Transaction Cost Factors Affecting the Economic Life of Smallholder Paddy Farmers in Tanzania

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ABSTRACT

Smallholder farmers (SHFs) constitute more than half of the world's undernourished people and the majority of people living in absolute poverty. Due to high transaction costs, lack of access to financial services, inaccessibility to more remunerative markets, and immediate cash needs, many sell their harvest when prices are low, then buy when prices are high for lack of household stock. Though numerous studies exist on the effects of transaction costs on smallholder farmers, many do not focus on how these affect smallholder paddy farmers. The objective of this study was to enumerate market factors affecting smallholder farmers and investigate those that influence the transaction costs of smallholder farmers. The study used multi-stage sampling techniques consisting of purposive sampling based on paddy productivity, knowledge of market, etc. and simple random sampling of balloting to select the five key informants and 315 smallholder paddy farmers with an average of nine persons per group thereby constituting about 30% of the total 1021 population. The study observed the market

participation requirements of respondents and found that 82.5% stated that it is difficult while only 19% see the market size as large. Further, 72.4% have their customers as small quantity buyers, and 62.2% reportedly rated market prices as poor. The results show that most of the customers are small quantity buyers, which buttresses the fact that inadequate access to markets for smallholder farmers is one of the key factors affecting reduction of transaction cost, a challenge currently prevailing in the sub-Saharan African agricultural sector.

Key Words: Smallholder Farmers, Transaction Cost, Market Factors, Paddy Productivity

Introduction

Tanzania has a total land area covering 94.5 million hectares, out of which 44 million hectares are suitable for agriculture. However, it is estimated that only 23 percent of this arable land is under cultivation. The country's population is approximately 50 million, with 45 percent under 15 years of age and an annual population growth rate of 2.8 percent (Mbise et al., 2011). Its main geographic features are a coastal plain in the west, northern highlands along the border with Kenya, southern highlands near the Zambian border, and the semi-arid central plains. Tanzania is larger and more populous than any of its neighbours in eastern and southern Africa with the exceptions of Ethiopia and South Africa (Match Maker Associates, 2010).

Paddy is one of the most cultivated important food grains in Tanzania and is the second most important food crop in terms of number of households, area planted and production volume. It is grown under three major ecosystems, namely rain-fed lowland, upland and irrigated. Its cultivation is predominantly by smallholder farmers under rain-fed conditions. It falls under the category of 'preferred staples,' which also comprises maize and wheat. Other categories include 'drought staples' (sorghum, millet and cassava), 'pulses' (beans and pigeon peas) and 'oil seeds' (sunflower, groundnuts, sesame and copra) (Mbise et al., 2011). Due to climatic conditions, most of the wetlands, which are major rice-producing areas, lack alternative food and cash crops, making rice the only source of

cash and the staple food. The leading regions in rice production are Shinyanga, Tabora, Mwanza, Mbeya, Rukwa and Morogoro. Others include Kilimanjaro, Arusha, Manyara, Iringa, Mara, Tanga and Kigoma. Rice consumers in Tanzania are very keen on grain size, colour, taste/flavour and cooking attributes (Gebremeskel, 2010).

Many of the world's poor still directly or indirectly depend on agriculture for their livelihood, most of them as small-scale farmers. Living in remote areas with poor infrastructure, they face high transaction costs that significantly reduce their incentives for market participation (Barrett, 2008). Though specific households face unique constraint sets, The World Bank (2008) identified nine barriers broadly affecting SHF transaction costs: awareness, technology, organization and management skills, production, productivity, financial resources, infrastructure, information, and policy environment. Lack of connections to established market actors, distortions or absence of input and output markets, and credit constraints further worsen SHF transactions. Farmers in remote locations also have to contend with inadequate transportation and storage infrastructure, particularly the disadvantaged (IFAD, 2003).

