SMALL AGRO-PROCESSING INDUSTRIES AND RURAL HOUSEHOLD LIVELIHOODS IN TANZANIA: THE CASE OF GINGER FACTORY IN SAME DISTRICT

SMALL AGRO-PROCESSING INDUSTRIES AND RURAL HOUSEHOLD LIVELIHOODS IN TANZANIA: THE CASE OF GINGER FACTORY IN SAME DISTRICT

By

Inocent Kashana Augustino

A Dissertation Submitted in Partial Fulfillment of the Requirements for Award of the Degree of Master of Science in Development Policy (MSc. DP) of Mzumbe University

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CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by Mzumbe University, a Dissertation entitled: **Small Agro-Processing Industries and Rural Household Livelihoods in Tanzania; the Case of Ginger Factory in Same District**, in partial fulfillment of the requirements for award of Degree of Masters of Science in Development Policy of Mzumbe University.

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Dr. Mamkwe C. Edward (Major Supervisor)

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Internal Examiner

Accepted for the Board of IDS

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DIRECTOR, INSTITUTE OF DEVELOPMENT STUDIES

DECLARATION AND COPYRIGHT

I, **Inocent Kashana Augustino,** declare that, this dissertation is my own original work; it has neither been submitted nor presented and will not be presented to any other university for a similar or any other degree award.

Signature…….

Date ……

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DEDICATION

I’m humbly to the Almighty God, Jesus Christ the Redeemer and the Holy Spirit for guide and keep me health all the time.

This work is directly dedicated to all my family members; including my lovely mother Rose Ramadhan and my father Kashana Augustino Lwaya for laying foundation of my education, the roles of my wife Haika, my daughter Elizabeth, family members and other friends in favour of their prayers, patience, sacrifice and encouragement. Thank you all my family members, may our Heavenly God bless you all. This achievement is just as yours as is mine.

ABBREVIATIONS AND ACRONYMS

AP	Agriculture Policy
DFID	Department for International Development
FAO	Food and Agriculture Organization
FNP	Food and Nutrition Policy
GDP	Gross Domestic Products
IDS	Institute of Development Studies
IIDS	Integrated Industrial Development Strategy
LAPF	Local Authorities Pension Fund
MGGRCS	Mamba Ginger Growers Rural Co-operative Society
MIVARF	Market Infrastructure, Value Addition and Rural Finance
NGOs	Non Governmental Organizations
NIPP	National Investment Promotion Policy
NSGRP	National Strategy for Growth and Reduction of Poverty
PPP	Public Private Partnerships
PSPF	Public Service Pension Fund
RHL	Rural Household Livelihood
SAPFs	Small Agro-processing Factories
SAPIs	Small Agro-Processing Industries
SIDP	Sustainable Industries Development Policy
SMEDP	Small and Medium Enterprise Development Policy
SPSS	Statistical Package for Social Sciences
TBS	Tanzania Bureau Standards
TDV	Tanzania Development Vision
URT	United Republic of Tanzania

ABSTRACT

This study is an effort to determine the contribution of Small Agro-Processing Industries (SAPIs) on improving Rural Household Livelihoods (RHLs) drawing principally on examples from ginger factory in Same District in Tanzania. This study covered three specific objectives which are to assess the contribution of ginger factory to farming households' income; also, to determine the influence of ginger factory to the accessibility of social services including education, health and water in the study area; lastly, to examine the capacity of ginger factory in consuming farmers ginger produces. The study employed a cross-sectional descriptive research design. Data were collected from 125 systematically sampled households and from purposive sampled select key informants. Data collection methods involved key informants interview, observation and documentary review. The data of households' income, food security and access to social services were analyzed descriptively in terms of frequencies and percentages using SPSS. Qualitative data were analysed using content analysis. The results showed that 29% of the respondents asserted that, their livelihoods have been improved through the presence of ginger factory during 2015 to 2016. However, 71% of the respondents claimed that, they were not improving their livelihoods because they had to sell their ginger to middlemen at low price. Moreover, this study observed that the ginger factory did not operate effectively due to poor industrial machinery and inadequate capital. The study concluded that, SAPIs need to be improved due to its remarkable contribution in improving rural livelihoods. The study recommends the government through Public Private Partnerships (PPPs) should promote ginger factory by allocating investors with enough skills and capital to operate this industry so as to improve people's livelihoods.

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CHAPTER ONE
INTRODUCTION

1.1 Background Information

Worldwide, Small Agro- Processing Industries (SAPIs) have been accepted as an engine of social-economic growth for promoting equitable development. It contributes a lot in stimulating various different economic activities such as farming, creating jobs and uplifting living standards (Powel, 2005). Worldwide, ginger processing factories have been recognized in creation of the employment opportunities to both the farm and non-farm activities, raising Gross Domestic Product (GDP). Moreover, ginger processing factories stimulate different economic activities such as farming hence raising farming households' living standards. In addition, ginger is utilized widely as a spice, candies, for pickles and as a medicinal herb.

Globally, ginger production is done in moist- tropical conditions which regarded as the most favorable climatic condition for ginger production. Ginger is produced in various countries but India, Indonesia, the Philippines, Thailand and China are the main ginger producers; India produced 232,510 Tons in 1996/1997 on 70,910 hectares. Furthermore; China, Thailand, and Brazil were leading countries in exporting ginger by 2000 (Plotto, 2002). Ginger production influenced the establishments of the ginger processing factories in various countries; the main ginger processors countries include China, Thailand, Netherlands, Indonesia, Singapore, India, the Philippines and Malaysia. Moreover, according to Plotto (2002) on the main ginger consumption areas postulated that, United Kingdom, Japan, United States, Singapore, Saudi Arabia and Netherlands were among the major ginger importing countries by 2000. Also, according to Plotto (2002) on the ginger production and processing postulated that, in the 1980s ginger world production was

estimated to be 100,000Tons although it was projected to grow from 300,000Tons in 1980, to 500,000Tons in 1990 and to 600,000Tons in 1998.

In African context, according to Liedholm *et al*, (2010) on agro-industries postulated that, small scale industries in Africa account for 95% of employment and concerning 43% of the worth additional to the total development industrial sector. Also, small scale industries are typically traditional and create both a large quantity of products and employ many people than large scale industries. However, the potential of small agro-industries as an economic sector development have not yet been realized in rural areas in many developing countries. Ellis and Tersoo (2013) on the ways to eradicate poverty argues that, nearly every country in Sub Saharan Africa specifically in rural areas there is a high rate of poverty due to African's failure in imitating the Asian Green Revolution/agro-industrialization. Moreover, basing on the statistics from World Bank (2007) a total of 800 million people were considered poor, subsisting with income of a less than US$1 per day. In addition, among the world's poor, 75% live in rural areas, engaging in farming as their major source of income. Douglass (1998) on development of agro-industries argues that, during 1950s and 1960s, the governments among the developing countries emphasized on industrial development in urban than in rural areas. Ginger is produced in various countries include Nigeria and South Africa. Ginger production influenced ginger processing factories; the main ginger processors countries in Africa include Nigeria and South Africa (Plotto, 2002).

In Tanzania context, according to Economic and Social Research Foundation (ESRF) (2015), the level of SAPIs is still low due to poor transportation in rural areas. This make the country continue to export unprocessed agro-products, making the agro-processing industries fail to fulfill the domestic demands. Kanhaiya, (2014) on the factors that influences the developments of industry assert that, agro-processing industrial development require availability of raw materials, capital, water and presence of skilled and non skilled labours as well as good infrastructure networks

and good government policies. According to Same District Administrative, 80% of the population in Same District depends on agriculture mainly ginger farming whereby the trends of ginger production in Tons from 2000/2001 to 2007/2008 were 52,650Tons on 6100 hectares. The poor living standard among the rural people has been associated by ignoring of the agro-industrial sector growth in rural areas in spite of having plenty of raw materials. This study focuses on determining the contributions of small agro-processing industries in improving rural livelihoods by using a case of ginger processing factory in Same District.

1.2 Statement of the Problem

SAPIs in Tanzania specifically in rural areas are few compared to the amount of raw materials produced by rural farmers. Same District is recognized as a leading rural district in ginger production among all districts in Tanzania and where a small ginger processing factory was launched in 2012. The scarcities of the ginger factories in rural areas led to low income among many rural households of Same District hence poor living standards. A number of studies have been conducted concerning the role of the SAPI in providing employment opportunities (Mogor & Orr 1990; Plotto, 2002, Kipene, 2014; Simon *et al*, 2014; Mussa, 2014); Thorat & Potdar, 2015). However, the contribution of SAPIs in improving Rural Household Livelihoods (RHLs) is scarcely known. This study sought to determine the contribution of SAPIs in improving the RHLs at the district levels in Tanzania.

1.3 Objectives

This study has two major intended objectives; these objectives are general objective and specific objectives.

1.3.1 General Objective

The general objective of this study is to determine the contribution of the small agro-processing industries in improving rural household livelihoods.

1.3.2 Specific Objectives

Specific objectives of the study are:

i. To assess the contribution of ginger processing factory to farming households income.
ii. To determine the influence of ginger processing factory to the accessibility of social services including education, health and water in the study area.
iii. To examine the capacity of ginger processing factory in consuming farmers ginger produces.

1.4 Research Questions

i. To what extent does ginger processing factory contributes to income increase among households?
ii. What are the contributions of ginger processing factory on households' access to social services?
iii. To what extent does ginger processing factory consumes farmers ginger produce?

1.5 Significance of the Study

Sustainable Industrial Development Policy (SIDP) of 1996 – 2020, the National Vision 2025 and National Strategy for Growth and Reduction of Poverty (NSGRP) of 2005 recognizes the importance and need of SAPIs to be located in rural areas due to the presence of raw materials produced as a means to improve the livelihoods of the rural population. The application of the knowledge from the results of this study would help and advise the policy makers and other related industrial stakeholders (NGOs) in improving small ginger processing factory for better living standards of the rural people. Also, knowledge produced would enable policy makers when formulating new policies to consider the role of the SAPIs in rural areas.

1.6 Ethical Consideration

Ethical issues were taken into consideration. This involved freedom of the respondents in giving out their views. This made the participants mentally and expressively comfortable because were assured of security for their information. The households' information's were made be confidential and mainly for study purposes, research and others interested for further studies in related.

1.7 Scope

The study focused on the contribution of the ginger factory to the rural household livelihoods in Same District. The majority of the rural farmers in Same District did not improve their living standards from small ginger factory due to inadequate capital and poor machinery which associated to livelihoods improvement of the few ginger farming households. Rural farmers produces enough raw materials hence it is necessary to improve the presence ginger factory for lifting the livelihoods of many ginger farming households in Same District.

1.8 Limitations of the Study

This study was constrained by lack of agro-industrial data related to ginger production and ginger processing in Tanzania. This created difficulties for the researcher to get secondary data related to ginger production and ginger processing in Tanzania. The researcher went into the field for collecting households' information of ginger production and collecting information of ginger processing in the ginger factory. The information would create a base to make ginger production and processing data accessible through publication. Moreover, the other common issues in any social research that faced the study were as follows: Because the respondents were busy in farming activities; the researcher tried to distribute the questionnaires and make appointment of taking the answered questionnaires after few days. Also, because some of the respondents were not able to articulate their perception concerning ginger factory; the researcher tried to clarify a lot to the respondents that, they should not fear in providing their confidentialities because their information

would be strictly confidential. Additionally, because of fixed budget, the researcher applied sampling procedures such as purposive sampling and systematic sampling for covering the whole households' population. Lastly, due to mountainous nature in the study area which made it difficult traveling by car to reach the respondents, the researcher had to walk on foot reach the households.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter provides the definitions of the key terms that were used in this study. It advances the contributions of SAPIs in rural areas. It also states the theory and framework appropriate for the study. This chapter reviews literature relevant to the research problem which based on several research papers and contributions of various authors. Furthermore, the chapter provides empirical literature reviews from similar studies done on the contribution of SAPIs and RHLs. To sum up, the chapter is covered by providing Conceptual Framework that guided the study.

2.2 Theoretical Literature Review

This section provides analytical theoretical reviews based on several research papers, contributions of the National Development plans, Government papers and other policy documents in the growth of SAPIs.

2.2.1.Definition of terms

This section provides the definition of the selected terms relevant to this study. The described definitions include Industry/Industries, Factory and livelihoods.

2.2.1.1 Industry/Industries

Industry refers to the production of goods services within an economy. On the side, **industries** are considered when a large group has multiple sources of revenue generation **(**Wikipedia**)**. For the purpose of this study, **industry/industries** refer to small-scale agro-processing which involves the progression of rotating primary agricultural produce and to other produce for market and expenditure. Basing on Small and Medium Enterprise Development Policy (SMEDP), small agro-processing industries are regarded as the enterprises with capital for savings not as much of

200Tsh million (Ministry of Industry and Trade, 2002). For the purpose of this study, SAPIs are employed to mean the factory that use less than 200Tsh million. SAPIs have significant impact on economic development and poverty reduction in both urban and rural communities. SAPIs are locomotive for creating employment opportunities not just in agriculture but also in the off-farm works including handling, packaging, processing, transporting and marketing for food and other agricultural products.

2.2.1.2 A Factory

A factory refers to the industrial site which consisting of building or a group of buildings and machinery where workers manufacture goods into another (Wikipedia). For the purpose of this study, factory refers to ginger industrial site that consisting of building and machinery where primarily agricultural raw materials are processed into other products for market and consumption.

2.2.1.3 Livelihood

According to Chambers and Conway (1991); Scoones, (1998) livelihood comprises the capabilities, assets (together with both material and social resources) and activities necessary for a way of living. For the purpose of this study, livelihood is employed to mean the activities specifically small agro-industrial activities performed by rural farmers for a means of living to improve their livelihoods. RHLs could be better if there were sufficient market for their agricultural produces. The SAPIs provide market automatically for the agricultural products as well as giving employment opportunities for the rural farmers.

