

## Determinants of Commercialisation Level among Smallholder Maize Farmers in Eastern Cape, South Africa: A Case Study of Qamata and Tyefu Municipality

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**ABSTRACT** The paper sought to analyse the socio-demographic features of the smallholder maize farmers; and to determine the commercialisation level of the smallholder maize farmers. The study used quantitative research design to collect data. Descriptive statistics such as percentages, frequency distributions and tables; and the household commercialisation index were used in the analysis. The HCI result showed a low level of commercialisation among farmers, the higher maize yield of smallholder farmers contributed to higher commercialisation level, in addition to higher yield, total revenues and gross margins from maize enterprise, smallholder farmers produce more yields and earn slightly more total revenue. This therefore, implies that smallholder maize farming is lucrative due to its profit-making potentials. Moreover, this is a clear indication that more income and wealth is generated thereby implying that it is strategic and pivotal in improving farmers' livelihoods.

### INTRODUCTION

Commercialization of smallholder farming can essentially be described as a virtuous cycle in which farmers intensify their use of productive assets by enhancing technologies on their farms to achieve greater output per unit of land and labour expended, in producing greater farm surpluses (or transition from deficit to surplus producers), in order to expand their participation in markets, and ultimately raise their incomes and living standards (Food and Agricultural Organisation (FAO) 2014). Furthermore, it can be defined as using the market to obtain additional factors of production, including; hired labour, land and borrowing of funds for investment and working capital from banks and other financial agencies. Hence, smallholder farmers can benefit from greater engagement of productive fac-

tors with markets, both for increased output for sale, as well as for inputs and services that can raise productivity (Barrett 2008; Jayne and Boughton 2011).

On the other hand, commercialization of agricultural production can best be described based on the farmers' goals and aspirations. Smallholder commercialization of agricultural production can be defined as; small scale farmers that are more integrated into available local, national and international markets (Poulton et al. 2006). Farmer's goals and aspirations that shape the definition of commercialization of agricultural production include production aimed mainly for sale oriented towards profit maximization while satisfying the different needs and interests of the consumer. Such production calls for effective business management and entrepreneurial skills to achieve farmer's set market-oriented objectives (Mahaliyanaarachchi and Bandara 2006). They further stressed that commercial farmers can be classified into some certain categories based on the marketable surplus produced and these include; subsistence farmers who produce marketable surplus of under twenty-five percent (25%) of the total production. The other group comprises the emerging farmers who produce a

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marketable surplus ranging between twenty-five - fifty percent of total production. The third group is made up of commercial farmers who produce marketable surplus of more than fifty percent of the total production.

Commercialization of agricultural production in many developed and developing countries has proved efficient in catalysing industrial and economic growth (Eicher and Staatz 1985; Von-Braun 1995; Jaleta et al. 2009; Kofi Annan Foundation 2011). Large-scale commercialised agriculture using modern machinery and sophisticated technologies. Furthermore, it can be defined as using the market to obtain additional factors of production, including; hired labour, land and borrowing of funds for investment and working capital from banks and other financial agencies. Hence, smallholder farmers can benefit from greater engagement of productive factors with markets, both for increased output for sale, as well as for inputs and services that can raise productivity (Barrett 2008).

With substantial increase in productivity of smallholder farmers who had initially aimed at producing food for the household, surpluses could be produced and sold in villages and district markets to acquire other goods and services necessary to maintain households (Wiggins and Keats 2013). However, there is a tendency for smallholder farms to become more commercialized in cities where agricultural lands and farming areas become linked to markets by passable means of transportation, through roads, district rail or navigation. Sometimes, the smallholder farmers are compelled to deliver their produce to the markets, usually through imposition of a quota to be supplied to a state agency, since their contribution to the economy is becoming significant (Wiggins et al. 2012).

### Objectives of the Study

- To analyse the socio-demographic features of the smallholder maize farmers.
- To determine the commercialisation level of the smallholder maize farmers.

### Research Questions

- What are the socio-demographic features of the smallholder maize farmers?
- What is the commercialisation level of the smallholder maize farmers?

