job opportunities for the surrounding communities (Yalew, 2012).

The marketing activity is among the major driving forces of economic development and has a guiding and simulating impact on production and distribution of production. More specifically, agricultural marketing system is vital to transform a traditional agrarian society into a modern industrial society. Consumption of fish services source of animal protein and provides a variety of essential fatty acids and micronutrients, such as iron, zinc, vitamin A and others. Fish is especially an important source of food and nutrients due to its seasonal availability which is often different from crops, and thus can help to reduce seasonal vulnerability, particularly in rural communities, Kawarazuka (2010 as cited in Janko, 2015). Favorable physical and hydrographic conditions (suitable geographic relief, rich soil quality, good mean annual rainfall, and sufficient freshwater availability); aquaculture production is negligible in Ethiopia. And, in a similar vein, recreational fishing is yet to be adopted as an important form of leisure by the people (Yalew, 2012).

The structure-conduct-performance (SCP) model implies that as number of firms increase, the market concentration falls, which results in market power declining, and the end result is that price gets closer to marginal cost. Empirically, when comparing industries, it should be observed that industries with lower concentration have less market power. The paradigm was based on the following hypotheses: i) Structure influences Conduct: Lower concentration (more firms with an equal share of power) means that firms will exhibit more competitive behavior. ii) Conduct influences Performance: More competitive behavior means less market power which will lead to greater social efficiency (prices gets closer to marginal cost) (J.W. Hanekom et al.2010).

SCP Paradigm is thus basically used to determine the degree of competition in an industry by assessing the level of concentration in the industry to see how it affects performance (efficiency and profits) within the industry. Level of concentration is calculated by determining the amount of firms in the industry, as well as how the market power is shared between the firms (Ibid). If we have six firms in the fish processing industry with two accounting for 80% of the gross output, while the other four shares the remaining 20%, it will be an example of a highly concentrated industry. Competition will thus be weak as the two dominant firms will be able to control price and output and depart from marginal cost pricing which is inefficient. According to the SCP Paradigm this highly concentrated industry will enjoy higher returns and possible monopoly profits through price collusion between firms (Ibid).

Despite this conducive environment for fish production, the amount of production is very limited because of problems associated with marketing; Insufficient institutional and management capacity, limited resource allocation and investment, poor policy and regulatory framework, and insufficient value chain and fish marketing infrastructure, are some of the cross-sectoral challenges affecting fisheries (BCLME, 2006). At the same time opportunities exist to increase the global social, health and economic value for fish; to increase demand for fish and fishery products; and to grow intra-regional trade, abound. Janko (2015) market chain of fish because of lack of market integration the fish sector exploit by illegal fish producers in the market. The study was conducted in Oromia national regional state due to the potential of fishery is not completely developed because of bottlenecks related to fish marketing (Ibid).

1.2 Statement of the Problem

The fishery sector in general and aquaculture in particular is an important source of livelihood and a sector which contributes to economic growth and poverty reduction. Fish, wherever it comes from, is a global commodity of key significance due to its potential to improve human health and nutrition, its accessibility by the poor, and the low environmental impact of its production compared to that of other animal source foods. Fish provides long-chain omega 3 fatty acids, Vitamin A, and several critical micronutrients, which help reduce ischemic heart diseases and improve health during the critical 1000-day window of life opportunity (pregnancy/lactation/infancy) (FAO, 2015). Challenges of the fishery sector Although Ethiopia is

endowed with resources (land, water & fish species), the contribution of the fishery sector to the country's GDP is still minimal.

According to Dagne (2012) several challenges affect the performance of the fishery sub-sector despite its contributions to the livelihood of the population and to the nation's economy. This includes, lack of recognition (fishery was and is still organized under livestock, absence of universities dealing with fisheries and aquaculture related training and research activities, lack of trained personnel and high turnover of the fishery staffs into other sectors, poor coordination among stakeholders, poor enforcement of decrees, weak extension services and poor linkages are the major factor affecting the sub-sector. also documented some of the significant challenges that hampered the development of commercial fishing industry in Ethiopia such as low technical capacity, limited knowledge about the sector, weak research and extension support, poor fish dietary culture, and poor access to fishing equipments, credit facilities and market infrastructure including roads and communication channels, and unclear land and water user rights favorable to commercial fishing(Ibid).

According to United Nation Food and Agricultural Organization (FAO), fishing in Ethiopia is constrained by lack of efficient infrastructure and marketing network. The infrastructure at fishing sites is undeveloped and inadequate and is devoid of transport facilities to link remote water bodies with major consuming areas. Harvesting and processing technology are not accessible, and it thus limits the scope of marketing to the nearest local outlets where fish can be sold fresh immediately after catching. Inadequate extension services and lack of credit for the purchase of fishing tools have constrained the production capacity of fishermen. There are no laws and regulations for productive utilization of fish resources and protection of catchment areas or rechecking degradation around the lakes (FAO, 1995).

Despite the fact that consumption of fish provides sufficient animal protein with reasonable cost serve as source of income for those who are engaged in production and marketing of fish generate foreign currency through export, and contribute environmental sustainability. Ethiopians do not consume large quantities of fish, due to marketing and production related challenges. The population have a strong tradition of consuming livestock meat. The Ethiopian Orthodox Church observes several fasting periods as well as fasting days every week, and most

Christians consider fish consumption acceptable during those fasting periods (Gordon et al, 2007). According to FAO (2014), the Ethiopian domestic fish market is small and consumption patterns are erratic. This trend is the result of three principal factors: 1) most of the population are yet to integrate fish into their diet; 2) the seasonality of fish consumption because of religious influences; and 3) the occasional short supply and relatively high price of fish often renders it out of the reach of the average consumers. Other marketing related constraints faced by the fishers include lack of physical access to landing points, prices that are insufficiently remunerative to fishers, and loss of quality because of limited options for preservation until the product is traded to the consumers.

Even though fish is economically and socially important, fish marketing actors and channels and their characteristics have not been yet studied and analyzed for the target study area. Therefore, market chain analysis is a better approach for studies of such type. Analysis of the system in terms of fish market structure, conduct and performance that takes into account product and location specificity helps to identify the bottlenecks and come up with specific workable solutions. This narrows the information gap on the issue under discussion and contributes to better understand the marketing system for the benefit of fishers and other stakeholders involved in the marketing of fish. Therefore, this study is initiated to provide information regarding problems related to fish marketing chain in Lake Tana.

1.3. Objectives of the Study

The overall objective of this research is to study fish market and analyze its market chain in Lake Tana in terms of market structure, conduct and performance. The specific objectives of the study are:

1. to assess fish market in terms of structure, conduct and performance
2. to identify fish marketing actors and channels by quantifying costs and profit margins in Lake Tana, and
3. to assess the major constraints in fish marketing in the study area.

1.4 Basic Research Questions

1. What are the key fish marketing actors and channels in Lake Tana?

2. What is the structure of the fish market in the study area?
3. What are the major constraints in the fish marketing chain in the study area?
4. How is the fish marketing system organized in the study area?
5. What are the functioning and performance of fish market in the study area?

1.5 Significance of the Study

The finding of this study helps to improve both fish marketing practices and inform policymakers to take appropriate decision in the fishery sub-sector so that the contribution of fishery to the regional economy will be improved. The study does this by providing important information about Lake Tana's fishery in terms of market structure, conduct and performance, and by identifying market relationships between fishers and buyers, and by describing the marketing system of fish in Lake Tana. The findings of the study can also help to initiate further detail studies by inspiring researchers and by serving as a benchmark.

1.6 Scope and Limitation of the Study

Conceptually, this study is restricted in its scope to the analysis of fish market chain using the concept of market structure, conduct and performance. Geographically, this study examined fish production and marketing in Lake Tana and did not cover neighboring fish landing sites from Blue Nile. The present study faces some limitations. Reluctance and lack of interest among the respondents of the study to fill and complete the questionnaire has limited the outcome of the research.

1.7 Organization of the study

This paper is organized into five chapters. The first chapter discusses the background of the study and statement of the problem, general and specific objectives of the study, scope and limitation of the research. Chapter two introduces relevant literature that deals with both theoretical and empirical literature related to fish market chain analysis. Chapter three describes the research methodology, more specifically, discusses about the sampling design and sample size, methods of data collection, and data analysis. Chapter four presents the results, and interpretation of the analysis. Finally, based on the findings of the study, conclusion and recommendations of the study are presented in chapter five.

CHAPTER TWO

LITERATURE REVIEW

This chapter presents review of basic concepts and definitions of marketing and related theories of marketing, marketing chain, market channel, market efficiency. Furthermore, the chapter tries to explore relevant empirical studies that have been conducted in previously.

2.1 Market and Marketing Definitions

Market: The term market is a place which allows the purchaser and the seller to invent and gather information and lets them carry out exchange of various products and services. In other words the Meaning of Market refers to a place where the trading of goods takes place. Or the place can be a market place or a street market. A market is the “place” where price is determined. In other words, a market is the collection of buyers and sellers that, through their actual or potential interactions, determine the price of a product or set of products (Robert, 2012). An assessment of the markets is essential when performing a sub-sector assessment. This includes an analysis of supply and demand, the number and importance of buyers and sellers, prices, quality standards, etc. Although it may not always be straightforward to obtain precise figures on this, an understanding of the approximate size of the market (i.e. in terms of quantity and/or value) provides an indication of the importance of the sub-sector. In particular, if new interventions are planned, there must be a viable long-term market for the sub-sector commodity (Kleih et al, 2003).

Marketing: is an organizational function and a set of processes for creating, communicating, and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders. Marketing management is the art and science of choosing target markets and getting, keeping, and growing customers through creating, delivering, and communicating superior customer value (Kotler, 2012).

2.1.1 Market conditions of fish

Supply side of the fish and fishery products affects: market demand, prices, season, climatic conditions, population dynamics, economic status, fuel prices, trade policy, legal environment, and etc. Perishable nature of fish requires special attention on handling, grading and packaging,

and the market price reflects the quality of fish. Fifty percent of fish supplies come from developing countries where market infrastructure facilities are minimal (De Silva, 2011). Huge post-harvest losses and poor infrastructure contributes to the inferior quality of fish and its export earnings. Most fish suppliers in developing countries act as raw material suppliers of industrial nations, which allow them to earn little profit from their valuable natural resources (Ibid)

2.2 Marketing chain

Market chains comprise the economic actors who produce and transact a particular product as it moves from primary producer to final consumer. These actors include small and large-scale producers, input suppliers, traders, processors, transporters, wholesalers and retailers. Any given market chain is situated within a broader overall market system comprised of three interlinked components: the market chain; the enabling business environment; and service providers (Tony, 2010). According to Kleih et al (2003), the fish marketing chain, competition exists across every level in that, for example, wholesale traders compete with other wholesalers and exporters with other similar players. Competition comes from domestic sources, as well as from other countries. Understanding the competition, domestic and international, can shed considerable light on the problems faced by all in the sub-sector, as well as illustrate the techniques used by successful enterprises.

2.3 Marketing Channel

Marketing channels facilitate the exchange process. Since marketing focuses on the activities and behaviors' necessary for exchange to occur, channels should be thought of as exchange facilitators. Thus, any connection between individual- ales and/or organizations that allows or contributes to the occurrence of an exchange is a marketing channel. So Marketing channel can be defined as an array of exchange relationships that create customer value in the acquisition, consumption and disposition of products and services. This definition implies that exchange relationships emerge from market needs as a way of serving market needs. Channel members must come to the marketplace well equipped to address changing market needs and wants (Kleih, et al 2003).

2.3.1 Marketing Actors

The actors in the value chain of any commodity commonly include producers, collectors, wholesalers, retailers and consumers/processors. Each of them are described hereunder.

Producer: It is the first link in the fish market chain, the producer harvests the products and supplies to the second agent. From the moment he/she decides what to produce, how much to grow and when to grow and sale.

Collectors: sometimes also known as transporter or trader, he/she is the first link between producer and other middlemen.

Wholesalers: this group of market actors concentrate the various, intermediate sized loads and puts the product into large and uniform units. These activities all contribute to price formation.

Retailers: Middlemen that include supper market another large-scale retailer who divides large shipments of produce and sell it to consumers in small units. The basic function they provide is bulk breaking.

Consumer/processor: It is the last link in the fish market chain, the participants and their respective functions often overlap. The most widespread combinations are the following: Traders-whole sellers that collect the commodity and supply it to retailers, whole sellers-retailers (whole sellers that also sell directly to consumers) and whole sellers-exporters.

2.3.2 Marketing Efficiency

Refers to the degree to which commodity prices accurately reflects current information in the market place. Market integration was utilized to infer on the levels of market efficiency. Efficiency in marketing is the most used measure of market performance. Improved marketing efficiency is a common goal of farmers, marketing organizations, consumers and society. It is a commonplace notation that higher efficiency means better performance where as declining efficiency denotes poor performance. Most of the changes proposed in marketing are justified on the grounds of improved efficiency (Kohls & Uhl, 1985 as cited in Dawit, 2010).

2.3.3 Barriers to entry

Markets of contemporary economies are characterized to a considerable degree by market concentration connected with gaining and maintaining dominant position by a company. The market monopolization isn't necessarily a goal of business entity, however it is desired. It enables to pursue such policy, as a company wants, not the one that is imposed by competition. The lack of fear for reactions of market rivals creates favorable conditions for stabilization and

confidence in action. Enterprises that possess leading positions, usually have considerable market shares, which are estimated by own turnover in comparison with the entire market. At the same time, they can gain above the average profit that is much easier to make than in situation of significant and tough competition (Bernat, 2006). The barriers to enter to the market that cause the concentration belong to the first group. Their type and strength determine the possibilities of market contestation by new rivals as well as a chance of defiance that are undertaken by business entities. The antimonopoly activities performed by a state belong to the second group; they aim at limiting market monopolization through decreasing concentration as well as various pro-competitive actions of competing enterprises to limit existing market barriers (Ibid).

2.4 Framework for Evaluating of Marketing System

A number of studies have examined the Structure-Conduct-Performance (SCP) hypotheses for various commodities as an analytical approach or framework to study how the structure of the market and the behavior of sellers of different commodities and services affect the performance of markets, and consequently the welfare of the country as a whole. The SCP framework explains market behavior and its differences between markets (Andrew, 2008). The model hypothesizes that market structure determines market conduct, which in turn determines the performance of the market. Market structure explains the concentration, i.e. the number and distribution, of sellers and buyers within the marketplace. Measures of market concentration include buyer concentration ratios and seller concentration ratios. The Herfindahl index is used to determine and compare concentration within industries. Barriers to entry limit the number of firms in the business.