2.2.2 Importance of SAPIs in rural areas

SAPIs are very important in transforming the wealth of the country from pre-dominant agricultural to industrial era. In rural communities SAPIs recognized as an engine for creating employment opportunities not simply in farming, but also in off-

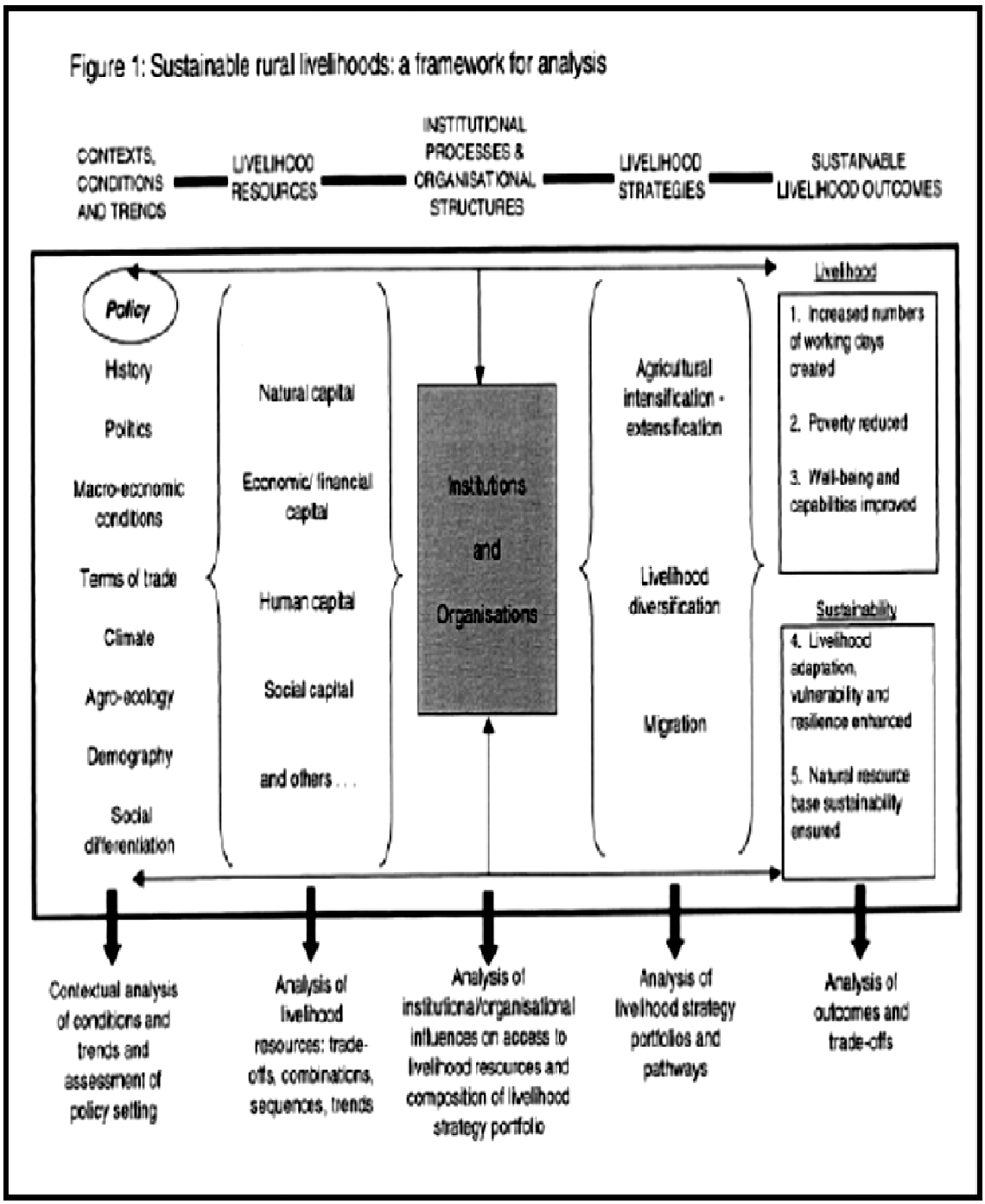
farm actions such as handling, packaging, processing, transporting and marketing of foodstuff and extra farming products. Using a gender eye; SAPIs empowers women who are often involved in agro-processing sector (UNIDO, 2009). This is supported by Simon *et al,* (2014) as postulated that, majority of women employed in SAPIs. The problems of unemployment to women in rural areas can be solved through small agro-industries and its related activities. With SAPIs, the rural farmers will be ensured of permanent market for their agricultural products. This is the area with high propensity to attract the mass of school leavers including graduates who will transform from peasant agriculture to commercial agriculture through innovations. Also, SAPIs acts as market centre for the raw materials produced by the farmers. SAPIs ensure the small-scale rural farmers with market for their crops hence solve the problem of market in rural areas. This would enhance the viability of small-scale farms by providing market outlet for their products, often within the rural surrounding areas (Hawassi, 2006; Eze & Ogiji (2013). The implication is that once farmers are ensured with market they tend to expand manufacturing capacity hence they gain more income which leads to the improvement of farming households' living standards.

Furthermore, SAPIs reduce post harvest looses due to the fact that the cops produced are being processed to more valuable for being further sold to the export market. SAPIs prevent post harvest looses for the rural farmers hence ensure food security and therefore sustainable livelihoods. SAPIs reduce cost for the farmers in transporting their products to urban places where there are abundance of market. The shelf living of the processed products is higher and longer because it becomes simple for packaging hence become easy for transportation and also makes the processed products increase more profitable value (URT, 2008). Moreover, SAPIs brings technological evolution because of higher demand for raw materials which reinforce farmers to shift from traditional to modern agriculture, for instance the use tractors in farming for producing enough raw materials. According to Quartey and Darkwah,

(2015) the development of SAPIs are related with producing capital goods like machines, farm implements and other equipments; for a nation toward produce a wide different produce in great quantities and at little costs. In addition, SAPIs reduce rural-urban migration by creating jobs and supplying good social services like schools, health, and electricity. All these services attract people leaving in rural areas to town seeking for the good social services. FAO (2004 & 2008) described that SAPIs serve as a means which stimulates rural development from different dimensions, like health, education, roads, water and electricity. These social services reduce rural-urban migration because they pull rural farmers to remain in their rural residencies.

2.2.3 Livelihood Framework

This section describes the framework that provides a guideline on how rural farming household use asserts as their strategies to generate livelihood outcomes hence improvements of farming households' living standards. A livelihood framework is an attempt to be aware of the livelihood strategies for poverty alleviation in bringing social economic development (Krantz, 2001). Figure 2.1 indicate the sustainable rural livelihoods framework.



Source: Chambers & Conway (1991)

Figure 2 1: Sustainable rural livelihoods framework for analysis

According to Petersen and Pedersen (2010), to achieve a positive livelihood outcome, people require special kind of assets: human capital which includes skills, knowledge. Social capital this could be through networking, and membership of formalized groups. Natural capital, this covers both tangible factors like the natural resources such as trees, land and intangible products especially the atmosphere and biodiversity. Physical capital includes infrastructure that are considered necessary for the livelihoods and financial capital which includes financial resources. Institutions, organizations and policies should be transformed to determine the access that people have to diverse assets. Examples of processes are international agreements, ownership rights and laws to secure the rights of the individuals, whereas structures might be the being of ministries, banks that supply capital to farmers. Asserts are used for livelihood strategies to produce the livelihood outcomes like better health and more income.

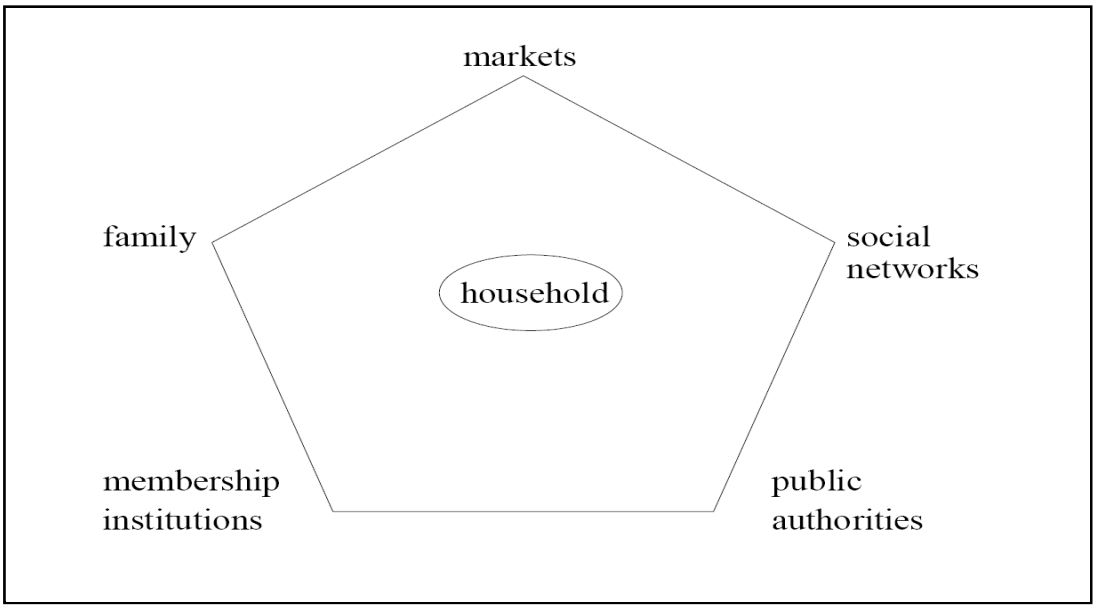
Relying on the Institute of Development Studies (IDS)- Sustainable Rural Livelihoods Framework by Chambers & Conway (1991), for good living standards rural households must adapt one among three livelihood strategies; agricultural intensification, livelihood diversification and migration. According to (UNIDO, 2005; Nyasimi *et al*,2007; Masanjala, 2007; Seraje, 2007) on livelihood strategies postulated that agricultural intensification is considered the most useful livelihood strategies among the rural farmers that improve their livelihoods; For the purpose of this study agricultural intensification is recognized as the livelihood strategy which made the rural farmers shift from local to modern farming methods hence producing enough raw materials which will lead to the establishments of SAPIs . The rural farmers used the income earned from small ginger processing factory to progress their livelihoods. Sen (1975) found three aspects of employment; income, production and recognition. In this view, rural farmers earned income through agro-industrial activities hence poverty reduction; the poverty rank is a key criterion in the evaluation of livelihoods. According to Makombe (2006) on women micro

entrepreneurs in the food processing sector postulated that, once women are ensured with stable credit facilities they would reduce poverty themselves through agro-industrial activities hence livelihoods improvement.

Different procedures are capable for developing an absolute 'poverty line' quantifies relying to income or spending levels (Ravallion 1992; Baulch 1996). Yet, such quantitative assessments of poverty are capable of mixture with additional qualitative indicators of livelihoods (Jodha, 1988; Schaffer 1996). Therefore, for the purpose of this study the indicated dependent variables such as increased income, improved food security and improved access to social services are more useful in assessing the rural livelihoods status. SAPIs reduce rural poverty through agricultural intensification.

2.2.4 Livelihood theory

The theory was described by Neubourg in 2002; the theory uses welfare pentagon which represents five hub institutions (social networks, membership institutions, market, public authorities and family). Despite, the past and environmental differences, these institutions are found in all societies athwart time and locations. The significance of each institution and associations of households and these institutions though may change by society and over time. A livelihood theory assumed that, the households may decide for one institution and performing activities by dealing with particular "production point" in the five dimensional space defined by the welfare pentagon as indicated in the Figure 2.2



Source: de Neubourg (2002)

Figure 2.2: Welfare pentagon

The household livelihood depends on market for their survival strategies. Access to institution develops rural livelihoods. Basing on a livelihood portfolio theory of social protection, ginger processing factory is recognized as an institution which provides marketplace for the ginger farmers. The farmers once sell their ginger they earn income of which improves their household livelihoods. A theory is applicable for sustainable household livelihoods. The rural district requires improved market for their agricultural produces. The improved market will ensure the enrichment of production from low level to highest level. Once rural farmers are ensured with market leads to food protection because they will use their income earn through selling ginger to buy food materials for their survival in all seasons during the year. The household needs food protection for their sustainable living standards. Access to ginger market in the ginger factory contributed role for the farmers income increase. According to a livelihood theory, access to market brings about sustainable price which then lead to increased income to the farmers hence healthier households' living standards.

2.3 Empirical Literature Review

This study reviews from similar studies literature done on the importance of SAPIs in household livelihoods. The empirical literature reviews helped to associate their findings in this study.

2.3.1 Empirical evidences from literature on SAPIs and RHLs

Worldwide, East Asian tigers (Japan, Taiwan, South Korea, Hong Kong, Singapore) have experienced dramatic economic development since the end of World War II as a result of transforming agricultural sector to agro-industrialization (Powel, 2005). A report by Thorat and Potdar (2015) on SAPIs found that about 24 agro industries were established in Satara-tehsil, only one was large scale and 2 were medium scale, the remaining all were small scale. Thus, SAPIs are put into consideration for the national economic development. These SAPIs were established in number of villages which created employment in these villages. Also, these SAPIs were using agriculture products of nearby areas like raw material which was also creating market for agricultural sector.

A research at rural Bangladesh by Mogor and Orr (1990) on agriculture reported that, 37% of household incomes came directly from agriculture whereby agro processing was considered economically appropriate for the rural farmer's income, with 44% from labour including agricultural labour and 19% from business, services and other sources. The implication is that at rural areas, the core basis of returns depends on agricultural activities. Therefore, once the households are ensured with market for their products such as availability of Small Agro-Processing Firms (SAPIs) will contribute to the rise of their income hence better living standards for the rural farmers.

Kipene (2014) on SAPFs found that, from 2000 – 2001 about 492 people were employed in six firms from Mbeya and Morogoro regions where by 39 Animal feed, 172 Bakeries, 28 Maize, 89 Milk, 108 Rice, 56 Sun flour. Having these statistics

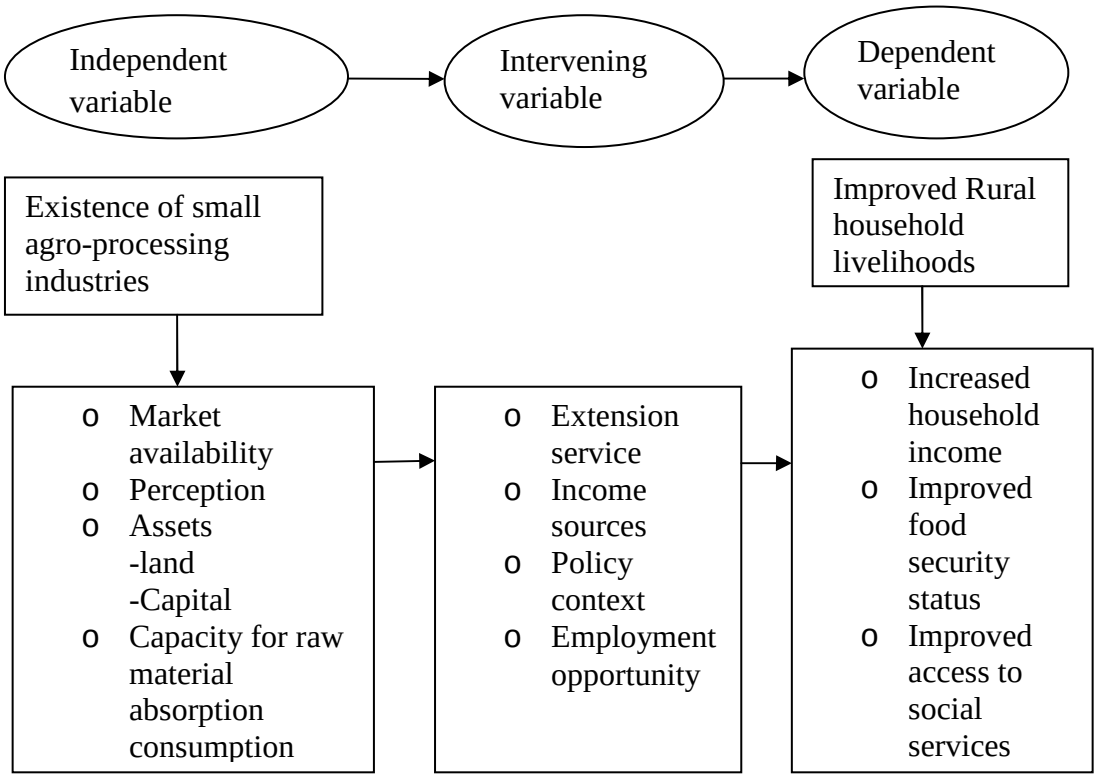
entails that SAPIs improves RHLs through provision of employment opportunities and the income gained by the household from SAPFs, they further used their income for example purchasing food for future uses hence reducing the problem of food insecurity. In addition to that, for employment it was reported that in 2009 a sum of 46,310 people were employed in agro food processing industries, where by 34,276 were male and 12,034 female (National Bureau Statistics, 2015). Besides, Bwana (2009) on livelihoods reported that, about 43.5% of the respondents were employing themselves in farming activities. This means that, many rural farmers in Tanzania depend on agricultural activities hence SAPIs are more required to improve RHLs. Furthermore, a report from Wa Ghana by Simon *et al,* (2014) on SAPIs, showed that agro-industrial activities was the foremost cause of earnings for rural households as 95.6% of the respondents were employing in the Shea butter processing industry hence improved their living standards. Moreover, the contribution of SAPIs in reducing transaction bottlenecks via direct purchase from rural farmers is a considerable advantage to both the farm and non-farm components (Simon *et al,* 2014). Therefore, this strategy of direct sourcing will make SAPIs assist farmers and offer a sure of permanent market for buying of the farmers' crops produced.

