

INDIRA GANDHI NATIONAL OPEN UNIVERSITY

SCHOOL OF CONTINUING EDUCATION

VALUE CHAIN ANALYSIS FOR RICE CROP IN GURAFERDA DISTRICT, BENCH-MAJI ZONE, SOUTH-WEST ETHIOPIA

A Research Proposal Submitted to IGNOU in Partial Fulfillment of the Requirements for the **MASTER of ARTS Degree in RURAL DEVELOPMENT**

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TABLE OF CONTENTS

	Pages
INTRODUCTION.....	1
1.1 Background.....	1
1.2 Statement of the Problem.....	2
1.3 Objectives of the Study.....	4
1.4 Research Questions.....	4
1.5 Significance of the Study.....	4
1.6 Scope and Limitation of the Study.....	5
1.7 Organization of the Thesis.....	5
2. RESEARCH METHODOLOGY.....	6
2.1 Description of the Study Area.....	6
2.2 Research Design.....	7
2.2.1 Sampling Procedure.....	7
2.2.2 Methods of Data Collection.....	8
2.2.3 Method of Data Analysis.....	9
3. REFERENCES.....	10
4. APPENDICES.....	12

1. INTRODUCTION

1.1 Background

Rice is a staple food for more than half of the world's population. In Asia alone, more than two billion people obtain 60-70% of their calorie from rice and its products. It is also the most rapidly growing source of food in Africa, and is of significant importance to food security and food self-sufficiency in an increasing number of low-income food deficit countries. Therefore, improving the productivity of rice systems would contribute to hunger eradication, poverty alleviation, national food security and economic development (FAO, 2004).

Among the developing countries in the world, Ethiopia is the one with high population and food insecurity. The country has been designing and implementing various types of strategies to achieve food security. Diversification of crops, increasing the availability of food through domestic production, and encouraging the production of early maturing and high yielding crops in different agro-ecologies of the country are some of such strategies. Rice is considered to be a highly productive crop next to maize in the country (CSA, 2003). The introduction and expansion of rice production in suitable agro-ecologies, therefore, could be an option to achieve food security and self-sufficiency.

Rice is among the most important cereals and root crops grown in different parts of Ethiopia as food crop. It is reported that the potential of rice production area in Ethiopia is estimated to be about 30 million hectare (MoARD, 2010). According to FAO (2009), four rice ecosystems were identified in the country. These are; *upland rice*, which is grown on naturally drained soils and where the water table always remains below the roots and is entirely rainfed; *Hydromorphic (rainfed lowland) rice*, which is grown on soils where the roots are periodically saturated by fluctuating water table in addition to the rainfall; *Irrigated lowland ecosystem*, whereby crop water requirement is entirely satisfied from irrigation, and rainfall is not a limiting factor, and *paddy rice (with or without irrigation)* which is grown under water-logged or submerged environmental conditions.

According to Tareke (2003), even though rice is not a traditional staple food in Ethiopia, it is a high potential emergency and food security crop for the country. Rice production is expanding rapidly and farmers are growing it in many places and over large areas and also have developed many Ethiopian recipes using rice including; *injera, bread, porridge, soup*, etc. and some local alcoholic drinks (*tella, arekie, etc*). Nationally the area under rice coverage increased approximately from 100,000 ha in 2010 to more than 200,000 ha in 2012. And thus a total of more than 2.5 million qtls of rice was produced in the country in 2012. However, the amount of area under rice cultivation is low as compared to the potential (MoARD, 2013).

Rice is introduced in Ethiopia during the 1970's and has been cultivated in small pockets of the country. Ever growing demand due to population growth and urbanization, consumer preference and diet changes especially from city dwellers, increased consumption of food away from home, increased participation of women in labour force, convenience and ease of storage & cooking, etc. are forcing the government to spend large amounts of money on importing rice. The recent surge in demand combined with the skyrocketing import price, and availability of potential agro-ecologies for rice production, challenged the country's policy makers to seriously consider the country's potential to grow the grain for itself. Subsequently, successful lobbying has pushed rice to be classified as the fourth "National Food Security Crop" after wheat, maize, and the country's traditional most staple cereal crop, teff. This move favours rice research and promotion on a large scale (Nigussie et al., 2008).

The south-western low-land parts of the country particularly *Guraferda* and its surrounding areas have an immense potential to grow rice since the area is characterized by its low altitude, fertile soils and high temperature with sufficient rainfall. Cognizant of the stated importance of rice and existing potential for its production, Bonga Agricultural Research Center in collaboration with various stakeholders including NGOs (MEDA, SG-2000, etc), has tried to conduct multi-location adaptation trials so as to release locally adapted varieties. *Guraferda District* is one of the study areas where adaptation trial is conducted.