These barriers include copyrights, patents, control of ownership of key inputs, economies of scale, product differentiation, high capital outlay, managerial know-how, market information, legal requirements and established brand names. Product or service differentiation exists when products sold within the same market are not regarded by buyers as perfect substitutes. Market conduct explains the existing market structure and includes price determination behavior, product behavior, research and development, innovation, advertising, sales promotion policies, financial policy and collusion. Market performance considers the price relative to the average cost of production (Kohl & Uhl, 1985; Kotler et al, 2002 as cited in Nancy et al, 2014).

2.4.1 Market Structure

The term structure refers to something that has organization and dimension – shape, size and design; and which is evolved for the purpose of performing a function. A function modifies the structure, and the nature of the existing structure limits the performance of functions. Market Structure consists of the relatively stable features of the market that influence the rivalry among the buyers and sellers operating in a market. Some examples of market structure include the number of buyers and sellers of food commodities in the market, the number of sellers of agricultural inputs such as fertilizer and veterinary drugs, barriers to entry into the market and the nature of trading relations (vertical coordination mechanisms) among market participants (Andrew, 2008). In SCP analysis, “structure” encompasses the form of the industry and the operations of the participants in it (including rent seekers and the State). Any market has two sides, supply (production) and demand (consumption). The industry structure provides the backdrop to the supply side. It may also determine which groups of consumers are targeted to provide the demand side of the market. In many markets the relative bargaining powers of consumers and producers is a key feature (ENVIRO-FISH AFRICA, 2006).

2.4.2 Market Conduct

The catching, processing and marketing decisions of the firm, and the lobbying activities of the industry, form the core of the industry’s ‘conduct’. All are driven by (and in turn drive) the structure of the industry. By controlling access the State also participates, indirectly steering the technological decisions of firms (ENVIRO-FISH AFRICA, 2006). The structure and conduct of market participants have a direct implication for the nature of production price relationships between different marketing levels. Market conduct refers to the practices or strategies of traders in maximizing their profits. Among these practices are the use of regular partners, long-term relations with clients, and suppliers, the use of intermediaries, and trade within personalized networks (Wolday, 1994). Market conduct refers to the patterns of behavior that traders and other market participants adopt to affect or adjust to the markets in which they sell or buy. These include price setting behavior, and buying and selling practices. Market conduct refers to the exchange practice and pricing behavior of the marketing firms that make up the industry to examine the influence of the existing market structure on the market conduct and the bargaining power of marketing actors in the marketing system. Here in this analysis the market conduct of

firms in the subsector have been analyzed using information like selling and buying behaviors and price setting strategy of sample traders have been analyzed (Jenko, 2015).

2.4.3 Performance of the market

According to Kolter (2012) Performance marketing requires understanding the financial and nonfinancial returns to business and society from marketing activities and programs. Top marketers are increasingly going beyond sales revenue to examine the marketing scorecard and interpret what is happening to market share, customer loss rate, customer satisfaction, product quality, and other measures. They are also considering the legal, ethical, social, and environmental effects of marketing activities and programs (Kolter, 2012). Market performance refers to the extent to which markets result in outcomes that are deemed good or preferred by society. Market performance refers to how well the market fulfills certain social and private objectives. These include price levels and price stability in the long and short term, profit levels, costs, efficiency and quantities and quality of food commodities sold. It is commonly measured in terms of productive and locative efficiency. Progressiveness or innovation is also sometimes considered. Where equity and employment creation are national objectives, these are also considered as criteria for performance assessment (Ibid).

2.4.3.1 Marketing costs and margin analysis

A marketing margin measures the share of the final selling price that is captured by a particular agent in the marketing chain. It refers to the difference between prices at different levels in the marketing system. The total marketing margin (TMM) is the difference between what the consumer pays and what the producer/farmer receives for his produce. In other words, it is the difference between retail price and farm price. A wide margin means usually high prices to consumers and low prices to producers (Ibid). Marketing margins for some farm products are determined under conditions that more nearly conform to the oligopolistic model than to the purely competitive model. The attitude or strategy of individual firms in price-cutting becomes a critical factor affecting retail prices. The reluctance of firms to cut prices often leads to non-price competition. This can take the form of offering rebates, gifts or prizes in an attempt to increase sales. Firms also may try to gain a larger market share by increasing advertising and promotion expenditures and by differentiating their product (Naser et al, 2002).

Several calculations can be done for the different marketing margins, i.e. total gross marketing margin (TGMM), producers gross marketing margins (GMMp) and the net marketing margin (NMM)]. The total marketing margin may be subdivided into different components: costs of marketing services and the profit margins or net returns. The cost of marketing includes all the costs involved in the creation of place, time, and form utilities. In an efficient marketing system, such costs should be recovered plus a reasonable return to investment (Pomeroy and Trinidad, 1995 as cited in Kariuki, 2011).

2.5 Buyer Specification

2.5.1 Volume

Buyer specifications are very important to the marketing of fresh products. Buyers are twofold, individual buyer and institutional buyers, thus volume of trade differs according to the type of buyers. Mainly seasonality, economic status, cultural aspects and purchasing power of the consumers affects the trade volume.

2.5.2 Product Presentation

Generally, product presentation style appeals and attracts consumers, and this is especially important for fish and fishery products. Unfavorable odor and its easy perish ability make fish unattractive to consumers. Good packaging materials will improve the handling and shelf life of the products. Clean cut ready to cook or eat fishery products attracts more consumers than the raw whole fish. Food habits and food culture have direct impacts on the consumer preferences.

2.5.3 Product Labeling

Food labeling is intended to provide information on product composition and safety. Country of origin labeling, meaning all fish and shellfish has to carry labels stating the origin and the means of production (farmed or wild). This labeling regulation is intended to strengthen traceability – the ability to trace fishery products from sea to market and allow consumers to choose their seafood according to specific criteria (De Silva, 2011).

2.6. Characteristics of fish marketing

Seasonality: These listed characteristics of the product require a special complex system of supportive inputs. It demands a regular marketing preparation process like washing, cooling, proper management from the time of harvest until the produce is put on display. It is frequently

believed a vegetable not only remain attractive to the consumer it must also have a shelf life of few days after having purchased by the consumer (Nonnecke, 1989)

Goorden (2007) discussed about the seasonality of fish harvest in Lake Tana and identified the types of fish that are commonly available in some seasons. According to him, March to August are the seasons with highest catch levels from Lake Tana. From January to July (especially March, April and May), tilapia is more important, and in the months of June to September (especially June and July), catfish is important.

Perishable: The storage function is primary concerned with making goods available at the desired time. It enables traders to obtain better prices for their product. Being a highly perishable commodity, fish requires externally specialized storage facilities matching the seasonal demand. The processing plants use proper storage system in order to be export to the world market. Life time is short easily spoil because of the mussels are week when the catchment time up to 6 hours it should use refrigerator or to use consume.

2.7 Review of Empirical Studies in Ethiopia

A number of scholars such as Abay (2007), Dawit (2010), Awol (2010), Ayelech (2011), Dawit (2015) and Jenko (2015) did research on market chain analysis of vegetables, fruits, dairy products, poultry and fishery in Ethiopia. The studies analyzed the factors that affect market supply of different agricultural commodities and examined the SCP hypotheses.

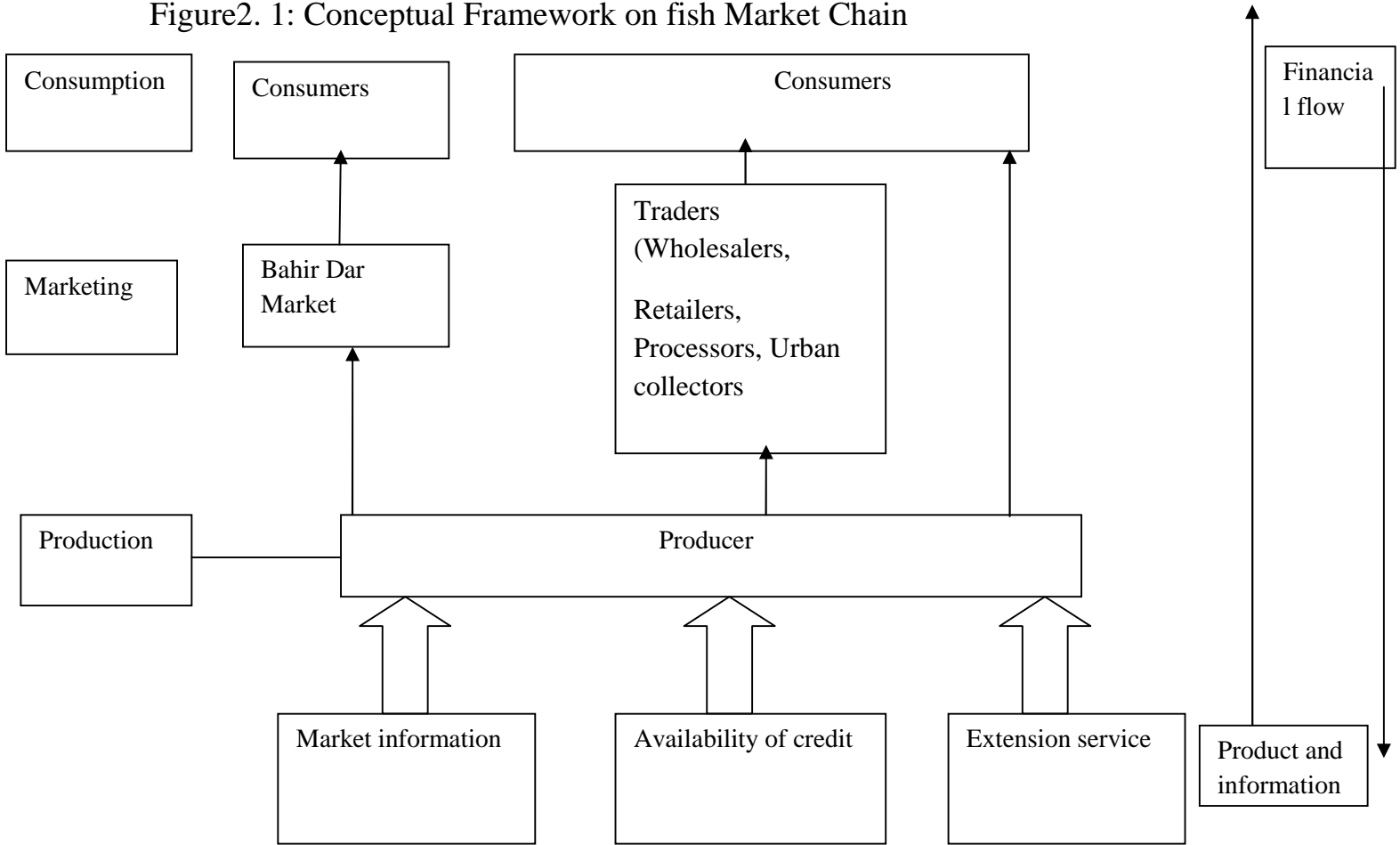
Jenko (2015) studied market chain of fish in Oromia region. Following Greene (2003), he used a multiple linear regression model and analyzed the factors that affect quantity of fish supplied to the market in Oromia. The study concluded that monthly income from fish, alternative income, price of fish and education of the fishers affected fish quantity supplied to the market positively, and family size of fishers affected quantity of fish supply to the market negatively.

Awol (2010) studied market chain analysis of poultry in Dale and Alaba special woredas. He used Tobit and Heckman two stage models to identify the factors that affect producers to participate in the supply of poultry products. The most important variables affecting the producer's participation decision on the supply of hens and eggs to the market includes: total number of birds the family kept, feed supplementation to local chickens, purpose of poultry keeping, family size, sex of the household head and access to credit for the production and

marketing of village poultry. Dawit (2010) also conducted another study on poultry market chain analysis in Alamata and Atsbi woreda. He used Heckman two stage procedures to estimate market participation decision and value of poultry sales. Sex of household head, distance to woreda market, family size and education status of the household head were the variables that significantly influenced market participation decision in poultry market. Value of poultry sales was influenced negatively in Alamata as compare to Atsbi woreda.

Chekol's (2013) study on fish marketing in Lake Tana explained that because of lack of sufficient market and low demand for fishery, producers don't get what they deserve from their hard work. Fish producers also feel extremely dissatisfied and always frustrated in marketing their catch. They are aware of the fact that the middlemen were exploiting them. One of the main causes that prohibit farmers to invest in fishery was the lack of market access (demand) for fish products. Fishers did not receive fair price for their harvest. Even some times if fish collectors are absent, they are obligated to dump their products since they do not own cold storage facilities for preservation. Fish is aquatic inhabitant and it should be preserved properly as soon as it is caught. Adequate storage facilities play a vital role in marketing fish products. But in the study area, it was hardly possible to find preservation facilities such as icebox, which puts the fish producers in hardship. A lot of wastage takes place that is primarily due to absence of preservation facilities. Therefore, in order to enhance the participation of farmers in fish resource utilization there by to augment contribution of fishery resource to economic welfare, development and expansion of facilities such as transportation system, cool preservation, and sustainable market for fish product is fundamental issue.

Figure2. 1: Conceptual Framework on fish Market Chain



Source: own survey result (2016)

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter outlines and discusses the methods and techniques used to collect and analyze data. It first describes the study area followed by discussion on the types and sources of data, sampling procedures and method of data analysis.

3.1. Description of the Study Area

Amhara regional state consists of 10 administrative Zones, one special zone, 105 woredas, and 78 urban centers. It is located in the north western and north central part of Ethiopia. The region has common borders with the state of Tigray in the north, Afar in the east Oromiya in the south, Benishangul Gumuz in the south west, and the Republic of Sudan in the west. It covers an estimated area of 170,752 square kilometers. Bahir Dar city is the capital of the Amhara National Regional State. It is located at 11° 38'N, 37° 10'E on the southern side of Lake Tana (where Blue Nile river starts). The altitude of the city is about 1801m above mean sea level. The city covers an area of 16,000 hectares. Water body of Bahir Dar accounts just over 31% of the total land (Forum for Environment, 2010).

Bahir Dar is a metropolitan city mostly characterized by flat plain topographic landscape. However, there are some pockets of land with hills, rugged and undulating features. The elevation of the metropolitan area is between the range of 1650 meters above sea level and 2100 meters above sea level. When it is viewed specifically, the average elevation of Bahir Dar city is estimated in between as low as 1786 meters above sea level (near the lake shore) and as high as 1886 meters above sea level (Tana Forum, 2015).