Furthermore, according to Davies (1996), livelihoods strategies require special types of cash income for rural household and community. These special types of cash income include casual earnings opportunities from selling crops, regular wages for those having jobs, collective earned by the community and profits from ownership. Each type needs to be considered separately as they are being earned by different people, in a very different amount which have different implications for livelihoods. This entails that, selling of cash crops led rural farmers earn income hence improve their livelihoods. In Tanzania, during 1980s there were institutional reforms where by special policies were introduced which among others include the Sustainable Industries Development Policy (SIDP) of 1996-2020. All these policies recognized the importance and need of SAPIs to create employment and generate income (URT,

1996 & 1996). Chambers and Conway (1991) postulated that, in the 21st century the government should promote rural industrialization for improving of RHLs. Integrated Industrial Development Strategy (IIDS) 2025 and National Vision 2025 promote SAPIs in rural area. This is an effort to the attainment of middle income economy by 2025. Focusing on the vision of 2025, agricultural sector especially in rural areas should be integrated with SAPIs so as to enable rural households increase their income for healthier livelihoods.

2.4 Conceptual Framework

SAPIs are recognized as an independent variable which comprises availability of market, people's perception on ginger factory, asserts such as land and capital but also capacity of the giving out factory consumption of raw materials. SAPIs acts as a center for market hence leads to employment creation for rural small farmers. Additionally, the intervening variables include income sources, extension services and employment variations which if increases will simplify on the improvement of rural households of the small farming households. However, these intervening variables are not part of this study. Moreover, the dependent variables which are part of this study include more increased income, enhanced food protection and access to social services. These variables are measured qualitatively and quantitatively for quantifying percentages of the households. In this view, opportunities of few ginger farmers' entrance to market in the ginger factory enabled them to generate their income since the establishment of the ginger factory hence improved their livelihoods. According to Neubourg (2002), assets include capital and land. In this sense, SAPIs stimulate rural household farmers on successfully utilization of their physical (land) assert for ginger production like a way of diversifying their economies hence progress of their livelihoods after having more increased income, enhanced food protection and access to social services like health, water and education.



Source: Adopted from Neubourg (2002)

Figure 2.3: Conceptual framework

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the research methodologies used by the researcher for gathering information from the field survey. It also includes some explanations of the study area, research design, population of the study, sampling techniques, data collection methods and tools, data collection procedures, data processing, data analysis and presentation.

3.2 Explanation of the Study Area

The study was conducted in Kilimanjaro region- the Northern East Zone particularly Same District at Myamba Ward where the small ginger processing factory is located. Same District was deliberately chosen as it is recognized as a leading center in ginger production among other districts in Tanzania. Same District was purposely selected due to its ginger farming activities that supply raw materials to the small ginger factory.

3.3 Research Design

This study used a cross-sectional descriptive research design; cross-sectional design is applied where data were gathered at one point in time in the study area. Given that, variables were not likely to vary more. For the purpose of this study, cross-sectional design is employed to determine the correlation between SAPIs and RHLs. According to Cochran (2007) on sampling techniques, a descriptive design is useful when data is composed to express persons, organizations, households, settings, or phenomena. Descriptive design was appropriate for reasons; that it describes the current situation of the rural farmers specifically ginger farming households. Also, descriptive design was helpful for quantitative data. Therefore, the designs were fitting for this study.

3.4 Population of the Study

The Population of this study included District Agriculture Officer, Industrial Board Manager, Ward Development Officer, Village Executive Officers, Village Agricultural Officer and rural ginger farmers' households.

3.5 Sampling Techniques

Purposive sampling was adopted to pick the key informants including District Agriculture Officers, Ward Development Officers, Village Executive Officers and Village Extension Officers. This was based on their knowledge on ginger farming and having information on ginger processing factory. Systematic random sampling was used in selecting rural farmers' households so as to avoid biasness. The systematic random sampling involved picking of elements where by every n^{th} element of list was then drawn for inclusion in the sample.

3.5.1 Sampling Frame and Sampling Unit

This study used a list of household names from a village registered book. Sampling frame involved a register of the whole residents from which the sample was to be drawn. According to Qin and Flint (2012), the household is recognized as an appropriate level of analysis for merging research on the dynamic interactions among livelihoods at rural areas in developing countries. A list of registered names of the households acted as a representative of the population. The sampling unit for analysis of this study was the household. Household heads provided different information's regarding to ginger production.

3.5.2 Sample size

There were 2,487 total registered households within Myamba Ward. The sample size was drawn in villages of Myamba Ward. Sample size of the surveyed study area was described in Table 3.1. However, due to inadequate time and cost, the researcher preferred to use 125 households. According to Fowler (2002) on survey research

methods, described that depending on time limit and cost, a sample of 5% can be adequate representative of the population.

Then: 2487 by 5% = 125.

Sample size therefore = 125

The sample population will be calculated as:

N = nk

Where:

N = the population size

n= the sample size

K = the number of intervals (i.e every k^{th} element to be selected)

Thus:

2487/125 = 125/125k

k = 19.896 approx 20

Therefore, after every 20^{th} element the respondents were selected.

Table 3. 1: Sample size for the surveyed study area

Study area	Existing number of households	Respondents Sample (5%)
Kambeni	850	43
Goha	825	41
Manka	603	30
Kirore	108	6
Kitumbwa	101	5
Total	**2487**	**125**

Source: Village registered book, 2017

3.6 Data Collection Methods and Tools

The study used a questionnaire survey, key informants interview, observation and documentary review for data collection. Each method complemented to each other. Each method provided the required information for the study.

3.6.1 Questionnaire method

The questionnaire method was used for obtaining the quantitative data. The study used the self administered questionnaires to ask the rural farmers households questions on ginger production in relations to small ginger processing factory. Open and closed ended structured questionnaires were also applied as an instrument for data collection in order to get the quantitative data from the respondents.

3.6.2 Key informants interview

This study used interview method which involved talking with key informants including both and informal interviews or formal conversations; the same as to acquire Qualitative data. Key informants comprised of District Industrial and Agricultural Officers, Ginger Industrial Board Manager, Ward Development Officer, Village Executive Officers, and Village Agriculture officer were interviewed by means of guided questions.

Table 3. 2: Kinds of information collected from key informants

Key informants	Type of data collected	
	Qualitative data	**Quantitative data**
District agriculture officer	Asserts (Land and capital) for ginger production	Number of Hectares and Tons
Ginger industrial manager	Perception on industrial performance	Data report for Processed ginger
Ward development officer	Type of projects conducted	No. of projects
VEO's households	Perception on social services	percent of accessed social services

Source: Survey data, 2017

3.6.3 Observation method

The observation method involves direct and indirect observation. This study used direct observation method to obtain the information so as to get the personal-hand experience of the rural farmers. The tool for this method was observation checklists where a notebook was used to write the information during direct observation.

3.6.4 Documentary Review

The study applied the secondary sources of information such as books, journal articles and internet sources so as to get the required information on SAPIs because the various information regarding to SAPIs are readily available and accessible.

3.7 Data Collection Procedures

Prior to the main research work a pilot survey was conducted from 1st November 2016 to 15th November 2016 to test the validity and reliability of research instruments. Validity involves the extent to which results obtained from the data analysis accurately represent the phenomenon under study. According to Orodho (2005) the questionnaire is considered reliable if the coefficient of reliability is greater than 0.70. A pilot test with 10 respondents was used in the pre-testing from the target population. The 10 respondents were expelled from the sample in the study

conducted. The instruments were pre-tested in the field to the target group (ginger farming households). A correlation coefficient was calculated by Cranach's Alpha using Statistical Package for Social Sciences (SPSS). The correlation coefficient calculated was 0.83 which is higher than 0.70, therefore the questionnaire had a sufficient high pre-test reliability. The necessary editing was made to the questionnaire before actual data collection.

The main purpose to find out validity and reliability of the instruments was to see whether the questions adequately answer the study specific objectives. Also, pre-testing served to establishment of effective sampling frame and techniques for the required information. The pre-testing questionnaires provided an occasion to train field assistants for data collection and assessed the adequacy of resources allocated for this research.

Qualitative and quantitative data were collected from rural household farmers and different key informants such as District Agricultural Officer, Ward Development Officer, Village Extension Officer and Village Executive Officers. Quantitative data included Tons of raw material consumption at the ginger processing factory, Tons of ginger produce for household and household farmer's income. The quantitative data obtained from the farming household's heads using questionnaires. Qualitative data involved local government officials – their perception related to small ginger processing factory on improving RHLs. Qualitative data were collected from key informants using guided questions supported by direct observation.

A record of structured questionnaire indicated in the appendix (I) and interview guide questions in the appendix (II-VI) were used as instruments for data collection. The questionnaires and interview guide questions were designed in English and translated into Kiswahili to allow easy communication during data collection. The

questionnaire saved time to cover great sum of population and ensured the consistence of the information.

3.8 Data Processing

This study involved data editing and coding. It involved field editing through the already filled questionnaires and making clarification on the spot to obtain accurate information. Also, central editing was involved; this was done after questionnaires answered and collected. Editing was important for improving accuracy through deleting inappropriate information. Coding employed numbering which involved assigning numerals to answers where by the respondents responses were put into a restricted numeral of categories. It saved time.

3.1 Data Analysis and Presentation

The data were analyzed descriptively using SPSS, specifically descriptive statistics such as frequencies and percentages were used to explain data obtained from the households. The results were presented using tables because tables contained column and rows which were simple to present the information from the respondents. Tables saved time. Furthermore, pie charts with the help of SPSS chart editor were used to present the results of this study attractively.

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results and discusses the findings of study basing on the three specific objectives as stated in section 1.3.2; Contribution of SAPIs to farming households income, the influence of ginger factory to accessibility of social services including education, health and water to farming households, and capacity of SAPIs on consuming ginger produces, challenges and its solutions are presented and discussed.

4.2 Background Characteristics of the Respondents

The household characteristics considered in this study included sex, age, marital status, number of the households members as well as number years one has lived in that village.

4.2.1 Sex of the respondents

Women participated in agricultural activities at household hence an imperative that studies for SAPIs considers the degree of women participation. The respondents' distribution by sex is presented in Table 4.1 and discussed.

Table 4.1: Respondents distribution by sex

Sex	Frequency	Percent
Female	71	56.8
Male	54	43.2
Total	**125**	**100.0**

Source: Survey data, 2017

The result in Table 4.1 shows that, 56.8% of the respondents were women while 43.2% of the respondents were men. Women were found working in ginger farming

to earn their daily income. This implies that, the higher numbers of the women were engaging in ginger farming. The results resembled the findings of Simon *et al* (2014) on respondents' distribution by sex; they reported that 95.6% of the respondents engaged in Shea butter production.

4.2.2 Age of the respondents

Age factor is vital in understanding the labour force belonging to the study area. Age grouping was based on population census 2012. The respondents' distribution by age presented in Table 4.2 and discussed.

Table 4.2: Respondents distribution by age

Age groups	Frequency	Percent
20 – 35	45	36.0
36 – 45	44	35.2
46 – 55	25	20.0
56+	11	8.8
Total	**125**	**100.0**

Source: Survey data, 2017

The results in Table 4.2 shows that 36% of the respondents had the age between 20 – 35 years, and 35.2% of the respondents were between 36 – 45 years and 20% of the respondents were between 46 – 55 years and 8.8% of the respondents were 56+ years. Majority of the respondents fall within the active labor force that, they were from 20 – 45 years, representing about 69% of the total respondents. The respondents with 56 and above years were few. The higher numbers of younger progressive villagers were engaging in ginger farming are to be involved by the policy makers on the implementation of the rural industrialization.

4.2.3 Marital status of the respondents

It is vital to realize the marital status of the respondents. It helps in the determination the extent to which SAPIs benefits the respondents. The marital status of the respondents presented in Table 4.3 and discussed.

Table 4.3: Marital status of the respondents

Marital status	Frequency	Percent
Married	72	57.6
Divorced	26	20.8
Single	18	14.4
Widowed	9	7.2
Total	**125**	**100.0**

Source: Survey data, 2017

The results in Table 4.3 show that 57.6% of the respondents said that they were married while 20.8% of the respondents were divorced; also 14.4% of the respondents were single and lastly, 7.2% of the respondents were widow.

4.2.4 Education status of the respondents

Knowing the education level of the respondents is crucial for assessing their knowledge of viewing issues. The respondents were required to indicate their final level of education. The assumption is that schooling facilitates learning hence create confidence in providing information. The findings presented in Table 4.4 and discussed.

Table 4.4: Distribution of the respondents according to education level

Education status	Frequency	Percent
Primary education	57	45.6
Secondary Education	32	25.6
Above Secondary education	29	23.2
Non formal education	7	5.6
Never	0	0
Total	**125**	**100.0**

Source: Survey data, 2017

The results in Table 4.4 show that 45.6% of the respondents have completed primary education whilst 25.6% of the respondents have completed secondary education. Also, 23.2% of the respondents were above secondary education. Lastly, 5.6% of the respondents possessed the non- formal education. This implies that, the literacy rate is high for the respondents engaged in ginger production within the study area. This is evidence on the position as most of the respondents were able to give accurate records of their monetary flows. It therefore, has a trickle-down effect on the small ginger industry as rural farmers were able to maintain the simple records to conclude the profit and loss of their agro-activities. The results were inconsistence with Simon *et al* (2014) on the respondents' level of education reported that, 78.1% of the respondents had no any form of education because of drop out from school. Simon *et al* (2014) evidenced that, those who dropped out from school were unable to give accurate records of their monetary flows which in addition suggested non formal education programs.

4.2.6 Number of household members

Knowing number of household members is vital in assessing food security status per household. Table 4.5 indicates the total number per households.

Table 4.5: Respondents on totality of household members

No. of households members	Frequency	Percent
4 – 6	58	46.4
1 – 3	45	36.0
7+	22	17.6
Total	**125**	**100.0**

Source: Survey data, 2017

The results in Table 4.5 show that 46.4% of the respondents were between 4 – 6 households' members. Also 36% of the respondents were between 1 – 3 household members while 17.6% of the respondents were more than 7 household members. This implies that, few respondents had higher numbers of people.

5.2.6 Years the respondent stayed in the village

Understanding the number of years each respondent has stayed in the village helped in attaining the experienced views. The numbers of years stayed in the village per households are indicated in Table 4.6.

Table 4.6: Respondents on years stayed in the village

No. of years respondents stayed in the Village	Frequency	Percent
31 – 40	53	42.4
41+	30	24.0
11 – 20	18	14.4
21 – 30	15	12.0
1 – 10	9	7.2
Total	**125**	**100.0**

Source: Survey data, 2017

The results in Table 4.6 show that 42.4% of the respondents had been staying in village between 31 – 40 years while 24% of the respondents had been staying in village for 41+ years. Also, 14.4% of the respondents had been staying in village between 11 – 20 years while 12.0% of the respondents had been staying in village between 21 – 30 years. Lastly, 7.2% of the respondents had been staying in village between 1 – 10 years. It therefore, aggregated that majority of the respondents had been staying in village between 11 – 40 years. This implies that, the respondents had enough experiences in the study area hence provided truth information.

