

## Challenges for Small-Scale Rice Farmers: A Case Study of Ulanga District-Morogoro, Tanzania

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### Abstract

*Rice is the second most important crop mostly used as food and cash crop; however small-scale farmers in the study were faced by the number of challenges in the production of rice. The main objective of this study was to identify challenges for small-scale rice farmers in Ulanga District. The sample size of the study was 100 respondents, the quantitative approach had been used for analyzing data such as socio-demographic characteristics and compiling simple statistics and qualitative approach was used to capture small-scale rice farmers' responses. The study revealed that plant disease was a setback to small-scale farmers in the village because it reduced yields from the production. Most Farmers used seeds from the previous year's harvest while few used improved rice varieties. The use of hand hoe, oxen plough, and lack of credits reduced the timeliness of farm operations and limited the efficacy of cultivation and weeding.*

**Keywords:** Small Scale Rice farmers' Challenges, Morogoro, Tanzania.

### 1. Introduction

Rice is the second most widely grown cereal crop and the staple food for more than half the world's population. People depend on rice for food calories and protein, especially in developing countries (IRRI, 2004). One fifth of the world's population or more than a billion household in Asia, Africa and the America rely on rice systems for their main sources of employment and livelihoods. It is also on the frontline in the fight against world hunger and poverty (Nguyen and Ferrero, 2006).

In Tanzania, rice is the second most important crop and mostly used as a cash crop. Tanzania is the second largest producer of rice in Southern Africa after Madagascar, with production level of 818 000 tones (Matchmaker, 2010). The cultivated area is 681 000 ha and this represents 18% of Tanzania's cultivated land. About 71% of the rice grown in Tanzania is produced under rain fed conditions, where irrigated land presents 29% of the total land with most of it in small village level traditional irrigations with the average yield of 1-1.5 t/ha (Kibanda, 2008).

Rice farming in Tanzania, so far, has been able to provide income to small-scale farmers. However, it needs a better performance in farming unless the government takes an appropriate action to rescue the prevailing challenges. The challenge facing rice production in the study area includes lack of extension officers, inappropriate market, inadequate pesticides and plant diseases. The main challenge for rice research and development in the world—which includes improvement of the small farmers' welfare and rural employment on a sustainable and economic basis—is to find ways and means to produce more food for the fast growing population with limited land, less labour, less water and even less chemical inputs as well as to improve production in an efficient way (Chataigner J. 1997).

Rice production in Tanzania lacks technological innovations such as improved seeds, use of fertilizers, appropriate implements, and rain-water harvesting and post-harvest technologies are not yet widely adopted by the majority of smallholder farmers. This has resulted to inefficiency of technology dissemination and low use and adaptation of improved technologies. With no serious land constraint, efforts to increase smallholder agricultural production can include both expansion of area under cultivation and/ or intensification of the existing cultivated area. Agricultural education is needed to facilitate learning, which instills a favourable attitude towards the use of improved farm practices (Nkamleu and Manyong 2005).

Balogun et al. (2012) revealed that, less than half (44.1%) of the credit needs of households which also include farmers considered in their study were met through the help of friends/family and cooperatives sources. These financial sources offer households greater access to credit in terms of volume, pay-back period and interest rates. In another study, Adebayo & Adeola (2008) also investigated the sources and uses of agricultural credit among small-scale farmers in Oyo State. The study revealed that, co-operative societies was the highest source of farmers' credit (84.7%), followed by personal savings, friends/relatives (62.5%). In addition, 60% have their credit source from esusu clubs (traditional savings association).

In addition, Amaza et al. (1999) found that lack of awareness due to low literacy rate hinders women's access to farm resources in Nigeria and thus affect their productivity. Rice farmers are also affected by several factors including poor access to good quality seed, fertilizers and agrochemicals, poor producer prices, lack of mechanized equipments for threshing and winnowing which reduces quality of paddy rice, increases labour cost; lack of access to credit and market information. Improved access of farmers to these resources would likely increase farm productivity and reduce production costs; thereby increasing the competitive capacity of rice farmers.

Nevertheless, Ndanitsa et al. (2011) reported that some of the constraints faced by farmers were those of poor rural infrastructure, limited capital to increase volume of coverage, lack of trained man-power, low level of educational status, and lack of availability of extension education. These factors have jointly led to the large gap observed in rice demand and domestic production over the years. Therefore, the purpose of the study was to single out key findings that could guide the government in coming up with appropriate interventions for the challenges of small-scale rice farmers.

