

RELEVANCE OF MICRO FINANCIAL INSTITUTION CREDIT IN TOMATO PRODUCTION AND LIVELIHOOD IN SANTA, CAMEROON

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Key words

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Abstract

The aim of this study is to analyze the relevance of Micro Financial Institution Credit in tomato production in Santa, Cameroon. Primary data was collected using purposive and random sampling techniques and results computed using ordinary least squared. The result indicates that Micro Financial Institution Credit is strongly associated to the production of tomatoes in Santa, Cameroon. The prevalence of pest and disease, inadequate adoption of the use of farm credit from MFIs and lack of agricultural training are the major challenges of Tomatoes producers. Tomatoes production is observed to be a profitable business and so a major contributor to livelihood in Santa. We recommend that policy makers should develop new strategies towards the management of tomatoes farms in terms of new variety of seeds, pest control and the acquisition of credit from financial institutions.

1. INTRODUCTION

Agriculture is the backbone of the economies of most countries in the world. Out of the three quarters of the world's poor living in rural areas, 80 percent directly or indirectly depend on agriculture as their main source of income and employment (IFC, 2014). Cameroon is among the Sub-Saharan African countries endowed with both economic and human resources. After independence the economy was sustained principally from agriculture which played a vital role in employment, income generation and provision of some essential inputs as raw materials to some of its industries (Ngoe, 2016). In Cameroon, agriculture remains the dominant economic activity and its role in contributing to the gross domestic product (GDP) has not significantly changed since independence. It is estimated that crop production accounts for over 70% of all rural income and employs over 59% of the country's population (FAO, 2006). According to the National Institute of Statistics in 2013, agriculture contribute to about 42% of its GDP and 30% of its export revenue, SMEs account for over 90% of the country's economy and contribute 34% of its GDP (USAID, 2016).

Microfinance emerged as a noble substitute for informal credit and an effective and powerful instrument for poverty reduction among people, who are economically active, but financially constrained and vulnerable in various countries (Shivi and Prabhat, 2014). Microfinance has existed for centuries in Africa and around the world. There are many global examples of the history of microfinance,

ranging from informal, small-scale, rotating savings-and-loans clubs as well as savings and credit cooperatives in the world. In Africa, mainstreaming, formalization, and recognition of microfinance as part of the formal financial sector began to gain momentum in the late 1990s (ABD, 2006). Although microfinance emerged in developing countries as an alternative to top-down economic development activities, today it has also become an interesting proposition for the industrialized economies and economies in transition (FAO, 2002). According to African Development Bank (ADB) in 2008 Cameroon government negotiated and launched, with the help of the International Fund for Agricultural Development (IFAD), a microfinance sector consolidation and development project. This was known as the National Microfinance Program Support Project whose goal is to facilitate access to community financial services for the marginalized, with special emphasis on rural areas. Microfinance is an important pillar of the Poverty Reduction Strategy Paper prepared by the Cameroon Government to facilitate access to appropriate financial services for the marginalized (USAID, 2016).

Tomato is one of the most important vegetables worldwide. World tomato production in 2001 was about 105 million tons of fresh fruit from an estimated 3.9 million ha (Shankara et al, 2005). According to the Food and Agricultural Organization of the United Nations 2008 statistics, tomato is grown on more than 5 million ha with a production of nearly 129 million tons. China is the world's tomato grower, accounting for more than one-quarter of the world's tomato acreage.

Egypt and India together account for more than one-fifth of the world's total. Turkey and Nigeria are other major tomato producing countries. Asia and Africa account for about 79 percent of the global tomato area, with about 65 percent of world output. Tomato and tomato products are important part of human diets. Currently, tomato has a higher consumption rate in developed countries and is often referred to as a luxury crop.

In developing countries, tomato has become important part of the food basket (Muthyalu, 2014). Tomato forms a very important component of food consumed in Ghana and this is evident in the fact that many Ghanaian dishes have tomatoes as a component ingredient. Tomato production in Ghana is mainly a smallholder activity and provides income to farmers and all other agents involved in its production and marketing Justice (Akpene and Gbemu, 2010). Tomato is the most widely cultivated field vegetable crop in Cameroon.

The population of Santa plays a vital role in the production of tomato in Cameroon and contributes immensely to the country's GDP. The population of this area practice mainly subsistence farming for their livelihood, with both the men, women and children constituting the labour force. Most tomato farmers in this area face numerous challenges one of which is the financial means to intensify and expand their production in spite of the presence of several MFIs (Isah, 2012). These farmers still face considerable difficulties in obtaining finances required for the purchase of farm inputs. Even when they strive to obtain inputs such as chemical pesticides through other means they face challenges linked to the ineffectiveness of these chemicals. Despite their socioeconomic importance, smallholders tend to have little or no access to formal credit, which limits their capacity to invest in the technologies and inputs they need to increase their yields and incomes and reduce hunger and poverty, both their own and that of others (IFC, 2014).