1.2 Statement of the Problem

Even though the country has 30 million hectares of potential rice production area, the amount of arable land under rice cultivation during 2012 (more than 200,000 ha) is very small as compared to the potential (MoA, 2012). In addition, inefficient utilization of the rice production area, the same author illustrated that input supply, agronomic practices, pre-and post-harvest handlings, marketing, utilization and overall investment are some of the research and development gaps and priorities under the current situation of rice production in Ethiopia. Organizations that are working on rice development, however, mainly focus on adaptation and release of locally adapted varieties. They do not give importance to the other activities (input supply, post-harvest processing, marketing and utilization) across the value chain. Nigussie et al., argued that the rice production system in the country has focused mainly on the introduction of improved varieties from a range of different sources, including the International Rice Research Institute (IRRI), the African Rice Center, etc. Research centers in the country are also concentrating on the evaluation and release of new varieties for the local rice growers.

However, to increase production and productivity and to get competitive advantage from the development of rice sector, there should be innovation at every stage of the value chain. Bammann (2007) illustrated that the value chain concept helps to trace product flows; show value addition at different stages; identify key actors and their relationships in the chain; identify enterprises that contribute to production, services and required institutional support; identify bottlenecks preventing progress; provide a framework for sector-specific action; identifies

strategy to help local enterprises to compete and improve earning opportunities and identify relevant stakeholders for program planning.

Recently, the demand for production and consumption of rice varieties is increasing tremendously by farmers in the study area (*Guraferda*) as well as neighboring ones. The main factors for the existing demand are availability of land with suitable soil characteristics for rice production and climatic condition, search for alternative cereal crop for consumption, crop rotation and diversification, and the need of crop residue for livestock fodder.

Considering such huge demand and potential agro-ecology; various research, development and non-governmental organizations put some effort to introduce and raise rice production in the area. Yet, farmers are still facing different problems like input supply (improved seeds, fertilizers, pesticides, etc), post-harvest management practices (particularly of shortage of rice harvester, thresher and processing machine), storage facilities and lack of market information for the seed as well as the grain, and its utilization. Therefore, this entails the need for doing more comprehensive study which rigorously examines the rice value chain in the study area.

Rice is a new and recently introduced crop and lacks in-depth studies. Accordingly, very few studies have been done on rice (Getachew, 2000; Biruhalem & Desalegn, 2007; and MoA, 2010). However, most of these studies have focused on production (adaptation trials) or they are simple informal surveys. Rather there is no comprehensive study made so far to understand the whole rice value chain in the study area, *Guraferda*. This is the first study of its kind which analyses the entire value chain from input supplier to the consumer. This study has the benefit of applying a holistic/integrated approach that tries to analyze the dynamics of input supply, production, marketing, post-harvest processing and consumption of rice in the study area. Through such an approach, potential areas or entry points can be identified for infusing further innovation to upgrade the value chain. It also provides a holistic picture of the existing challenges and opportunities in the rice value chain; allowing, identifying and taking appropriate intervention measures for improvement.

To understand opportunities and constraints in addressing the existing problems and to increase competitive advantage of the rice production in the area, this study was designed to achieve the following specific purposes/objectives.

1.3 Objectives of the Study

1.3.1 General Objective:

To identify and analyze the challenges and opportunities for innovation along the rice value chain development in Guraferda District, Bench-Maji Zone, South-West Ethiopia.

1.3.2 Specific Objectives:

- To identify the actors/stakeholders and assess their roles/functions, linkages, attitude, habits and practices in the rice value chain
- To analyze the institutional arrangements and enabling environment that affect the functioning of the rice value chain
- To identify and analyze recent innovation activities related to development along the rice value chain and assess their immediate outcomes/impacts

1.4 Research Questions

- ⇒ Who are the actors/stakeholders involved in the rice value chain? And what are their characteristics, roles/functions, linkages, attitude, habits and practices?
- ⇒ What institutional arrangements and enabling environment are affecting the functioning of the value chain?
- ⇒ What recent innovation activities are undertaken in development of the value chain and what outcomes are obtained?
- ⇒ What challenges, opportunities and entry points are available for infusing further innovation (technological, institutional and organizational) for upgrading the value chain?
- ⇒ What interventions should be taken to pursue opportunities and address constraints?