4.3 Contribution of Small Ginger Factory to Farming Households' Income

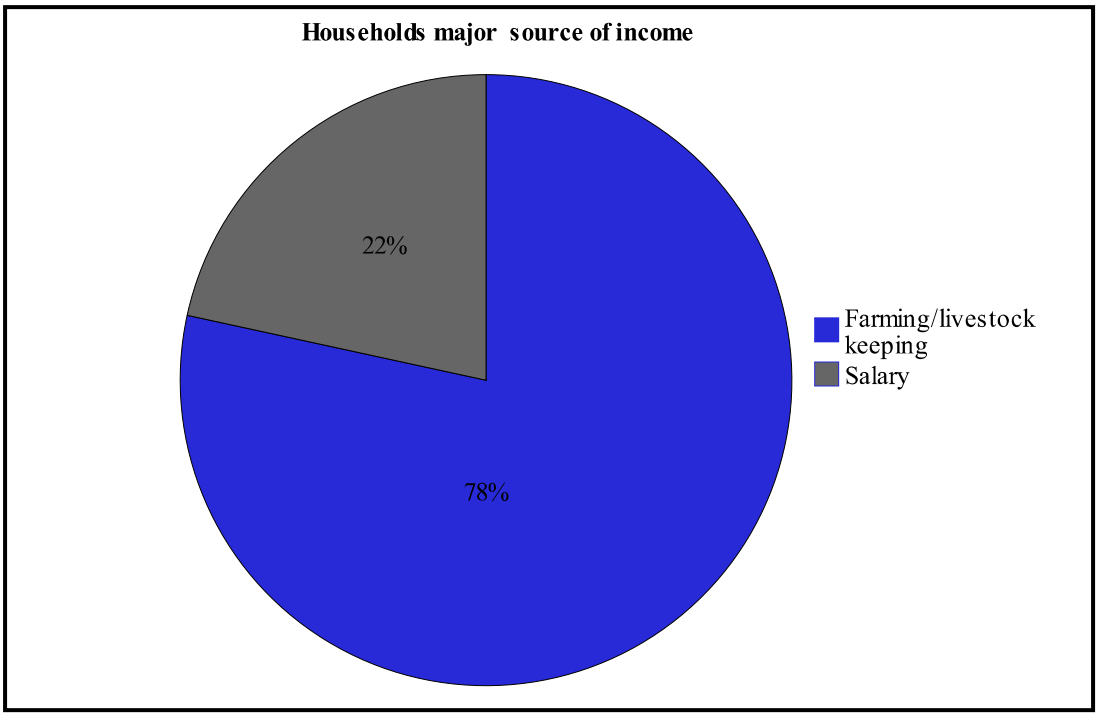
This section presents and discusses the findings of the first specific objective of this study which is the contribution of ginger processing factory to farming households. This study discusses two intended outcomes of the presence of small processing factory in the study area. The outcomes included increased income and improved food security status.

4.3.1. Contribution on increased income

The small ginger processing factory facilitated at high percent to the increase of annual income per households. Ginger Factory Board Manager said that:

> *"The small ginger factory created employment opportunities of 8 permanent workers and 100 temporal workers within the areas of the ginger growers".*

Therefore, the ginger growers' increased their income through employment obtained from agro-industrial activities hence benefit in situation of employment opportunities from the ginger processing factory. In association with Kipene (2014) on SAPFs reported that from 2000 to 2001 about 492 total numbers of employments was created in six firms from Mbeya and Morogoro. The contribution of the ginger processing factory on increased income at household level are presented in Fig. 4.1 and discussed.



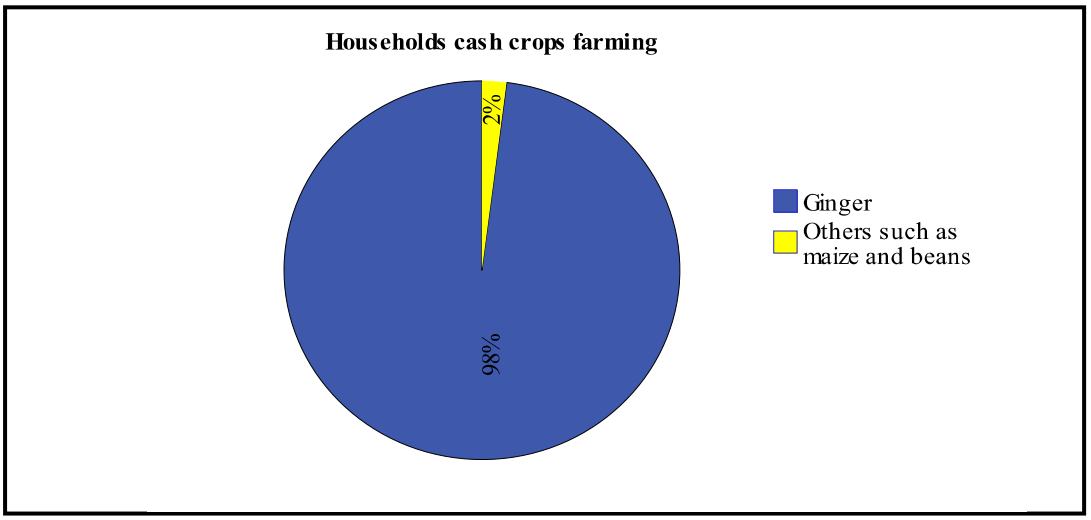
Source: Survey data, 2017

Figure 4.1: Households' sources of income

The results in Fig. 4.1 show that 78 % of the respondents were depending on farming/livestock keeping as a major source of their income while 22% of the respondents were depending on salary as a major source of their income. Relying on the results presented, those who said that they were depending on farming were the majority compared to those who were depending on salary. The results were resembled with Simon *et al* (2014) on the foremost source of income for rural farmers stated 95.6% engaged in farming as full time occupation. Furthermore, Bwana (2009) on livelihoods reported that about 43.5% of the respondents they were employing themselves in farming activities. In addition to that, Mogor and Orr (1990) on the source of income for rural farmers found that 37% of the respondents stated that their incomes came directly from agriculture. Moreover, in line with rural households improvements as postulated by Mark and Michael (2000) on source of income provided a strong indication that rural household improvements are multi-dimensional in the sense that a number of sectors are to be involved. In this scenario, agriculture sector was transformed into agro-industrial activities to add value for the ginger crops produced where by agricultural crops include ginger crop in the study area.

4.3.1.1 Households' cash crops farming

This section presents and discusses the cash crops that households were farming in the study area. According to Lindberg (2012) on cash crops reported that, the rural household improvements depended primarily on small–farming cash crops farming which implies that much encompasses efforts are needed to transform/add crop value to real income through rural industrialization. Different households farming crops are presented in Fig. 4.2 presented and discussed.



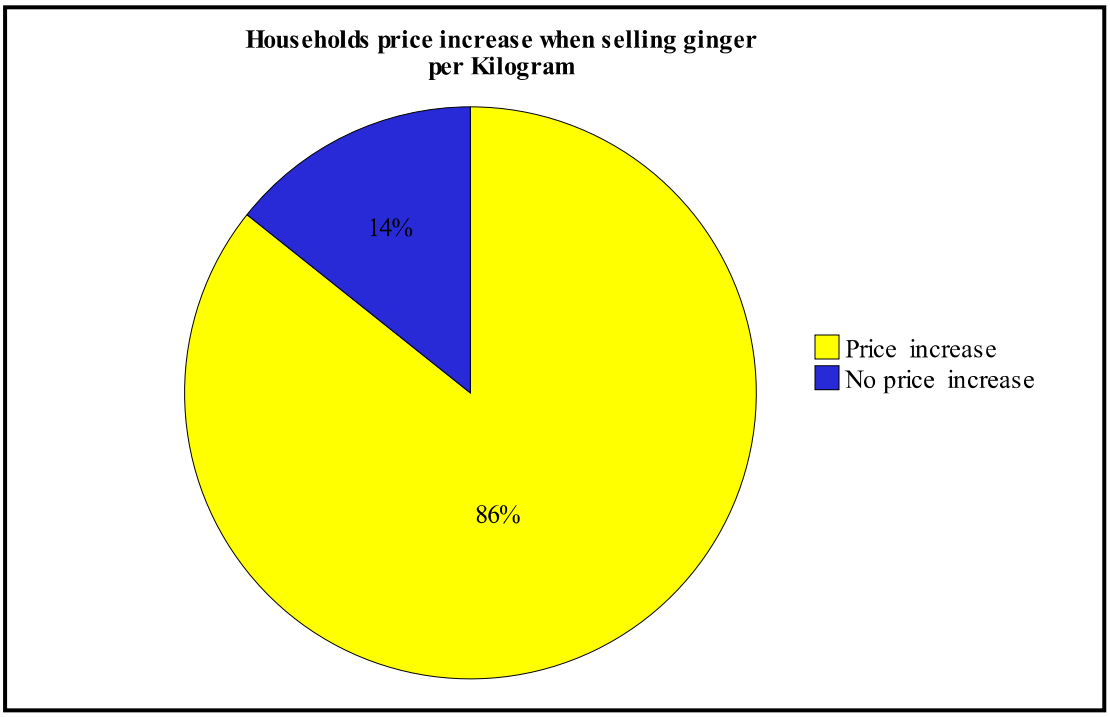
Source: Survey data, 2017

Figure 4.2: Households' variety of cash crops farming

The results in Fig. 4.2 show that 98% of the respondents were involved in ginger farming as their main cash crop and only 2% of the respondents were involved in farming of maize and beans as their main cash crops. It was revealed that, majority of the respondents employed in ginger farming due to the presence of small ginger factory. This is an indication that, SAPIs served as a base of employment and market for the deprived rural households.

4.3.1.2 Relationship between middlemen' price and peasants' low income

This section presents and discusses the households selling price of ginger to small ginger processing factory or other areas for example to the middleman. The relationship is based on differences of middlemen and ginger factories price for buying a Kilogram of ginger. The households ginger price status presented in Fig. 4.3 and discussed.



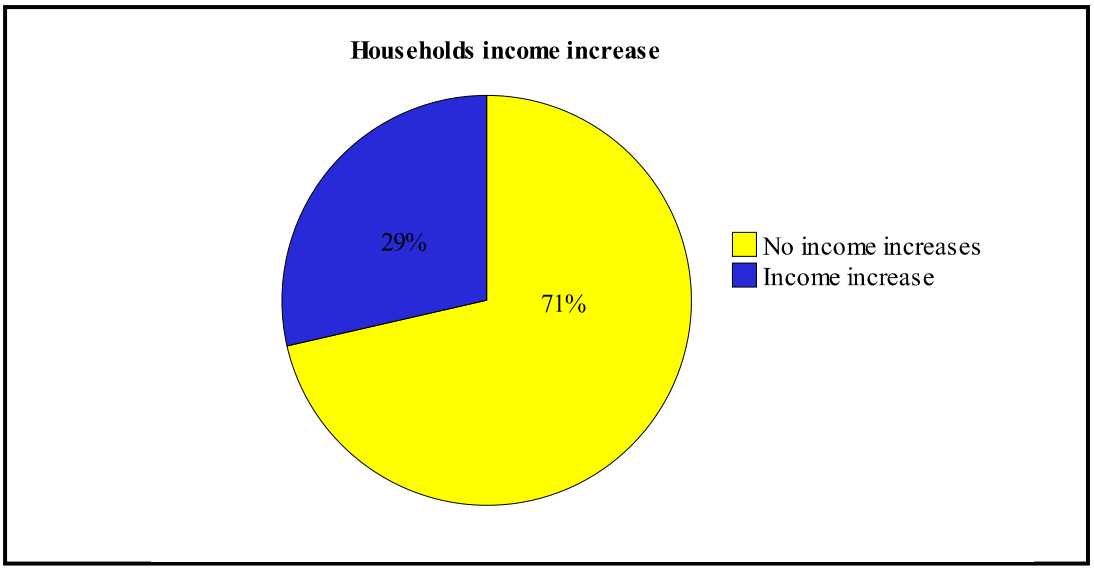
Source: Survey data, 2017

Figure 4.3: Households' responses on ginger price increase

The results in Fig. 4.3 show that 86% of the respondents claimed that there were increase of price to the small ginger factory while 14% of the respondents claimed that, there were no price increase especially to the middlemen. Furthermore, the Village Extension Officer said that:

> *"The cost incurred for the rural farmers in production of one Kilogram of ginger was 1,400Tshs while the ginger farmers were selling ginger for a price of less than 1000Tshs per kilogram of ginger. He added that, there were slightly price increase from a range of between 250 – 500Tshs per Kilogram of ginger before the presence of ginger industry to a range of between 250 – 1000Tshs per Kilogram of ginger after the establishment of ginger factory hence resulted to a little income increase for rural ginger farmers*".

This is a sign that, the rural farmers incurred double costs during and after ginger production. Those who mentioned that, there was price increase were selling their ginger to the ginger factory. Also, those who mentioned that, there was no price increase were selling their ginger to the middlemen due to the fact that, the middlemen paid the ginger farmers less money ranging between 250-1000Tsh for buying one Kilogram of ginger; furthermore, the middlemen have no stable price. In addition to that, 1,000Tshs per kilogram of ginger which rural farmers used to receive through sell of ginger to the ginger factory was not sufficient for them to improve their livelihoods/living standards due to the fact that, the charge which were incurred during ginger production was high hence it creates double loss for the rural farmers. Therefore, the less money which the ginger farmers were paid from the middlemen associated to low households' income among the majority of the rural farmers. Households' income increase presented in Fig.4.4 and discussed.



Source: Survey data, 2017

Figure 4.4: Households' income increase (n=98)

The results in Fig. 4.4 show that 71% of the respondents claimed that there were no increase of income while 29% of the respondents claimed that there were income increase after the establishment of ginger processing factory. Those who did not

increase income were not benefited from the establishment of ginger factory due to the fact that they were sold their ginger to the middlemen and those who increased income have been benefiting from sale of their ginger to the ginger factory. Table 4.7 shows the respondents income before the presence of ginger processing factory.

Table 4.7: Households' income earned before ginger processing factory (n=98)

H/Hs income in 2011/2012	Frequency	Percent
Less than 199,999Tshs	55	56.1
Higher than 1,000,000Tshs	43	43.9
Total	**98**	**100.0**

Source: Survey data, 2017

The results in Table 4.7 show that 56.1% of the respondents postulated to earn income less than 999,999Tshs per year and 43.9% of the respondents claimed to earn income higher than 1,000,000Tshs per year. The low income was associated with absence of any type of ginger factory in rural areas in the study area and other reason was low price that range between 250-500Tshs per Kilogram of ginger. Therefore, it was found that before the establishment of ginger factory in 2011/2012, those who earned income less than 999,999Tshs per year, they were not able to improve their living standards. Table 4.8 indicates the households' income after naissance of ginger factory.