Farmers lack traditional forms of collateral securities, and even when they do, the lengthy informational, bureaucratic and time consuming procedures of accessing MFIs discourage them, thus limiting access to needed funding for agricultural ventures from MFIs. Even when some farmers succeed to access agricultural loans in MFIs, most at times the loans are associated with tight monitoring and supervision rules that farmers have to follow and as a result the farmer's freedom in carrying out farm activities is affected. Also, most tomato producing farmers use money obtained from 'Njangi' houses, family members, friends who are general restrain sources of finance to run their agricultural activities. Above all, the production capacity of tomato farmers will be enhanced by the amount of money they have at their disposal (Sigei et al., 2014). It is therefore necessary to find out if actually the money bank of MFIs is readily available to tomato farmers irrespective of their social status despite all the limitations and/or inconveniences they face when attempting to access these financial institutions. The latter draws us to the following objectives that will help us have a closer study on the relevance of MFICs on the production of tomato in Santa sub division of the North West Region of Cameroon. Specifically the study attempts to: assess the contribution of MFICs on tomato production, examine the challenges farmers face in tomato production and assess the effects of tomato cultivation on the livelihood of farmers.

2. TOMATO CONTENT AND PERSPECTIVE

Tomato is scientifically known as *Lycopersicon esculentum* Mill. Tomato belongs to the *Solanaceae* family. This family also includes other well-known species, such as potato, tobacco, peppers and eggplant (aubergine). Tomato has its origin in the South American Andes. The cultivated tomato was brought to Europe by the Spanish conquistadors in the sixteenth century and later introduced from Europe to southern and eastern Asia, Africa and the Middle East. More recently, wild tomato has been distributed into other parts of South America and Mexico. Common names for the tomato are: tomate (Spain, France), tomat (Indonesia), faan ke'e (China), tomati (West Africa), tomatl (Nahuatl), jitomate (Mexico), pomodoro (Italy), nyanya (Swahili). Tomatoes contribute to a healthy, well-balanced diet. They are rich in minerals, vitamins, essential amino acids, sugars and dietary fibres. Tomato contains much vitamin B and C, iron and phosphorus. Tomato fruits are consumed fresh in salads or cooked in sauces, soup and meat or fish dishes. They can be processed into purées, juices and ketchup, canned and dried tomatoes are economically important processed products (Isah, 2012).

Tomato is an annual plant, which can reach a height of over two meters. In South America, however, the same plants can be harvested for several years in succession. The first harvest is possible 45-55 days after flowering, or 90-120 days after sowing. The shape of the fruit differs per cultivar. The colour ranges from yellow to red. The advantages of tomato: relatively short duration vegetable crop, short or long production period, can be grown as an uncovered field crop and in protected cultivation, fits easily into different cropping systems. Tomato has high economic value; high micronutrient content and fruits can be processed, dried and canned (Fongang, 2007). Tomato requires a relatively cool, dry climate for high yield and premium quality. However, it is adapted to a wide range of climatic conditions from temperate to hot and humid tropical climate. The optimum temperature for most varieties lies between 21 and 24 °C. The plants can survive a range of temperatures, but the plant tissues are damaged below 10 °C and above 38 °C. Tomato plants react to temperature variation during the growth cycle, for seed germination, seedling growth, flower and fruit set and fruit quality. If cool or hot weather spells persist during flowering, pollen production will be low (Orden et al., 2016).

A simple rule of thumb can be used to determine whether local water supplies are sufficient for growing tomato. If there are herbaceous plants (plants with many thin leaves) growing in the natural environment, it will be possible to grow tomato. Cloudy skies will slow down the ripening of tomatoes. However, adapted cultivars are available. Seed companies have special tomato varieties for hot-humid climates. Tomato grows well on most mineral soils that have proper water holding capacity and aeration, and are free of salt. It prefers deep, well drained, sandy loam soils. The upper layer needs to be permeable. Soil depth of 15 to 20 cm is needed to grow a healthy crop. In heavy clay soils, deep ploughing allows better root penetration. Tomato is moderately tolerant to a wide range of pH (level of acidity), but grows well in soils with a pH of 5.5 – 6.8 with adequate nutrient supply and availability. Addition of organic matter is, in general, favourable for good growth. Soils with very high organic matter

content, like peat soils, are less suitable due to their high water holding capacity and nutrient deficiencies (Orden et al., 2016).

