Economic Analysis of Fresh Fruit and Vegetable Export Marketing Channels by Small-Scale Farmers in Tanzania: The Case of Meru District

***C. P. Mgeni and A. E. Temu**

Department of Agricultural Economics and Agribusiness, Sokoine University of Agriculture, P. O. Box 3007, Morogoro, Tanzania

Abstract

The study was carried out in two divisions of Meru District in Arusha region in Tanzania to investigate the profitability and coordination of fresh fruit and vegetable export marketing channels by small-scale farmers in Tanzania. Purposive sampling was done in order to select two divisions where most of the horticultural crops are grown and then simple random sampling technique was employed in selecting 60 small-scale farmers of fresh fruit and vegetable, 5 large-scale producers, 14 middlemen and one Export Company. Descriptive and quantitative analytical techniques i.e. cluster analysis; Gross Margin and Logistic regression were employed. The findings suggest that four export marketing channels for fresh fruit and vegetable exist, and these are vertically integrated. The enterprises profitability between farmers selling fresh fruit and vegetable to export and domestic markets was statistically different ($P<0.05$), meaning that export trade is shown significantly being more profitable than domestic trade, with a mean GM difference of Tsh. 543,642 per acre. This study also found that knowledge about Global Good agricultural practices, record keeping, possession of storage facilities and contracts were the major challenges facing FFV export market enterprises. This supports the formation of FFV farmers and traders association and the provision of soft credit which may increase FFV export marketing efficiency.

Key words: Fruit and Vegetable, Export Market channels, Small-Scale Farmers

Introduction

In Tanzania Export of agricultural products, both from traditional and non- traditional crops, contribute considerably to foreign exchange earnings (Temu and Marwa, 2007). Prices for traditional cash crops such as coffee, cotton, sisal, tea and cashew nuts, have been declining while those for non-traditional high value crops have been increasing, these have compelled farmers to diversify and switch towards fresh fruit and vegetable. Dolan and Humphrey (2001) argue that, because of an increasing demand for fresh fruit and vegetable, effort has been devoted to promoting the production of fresh horticultural products in developing countries.

Fresh fruit and vegetable (FFV) have more value to people than is commonly appreciated; exports of these crops enhance workers' pay, skills, their productivity and future prosperity (Wangwe, 1995). Moreover, it is widely accepted in development economics that exports can be a driving engine of an economy (Lall, 2001; Wangwe, 1995). Exports influence and contribute to higher growth and economic development (Wangwe, 1995). Exports remain directly relevant as the main means of earning foreign exchange, reaping economies of scale, as well as form a basis for specialization and accessing new technology (Lall, 2001). Furthermore, exports are sources of learning and channels for technological transfers to the nation. They also allow domestic producers to learn from sophisticated markets abroad (Wangwe, 1995). In the absence of such spillovers, there is only a weak economic base for government policies that favor exports.

In Tanzania, like in other developing countries, fresh fruit and vegetable trade is under many small producers who have to look for markets

**Corresponding author: C.P. Mgeni*

Accepted July, 2010 ***Tanzania Journal of Agricultural Sciences (2010) Vol. 10 No. 1, 46-54***

internationally on individual bases. The FFV supply chain in Tanzania is very complex and disorganized (Lynch, 1994). Existing supply chains are based on the contacts and knowledge of the people involved in the trading and not just in the presence of physical roads, buildings and vehicles (Lynch, 1994).

Moreover, few small-scale farmers have succeeded in producing for the export market, but still they face a daunting set of challenges. The most reported challenges include, lack of storage facilities, poor record keeping, unreliable input delivery, knowledge on Global Good agriculture practices (GlobalGap) and contractual arrangements (Brigitte, *et al.,* 2005). The short post harvest life span of horticultural crops also puts the enterprise at high risk. It takes only few days for most of the horticultural produce to rot after being harvested. The short term post harvest life span, and the quality attributes required by consumers of horticultural crops, necessitate a systematic and an effectively coordinated chain.