1.5 Significance of the Study

The study analyzes the entire value chain from input supplier to the consumer. It also provides a holistic picture of existing challenges, opportunities and entry points in the rice value chain. Therefore, it can shed light on required efforts to enhance the production and utilization of the crop at larger scale to ensure food security and self-sufficiency and bring about economic development in the area. The information generated will also help a number of organizations; research and development organizations, traders/processors, producers, policy makers, extension service providers, NGOs/donors, etc to assess their activities and re-design their model of operations and ultimately influence the design and implementation of policies and strategies. It can also help such actors and others to identify and analyze new ways of stimulating innovation.

1.6 Scope and Limitations of the Study

This study aimed at identifying challenges and opportunities for innovation along the rice value chain in Guraferda District, South-West Ethiopia. Due to time shortage and unavailability of enough financial resources, the study is limited in its depth and coverage that fully addresses the aforementioned objectives of the study. Furthermore, since Ethiopia has wide range of diverse agro-ecologies, institutional capacities, organizational and environmental conditions, the result of the study may have limitations to make generalizations and make them applicable to overall country. However, it may be useful for areas with similar context with the study area.

1.6 Organization of the thesis

The thesis consists five chapters. Chapter one deals with the background, problem statements, objectives, scope & limitations, and significance of the study. Chapter two reviews related literatures appropriate for the research topic. Methodological issues including the study area description are presented in chapter three. The fourth chapter provides and discusses all the research findings. The final chapter includes conclusion and recommendations.

2. RESEARCH METHODOLOGY

2.1 Description of the Study Area

The study will be conducted in *Guraferda District*, one of the 10(ten) most existing Districts of Bench-Maji Zone. It is located at 700 km South-West of *Addis Ababa* and 260 km South of *Jimma* town. *Guraferda* is one of the west most district of the Southern Nations & Nationality People Regional State. *Guraferda* is found North of Surma, South of Bebeke State-owned coffee farm and Sheko District, West of South Bench District, and East of Yeki and Goderie Districts. The District is sub-divided into 22(twenty two) kebeles and its center namely called Biftu.

The altitude of Guraferda ranges from 850 to 1,995 m above sea level while the minimum annual temperature ranged between 20°C to 39 °C. Daily temperature becomes very high during the month of February to May, where it may get to as high as 35 °C. Mean annual rainfall ranges from about 1000 mm to around 1450 mm. It has a unimodal-type with extended period of rainfall. The rainy season extends from end of April to the beginning of October. However, most of the rainfall is received during the months of June, July and August accompanied by its erratic distribution. The soils in the area are predominantly light black and reddish in color, and some are with vertic properties. During the heavy rainfall months, erosion of the soils is so high due to its rugged (up and down) landscape and creates some production problems. However, the soils in the area are believed to be fertile (forest soils) and consequently, farmers do not adequately apply commercial fertilizers.

According to CSA (2008) and updated District Administration information, *Guraferda* has a total population of 45,028(more than 8,000 HHs) with an area of 228, 281.25 ha

Table 2.1: Total area and population number & density of the study area

Description	Unit	
Total area of land	Ha	228,281.25
Total population of the Woreda	No	45,028
Male		23,500
Female		21,528
Population Density	HH/ km ²	3.50

According to the Woreda Agriculture Office, only 23% of the total area is under cultivation (52,250 ha). The area has also additional 27,100 ha of potentially cultivatable land. In addition, there are 146,652(64%) ha covered by forest trees and shrubs/grasses. Average land holding is about 5 ha, which is very high as compared to the highlands in other parts of the country.

The area is characterized by mixed farming system (combination of both crop production and raring of animals). Previously sorghum, maize and coffee were the dominant crops grown in the

area. However, today the rice crop production accounts more than 60 % of the cultivated area of the area under cultivation. Even though the abundance of livestock diseases is found significant, animal husbandry is considered as an integral part of production system. Raring of cattle (milk, meat), goat (meat) and some poultry is a common practice.

2.2 Research Design

In this study, mixed methods will be employed to access the detail and diverse information on the same issue. Use of mixed methods also helps to triangulate the reliability of information which will be gathered. It is advisable for researchers to employ mixed method designs to investigate different aspects of the same phenomenon (Sarantakos, 1998). In this study both qualitative and quantitative methods will be used. Semi-structured interview, focus group discussion, key informant interview and personal observation methods will be also used to gather the required data. Use of cross-sectional type of research design is going to be appreciated too.

2.2.1 Sampling Procedure

The study area, *Guraferda*, is selected purposively since the area has high potential for rice production but not yet efficiently utilized. Initially actors who involve in a value chain will be identified using review of related literatures and interview of some key informants. Following this, samples shall be chosen from each segment of the chain to be included in this study using diverse sampling techniques.