The variety to choose depends on local conditions and the purpose of growing. Local varieties (land-races) and improved (or commercial) varieties can be distinguished. They are the result of a continuous process of selection of plants. Selection criteria are based on characteristics such as type of fruit, shape of plant, vitality and resistance to pests and diseases, but also on factors related to climate and management. Farmers select varieties that perform best under the local conditions. Only fruits from the best plants must be selected and kept for seeds for the subsequent season. Farmers may breed their own cultivars, but it is a costly and risky to process. Tomato breeding companies have produced F1-hybrids. These grow from seeds that have been produced by controlled hand pollination of male and female parent lines. These hybrids combine high yield, disease resistance and other plant and fruit characteristics. Ploughing (or digging) is necessary to prepare the land for a new crop. It improves the structure and water holding capacity. In areas where water is a limiting factor, ploughing enhances water conservation as well. Fallow ploughing the land after harvesting the previous crop improves the soil structure and water-holding capacity. It also helps to reduce soil-borne pests and diseases by exposing the soil to the hot sun. Deep ploughing is necessary to break an impermeable hard subsoil layer (ploughing pan), remove the weeds and bring the land to fine tilth.

Tomatoes are normally transplanted because much better results are gained when seedlings are raised in a nursery. Two methods of raising seedling in nurseries can be used: sowing in seedbed and sowing in seedling tray (used by many farmers in Southeast Asia). Smaller quantities of seed are needed, the seedlings can be selected for growth and health before planting in the field, the plantlets can be well protected and the planting distance is more regular than after sowing directly in the field. The seedbed should be 60-120 cm wide and 20-25 cm high. The length depends on the number of seedlings wanted. Remove clods of earth and stubble. Add well decomposed farmyard manure and fine sand. Bring the seedbed to fine tilth. To raise a sufficient amount of plants for one hectare, 150-200 g seeds should be sown on 250 m² of seedbed. Draw lines, 10-15 cm apart, over the length of the seedbed. Sow the seeds thinly spaced on the lines and press gently. Cover the seeds with fine sand and straw. Water the seedbeds twice a day to ensure sufficient moisture for germination. After germination the straw must be removed.

Transplant the seedling to the field 3 to 6 weeks after sowing. A week before transplanting, seedlings should be hardened by reducing the application of water, but 12-14 hours before they are taken out of the seedbed they should be thoroughly watered again to avoid excessive damage to the roots. Seedlings of 15-25 cm tall with 3-5 true leaves are most suitable for transplanting. Transplanting should be done in the afternoon or on a cloudy day to reduce the transplanting shock. Water the plants immediately once they have been transplanted. When removing the seedlings, keep a large clump of soil attached to the roots to prevent them from being damaged. After transplanting, mulch can be placed on the ground around the plants to protect them from heat during the first five days. Mulch is composed of plant remains (e.g. rice-straw or sorghum-straw) used to cover the soil to control weed growth, prevent erosion and conserve water. Care should be taken not

to wet the lowest leaves, as this can stimulate the growth of mould. A more advanced method is to put plastic mulch on the beds and punch holes in the plastic before planting. The transplanted plants should be protected from heat during the first five days, e.g. by covering them with large leaves.

3. LITERATURE REVIEW

From the beginning, the focus of microfinance has been on providing savings and credit to low income entrepreneurs and has facilitated small-scale enterprises, mostly in the service sector. In the food and agriculture sector, the typical clientele of MFIs are rural or peri-urban microenterprises, poorer farmers, landless farmers, women, market traders, and contract -growers, artisanal fisher folk and small households. Such low-income women and men, both urban and rural micro entrepreneurs, have again and again proven to be viable savers and borrowers (FAO, 2002). According to the FAO (2002), the vast majority of MFIs provide credit on a solidarity-group lending basis without collateral and there is also a range of other methodologies that MFIs employ. Some MFIs begin with one methodology and later move or diversify to another so they do not exclude certain socio-economic categories of clients. It is necessary to have a basic understanding of microfinance methodologies in order to unpack any gender issues related to the microfinance activity.

Group based lending has been a novel approach to lending small amounts of money to a large number of clients who cannot offer collateral. Group sizes vary but most have between four to eight members. The group self-selects its members before obtaining a loan. Loans are granted to selected member(s) of the group first and then to the others. Most MFIs require a percentage of the loan to be saved in advance to indicate the ability to make regular payments and serve as collateral. Group members are jointly responsible for the repayment of each other's loans and usually meet weekly to collect repayments. Peer pressure and joint liability is used to ensure repayment. In case of default by one member, the entire group will not be allowed to borrow again. The creditworthiness of the borrower is therefore determined by the members rather than by the MFI. One of the best-known group lending and savings institutions is the Grameen Bank in Bangladesh (USAID, 2016).