Lake Tana is the only lake water in the metropolis. It is the source of the Blue Nile and covers more than 3,000 km² of the total drainage area of 15,320 km² above the outlet. The Lake has a maximum depth of 14 meters. Lake Tana stores 29.175×10^9 m³ of water and is the largest highland Lake in Ethiopia and occupies a wide depression on the Ethiopian plateau, which contributes 90% of the main Nile flood and about 70% of flow diurnal normal year. More than 40 rivers feed the lake, of which Gilgel-Abay, Ribb, Gumera, Megech, Gelda and Infranz contribute more than 95% of the inflow. The only surface water that drains the lake is the Blue

Nile. The present Lake was formed by the relatively recent lava flows, which dammed off the previously eroded valley during the Pliocene (Tana Forum, 2015).



Figure 3.1 Map of Lake Tana and the surrounding area

Source: Gorden (2007)

3.2. Data Sources and Methods of Collection

3.2.1. Data type and sources

The study used information from different sources. Data on fish market, monthly income from fish, experience of the households price of fish, alternative income, family size and education status of household head, sex, age, information access, local market access, distance to the nearest market, credit access and extension access were some of the variables that were collected from primary and secondary sources of data.

3.2.2. Methods of data collection

This study collected both primary and secondary data on a wide variety of variables. To collect primary data formal survey were conducted. Primary data were collected from fishers, consumers, and marketing actor and informal survey was conducted to collect secondary data. Formal survey was done by interviewing the sample respondents using the structured

questionnaire developed for the purpose. Enumerators were trained to create clear awareness on the subject matter of the study. Secondary data were collected from Bahir Dar city Agricultural office and Bahir Dar fishery research center.

3.3. Sampling Size Determination and Sampling Procedure

The primary data were collected using two surveys. These are the trader's and the producer's surveys. Households who live around Lake Tana and who are engaged in fishing practices on a permanent basis constituted the sampling frame for the producer's survey. The list of fishers and traders were obtained from relevant government offices. A four-stage sampling procedure was employed to select fish producing households. First, by using purposive sampling method Bahir Dar city is selected since the target population who are fishing in Lake Tana is administratively found in the city. In the city, the fishers are found in a total of 10 kebeles. In the second stage, by using simple random sampling technique four kebeles such as Shimbet, Zeghie, Yiganda and Woramit were selected from the available 10 fish producing kebeles. Then by employing probability proportional to the size of each kebele, the sample size that should be taken from each kebele was determined in the third stage. Finally, using the sampling frame collected from each kebele and by employing systematic random sampling technique fish producers were selected (Table 3.1). Sample size was determined using the Slovin's sampling procedure formula cited on Ayelech

(2011) at 90 percent confidence level and allowing a 5 percent sampling error, which is reasonably acceptable.

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

Where, n= sample size; N=total population; e= sampling error

Table 3.1. Sample distribution of fish producers

| Sampling location | Population | Sample |
|-------------------|------------|--------|
| Shimbet | 43 | 26 |
| Zeghie | 28 | 17 |
| Yiganda | 138 | 82 |
| Woramit | 69 | 41 |
| Total | 278 | 166 |

Source: Bahir Dar city Agricultural Office and Kebele administrations

The total number of traders operating in Bahir Dar city are 75. A total of 64 traders were interviewed from both licensed and unlicensed ones (Table 3.2).

The place for trader surveys was market towns in which a good sample of fish traders existed. On the basis of flow of fish markets namely Bahir Dar town were selected purposively. Fish traders such as wholesalers, retailers ,processor and Urban collector were sampled at town of Bahir Dar respectively. Because of the limited number of wholesale traders in the city the sample exhaustively contained almost all fish wholesalers from Bahir Dar town. In total 64 fish traders; 5 wholesaler; 39 retailer; 10 urban collector and 10 processors from Bahir Dar town market were interviewed making a total number of 64 respondents for the study.

Table 3.2. Sample distribution of fish traders

| Traders | Population | Sample |
|------------------|------------|--------|
| Wholesalers | 5 | 5 |
| Retailers | 50 | 39 |
| Processors | 10 | 10 |
| Urban collectors | 10 | 10 |
| Total | 75 | 64 |

Source: Bahir Dar city Agricultural Office and Kebele administrations

3.4. Methods of Data Analysis

This study adopted a descriptive statistics to analyze data collected from different sources. Data were analyzed on the basis of fish market structure, conduct and performance. Market structure analysis considered the number of farmers and traders engaged in fish production and marketing, the number and composition of markets, the quality and quantity of infrastructure support. Market structure is presumed to affect market conduct such as production and marketing practices. Market conduct is in turn presumed to affect fish market performance. In analyzing fish market performance prices, quantities of fish traded and profits earned were considered. This procedure provides a good analytical framework for the research because it allows a straight forward measure of market efficiency (Milagrosa, 2007 as cited in Hanekom et al, 2010).

The SCP analytical framework was based on the following argument:

- I. Market structure influences market conduct: The lower market concentration (more firms with an equal share of market power) means that firms exhibit more competitive behavior.
- II. Market conduct influences market performance: A competitive market behavior means less market power which will lead to greater social efficiency (prices gets closer to marginal cost).

Structure of market: Consists relatively stable features of the market that influence the rivalry among the buyers and sellers operating in a market. Some examples of market structure include the number of buyers and sellers of food commodities in the market, the number of sellers of agricultural inputs barriers to entry into the market and the nature of trading relations among market participants. The characteristics of market structure are described on the basis of the degree of concentration, which considers the number of market participants, their size distribution, and the relative ease or difficulty of the market participant to enter into the market (Gebremeskel et al, 1998).

Market Concentration Measure: Concentration ratio is a way of measuring the concentration of market share held by particular suppliers to the market. It is the percentage of total market sales accounted for by a given number of leading firms. Hence, a four-firm concentration ratio is the total market share of the four firms with the largest market shares. Large degree of market concentration ratio shows greater possibility for non-competitive behavior existing in the market. For an efficient market, there should be sufficient number of firms (buyers and sellers). The market concentration ratio (C) is described using the following mathematical formula:

$$C = \sum_{i=1}^r s_i \quad r = 1, 2, 3, \dots \dots \dots (1)$$

Where, C is concentration ratio

S_i - is market share of the i^{th} firm, and

r is the number of largest firms for which the ratio is going to be calculated

As rule-of-thumb, a four largest enterprise concentration ratio of 50 % or more is an indication of strong oligopolistic industry and a 33% to 50% concentration ratio shows weak oligopoly behavior of the industry (Kohls and Uhl, 1985). The problem associated with this index is the arbitrary selection of the number of firms that are taken to compare the ratio. Oligopoly is a market structure in which there are few large firms and entry is difficult but not impossible. Oligopolies can produce identical products or differentiated products. Oligopoly is different from other market structures because firms are interdependent. Any action taken by one firm usually provokes a reaction by other firms. Accordingly, concentration ratio was computed for this study and based on result, the structure of the fish market is determined.

Barriers to entry: A barrier to entry is simply any advantage held by existing firms over those firms that might potentially produce in a given market. In fact, interviewing traders about barriers to entry might be difficult since all have entered the market. Rather, observation of the age, gender, and ethnic distributions of owners, and employees of different sizes of enterprises and the extent to which fluctuations in the number of active traders follow rises and falls in profitability was considered as proxy indicators. Market structure is most commonly evaluated by examining trends in the numbers and sizes of firms relative to each other, and relative to the number of consumers and producer existing in particular time and places (Scarborough and Kydd, 1992).

Market conduct: There are no agreed up on procedures for analyzing the element of market conduct. Market conduct defines the condition which shows possible exploitive relationship between sellers and buyers. It is a systematic way to detect indication of unfair price setting practices and the conditions under which practices are likely to prevail. Moreover, it covers the following variables: the existence of formal and informal marketing groups that perpetuate such practices, the availability of formal and informal producer groups that affect bargaining power, the distance from major market places and its impact on prices, and the feasibility of utilizing alternative market outlets (Muhammed, 2011).

Market Performance: Refers to the extent to which markets result in outcomes that are deemed good or preferred by the society. Market performance refers to how well the market fulfills certain social and private objectives. These include price levels and price stability in the long and

short term, profit levels, costs, efficiency and quantities and quality of food commodities sold (Andrew, 2008).

Marketing Margin: Gross margins can indicate where in the marketing chain value is added and/or profits are made. The total marketing margin is given by the following formula:

$$TGMM = \frac{\text{Consumer price} - \text{farmer price}}{\text{Consumer price}} \times 100 \dots \dots \dots (2)$$

Where TGMM-Total gross marketing margin

Producers' participation or producers' gross margin is the proportion of the price paid by the end consumer that belongs to the farmer as a producer.

$$GMM_p = \frac{\text{Consumer price} - \text{market gross margin}}{\text{consumer price}} \times 100 \dots \dots \dots (3)$$

Were

GMM p-Producers participation (fisher men portion)

$$PS = \frac{Px}{Pr} = 1 - \frac{MM}{Pr} \dots \dots \dots (4)$$

Where

PS- Producer's share

Px- Producer's price of fish

Pr-Retail price of fish, and

MM – Marketing margin

The above equation tells us that a higher marketing margin diminishes producers' share and vice versa. It also provides an indication of welfare distribution among production and marketing agent

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Fishery production and marketing constraints in Lake Tana

Strength, Weakness, Opportunities and Threat (SWOT) analysis was done in the study area with key stakeholder of the fishery sub-sector. The analysis revealed that there are factors that hamper the production and marketing of fish in Lake Tana. According to the sample respondent, there are no quality assurance mechanisms at all levels of the chain as a result the sub-sector is not competitive. Poor transportation system, widespread theft of gears fish nets at night offshore, lack of access to ice-box, poor access to extension and advisory services, lack of access to market information, institutional credit and capital, and use of traditional boats made of papyrus (locally called Tankua) are some of the constraints mentioned by key informants during the survey period (for details see Annex 4.1).

4.2 Opportunities of the fishery sub-sector in study area

Lake Tana and its surrounding environment have enormous opportunities with respect to fishery production and marketing. Its proximity to the regional state's metropolitan town provides ample opportunity to commercialize and integrate the fishers with markets. If considerable support is rendered to the fishers and to those market actors engaged in the fishery sub-sector, strong institutional support (E.g. institutional credit, access to fishery equipments, extension support, provision of market information, etc) can be easily made available given the fact that the location of Lake Tana is in the regional city. Added to this, despite past times, fish consumption culture of the local population is changing positively, which increased the demand for fish in Bahir Dar. The opening of several hotels and restaurants and the tourist influx to the capital city, will all add to the lists of opportunity to strengthen the fishery sub-sector. The physical proximity to Amhara regional state to South Sudan and nearby regional states within Ethiopia (E.g. Afar and Tigray national regional states) provide the opportunity to enhance the level of fishery commercialization (see Annex 4.1 for details).

4.3 Demographic Characteristics of Sample Respondents

This chapter presents the profile of respondents with regard to their age, sex, family size and experience, level of education, dependency ratio, access to extension service, access to roads and access to market.

4.3.1 Demographic Characteristics of the fishermen

As presented in Table 4.1, from the total fish producers only 6% of them were female headed households with the lion's share of them (99.4%) being male-headed ones. This is perhaps the fact that the fishing sub-sector is operated using less sophisticated technologies (E.g. in terms of using manually operated boats than motorized boats) and has a high life-risk in case of a blowing wind, which both demand more physical labor that make it difficult for women. Therefore, this implies that entry for women headed households to fish production is difficult.

On the other hand, close to 98% of the fishers were Orthodox Christian since the area is dominantly inhabited by Orthodox followers. Regarding education level of the fishers, about 81% of them were illiterate showing that the sub-sector is not as such attractive for those who have formal education.

Table 4.1: Demographic Characteristics of Fish Producing Households

| Variables | Category | Frequency | Percent |
|----------------|------------|-----------|---------|
| Sex | Male | 165 | 99.4 |
| | Female | 1 | 6 |
| Religion | Orthodox | 161 | 97.6 |
| | Catholic | 4 | 2.4 |
| Education | Illiterate | 32 | 80.7 |
| | Literate | 134 | 19.3 |
| Marital status | Single | 59 | 35.5 |
| | Married | 99 | 59.6 |
| | Divorced | 6 | 3.6 |
| | Windowed | 2 | 1.2 |

Source: Own survey result (2016)

4.3.2 Means of livelihood

Fishing is considered as a subsidiary activity since the benefits extracted does not fully support families' expenditure. As a result, fish producing households are engaged in other livelihood activities. The study enquired the different sources of incomes and ranked them based on fishers' declaration (Table 4.2).

Table 4.2: Major Means of income for fish producing households

| Income source | Frequency | Percent | Ranking based on importance |
|----------------------|------------------|----------------|------------------------------------|
| Wage employment | 33 | 53.2 | 1 |
| Petty trading | 14 | 22.6 | 2 |
| Remittance | 10 | 16.1 | 3 |
| Other sources | 5 | 8.1 | 4 |

Source: own survey result (2016)

The result shows that wage employment is the most important source of income for those households engaged in fishing followed by petty trading. This sheds light about the development of the fishing sub-sector; despite its enormous potential to serve as source of employment and income generation, the fact on the ground shows that it cannot even support to make a living for those who practice it. This is perhaps related to the low level of production efficiency per effort of catching, which may be again linked to the different types of constraints that the fishers face. The key informants explained that production of fish in Lake Tana has declined substantially in recent years due to infestation of the Lake by a weed species and due to the use chemicals to eradicate the weed that invaded the Lake, fishery resources of the Lake have declined. As a result, fishing became a subsidiary livelihood activity as it can't support the expenditures of fishers. The study has enquired and investigated the different type's challenges, which are presented in the subsequent sections.

4.3.3. Access to extension service

Access to extension advice is an important service that improves the production efficiency of fishers per catch effort. The results presented in Table 4.3 shows that only a small proportion of the fishers had extension contact at least once in a week to get important advices regarding fish production. The majority of them had either not contact at all (about 56%) or received extension advice only once in a month, once a year and twice per year (about 23.3%). This shows the

limited extension support that the households who are engaged in fishing received, which partly supports the discussion made the preceding section.