The District has 22 rural administrative kebeles. Among those kebeles, four of them (*Otowa-I, Berji, Kuja and Semerta*) will be chosen purposively based on their accessibility to transportation and relatively rich experience in rice production innovation. The farm households at the production stage of the value chain may then be stratified in to two groups; rice producers and non-rice producers. In order to have gender disaggregated data at least 15% FHHs will be incorporated in the sample for this study. Finally sample of respondents will be selected using probability proportional to size method. Simple random sampling technique would be used to choose the ultimate sample of households. A total of 100 sample households shall be chosen for the study.

In addition to farm households, sample respondents shall also be selected from the other value chain actors including; input suppliers, market agents, consumers, and supporting actors like research centers, cooperatives, agricultural extension service delivery institutions(gov't offices, NGOs, etc.). Such key informants will be selected purposively at various levels like selected sample kebeles/PAs of Guraferda. One private input supplier from each sample PAs and one from Guraferda District will be selected as input suppliers. Here primary cooperatives at each sample PAs, Andinet Union at Mizan Teferi town, and Guraferda District Agriculture Office will also interviewed as input supplier. Regarding the post-harvest processors, out of the 10(ten) total grain millers in the sample PAs, only four will be selected based on their relatively good

experience in rice polishing service provision. The consumers are going to be selected from both the study sites and Biftu town (district center). The key informants from Woreda Agriculture Office, BARC, primary cooperatives, Andinet Union, and Bench-Maji Zone Agriculture department will be selected and interviewed too. Detail breakdown of selected sample of respondents in the value chain is mentioned below.

Table 2.2: Composition of sample respondents in rice value chain in GF District

Actors	Selected Samples
Rice producing farmers	100
Input suppliers	5
Retailers	8
Processors after harvest	4
Consumers	10
Supporting services	16
Total	143

2.2.2 Methods of Data Collection

Both primary and secondary data will be collected for the study. The secondary data shall be gathered from various sources including Guraferda District Agriculture Office, Farmers Training Centers in the selected kebeles, BARC, primary cooperatives in the selected PAs, Unions and other GOs/NGOs working on rice research and development activities in the study area. Besides, relevant literatures, official reports and memos will be reviewed as secondary data source. Primary data will be collected from sampled actors/stakeholders who are involved in input supply, production, marketing, post-harvest processing, consumption and supportive services (research, extension, finance, and facilitation) along the rice value chain in Guraferda District. Household surveys, Focus Group Discussions (FGD), Key Informant Interview (KII) and personal observation methods will be employed to gather the information required from such actors. Pre-tested interview schedule and checklists (topical guideline) will also be used as survey instruments.

Pre-tested semi-structured interview schedule will be used to collect data from farmers. The interview schedule will require pre-testing on non-randomly selected households. Some modifications shall be made based on the outcomes of the pre-test. Interviewers, who know the study area very well, will be recruited and advised/trained about the objectives of the study, methods of data collection and interviewing techniques and ethics. Then they (MEDA project field staffs) collect the data from sample farmers with the supervision of the researcher. Along with the survey, four FGDs will be conducted in the selected kebeles (one FGD per each PAs) with composition of 8-10 participants in each session for in-depth understanding on the selected key issues like input supply, production, marketing, post-harvest processing and consumption as

well as constraints vs opportunities, enabling environment and potential intervention to remove/reduce the constraints and take the advantages of the opportunities.

Apart from farmers, primary cooperatives, farmers and some retailers who participate in rice marketing, grain millers as a post-harvest processor, and supportive actors (experts from Agriculture Office, research centers, NGOs, and others) will also be interviewed to get a thorough understanding of all the issues at all levels in the chain. Finally, a few numbers of consumers in the town areas, Biftu/Mizan Teferi will be deeply interviewed too.

2.2.3 Method of Data Analysis

Both qualitative and quantitative methods of data analysis will be used. The study is going to be largely qualitative in nature. System of thematic analysis will be used for the data that are collected through FGD, KII, personal observation and secondary document analysis. Functional analysis is used to identify the various actors and their roles in the value chain. Partnership and linkages, which are central to innovative performance in value chain, are going to be analysed in their historical and contemporary context to understand their strengths and weaknesses. During analysis a number of tools will be employed. Actor time line shall be incorporated to identify recent innovation activities undertaken and their immediate outcome along the rice value chain in the study area. Besides, SWOT (strength, weakness, opportunity and threat) analysis shall be utilized to analyze the challenges and opportunities for technological, institutional and organizational innovation across the value chain.

