FACTORS AFFECTING INCOME OF SMALLHOLDER
SUNFLOWER FARMERS IN SINGIDA REGION, TANZANIA
A CASE STUDY OF SUNFLOWER FARMERS IN SINGIDA
RURAL DISTRICT

By

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A Dissertation Submitted in Partial Fulfilment of the Requirements
for the Award of the Degree of Master of Business Administration
(MBA)-Corporate Management of Mzumbe University
2015
CERTIFICATION
We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a thesis factors affecting income of smallholder sunflower farmers in Singida region, Tanzania a case study of sunflower farmers in Singida rural, in partial/fulfillment of the requirements for the degree of Master of Business Administration (MBA)-Corporate Management of Mzumbe University.

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DEDICATION

This work is dedicated to my wife Joyce Mrema my daughter Naomi and my son Christopher for their tolerant when I was away for my studies. I love you so much may God Bless you.
ACKNOWLEDGEMENT

I would like to express my heartfelt thanks and appreciation to all those who have contributed in one way or another to enable the successful completion of this research work. This included my Supervisor Mr Robert Makorere who did a lot of work in directing, guiding, encouraging and giving intellectual support when needed from time to time.

Special thanks should go to my lecturers and my colleagues at the 2013/2014 MBA Corporate Management Students, for their personal encouragement and friendship in sharing research experiences with them, my colleagues whom we used to study and discuss together up to odd hours, I humbly appreciate their contribution to the success of this remarkable work.

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It is difficult to acknowledge each and every one individually for the kind support offered but generally I may ask them to accept my thanks through this note and let the Almighty God bless them all.
LIST OF ABBREVIATIONS AND SYMBOLS

%  Percentage
<  Less than
>  Greater than
ARI  Agriculture Research Institute
C°  Degree Centigrade
DANIDA  Danish International Development Agency
e.g  For example
Eqn  Equation
FAO  Food and Agriculture Organization of the United Nations
FYM  Farm Yard Manure
GDP  Gross Domestic Product
GM  Gross Margin Analysis
Ha  Hectare
Kg  Kilogram
MAFSC  Ministry of agriculture food security and Cooperatives
MDL  Millennium Development Goal
MKUKUTA  Mpango wa Kukuza Uchumi na kupunguza Umaskini
NBS  National Bureau of Statistic
REPOA  Research on Poverty alleviation
SNV  Stichting Nederlandse Vrijwilligers (Netherlands Development Organization).
SPSS  Statistical Package for Social Science
TCCIA  Tanzania Chamber of Commerce, Industry and Agriculture
TFDA  Tanzania Food and Drugs Authority
UNCTAD  United Nations Conference on Trade and Development
URT  United Republic of Tanzania
USD  United State Dollar.
ABSTRACT

The paper stresses on understanding factors affecting development of sunflower sub sector in Tanzania particularly in Singida rural district, in Singida region. Sunflower is one of the most important crops in Singida in improving rural farmers’ income. The study employed Multiple stage sampling procedure. Regardless the government of Tanzania has been implementing various agricultural development production as well as to enhance farmers’ income. However, yet the results reveal that the sunflower farming practices in the studied area are not well developed, low prices received by farmers, poor market infrastructure such as processing facilities, road facilities, poor contract entered middlemen and lack of market information by farmers few farmers organization. Connection to that sunflower market is dominated by traders. The common practice is for traders to buy the sunflower crop before the harvest and ultimately farmers obtain low prices. This market practice seems to erode a greater portion of market margin to the farmers and the study has shown that along the sunflower value of chain farmers receive low profitability compare to the traders and processors who earn high profit. It is therefore, recommended that the policy maker should focus on development of sunflower sub sector in Tanzania in order to promote the production. Contracting farming and formulation of farmers organization should be encouraged to motivate and mobilize the farmers and earn more profit to improve their livelihood.
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CHAPTER ONE

GENERAL INTRODUCTION

1.0 Introduction
This chapter consists of sections including, the first section explains about the background information of the research problems, the second Statement of the problem, third research objective and fourth research question.

1.1 Background information
In Tanzania, agriculture continues to be the main backbone of the economy of most of the rural population. According to URT (2008) over 80% Tanzanians live in rural areas where agriculture and the use of natural resources are crucial to their livelihoods. The Tanzanian economy is heavily based on agriculture, which accounts for 24.5% of gross domestic product(NBS 2013) provides 85% of exports, and accounts for half of the employed workforce(NBS 2013) The agricultural sector grew at around 4.3% in 2012, less than half of the Millennium Development Goal target of 10.8 percent(Mkukuta, 2013). Most of the smallholder farmers in the country farming food crops and cash-crops. In Tanzania, most of smallholder farmers farming food- cash crops such as sunflowers, tea, coffee, and maize, and paddy and some of fruits and vegetables(URT,2004). In the side of sunflower cash crop production, the sector contributes the most in the country as noted above (URT, 2004) Thus, the importance of agriculture in both income poverty reduction and economic growth deserves a special attention (URT, 2012).