Several studies have been conducted on the horticulture sector in Tanzania. Some of which were: "Markets of horticultural crops" (Mbelwa, 1999). "Fresh fruit market in Tanzania: prospect for international marketing" (Nyange *et al.,* 2000). "Vegetable market in Mgeta, Morogoro district", (Ashimogo and Lazaro, 1989). "Economic analysis of Vanilla Production and Marketing", Bukoba district (Mutayoba, 2005), and "Evaluating production and marketing potential for paprika as an alternative crop to tobacco: Urambo, district" (Nathania, 2007).

Regardless of the useful studies in the past, there is still a lack of information regarding profitability, movement and coordination of fresh fruit and vegetable export marketing and institution bound chain actors, hence there is a challenge for small-scale farmers to remain competitive and cope with international market forces. This study investigates the profitability and coordination of export marketing channels of FFV in Tanzania using a case study from Meru District. Findings from this study are aimed at providing information that will help policy makers, NGOs and other stakeholders in designing appropriate programmes for small-scale farmers and improving performances of the fresh fruit and vegetable sub sector in Tanzania.

Methodology

Ecological Zone in Meru District

The district has two rainfall patterns, with short rains starting in September and ending in December and long rains starting in March and ending in June. There are significant variations in rainfall distribution between the highlands and the lowlands. The highlands are bimodal and receive between 800mm to 1,200mm of rainfall and lowlands are unimodal receiving 500mm to 700mm of rainfall. The mean monthly temperature of district is 20ºC. However during the cooler period (June - August) the mean average temperature drops to 17ºC. Therefore the district has two agricultural seasons. Moreover, the district is divided into three agro-ecological zones, which are Upper zone, Middle zone and Lower zone.

Upper zone - This is a mountainous area rising between 1400 meters(m) and 800 meters above sea level. It has an average annual rainfall of about 1000mm. Forests forming water catchments for most of the streams cover most of the land area. Main economic activities are agriculture and livestock kept under zero grazing systems. Crops grown include coffee, pyrethrum, banana and round potatoes.

Middle zone - This zone rises between 1000m and 1350m above sea level, receiving an average annual rainfall of 500mm. Major economic activities are livestock keeping and agriculture. Crops grown in this belt are coffee, banana, maize, beans, wheat, and horticultural crops.

Lower zone - This zone rises between 800m and 1000 m above sea level, receiving an average annual rainfall of about 300mm. Most rivers and streams originating from the upper belt spill their waters in this zone making irrigation the mainstay of the farmers. Agriculture is the most important activity and major crops include: maize, beans, banana, cassava, sisal and horticultural crops.

Overall, the district is thought ideal for studying fresh fruits and vegetables export potential due to its high horticultural potential, which cause good growth of fresh fruits and vegetables.

Sampling and Data Collection

Purposive sampling procedure was used to select two divisions out of six in which most of the horticultural crops are grown. From this, three wards were selected and lastly six villages from the selected wards. The sample size of FFV producers was selected using random sampling technique from the lists of farmers which were obtained from district agricultural records and the export company. Therefore in order to get a good representative sample, a proportionate stratified sampling procedure was used.

In this study primary data were collected from the following six villages: Kikwe, Maweni, Singisi, Kwafundi, Ambureni Moivaro and Usariver. In each, sources of income and factors affecting fruit and vegetable crops were considered. A Simple random sampling technique was employed to selecting 60, small-scale farmers of fresh fruit and vegetable, 5 large-scale producers, 14 middlemen and one Export Company out of three Export companies. A pre-coded structured questionnaire was used to collect primary data, to supplement the secondary data obtained from district headquarter.

Analytical Approach

A number of different methods were used, including cluster analysis, Gross Margin Analysis (GM), and Logistic Regression Analysis. A number of socio-economic parameters were also analyzed. These include age, gender, education level and marital status. Such understanding of the level of education, age, gender and marital status of the respondents, might have an influence on participation in a FFV enterprise.

Cluster Analysis

It was hypothesized that "The export marketing channels of fresh fruits and vegetables in Tanzania are not vertically integrated". Different market channels were identified using cluster analysis of the market outlets used by growers and traders. Specifically, cluster analysis techniques were used to differentiate the market channels to which FFV growers or traders belong.