Regarding the quantitative analysis, simple descriptive statistics such as simple measures of central tendency, mean, standard deviation, frequency, percentages and cross-tabulation will be used for the survey data gathered from sample farm households. The analysed data are then going to be presented using tables, graphs and charts.

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4. APPENDICES

4.1 Interview Schedule for Sample Farm Households

Instruction/guide:

- ⇒ *Make a brief introduction to each farmer before starting the interview; greet them in the local way, know each other and ask his/her name, tell them about the purpose of the study*
- ⇒ *After greeting, please ask each question so clearly and patiently until the interviewee well understand*
- ⇒ *Please fill up the interview schedule according to the farmer ' s reply(avoid putting personal opinions)*
- ⇒ *Do not try to use technical terms, please while discussion with farmers and do not forget to use/record the local unit*
- ⇒ *Prove that all questions are asked and filled in the interview formats*
- ⇒ *Finally leave farmers with words of thanks*

General information:

Name of respondent: -----

Woreda/district: -----

Peasant Association (PA):-----

Name of village/got: -----

Date of interview: -----

Name of enumerator: -----

Signature of enumerator: -----

Questionnaire code: -----

1. Demographic characteristics of sampled respondents:

No	Name of HH members(use the first name only & start with the HH head)	Relation with the head of HH	Sex	Age	Marital status	Education level	Occupation
1							
2							
3							
4							
5							
6							
7							

HH= house hold

2. Farm characteristics and rice production condition

2.1 Farm size:

2.1.1 Do you own arable land? Yes No..... (Make a right mark)

2.1.2 How much hectare of land do you have? Arable land..... Grazing land.....

2.1.3 How much you have hectare of rented in (cash/ share) arable land.....rented out arable land.....

2.2 Livestock ownership:

Types of livestock	Number
Cattle(ox, cow, bull, heifer)	
Equines(donkey, mule, horse)	
Goats/sheep	
Poultry(hen, coke, chickens)	
Bee colonies	

2.3 Rice production

2.3.1 Are you aware of the existence of improved rice seed varieties which can grow in your environment? Yes.....No.....

2.3.2 When did you first hear about the improved seed varieties?

2.3.3 Have you ever used such varieties before? Yes.....No.....

2.3.4 If yes, why did you decide to produce rice?

- Awareness and availability of the improved rice varieties
- Favorable land and climate condition
- Presence of high market demand
- High preference for household consumption
- Existence of technical and material support from gov't and NGO's
- Need of crop diversification
- Crop potential to provide straw for livestock feed
- High productivity and profitability of the rice crop
- Others (specify).....

2.3.5 How much land have you allocated for rice production from your total owned/sharecropping/rented land in the previous cropping seasons?

Production year	Total land holding size(ha)	Arable land covered by rice(ha)	Seed varieties used	Average yield (qtl/ha)
2012				
2013				
2014				

2.3.6 What are the challenges that you faced in producing and using rice seed varieties before?

.....

2.3.7 If you are aware of the existence of improved rice varieties and still you have not been used it, do you plan to produce the rice in the coming cropping season? Yes.....No.....

2.3.8 If yes, why will you produce?

2.3.9 If the answer for above question is no, why have you decided not to produce the improved rice crop?

- Unavailability and low access to improved rice seeds
- Limited knowledge about rice production since the crop is new to the area
- Non-availability of rice thresher and polishing machines in the area
- Absence of land with suitable soil properties for rice production
- Fear of pest attack(termites, ants, etc)
- Low access to inputs(fertilizers, pesticides, etc), credit and extension service
- High labour required for farm management activities
- Non-availability/limited access of market
- Others (specify).....

2.3.10 what suggestions do you have to tackle such challenges and enable you to produce and benefit from rice production?

.....

3. Production Services:

3.1 Input supply:

3.1.1 Have you ever used agricultural inputs (improved seeds, fertilizers, pesticides, farming tools, etc.) for the production of improved rice crop? Yes....No.....