Table 4.3: Frequency of Extension Contact

| Frequency of Extension contact | Frequency | Valid percent |
|--------------------------------|-----------|---------------|
| No contact at all | 91 | 55.8 |
| Weekly | 2 | 1.2 |
| Once in two weeks | 5 | 3.07 |
| Once in a month | 8 | 4.9 |
| Twice a year | 24 | 14.72 |
| Once a year | 6 | 3.7 |
| Any time I ask them | 27 | 16.6 |
| Total | 163 | 100 |

Source: own survey result (2016)

4.3.4 Access to market and road infrastructure

Access to market infrastructure and road infrastructure is an important incentive for fish producing households. This was measured in terms of the number of hours that fishers have to travel to reach to the nearest market place, the time they have to travel from their residential site to landing site and the time they have to travel from their homes to reach to all weather roads (before reaching to the landing site). The mean number of hours that fishers have to travel to reach to the nearest market place is about one hour. They have to travel, on average about two hours to reach to landing site from their homes (Table 4.4). This means that the fish caught will not be fresh to the consumers given the fact that fishers do not have refrigerator to avoid spoilage. This will reduce the amount of price that fishers receive. Again this adds to the list of challenges that the sub-sector faces in the study area.

Table 4.4: Access to market service

| Indicator | Mean | Std. Dev |
|---|--------|----------|
| Distance to from landing site to nearest market (hr) | 1.0207 | 0.79565 |
| Distance to all weather road from resident to landing site (hr) | 1.5576 | 0.51028 |
| Distance from resident to landing site (hr) | 1.8541 | 3.60446 |

Source: own survey result (2016)

4.3.5 Access to and use of credit availability

Table 4.5: Access to and use of credit availability

| Category | Response | Frequency | Percent |
|-------------------|---------------------------------|-----------|---------|
| Access to credit | Yes | 106 | 86.2 |
| | No | 17 | 13.8 |
| Source of credit | Commercial bank | 3 | 4.6 |
| | NGO | | |
| | Family and friends | 39 | 60.0 |
| | Other | 65 | 35.4 |
| | Microfinance institution | | |
| Purpose of credit | To purchase fish material | 72 | 62.1 |
| | To purchase preserving material | 21 | 18.1 |
| | To hire labor | 23 | 19.8 |
| | Other | | |

Source: Own survey result (2016)

Credit access is important or much more required to purchase and fulfill fishing materials/equipment's input and output marketing arrangement such as fishing net, and motorboat etc. The study result indicated (Table4.5) show that 86.2 percent of fishermen had better access and 13.85% have not access. The major source of credit those who received were relatives 60% the remaining 35.4 and 4.6 percent are other source and commercial bank respectively. The study results shown that the purpose of the credit to purchase fish material 72(62.1%), to purchase preserving material 21 (18.1%) and to hire labor 23 (19.8%) respectively.

4.3.6 Problems of fish market

Table 4.6: problems of fish market

| Type of problem | Frequency | Percent |
|---------------------------|-----------|---------|
| Inaccessibility of market | 57 | 52.8 |
| Low price offered | 34 | 31.5 |
| Lack of information | 14 | 13.0 |
| Other | 3 | 2.8 |

Source: own survey result (2016)

As shown from (Table 4.6) above 57(52.8%) respondents responded that Inaccessibility of market the problem of fish market , while 31.5, 13.0, and 28 percent of the respondent said that low price offered, lack of market information and other are respectively the problem of fish market.

4.4. Socio-Demographic Characteristics of Traders

Table 4.7: Socio-Demographic Characteristics of trader

| Variable | Category | Frequency | Percent |
|-----------------------|-------------|-----------|---------|
| Sex | Female | 19 | 29.4 |
| | Male | 45 | 70.3 |
| Main occupation | Retailer | 38 | 58.4 |
| | Wholesaler | 5 | 7.8 |
| | Processor | 11 | 17.2 |
| | Collector | 10 | 15.6 |
| Partnership/Alone | Alone | 39 | 62.9 |
| | Partnership | 23 | 37.1 |
| Trade other than fish | Yes | 38 | 63.3 |
| | No | 22 | 36.7 |

Source: own survey result (2016)

The analysis on this demographic characteristics highlighted that, about 19(29.4%) of traders are female and all the rest are male i.e.45 (70.3%). The study result in (Table4.7) shows that 38(58.4%) are retailer, 5(7.8) are wholesalers, 11(17.2) processors, and 10(15.6%) are collectors. Presented main occupations of the trader are retailer, wholesaler, processor and collector and the trader engaged other than fish trading is 63.3 percent. The trading activity 39(62.9%) are done own and while partnership 23(37.1).According to the result of the study majority of the respondents are male, retailer and traders other than fish.

4.4.1. Financial Capital of Traders

Table 4.8: Financial capital of trader

| Source of working capital | Frequency | Percent |
|---------------------------|-----------|---------|
| Own | 16 | 25.8 |
| Loan | 23 | 37.1 |
| Gift from family/relative | 6 | 9.7 |
| Share | 11 | 17.7 |
| Other | 6 | 9.7 |

Source: own survey result (2016)

The source of working capital might be own funds, loan, gift from family or relatives, share and other. The study result (Table 4.8) shows that 16 (25.8%) of sample traders source their working capital from their own funds while 23 (37.1%) of them had to take loans the remaining 9.7%, 17.7% and 9.7% of sample traders source their working capital from gift, share and other source respectively.

4.4.2 Market information for trader

Table 4.9: Source of market information by trader

| Variable | Category | Frequency | Percent |
|------------------------------|----------------------|-----------|---------|
| Market information | Yes | 54 | 85.7 |
| | No | 9 | 14.3 |
| Source of market information | Other trader | 21 | 38.9 |
| | Cooperative | 8 | 14.8 |
| | Through telephone | 9 | 16.2 |
| | Personal observation | 6 | 11.1 |
| | Radio | - | - |
| | Brokers | 3 | 5.6 |
| | Others | 7 | 13.0 |

Source: our survey result (2016)

Market information systems, particularly for agricultural commodities (broad sense) are not easy to implement effectively. Too often, the information is not current or does not include sufficient detail on product characteristics. In addition to the normal supply, demand and location factors that influence prices, fish prices vary depending on quality, size of fish (different size fish may have different per kg prices), how it has been prepared (filleted, gutted, headed, skinned etc.) and time of sale (fresh fish usually trades at a discount later in the day) (Goorden et al, 2007). Timely and accurate market information improves the knowledge of buyers and sellers concerning supply and demand enhance market information. The survey result (Table4.9) shown that, about 54(85.7%) of the respondent had enough information about marketing and the reaming 9 (14.3%) has no information regarding fish marketing. Regarding to the study the source of information 38.9 percent of traders source from other trades and while the reaming 14.8, 16.2, 11.1, 5.6, 13.0 percent through cooperative, telephone, personal observation, radio, broker and other source respectively.

4.5 Structure, conduct and performance of fish market in Lake Tana

4.5.1 Market participants, their roles and linkages

In this study, different fish market participants were identified in the exchange functions of the product between the producers and the final consumer. Market structure describes the fish market actors, their roles and linkages in the value chain of fish production and marketing. Market participants in the study areas include producers, wholesalers, retailers, collectors, and consumers/processors of the product.

Producers: are the primary or first link actors who cultivate and supply fish to the market. Since the products are very seasonal and perishable in nature, producers sell their produce immediately after harvest either at the Kebele or in Bahir Dar market. After catching the products are handed to the local collectors, retailers, wholesalers and a limited amount is sold directly to consumers. Similarly, due to lack of adequate, reliable and timely market information, fishers usually dispose their produce at low selling price.

Wholesalers: are major buyers of fish product with a better financial and information capacity. They are actors in the channel and they purchase fish either directly from fishers (producers) or from local collectors to procure large amount of fish to Bahir Dar market.

Retailers: are market actors which have direct contact with consumers. They are known for their limited capacity financial and information capacity. Besides, these are the ultimate actors in the market chain that purchase and deliver fish to consumers. The study identified that most retailers operating in the study area are not licensed to sell fish. Only 10.9% of the retailers in the study area are licensed. These unlicensed retailers sell fish products at lower price compared to other market actors engaged in fish supply to the consumers. Thus, the consumers access fish products at a comparatively better price from the retailers. Details about profit margins are discussed in the market performance section.

Urban collectors: are small and informal traders who usually buy fish from producers and make it available to consumers through processors. Collectors are not also licensed.

Consumers: are end users of the fish caught. From the consumers' point of view, the shorter the marketing chain, the more likely is the retail price going to be affordable.

Processor: are hotels and restaurants that provide processed fish food to the end users in the city of Bahir Dar.

In the study, the following five different fish marketing channels were investigated in Lake Tana.

Table 4.10: Types of fish market channels and their description in Lake Tana

| Channel | Chain | Description |
|-------------|--|--|
| Channel I | Producer→Consumer | Consumers buying fish directly from producers |
| Channel II | Producer→Retailer→Consumer | Retailers collect fish from producers then supply it to consumers |
| Channel III | Producer→Processor→Consumer | End users buying processed fish food from hotels and restaurants |
| Channel IV | Producer→Wholesaler→Consumer | Consumers buying fish from wholesalers after the wholesalers collect the fish catch from producers |
| Channel V | Producer→Urban collectors→Wholesalers→Processor→Consumer | Consumers buy processed fish product from hotels and restaurants through urban collectors |

Source: Own construction from survey data (2016)

As presented in Figure 4.1, marketing channel V is the dominant marketing channel that clears up about 61% of the total fish catch by the producers. Marketing channel II takes the second position in terms of channeling about 19% of the total fish catch from producers to final

consumers. Consumers do also buy fresh fish products directly from producers, which was estimated to constitute about 14% of the total fish catch. While restaurants in Bahir Dar city commonly buy fish products from wholesalers, they do also buy directly from producers but in terms of proportion, it accounts only 6.7% of the total catch.

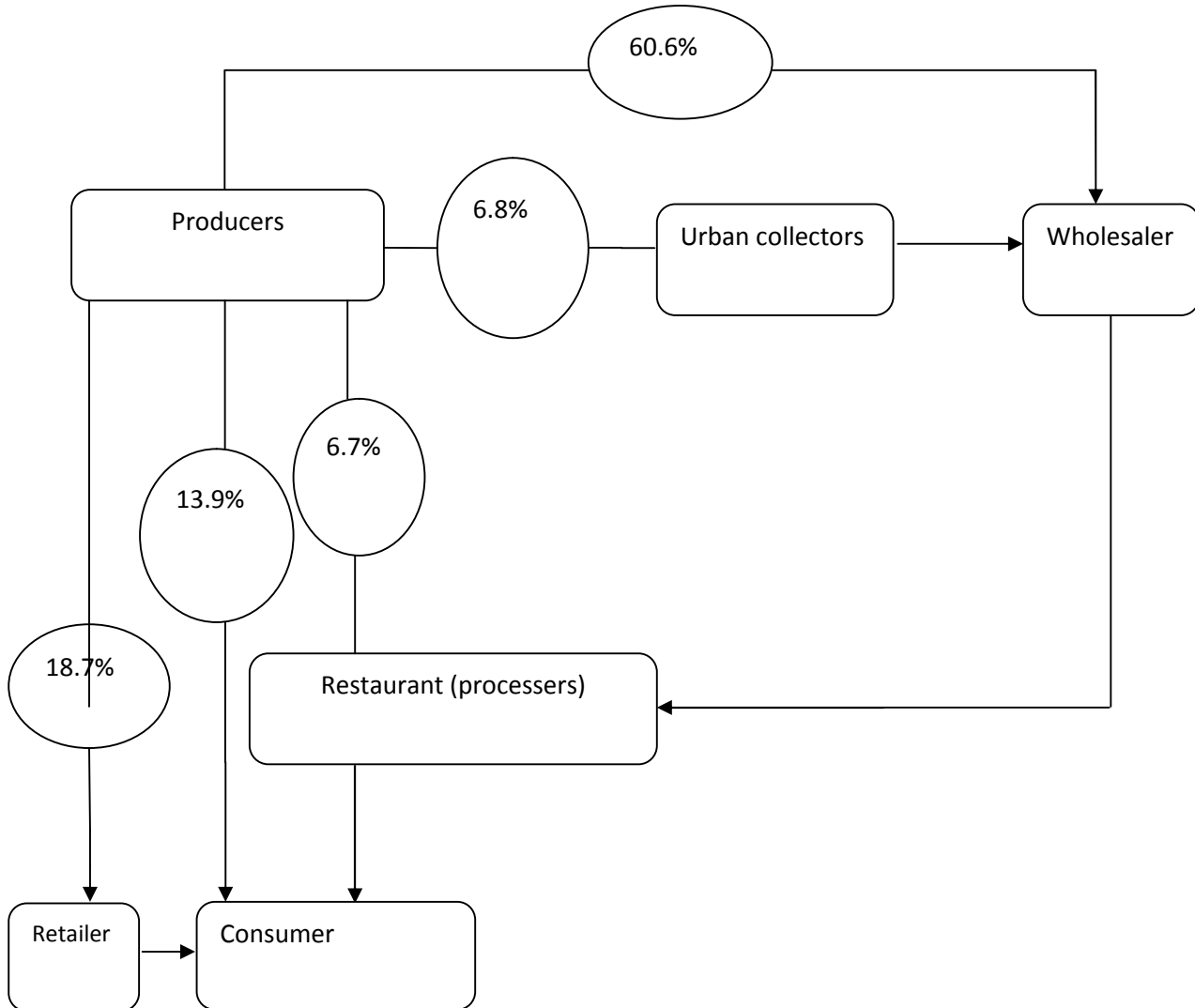


Figure 4.1: Fish marketing channels in Lake Tana

Source: Own Survey result

4.5.2 Fish market structure in Lake Tana

Market structure shows the degree of seller and buyer concentration, the magnitude of product differentiation and the condition of entry and exit to the market (Koch, 1980). Accordingly, fish market structure in Lake Tana is assessed based on market concentration ratio, conditions of entry into and exit from the market and flow of market price information within markets. Lack of

working capital and barriers are used as indicators to examine the fish market structure in Lake Tana.

The degree of market concentration: Market concentration refers to the number and relative size distribution of buyers and sellers in the market. For an efficient market, there should be sufficient number of firms (buyers and sellers), firms of appropriate size to fully capture economies of size and full market information. Accordingly, concentration ratio was calculated for fish market by taking 64 valid sampled cases from traders in Bahir Dar market. Concentration was calculated by collecting information about the volume of fish purchased by traders in 2007 E.C. from fish producers. The result shows that in Bahir Dar market only the four largest traders handled 27% of the total volume of fish supplied to the market. Kohls and Uhl (1985) explained that a market structure with this degree of concentration can be labeled as weak oligopoly, and thus the fish market exhibits a competitive nature.