Table 4.8: Households' income earned after ginger processing factory (n=98)

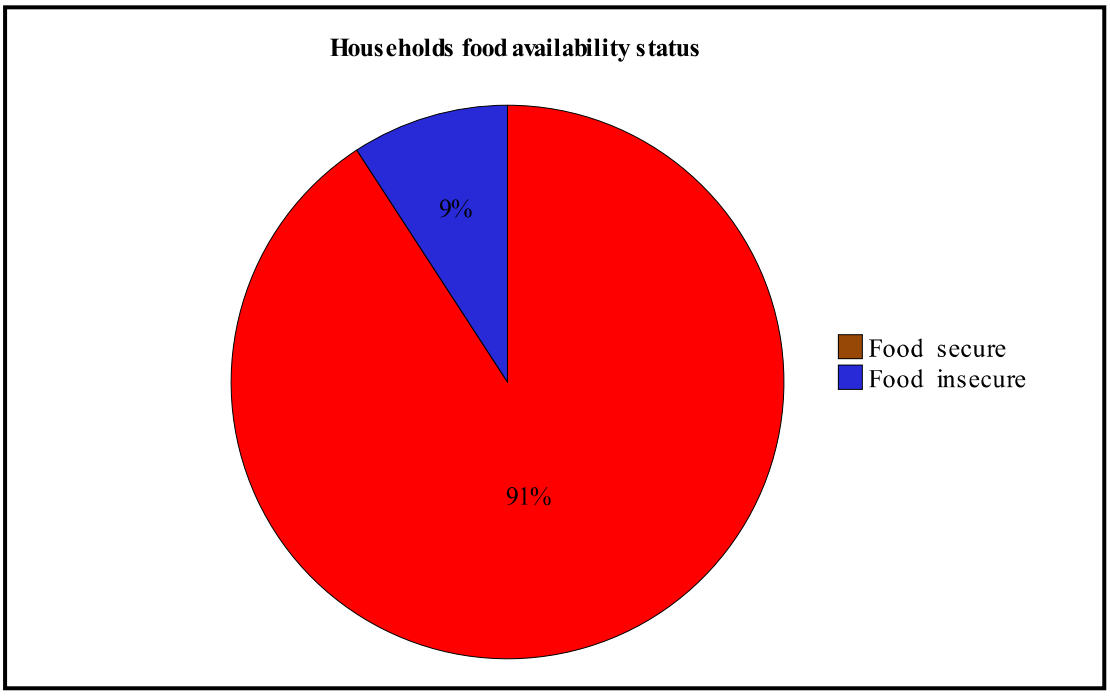
H/Hs income in 2015/2016	Frequency	Percent
Less than 1,999,999Tshs	70	71.4
Higher than 2,000,000	28	28.6
Total	**98**	**100.0**

Source: Survey data, 2017

The results in Table 4.8 show that 71.4% of the respondents blamed to earn income less than 1,999,999Tshs per year while 28.6% of the respondents claimed to earn income higher than 2,000,000Tshs per year. Basing on the results presented, those who earned income less than 1,999,999Tshs per year, they were majority due to poor industrial machinery and inadequate capital for buying farmers' ginger hence made the rural farmers to sell their ginger to the middlemen for low price of less than 1,000Tshs per kilogram of ginger. Also, for those who earned income higher than 2,000,000Tshs per year were few; these ginger farmers accessed to sell their ginger directly to the ginger factory for a stable price of 1000Tshs per Kilogram of ginger. Therefore, those who earned income of higher than 2,000,000Tshs per year from ginger's sales used the income to improve their livelihoods while the majority who earned income of less than 1,999,999Tshs per year did not improve their living standards due to the fact that, they were selling their ginger to the middlemen.

4.3.2 Contribution on increased food security

This section presents and discusses the contribution of small ginger factory on households' food security. Households' food security presented in Fig. 4.5 and discussed.

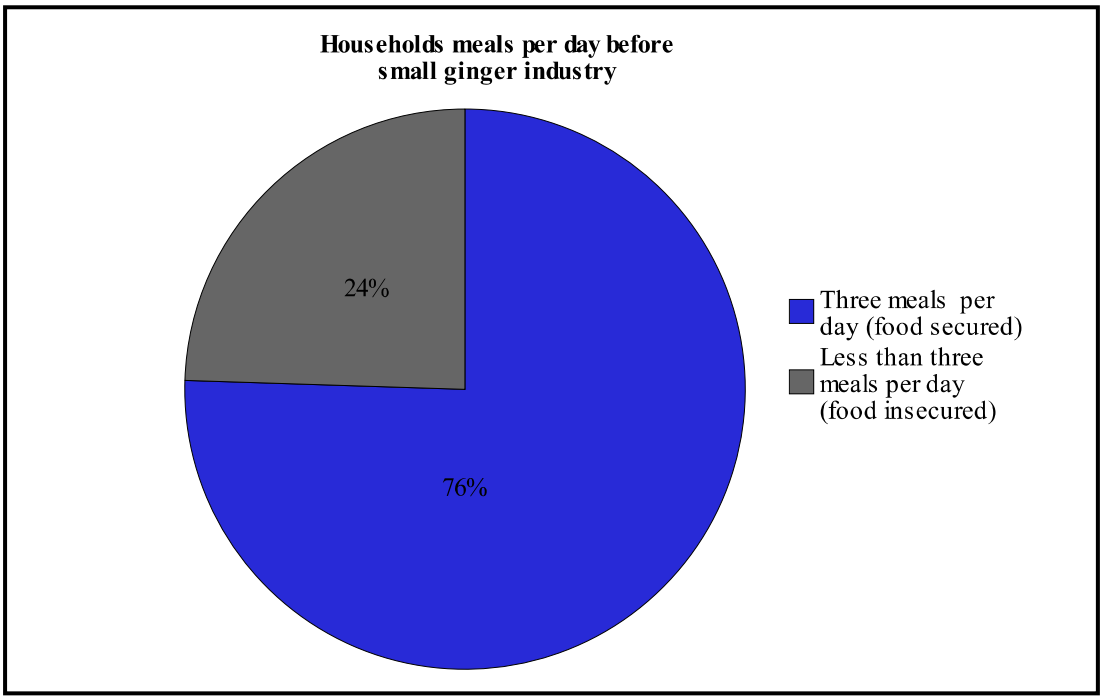


Source: Survey data, 2017

Figure 4.5: Households' food security status (n=98)

The results in Fig. 4.5 show that 91% of the respondents accepted that there was food secure due to the fact that were able to afford three meals per day all the time throughout the year while 9% of the respondents claimed that, there was food insecure due to the fact that, they were able to afford less than three meals per day during the year. Basing on rural livelihood framework by Chambers and Conway (1991) on food security postulated that, for good living standards in rural areas, must adapt one among the three livelihoods strategies: agricultural intensification, livelihood diversification and migration. For the purpose of this study agricultural intensification was employed because it fits the rural farmers in agro-industrialization. The small ginger processing factory influenced rural framers' increase in production of food crops and income increase through consumptions of related agro-raw materials like ginger hence enabled rural households to purchase food. In addition to that, Lindberg (2012), on food Security issues postulated that SAPIs are capable of ensuring of the availability and entitlement of the people to

sufficient food hence guarantee healthy life. He further elaborated that SAPIs must ensure food availability (by supply) and encourage privilege of the people with plenty opportunity of the commodity bundles for the people. This is because SAPIs are considered as a consumer of farmers' raw materials which led rural farmers' production of food crops and access money from sell of raw materials to the small ginger processing factory hence maintains food security. Households' number of meals before the establishment of ginger factory are presented in Fig. 4.6 and discussed.

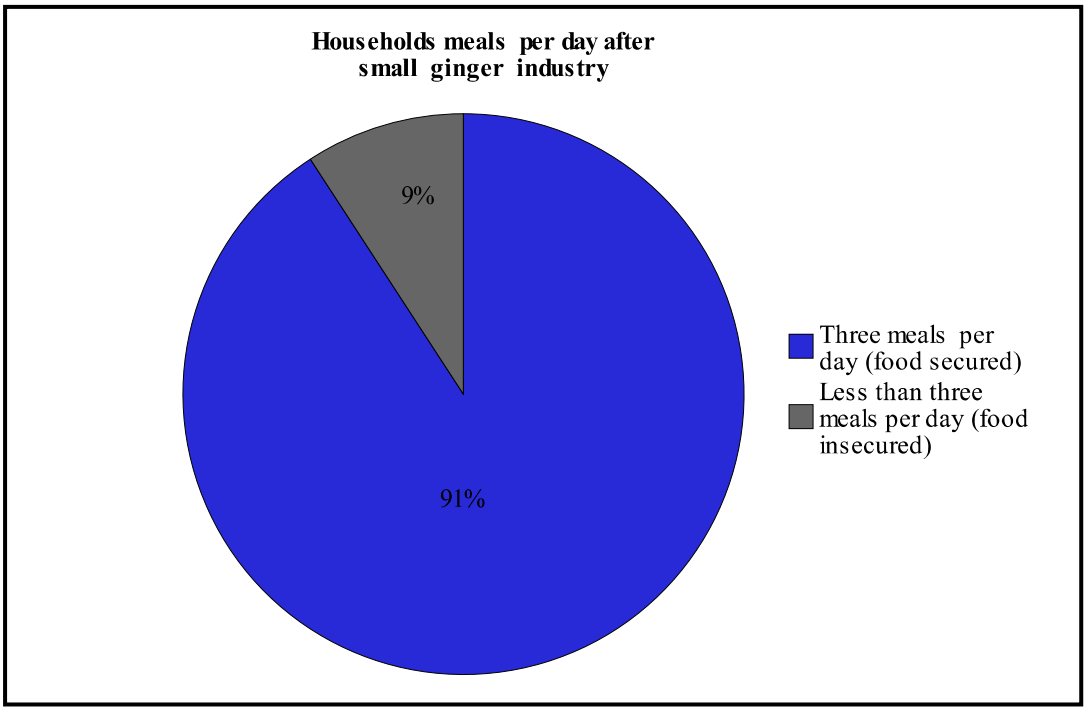


Source: Survey data, 2017

Figure 4. 6: Households' food consumption per day before ginger factory (n=98)

The findings in Fig. 4.6 show that, 76% of the respondents claimed that, they were food secure due to the fact that they were able to afford three meals per day all the time throughout the year for stance, through direct observation the researcher proved that majority of the visited households during meals time were food secure while 24% of the respondents accepted that, they were food insecure due to the fact that

they were able to afford less than three meals per day all the time throughout the year. Basing on the results presented, those who said that they were food secure were the majority than those who said that there was food insecure. In addition to that, the study observed that the numbers of food insecure households were decreasing after the establishment of the small ginger factory. Households' number of meals after the establishment of ginger processing factory presented in Fig. 4.7 and discussed.



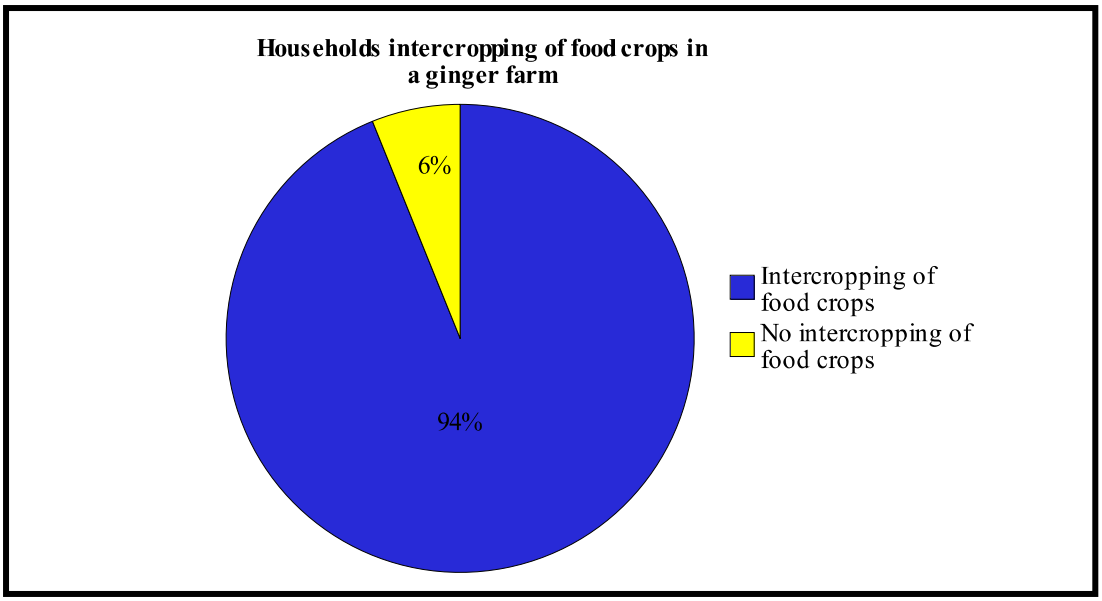
Source: Survey data, 2017

Figure 4.7: Households' food consumption per day after ginger factory (n=98)

The results in Fig. 4.7 shows that 91% of the respondents accepted that, they were food secure due to the fact that they were able to afford three meals per day all the time during the year while 9% of the respondents asserted that, they were food insecure due to the fact that they were able to afford less than three meals per day all the time during the year; for instance through direct observation the researcher proved that very few of the visited households during meals time were food insecure. In 2015/2016, numbers of food secure households increased from 76% of the

respondents to 91% of the respondents while number of food insecure households decreased from 24% of the respondents to 9% of the respondents due to presence of ginger processing factory. In addition to that, number of food insecure decreased by 15% of the respondents. Therefore, number of food insecure households decreased whilst the number of food secure households increased. This was influenced directly by presence of the small ginger processing factory.

Another observed new activity was intercropping of food crops in a ginger farm which has been considered to maintain food availability status in the study area. According to Dusa and Roman (2013) on productivity reported that, intercropping of food crops increased the maintenance of food availability status in rural areas. The households intercropping of food crops responses, is presented in Fig. 4.8 and discussed.



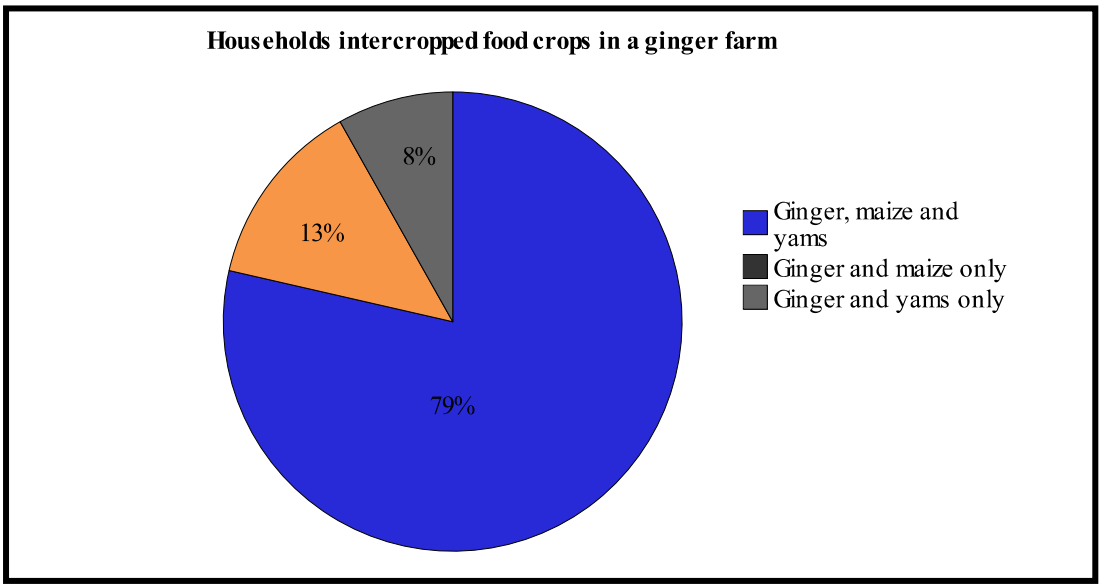
Source: Survey data, 2017

Figure 4. 8: Households' intercropping of food crops (n=98)

The results in Fig. 4.8 show that 94% of the respondents engaged in intercropping variety of food crops in a ginger farm while 6% of the respondents did not engage in

intercropping of any variety of food crops in a ginger farm. Those who said that were engaged in intercropping of food crops in a ginger farm was due to the fact that after the establishment of ginger factory, the rural farms which used for food crops production became useful for ginger production. In addition to that, intercropping of food crops increased the size of ginger farm plots because those farms particularly special for food crops (maize and yams) were included into a ginger farm.

This also facilitated the increase in food crops production due to the fact that there was application of manures in a ginger farm. This added soil fertility hence increase of ginger production. Therefore, small ginger factory has been increasing directly ginger production hence rural farmers earned income which in turn used that income to purchase food. Also, in advanced view, the small ginger factory has been influencing indirectly to the increase of food crops production hence ensured food availability in the study area. The variety of households' intercropping of food crops in a ginger farm presented in Fig. 4.9 and discussed.