Profitability analysis of FFV

It was hypothesized that selling fresh fruit and vegetable to the export market is not more profitable to small-scale farmers than selling to the domestic market. This hypothesis was tested using Gross Margin Analysis (GM). This analysis relied upon two assumptions. First, family labour was unpaid, since it was tedious to estimate as costs incurred in FFV marketing enterprises. Second it was assumed that fixed costs are so small that they do not affect the sustainability of the enterprises.

Consequently, a T-test was carried out to compare the Gross margin between export trade and domestic trade per acre of FFV. Thus the formula which was used to calculate the GM across different enterprises in FFV marketing is shown below:

$$GMi = \sum TRi - \sum TVCi \quad (1)$$

Where; GMi = Gross margin per acre of i^{th} Farmer/trader/exporter

$\sum TRi$ = Total revenue from sales of one acre of i^{th} FFV

$\sum TVCi$ = Total variable cost spent on one acre due to i^{th} marketing function

Challenges facing FFV Export marketing actors

It was also hypothesized that quality characteristics such as storage facilities, record keeping, input delivery by buyers and Global Good agricultural practice (GlobalGap) protocol and Contractual arrangements, did not represent major challenges facing marketing agents within the FFV export market channels. This hypothesis was tested using binary logistic regression model using maximum likelihood method, and the model was specified as:

$$\ln\left(\frac{p}{1-p}\right)=\alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\mu_i \quad (2)$$

Where: $\ln\left(\frac{p}{1-p}\right)$ is the dependent variable in the natural log of the probability of selling to the export market (p) divided by the probability of not selling to the export market (1-p) it takes a value of 1 for selling to exporters and 0 for not selling to exporters;

α = General mean (intercept constant);

X_1 = Land possession ($X_1 = 1$ if Yes; $X_1 = 0$ otherwise)

X_2 = Input delivery by buyers ($X_2 = 1$ if Yes; $X_2 = 0$ otherwise);

X_3 = Having storage facilities (if yes =1 and; X_3 = 0 otherwise);
X_4 = Record keeping (if yes =1 and 0 otherwise)
X_5 = Having contract farming (if yes = 1 and 0 otherwise)
X_6 = Farmer has heard from GlobalGap (1 = yes and 0 = no)
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = Parameters to be estimated;
μ_i = Random effect term $\mu \sim N(0, p_i(1-p_i))$

Limitation of the Study

The study has a number of limitations that should be considered. Although all interviews have been done similarly, differences in interpretation of the questions and answers might still be a problem. Because this problem might have happened to all interviews, it could be ignored. In addition, it is important to note that the data were collected in September 2008, as questions regarding the price paid to farmers and the price received from their buyers will be seasonally. Furthermore, because these prices vary a lot during the year, it is difficult for the farmers and the buyers to determine these prices. Therefore the average price obtained from prices of four seasons was used in the analyses.

Results and discussion

Socio-economic Characteristics

Socio-economic characteristics for small-scale farmers participating in FFV export marketing channels in the study area were analysed. Results revealed that 88.3 % of the FFV enterprises are headed by males, implying that the FFV sub sector is male dominated. This situation may be attributed by the fact that fruit and vegetable production and marketing is labour and capital intensive and hence a bias against females who may have less land, support service such as credit, lack of family financial support. Moreover, females have additional gender specific responsibilities (Cagatay *et al.,* 1995).

Marital status showed that 83.3% of the respondents were married, and 65% of them had primary school education in such a way that they could not get any employment in the public or private sectors. Therefore, the FFV sub sector offers an opportunity to earn income for their families' expenditures. The age of the farmer does not influence participation in FFV marketing, results revealed that 50% of FFV marketing is performed by young farmers who are aged between 16-35 years and 45% were middle aged between 36-50 and 5% were above 50 years of age . The implication is that 95% of FFV marketing along the value chain is performed by the economically active group in the population (Table 1).

FFV Export Marketing Channels Segmentation

To find out whether the interviewed middlemen can be divided into groups, cluster analysis has been carried out on the basis of GlobalGap requirements. The variables that related to the GlobalGap protocol were:

i. Whether the middleman has heard from the GlobalGap protocol;
ii. Whether the middleman has storage facilities;
iii. Whether the farmers the middleman buys from have storage facilities;
iv. Whether the farmers the middleman buys from keep records;
v. Whether the middleman is able to trace the produce.