## Conceptual Framework

### *Household Commercialisation Index*

There are several methods of measuring household commercialisation level among smallholder farmers (Jaleta et al. 2009). Some studies like De-Janvry et al. (1991) and Fafchamps (1992) cited by Jaleta et al. (2009) used dichotomy between food and cash crops and examine household decision on resource allocation to these crops as a proxy for smallholder commercialisation. However, this study used the ratio of marketed output to the total value of agricultural production. Estimation of commerciality levels help to establish the farmer's entrepreneurial ability for different enterprises.

## METHODOLOGY

The site of the study was in Eastern Cape Province (ECP) of South Africa. The province is one of the nine provinces of South Africa, having a border with the provinces of the Western Cape, the Free State, KwaZulu-Natal and Lesotho in the north (Eastern Cape Provincial Legislature 2003). There are thirty-nine (39) municipalities in the study area, out of which thirty-seven (37) and two (2) are categorized as local and metropolitan municipalities, respectively. The ECP is referred to as the home of the *Xhosa* group, a tribe in South Africa. The vast interior of the province ranges from the dry Karoo in the west to the rolling hills and cascading rivers of the Transkei in the East. The province is made up of two regions: the Western and the Eastern regions. The land area of ECP is covering approximately 169,580 sq. km, and this amounted to about 13.9 percent of the South African total area (ECDRAR 2011). The area is estimated to have 6,562,053 persons, out of the 51,770,560 persons which make up South Africa's total population (Statistics South Africa 2012). In order words, sixty percent of the total population of people are living in the rural area. The ECP is characterized by high level of illiteracy, high level of poverty, high unemployment rate, poor infrastructural facilities and lack of other basic amenities. According to ECDRAR (2011), the contribution of agriculture to the GDP of the area has been on the decline. Some purposive and random sampling techniques were adopted for the study. Further information re-

garding the operational status of the irrigation schemes in the Eastern Cape Province of South Africa was accessed through stakeholder meetings with the officials of the Department of Rural Development and Agrarian Reform (DRDAR 2011), and officials at the Municipal offices, as well as the community members. Based on the information gathered, the two smallholder irrigation schemes and the surrounding communities were identified. Out of the thirty-seven (37) municipalities that make up the Eastern Cape Province (ECP) of South Africa, two (2) municipalities namely: Qamata and Tyefu irrigation schemes were purposively chosen because they have functional small-scale irrigation schemes and considered among the largest in the Transkei and Ciskei homelands, respectively. A research team was involved in data collection who sought support from extension officers and were assisted by community authorities. A total of 70 farmers were interviewed in Qamata and 40 farmers in Tyefu village. In all, an overall sample size of 110 smallholder maize farmers were selected for the study. Descriptive statistics such as frequencies and percentages were used to describe the socio-economic features of the smallholder maize farmers in the study area while household commercialisation index was used to calculate the commercialisation level of the farmers.

## FINDINGS AND DISCUSSION

### Socio-economic Features of Smallholder Maize Farmers

The socio-economic characteristics of the farmers interviewed in this study area include: gender, age, marital status, household size, and level of education, distribution of farmers according to irrigation scheme, occupation and number of years spent in smallholder maize farming as an enterprise.

#### *Gender Distribution of the Household Head*

Gender has a direct relationship with the extent farmers get involved in irrigation practices which they engage in. The reason for this is not far-fetched. As such agribusiness practices are gender specific. Data was collected on gender of the units interviewed because of its importance and presented in Table 1.

**Table 1: Distribution of the sample according to the gender of the household heads**

<i>Sex</i>	<i>Frequency</i>	<i>Percentage</i>
Male	72	65.5
Female	38	34.5
Total	110	100

*Source:* Field Survey Data 2014

Table 1 captures the relationship between genders and farming. From the table, it could be deduced that there are more male in the farming work compared with female with 65.5 percent out of the totality of the sample being men, 34.5 percent is for female part of the total number interviewed. This is in agreement with the study of Kodua-Agyekum (2009) that more dry agricultural lands were allocated to males; this can be as a result of African rules and norms that did not favour women in having their own farmland.