Source: Survey data, 2017

Figure 4.9: Households' intercropped food crops (n=98)

The results in Fig. 4.9 show that 79% of the respondents were intercropping crops like ginger, maize and yams while 13% of the respondents accepted that there was

intercropping of food crops like ginger and maize only. Lastly, 8% of the respondents postulated that there was intercropping of food crops like ginger and yams only. Due to use of fertilizers in a ginger farm, it added soil fertility hence influences high production of ginger, maize and yams. This implies that, the small ginger factory has been influencing production of food crops in a ginger farm hence maintains food availability in the study area. The intercropping of food crops like ginger, maize and yams in a single farm shown in Fig. 4.10.

Source: Field survey, 2017

Figure 4.10: Households' intercropping farm of ginger, maize and yams

4.4 The Influence of Ginger Factory to the Accessibility to Social Services

This section presents and discusses the findings of the second specific objective of this study which is the influence of ginger processing factory to the accessibility of social services including education, health and water to the farming households. This study discusses the major intended outcome which is the household's accessibility to

social services in the study area. The basic social services in the study area included water, education and health services.

4.4.1 Accessibility to water, education and health services

The presence of small ginger factory in the study area influenced infrastructures development which comprised of water and roads projects. These projects influence the increase in ginger production. Key informants (Ward Development Officer and Village Executive Officers) had some ideas that:

> "*There were the water and road projects sponsored by MIVARF which aim at improving rural farmer's income and enabling availability of food in rural areas. Water projects included dam construction and various water tributaries to the household ginger farms. These water tributaries simplified the irrigation of ginger crop hence increased production. The minor roads facilitated the movement of people towards schools, hospitals or clinic centres"*.

Therefore , the roads constructed simplifies the taking of ginger from the household farms to the ginger factory where by rural farmers used to sell their ginger produce hence earn of income which further used that income to improve their living standards.

4.4.1.1 Households' uses of income earned from the ginger - factory

This section presents and discusses the uses of households' income earned from sell of ginger to the small ginger processing factory. The uses of households' income earned from ginger processing factory presented in Table 4.9.

Table 4.9: Households' uses of income earned from the ginger factory (n=98)

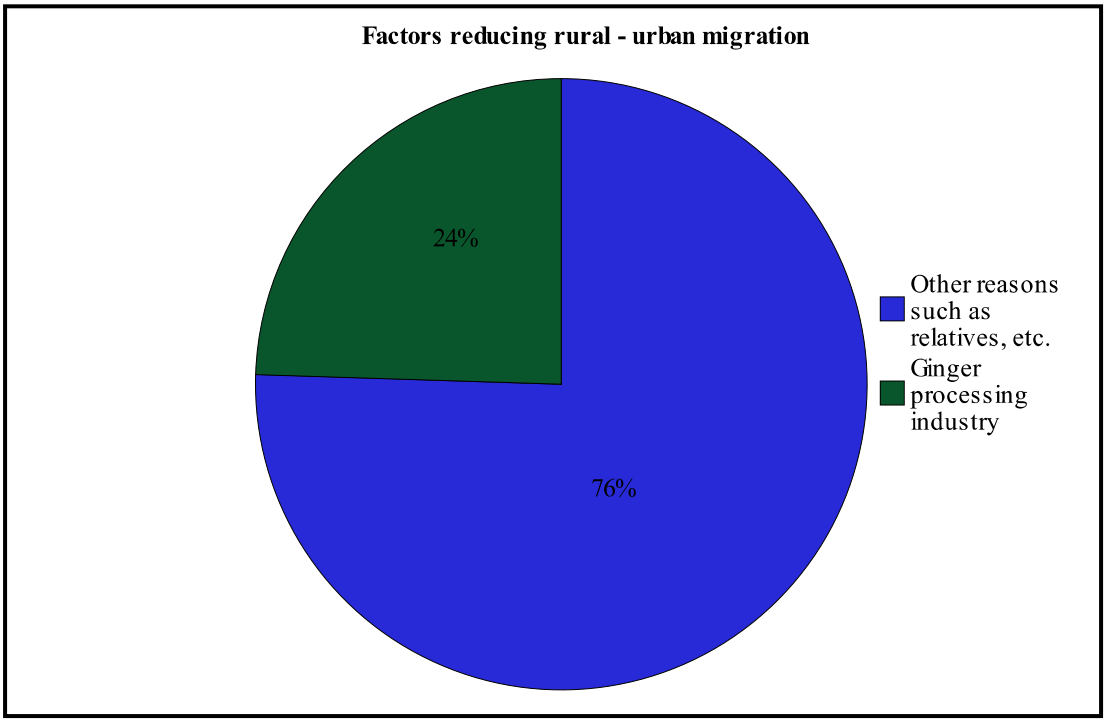
H/Hs income uses	Frequency	Percent
Not improved household wellbeing	70	71.4
Built houses, afforded food, school and medical costs	13	13.3
Built iron sheet roofed house only	7	7.1
Paid school fees only	3	3.1
Paid medical costs only	3	3.1
Purchased food only	2	2.0
Total	**98**	**100.0**

Source: Survey data, 2017

The results in Table 4.9 show that 71.4% of the respondents failed to improve their living standards whilst 13.3% of the respondents succeed to improve their livelihoods due the fact that, they built/repaired their houses, purchased food, paid school fees and medical costs. Also, 7.1% of the respondents succeed to build iron sheet roofed house only. Also, while 3.1% of the respondents asserted that, they succeeded to pay school fees only and 3.1% of the respondents mentioned that, they succeeded to pay medical costs only. Lastly, 2.0% of the respondents claimed that, they purchased food only. Those who did not improve their living standards were used to sell their ginger to the middlemen where they were receiving less money from the middlemen while those who improved their living standards were selling their ginger to the small ginger factory where they were receiving sufficient money from the ginger factory. They further used their income to repair houses, purchase food, pay school fees and medical costs.

This implies that, to a little extent small ginger factory enabled the rural farmers to access basic social services such as water, hospitals and schools. A study by Simon, *et al* (2014) on the use of income earned from SAPIs, reported that, 95.6% of the respondents were used the income earned from sell of Shea nuts to the Shea butter industry so as to access social services hence paid education costs for their children. The respondents were receiving income generated from selling Shea nuts to Shea

butter industry. Those rural farmers had ensured that, their children did not suffer hence got education. Moreover, the accessibility to social services by rural farmers resulted to establishments of permanent settlement hence reduced rural - urban migration. An accepted view on the impacts of rural- urban migration in agriculture is that rural labor outmigration leads to a decline in agricultural cultivation and production. This view is coined to Schmook and Radel (2008) on the impacts of rural – urban migration found that, rural households with labor migrants have lower agricultural productivity than those without migratory workers. Factors reducing rural – urban migration presented in Fig.4.11 and discussed.



Source: Survey data, 2017

Figure 4.11: Households' rural - urban migration (n=98)

The results in Fig. 11 show that 76% of the respondents argued that, they were staying in rural areas due to presence of their relatives while 24% of the respondents said that were staying in rural areas due to presence of ginger factory. Relying on the

results presented, it was found that, those who said that were staying in rural areas was because of the presence of ginger factory. These were belonging to young people who decided to start their permanent settlement in the rural areas after the establishments of small ginger factory. It therefore, creates a basis to credit the contribution of ginger processing factory within household levels. In this study, it was found that, rural farmers did not practice rural – urban migration due to presence of ginger factory and relative factor within their rural areas hence supplied enough raw materials to the small ginger factory. The results presented were coined to Asfaw, *et al* (2010) on the factors reducing rural – urban migration reported that; environmental degradation, lower agricultural productivity, insufficient social services, and land shortage are the major push factors of rural- urban migration while the presence of relatives and people of similar ethnic origin at their destination attracted people to remain in rural areas. Furthermore, FAO (2004 & 2008) on the factors reducing rural–urban migration reported that, agro-based industries served as a catalyst which stimulated rural development from different dimensions like health, education, and development of infrastructure roads, electricity and water services.

4.5 Capacity of Agro - Factory on Consuming Farmers' Ginger Produces

This section presents and discusses the findings of the third specific objective of this study which is the capacity of ginger processing factory on consuming farmers ginger produces. The capacity of ginger factory is discussed in terms of the relationships between farmers ginger production and industrial consumption of raw materials per year. Capacity for a factory to consume raw materials effectively depends much on effectiveness and efficiency of industrial machinery.

4.5.1 Relationships between ginger production and factorial capacity

The relationship between farmers ginger production and factorial industrial consumption is based on the livelihood theory of social protection by de Neubourg (2002) postulated that:

"An agro-factory is recognized as an institution which provides market for the rural farmers".

Basing on the theory explained, the small ginger processing factory saves as market center for rural farmers. Same District Agriculture Officer said that:

"In 2015/2016, there were 14,500 Tons of ginger produced".

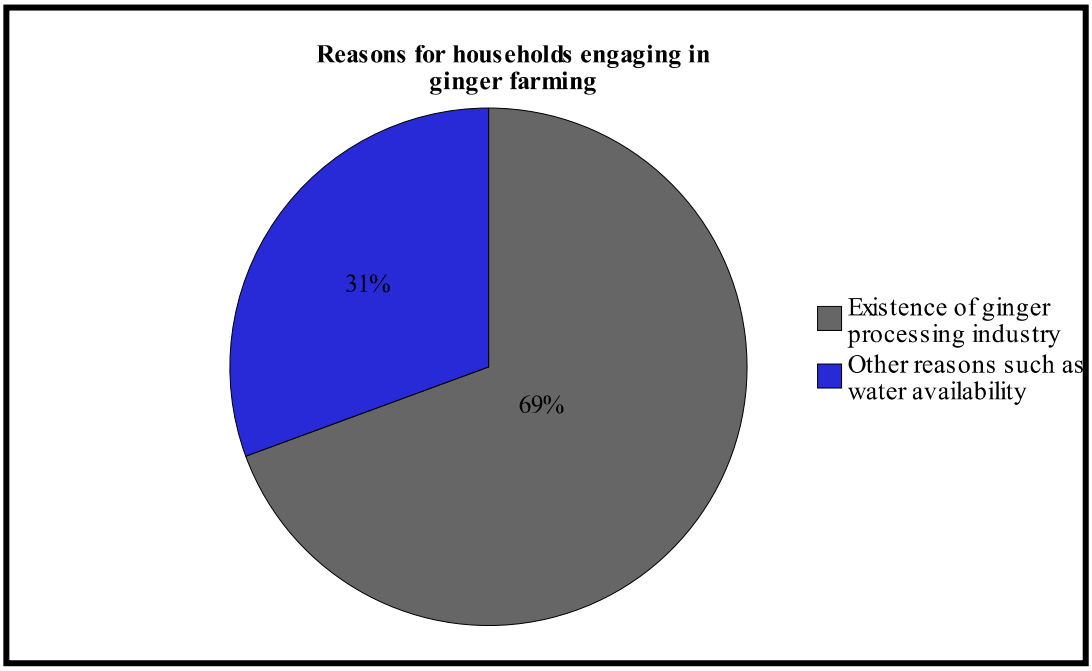
Whilst Ginger Factory Manager reported that:

"In 2015/2016 only 1.2% (177 Tons) of ginger was bought from the rural farmers by the factory. He further added that, it was expected to have ginger machinery with capacity of processing 9.8 Tons per day while the available has capacity of processing 2.2 Tons per day which again not process as expected due to its poor industrial machinery. Furthermore, up to 2015/2016, ginger factory bought ginger from rural farmers for 1,000Tshs per Kilogram of ginger instead of an expected price of 2,000Tshs per Kilogram of ginger due to inadequate capital. Moreover, it was observed that 2016/2017, ginger factory has no capital to purchase ginger directly from the farmers, and rather it process the middlemen's ginger at low cost for about 150Tshs per Kilogram of primarily ginger. Actually, this system does not benefit the rural farmers and the MGGRCS rather it benefit twice the middlemen."

Therefore, the linkage between households ginger production and the factorial raw material consumption was extremely below the average due to the fact that, production of ginger per year was higher than the raw materials consumed by the ginger processing factory. This study found that, ginger factory has no capacity to consume all ginger produced by rural farmers. The results were consistence with Kipene (2014) on the capacity of SAPFs, which concluded that 63.6% of small agro-processing firms operated under capacity.

4.5.1.1 Households' ginger production

The presence of ginger processing industry influenced many rural household farmers engaging in ginger farming and application of modern farming inputs, use of artificial fertilizers which increased the production. According to Darkwah and Quartey (2015) the high demand of raw materials influence rural farmers shift from the use of traditional to modern agricultural inputs for instance uses of artificial fertilizers in ginger farming for higher production. Rural households engaging in ginger farming due to presence of ginger processing factory as presented in Fig. 4.12 and discussed.



Source: Survey data, 2017

Figure 4. 12: Households' influences in ginger farming (n=98)

The results in Fig. 4.12 show that 69% of the respondents were engaging in ginger farming because of the presence of ginger processing factory while 31% of the respondents were engaging in ginger farming because of the presence of water availability sources such as dams within the area. The presence of both ginger factory and water availability facilitated the increase in ginger production. This was

evidenced by using statistical data from Same District Agriculture Officer, who said that:

> *"In 2013/2014 there were 1,390 hectares and 13,490 Tons while in 2014/2015 there were 1,300 hectares and 15,500 Tons while in 2015/2016 there were 1,350 hectares and 14,500 Tons. He further added that, in 2013/2014 there were 1,390 hectares which is higher compared to 2014/2015 but the production of 2014/2015 exceeded production of 2013/2014 due to the use of fertilizers. Again, in the period of 2015/2016 there was rapid increase in ginger production by which a total of 14,500Tons were produced from only 1,350 hectares. He further said the reasons associated to increase in ginger production included; work of village extension officers to rural farmers on employing modern farming methods and improvement of water sources like constructed dams and its tributaries; towards the farms areas which used for irrigation purposes hence facilitated to the increase of ginger production".*

This implies that, majority of the rural farmers were engaging in ginger farming after presence of small ginger processing factory. This led to increase of households ginger production per year. Households' ginger production before ginger factory presented in Table 4.10 and discussed.

Table 4.10: Households' ginger production before ginger Factory (n=98)

	Frequency	**Percent**
H/Hs ginger production in 2011/2012		
Less than 999 Kg of ginger	55	56
Higher than 1,000Kg of ginger	43	44
Total	**98**	**100**

Source: Survey data, 2017

The results in Table 4.10 show that 56% of the respondents were producing less than 999 Kilograms of ginger whilst below the average that is 44% of the respondents

asserted that were producing higher than 1,000Kilograms of ginger. Those who produced low ginger was due to low motivation caused by absence of any variety of ginger processing industry both rural and urban districts in Tanzania. Therefore, before establishment of ginger factory in 2011/2012 the majority of the rural farmers were producing low ginger which could not help them to improve their livelihoods. Households' ginger production after establishment of ginger factory presented in Table 4.11 and discussed.