These variables have been used to see whether the FFV Traders can be divided into segments. However, cluster analysis results show that three final cluster centers could be separated and formed namely EA1, EA2 and EA3 which are Exporter agents 1, 2 and 3 respectively. Furthermore, euclidian distances between final clusters centers were used to identify how far one cluster is separated from the other (Table 2).

Clusters have been classified using the five aspects mentioned above. The classifications of the clusters show that the 3-cluster solution generates distinguished clusters. One contains traders that meet all of requirements EA1. One cluster groups traders that meet four fifth of the requirements EA2, and the fourth cluster containing traders who meet about half of requirements completely EA3 (Table 3).

FFV Exporter Agents descriptions

The first cluster (EA1) constituted of 71.4% of traders who meet all of the GlobalGap requirements. These are traders who have heard from the GlobalGap protocol and are able to trace the produce.

Table 1: Social economic characteristics of FFV farmers

Characteristics	Village of respondent													
	Singisi		Kwafundi		Makiba		Maweni		Ambureni Moivaro		Usariver		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Gender														
Male	12	20.0	2	3.3	7	11.7	8	13.3	12	20.0	12	20.0	53	88.3
Female	0	0.0	0	0.0	3	5.0	4	6.7	0	0.0	0	0.0	7	11.7
Total	12	20.0	2	3.3	10	16.7	12	20.0	12	20.0	12	20.0	60	100.0
Education level														
Primary Education	9	15.0	2	3.3	9	15.0	10	16.7	7	11.7	2	3.3	39	65.0
Secondary education	1	1.7	0	0.0	1	1.7	1	1.7	4	6.7	5	8.3	12	20.0
Post secondary	1	1.7	0	0.0	0	0.0	1	1.7	0	0.0	3	5.0	5	8.3
Dip.Agriculture	1	1.7	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	1.7
Others (College, University)	0	0.0	0	0.0	0	0.0	0	0.0	1	1.7	2	3.3	3	5.0
Total	12	20.0	2	3.3	10	16.7	12	20.0	12	20.0	12	20.0	60	100.0
Marital status														
Single	1	1.7	0	0.0	0	0.0	2	3.3	4	6.7	3	5.0	10	16.7
Married	11	18.3	2	3.3	10	16.7	10	16.7	8	13.3	9	15.0	50	83.3
Total	12	20.0	2	3.3	10	16.7	12	20.0	12	20.0	12	20.0	60	100.0
Age														
Young (Aged 16-35 Years)	6	10.0	0	0.0	2	3.3	7	11.7	7	11.7	8	13.3	30	50.0
Middle aged (36-50 Years)	5	8.3	2	3.3	8	13.3	5	8.3	4	6.7	3	5.0	27	45.0
Elder (>50 Years)	1	1.7	0	0.0	0	0.0	0	0.0	1	1.7	1	1.7	3	5.0
Total	12	20.0	2	3.3	10	16.7	12	20.0	12	20.0	12	20.0	60	100.0

Almost all traders receive their produce from farmers who keep records. All of them have storage facilities themselves and buy their produces from farmers who have storage facilities.

The second cluster consists of 21.4% of traders (EA2) who meet four-fifth of the GlobalGap requirements regarding traceability and knowledge concerning the GlobalGap protocol. They also have storage facilities, while almost all traders get their produce from farmers who keep records. However, they often get their produce from farmers who have no storage facilities. But this aspect is of least importance since the produces are taken directly to the export company the day they are harvested where there are modernized storage facilities.