Barriers to entry and exit: The barrier to entry to the market refers competitive relationships between traders. If there are no barriers or the barrier to entry is low, new traders can enter easily into the fish markets and compete with traders and if the barriers to entry are strong or high firms are difficult to stay in the business. The study result indicated that there is no entry barrier or no licensing procedures from the producer side. This is typically true for an open access resource in which there is no ownership right for anyone. However, from the trader side there are barriers to entry in fish market. The survey indicates that shortage of product supply, weak/poor information flow, theft, lack of access to credit and capital shortage are the barriers to entry. Among the barriers, shortage of product supply and lack of information were the most critical challenges that create barriers to entry to fish market (Table 4.11).

Table 4.11: Major Marketing Problems of Traders

| Problem | Frequency | Percent |
|--------------------|------------------|----------------|
| Shortage of supply | 32 | 50.0 |
| Theft | 7 | 11.1 |
| Information flow | 12 | 19.0 |
| Capital shortage | 4 | 6.3 |
| Access to credit | 8 | 12.7 |

Source: own survey result (2016)

4.5.3. Market conduct of fish market in Lake Tana

Market conduct refers to the exchange practice and pricing behavior of the marketing firms that make up the industry. It helps to examine the influence of the existing market structure on the market conduct and the bargaining power of marketing actors in the marketing system. In this study the market conduct of firms in the sub-sector was analyzed using information like selling and buying behavior and price setting strategy of traders following the recommendation of Janko (2015).

Producers' market conduct: the survey result pointed out that supply of fish from Lake Tana increases in the months of March to August. Due to absence of modern post-harvest handling practices and lack of storage facilities that are furnished with cold rooms or refrigerators, producers sell their produce at prevailing prices and thus they are price takers than setters. This affected their bargaining power during the sale of fish. Wholesalers and cooperatives put pressure on fishermen/producers to buy the produce at prices they set.

Traders' market conduct: Based on the survey result, brokers were not among the market actors in fish marketing channels in the study area, and thus they don't affect the conduct of the market. The fish traders purchase fish either directly from producers at Kebele level or channels excluding brokers. Price setting mechanism is also worth considering in fish marketing. While about 82% of the traders claim that the purchase price of fish is determined by demand and supply, only 48% the producers agree about the power of demand and supply in determining fish price (see Table 4.12a and 4.12b). The discrepancy between the sellers and buyers in terms of who determine price of fish comes from the fact that during pick supply seasons (March to August), the producers have the view that they are simply price takers due to the perishable nature of the product.

Table 4.12a: Who sets/decides the selling price?

| Response from fishers | | |
|-----------------------|-----------|---------|
| Actor | Frequency | Percent |
| Me/own | 39 | 23.6 |
| Buyer | 9 | 5.5 |
| Demand and supply | 79 | 47.9 |
| Negotiation | 33 | 20.0 |
| Others | 5 | 3.0 |
| Total | 165 | 100 |

Source: Own survey (2016)

It is also interesting to note that about 24% the fishers believe that they set the fish price than being governed by the forces of demand and supply. This holds true during slack seasons when the supply of fish declines and traders are simply price takers.

Table 4.12b: Who sets/decides the buying price?

| Response from traders | | |
|------------------------------|----|------|
| Own | 4 | 6.6 |
| Buyer | 6 | 9.8 |
| Demand and supply | 50 | 81.7 |
| Other | 1 | 1.63 |
| Total | 61 | 100 |

Source: own survey result (2016)

4.5.4. Analysis of fish market performance

Market performances for all the five market channels described in Table 4.10 were analyzed by estimating the marketing margin and by taking into account associated marketing costs. This was done by estimating production costs and purchasing prices of major market participants.

Marketing margin

Fish market performance was analyzed by estimating the marketing margin. Total marketing margin is the difference between what the consumer pays and what the fishers/producers receive, or the difference between retail price and farm gate price. If there is high margin in the market, consumers will be charged with high price and producers will receive low price for their produce (Mendoza, 1995).

Table 4.13: Marketing margin of traders in different fish marketing channel in Bahir Dar

| Market actors | Indicator | Revenue (in ETB) for each marketing channels | | | | |
|---------------|--------------------|---|-------|-------------|-------|--------------|
| | | I | II | III | IV | V |
| Producer | Selling price/head | 65 | 45 | 45 | 45 | 65 |
| | TGMM% | 100 | 17.6 | 38.9 | 12.80 | 33.88 |
| Retailer | Selling price/head | - | 65 | | - | - |
| | Margin/fish | - | 20 | | - | - |
| | TGMMr% | - | 17.61 | | - | - |
| Processor | Selling price/head | - | - | 75 | - | - |
| | Margin/fish | - | - | 30 | - | |
| | TGMMp% | - | - | 38.9 | - | - |
| Collector | Selling price/head | - | - | - | 65 | |
| | Margin/fish | - | - | - | 20 | - |
| | TGMMc | - | - | - | 12.80 | - |
| Wholesaler | Selling price/head | - | - | - | - | 75 |
| | Margin/fish | | | | | 10 |
| | TGMMw% | | | | | 33.88 |

Note: (1) TGMM= Total Gross Marketing Margin (in %), which is the marketing margin as a percentage of final consumer price; (2) TCMMR=Assemblers' Retailers Portion of the Total Channel Marketing Margin (in %); (3) TCMMW= Wholesalers' of the Total Channel Marketing Margin (in %); (4) TCMMC= Collectors' Portion of the Total Channel Marketing Margin (%); and (4) TCMMp= Processors' portion of Total Channel Marketing margin (in %).

Source: own survey result (2016)

The survey result indicates that selling price of fish for channel I, II, III, IV, and V are ETB65, ETB45, ETB45, ETB45 and ETB65 respectively. Total marketing margin is thus calculated by deducting buying price from selling price and by dividing it with the selling price. In channel I, the consumer price and farmer selling price are equal because this connects the producer directly with the consumers. The TGMM is increases as the market chain increases, which means the average price charged from the consumers will be high. The results presented in Table 4.13 shows that, market channels III and V charged the consumers with high TGMM as captured in the shaded cell of the table.

Taking further the level of analysis, the study examined the performance of the market for each fish market actors by calculating the net profit earned. The result is presented in Table 4.14. Average cost is calculated by dividing the total sum of costs incurred for cost categories such as fish buying cost, transportation, cleaning, sorting and service fee, storage, loading and unloading and other miscellaneous expenses and by with the total kilogram of fish purchased by each fish market actor (Annex 4.2).

The average earning is calculated for each fish market actor, and net profit is then estimated. The survey result presented in Table 4.14 revealed that except the urban collectors, retailers, wholesalers and processors earned about 8% – 37% profit for each unit of money they invested in the marketing of fish in Bahir Dar. While the profit level of processors and wholesalers is the same, those of retailers are comparatively lower than the profit earned by wholesalers and processors. As discussed earlier, retailers sell their purchase at a relatively cheaper price to the consumers than wholesalers and processors, and thus their profit margin is lower. Urban fish collectors that supply fish to processors or wholesalers, on average, found to incur 7.2% loss of income for each unit of invested money (Table 4.14). The collectors never use ice-box to preserve the produce and rejection rate by processors and wholesalers is very high. As a result, they are the net losers. Although retailers also do not use ice-box, since they supply their produce directly to the consumers, the chance of rejection is very small.

Table 4.14: Magnitude of profit earned by fish market actors for each market channels in Lake Tana

| | II | III | IV | V |
|--|--------------|---------------|--------------|--------------|
| Mean retailer's purchase price (ETB/Kg) | 61.80 | | | |
| Average cost (ETB/Kg) | 7.77 | | | |
| Average selling price (ETB) | 75 | | | |
| Profit (ETB) | 5.43 | | | |
| % of profit for each unit of money invested | 7.80% | | | |
| Mean processor's purchase price (ETB/Kg) | | 45 | | |
| Average cost (ETB/Kg) | | 8.75 | | |
| Average selling price (ETB/Kg) | | 73.65 | | |
| Profit | | 19.90 | | |
| % of profit for each unit of money invested | | 37.02% | | |
| Mean collector's purchase price (ETB/Kg) | | | 65 | |
| Average cost (ETB/Kg) | | | 14.63 | |
| Average selling price (ETB/Kg) | | | 73.87 | |
| Profit (ETB/Kg) | | | -5.76 | |
| % of profit for each unit of money invested | | | -7.2% | |
| Mean wholesaler's purchase price (ETB/Kg) | | | | 48.58 |
| Average cost (ETB/Kg) | | | | 4.97 |
| Average selling price (ETB/Kg) | | | | 73.47 |
| Profit (ETB) | | | | 19.92 |
| % of profit for each unit of money invested | | | | 37.1% |

Note: % of profit for each unit of money invested=Selling price minus total cost divided by total cost time 100

Source: own survey result (2016)

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

This study was conducted to analyze fish market chain in Lake Tana, Bahir Dar. Five value chain actors and five market channels were involved in the fish market chain of the study area. The market chain actors identified were producers/fishers, retailer, collectors, wholesalers, processor or consumers. Fish market chain was examined following the framework of market structure, conduct and performance. In the evaluating the market performance of each actors and market channels, costs and benefits were estimated. The result showed that the total gross revenues were high for market channel III and V. In terms of net profit, wholesalers and processors earned about 37% of each unit of money they put in the fish marketing while retailers earned close to 8% of invested money as a profit. Consumers access fish at reasonable price when either they buy it directly from the fishers and when they buy it from the retailers. The wholesalers and processors who collect from urban collectors have stringent hygienic criteria to make sure that the supply from the collectors is fresh and not spoiled. As a result, the urban fish collectors were the net losers in the fish market value chain because of constraints they face in relation to fish preservation/storage and transportation.

Fish market structure in the study area was measured using market concentration ration. The concentration ratio was calculated by taking four sampled cases from wholesalers, retailers, collectors, and processors from Bahir Dar markets. The result indicated that the first four largest suppliers of fish constitute only 27% of market share which indicates existence of weak oligopolistic market structure. This implies that the fish market is relatively competitive. This was further strengthened by the responses from fishers and traders that fish selling and buying prices are determined by the forces of demand and supply.

Fish production and marketing in the study area face several challenges and constraints. The most important market-related constraints that the traders identified were shortage of fish supply, lack of market information, prevalence of product and equipments theft, lack of access to credit and capital, and poor access to facilities.

5.2 Recommendation

Fish has a core contribution to nutrition, food security, and income and employment opportunity for land constrained society. To maximize the benefits from the sub-sector, production and marketing related challenges/constraints should be addressed through taking appropriate actions by relevant stakeholders. This includes technological applications (transportation, storage and preservation), capacity building and information supply through improved extension service, creating access to formal credit and fishing equipments.

Based on the descriptive statistics of the study result, the major problems of fish marketing was shortage of supply, information flow and access to credit. To solve this problem institutional support provided to the sector and the local government bodies should promote credit and saving for the non cooperative fishermen.

When we compare to meat and chicken production the contribution of fish production and productivity is still low. Because of the nature of the Production of fish is perishable. Its high risky business at the time of production. These may influence prices to fall down even below its harvesting input cost. By Promoting sector processing that can add value to these product is the means of minimizing loss of production or risks. The government or NGOs should subsidizing the sector by supplying ice cool and the micro finance should proved credit to small scale fisher men.

REFERENCE

- Africa Caribbean Pacific, 2013. Strengthening fisheries management in ACP Region, Eastern Africa Country: Ethiopia.
- Andrew K, 2008. Structure-Conduct-Performance and food security. *FEWS Net Market Guidance No. 2*, Washington DC: USA
- Alam, P., A. Mian and M. Deye, 2012. A Value-chain Analysis of International Fish Trade and Food Security with an Impact Assessment of the Small-scale Sector. A report submitted to the Food and Agriculture Organization, FAO: Rome.
- Ayelech Tadesse. 2011. Market Chain Analysis of Fruits for Gomma Woreda, Jimma Zone, Oromia National Regional State. An MSc Thesis Presented to School of Graduate Studies of Haromaya University.
- Awol, Z. K., 2010. Analysis of poultry market chain: the case of Dale and Alaba special woredas of SNNPRS, Awasa, Ethiopia.
- BCLME, 2006. Market analysis of major fish product markets in the Benguela: Markets in the Benguela current large marine ecosystem, University of Cape Town, South Africa.
- Chekol, A. A., 2013. Management and Livelihood Opportunity of Lake Tana Fishery, Ethiopia: The need for co-management. Master thesis submitted to the Arctic University of Norway, in partial fulfillment of the requirement of MSc in International Fishery Management, Tromso, Norway.
- De Silva, D.A.M., 2011. Value chain of fish and fishery products: origin, functions and application in developed and developing country markets. FAO: Rome.
- Dagne, A., 2012. Overview of Sebeta National Fishery and other Aquatic Life Research Center, Sebeta, Ethiopia.
- Forum for Environment, 2010. Solid waste characterization and quantification of Bahir Dar city for development of an ISWM plan.
www.unep.or.jp/ietc/gpwm/data/t3/is_7_3_wastecq_bihardar.pdf Accessed on 06 June 2016.
- FAO, 2015. Part I of the Fishery and Aquaculture Country Profile, FAO Country briefs. FAO: Rome.
- FAO, 2015. Nutrition-sensitive aquaculture: a timely initiative, aquaculture newsletter, FAO: Rome.