Review of Literature

Since Williamson proposed the theory of Transaction Cost Economics in 1937, a number of researchers have used it in a variety of relationships. The transaction cost approach, as developed by Coase; Williamson; and Ouchi, focuses on how the characteristics of a transaction affect the costs of handling it through markets, bureaucracies, and other forms of organization. The 'New Institutional Economics' approach is also based on the premise that institutions have transaction cost minimizing arrangements which may change and evolve with changes in the nature and sources of transaction costs (Williamson, 1985). A transaction occurs whenever a good or service is transferred across a technologically separable interface (Williamson, 1985). Transaction costs include the costs of gathering and processing the information needed to carry out a transaction, of reaching decisions, of negotiating contracts, and of policing and enforcing those contracts. Coase (1960) emphasizes that market exchanges are not costless. Costs are incurred because of the friction involved in the exchange process, as it entails the transfer and enforcement of property rights.
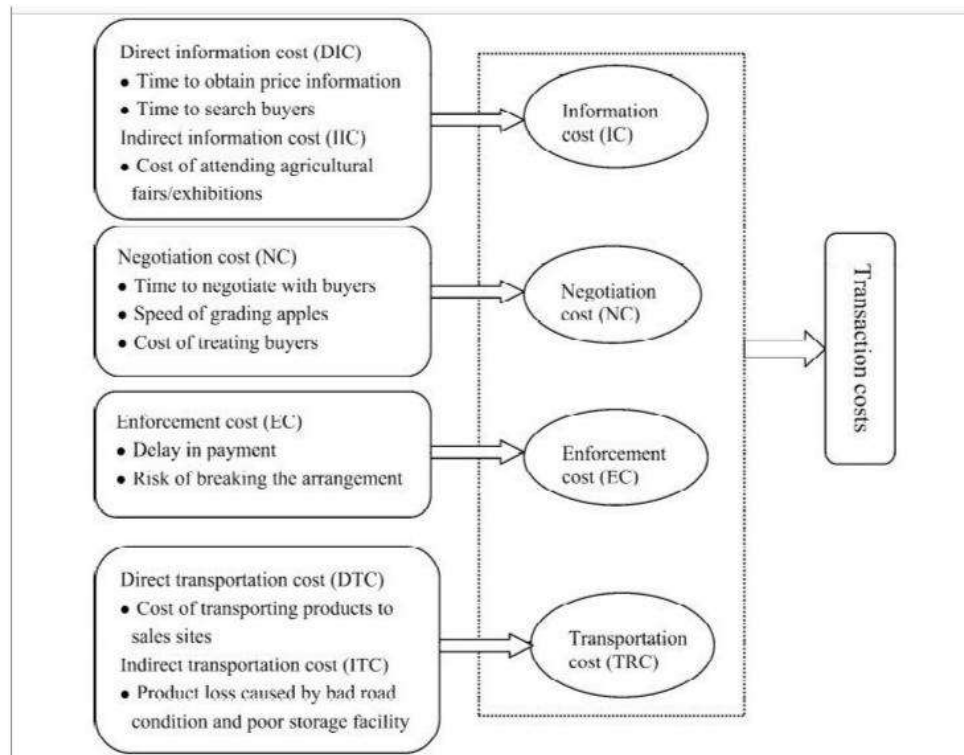
Figure 1: Framework of Transaction Costs

Source: Wang and Huo, (2013).

Past studies such as Key et al. (2000) have categorized these costs into fixed and variable transaction costs. Fixed transaction costs (FTCs) are invariant to the volume of output traded and affect smallholder farmers' market participation decisions. They include the costs of searching for a buyer with the best price, or search for a market; for negotiation when there is asymmetric information on prices; and for screening the potential buyer and enforcing the contract in case of credit sales (Kirsten & Vink, 2005). Variable transaction costs (VTCs), on the other hand, are per unit costs of accessing markets that vary with the volumes traded and may affect the decision to participate in the market as well as the quantity traded. They include costs associated with transferring the output being traded, such as transport costs and time spent delivering the product to the market. In essence, variable transaction costs raise the real price of the commodity purchased and lower the real price received for the commodity sold (Key et al., 2000).

A number of studies, such as Key et al. (2000) and Makhura et al. (2001) have identified high transaction costs as one of the key reasons for smallholder farmers' failure to participate in markets. The studies also accorded attention to the participation of intermediaries operating in such marketing systems. Key et al. (2000) worked on market participation, supply response and transaction costs using data from corn producers in Mexico and claimed that costs associated with market transactions is the reason why households have different relationships with the market. Hobbs and Young (2000) stated that product perishability also complicates transaction, and raises transaction cost. Shiferaw et al. (2009) identified low volume as one of the major factors limiting the success of smallholder marketing groups in Kenya. Though numerous studies have accorded attention to the effects of transaction costs on smallholder farmers, not many focus on how they affect smallholder paddy farmers.

