Analysis of Production and Marketing Constraints of Tomato among Rural Farmers in Talensi Nabdam District of Upper East Region of Ghana

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The study focused on the analysis of production and marketing constraints of tomato among rural farmers in Talensi Nabdam district of Upper East Region of Ghana.A total of 100 respondents were interviewed using questionnaire. Data was analyzed using descriptive statistics to describe the socio economic characteristics of the farmers and Kendall's Coefficient of Concordance was used to rank the constraints. Lack of access to credit and lack of reliable market were the major constraints the farmers were facing. Male's form 89% of the respondents and 11% were females. This indicates that, majority of the tomato farmers were males. Moreover, 55% of the respondents have no access to basic education. 15% have access to primary and 11% to Senior high School and lastly 4% to tertiary institution which means more than half of the tomato farmers were illiterate.77% of the respondents have been in the practice of tomato production for more than 5 years, this result shows that tomato production is an age long profession of the people in the study area

Key words: Tomato Production, Production, Marketing, Constraint

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1. Introduction

Tomato forms a very important component of food consumed in Ghana and this is evident in the fact that many Ghanaians dishes have tomatoes as a component ingredient. Tomato production in Ghana is mainly a smallholder activity and provides income to farmers and all other agencies involved in its production and marketing (Ministry of food and agriculture, 2009).

Out of the total agricultural land of 13.63 million, the total land area utilized for tomato production in Ghana grew from 28,000 ha in 1996 to 37,000 ha in 2000, an increase of 30 percent. The average yield is 7.5 MT/ha (ISODEC, 2004). Tomato is cultivated in almost all ecologies in Ghana and predominantly the northern zone. The total area under cultivation and hence the total annual production have been fluctuating in response to factors such as market availability, production cost etc. The demand for tomato has been increasing and output has been decreasing which create a deficit and has warranted importation to meet demand. Ghana has always imported tomato to meet demand. Ghana is the second largest importer of tomato second to Germany in the World and consuming an average of twenty-five thousand tonnes (25,000 tonnes) of tomato paste in a year at a total cost of 25million dollars and therefore represents a drain on the foreign exchange earnings of the economy (Ministry of food and agriculture, 2008).

Efforts are being made by research institutes and government to develop high yielding varieties with high quality suitable for the local and export market. Measures put in place include; revamp of the tomato factory for farmers and training of farmers in the identification of the best seeds which could help increase production. The Agriculture Ministry is researching into new tomato varieties as well as trying to push business people and farmers to sign agreements to secure tomato buyers before planting (MOFA, 2007) Despite all efforts by Trade and Investment Programmed for Competitive Export Economy, research stations such as Savanna Agricultural Research Institute and Government among others to come out with technologies to help boost tomato industry, production is still below local consumption. This could be attributed to problems including lack of reliable market for their produce, high cost of inputs, price fluctuations, and unavailable storage and processing facilities, high credit and irrigation costs.

Credit allows farmers to be able to allocate resources efficiently to increase their production. Institutions like Agricultural Development Bank

(A.D.B), Ghana Commercial Bank (G.C.B) and Barclays Bank made heavy investment into the tomato industry which helped increase farm size and also encouraged farmers to adopt new technologies such as tractor use, improved seeds and the use of chemical fertilizer to help increase production (MOFA, 2008). Most tomato farmers especially in the northern region where a greater percentage of tomato is produced are small scale farmers who because of the problem of collateral find it difficult to obtain loans from the credit institutions. Small scale farmers therefore depend on their own meager resource which in most cases is not adequate to purchase enough inputs for a higher output (MOFA, 1997)

High cost of production requisites such as improved seeds, fertilizer, insecticides, and fungicides and high irrigation cost are limiting most small scale farmers from adopting the use of recommended inputs, therefore militating against increasing production. It has been revealed that high cost of inputs due to subsidy removal has caused reduction of used of inputs and hence reduction in yields (MOFA, 1997)