- FAO, 2003. Structure and Characteristics of the Fishing Industry Ethiopian Custom Authority, FAO: Rome.
- FAO, 1995. Country information Brief Fisher development programmers. Fishery Resources and Programmers, FAO: Rome.
- FAO, 2014. Part II of the Fishery and Aquaculture: Ethiopia Country Report, FAO: Rome.
- Gebremeskel, D., T. S. Jayne. and J. D. Shaffers, 1998. Market Structure, Conduct, and Performance: Constraints on Performance of Ethiopian Grain Markets. *Working Paper, No.8*, Grain market Research Project, MEDAC, Addis Ababa.
- Gordon, A., 2007. Marketing systems for fish from Lake Tana, Ethiopia: Opportunities for marketing and livelihoods, World Fish/ARARI (World Fish Center/Amhara Region Agricultural Research Institute, Bahir Dar, Ethiopia.
- Hanekom, J.W., B.J. Willemsse and D.B. Strydom, 2010. Structure, Conduct and Performance in the South African Potato Processing Industry Contributed Paper presented at the Joint 3rd African Association of Agricultural Economists (AAAE) and 48th Agricultural Economists Association of South Africa (AEASA) Conference, Cape Town, South Africa, September 19-23, 2010
- Hanekom W., B.J. Willemsse and D.B. Strydom, 2010. Structure, Conduct and Performance in the South African Potato Processing Industry. A paper presented at the AEASA African conference, Cape Town,, South Africa.
- Janko A., M., 2015. Fish Marketing Chains Analysis Zeway Fisheries Resources Research Center in some Water Bodies of Oromia National Regional State, Ethiopia
- Kawarazuka, 2010. The contribution of fish intake, aquaculture, and small-scale fisheries to improving nutrition: A literature review. *Working Paper No. 2106*. The World Fish Center, Penang, Malaysia.
- Kleih, U., P., Green and N., Oudwater, 2003. A Guide to the Analysis of Fish Marketing Systems Using a Combination of Sub-sector Analysis and the Sustainable Livelihoods Approach. University of Greenwich: UK.
- Koch, J.V., 1980. Industrialization and prices, 2nd Edition. London, UK: Prentice/Hall International.
- Kohls. R.L and J.N. Uhl, 1985. Marketing of Agricultural Products, 6th Edition, Macmillan Publishing Company. USA

- Kolter, P., 2012. Marketing management. 14 edition, Northwestern University publishing as Prentice Hall: New Jersey.
- Kariuki, M. B. J., 2011. Analysis of Market Performance: A Case of 'Omena' Fish in Selected Outlets in Kenya. A Thesis Submitted to the Graduate School of Egerton University, in Partial Fulfillment for the Requirements of the Master of Science Degree in Agricultural and Applied Economics, Egerton, Kenya.
- MOFED, 2015. The overall Economic Performance, Ministry of Finance and Economic Development (MoFED), Addis Ababa, Ethiopia
- Muhammed, U., 2011. Market Chain Analysis of Teff and Wheat Production in Halaba Special Woreda, Southern Ethiopia. M. Sc. Thesis submitted to Haramaya University, Haramaya, Ethiopia.
- Mendoza G (1995). A Primer on Marketing Channels and Margins, pp. 254-275. In: Scott Gregory. J (eds.). Price Products and People. International Potato Center. Lima, Peru.
- Nancy M. L. and J. M. Omiti, 2014. Market Structure and Price: An empirical analysis of Irish Potato markets in Kenya, A research report submitted to the Future Agricultures Consortium, University of Sussex, UK.
- Naser, F. and M. R., Sayedur, 2002. Market Structure and Price Determination of Food grains in Bangladesh, Bangladesh.
- Nonnecke, I., 1989. Vegetable Production. Van Nostrand Reinhold Library of Congress: New York.
- Robert S. Pindyck, 2012 Industrial Economics for Strategic Decisions Institute of Technology Market Definition and Concentration Massachusetts USA
- Reyntijens and Wudneh, 1998. Fisheries management: Overview of the current status and research needs in Ethiopia, Faculty of Science, Addis Ababa University, Ethiopia.
- Scarborough, V. and J. Kydd, 1992. Economic Analysis of Agricultural Markets: A Manual of Marketing Series 5, Chatham Natural Resource Institute: UK.
- Tomasz, B. 2006. Barriers to entry, division of barriers to entry, economy sections, barriers to entry in Polish economy, University of Szczecin, Poland.
- Tana Forum, 2015. Bahir Dar City Profile Physical Feature /Characteristics. Tana high-level forum on security in Africa tanaforum@ipss-addis.org. www.tanaforum.org Accessed 06 June 2016.

- Tony, B. 2010. The Market chain approach: Knowledge Note. <https://www.mfat.govz.nz/assets/-securedfiles/aid-prog-docs/tool-market-chain-approach-knowledge-note.pdf> Accessed 06 June 2016
- Wolday, A., 1994. Food grain marketing development in Ethiopia after reform 1990. A case study of Alba Seraro. PhD Dissertation presented to Verlag Costar University, Berlin.
- Yalew, A., 2012. Fish production, processing and utilization in the Lake Tana fisheries. Bahir Dar Fishery and Aquatic Life Research Center, Bahir Dar, Ethiopia.

Annex 4.1 Results of SWOT Analysis

The stakeholder analysis with fishermen and traders to assess strengths, weaknesses, opportunities and threats was conducted. For this study purpose, internal weakness and strengths of actors and external opportunities and threats are analyzed under categories of economic, social, technological, demographic and institutional themes.

SWOT analysis matrix

| Strength | Weakness |
|---|---|
| <p>Resource</p> <ul style="list-style-type: none"> • Increasing telecom service • Potential for fish production • Accumulated traditional knowledge | <p>Production</p> <ul style="list-style-type: none"> • poor value addition technology • absence or poor harvest technology • Not equal base treatment • Low price • Shortage of row material • Shortage of fish management practices |
| <p>Marketing</p> <ul style="list-style-type: none"> • Employment creation • Payment received at delivery • Rare information communication • Multiple customers | <p>Marketing</p> <ul style="list-style-type: none"> • Bad reputation for quality • Poor market information system • Lack of credit service • Lack of strong cooperatives • High cost of landed fish |
| <p>Opportunity</p> | <p>Threats</p> |
| <p>Production</p> <ul style="list-style-type: none"> • Potential production area • Cooperatives are organized • Scope of processing industry | <p>Production</p> <ul style="list-style-type: none"> • Fishermen are not satisfy the price that receive • high supply driven channel • lack of quality assurance mechanism |
| <p>Business environment</p> <ul style="list-style-type: none"> • High value fish • Prospect to provide assistance in technology • Transformation and development plan | <p>Marketing</p> <ul style="list-style-type: none"> • delay payment • low price • hiding of information • No credit extend • Resource and capacity constraints • lack of coordination • Poor technology dissemination • Weak extension support service |
| <p>Market institution</p> <ul style="list-style-type: none"> • Scope of value added product • Premium revenue for fish | |

Source: own survey result (2016)

Annex 4.2 Marketing cost (ETB) for different fish market actors in Bahir Dar

| Average cost (ETB/Kg) | Market actors | | | |
|---------------------------------------|---------------|-------------|------------|------------------|
| | Retailers | Wholesalers | Processors | Urban collectors |
| Labor to fill and stitch/Packaging | 0.49 | 0.41 | 0.48 | 0.86 |
| Loading | 0.56 | 0.063 | 0.2305 | 1.1 |
| Unloading | 0.53 | 0.063 | 0.357 | 0.86 |
| Transportation | 1.48 | 0.74 | 1.427 | 2.2 |
| Sorting | 0.37 | 0.50 | 0.42 | 0.82 |
| Taxes | - | - | - | - |
| Renting store | 0.35 | 0.32 | 0.29 | 0.67 |
| Storage loss | - | | - | - |
| Processing cost | 2.28 | 1.68 | 3.38 | 4.1 |
| Telephone expense | 0.15 | 0.05 | 0.1 | 0.25 |
| Travel expenses | 1.53 | 0.67 | 0.99 | 2.4 |
| Others costs | 0.03 | 0.47 | 1.1 | 1.4 |
| Total costs | 7.77 | 4.97 | 8.7745 | 14.66 |

Data source: Own survey (2016)

Appendix A: Data Collection instrument questioner
St. Mary's University

Institute of Agricultural Development studies
Department of Agricultural Economics Studies
Research questionnaire

Producer Interview Questionnaires'

Introduction

This survey instrument is designed to collect data for the purpose of research for the partial fulfillment of the requirement of MA thesis in Agricultural Economics Studies at St. Mary University. The aim of this study is academic and contributing the understanding of the fish market chain analysis of Lake Tana in Bahir Dar city. You are kindly requested to participate in \the questioner while being assured that any information shared will be confidential.

I. Area Information

- Keble _____ Village: _____
- Name of data collector _____
- Date _____
- Signature _____

II. Respondent Demographics History

1. Sex (1) male (2) female _____ Age _____ years.
2. Marital status of Respondent _____ (1) Single (2) Married (3) Divorced (4) Widows
3. Religion of the Respondent _____ (1) Orthodox (2) Protestant (3) Catholic (4) Muslim
4. Education level of Respondent? _____ (1) Literate (2) Illiterate
5. Level of schooling _____
6. Total number of family members? _____

III. Distance to market, road, and fish land site

1. Distance of your residence from the nearest market center in hr? _____hr
2. Is there all weather roads to your fish landing site? (1) Yes (2) No
3. If your answer is no, for Q2 how far is the road from the landing site? _____ hr.
4. is your product spoil before you sale or consume? (1)Yes (2) No
5. If your answer is yes, for Q 4 what is average Birr that is spoiled per trip?
_____Birr.
6. What are the reasons for the spoilage?
(1) The market is far (2) no means of transport (no road) (3) no ice-box (refrigerator)

IV. fish Production, Consumption, and Supply to Market

1. What is the common Type of fish product you catch for the market?
1. Labeu barbns 2.Aferican cat fish 3.Nile Tilapia
2. How much do you exploit/catch in average daily/kg? _____ ?
3. Income from fish marketing per daily?
(1) Maximum_____Birr/daily
(2) Minimum_____Birr/daily
(3) Average_____Birr/daily
4. Do you have Alternative Income other than fishing? (1)Yes (2) No
5. If the answer is yes,for Q 5 describe your source of income
(1)Labor sale (2) Petty-trade (3) Help of relatives from urban/abroad (remittance)
(4) Other, Specify_____
6. Who perform the activities related to fishing?

(1) I and my family (2) Laborers especially women (3) Laborers especially men

V. Access to Extension Service

1. Did you have extension contact in relation to fish production in the year 2007 E.C fishing season? (1) Yes (2) No

2. If the answer is yes, who provide the extension service?

(1) Development Agent (DA) (2) NGO's (3) other's specify _____

3. If yes, how often the extension agent contacted you specifically for fish production and marketing purpose in the year 2007?

(1) Weekly (3) Monthly (5). Once in a year
(2) Once in two week (4) Twice in the year (6) any time I ask them

4. What was the extension advice about? _

(1) Fishery resource management and utilization (2) Marketing of fish (3) Natural resource management and utilization (4) Livestock Keeping and Management

5. If the extension expert advice was on marketing of fish, what were the specific issues addressed?

(1) What to produce (4) how to maintain quality of the product
(2) When to produce (5) information on price differences by variety or quality
(3) How to/whom to sell (6) other (specify) _____

6. Have you received training on fishing before? (1) Yes (2) No

7. If yes, Q6 for how? _____ days

8. On what areas you have got trained?

(1) Fishing methodology (2) Fish preparation and consumption

- (3)How to make fishing materials (4) Fish product management and preservation
- (5)Manipulating fishing technology (6) Fish product marketing
- (7) Other's, specify

VI. Membership of cooperative

1. Are you a member of fishing cooperative? 1= yes 2=No
2. If your answer is yes, what is the name of the cooperative

3. Why you joined the cooperative?
 - 1=the cooperative provide better price
 - 2=the cooperative provide me with cheap inputs
 - 3= Provide guaranteed market outlet
 - 4= Give field service or technical assistance
 - 5= It makes timely payment
 - 6= others (specify)
4. all weather road distance _____km by foot _____hr

VII. Access to Credit

1. Have you used credit for fishing activities for last year's 2007? (1)Yes (2) No
2. If your answer is yes, for what purpose
 - (1) To purchase fishing materials (2) To purchase preserving material
 - (3) To hire labor (4) other's specify_____
3. What are your sources of credit? (1) Commercial Banks (2) NGO's (3) Family and friends
(5) Microfinance institutions (4) Other's specify_____
4. Was the loan you received enough to fulfill your objective? (1)Yes (2) No
5. If your answer for question number 1 is no, do you want credit for fishing activity?
 - (1) Yes (2) No

6. If your answer is yes, for what fishing activities? (1) To purchase fishing materials (2) To purchase preserving material (3) To hire labor (4) other's specif.

VIII. Market and Marketing Aspect

1. Amount of fish supplied to the market and market agents in 2007E.C?

Code 1.Labeu barbns 2.Aferican Cat 3.Nile Tilapia

| Name of actors | Clients/customers number | Type of Fish species fish product | Price/ kg | Supply size (%) |
|-----------------------------------|--------------------------|-----------------------------------|-----------|-----------------|
| Whole sellers | | | | |
| Retailers | | | | |
| Hotel/Restauran | | | | |
| Home consumption/individual buyer | | | | |
| Others | | | | |

2 How did you sale your fish in 2007? (1) Direct to the purchaser (2) Through broker (3) Through commission man to the purchaser (4) others (specify) _____

3. Who does buy your fish? (1) Retailers (1) Wholesalers (3) Fish producers and cooperative (4) Consumers

4. Did you face difficulty in finding buyers when you wanted to sell fish? (1) Yes (2) No

5. If yes, is it due to: (1) Inaccessibility of market? (2) Low price offered? (3) Lack of information? (4) Others (specify) _____

6. What do you do if you didn't get the expected price for your fish supply?

(1)Took back home (2) Took to another market on the same day (3) Sold at lower price

(4) Sold on other market day

7. Who sets your selling price for fish in 2007?

(1) You (2) Buyers (3) Set by demand and supply (4) Negotiations (5) others (specify)

8. When did you get the money after you sell to local collectors in credit?

(1) As soon as I sold (2) After some hours (3) on other- days (4) others (specify)

9. When did you get the money after you sell to retailers in credit?

(1) As soon as I sold (3) on other- days (2) After some hours (4) others (specify)

10. When did you get the money after you sell to wholesalers in credit?

(1) As soon as I sold (3) on other- days (2) After some hours (4) others (specify)

11. Fishery marketing challenge and opportunity

- Opportunity

- Challenge

Traders Interview Questionnaire

Introduction

This survey instrument is designed to collect data for the purpose of research for the partial fulfillment of the requirement of MA thesis in Agricultural Economics Studies at St.Mary University. The aim of this study is academic and contributing the understanding of the fish market chain analysis of Lake Tana in Bahir Dar city. You are kindly requested to participate in the questioner while being assured that any information shared will be confidential.

I. Area Information

- Keble _____ Village: _____
- Name of data collector _____
- Date _____
- Signature _____

II. Respondent Demographics History

1 Sex _____ Age _____ years.

2. Marital status of Respondent _____ (1) Single (2) Married (3) Divorced (4) Widows

3. Religion of the Respondent _____ (1) Orthodox (2) Protestant (3) Catholic (4) Muslim

4. Education level of Respondent? _____ (1) literate (2) Illiterate

5. Level of schooling _____

6. Total number of family members? _____

7. Main occupation (Multiple answers is possible)

(1) Wholesaler (2) Retailer (3) Processor (4) Farmer trader (village collector) (5) Urban collector

8. How do you undertake fish trade activity in 2007? (1) Alone (2) With partner

9. How long have you been in fish trading? _____years.

10. Do you participate in trading year round? (1) Yes (2) No.

11. If no, at what period of the year do you participate? (1) Year round (2) When purchase price becomes low (3) During high supply (4) Other (specify) _____

III. Capital

1. What was the amount of your initial working capital when you start this fish trade business?
_____Birr.

2. What is the amount of your current working capital in 2008E.C? _____Birr.

3. What is your source of working capital? (1)Own (2) Loan (3) Gift (4) Share (5) others (specify)_____

4. If it was loan, from whom did you borrow?

(1) Relative/family (2) Private money lenders (3) NGO. (4). Friends.