#### *Age Distribution of the Household Heads*

An important factor in agricultural enterprises is age. The results of most socio-economic studies have shown that age and performance are inversely related (Kibirige 2013). As a result of this assertion, data on the age distribution of the respondents interviewed were collected. The results are presented in Table 2.

**Table 2: Distribution of the household heads according to their ages**

<i>Age</i>	<i>Frequency</i>	<i>Percentage</i>
35-40	18	16.36
41-45	9	8.18
46-50	14	12.73
51-55	22	20.00
56-60	9	8.18
61-65	36	32.72
66-70	2	1.83
Total	110	100

*Source:* Field Survey Data 2014

Results from Table 2 show that the average age of the household head among smallholder farmers is about 61 years, this implies that both Qamata and Tyefu might be operating under less productive status due to their age which is considered to be weak compared to youthful age which seems to be more productive (Ogundele and Okoruwa 2006). The large proportion of the

youth in the study area are not looking at farming work as a means of livelihood thus, left the area in search of more paying employment (Obi and Pote 2012) and for a white-collared job, thereby creating a gap in the need of farming.

#### ***Marital Status Distribution of the Household Heads***

Amongst the factors considered in the farming profession is the marital status. A high proportion of married respondents suggest an additional supply of labour from the family (Obi and Pote 2012). In view of this, data was collected on the marital status of smallholder maize farmers, and Table 3 presented the results.

**Table 3: Distribution of the household heads according to their marital status**

<i>Marital status</i>	<i>Frequency</i>	<i>Percentage</i>
Married	69	62.70
Single	5	4.55
Divorced	14	12.75
Widow	19	17.27
Widower	3	2.73
Total	110	100

Source: Field Survey Data 2014

Table 3 shows that the marital status of farmers is an important element in farming enterprise. Therefore, its importance cannot be overlooked as farming households take advantage of large families in providing family labour. The results indicated that majority (62.7%) of the respondents are married, 12.75 percent divorced, 4.55 percent are single while the rest (20%) of the respondents are either widows or widower.

#### ***Household Size Distribution of the Farmers***

The size of every household has a very important relationship with business and income (Enete and Agbugba 2008). Data was collected on household size for this singular reason. The results of the distribution of the farmers according to their household sizes are presented in Table 4.

Similarly, Table 4 indicated the household size distributions of the respondent members in farming. However, in this case, a family with 4 members has the highest frequency distribution (54.54%). Households with 5-6 persons have 32.73 percent of the total respondents, while 2.73

**Table 4: Distribution of the farmers according to their household size**

<i>Household size</i>	<i>Frequency</i>	<i>Percentage</i>
1-4	60	54.54
5-6	36	32.73
7-9	11	10.00
10-Above	3	2.73
Total	110	100

Source: Field Survey Data 2014

percent of the population has family size greater than 10 persons. In essence, the use of family labour helped reduce the cost that would have been spent on hired labour.

The implication of this is that more cost will be incurred due to more hired labour employed to supplement the family labour (Ezihe et al. 2014).

#### ***Distribution of Maize Farmers According to their Educational Level***

In need of effective farming household performance education status of the farmer is very important and could be a leading factor on how best a new technology is adopted. Data was collected from the maize farmers interviewed on their level of education and the results presented in Table 5.

**Table 5: Distribution of the household heads according to their educational level**

<i>Educational level</i>	<i>Frequency</i>	<i>Percentage</i>
No education	53	48.18
Primary education	32	29.09
Secondary education	23	20.90
Tertiary education	2	1.83
Total	110	100

Source: Field Survey Data 2014

Table 5 which indicates the educational status of the maize farmers interviewed showed that 48.18 percent of the total respondent has no form of formal education. However, the majority (29%) of the household heads have one form of formal education, and this indicates a meaningful farmers' output in the study area.

#### ***Distribution of Farmers' Categories Based on their Irrigation Schemes***

The use of irrigation is a reflection of the role or impact which the education element plays in

technology adoption (Cremades et al. 2014). This is the reason why data on the categories of irrigation used by maize farmers were collected. Results of this distribution are indicated in Table 6.