Grameen targets women (women are 98% of their clients) on the basis that women repay their loans better than men and Grameen believe that loans extended to women benefit all the household members with improved level of food intake, health, and education. Average loans range from US\$100 to US\$200 for a period of 3-12 months (Isah, 2012). In -countries in transition average loan amounts tend to be higher (\$500 or more). While group formation leads to lower transaction costs for the MFI, there are social costs associated with this process. These social costs can be negative constraints to group borrowing and joint liability approaches, and include coercive peer pressure, loss of trust and the likelihood that the poorest and most vulnerable will remain excluded or further stigmatized (Sigei, et al., 2014). Such social costs are higher in some societies than in others and depend upon underlying social relations (which influence the ease/difficulty of group formation) and the distances people must travel to participate in group activities.

Village banking is a financial services model that enables poor communities to establish their own credit and savings associations, or village banks. Village banking (Bancomunales) was initiated by FINCA (Fundación Integral Campesina) in Costa Rica in 1984. In Bolivia, during the 1980s village banks were developed as an alternative to rural credit. Village banks provide a credit line of non collateralized loans to members, a place to invest savings and promote social solidarity. The sponsoring agency makes one loan to the village bank, which then makes individual loans to its members. The bank guarantees these loans and relies on peer pressure and peer support among members to ensure repayment. The small, working capital loans are repaid every four to six months. Borrowers start with a very small loan and work their way up to an established loan ceiling. Credit is linked to savings, and in most cases loans sizes are related to the amount each borrower has saved. Members' savings are held by the village bank, and are lent or invested to increase the resource base of the bank. Commercial standards are applied to interest rates and fees. At the end of 1994 there were 3,499 recorded village banks with 90,754 members. According to UNIFEM, in 1996 women constitute 90% of the membership of village banks around the world. In Asia all of the 6,678 members of 172 banks are women (Isah, 2012). Village banks in rural areas have had more difficulty in building trust and solidarity and for reasons not yet understood suffer from large numbers of members leaving.

Rotating savings and credit associations (RoSCAs) exist in many parts of the world and are known under different names including Tontines and Susus (Isah, 2012). They are often female dominated organizations that save small amounts and can borrow from the common pool on a rotating basis. RoSCAs and other self-help groups have sometimes been used by MFIs for group lending. 'Tontines' are widely used in West Africa. In Senegal for example Tontines allow members to save very small amounts of money at a pre-established rhythm and obtain interest free loans from the collective membership (USAID, 2016). The level of the loan that can be obtained from the collective

membership varies between meetings because a tiered system of loan entitlements is rotated among the members.

4. METHODOLOGY OF STUDY

Presentation of Study Area

Mezam division is one of the seven divisions in the North West region, Cameroon. Mezam is divided into seven sub divisions which are Tubah, Bali, Santa, Bafut and Bamenda 1, 2 and 3. Santa is located at about 12 km away to the south east of the town of Bamenda with 10 villages which are; Akum, Alatening, Awing, Baba II, Baligham, Mbei, Mbu, Njong, Santa, Pinyin, including other two developments which has surfaced, leading to a number of chieftaincy disputes. According to the last census projections of 2008, Santa had a total population of about 99,852. In 2010, the projected total population of Mezam was 802,100 inhabitants with Santa alone having 105,443.4 inhabitants. The municipality covers a surface area of about 532.67 square km and a population density of about 114 inhabitants per km square. This population is unevenly distributed with the highest densities found around Santa center. It lies between longitude 9°58 and 10°18 east of the Greenwich meridian and between latitude 5°42 and 5°53 north of the equator.

The type of climate found here is the Guinean climate. It is characterized by two distinct seasons, the dry season which runs from December to February and the rainy season from March to November. The nights are generally very cold while the days are hot. The rainfall ranges between 2000 to 3000mm per annum. The annual average temperature recorded at the Santa Agricultural Post is about 19°C. Strong winds and heavy cloud cover characterize the area. The heavy cloud descending from hills leads to poor visibility during their occurrences. The abundant rainfall and cold climate make the area favourable for gardening and thus creating a market for the people and a source of livelihood.