For production to be profitable and serve as an incentive there should be a good price and ready market for the output. In Ghana, the strong competition between imported, and local tomato seems not to favor local production. Desired characteristics of tomato such as bigger, hardier and superiority in taste produced by farmers in Burkina Faso create a strong competition with our local varieties. As a result, market traders from Ghana prefer going to Burkina Faso for their tomato since they say that is the best which can guarantee them more profit. This situation usually results in reduced demand for the tomato produced in Ghana and hence lower prices; there is the need therefore to research into varieties which will yield more market and profit to the farmers (MOFA, 2007).For that matter, there is no tomato season that passes without farmers going through a lot of frustration as a result of glut and lack of ready market. The problem of marketing is very essential to be addressed to encourage production (MOFA, 2008).

Tomato is a highly perishable product, yet is stored mainly by farmers in a variety of traditional structures which are highly unsuitable resulting in heavy losses (Engindeniz, 2007). Prices of fresh field tomatoes are volatile. Daily prices may vary due to transportation problems or adverse weather conditions in both supply and demand regions. Weather can shift the start or end date for any production region relative to its typical season, and this can cause either excess supplies or shortages, and sometimes sizable swings in price for certain types of tomatoes. Prices determine income and define income levels for agricultural producers as well as their incentives to invest in new technology. Also price, production cost and yield determine the profitability of tomato (Caballero, 2008). Lack of reliable market poses a major problem for tomato farmers. Farmers are usually unable to sell their produce at a price that covers their cost (Robinson et al, 2010). Lack of strong cooperatives between farmers is one of the problems of marketing. With the establishment of a multipurpose irrigation and a one union cooperative which were established in Alamata to safeguard farmers rights over their marketable produces, farmers were exposed to baseless traders; ultimately sell their produce at low price. On top of this, local traders and elite farmers went to weaken the limited activities under taken by cooperatives (Adugna, 2009)

Adugna (2009) asserts unfair price quotation in his study of the analysis of fruit and vegetable market chains in Alamata as one of the problems of marketing. Low pricing was reported at peak supply periods that were not based on the actual supply and demand interaction but information collusion created by buying actors. The ownership of advanced farm equipment among the peri-urban vegetables farmers is an indication of the level of prosperity and progressiveness of these farmers as compared to other small-scale farmers in Africa. However, these farmers are not completely independent and bear an extra cost of production due to lack of equipment for vegetable production (Madisa et al, 2010). This is a production constraint that ultimately increase production cost among African farmers who eventually find it difficult to compete in the formal commodity markets (Machethe et al., 2004). It is however necessary to investigate the major constraint of marketing and production of tomato in Talensi Nabdam district of Upper East Region of Ghana.

2. Materials and Methods

2.1 Data collection and source

Data for the study was collected from both primary and secondary sources. Primary data was obtained through personal interview of farmers using structured questionnaire. Data collected include the cost of production, output levels, and marketing and production problems, storage, source of financing etc. Secondary sources included published and unpublished information about the study and from the internet. Secondary information was also collected from the Ministry of Food and Agriculture and KNUST libraries.

2.2 Sampling Technique

A reconnaissance survey was carried out by the researcher to familiarize her with the activities of

the farmers in the study area. Five communities were purposively selected namely, Pwalugu, Pusu-Namogo, Winkogo, Yindure and Arigu. A total of 100 farmers were selected and the simple random technique was used to select 20 farmers from each community.

2.3 Analysis

Descriptive statistics consisting of simple percentages, frequencies, and tables were used to examine these socio- economic characteristics of the tomato farmers. The constraints to production and marketing were ranked using the mean score in SPSS.