Table 4.11: Households' ginger production after ginger factory (n=98)

H/Hs ginger production in 2015/2016	Frequency	Percent
Less than 1,999 Kg of ginger	70	71
Higher than 2,000Kg of ginger	28	29
Total	**98**	**100**

Source: Survey data, 2017

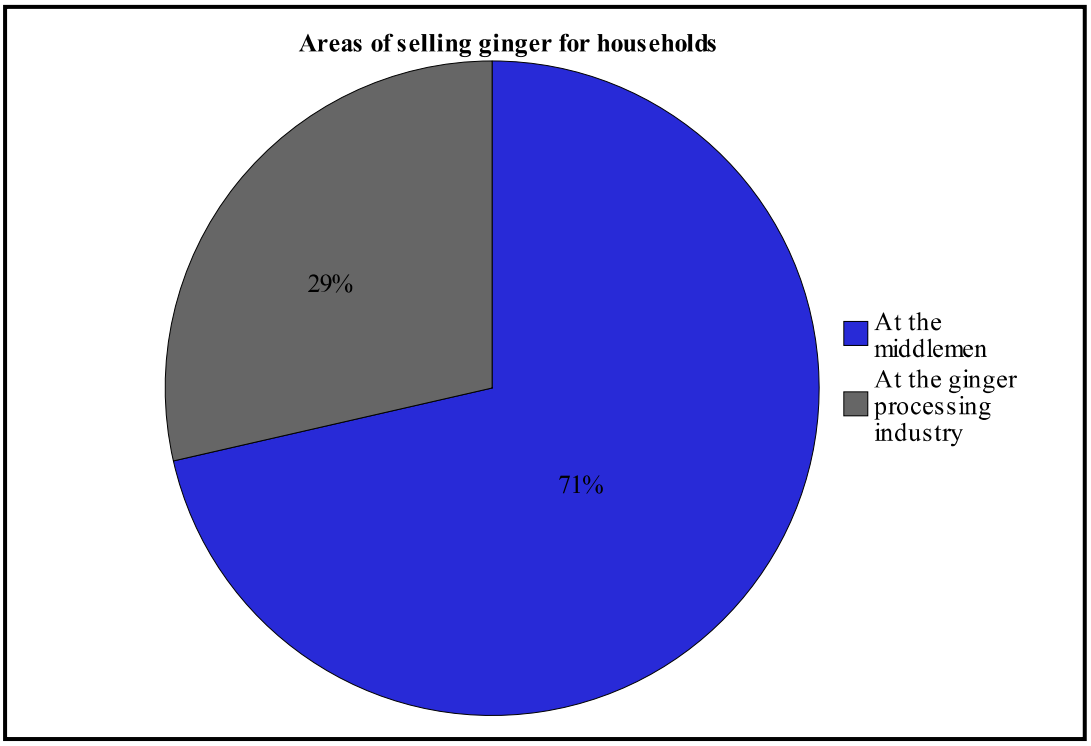
The results in Table 4.11 show that 71% of the respondents mentioned that, they were producing less than 1,999 Kilograms of ginger whilst 29% of respondents asserted that they produced higher than 2,000 Kilograms of ginger. High productions were associated by influence of the presence of ginger processing factory. Therefore, those who produced less than 1,999 Kilograms of ginger were due to poor farming methods hence did not improve their livelihoods. But, on the other side, those who produced higher than 2,000 Kilograms of ginger was due to the fact that, they adopted modern farming methods hence increased ginger production from between 1,000 - 1,999 Kilograms of ginger before establishment of ginger factory to between 2,000 - 3,999 Kilograms of ginger after establishment of ginger factory which further facilitated improvements of rural living standards.

4.5.1.2 Households' market areas for selling ginger

Market areas for buying raw materials were assessed using a livelihood theory of social protection developed by de Neubourg (2002) which postulated that:

"Improvement of RHLs depends on five elements: Market, family, membership institution, public authorities and social networks".

This study established that, market improves RHLs. Ginger processing factory acted as a market for buying raw materials from rural peasants hence improved their livelihoods. The areas where rural peasants used to sell ginger presented in Fig. 4.13 and discussed.



Source: Survey data, 2017

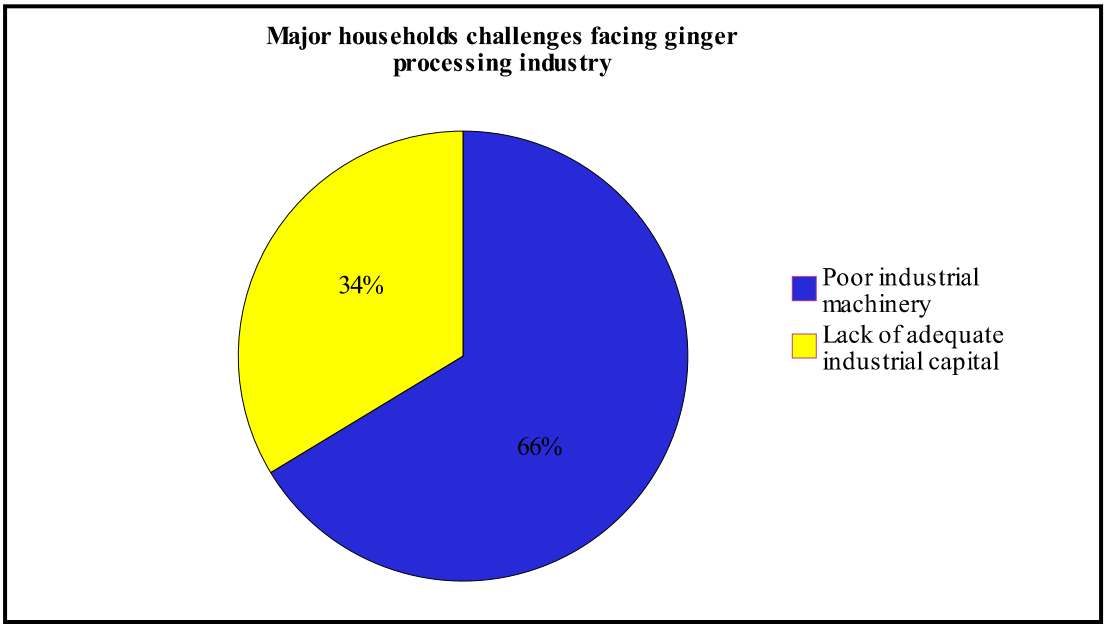
Figure 4. 13: Households' market area for selling ginger (n=98)

The results in Fig. 4.13 show that in 2015/2016, 71% of the respondents were selling their ginger to the middlemen while 29% of the respondents were selling ginger to the ginger processing factory. Relying on the results presented, majority were selling ginger to the middlemen because of insufficient permanent ready market for their ginger produces. Again, those rural farmers have low bargaining power in determination of price for their ginger produces hence they did not earn enough

income to satisfy their daily uses and therefore mostly were exploited. The results were consistence with Simon *et al* (2014) on market area for selling Shea butter production, reported that 93.8% of the respondents were lacked permanent ready market for their crops produces.

4.6 Challenges Facing Small Ginger Processing Factory

This section presents and discusses challenges that facing small ginger processing factory. These challenges addressed by both key informants and ginger farmers. In this study the notable major challenge facing ginger processing factory presented in Fig.4.14 and discussed.



Source: Survey data, 2017

Figure 4.14: Households' responses on industrial major challenges (n=98)

The results in Fig. 14 show that, 66% of the respondents contested that there was poor industrial machinery while 34% of the respondents mentioned that there was inadequate industrial capital for buying ginger at expected price of 2,000Tshs. In

addition to that, key informants (District Agriculture Officer, Ward Development Officer, Ward Extension Officer and Village Executive Officer) had same ideas that:

> *"There was lack of approval from TBS certificate, absence of permanent ready market, use of low industrial technology and inadequate industrial experts were challenges encountered ginger factory"*.

In connection to those challenges, Ginger Factory Manager said that:

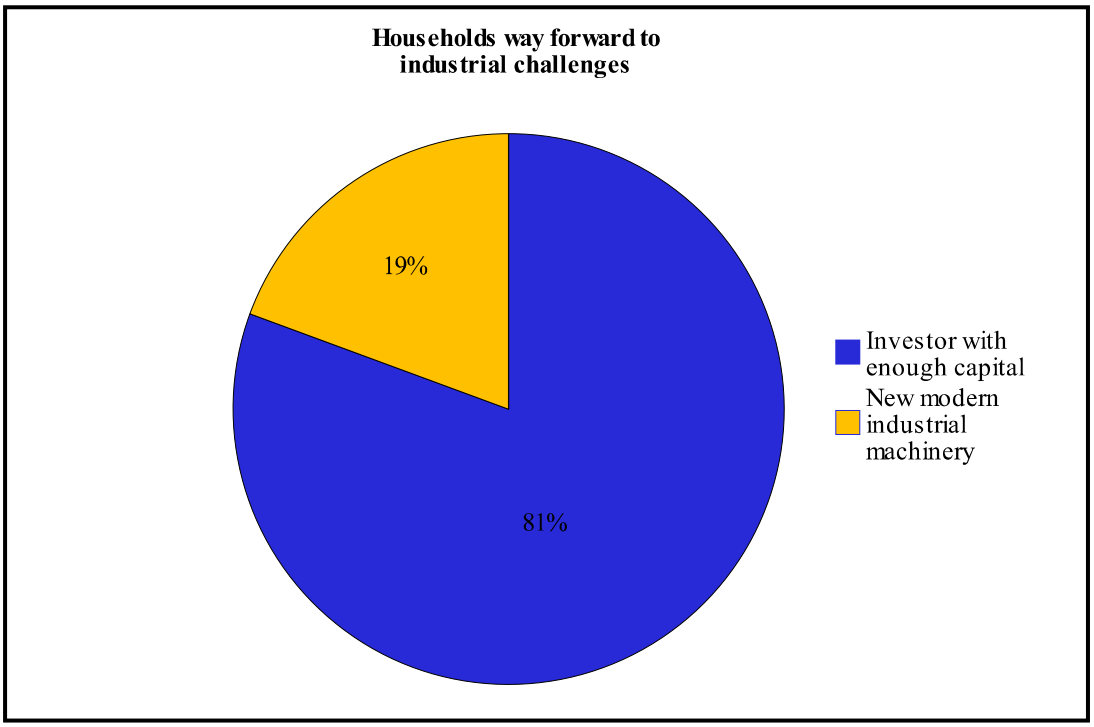
> *"In 2015/2016 a total of 176,758 Kilograms of ginger were bought from the rural farmers for 1,000Tshs per Kilogram of ginger. The ginger processing factory managed to process 78,586 Kilograms and the rest 98,672 Kilograms were not processed because of poor industrial machinery. Also, the processed ginger were expected to be sold for 18,000Tshs per Kilogram of ginger powder; because of the lack of TBS certificate, one kilogram of ginger powder was sold for 7,500 - 10,000Tshs per kilogram of ginger powder hence made a sum of 84,338,000Tshs. He concluded that lack of approval from TBS certificate and poor industrial machinery resulted to a total loss of 213,660,000Tshs for MGGRCS"*.

Basing on the results presented; poor machinery, inadequate capital, and lack of approval from TBS certificate, absence of permanent ready market, low technology and lack of enough expertise were found leading challenges that were facing the small ginger factory. It therefore, small ginger factory was incapable of processing ginger hence the implication was that little ginger powder exported even though there is huge potential demand of ginger powder in the export market. The results were consistence with Simon *et al* (2014) on challenges facing small-scale agro-industries reported that inadequate capital and inefficient modern industrial tools were obstacles to the growing of SAPIs sector. In addition to that, the results were also consistence with Kipene (2014) on challenges facing SAPIs; He reported that there was limited access to capital, low level of technology, lack of managerial skills; He also added

that high costs of energy, poor marketing system and implementation of policies to boost firms' development were constraints to small agro-industries.

4.7 Suggestions against Challenges Facing Ginger Processing Factory

This section presents and discusses way forward towards small ginger factory. Rural farmers expect to see ginger processing factory perform its work. Way forward to industrial challenges were suggested by both rural farmers and key informants as presented in Fig. 4.15 and discussed.



Source: Survey data, 2017

Figure 4.15: Households' suggestions to improve ginger processing factory (n=98)

The results in Fig. 4.15 show that 81% of the respondents supported for investment due to the fact that they were requesting the government to allocate investors with adequate capital to buy all their ginger produced per year whilst 19% of the

respondents were requesting the government to put new modern industrial machinery. In addition to that, the other way forward provided from key informants (District Agriculture Officer, Ward Development Officer, Ward Extension Officer and Village Executive Officers) had some views that:

> *"There should be approval from TBS certificate to the ginger industry that will helpful not only for health products but also for raising price of ginger powder from between 7000 – 10,000Tshs to 18,000Tshs per kilogram of ginger powder. Furthermore, they said that there should be an improvement of industrial infrastructures. Also, they said that, there should be adaptation of the industrial technological advancement. Lastly, they said that there should be regular training for industrial board members to improve the presence small ginger processing factory".*

Relying to the results presented those who requested investors were the majority compared to those who requested the government to put new modern industrial machinery. Capital can be acquired from accessible credit incentives supplied by the government and private monetary bodies/institutions. According to Mamkwe and Leonada (2013) on the inside story of outsourcing: contract management capacity in Tanzania, reported that Sokoine University of Agriculture (SUA) and Morogoro Regional Hospital (MRH) operate well because of PPP investments. This implies that, small ginger processing factory would improve rural farmers' living standards if it operates under PPP investment. In addition to that, Tersoo (2013); Kipene, (2014) and Simon *et al* (2014) on way forward to agro-industrial sector postulated that, adequate capital reduce business deal challenges by means of direct purchasing of raw materials from rural farmers to advantage both the farm and non-farm works. Therefore, this approach of straight sourcing will make SAPIs assist rural farmers and provide a sure of permanent market for buying crops produced by the rural farmers.

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.7 Summary

This study focuses on the achievements of the three specific objectives: In attempting the first specific objective which was to assess the contribution of ginger factory to farming household's income. This study establishes the trend of ginger processing factory from its establishment in 2012 to 2016. The results evidenced that, small ginger factory contributed to income increase among the few respondents. A total of 29% of the respondents were increasing their income from less than 999,999Tshs in 2012/2013 to higher than 1,000,000Tshs by 2015/2016. Whilst 71% of the respondents were not increasing their income because of low factorial capacity for raw material consumption and inadequate capital for buying ginger directly from the rural peasants. Majority of rural peasants depend on ginger farming as main source of their income. Also, few respondents were increased income per year from sells of ginger to the factory after the establishment of ginger processing factory while majority of the respondents were not increase income because they use to sell their ginger to the middlemen.

In addressing the second specific objective, which was to determine the influence of ginger factory to the accessibility of social services to farming households. This study evaluate projects resulted by the influence of ginger factory established within the ginger growers' villagers. The infrastructural projects comprised of roads and water, those projects were sponsored by the MIVARF in 2015 aim at improving rural peasants' income and enabling food availability to benefit rural peasants. Roads were simplifying taking ginger from the ginger farms to the ginger factory. Those minor roads provided connectivity from one point to the next, and water projects facilitated the irrigation purposes and domestic uses.

This study established measure of the number of meals taken per day by household; three meals represent numbers of food secure households, higher than three mills indicated numbers of food insecure households. This study found that, the numbers of food secure households increased from 76% of the respondents in season 2011/2012 to 91% of the respondents in season 2015/2016 whilst the numbers of food insecure households decreased from 24% of the respondents in season 2011/2012 to 9% of the respondents in 2015/2016. Therefore, few respondents improved their livelihood through income earned from sells of ginger to the factory because they repaired houses, purchased food, paid school fees and medical costs hence were able to access social services such as school, water and health. In addition to that, ginger processing factory decreased number of food insecure respondents and increased number of food secure respondents respectively. Small ginger factory contributed to the accessibility to social services within ginger grower's villagers.

In addressing the third specific objective, which was to examine the capacity of ginger processing factory on consuming farmers ginger produces; performance of ginger processing factory was measured by considering the relationship between raw material produced from 2013 to 2016 and the capacity of raw material consumption to the factory. This study found that industrial consumption of raw materials were below 50% hence creating difficult for every ginger farmer to access market for their ginger produces. The leading challenges facing ginger processing factory were identified to include: poor industrial machinery because of its low level of performance, lack of enough ginger industrial experts and inadequate capital for buying ginger direct from farmers. During the study, small ginger factory found that performing minor work of processing ginger of the middlemen. Other challenges facing ginger factory were low technology and absence of the approval from TBS certificate. Unless the challenges are solved, the SAPIs will continue performing poor, providing marginal input to the improvement of the RHLs. Small ginger factory has no capacity in consuming all the ginger produced by the rural peasants because

majority of the respondents did not access to sell their ginger to the ginger numbers of because of poor industrial machinery and inadequate capital.