The third cluster (EA3) shows that about 7.2% Traders meet about half of GlobalGap requirements falling short on storage facilities of the farmers and

Table 2: FFV Export marketing Final Cluster Centers

Variables	Clusters		
	EA2	EA1	EA3
Heard information about GlobalGap	0	1	0
Ability to trace back produce	3	1	3
Farmers keep records of inputs used	1	1	1
Have storage facilities	1	1	2
Farmers possess storage facilities	0	1	0

EA2, EA1 and EA3 are FFV exporter agents 1, 2 and 3

Table 3: FFV Export marketing euclidian Distances between Final Cluster Centers

Clusters	EA2	EA1	EA3
EA2		2.071	1.414
EA1	2.071		2.427
EA3	1.414	2.427	
Size (N)	3	10	1
%	21.4	71.4	7.2

EA2, EA1 and EA3 are FFV exporter agents

information about Global Gap. This group sells most of their bought produces to Nairobi and Mombasa (in Kenya), of which buyers are not very much stringent on the aspect of GlobalGap. Also the produce is taken on the day they are harvested, so farmers need not to have storage facilities.

Deduced FFV Export Channels

There are four main export marketing channels of FFV used by small-scale farmers in the study area to market their produce. First is where the farmers sell their produces direct to the export company. Traders provide the other three export market channels. As the cluster analysis results showed, these are Exporter agents one (EA1); these are traders who buy their produces from farmers and sell direct to the export company (i.e. Serengeti Fresh Company which exports FFV to UK and other European countries).

The second channel is Exporter agents two (EA2); these traders sell their produces to either export company or other traders from Kenya. The third export channel is the Exporter agents three (EA3); these are traders who purchase their produces and sell to other traders from Kenya. Therefore, FFV export market channels revealed from this study were vertically coordinated, since; few actors are involved along those channels. (Figure 1)

Gross margin (GM) analysis was done to test the hypothesis that "Selling fresh fruit and vegetable to export market is not more profitable to small-scale farmers than selling to domestic market". Consequently, a T-test was used to test if there was a

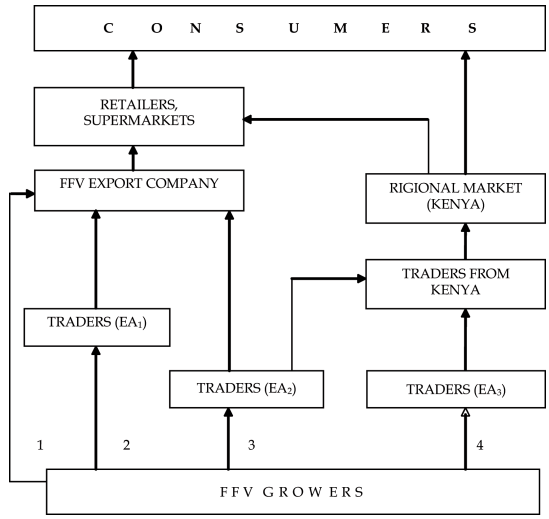

Figure 1: FFV Export marketing channels

Profitability Analysis of FFV

significant difference in GM per acre obtained by different functional segments of FFV traders. These were done between small-scale farmers selling their FFV to the export market and those who are selling to domestic market as well as for traders selling directly to export company and those selling to other middlemen.

Profitability of selling FFV to domestic market and export market

Our analysis shows that, the hypothesis that selling fresh fruit and vegetable to export market is not profitable to small-scale farmers than selling to domestic market, and assuming that there is not significant difference in GM per acre obtained by small-scale farmers selling to export market and those selling to domestic market can not be accepted. We conclude that the GM per acre between farmers selling to export market and domestic market is different along the marketing channel.

For that case, small-scale farmers selling their FFV to the export market accrue more profits than those selling to domestic market, with a mean difference of about 543, 642 shilling per acre. This is due to high and stable price set between farmers and Export Company despite stringent conditions required by the exporters (Table 4).

Table 4: T-test of selling FFV to domestic market and export market

	GM per acre Domestic market	GM per acre Export market
Mean	800,071.428	1,343,714.286
Variance	19,093,763,736	3.00912E+11
Mean different	543642.857	
N	14	14
df	13	
t Stat	-3.633	
P(T<=t)	0.003***	Sig.(2-tailed)
t Critical	2.160	

*** Significant at 0.01

Profitability of selling FFV directly to export Company or middlemen

Results showed that, the t-statistics under the assumption of equal variance has a value of 1.803 and degree of freedom of 23, with associated significance level of 0.0844. Therefore, the probability that there is no significant difference (P>0.05) in GM per acre obtained by small-scale farmers selling FFV directly to the Export Company and those selling to middlemen is very large. Consequently, GM per acre between selling directly to Export Company and to middlemen does not differ along the export market chain. This may be aggravated by farmers not meeting the standards required. Hence, high rejection of the produces sold to the Export Company, which in turn reduces profits gained in comparison to low rejection rate of produces for those selling to middlemen (Table 5).