Problem Statement

More than two-thirds of the three billion people comprising the developing world's rural population live on small farms of two hectares or less. Smallholder farmers (SHFs) constitute more than half of the world's undernourished people and the majority of people living in absolute poverty. Due to high transaction costs, immediate cash needs, lack of access to financial services, and inaccessibility to more remunerative markets, SHFs have traditionally sold their crops to intermediaries after harvest (Mukindia, 2014). Selling at harvest when prices are low for lack of liquidity, then buying when prices are high for lack of household stock, the majority of SHFs participate in markets as net buyers of the very food they produce (Barrett, 2008).

Similarly, the majority of smallholder farmers in developing countries are located in remote areas with poor infrastructure and they often fail to participate in markets due to the high transaction costs involved. Sometimes, the transaction costs are so high that markets can be said to be "missing" while in other instances, farmers may choose to remain self-sufficient in order to minimize the transaction costs (Key et al., 2000). Therefore, this study is carried out to show the multifaceted problems affecting paddy farmers' transaction costs and make recommendations on reducing transaction costs.

Objectives of the Study

The overall objective of the study is to investigate the effects of transaction costs on the participation of smallholder paddy farmers in markets. The specific objectives of the study are:

i.   To enumerate market factors affecting smallholder farmers

ii. To investigate factors influencing transaction costs of smallholder farmers

Methodology

The study used multi-stage sampling techniques consisting of purposive sampling based on paddy productivity; knowledge of market, etc while simple random sampling of balloting was used to select the five key informants from smallholder farmers in farmers groups, five group heads, three MSalala Paddy Farmers Company (MPAFAC) governing board members and one project district focal person. The target population for this study consisted of the members of MPAFAC belonging to five different wards, 35 groups and different villages. According to the secondary data obtained from Small Enterprises Institutional Development Associates (SEIDA), there were a total of 1021 smallholder paddy farmers from these wards as at March 2017. A purposive sampling of MPAFAC was carried out to select 5 wards belonging to 35 different groups. Simple random sampling of balloting was done to select 315 smallholder paddy farmers with an average of nine persons per group thereby constituting about 30 percent of the total 1021 population. To enhance the validity and reliability of the instruments, a pre-test was carried out at Shilela Ward by administering questionnaires to the SHF in one group out of the sampled population to assess the ability of the respondents to interpret and answer the questions asked correctly. Data obtained were entered and analysed descriptively using frequencies, tables, graphs and simple percentages. Mean, median, mode and standard deviation were calculated for continuous variables and Chi-square was used to test for associations between categorical variables and proportions. Statistical computations were carried out using SPSS software. A confidence level of 95% was used and p-values $\leq$ 0.05 were considered statistically significant.

Results

Socio-demographic data of respondents

Results of the study reveal that of the 315 smallholder farmers interviewed, 49.2% were male and 50.8% were female. As shown on table 1, the age categorization of the farmers shows that 25.4%were in the 18–35 years group, 61.9% were aged 36–55 years and 12.7% were aged 56 years and above. The majority (75.9%) of the farmers were married, while 11.7% were single, 6.7% widowed and 5.7% separated. The results further show that the bulk of the study population (67.3%) had primary education while 23.8% had no formal education. A farm size of 2.5-5.0 acres was the most common (53%) among the sampled respondents while 5.1 acres and above was the least common with percentage of 18.1%. The survey revealed that most of the respondents (45.4%) rented their farmland, while 23.2%, 9.5%, and 21.9% of the farmers inherited, leased and purchased theirs respectively.

Table 1: Demographic Composition of Farmers

Domain	Frequency	Percent
Gender		
Male	155	49.2
Female	160	50.8
Total	315	100.0
Marital Status		
Single	37	11.7
Married	239	75.9
Widowed	21	6.7
Separated	18	5.7
Total	315	100.0
Age Group		
18 – 35yrs	80	25.4
36 – 55yrs	195	61.9
56yrs and above	40	12.7
Total	315	100.0
Educational Status		
No Formal Education	75	23.8
Primary Education	212	67.3
Secondary Education	20	6.3
Vocational Education	8	2.5
Total	315	100.0

Domain	Frequency	Percent
Farm Size (Acres)		
0.0 - 2.4	91	28.9
2.5 - 5.0	167	53.0
5.1 and above	57	18.1
Total	315	100.0
Land Acquisition		
Inheritance	73	23.2
Rent	143	45.4
Lease	30	9.5
Purchased	69	21.9
Total	315	100.0

Source: Field survey, 2018.