(5)Other traders (6) Micro finance institution. (7) Bank. (8)Others (specify)

5. How much was the rate of interest? _____ Birr for formal, _____for informal.

6. What was the reason behind the loan?

(1) To extend fish trading. (2). to purchase fish transporting vehicles/animals. (3). Others (specify)_____

7. How was the repayment schedule? _

(1) Monthly (3) Semi-annually (5) others (specify) _____

(2) Quarterly (4) when you get money

8. Is there change in accessing finance for fish trade these days?(1) Improved (2) Deteriorated (3). No change

9. Who will buy fish from you in (1) Wholesaler (2) Retailers (3) Household consumers (4).
Brokers (5) others _____

10. From where did you purchase fish in 2007?

(1) From village, name of village (specify) _____

(2) From market, name of market (specify) _____

IV. Marketing service

1. Is fish trading in your locality needs a trading license? (1)Yes (2) No

2. Did you have fish trade license? (1)Yes (2) No

3. Did you pay tax for the fish you purchased in 2007? (1)Yes (2) No

4. Did you pay tax for the fish you sold in 2007? (1)Yes (2) No

5. What is your opinion regarding the marketing fee paid in this market as compared to your
transaction? (1). Low (2) High (3) Average (4). You don't know

6. Did you store fish before you sold in 2007? (1)Yes (2) No

7. If yes how long did you store fish in the store?

Maximum for _____Hrs or/days.

8. Amount of fish lost due to storage ----- br.

9. Indicate your average cost incurred the trading process of fish in 2007.

| Cost of Marketing | Birr/kg |
|---|----------------|
| | Fish |
| Purchas price of fish per kg | |
| Labor employed to fill and stitch/Packaging | |
| Loading | |
| Unloading | |
| Transportation: Vehicle Cart Human labor | |
| Sorting | |
| Taxes | |
| Renting Store cost | |
| Storage loss | |
| processing cost | |
| Telephone expense | |
| Personal travel & other expense | |
| Others (specify) | |
| Total costs | |
| fish Purchasedfrom 1.Producer2.Urbanassembler3.Farmercollector4.Wholeseller 5.Retailer 6.Cooperatives7.Others(specify) | |

10. Do you practice trading other than fish? (1) Yes (2) No

11. Number of market days in a week? _____

12. What amount of the total produce is sold on local market in 2007? Fish _____ Birr

13. What amount of the total produce is sold on Bahir Dar market in 2007
14. How did you sale your produce in 2007? (1)Direct to the purchaser (2) through broker
(3)Other (specify) _____
- 15 Who sets the price in 2007? (1)Myself (2) Set by demand and supply (3) Buyers (4).Other

16. How did you set price? (1) Set at time of advance given (2) Negotiated at delivery (3) At
time of delivery (4) Others_____
17. If purchasing price was set at the time of advance given, how did you agree?
(1) Orally (2) Written agreement
18. When did you get the money after sale? (1)As soon as you sold (2) after some hours
(3) On the other day after sale (4) other (specify) _____
19. Did you get market information? (1) Yes (2) No
20. If your answer is yes from where did you get market information?
(1) Other traders (2) Cooperatives (3) Through Telephone (4) Personal observation (5) Radio
(6) Brokers (7) others (specify) _____
21. Do you carry out any physical treatment to maintain product quality? (1) Yes (2) No
22. What do you do, if the product is not sold on time? (1)Took back home (2) Took to another
market (3) Sold it at lower price (4) Sold on other market day
23. How do you attract suppliers? (1) Giving better price (2) By visiting them (3) Fair scaling
/weighing (4) other
24. Amount of fish purchase 2007 in Birr_____
25. Who purchase fish for you in 2007? (1) Myself (2) Broker (3) Commission agent

(4) Family members (5) Friends (6) Others_____

25. What amount of fish purchase in 2007?_____

26. What are the tricks that traders use when selling fish to intermediaries?

1. Infrastructure
2. Shortage of supply
3. Storage problem
4. Theft
5. Information Flow
6. Capital Shortage
7. Access to credit
8. Lack of demand
9. Too much competition with licensed traders
10. Farmers reluctance to sell due to lower price
11. Telephone expense
12. Other specify

. Suggest solutions to overcome the problem

1. _____ -
2. _____

Thank you

ቅድስተ ማርያም ዩኒቨርስቲ
የግብርና ኢኮኖሚና ልማት ተቋም
አግሪካል ቸራል ኢኮኖሚክስ

የዓሳ አምራቾች መጠይቅ

መግቢያ

I. የአካባቢ መረጃ

- የመኖሪያ አድራሻ:- ቀበሌ _____ መንደር _____
- የመረጃ ሰብሳቢ ስም _____
- መረጃው የተሰጠበት ቀን _____
- ፊርማ _____

II. የመልስ ሰጭ ጠቅላላ ሁኔታ

1) ያታ _____ እድሜ _____ በዓመት::

2) የመልስ ሰጪ የጋብታ ሁኔታ

1. ያላገባ

3. የተፋታ

2. ያገባ

4. የሞተበት

3) የመልስ ሰጭ ሃይማኖት

1. ኦርቶዶክስ

3. ሙስሊም

2. ፕሮቴስታንት

4. ካቶሊክ

4) የመልስ ሰጭ የትምህርት ደረጃ

1. የተማረ

2. ያልተማረ

5) የተማረ ከሆነ የትምህርት ደረጃ ስንት ነው-----

III. ከገበያ እና ከመንገድ ያለው ርቀት

1. ከመኖሪያ ቤትዎ ወደሚቀርበው ገበያ ያለው ርቀት በኪ.ሜ _____

2. በጋ ከክረምት የሚሠራ የመኪና መንገድ ወደ ዓሳ ማስገራያው ቦታ የሚያደርስ መንገድ አለ?

1. አዎ

2. የለም

3. ለጥያ ቁጥር 2 መልስ የለም ከሆነ ወደ ዓሳ ማስገራያው ቦታ ለመሄድ ከመንገዱ ምን ያክል ርቀል? _____ በሰአት::

4. ምርት ከሽያጭ ወይም ከመጠቀም በፊት ለብክለት ተጋልጦ ያቃል?

1. አዎ

2. የለም

5. ለጥያቄ ቁጥር 4 መልስ አዎ ከሆነ በአማካኝ በአንድ ጉዞ በገንዘብ ምን ያህል ይበላሻል ? _____ ብር

6. ለመበላሸት ምክንያት ምንድን ናቸው ?

1. የገበያ መራቅ 2. ትራንስፖርት (መንገድ) አለመኖር 3. ማቀዘቀዣ አለመኖር

IV. የአምራቹ የኢኮኖሚ ሁኔታ

1. ለገበያ የምታቀርቡት የዓላ ምርት ዓይነት 1.ነጨ አሳ 2. ቀይ አሳ 3. ቀረሶ

2. በቀን ውስጥ በአማካኝ ምን ያህል ዓላ በኪ.ግ ታገኛላችሁ _____ ኪ.ግ

3. ከዓላ ሽያጭ የሚገኝ የቀን ገቢ

1. ከፍተኛ _____ ብር
2. ዝቅተኛ _____ ብር
3. አማካኝ _____ ብር

4. ከዓላ ውጭ ሌላ የገቢ ምንጭ አላችሁ?

1. አዎ 2. የለም

5. መልሱ አዎ ከሆነ የገቢዎን ምንጭ ግለፅ

1. የጉልበት ሥራ 3. በእርዳታ (ከዘመድ በሚገኝ ገንዘብ)
2. ጥቃቅን ንግድ 4. ሌላ

6. ከዓላ ማስገር ጋር በተገናኘ ሥራውን የሚያከናውነው ማን ነው ?

1. እኔና የቤተሰብ አባል
2. የጉልበት ሠራተኛ በተለይ ሴቶች
3. የጉልበት ሰራተኛ በተለይ ወንዶች

V. የኤክስቴንሽን አገልግሎትና ድጋፍ

1. በ2007 ዓ.ም ምርት ዘመን ከዓላ ምርት ጋር በተገናኘ የኤክስቴንሽን አገልግሎት አግኝተው ነበር?

1. አዎ 2. የለም

2. የጥያቄ ቁጥር 1 መልስ አዎ ከሆነ የኤክስቴንሽን አገልግሎቱን ያገኙት ከማን ነው?

1. ከልማት ጣቢያ ሠራተኛ (DA)
2. ከመንግስታዊ ካልሆነ ድርጅት (NGO)
3. ሌላ (ይገለፅ)

3. የጥያቄ ቁጥር 1 መልስ አዎ ከሆነ በ2007ዓ.ም በዓላ ምርትና ገበያን በተመለከተ ከኤክስቴንሽን ሰራተኛ ጋር በየምን ያህል ጊዜው ተገናኝተዋል?

1. በየሳምንቱ 4. በዓመት ሁለት ጊዜ
2. በሁለት ሳምንት አንዴ 5. በዓመት አንድ ጊዜ
3. በየወር 6. በማንኛውም ሰዓት አገኛቸዋለሁ

4. ያገኘኸው ምክር /ድጋፍ ምን ነበር ?

1. የዓላ ሀብተ አጠቃቀም አስተዳደር
2. የዓላን ገበያ በተመለከተ

- 3. የተፈጥሮ ሀብት አጠቃቀምና አስተዳደር
- 4 የእንስሳት አያያዝ እና አጠባበቅ

5. በኤክስቴንሽን ባለሙያ ያገኘሽው ምክር ቤቱ በተለይ በዓሳ ገበያ ላይ ከሆነ በዋናነት በምን ላይ ያተኮረ ነበር?(ከአንድ በላይ መልስ ይቻላል)
- 1. እንዴት ማምረት እንዳለብኝ
 - 2. መቻላት ማምረት እንዳለብኝ
 - 3. መቻላት መሸጥ እንዳለብኝ
 - 4. የምርቱን ጥራት እንዴት መጠቀም እንዳለብኝ
 - 5. የተለየ የገበያ (የዋጋ መረጃ በአይነት በጥራት)
 - 6. ሌላ (ይገለፅ) _____

6.ከዚህ በፊት በዓሳ ሀብተና ዓሳ ማስገር ስልጠና አግኝተው ነበር ?

- 1. አዎ
- 2. የለም

7.የጥያቄ ቁጥር 6 መልስ አዎ ከሆነ ስልጠናው ለምን ያህል ቀን ነበር ?-----

8.ስልጠናውን የወሰድከው በምን ዙሪያ ነው ?

- 1. ዓሳ ማስገርን በተመለከተ
- 2. የዓሳ አዘገጃጀትና አጠቃቀም
- 3. የዓሳ ማስገሪያ ዕቃዎችን ስለ መስራት
- 4. የዓሳ ምርት አስተዳደርና አያያዝ
- 5. ለዓሳ ማስገር የሚያገለግሉ ቴክኖሎጂዎችን አጠቃቀም
- 6. የዓሳ ምርት አያያዝና ገበያ
- 7. ሌላ (ይገለፅ) _____

II. የሀብረት ሥራ ማህበር አባልነት

- 1. የማንኛውም አይነት ሀብረት ሥራ ማህበር አባል ነህ/ነሽ ?
 - 1. አዎ
 - 2. አይደለሁም
- 2. የ1ኛ መልስ አዎ ከሆነ የሀብረት ሥራ ማህበሩ ሥም ማን ነው ? _____
- 3. የሀብረት ሥራ ማህበሩን ለምን ተቀላቀልክ
 - 1. የተሸለ ዋጋ የሀብረት ማህበሩ ስለሚያቀርብ
 - 2. የሀብረት ሥራ ማህበሩ በቅናሽ ዋጋ ግብዓቶችን ስለሚያቀርብልኝ
 - 3. ዋስትና ያለው ገበያ ስለሚያቀርብ
 - 4. የቴክኒካል ክትትልና የምክር ሥራ አገልግሎት ስለሚሰጠኝ
 - 5. ክፍያ በግዜው ስለሚፈፅም
 - 6. ሌላ ይገለፅ _____
- 4. ከክረምት ከበጋ መንገድ እርቀት _____ ኪ.ግ በእግር _____ ሰዓት

የብድር አገልግሎት

- 1. በ2007 ዓ.ም ለዓሳ ማስገር ሥራ የሚሆን ብድር አግኝተው ነበር?

1. አዎ 2. የለም
2. መልሱ አዎ ከሆነ ብድሩን ለምን አገልግሎት አዋልከው?
 1. የዓሳ ማስገሪያ ዕቃዎችን ለመግዛት 3. ሠራተኛ ለመቅጠር
 2. የዓሳ ማቆሪያ ዕቃዎችን ለመግዛት 4. ሌላ ካለ ግለፅ _____
3. ብድሩን ያገኙት ከየት ነው ?
 1. ከንግድ ባንክ 3. ከቤተሰብ
 2. መንግስታዊ ካልሆነ ድርጅት (NGO) 4. ከጥቃቅን እና አነስተኛ
 5. ሌላ ካለ ግለፅ _____
4. የተበደርከው ብር ዓላማህን ለማሳካት በቂ ነበር ?
 - 1 አዎ 2. የለም
5. የጥያቄ ቁጥር 1 መልሱ አይደለም ከሆነ ለዓሳ ማስገር ሥራ ብድር ትፈልግ ነበር?
 - 1 አዎ 2. የለም
6. መልሱ አዎ ከሆነ ለየትኛው ከዓሳ ጋር ለተገናኘ ሥራ ነው? _____
 1. የዓሳ ማስገር ዕቃዎችን ለመግዛት 3. ሠራተኛ ለመቅጠር
 2. የማቆያ ዕቃዎችን ለመግዛት 4. ሌላ ካለ ግለፅ _____

1.የገበያና የገበያ ሁኔታ

ከድ 1.ነጩ አሳ 2.ቀይ አሳ 3. ቀረሶ
 ባለፈው ሳምታት ለገቢያ የቀረበው የአሳ መጠን

| የንግዱ አካላት | የደምበኞች ቁጥር | የዓሳ አይነትና ዝርያ | የዓሳ ዋጋ በኪ.ግ | አቅርቦት % |
|-------------|------------|---------------|-------------|---------|
| አከፋፋይ | | | | |
| ችርቻሪ | | | | |
| ሆቴል /ሬስቶራንት | | | | |
| ለቤት ውስጥ ፍጆታ | | | | |
| ሌላ | | | | |

2.በ2007 ዓ.ም የዓሳ ምርትህን እንዴት ነው የሸጥከው ?