3.1.2 If no, what was the main reason behind?

3.1.3 If yes, which type and from which source did you get such agricultural inputs in the rice production process?

No	Type of inputs used	Sources		
1	Improved seeds		1. Coop's/unions	6. Neighbor farmers
2	Fertilizer		2. Local market	7. Friends/relatives
3	Pesticides		in/outside the village	
4	Farming implements		3. Research centers	8. Others(specify)
			4. NGO	
			5. Private suppliers	

3.1.4 Why did you prefer the chosen sources to get the needed inputs?

3.1.5 How did you get the input from the mentioned sources?

No	Type of inputs used	How	1. Through purchase	6. Others(specify)
1	Improved seeds		2. On credit bases	
2	Fertilizer		3. In kind	
3	Pesticides		4. As a gift	
4	Farming implements		5. Through exchange	

3.1.6 Do you always get inputs at the right time? Yes.....No.....

3.1.7 If no, what are the reasons?

3.1.8 Do you always get inputs in the quantities that you need every year? Yes.....No.....

3.1.9 If no, why?

- ✓ Unavailable
- ✓ Too much expensive
- ✓ Shortage of cash
- I am not sure of the benefit
- Not available in time
- Others (specify)

3.1.10 Have you encountered problems in accessing these inputs? Yes.....No.....

3.1.11 If yes, what are the problems?

No	Type of inputs used	Problems
1	Improved seeds	1. unavailability
2	Fertilizer	2. Supply shortage
3	Pesticides	3. Costly
4	Farming implements	4 Remoteness of inputs market
		5. Others(specify)

3.1.12 How did you solve these problems?

3.2 Access to credit:

3.2.1 Did you borrow money for rice production before? Yes.....No.....

3.2.2 If yes, from where and for what purpose did you collect the credit?

Source of credit	Reason for loan received and used
Omo Microfinance Institute	1. Payment for hired labour
Cooperatives/union	2. Purchase of seeds, and fertilizers
Banks	3. payment for farm implements and other inputs
NGO's	4. Payment for rented oxen
Private money lenders	5. Others(specify)
Relatives, neighbors	
<i>Idir, Iqub, etc</i>	

3.2.3 If your answer for the above question is yes, have you paid the loan? Yes.....No.....

3.2.4 If the answer is no, what is the reason?

3.2.5 Did you face any problem in accessing credit? Yes.....No.....

- 3.2.6 If yes, what was the problem?
- ✓ Limited supply of credit
 - ✓ Huge bureaucracy
 - ✓ Limited access to transportation
 - ✓ Others(specify)

3.2.7 How did you solve the problems?

3.3 Information/Knowledge flow:

3.3.1 Training:

3.3.1.1 Have you ever participated in rice production system training in the last three years?

Yes.....No.....

3.3.1.2 If no, why?

3.3.1.3 If yes, on which aspects, by whom and for how long you have got the training?

No	Type of training	By whom	How long	Year
1	Rice seed multiplication			
2	Pre-harvest farm mg't practices of rice production			
3	Rice market dev't			
4	Rice food preparation techniques			
5	Post-harvest handling of rice crop			
6	Utilization of rice byproducts			
7	Others(specify)			

3.3.1.4 Was the training you get easily understandable and practicable? Yes.....No.....

3.3.1.5 Was the information/knowledge you got through training useful? Yes.....No.....

3.3.1.6 Which aspects were not useful?

3.3.1.7 Were you able to employ the new knowledge you acquired? Yes.....No.....

3.3.1.8 If yes, what? If not, why?

3.3.2 Advisory service:

3.3.2.1 Did you get advisory service on rice production practices before? Yes.....No.....

3.3.2.2 If no, why?

- No service provider agency in the nearby area
- Possessed the required information
- Availability of contact farmers
- Do not have time to get the service
- Others(specify)

3.3.2.3 If yes, for how long do you get the service?

3.3.2.4 Who provides the advisory services?

Development agents/Woreda agriculture office

- Research centers
- NGO's

- Neighbors/friends
- Others(specify)

3.3.2.5 How do you get the advisory service?

- ✓ Farm to farm visit by DA's/experts
- ✓ Visit to demonstration sites for model farmers
- ✓ Training
- ✓ Field day/experience sharing tour
- ✓ Others(specify)

3.3.2.6 How frequent were you visited by DA's/gov't experts last year?

- Once per month
- Twice per month
- Three times a month
- Weekly basis

3.3.3 Research:

3.3.3.1 Source of rice production, marketing and consumption research/innovation in your area?

- ✓ Bonga Agricultural Research Center
- ✓ Zonal/Woreda Agriculture offices
- ✓ Projects/NGO's
- ✓ Others(specify)

3.3.3.2 Have you ever participated in problem identification and/or research-planning?

Yes.....No.....