Market factors affecting smallholder farmers

The study examined the market participation requirements of respondents, while 17.7% said it was easy to participate in market, 82.5% stated it is difficult. The study then explore further to look at market size. While 42.2% saw the market as small, 38.7% as medium and 19% saw it as large. On access to input materials for production, majority of the respondents (83.2%) stated it was difficult to access input materials while 10.2%, 17.5% and 72.4% saw their customers as off-takers, one-time buyers and small quantity buyers respectively.

Table 2: Market factors affecting smallholder farmers

Domain	Frequency	Percent
Market Participation		
Easy	55	17.5
Difficult	260	82.5
Total	315	100.0
Market Size		
Small	133	42.2
Medium	122	38.7
Large	60	19.0
Total	315	100.0
Access to Input Materials		
Easy	53	16.8
Difficult	262	83.2
Total	315	100.0

Domain	Frequency	Percent
Description of Customers		
Off-takers	32	10.2
One-time buyers	55	17.5
Small Quantity Buyers	228	72.4
Total	315	100.0

Source: Field survey, 2018.

Table 3: Market factors affecting smallholder farmers II

Domain	Frequency	Percent
Rating of Market Prices		
Fair	43	13.7
Good	76	24.1
Poor	196	62.2
Total	315	100.0
Rating of Market Demand		
High	106	33.7
Average	134	42.5
Low	75	23.8
Total	315	100.0
Adequate Access to Market		
Yes	197	62.5
No	118	37.5
Total	315	100.0
Do buyers reject your paddy?		
Yes	121	38.4
No	194	61.6
Total	315	100.0
Customer Retention Strategy		
Harvest on Time	9	2.9
Agreement on Sales	4	1.3
Good Crops and Preservation	21	6.7
Selling Together	51	16.2
Good Output	70	22.2
No Strategy/Rely on Government	160	50.8
Total	315	100.0

Source: Field survey, 2018.

While looking at access to market and its role in transaction cost, the study investigated respondents' farming experience, market prices and demand, adequate access to market, response behaviour of customers among others. More than half of the farmers (58.7%) had 4.1 years and above farming experience. The majority of the farmers (62.2%) rated market prices as poor while 33.7%, 42.5% and 23.8% saw market demand as high, average and low respectively.

On adequate access to markets, 62.5% of the respondents stated that there is adequate access, while 38.4% stated that buyers reject their paddy. The research further investigated the reasons for this high rate of rejection and found out that 13% of the respondent said the paddy has colours, 1.3% said because of poor weighing scale, 7.3% was due to high price, 8.9% due to poor harvest and 4.8 due to mixing of seeds. With regard to outcomes to farmer's customer retention strategy, it was observed that most of the farmers (50.8%) lacked retention strategies and relied on government or institutions to provide them.

Factors influencing transaction costs of smallholder paddy farmers

Proximity to the market is an important factor to consider in access to market as well as available mode of transportation. The majority of the respondents (86.3%) reported that the road to their farms were not tarred, but 81.6% had a personal means of transportation, in the form of a bicycle (43.2%), animal (24.1%), motorcycle (13.3%) and others. The mean distance from farms to markets was 19.519km, with the minimum and maximum distances being 1km and 100km respectively. The mean distance from farms to nearest tarred roads was 5.1794km, with minimum and maximum distances being 1km and 21km respectively. A closer examination of the relationship between gender and ownership of transportation modes showed that none of the female respondents had a vehicle and none of the male respondents had a tricycle. Further investigations shows that while 37 male and 39 female farmers own animals, 61 male and 75 female farmers own bicycle, 42 male also have Motorcycle out of 315 sampled respondents.