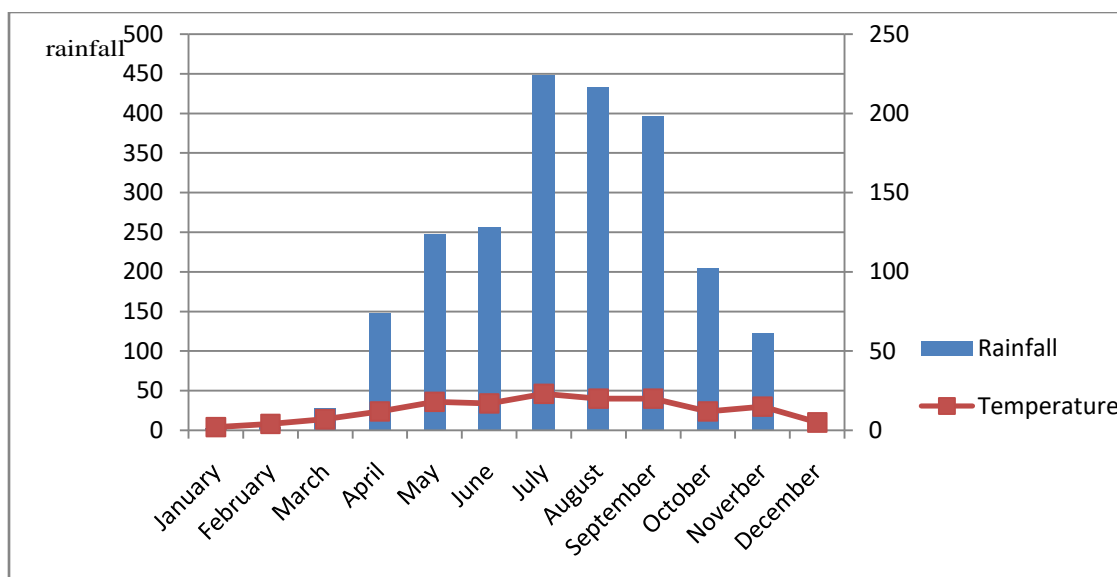


Figure 1: Ombrothermal diagram

Source: Adapted from the Bamenda meteorological station

Santa sub division is characterized by a good number of rivers, streams, springs and water fall. The most important are Mbei, Njong, Akum and Mbu springs, which flow both in the rainy and dry seasons. The streams here flow in the north south direction where they converge to form the Matazem stream. These streams reduce in size during the dry season and are greatly increased during the rainy season. The drainage system here is trellis from the north and dendritic to the south. Some of the main rivers include; Mifi, Matazem, Custom, Makemtikang and Mbunfon. Water falls (water shed of mile II) and lakes (lake awing), which attract tourists. Water from some of these streams is used for irrigating farmlands especially during the dry season. The highland range, which extends from the Bamboutos through Santa and Bambuluwe has been blessed with volcanic activity. The area has rich volcanic soils favourable for agriculture or crop farming. There are three main types of soils in this study area, the penevoluted ferralitic soils found mostly in the low-lying areas especially in Baligham, Santa town and Njong. The Orthic soils are found in Highlands of Akum, Baba, Mbu and Awing while within Mbei and Pinyin area are dominated by the Aliatic and Penevoluted ferralitic red soils. The fertility of the soils varies in lowlands and highlands. On the high lands, the soil is not very fertile since it has been washed down to the valleys while the soils in lowlands are more fertile due to nutrients washed from the hills and deposited there.

It is estimated that more than 90% of the population depend on agriculture, as it is their main source of family income. The people are mostly farmers carrying out subsistence and extensive farming with coffee as their main formal cash crop which has been replaced by vegetable gardening. This has been motivated by a high degree of soil fertility and a favourable climatic condition which has led to an increase in rural exodus practices as people move from other regions and countries, either to carry out trading in this area (distribution of farm products to other parts of the country and their exportation to some neighboring countries like Equatorial Guinea, Chad, Gabon and Central African Republic etc.) or to practice agriculture. Crops such as Maize, Irish potatoes, sweet potatoes, plantains, bananas, beans, cassava, Kola nuts and garden crops are grown for sale and home consumption in most households. However, small livestock rearing (pigs, goats, sheep, and fowls) and petty trading constitute an important source of supplement to income from agriculture.

Sources of Data and Sampling Procedure and Research Instrument

There are two types of data sources for this study; primary sources and secondary sources. Primary data is collected from household heads, village leaders, and key informants at the village level. Secondary data will be obtained from a series of documents from the following sources: Santa Rural Council, relevant research reports, books, journals, thesis, and internet, as well as published and unpublished documents from relevant organizations, which are appropriate to the study. Data collection was done on the entire sample population but this study covered a total of 150 households which consisted of households who do not use MFICs and those who use loans from MFIs to produce tomato.

The 150 questionnaires used to obtain quantitative data were shared equally to the 3 sample villages (Santa, Baligham and Awing) hence

50 questionnaires per village. The study will use two different sample types. First, the study will use purposive sampling which is a non probabilistic sampling technique that conforms to certain criteria for selecting households. Purposive sampling will be very useful since it will help to reach targeted samples quickly and helps to get easily the opinions of the targeted population. Specifically, the study used a second type of purposive sampling which is Quota Sampling. Quota sampling is used since it improves the representativeness of the sample. Second, the study use random sampling in choosing households which do not use MFICs and living in close proximity to households using MFICs for tomato production.