**Table 6: Distribution of smallholder maize farmers according to irrigation scheme**

<i>Categories of farmers</i>	<i>Frequency Percentage</i>	
Farmers with irrigation scheme	84	76.35
Homestead gardeners	26	23.65
Total	110	100

Source: Field Survey Data 2014

Table 6 shows the farmer category interviewed, and observed that there are more farmers who are smallholder irrigators compared to the homestead food gardeners; this occurrence might be connected to the availability of functional irrigation schemes in the study area. Agricultural practices which embrace user-friendly technology gets better productivity. However, irrigation has been a long year breakthrough for agriculture as the respondents in the study area embraced the maize irrigation technology with seventy-six percent, while twenty-four percent of the remaining farmer practices homestead maize gardening.

#### ***Distribution of Respondents Based on the Number of Years Spent in Maize Farming***

The number of years spent in farming is an important determinant of farmers' efficiency and this is synonymous to farming experience (Fan 2009). Based on this, data was collected on the number of years the farmers spent in maize farming, and the results explained in Table 7.

**Table 7: Distribution of the household heads according to the number of years spent in maize farming**

<i>Number of years</i>	<i>Frequency</i>	<i>Percentage</i>
1-2	17	15.45
3-5	11	10.00
6-8	19	17.27
9-11	47	42.73
11-Above	16	14.55
Total	110	100

Source: Field Survey Data 2014

Table 7 indicated that the number of years spent in maize farming is an important factor as it relates to the farmers' experience, and will in turn reflect the effectiveness of an agro-enterprise in order to yield a reasonable output. The result further revealed that majority (42.73%) of maize farmers spent between 9 and 11 years in the farming, thereby implying that most of the maize farmers are experienced smallholders.

#### ***Distribution of Household Heads Based on their Primary Occupation***

Primary occupation is the occupation in which households spend seventy-five percent and above of their time, and from which they earn a greater proportion of their income (Echebiri 2001). This was the reason why data was collected on the primary occupation of maize farmers and the results of the distribution are presented in Table 8.

**Table 8: Distribution of household heads according to their primary occupation**

<i>Occupation</i>	<i>Frequency</i>	<i>Percentage</i>
Farming	98	89.20
Trading	1	0.90
Casual worker	5	4.50
Civil servant	4	3.60
Student	2	1.80
Total	110	100

Source: Field Survey Data 2014

Table 8 shows that about eighty-nine percent of smallholder farmers considered maize farming as their primary occupation in Qamata and Tyefu, respectively. This is a signal that there is a high level of unemployment in the study area.

#### ***Distribution of Household Heads According to their Land Acquisition***

Land acquisitions is referred to as the process by which the government of a community or land or an authority acquires a portion of land for various infrastructure and economic growth initiatives irrespective of the controversies arising with claims of land owners (Guha 2012). However, the importance of who sets the rules cannot be over ignored. This lead to collection of data on who sets the rules on land acquisi-

tion. Therefore, the results of the distribution are presented in Table 9.

**Table 9: Distribution of who sets the rules concerning land acquisition**

<i>Rules of land acquisition</i>	<i>Frequency</i>	<i>Percentage</i>
Traditional/Community leadership	53	48.19
Government	15	13.63
Both	42	38.18
Total	110	100

Source: Field Survey Data 2014

Table 9 gives a clear picture that the traditional chief set the rules and regulations with regards to land acquisition in the study area with 48.19 percent, followed strictly is the government (13.63%) and chiefs, and indication that both (38.18%) can approve the rules that govern the acquisition of land in the study area.