Table 5: T-test of selling FFV to export company or middlemen

	GM/acre direct to Export Company	GM/acre to middlemen
Mean	1,256,895.833	1,071,708.333
Variance	1.55711E+11	1.42035E+11
N	24	24
df	23	
t Stat	1.803	
P(T<=t)	0.084	Sig. (2-tailed)
t Critical	2.068	

Challenges Faced by FFV Export Marketing Agents

The logistic regression model, results indicate the need to reject the hypothesis that quality characteristics specifically; storage facilities, record keeping, input delivery by buyers and GlobalGap protocol, and contractual arrangements are not major challenges facing marketing agents within the FFV export marketing channels. There are major challenges facing marketing agents within the FFV export marketing channels. Moreover, the model explains about 53.6% of the variation on the odd ratios suggesting that the model fit the data well (Table 6).

Furthermore, results show that, farmers of FFV who were informed about GlobalGap protocol had increased access to an export market. That means these farmers produce and sell FFV that are of the quality required by their customers. Further, results indicated that having contract farming increased the chances of accessing the export market. However, results shown in Table 2 indicated that about 36.7% of the small-scale farmers had contracts with buyers of their produce and 63.3% had no contracts, which make them to have a small chance of accessing the export market.

Moreover, farmers receiving input from buyers had higher chances of selling to the export market; this effect is aggravated by the fact that inputs such as quality seeds, fertilizers and pesticides have high costs of which most small-scale farmers can not afford. Therefore, farmers receiving inputs from buyers, produce quality crops and the buyers visit farmers regularly for consultation on how to take care of crops.

Record keeping had a positive implication for FFV actors to access export market. With reference to traceability, record keeping for FFV actors is vital, simply because export traders would like to know the type of inputs used in production of a particular crop, especially the rate and timing of pesticides and fertilizer application.

Finally, quality requirements and storage facilities, record keeping, input delivery by buyers and GlobalGap protocol, and contractual arrangements

Table 6: FFV export market requirements

Variables influencing quality	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	1.734	0.505		3.432	0.001
Years of production of fresh fruits or vegetables	0.008	0.019	0.056	0.434	0.667
Buyers (Exporter or Middlemen)	0.631	0.299	-0.283	-2.110	0.040
Heard information about GlobalGap	1.053	0.364	0.447	2.891	0.006
Records keeping on fertilizer and pesticides	-0.614	0.373	-0.240	-1.645	0.001
Selling to specific buyer	0.264	0.419	0.119	0.631	0.031
Receiving input from buyer	-0.816	0.336	-0.342	-2.429	0.019
Possession of storage facilities	-0.785	0.412	-0.333	-1.902	0.043
Education level of respondent	0.027	0.174	0.026	0.156	0.006
Having contract farming	0.728	0.381	0.316	1.912	0.022
Adjusted R2= 0.81 F-value 2.543 Sig. 0.007					

proved to be major challenges facing marketing agents within the FFV export marketing channels (Table 6).

Conclusion and recommendation

Conclusion

The critical query using GM per acre, this research revealed that the export market is relatively profitable; due to the fact that export buyers pay a significantly higher average price per year than the local trader who sell produce to domestic markets. The GM per acre for farmers selling to export market is greater by a mean deference of Tsh. 543,642 per acre relative to domestic markets. GM analysis was a necessary condition to assess the relative importance of different segments of the channels, which in turn would allow an appropriate use of time and resources of FFV traders for profit maximization.

Cluster analysis results revealed four existing export market channels for FFV in the study area. These channels may be described as FFV farmers selling directly to export company and EA1, EA2 and EA3. (export agent 1, 2 and 3).