5.2 Conclusion

This study evaluated the role of SAPIs on RHLs at Same District in Tanzania. It concludes that ginger processing factory needs to be improved due to its remarkable contribution in improving RHLs. Improving ginger factory will add value to ginger crop which would certainly culminate into a serious agrarian change to the greater number of rural farmers. SAPIs are considered as actual tool for improving the RHLs because the farm and non-farm relationship would actually create employment opportunities; increased income and poverty reduction through accessibility to essential social services to rural farmers. Successful RHLs improvements can take place in rural districts and the entire country if critical attention is given to SAPIs and its related activities. This fact is basing on the social-economic contributions of the SAPIs and how it has enhanced the improvements of RHLs in Tanzania specifically at Same District. Moreover, effectively achievement of an IIDS of 2011 – 2025 to deepen the carrying out of the SIDP and to enable the consciousness of the objectives and targets fixed in the TDV of 2025 will uphold rural agro–industrialization hence better RHLs. It is therefore of great importance to the entire country to identify this opportunity and direct national resources or efforts towards attracting private investors into the small agro-industrial sector in rural districts.

5.3 Recommendations

On the contribution of the small ginger processing factory to farming households' income, this study established that many respondents did not increase their income due to the fact of poor industrial machinery and hence low ginger absorption capacity in the ginger factory. It is recommended that, government under PPP should look for the possibility of allocating investors with enough expertise in operating ginger factory.

On the influence of ginger factory to the accessibility of social services; because of the role played by small ginger processing factory in reducing rural–urban migration through the influence ginger factory in simplifying the accessibility of better social services for the rural farmers, it is recommend that there should be improvement of SAPIs particularly ginger factory as a way of attracting the young people staying and establishing their permanent settlement in rural areas.

On the capacity of ginger factory on consuming farmers ginger produces; because of the low capacity of ginger factorial consumption caused by the available poor industrial machinery. It is recommended that, the government and private sector under PPP should consult internal investors such as Local Authorities Pension Fund (LAPF) and Public Services Pension Fund (PSPF) to invest in improving small ginger processing factory. In addition to that, government should attract other external industrial stakeholder's like development partners to invest in progressing SAPIs for better RHLs. Therefore, rural households' farmers who the majorities are small level farmer should be linked to SAPIs for a kind of intervention to transform rural agriculture from subsistence to large scale farming.

Furthermore, this study established that, lack of approval from TBS certificate reduced opportunities of the products entering into the external markets due to lacking of quality specification from ginger importing countries. It is recommend that, government and Non Governmental Organization (NGOs) should put more emphasis on technological innovation and adherence to process products basing on standards stipulated by authorities. This would helpful not only for health products but also for raising price of ginger powder to the export market.

5.4 Suggestion for Further Study

Researcher suggested that, further study should be done on the contribution of PPP and performance of SAPIs. This further study would help to seek the extent that PPP between small ginger processing factory and government may expand the capacity of small ginger processing factory in purchasing ginger from rural farmers. It was observed during the study that, the small ginger processing factory was unable to purchase all ginger produced by rural farmers hence some of ginger decayed as it lacked sustainable market.

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APPENDICES
APPENDIX I

QUESTIONNAIRE FOR HOUSEHOLD

Small Agro-Processing Industries and Rural Household Livelihoods in Tanzania; the Case Study of Ginger Factory in Same District

INTRODUCTION

My name is Inocent Kashana Augustino, Msc. Development Policy student from Mzumbe University. I am conducting an academic research about **"Small Agro-Processing Industries and Rural Household Livelihoods in Tanzania; the Case of Ginger Factory in Same District"** Kindly respond to the questions below with as much transparency as possible. The information you provide will strictly be treated as confidential and for academic purposes only.

Respondent No: ……

Division…….Ward……Village……

Date ……

INSTRUCTIONS:

A. Fill in the blanks for the spaces provided
B. Circle the appropriate answer from the given responses

Section A: Background Characteristics of the Respondents

Name of the respondent; Phone number (option)

…….

1. What is your age? (Full number of years) _____

2. Sex:
   1.Male
   2.Female
   3.Marital status

1. Single
2. Married
3. Divorced
4. Widowed

4. Highest education Level
    1. No formal education
    2. Primary education
    3. Secondary education
    4. Above secondary education
5. Household size (number of people in the household) (…….)
6. How long have you stayed in this village……..years?

SECTION B: Contribution of Small Ginger Factory to Farming Households' Income

7. What was the major source of income for your household?
    1. Farming/livestock keeping
    2. Salary/wages
    3. Others (specify)……
8. What were cash crops did you produced in your household?
    1. Ginger
    2. Others such as beans, maize and cassava
9. What motivated you to engage in ginger farming?
    1. Existence of ginger processing factory
    2. Other reasons (specify)…….
10. A. Did the occurrence of ginger processing factory contributed to ginger price increase?
    1. Yes
    2. No

    B. If yes, please explain how

11. Does the presence of ginger processing factory facilitate the raise of your household income per year?
    1. Yes
    2. No
12. How much income did your household earned from sell of ginger before the establishment of ginger processing factory?

Year	**Income/ TSH.**
2011/2012	

SECTION C: The Influence of Ginger Factory to the Accessibility of Social Services

13. How much income did your household earned from sell of ginger after the establishment of ginger processing factory?

Year	**Income/ TSH.**
2015/2016	

14. A. Did the income you earned from selling ginger to ginger processing factory facilitated you to improve your wellbeing?
    1. Yes
    2. No

    B. If yes, how did the income you earned from ginger improve your life?
    1. Building iron sheet roofed better house
    2. Paying School fees
    3. Paying medical services
    4. Purchasing food
    5. Others (specify)…….
    6. Not improved my family living standards
15. What influenced you on establishing permanent settlement in this village?

1. Presence of ginger processing factory
2. Other reasons such as closeness to the relatives

SECTION: Capacity of Small Agro - Factory on Consuming Farmers Ginger Produces

16. Where did you sell your ginger?
    1. To the ginger processing factory?
    2. Other areas – to the middlemen
17. Did the establishment of ginger processing factory facilitate your household to have enough food for present use and store for future uses?
    1. Yes
    2. No
18. How occurrence of ginger processing factory contributed your family households to have enough food?
    1. Ability to afford less than three meals per day (food secure)
    2. Ability to afford higher than three meals per day (food insecure)
19. How many meals per day your family were eating after you have started selling ginger to ginger processing factory?
    1. Ability to afford less than three meals per day (food secure)
    2. Ability to afford higher than three meals per day (food insecure)
20. What are the main challenges facing ginger processing factory?

    ……

    ……

    ……

    What are your important opinions to improve price in agro-processing factory?

    ……

    ……

Your cooperation is taken into consideration and highly appreciated

APPENDIX II

INTERVIEW GUIDE FOR VILLAGE EXECUTIVE OFFICERS

Small Agro-Processing Industries and Rural Household Livelihoods in Tanzania; the Case of Ginger Factory in Same District

INTRODUCTION

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Background Characteristics of the Respondents

Sex……

Age……

Education level……..…Date of interview……..

Questions

1. How long have you worked in this village? (…… years)
2. How does the presence of ginger processing factory facilitate the improvement of accessibility of social services in your village?
3. What are the main challenges facing ginger processing factory?
4. In your opinion what do you think can be done to improve ginger factory?

Your cooperation is taken into consideration and appreciated

APPENDIX III

INTERVIEW GUIDE FOR WARD DEVELOPMENT OFFICER

Small Agro-Processing Industries and Rural Household Livelihoods in Tanzania; the Case of Ginger Factory in Same District

INTRODUCTION

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Background Characteristics of the Respondent

Sex……

Age……

Education level……..…Date of interview……..

Questions

1. How long have you worked in this ward……..years.
2. How does the presence of ginger processing factory facilitate the improvement of accessibility of social services in your ward?
3. What are the main challenges facing ginger processing factory?
4. In your opinion what do you think can be done to improve ginger factory?

Your cooperation is taken into consideration and appreciated

APPENDIX IV

INTERVIEW GUIDE FOR GINGER FACTORIAL BOARD MANAGER

Small Agro-Processing Industries and Rural Household Livelihoods in Tanzania; the Case of Ginger Factory in Same District

INTRODUCTION

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Background Characteristics of the Respondent

Sex……

Age……

Education level……..…Date of interview……..

Questions

a. How long have you worked in this factory…….. (years)?
b. May you provide me with data on the amount in terms of Tons you buy for your factory per year from season 2013/2014 to 2015/2016?
c. What was the buying price of ginger by your factory per Kilogram?
d. Is your factory has capacity to consume all the ginger produced by farmers?
e. What are the main challenges facing your ginger processing factory?

Your cooperation is taken into consideration and appreciated

APPENDIX V

INTERVIEW GUIDE FOR DISTRICT AGRICULTURE OFFICER

Small Agro-Processing Industries and Rural Household Livelihoods in Tanzania; the Case of Ginger Factory in Same District

INTRODUCTION

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Background Characteristics of the Respondents

Sex……Age……Education level……Date of interview…….

Questions:

1. How long have you worked in this district? (……. years)
2. Who is the owner of this factory?
3. How does the presence of ginger processing factory facilitate the establishment/improvement of social services (schools + hospitals) in this district?
4. Is ginger factory has capacity to consume all the ginger produced by farmers?
5. What are the main challenges facing ginger processing factory?
6. In your opinion what do you think can be done to improve ginger factory?

7. May you provide me with data on the amount in terms of Tons of ginger produced per year from 2013 to 2015?

Your cooperation is taken into consideration and highly appreciated

APPENDIX VI

INTERVIEW GUIDE FOR WARD EXTENSION OFFICER

Small Agro-Processing Industries and Rural Household Livelihoods in Tanzania; the Case of Ginger Factory in Same District

INTRODUCTION

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Background Characteristics of the Respondent

Sex……

Age……

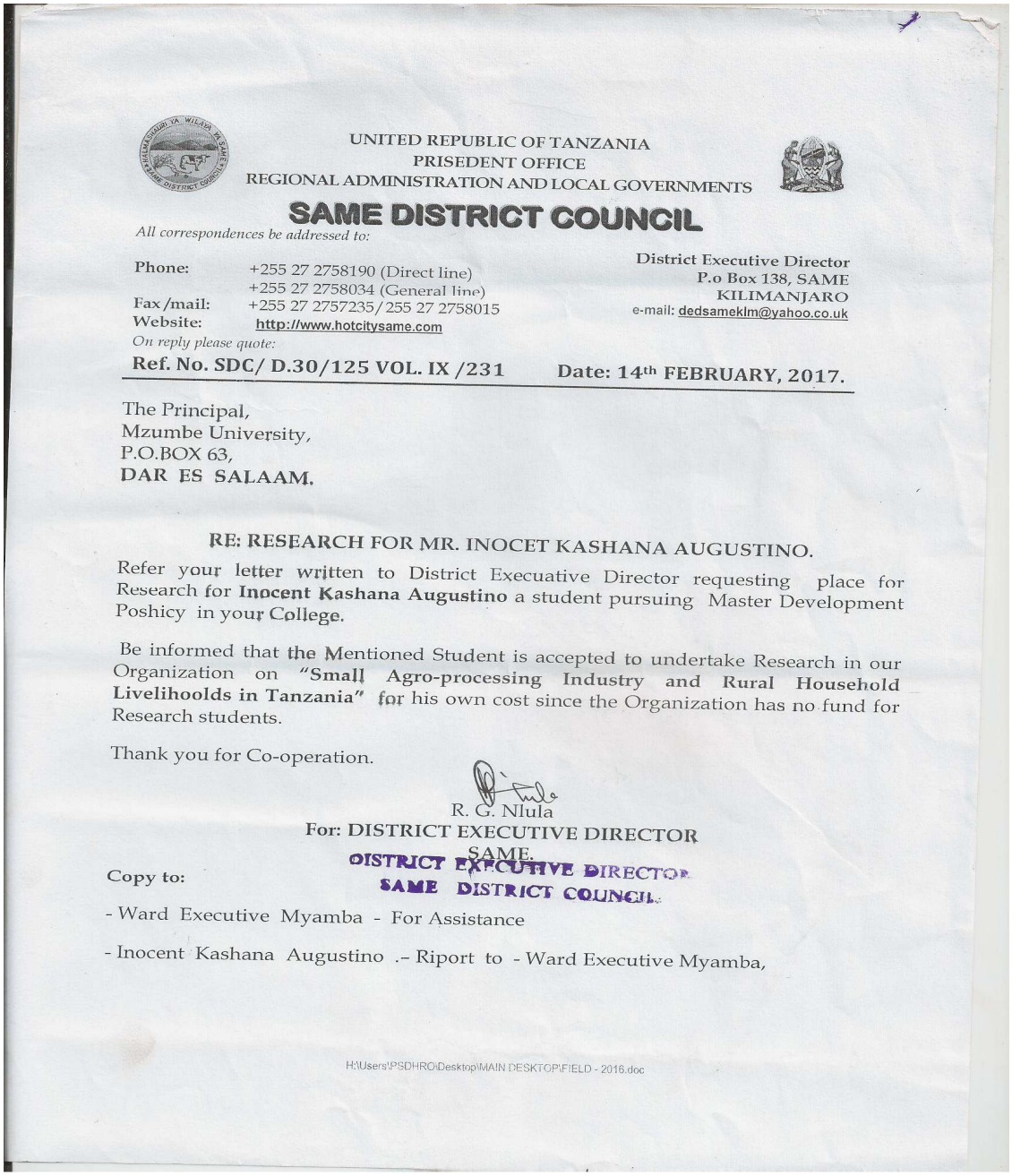
Education level……..…Date of interview……..

Questions

1. How long have you worked in this village as village extension officers years?
2. How does the presence of ginger processing factory facilitate improvement of ginger production in your village?
3. How does the use of modern farming system methods contribute to increase in ginger production?
4. In your opinion what do you think can be done to improve ginger factory?

Your cooperation is taken into consideration and highly appreciated

APPENDEX VII
RESEARCH PERMIT LETTER



UNITED REPUBLIC OF TANZANIA
PRISEDENT OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENTS

SAME DISTRICT COUNCIL

All correspondences be addressed to:

Phone: +255 27 2758190 (Direct line)
+255 27 2758034 (General line)
Fax/mail: +255 27 2757235/ 255 27 2758015
Website: http://www.hotcitysame.com

District Executive Director
P.o Box 138, SAME
KILIMANJARO
e-mail: dedsameklm@yahoo.co.uk

On reply please quote:

Ref. No. SDC/ D.30/125 VOL. IX /231 **Date: 14th FEBRUARY, 2017.**

The Principal,
Mzumbe University,
P.O.BOX 63,
DAR ES SALAAM.

RE: RESEARCH FOR MR. INOCET KASHANA AUGUSTINO.

Refer your letter written to District Executive Director requesting place for Research for **Inocent Kashana Augustino** a student pursuing Master Development Poshicy in your College.

Be informed that the Mentioned Student is accepted to undertake Research in our Organization on **"Small Agro-processing Industry and Rural Household Livelihoolds in Tanzania"** for his own cost since the Organization has no fund for Research students.

Thank you for Co-operation.

R. G. Nlula
For: DISTRICT EXECUTIVE DIRECTOR
SAME.

DISTRICT EXECUTIVE DIRECTOR
SAME DISTRICT COUNCIL

Copy to:

- Ward Executive Myamba - For Assistance

- Inocent Kashana Augustino .– Riport to - Ward Executive Myamba,

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