Table 4: Factors affecting transaction cost

Domain	Frequency	Percent
Type of Road to Farm		
Tarred	43	13.7
Un-tarred	272	86.3
Total	315	100.0
Own Means of Transportation		
Yes	257	81.6
No	58	18.4
Total	315	100.0
Transport Means		
Animal	76	24.1
Motorcycle	42	13.3
Tricycle	2	.6
Vehicle	1	.3
Other (Bicycle)	136	43.2
Total	257	81.6

Statistics	**Distance from Farm to Market in Km**	**Distance from Farm to nearest Tarred Road in Km**
Mean	19.5190	5.1794
Median	12.0000	4.0000
Mode	42.00	4.00
Std. Deviation	16.52699	3.43693
Range	99.00	20.00
Minimum	1.00	1.00
Maximum	100.00	21.00
Sum	6148.50	1631.50

Source: Field survey 2018.

Table 5: Showing ANOVA test of relationship between distance from farm to market and market access

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.245	1	0.245	0.001	0.976
Within Groups	85766.14	313	274.013		
Total	85766.39	314			

Taking 5% probability level, since the P-value= 0.976, it can be said that there is an association or relationship between adequate access of smallholder farmers to paddy markets and distance from the farm to the market.

Table 6: Showing ANOVA test of relationship between distance from farm to nearest tarred road and market access

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	36.171	1	36.171	3.082	0.08
Within Groups	3672.945	313	11.735		
Total	3709.116	314			

Taking 5% probability level, since the P-value= 0.08, it can be said that there is an association between adequate access of smallholder farmers to paddy markets and distance from the farm to the nearest tarred road.

Discussion

The motivation for this study arose from the need to understand the extent to which transaction costs affect smallholder paddy farmers' participation in markets. The study examined the market participation requirements of the respondents and observed that 82.5% stated that it is difficult while only 19% saw the market size as large and 72.4% indicated that their customers were small quantity buyers. Furthermore, 62.2% rated market prices as poor while 62.5% stated they have adequate access to market. It was also noted that 50.8% of the farmers lacked customer retention strategies and were relying on government or institutions to provide one.

Proximity to market or point of sale is an important factor to consider in transaction costs. About 86.3% of the respondents reported that the road to their farms were not tarred, however, the majority (43.2%) have bicycles as their personal means of transportation. The mean of distance from farms to markets was 19.519km, with the minimum and maximum distances to farms being 1km and 100km respectively. The mean distance from farms to nearest tarred road was 5.1794km, with the minimum and maximum distances being 1km and 21km respectively.

Hypotheses were tested to find out how these distances affect access to market. It was observed that, at 5% probability level, with P-value = 0.976,

there is an association or relationship between adequate access of smallholder farmers to paddy market and distance from farm to market. Also, taking 5% probability level, since the P-value= 0.08, we accepted that there is an association between adequate access of smallholder farmers to paddy markets and distance from farms to the nearest tarred road.

Conclusion

The majority of the smallholder farmers had primary education and this is in tandem with the view of Mwatawala et al. (2016) that the majority of the population of developing countries that depend on agricultural activities for economic prosperity have their agricultural sector operated by individuals with low level of education.

Since the results show that most of the customers are small quantity buyers, this buttresses the fact of inadequate access to markets for smallholder farmers as one of the key factors militating against reduction in transaction costs, a challenge currently prevailing in the sub-Saharan African agricultural sector. The age distribution of farmers is another interesting issue as it touches on the issue of food security in Africa and the need to make agriculture attractive to its young growing population.

Rejection of farm produce indicates poor agricultural practices on the side of the farmers and buttresses the need for quality training on good agricultural practices. Similarly, over-reliance of farmers on government/institutions to help them retain their customers shows lack of proper training in business management, which is affecting their business productivity.

From the results, it can be assumed that since the majority of the roads leading to the respondents' farms are not tarred, they will spend more on transportation which will impact their transaction cost. Also, since most of the respondents rely on government and institutions to provide and help them retain their customers, this study believes that they will continuously invest in customer acquisition which will further increase their transaction costs.

Also since most of the respondents rely on bicycle as their mode of transportation, this increases the time they get to market which may impair their transaction cost. Also, large proportion of respondents indicated that the buyers reject their produce, this will further increase their transaction cost as many will have to look for new buyers. This calls for the need for stable market and capacity building for the farmers.