1. ቀጥታ ለግዥ 3. በኮሚሽን
2. ለደላሎች 4. ሌላ ይገለፅ _____

3.ማነው የዓሳ ምርቱን የገዛህ ?

1. ቸርቻሪ 3.የዓሳ አምራቾች ህብረት ሥራ ማህበር
2. አከፋፋይ 4. ተጠቃሚዎች

4.ዓሳ በሚሸጥበት ጊዜ የገዥዎች የገበያ ችግር አጋጥሞዎት ያውቃል?

- 1 አዎ 2. የለም

5.አዎ ከሆነ ምክንያቱን ምን ነበር ?

- | | |
|---------------------|-------------|
| 1. የገበያ አለመኖር | 3. የመረጃ ማጣት |
| 2. ዝቅተኛ በሆነ ዋጋ ማቅረብ | 4. ሌላ ይገለፅ |

6.ላቀረብከው የዓሳ ምርት የጠበከውን ዋጋ ባታገኝ ምን ታደርጋለህ ?

- | | |
|---------------------------------------|--------------------|
| 1. ወደ ቤት እመልስዋለሁ | 3. በዝቅተኛ ዋጋ እሸጠዋለሁ |
| 2. በተመሳሳይ ቀን ወደ ሌላ ገበያ እወስደዋለሁ እሸጠዋለሁ | 4. በሌላ ገበያ ቀን |

7.በ2007 ዓ.ም የዓሳን ዋጋ የተመነልህ (ያወጣልህ) ማን ነው ?

- | | | | | |
|-------|--------|------------------------|-----------|-------|
| 1. እኔ | 2. ገዥው | 3. በአቅርቦትና ፍላጎት በመመስረት | 4. በስምምነት | 5. ሌላ |
|-------|--------|------------------------|-----------|-------|

8.በአካባቢው ሰብሳቢዎች በዱቤ ከሸጥክ በኋላ ገንዘቡን መች ነው የምትሠበስበው?

- | | |
|-------------------|--------------|
| 1. እንደ ሸጥኩ ወዲያውኑ | 3. በሌላ ቀን |
| 2. ከሸጥኩ ከሰዓታት በኋላ | 4. ሌላ ካለ ግለፅ |

9.በችርቻሮ በዱቤ ከሸጥክ በኋላ ገንዘቡን መች ነው የምትሰበስበው ?

- | | |
|-----------------|---------------|
| 1. እንደሸጥኩ ወዲያውኑ | 3. ሌላ ቀን |
| 2. ከሰዓታት በኋላ | 4. ሌላ ካለ ይገለፅ |

10.ለጅምላ ሠብሳቢዎች በዱቤ ከሸጥክ በሀዋላ ገንዘቡን መች ነው የምትሰበስበው ?

- | | |
|-----------------|---------------|
| 1. እንደሸጥኩ ወዲያውኑ | 3. ሌላ ቀን |
| 2. ከሰዓታት በኋላ | 4. ሌላ ካለ ይገለፅ |

11.ለዓሳ ንግድ ያሉ ችግሮች እና ምቹ ሁኔታዎች

- ምቹ ሁኔታዎች _____
- _____
- ችግሮች _____
- _____

የነጋዴዎች መጠይቅ

5.ዋና ሥራህ ምንድነው?

- | | |
|--------------|---|
| 1. ጅምላ አከፋፋይ | 3. አቀነባባሪ |
| 2. ቸርቻሪ | 4. በገበሬ ነጋዴዎች (የአካባቢ ሰብሳቢ) 5. የከተማ ሰብሳቢ |

6.በ2007 ዓ.ም የዓሳ ንግድ ሥራውን እንዴት ነው ያከናወነው ?

- | | |
|---------|--------|
| 1. ለብቻዬ | 2. በጋራ |
|---------|--------|

7.የዓሳ ንግድ ሥራ ላይ ከተሰማራህ ምን ያህል ጊዜ ሆነህ _____ አመት

8.ዓመቱን በሙሉ በንግድ ሥራ ላይ ተሳትፋለህ (ትሰማራለህ)

- | | |
|------|--------|
| 1 አዎ | 2. የለም |
|------|--------|

9.መልሱ የለም ከሆነ በዓመት ውስጥ በየትኛው ንግድ ነው የምትሳተፈው

- | | |
|---------------------|--------------------|
| 1. በወቅቱ ጠብቂ | 3. በአቅርቦቱ ከፍተኛ ሲሆን |
| 2. የመግዣ ዋጋ ዝቅተኛ ሲሆን | 4. ሌላ |

ሀብት /ንብረት

1. የዓሳ ንግድ ሥራ ስትጀምር መነሻ ገንዘብህ / ንብረትህ ምን ያህል ነበር _____ ብር

2. በአሁኑ ጊዜ በ2008 ዓ.ም የመስሪያ ገንዘብ ምን ያህል ነው ?-----ብር

3. የመስሪያ ገንዘብህን ያገኘው ከየትኛው ምንጭ ነው ያገኘው

- | | | | | |
|--------|---------|--------|--------|------------|
| 1. ከራሴ | 2. ከብድር | 3 ከሥጦታ | 4. በጋራ | 5. ሌላ ይግለፅ |
|--------|---------|--------|--------|------------|

4. ብድር ከሆነ ብድሩን ከማን አገኘህ

- | | |
|--------------------|----------------------|
| 1. ከዘመድ ወይም ከጎረቤት | 3. መንግስታዊ ካልሆኑ አካላት |
| 2. በግል ገንዘብ አበዳሪዎች | 4. ከጓደኛ 5.ከሌላ ነጋዴዎች |
| 6.ከጥቃቅን እና አነስተኛ | 7 ከባንክ 8. ሌላ ካለ ይግለፅ |

5. የብድሩ ወለድ ምን ያህል ነበር _____ ብር በህጋዊ _____ ህጋዊ ካልሆነ አካል _____

6.ከብድሩ ጀርባ ያለው ምክንያት ምን ነበር

- | | |
|------------------------------|---------------|
| 1. የዓሳ ንግድ ለማስፋፋት | 3. ሌላ ካለ ይግለፅ |
| 2. ለዓሳ ማጓጓዣ መኪና/ እንስሳት ለመግዛት | |

7.የብድሩ አከፋፈል እንዴት ነበር

- | | | | | |
|--------|---------|----------------|----------------|---------------|
| 1. በወር | 2. በዓመት | 3. በዓመት ሁለት ጊዜ | 4. ገንዘብ እንደተገኘ | 5. ሌላ ካለ ይግለፅ |
|--------|---------|----------------|----------------|---------------|

8.በአሁኑ ጊዜ የዓሳ ንግድ ለማከናወን ገንዘብ/ብድር ለማግኘት የተደረጉ ለውጦች አሉ

- 1. ተሸሽሏል
- 2.ከነበረው ቀንሷል
- 3. ምንም አይልም

9.ዓሳህን የሚገዛህ ማነው

- 1. ጅምላ ነጋዴ
- 2. ቸርቻሪ
- 3 ተጠቃሚ
- 4. ደላላ
- 5 . ሌላ ካለ ይገለፅ_____

10.በ2007 ዓ.ም ዓሳ የገዛኸው ከየት ነው

- 1. ከአካባቢዬ (ከሰፈር) ስም _____
- 2. ከገበያ የገበያ ሥም _____

የገበያ ሁኔታ (አገልግሎት)

- 1. በእናንተ አካባቢ ለዓሳ ንግድ ፈቃድ ያስፈልጋል
 - 1. አዎ
 - 2. የለም
- 2. የዓሳ ንግድ ፈቃድ አለህ
 - 1. አዎ
 - 2. የለም
- 3. 2007 ዓ.ም ለገዛኸው ዓሳ ግብር ከፋለህ ነበር
 - 1. አዎ
 - 2. የለም
- 4. በ2007 ዓ.ም ለሽጥከው ዓሳ ግብር ከፍለህ ነበር
 - 1. አዎ
 - 2. የለም
- 5. ካካሄድከው የገበያ ግብይት አንፀር የከፈልከው ገንዘብ እንዴት ታየዋለህ (ትመዝነዋለህ) ?
 - 1. ዝቅተኛ ነው
 - 2. ከፍተኛ
 - 3. መካከለኛ
 - 4. አላውቅም
- 6. በ2007 ዓሳ ከመሸጥህ በፊት አከማችተህ ነበር ?
 - 1. አዎ
 - 2. የለም
- 7. አዎ ከሆነ ለምን ያህል ጊዜ አከማችህ ከፍተኛ _____ ሠዓት / በቀን
- 8. በክረምት ወቅት የተበላሸ በ_____ በብር2007
- 9. 2007 ዓ.ም ለዓሳ ንግድ ሂደት ውስጥ በአማካኝ /ኪ.ግ የወጣ ወጪ

| | |
|--|--------------|
| | ብር በኪሎግራም አሳ |
| ዓሳ የተገዛበት ዋጋ በኪ.ግ | |
| ለጉልበት ሠራተኛ የተከፈለ ወጭ ለመሰብሰብ እና ለማሸግ | |
| የመጫኛ ዋጋ | |
| የማውረጃ ዋጋ | |
| መጓጓዣ ለመኪና / በሰው ሸክም | |
| ለመለየት በመጠን (አይነት) | |
| ለንግድ ፈቃድ እና ግብር | |
| ለመጋዘን የተከፈለ | |
| የመጋዘን (ክምችት) የተበላሸ | |
| የማምረቻ (የማቀናበሪያ ዋጋ | |
| የስልክ ወጭ | |
| የግል መጓጓዣ (ሌላ ወጭ | |
| ሌሎች ወጪዎች | |
| ጠቅላላ ወጪዎች | |
| ዓሳ የተገዛው ኬየት ነው ? 1. ከአምራች 2. ከከተማ ሻጭ 3. ከገበሬ ሰብሳቢዎች 4. ከአከፋፋ 5. ከቸርቻሪ 6. ከህብረተሰብ ሥራ መሀበራት 7. ሌላ | |

10. ከዓሳ ንግድ ውጪ በሌላ ንግድ ውስጥ ተሠማርተህል
1. አዎ 2. የለም
11. በሳምንት ውስጥ ምን ያህል የገበያ ቀናቶች አሉ _____ ቀን
12. 2007 ምን ያህሉን የዓሳ ምርት ለአካባቢው ገበያ ሸጥክ _____ በብር
13. 2007 ዓ.ም ምን ያህሉን የዓሳ ምርት ለባህር ዳር ገበያ ሸጥክ _____ በብር
14. በ2007 የዓሳ ምርት ህንጻ እንዴት ነው የሸጥከው
1. ቀጥታ ለገዥው 2. በደላላ 3. ሌላ ገለፅ
15. በ2007 የዓሳ መሸጫ ዋጋውን የተመነው /ያወጣው ማንነው
1. በራሴ 2. በፍላጎትና በአቅርቦት ላይ 3. በገዥው 4. ሌላ ይገለፅ
16. የመሸጫ ዋጋውን እንዴት ተመናችሁት
1. ተስማምተን ጊዜያቶችን ወስደናል 3. በተረከብኩበት ጊዜ
2. በመረከቢያ ጊዜ በስምምነት 4. ሌላ ይገለፅ
17. የግዥ ክፍያ በቅድሚያ የሚከፈልህ ከሆነ እንዴት ነበር የተስማማችሁት
1. በቃል (በንግግር) 2. በፅሁፍ
18. ከሽያጭ በኋላ ገንዘብህን እንዴት ታገኛለህ

- 1. ወዲያውኑ
 - 2. ከጥቂት ሰዓታት በኋላ
 - 3. በሌላኛው ቀን
 - 4. ሌላ ካለ ይገለፅ
19. የገበያ ዋጋ መረጃ አግኝተህ ነበር
- 1. አዎ
 - 2. የለም
20. መልሱ አዎ ከሆነ መረጃውን ከየት አገኘህ
- 1. ከሌላ ነጋዴዎች
 - 2. ከህብረት ሥራ ማህበራት
 - 3. በስልክ
 - 4. በመመልከት
 - 5.
 - 6. ከደላሎች
 - 7. ሌላ ይገለፅ
21. ከኬሚካል ውጭ የዓለውን ጥራት ለመጠበቅ ማንኛውም አይነት እንክብካቤ አድርገህል
- 1. አዎ
 - 2. የለም
22. ምርቱ በጊዜው ካልተሸጠ ምን ታደርጋለህ
- 1. ወደ ቤት እመልሳለሁ
 - 2. ወደ ሌላ ገበያ እወስደዋለሁ
 - 3. በዝቅተኛ ዋጋ እሸጠዋለሁ
 - 4. በሌላ የገበያ ቀን እሸጠዋለሁ
23. አቅራቢዎችህን እንዴት ትስባለህ /ታገኛለህ ?
- 1. የተሻለ ዋጋ በመስጠት
 - 2. በመጎብኘት
 - 3. በትክክለኛ ሚዛን በመመዘን
 - 4. ሌላ ካለ ይገለፅ
24. በ2007 ዓ.ም ለአንተ ዓሳ የገዛልህ ማን ነው ?
- 1. ራሴ
 - 2. ደላላ
 - 3. የኮማሽን ሠራተኛ
 - 4. የቤተሠብ አባል
 - 5. ጓደኛ
 - 6. ሌላ ካለ ይገለፅ

25. በ2007አ.ም የተግዛ የአሳ መጠን-----

26. ነጋዴዎች ዓሳ ለመሸጥ የሚያጋጥማቸው ችግሮች ምንድናቸው ?
- 1. መሠረተ ልማት
 - 2. የአቅርቦት እጦት
 - 3. የመጋዘን ችግር
 - 4. የመረጃ ልውውጥ
 - 5. የገንዘብ እጥረት
 - 6. የብድር አቅርቦት ችግር
 - 7. የፋላጎት እጥረት
 - 8. ፈቃድ ካላቸው ነጋዴዎች ጋር ከፍተኛ የሆነ ውድድር መኖር
 - 9. የስልክ ወጭ
 - 10. ሌላ ካለ ይገለፅ

መፍትሄ ካለ ይገለፅ _____

አመሰግናለሁ !!