5. EMPIRICAL RESULT

Socio-Economic Characteristics of Farmers

The distribution of farmers by socio-economic characteristics from the data obtained from the survey for tomato farmers took into consideration the following aspects: ages, gender, level of education, marital status, MFICs use, the type of seeds planted. Age is a very important factor in farming. From the above figure we can see that out of all the farmers involve in the production of tomatoes that were question 40% fall within the age range of 20 to 30 years, 48% fall within the age range of 31 to 40 years and the remaining 12% fall within the age range of 41 to 50 years. The concentration of tomato farmers in the youthful age group that is to say below 40 years is because tomato farming requires a lot of man hours and power in land preparation, planting, spraying, mulching, and staking, harvesting and day to day monitoring of the farm. The latter is in accordance with the assertion raised by Dlova et al (2004), who affirmed that “older farmers are less capable of carrying out physical activities while younger ones are more capable.”

Gender is another very important factor that influences the type of activities to be carried out by individuals. From the above figure we can see that out of 150 tomato farmers, only 2% are made up of females while the remaining 98% are males. Women are not fit for tomato production since it is an agricultural activity that requires a lot of physical energy in spraying, couple with the time it consumes in monitoring the farmland which women naturally don't have because they are occupied with other household duties.

Education is an important aspect for the social economic development of a society (Pote, 2008). Out of 150 tomato farmers that were sampled for this study, 46% ended school at the primary level, 44.7% ended at the secondary level and the remaining 9.3% at the university level. From this statistics we can see clearly that all the tomato farmers in Santa are educated. The majority of tomato farmers stop schooling at the primary level due to lack of finances to sponsor their education thus indicating a high level of illiteracy among tomato farmers and the minority engaged into tomato production because of limited employment opportunities. This high illiteracy among tomato farmers hinders their acceptance of improved technical and financial tools since education facilitates farmers' adoption of innovation. Out of 150 farmers 22% are single while 78% are married. The high percentage of marriage among tomato farmers is in part as a result of their youthfulness and also due to their desire for children to enhance their labour force.