### Commercialisation Level of Smallholder Maize Enterprises

Commercialisation of agriculture is believed to play a key role in the development of rural economics especially in the sub-Saharan Africa thereby contributing to poverty reduction. However, the results from the study area indicate a low household commercialisation index (HCI) among small holder farmers. The relationship between HCI of maize enterprise and other identified socio-economic features was estimated. There is a high correlation between the HCI and other explanatory variables since the F- value (5.076) indicates a one percent level of significance. Also, the Durbin-Watson statistic results (1.964) indicated low extent of autocorrelation between the variables (Table 10). Demographic features such as household size and crop incomes have a positive and significant influence on HCI at one percent level, respectively. In this case, household size may be considered as a source of labour and crop incomes as source of

**Table 10: Factors affecting commercialisation level of smallholder maize enterprise**

<i>Explanatory variable</i>	<i>Dependent variable= HCI for maize</i>			
	<i>Coefficient</i>	<i>Standard error</i>	<i>t-value</i>	<i>P-value</i>
Household size	0.033	0.011	2.882	0.005***
Age of household head	0.003	0.003	0.897	0.372
Amount of land owned	-0.018	0.035	-0.513	0.609
Crop Incomes	0.000	0.000	3.965	0.000***
Off-farm income	-0.000	0.000	-4.354	0.000***
Source of water for crop production	0.100	0.032	3.096	0.003***
Location of irrigation scheme	-0.300	0.115	-2.608	0.011***
Education level (years)	0.002	0.010	0.234	0.816
Farming experience (Years)	0.001	0.003	0.252	0.801
Risk-taking (hope)	0.233	0.096	2.433	0.017**
Innovativeness (confidence)	0.136	0.091	1.497	0.138
Recognizing opportunity (optimism)	-0.276	0.086	-3.199	0.002***
Farm status	-0.049	0.159	-0.308	0.759
Business	-0.285	0.245	-1.165	0.247
Social	-0.127	0.099	-1.286	0.202
Independence	0.277	0.123	2.253	0.027**
Bonding	0.124	0.090	1.386	0.169
External	0.165	0.068	2.442	0.017**
Social values	-0.237	0.084	-2.816	0.006***
Constant	0.237	0.383	0.618	0.538

Adjusted R2=0.432  
 F-Value=5.076\*\*\*  
 Durbin Watson statistics=1.964  
 Number of observation (n)= 110

Source: Field survey 2014  
 Where \*\*\* and \*\* represents significance at 1% and 5% level

capital for reinvestment to increase marketable output. Jaleta et al. (2009) re-affirmed that household size and availability of relatively larger number of household members participating in farming positively and significantly affects smallholder farmers' commercialisation level. The age of the household head also has positive impact on HCI though not significant. Off-farm income has a negative and significant influence on HCI at one percent (1%) level. This might not be unconnected to limited time committed by farmers in participating in agricultural markets

### CONCLUSION

Smallholder agriculture is a popular practice in South Africa, and has been recognized as the main source of livelihood for the rural poor households in the study area. The commercialisation level in the study area is very low, leading to poor marketable surplus. In spite of all the government intervention and efforts aimed at reviving the pathetic situation, the area is still grappling with lack of enthusiasm coupled with low entrepreneurial spirit which is needful for transformation of subsistence agriculture to commercially oriented irrigation farming.

Therefore, before any meaningful upward movement in commercialisation level is witnessed farmers must be encouraged to work on their entrepreneurial spirit and show a lot of enthusiasms by creating a standardise marketing outlets so that all their surpluses will be sold to markets unlike all the experiences of waste and spoilages of the market surpluses. Also more young and educated people must be motivated into farming as a business.

### RECOMMENDATIONS

There is need for the improvement of the living conditions of the smallholder irrigated maize farmers which will in turn improve the socio-economic status as well as the income status of the maize farmers. Moreover, the money spent on farming inputs by these farmers should be substituted; this may have contributed to their low gross margins.

On the other hand, smallholder-farmer irrigators who incur less input costs have higher chances of benefiting from price discounts and transport offer by input suppliers than the home-stead gardeners. This results in smallholder farm-

ers having more money to invest in the farming business and produce more thereby increasing their marketable surplus. This in turn leads to an increase in commercialisation level and more profits, thereby creating more income and wealth which is pivotal in the improvement of farmers' livelihoods and the dream of the government in making agriculture to be a standard means of employment creation.

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