The FFV export marketing agents are faced with many challenges; however, results showed that for someone to access the export market, they have to adhere to record keeping of the pesticides and fertilizers used during the production of crops. Furthermore, about 63.3% of FFV export marketing actors had no contracts; consequently, it was difficult for them to access export market for their produces. Moreover, in order to produce quality produces farmers have to use quality seeds and other inputs such as fertilizers and pesticides. These are costly, as a result most farmers can not afford since many small-scale farmers and private traders do not possess enough working capital to run their enterprises. Therefore farmers who are receiving inputs from buyers, and buyers who were able to provide inputs to farmers were able to get good quality produce and sell this to the export markets.

Finally, FFV business actors who were well informed about GlobalGap requirement had a higher chance of selling to the export market. Since farmers were receiving market information from buyers of their produces, this means only farmers who were selling their produces direct to export companies or export agents had information on the export market requirements.

Recommendation*

From these results one would recommend that farmers use the shortest channel, selling directly to export company but there is a need to identify transaction costs involved to be able to explain why some farmers are using the longer channels or sell to the domestic market. This is an area for further research. *Further results and recommendations of this study appear in Mgeni (2009)

Acknowledgement
My gratitude goes to the Government of Belgium through Belgium and Tanzania Technical Cooperation (BTC) program, surely without its financial support this study would never have come out. I am thankful to the staff and colleagues in the Department of Agricultural Economics and Agribusiness (DAEA) for their constant encouragement throughout this study. To both I am very grateful.

References

Ashomogo, G. C. and Lazaro, E. A. (1989). "Vegetable market in Mgeta, Morogoro District" Franco-Tanzanian horticulture Development Project, Sokoine University of Agriculture, Morogoro, Tanzania. 128pp.

Briggitte, N. and Roger, V. (2005). Partnership for Market Access; Forwards a sustainable market oriented horticultural sector in Tanzania; Wegeningen UR position Paper. 81pp.

Cagatay, N., Elson, D. and Grown, C. (1995). "Gender and macroeconomics", special issue of world. 288pp.

Dolan, C. S. and Humphrey J., (2001). Governance and trade in fresh vegetables: Impact of UK supermarkets on the African horticulture industry, Journal of Development studies 37(2): 147 - 177.

Lall, S. (2001). The technological Response to Import liberalisation in Sub-saharan Africa, Macmillan Press. 76pp.

Lynch, K. (1994). Urban Fruit and Vegetable Supply in Dar es Salaam. The Geographical Journal 160(3): 307 - 318.

Mbelwa, R. and Semboja, H. H. (1999). Community and Economic Impact of Export Diversification: The Cutflower Industry in Tanzania, sector activities programme, working paper 152pp.

Mgeni, C. P. (2009). Economic Analysis of Fresh Fruit and Vegetable Export Marketing Channels by Small-Scale Farmers in Tanzania: The Case of Arumeru District. Dissertation for award of MSc Degree at Sokoine University of Agriculture, Morogoro, Tanzania. 107pp.

Mutayoba, V. (2005). Economic analysis of Vanilla Production and Marketing . A case study of Bukoba district, Dissertation for award of MSc Degree at Sokoine University of Agriculture, Morogoro, Tanzania. 86pp.

Nathania, A. J. (2007). Analysis of production and marketing potential for paprika as an alternative crop to tobacco: A case study of Urambo district. Dissertation for award of MSc Degree at Sokoine University of Agriculture, Morogoro, Tanzania. 64pp.

Nyange D., Duma, T. and Temu, A. E. (2000). Fresh Fruit Marketing in Tanzania: Prospects for International Marketing. In Cases and Research in Agricultural Marketing and Agribusiness. FAO. 119pp.

Temu, A. E. and Marwa, N. W. (2007). Changes in the governance of global value chains of fresh fruits and vegetables: Opportunities and challenges for producers in Sub-Saharan Africa. Research Papers. South Centre. 34pp.

Wangwe, S. M. (Ed.)(1995). Exporting Africa: Technology, Trade and Industrialisation in Sub-Saharan Africa, United Nations University press. 192pp.