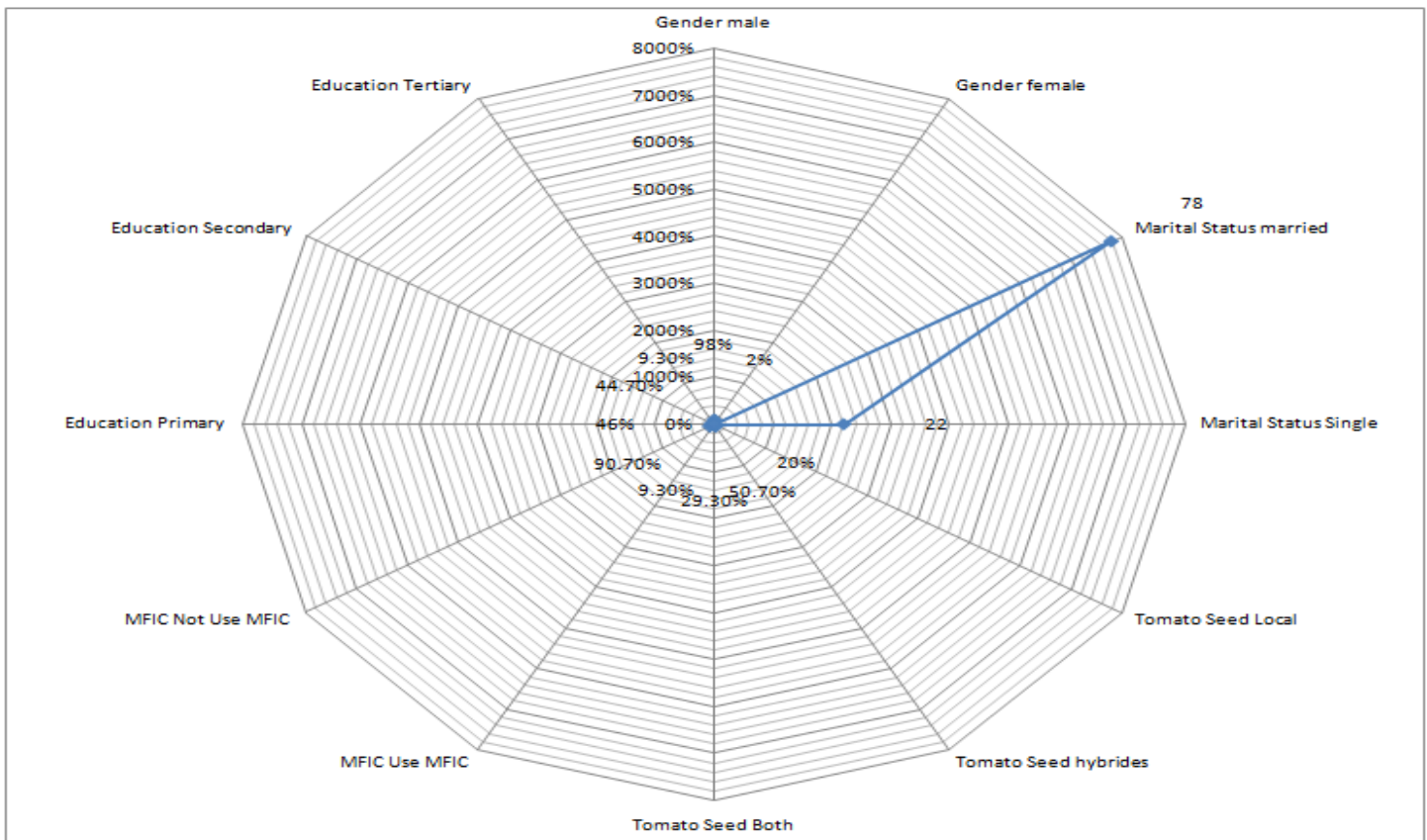


Figure 2: Socio-Economic Characteristics of Farmers

Source: Author

Financial capital plays a great role in enhancing agricultural production. From the above figure, the % of tomato farmers who do not use MFICs and those who do are 90.7% and 9.3% respectively. The higher % is made up of farmers who do not use MFICs because of the following reasons: some depend on “Njangis”; some obtain financial support from family members and friends; some are not members of MFIs in Santa; some are afraid of land seizure in case of crop failure; and others have their personal capital while the lower % is made up of farmers who use MFICs because their capital is inadequate and the interest rates of the MFIs are moderate or lower than that of other traditional sources of finance. One of the users of this financial service attested that “he obtained micro finance credits at an interest rate of 1.25% that permitted him to increase his capital, rent extra farms and employ extra labour, plant improved seeds and maintain the farm properly”.

The local variety of seeds were mostly used by these tomato farmers, that is 50.7% as to 29.3% who used hybridized seeds and 10% who used both local and hybridized seeds as seen in figure 1. Many of the farmers who were not using improved seeds complained that they are very expensive to purchase and easily get rotten after harvesting for instance one farmer said “I can buy 50grams of the local variety at a price of 6,000FCFA meanwhile the hybrids are sold at 30,000FCFA for the cheaper ones of the same quantity, and the local variety can be stored for more than two weeks after harvesting meanwhile the hybrids can barely last a week”. Therefore, according to these set of farmers, it is pretty expensive to cultivate hybridized seeds. This shows that most

of the farmers cannot have access to some improved farm inputs and ability to expand their production. This agrees with the findings of Isah (2012) who also reported that lack of credit facilities affect production.

MFICs Impact and Tomatoes Production

At 1% level of significance, with 11 degrees of freedom, age has positively affected the production of tomato. This implies that mostly younger farmers use MFICs to produce tomato since the older ones have already amassed enough financial capital that guarantees their financial autonomy. At 10% level of significance, with 11 degrees of freedom, gender positively affects the production of tomato since more men use MFICs than women because they own land that can be mortgaged. At 5% level of significance, with 11 degrees of freedom, education has a positive impact on the production of tomato meaning that, mostly educated farmers use MFICs to produce tomatoes. At 10% level of significance, with 11 degrees of freedom, the occupation of farmers have a positive influence on tomato production meaning that it is mostly fully engaged farmers who use MFICs to produce tomatoes. At 1% level of significance, with 11 degrees of freedom, household size has a negative effect on the production of tomato.

This implies that the majority of tomato farmers who use MFICs have very small household sizes. At 1% level of significance, with 11 degrees of freedom, the use of MFICs for the production of tomato is negatively significant meaning that only 9.3% of sampled tomato farmers use MFICs (figure 1) since the rest of the farmers are not ready to take the risk of borrowing funds from the bank to invest in the

production of tomatoes either because they don't have suitable collaterals or are not members of these financial institutions or have their personal capital or belong to "Njangi groups".

At 1% level of significance, with 11 degrees of freedom, the number of hectares of land on which tomato is cultivated has a positive influence on tomato production meaning that most farmers who use MFICs own considerably large farmlands since the quantity of tomato they can produce is also a function of the total cultivated surface area. At 10% level of significance, with 11 degrees of freedom, cropping system has a positive influence on the production of tomato since most of the farmers using MFICs practice sole cropping because with this type of cropping system they find it easier to manage the farm. At 1% level of significance, with 11 degrees of freedom, training has a positive influence on the production of tomato since majority of trained farmers use MFICs to produce tomato in large quantities. It is therefore concluded that MFICs have a significant effect on the production of tomato.

Challenges Faced by Farmers in Tomato Productions

From the above table we notice that training has a constraint percentage of -74.67 thus implying that training is negatively significant to the production of tomato. Similarly, credits from MFIs, plant protecting chemical and intercropping system have a constraint percentage of -81.33, -82.67 and -88 respectively thereby indicating a high negative effect of these constraints on the production of tomato. The null hypothesis is therefore rejected in favour of the alternative hypothesis. It is therefore concluded that the challenges faced by farmers have a negative effect on tomato production.