## **2. Materials and Methods**

The study was conducted at Mtimbila division in Ulanga District, Morogoro-Tanzania in May 2015. The total sample size was 100 respondents (73 males and 27 females). The study was done in four villages namely Karangatelo, Usangule, Itete, Madabadaba, where 25 small-scale rice farmers were selected from each village. The study was a cross-sectional research design which allowed the collection of data from different groups of respondents at relatively the same time. The study is descriptive in nature because it asked 'what' questions.

Both the qualitative and quantitative approaches to research were used, but the qualitative approach was largely employed. The quantitative approach had been used for purposes of analyzing quantitative data such as socio – demographic characteristics and compiling simple statistics, while qualitative approach was used to capture small-scale rice farmers' responses.

### **3. Ethical Issue**

As regard to the ethical issue the following ethical and moral concerns were addressed; harms and benefits were assessed for the wellbeing of research participants, informed consent were secured (participant understanding of what it means to participate in the study were ensured), privacy and confidentiality were kept (participants' identities and the data were protected).

### **4. Results and Discussion**

The characteristics of the small-scale farmers who participated in this study are shown in table 1. The results showed that nearly one-third of the small-scale farmers were males. The percentage of males farmers were 73% and females were 27%. Small-scale farmers in the study area admitted to have many challenges in rice farming. The percentage of 98% small-scale farmers agreed to have challenges in farming while 2% of the farmers said that they did not have challenges. The major challenges which small-scale farmers encountered were high cost of cultivation services during plough-wing, unfavourable market, plant diseases, and infestation of weeds, lack of extension services, lack of credit facilities as well as lack of improved varieties.

Small-farmers in the study area were challenged by the 2015 farming season where most of farmers' paddy plantations were attacked by the diseases which made plants to turn into yellow color. Plant disease was a setback to small-scale farmers in the village because it reduced production of yields in the field. That was the greatest challenge for small-scale farmers in the District since they couldn't know how to overcome the existed plant diseases. As regard to this plant diseases small-scale rice farmer couldn't get any technical support from the village agricultural officers and most farmers' yields were badly affected in the farm.

#### **4.1 Rice Seeds**

The findings in table 1 revealed that most farmers (95%) processed their own seeds (indigenous varieties) from the previous year's harvest while a few (5%) used improved rice varieties. The use of unimproved or indigenous varieties possessing different colours and shapes which when milled give poor quality of grains was often rejected by most customers. Therefore unimproved yields are usually low quality, keeping the farmers at a subsistence level of production. The results in this study is in line with the Surveys which were conducted in 2009 by the Africa Rice Center (Africa Rice) and national (NARS) partners in 16 countries in sub-Saharan Africa, involving more than 30,000 farming households, provide a good source of information on seed access by rice farmers. About 90% of the farmers use traditional varieties, and 75% of those using improved varieties use 'informal' seed systems. These farmers obtained seed from their previous harvest or they bought, exchanged or received seed from other farmers within their own village or from neighbouring villages. Other possible seed sources included development projects, NGOs and government extension agencies. Less than 10% of the farmers indicated that they had obtained seed of improved rice varieties from a local market (Bonou et al., 2012).

Table 1: Characteristics of the gender of small-scale rice farmers, type of seeds and their challenges

Sex of the respondents	Frequency	Percent
Male	73	73.0
Female	27	27.0
Total	100	100.0
<b>Challenges for rice farming</b>		
Yes	98	98.0
No	2	2.0
Total	100	100.0
<b>Type of seeds used</b>		
Improved	5	5.0
Unimproved	95	95.0
Total	100	100.0

#### 4.2 Farm equipments

The results in table 2 showed the percentage of small scale farmers who used tractors to cultivate their land were 25%. It doesn't mean that farmers owned tractors but they had to hire and pay for the given services, upon that one acre was changed 50,000tsh which was equal to 23\$. Farmers who used hand hoe (33%) to cultivate their land had limitations in terms of efficiency and operational output in the rice production. Therefore 42% of farmers used Oxen plough to till their land, these methods made farmers to apply more muscle power that placed severe limitations on the amount of land that could be cultivated per family. Poor farm equipment for farmers reduced the timeliness of farm operations and limits the efficacy of essential operations such as cultivation and weeding, thereby reducing crop yields.