3.3.3.3 If yes, specify the organization and year?

3.3.3.4 What are the technology types/services that you get from BARC?

- Provision of improved seed varieties
- Training
- Advisory services
- Information
- Others(specify)

4. Marketing

4.1 Did you sell improved rice seeds/grains before? Yes.....No.....

4.2 If no, why you did not sell?

4.3 If yes, how much and to whom did you sell your production?

Total production (Qtl)	Quantity for HH consumption (Qtl)	Amount sold(Qtl)		To whom sold	Where it sold
		Seed	Grain		
				<ul style="list-style-type: none"> • Other growers as seeds/food grain • Consumers • Intermediaries/traders • Retailers/wholesalers • Others(specify) 	<ul style="list-style-type: none"> ✓ Farm gate ✓ In the market to whole sellers/retailers ✓ Retailing yourself ✓ Others(specify)

4.4 Why have you preferred the mentioned consumers/markets to sell your production?

4.5 Distance of market center from you home/farm? And the time it will take?

4.6 Means of transportation

- ✓ Vehicles
- ✓ Back of animals
- ✓ Manpower
- ✓ Others(specify)

4.7 If you were used vehicles, was it easily accessible? Yes.....No.....

4.8 If you were not used vehicles, why?

4.9 Was there any other problem you faced in rice marketing? Yes.....No.....

4.10 If yes, what was the problem?

- Lack of market information
- Poor linkage with other value chain actors(retailers, traders, consumers, etc)
- Low consumer demand
- Non-availability/limited access to market
- Low quality product that meet consumer demand
- Absence of rice polisher
- Market distance
- Absence/limited access to transportation

- Others(specify)

4.11 How did you solve these problems?

4.12 Are there market related opportunities that motivate you to produce rice before and in the future time?

- High consumer demand for rice grain consumption
- High demand for rice seed by farmers in the surrounding area
- Presence of market demand out of the region
- Others(specify)

4.13 Linkage with commercial value chain actors

- ✓ Retailers
- ✓ Whole sellers
- ✓ Consumers
- ✓ Others(specify)

4.14 Are there marketing cooperatives/farmers organizations who are working on rice? Yes.....No.....

What kind of services do they provide?

4.15 Source of market information (both for input-and output marketing)

5. Consumption

5.1 Have you ever used rice for household food consumption? Yes.....No.....

5.2 If no, what is the main reason?

- ◇ Lack of skill/knowledge on how to prepare food recipes from rice
- ◇ Absence/ low access to rice
- ◇ Absence of sufficient production
- ◇ Lack of training
- ◇ Low preference as food (why?)
- ◇ Expensive to use it as household food consumption
- ◇ Others(specify)

5.3 If yes, how did you use it?

5.4 Why you prefer rice for food consumption?

5.5 Is there a rice polisher in your area?

5.6 If yes, how much is the distance from your farm/home to the processing center? How much time it will take to travel?

5.7 How did you transport the rice production from farm/home to the polishing/processing center?

- ✓ Vehicles
- ✓ Back of animals
- ✓ Manpower
- ✓ Others(specify)

5.8 If you were used vehicles, was it easily accessible?

5.9 If you were not used vehicles, why?

5.10 What were the main problems that you faced in using rice for food consumption?

5.11 What suggestions do you have to avoid those problems and enable you to use rice for food consumptions?

4.2 Interview Checklists for Focus Group Discussion/FGD

4.2.1 Rice producers:

- ✓ When you did first introduce about improved rice seed varieties in your location?
- ✓ From where these improved varieties came from? Who first introduce you them?
- ✓ Trends of annual rice production (increasing, decreasing, etc)?
- ✓ Why you decide to produce/not to produce rice in your area?
- ✓ What are the challenges you faced in implementing the rice farm management practices (both pre-and post-harvest handlings)?
- ✓ How do you adapt the recommendation given by the extension or research institutions?

Input supply:

- ◇ Have you got the required agricultural inputs in quality, adequacy, timeline and price?
- ◇ From where and how you get improved rice seeds, fertilizers, pesticides and farming tools
- ◇ Which sources do you like to get those inputs? And why?
- ◇ Where do you get the rice seeds from? (If multiple sources, why?). Where do you prefer to get the rice seeds from? Why?
- ◇ What information do you have about the rice seeds?(Variety name, source, production vs consumption traits, etc)
- ◇ Is there a problem in getting these inputs?
- ◇ What do you recommend/suggest to alleviate the problems and get the service required?