At 1% level of significance, with 12 degrees of freedom, household size has a positive effect on livelihood of farmers indicating that through tomato farming most farmers have been able to increase their household sizes thus increasing family responsibility. At 10% level of significance, with 12 degrees of freedom, the number of hectares of land on which tomato is cultivated is negatively significant to the livelihood of farmers.

Table 1: Relationship between MFICs and tomato production

Variables	Coefficient	Standard Error	T- statistics
Age	0.259***	0.099	2.629
Gender	0.642*	0.413	1.557
Level of education	-0.004**	0.301	2.051
Marital status	0.204	0.158	1.294
Occupation	1.031*	0.621	1.661
Family size	-0.079***	0.021	-3.770
Credits	-0.851***	0.213	-3.987
Hectares of land cultivated	1.164***	0.138	8.402
Season of cultivation	0.028	0.067	0.417
Cropping system	0.901*	0.533	1.691
Training	0.068***	0.011	6.210
Constant	1.078	0.988	1.092
R-square	0.559	N/A	N/A
F-statistics	11[15.906;000]	N/A	N/A
Total		149	

Source: Author; **Note:** *, **, *** significant at 10%, 5% and 1% level of significance

Table 2: Relationship between farmer's challenges and tomato production

Variable	Absolute frequency	Challenges facing Tomatoes Producers				
		Non Constraint	Constraint	Difference	Percentage	
Training	150	19	131	-112	-74.67	
Fertilizer	150	150	0	150	100	
Credits from MFIs	150	14	136	-122	-81.33	
Chemical	150	23	127	-124	-82.67	
Labour	150	150	0	150	100	
Climate	150	146	4	142	94.67	
Financial	150	131	19	112	74.67	
Cropping system	Sole cropping	150	141	9	132	88
	intercropping	150	9	141	-132	-88

Source: Author

Table 3: Relationship between tomato production and livelihood

Variables	Coefficient	Standard error	t-statistics
Age	-0.164***	0.062	-2.643
Gender	0.302	0.257	1.174
Level of education	0.141**	0.056	2.509
Marital status	-0.046	0.098	-0.468
Occupation	0.300***	0.053	5.684
Family size	0.169***	0.054	3.147
Credits	0.155	0.134	1.158
Hectares of land	-0.151*	0.087	-1.739
Season of cultivation	-0.054	0.042	-1.290
Cropping system	0.097	0.151	0.642
Training	0.235**	0.112	2.097
Constant	-0.009	0.635	-0.015
R-square	0.391	N/A	N/A
F-statistics	12[7.317; 000]	N/A	N/A
Total		149	

Source: Author; **Note:** *, ** and *** significant at 10%, 5% and 1% level of significance.

At 5% level of significance, with 12 degrees of freedom, training has a positive significance on the livelihood of tomato farmers since trained farmers employ techniques that enable them to produce more tomato per hectare. The null hypothesis is rejected in favour of the research hypothesis. It is therefore concluded that tomato production has a significant effect on the livelihood of tomato farmers.

6. CONCLUSION

This study was designed to analyze the relevance of Micro Financial Institution Credits in tomato production in Santa sub division. The objectives are to present the socio economic characteristics of tomato farmers, assess the use of MFICs in the production of tomato, examine the major challenges associated with tomato production and finally to assess the effects of tomato production on the livelihood of the farmers. The Primary data were collected from 150 tomato farmers, using purposive and random sampling techniques in 3 villages out of the 10 villages found in the target area. The data collected were for 2015/2016 cropping season with the aid of well structured questionnaires, interviews, observations and documents. Data collected were analyzed using descriptive and inferential statistics methods using SPSS version 20.

The result indicates that majority of the farmers were less than 40 years of age (88%), 98% male and 78% married, with family size of three people and above. 90.7% of the farmers do not use MFICs but rather their personal savings, family support and borrowed funds from rotational savings for production.. The major constraints associated to the production of tomatoes were identified to be chemical ineffectiveness that has lead to the prevalence of pest and disease, inadequate adoption of the use of farm credit from MFIs, lack of training since very few of the farmers had come in contact with extension services, and cropping system. Tomato production was found to be profitable since it is the main source of employment to 70.7% of the farmers with majority of the farmers having an estimated annual profit ranging from 5,000,000 to 1,000,000FCFA. The study therefore, recommends that immediate research should be conducted by agricultural research institutes to identify the course of high incident of pest and disease of tomato, input prices should be

subsidized by public and private sectors and farmers should be trained by the Ministry of Agriculture and rural development by means of extension agents.

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