Recommendations

For Tanzania to achieve a great feat in the agricultural sector and improve the economy of smallholder farmers, concrete activities must be instituted. These include: regular group meetings, where members gather to discuss future strategies and how to manage routine business; and collective marketing, whereby agricultural produce is transported to collection centres and sold on special market days to exploit economies of scale. Marketing Infrastructure Value Addition and Rural Finance (MIVARF) and MSalala Paddy Farmers Company (MPAFAC), with support from government, need to ensure the availability of high quality inputs for farmers as well as agricultural equipment for mechanized farming. If these issues are addressed, farmers can spend the same amount of money to obtain larger quantities of produce and as such they would make more money and reduce the cost of doing business.

Farmer education programmes, linkage to markets, quality and profitable packaging are important. And these are not an individual's job; all bodies supporting smallholder farmers must see the need to contribute their quota as this will lead to more productive output. Age, gender, and education can affect transaction costs in a variety of ways. Age can indicate farming experience, which makes certain information and search costs easier and relatively cheaper. Compared with men, women have greater variability of transaction costs related to accessing land and credit. Education matters in reducing the costs of searching for and processing information. Similarly, government, through various funding agencies and institutions, should make credit facilities and grants available to farmers to enable them adopt group activities.

Respondents acknowledged the benefits that capacity building programmes have had on their productivity over the years. However, the need for more training was indicated by farmers and observed by the study as many see it as one of the best strategies to reduce transaction costs. Farmers need to learn how to separate the business from personal expenses

such as renovation or building of houses, paying of dowry and wedding expenses. The study recommends that farmers take courses or undergo training on financial management in business. Farmers also need to manage money effectively especially during harvest time; maintenance of a savings account is recommended so that they can have something to fall back on during the off-season. In addition, farmers need to find alternative sources of revenue for subsistence during the off-season.

Farmers should select certified seeds, plant varieties like zarophyte and karamata for improved yield. Farmers need to find alternative source of revenue for subsistence during off-season. Farmers also need to manage money effectively especially during harvesting time, a saving account is recommended so that they can have things to fall on during off-seasons.

Support services in the form of training, research, and financial literacy and market preferences obtainable in the farmer organization have contributed to strengthening MPAFAC. Notwithstanding, they still face a number of challenges. While the composition of farmers groups was seen to have a varied effect on transaction costs as well as smallholders' participation in farmers' organizations, some rules within farmers group can be made less stringent such that more opportunities are provided for young people to not only join MPAFAC but also be involved in decision making.

Rejection of produce is another issue that affects transaction cost as farmers need to spend extra money to attract new buyers. If MPAFAC could ensure that farm produce meet standard requirements and buyers are well established before the produce leave the farms, it will save farmers a lot of money.

Since the majority of respondents reported that the roads to their farms were not tarred, it is expected that farmers spend extra money in moving their produce to points of sale or to markets. MPAFAC can offer collective marketing services whereby all the produce are collected together in the same place so as to reduce the amount each individual spends on transactions. Warehousing facilities and availability should be improved so that more people will have access to them.

A central selling location is needed. MPAFAC can adopt existing agricultural cooperative societies or create new ones to solve the issue of sales. Relationship can also be established with processors so that markets at good price are already available before harvest. MPAFAC should try and

get as many processors as possible to sell to. They should also come up with other economic activities to engage farmers during the off-season period. Work should be done to make buying prices more stable. Provision of demonstration plots during the training period will also help farmers.

During the off-season, many do gardening of other crops, vendoring through loans, market trading etc. therefore; it will be beneficial if farmers can be provided with irrigation schemes so as to ensure continuous planting instead of just planting once a year as is currently the practice. It is important for farmer groups to go beyond a single crop focus and add additional agricultural commodities to their activities. The farmers need to diversify, in order to reduce risk. In group governance, trust among members and good leadership was found to be significant in the pursuit of markets by paddy farmers. This is supported by Markelova (2009) who found that since group rules are crafted by members themselves and adopted and there is a higher likelihood of them being understood and followed, which contributes to the effectiveness and sustainability of collective efforts.

Most farmers reiterated that to cope and survive well, they need to plant an average of 5 acres per year, do more of transplanting which yields more compared to broadcasting, and use good agricultural practices. If knowledge is provided on how these can be done, it will assist the farmers as well as the nation's food bank.