#### 4.3 Technical Assistance

Findings in table 2 revealed that 54% of Small-scale farmers said they had an agricultural officer in the village, while 46% of farmers said they didn't have an extension officer in the village. Farmers in the village did not in any way get technical support from the village agricultural officer. The village agricultural officer had neither paid visit to a farm nor gave any agricultural advices to the farmers. Farmers were demoralized and requested for an immediate action from the concerned top management officials under the ministry of agriculture such that they could come and give solutions to their challenges particularly with affected paddy fields that were attacked by diseases. Lack of technical know-how to small-scale farmers affected their economic efficiency in the rice production. Therefore; technical assistance from extension officers is very important to increase the overall rice production to small-scale farmers.

Table 2. Distribution of table according to farming instruments and extension officer

Farming instruments	Frequency	Percent
Tractor	25	25.0
Hand hoe	33	33.0
Oxen plough	42	42.0
Total	100	100.0
<b>Extension officer</b>		
Yes	54	54.0
No	46	46.0
Total	100	100.0

#### 4.4 Infestation of weeds

The findings in table 3 revealed that 24% of the small-scale farmers weeded for one time, 56% weeded for two times, 13% weeded for three times and 7% weeded for more than four times. The number of weeding depended on the nature of the land, because some lands were more likely to have more grasses than other lands. Farmers were compelled to weed more than one times due to a quick grow of grasses in their rice fields. There was a certain type of grass that used to grow very fast just after being weeded, farmers named such type of grasses as *dakika tatu* in local language which meant three minutes, this implied that grasses would have grown bigger just after three days of weeding. Therefore, farmers whose land had such type of grasses incurred more costs than others because of the number of weeding that were done in their farms.

#### 4.5 Market for rice

Results in table 3 revealed that, farmers' rice price was determined through bargaining with the buyers and the government was not involved in the price determination. Farmers who sold their rice at the market places were 8%, while 92% of them sold their rice at home. During harvesting periods many buyers came in the village and bought rice from farmers. At harvesting time the price of rice used to be very cheap; hence, buyers used such opportunity to buy and store many bags of rice at relatively cheap price and sell when the market demand is high where they could make a huge profit. The results also revealed that buyers were even setting the rice price to small-scale farmers. Such situation made farmers to be economically stagnant as they were not getting benefits from the production of rice. Therefore, there is a need for the government to provide clear market centres where small-scale farmers could directly have access to markets in order to gain good profit and lessen their burdens. Rice Marketing System in Tanzania has been developed by the private sector since the government accepted the structural reforms in 1986 (Senda, 1999).

#### 4.6 Credit Services to farmers

Results in table 3 revealed that lack of credit to small-scale farmers was another bottleneck to purchase inputs for farming which hindered an increase of rice production. Small-scale farmers who had access to credits were 11% included farmers with formal employment (security) who were primary school teachers in the village. Farmers who did not have access to credits were 89% who did not have formal jobs. There was a lack of a well organized farmer’s organization such as rice growers associations which could play an advocacy role or serve as pressure groups to ensure that rice growers have access of credit services. Credit facility was highly recommended to farmers in the study areas. Farmers who were lacking security did not get credit services, therefore commercial financial institutions were not ready to offer credits to such a risky businesses like agriculture. Credits would enable farmers to increase acreage, and engage themselves in marketing associated activities like processing and packaging.

Table3. Distribution of table according to number of weeding, market and Credit services

The number of weeding	Frequency	Percent
One time	24	24.0
Two times	56	56.0
Three times	13	13.0
More than four times	7	7.0
Total	100	100.0
<b>Selling of rice products</b>		
In the market	8	8.0
At home	92	92.0
Total	100	100.0
<b>Farmers with Credit services</b>		
Have credit services	11	11.0
Have no Credit services	89	89.0
Total	100	100.0

## **Conclusion**

The study revealed that plant disease was a setback to small-scale farmers in the village because it reduced production of yields in the field. Farmers used their own seeds (indigenous varieties) from the previous year's harvest while few farmers used improved rice varieties. The use of unimproved or indigenous varieties possessing different colours and shapes which when milled give poor quality grain was often rejected by most customers. Farming equipments like hoe and oxen plough reduced the timeliness of farm operations and limit the efficacy of essential operations such as cultivation and weeding, thereby reducing crop yields. Lack of technical know-how to small-scale farmers affected farmers' economic efficiency in the rice production, because technical assistance is very important to increase the overall rice production to small-scale farmers. The number of weeding depended on the nature of the land, where some lands were more likely to have more grasses than other lands. Farmers were compelled to weed more than one times due to a quick grow of grasses in their rice fields. Farmers' rice price was determined through bargaining with the buyers and the government was not involved in the price determination. Therefore, lack of credit made small-scale farmers not to purchase inputs for farming, Credits would have enabled farmers to increase acreage, and engage themselves in marketing associated activities like processing and packaging.

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