3. Results and Discussion

3.1 Socio-economic characteristics

Male's form 89% of the respondents and 11% were females. This indicates that, majority of the tomato farmers were males and this confirms to a study done by Clottey et al (2009) on the tomato industry in Northern Ghana that tomato production attracts more men (60%) than women (40%) because it is capital intensive. Men had more access to financial capital than women in the community and also it is a risky venture and women appeared not to be ready to take so much risk for fear of incurring debts. In contrast, studies done elsewhere in Africa indicated that women dominated in vegetable production where rural women formed more than 70% of farmers enlisted in dry season vegetable production in southern Nigeria (Agboola, 2001). Female farmers are reported to be equally efficient farm managers to their male counterpart **(**Quisumbing, 1996). This therefore calls for the need to encourage females in tomato production in order to increase production and reduce exports into the country.

Also, Majority of the farmers (36%) were between the ages of 31-40 years. 29% were between the ages of 41-50 years, 16% were between the ages of 20-30 years, 15% were between the ages of 51-60 years and 4% were between the ages of 61-70 years. The mean age of the respondents was 33.54 years.

Moreover, 55% of the respondents have no access to basic education. 15% have access to primary and 11% to Senior high School and lastly 4% to tertiary institution which means more than half of the tomato farmers were illiterate. Existing literature shows that improved crop production strategies require high levels of expertise from farmers in order to be implemented effectively,farmer practices have been shown to constrain performance resulting in low productivity (Crosby et al., 2003). Farmers who are better educated are generally more open to innovative ideas and new technologies that promote technical change (Lapar and Ehui, 2003). Finally, the years of farming experience in tomato production is shown in table 1 below. It can be seen that 77% of the respondents have been in the practice of tomato production for more than 5 years, 22% of them have grown tomato between 3-4 years and finally 1% of the respondents have been in tomato production for 1-2 years. This result shows that tomato production is an age long profession of the people in the study area. All are indicated in table 1.

3.2 Production constraint

From the table 2, lack of credit has the least mean score and the one with the least mean score is the most serious problem that the tomato farmers are facing, followed by high cost of inputs, pest and diseases, high land rent and lastly cost of water. Their mean scores are; 1.62, 2.50, 2.54, 4.07, and 4.28 respectively. The major production problem the farmers face was lack of access to credit. A study conducted by Okon et al (2009) on resource use efficiency of vegetable farmers in Nigeria also shows that lack of access to credit was the major constraints the farmers were facing.

3.3 Marketing constraint

The result in table 3 shows that, lack of reliable market is the major problem the farmers face with the lowest mean score , followed by low price, cheating by market queens, lack of enough funds by the processing factory with mean scores of 1.82, 1.93, 2.83 and 3.42 respectively. A research conducted by Robinson et al (2010) on marketing the case of tomato in the Upper East Region of Ghana also attests to the problem of reliable market.

Table 1. Socio-economic characteristics

Variables	Frequency	Percentages(%)
Gender		
Male	89	89
Female	11	11
Total	100	100
Age(years)		
21-30	16	16
31-40	36	36
>40	48	48
Total	100	
Educational level		
Primary	15	15
Secondary	11	11
Tertiary	4	4
No formal Education	55	55
Total	85	85
Farming Experiencing		
1-2	1	1
3-4	22	22
>=5	77	77
Total	100	100

Table 2. Production constraints

Constraints	Mean score	Rank
Lack of credit	1.62	1st
High cost of inputs	2.50	2nd
Pest and diseases	2.54	3rd
High land rent	4.07	4th
Cost of water	4.28	5th

Table 3. Marketing constraint

Constraints	Mean score	Rank
Lack of reliable market	1.82	1st
Low price	1.93	2nd
Cheating by market queens	2.83	3rd
Lack of enough funds by the processing factory	3.42	4th

4. Conclusion and Recommendations

Farmer's major constraints were lack of reliable market and access to credit. These have made it difficult for some farmers to increase their farm sizes and others to shift into other vegetables or crops to take advantage of the market since they say tomato farming is a risky venture.

The land areas for tomato production should be increased to enable them enjoy economics of scale since land in the form of farm size was an important determinant of their production income.

Farmers can form cooperatives to obtain loan from financial institutions to enable them increase production and profitability.

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