MPAFAC needs to continue with manpower and financial support. It should also find a way to generate revenue so that its members can be paid meeting allowances as well as served food during meetings. Farmers also need to be encouraged to plant in several areas during planting season. Evidence shows that MPAFAC has been a success story; it needs to continue along this line.

MIVARF needs to work in such areas as transportation which is noted to be very bad. More training programmes on financial management and modern production of rice should be conducted. MIVARF needs to put storage infrastructure in place to meet farmers' needs in cases where internal markets are flooded and there are no other markets to sell to. Additionally, subsequent provisions should be made with future production targets in mind. Irrigation should be provided so that farmers can farm during the off-season and do not have to depend on rain-fed agriculture. Waste

management strategy also needs to be worked on, as wastes constitute a nuisance to the environment, especially since most are not suitable as livestock feed.

With the right training module on good agricultural practices communicated in a participatory manner, reinforced by commercialization of smallholder farmers, the skills and knowledge of farmers on improved agriculture will record an increase and this will assist them in reducing their transaction costs.

Acknowledgements

References

Barrett, C.B. (2008). Smallholder market participation: Concepts and evidence from eastern and southern Africa. *Food Policy* 33(4): 299–317.

Coase, R.H. (1960). The problem of social cost. *Journal of Law and Economics* 3(October), 1–44.

Gebremeskel, B.K. (2010). Rice value chain in Metema district, north Gondar, Ethiopia: Challenges and opportunities for innovation. Dissertation for Award of MSc Degree at Haramaya University, Ethiopia, 116pp.

Hobbs Jill E, Young Linda M, 2000. Supply Chain Management: An International Journal. Volume 5. Issue 3. International Journal 1 (2), 15-27, 1996

IFAD. (2003). Promoting market access for the rural poor in order to achieve the Millennium Development Goals. Rome: IFAD.

Key, N., E. Sadoulet, and A. de Janvry. (2000). Transactions Costs and Agricultural Household Supply Response. *American Journal of Agricultural Economics* 82: 245-59.

Kirsten, J. and Vink, N. (2005). The economics of institutions: Theory and applications to African agriculture. Course study material, Department of Agricultural Economics Extension and Rural Development, University of Pretoria.

Markelova, H. (2009). Collective action for Market access. Food policy 34.

Marketing Infrastructure Value Addition And Rural Finance Support Programme (MIVARF). Annual Progress Report 2017, JULY 2016 – JUNE 2017

Match Maker Associates. (2010). Value Chain Analysis of Rice and Maize in Selected Districts in Tanzania. A research report submitted to Agricultural Council of Tanzania. 21pp.

Makhura, M., J. Kirsten, and C. Delgado. (2001). Transaction costs and smallholder participation in the maize market in Northern Province of South Africa. Seventh Eastern and Southern Africa Regional Maize Conference, 11th -15th February, 2001, pp. 463-467.

Mbise, M., D.H. Ngongola, H. Chale, B. Maonga, and F.T.M. Kilima. (2011). Transaction costs and food security: A case of maize in southern highlands of Tanzania. Regional Universities Forum for Capacity Building in Agriculture. Paper presented at the Second RUFORUM Biennial Meeting 20 - 24 September 2010. Entebbe, Uganda.

Mukindia, B. M. (2014). Influence of collective action on market access among smallholder banana farmers in Imenti South District, Kenya. International Journal of Social Sciences and Project Planning Management, 1 (2), 99-110.

Mwatawala H.W, Mwang'onda E, Hyera R.N. 2006. Paddy Production in Southern Highlands of Tanzania: Contribution to Household Income and Challenges Faced by Paddy Farmers in Mbarali District. Scholars Journal of Agriculture and Veterinary Sciences e-ISSN 2348–1854

Shiferaw, B.A., Obare, G., Muricho, G., Silim, S. (2009). Leveraging institutions for collective action to improve markets for smallholder producers in less-favored areas. *African Journal of Agricultural and Resource Economics* 3(1): 1-18.

Wang, L.J. and Huo X.X. (2013). Grower's Selling Behaviour: Transaction Cost Comparison Analysis. *China Agricultural Economics Review*, 15(_0 2).

Williamson, O. (1985). *The Economic Institutions of Capitalism: Firms, markets, relational contracting*. New York: The Free Press.

World Bank. (2008). World Development Report: Agriculture for development. Agriculture (Vol. 54). Washington DC: World Bank.