Credit service:

- ⇒ From where you have got credit (formal vs informal sources), and which source is good for you and why?
- ⇒ What are the requirements/criteria to get credit from formal institutions (collateral requirement)? And what is your suggestion on the criteria?
- ⇒ In what condition you obtained the loan (individual, group, collateral bases), which one is good for you?
- ⇒ Which credit institutions are implementing group lending system?
- ⇒ What are the pre-determined criteria for group formation?
- ⇒ What is the interest rate? Is it good for you? If not why? Is there any difference in interest rate levels of these institutions?
- ⇒ When and how do you repay the loan you get (terms of repayment period)?
- ⇒ If not repaid on the due date, what actions did the formal lending institution take on you? What is your opinion on the action?
- ⇒ What limitations/challenges you encountered to get credit? And what alternative solution do you suggest?

Information/ knowledge flow:

- Where and how do you get information/knowledge and advisory services (training, demonstration, experience sharing tour, farm visit, etc) ?
- How do you evaluate the knowledge you acquired during such sessions?
- Have you adapted the suggested management practices to adjust to your farm and economic condition and also to the availability of inputs? If yes how?

Research:

- What is your role in problem identification, prioritization and planning of research agenda in your area?
- Which research center is working with you? What services have you got from the center?
- What problems you observe from the work of research centers? What do you suggest to improve the quality of service delivery?

Marketing:

- ✓ To whom do you typically sell your rice seeds?
- ✓ How you sell your production as a seed or grain (specified market price, gift, exchange, etc)?
- ✓ From where do you get for both input and output market information?
- ✓ What are the challenges and opportunities you faced in input and output marketing?
- ✓ What alternative solutions do you suggest to alleviate the problems and use the available opportunities?

Consumption:

- ◇ Do you have enough knowledge about the rice food preparation and consumption? If yes, from where do you get such information/knowledge?
- ◇ What do you think about feeding quality rice in your area?
- ◇ If you are using rice for HH food consumption, how do you use it?
- ◇ What problems you encountered to use rice for HH consumption (for sale and food)?
- ◇ What do you feel about availability/absence of rice polisher and thresher?
- ◇ Have you attempted to get rice polisher in group by taking credit? If not, why?
- ◇ What alternative solutions do you have to improve the development of rice in your area?

4.2.2 Supportive Actors

Organizational profile:

- *Name of the organization*
- *Location and contact information*
- *Type of the organization(private, public, NGO)*
- *Mandate area/target groups of the organization*
- *Type and manner of the services provision*

Role of the organization:

- What is the role of your organization in rice value chain dev't in the area?
- How you undertake those roles assigned to you (jointly with others or independently)?

Challenges and opportunities:

- What are the challenges you faced in undertaking those roles assigned to your organization (like shortage of supply of improved technologies, technical skill, human resource, finance, transport facility, field/office equipments, leadership, incentives, etc.) ?
- Opportunities available to execute your role and achieve good result in the dev't of rice in your area(high demand for rice technology, availability of improved production technology, institutional support, etc)

Patters of interaction:

- Linkage/interaction/partnership/coordination between actors
- Forms of linkage mechanism
- Strength of linkage(strong, medium, weak, and non-existence)
- Why linkage is strong/weak/ non-existence
- Linkage arrangement employed
- Factors constraining linkage between actors (policy, organizational, attitudinal and motivational)
- Are sector coordinating bodies present or absent? If present, are they effective?

Attitude and practice:

- Is there a habit of working with other organizations (private, public, NGO's, CBO's)? If there is, how you characterize the existing relationships(is there mistrust, competition, apprehension, distain, etc)
- How do you share knowledge with others?
- How you incorporate the needs and problems of your clients/target groups/ stakeholders?
- How you perform the planning process? Is it participatory/consultative/top-down?
- How you monitor and evaluate the performance of your activities? Is there a joint monitoring and evaluation program or not?
- How decisions are passed (with the participation of responsible bodies, managers decisions are made in isolation with others, etc)?
- How does the organization treat failure? As a learning opportunity or as something to be covered up? Is the organization very hierarchical?

- Is there a professional incentive like award for good work, promotion, etc? Are the criteria for promotion acceptable by the employees? Is it motivating or discouraging the employees?
- How do you feel about the work of other partner organizations/individuals who are working with you (mistrust, trustworthy, mutual respect, etc)?

Enabling environment (policies and infrastructure):

- Are farmers and other organizations involved in defining research and innovation challenges?
- Availability of infrastructures (roads, market, telecom services, etc) that promote or impede the expansion/scale-up of rice production?
- Are there favorable environment (policies, institutional arrangements, and incentive mechanism) to promote collaboration and rice production in the study area?

Interventions conducted, time & executing organization, and immediate results obtained:

- What interventions you undertake in rice value chain development?
- When did you intervene and what outcomes obtained?