Since about 90% of residents of Singida Region depend on agriculture as the main source of their live hood. Main cash crops grown in the region are: the sunflower, onions and cotton. While the main food crops include: sorghum, millet, sweet potatoes and paddy (Singida economic report 2009). Sunflower oil from Singida is the most popular cooking oil in central zone regions. As noted that today the sunflower sub-sector contributes 40% of edible oil in Tanzania, while 61% of the national sunflower production happens in the central zone regions (REPOA 2010). The sunflower plant grows best in fertile, moist, well drained soils and is propagated
by open pollination and it grows a deep taproot system that affords the plant some level of drought resisting capabilities (DANIDA 2012). Sunflower can therefore be planted in less fertile and semi arid areas, and is commonly intercropped with or used as a rotational crop or break crop for cereals. (Lyimo, 2014).

In Tanzania, Major sunflower seeds/oil production areas are located in central regions (Dodoma, Morogoro and Singida) and in the Southern Highlands- Iringa, Ruvuma, Rukwa and Mbeya Regions SNV,2010). The largest sunflower producer in the country is Singinda region as it is shown in Table 1.1. According to sunflower production statistics, production of sunflower in Singida has increased from 25,200 tonnes in 2000/2001 season to 68,297 tonnes in 2007/2008 season as Table 1.1 below shows:

**Table 1.1 Sunflower production in Tanzania (Metric tons in ‘000)**

<table>
<thead>
<tr>
<th>REGION</th>
<th>2000/01</th>
<th>2001/02</th>
<th>2002/03</th>
<th>2003/04</th>
<th>2004/05</th>
<th>2007/08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arusha</td>
<td>-</td>
<td>7.40</td>
<td>0.44</td>
<td>0.06</td>
<td>0.11</td>
<td>1.187</td>
</tr>
<tr>
<td>Dodoma</td>
<td>-</td>
<td>0.6</td>
<td>6.58</td>
<td>34.64</td>
<td>16.66</td>
<td>56.086</td>
</tr>
<tr>
<td>Iringa</td>
<td>-</td>
<td>16.30</td>
<td>7.30</td>
<td>63.48</td>
<td>12.21</td>
<td>21.161</td>
</tr>
<tr>
<td>Kagera</td>
<td>-</td>
<td>-</td>
<td>0.10</td>
<td>0.02</td>
<td>0.02</td>
<td>0.028</td>
</tr>
<tr>
<td>Kilimanjaro</td>
<td>-</td>
<td>-</td>
<td>3.72</td>
<td>2.80</td>
<td>0.29</td>
<td>2.590</td>
</tr>
<tr>
<td>Manyara</td>
<td>-</td>
<td>-</td>
<td>6.37</td>
<td>12.11</td>
<td>5.01</td>
<td>29.244</td>
</tr>
<tr>
<td>Mara</td>
<td>10.50</td>
<td>-</td>
<td>0.01</td>
<td>0.35</td>
<td>0.19</td>
<td>0.306</td>
</tr>
<tr>
<td>Mbeya</td>
<td>4.69</td>
<td>1.42</td>
<td>1.81</td>
<td>1.71</td>
<td>2.75</td>
<td>10.131</td>
</tr>
<tr>
<td>Mwanza</td>
<td>-</td>
<td>-</td>
<td>0.03</td>
<td>0.07</td>
<td>0.02</td>
<td>0.028</td>
</tr>
<tr>
<td>Morogoro</td>
<td>0.56</td>
<td>0.60</td>
<td>0.13</td>
<td>5.15</td>
<td>2.04</td>
<td>3.103</td>
</tr>
<tr>
<td>Rukwa</td>
<td>32.12</td>
<td>26.18</td>
<td>6.10</td>
<td>49.96</td>
<td>21.01</td>
<td>27.425</td>
</tr>
<tr>
<td>Ruvuma</td>
<td>-</td>
<td>0.01</td>
<td>0.40</td>
<td>1.54</td>
<td>1.45</td>
<td>2.841</td>
</tr>
<tr>
<td>Shinyanga</td>
<td>7.80</td>
<td>8.80</td>
<td>0.46</td>
<td>2.57</td>
<td>2.84</td>
<td>3.290</td>
</tr>
<tr>
<td>Singida</td>
<td>25.20</td>
<td>42.50</td>
<td>21.34</td>
<td>72.64</td>
<td>67.00</td>
<td>68.297</td>
</tr>
<tr>
<td>Tabora</td>
<td>-</td>
<td>0.63</td>
<td>0.15</td>
<td>0.74</td>
<td>0.89</td>
<td>11.802</td>
</tr>
<tr>
<td>Tanga</td>
<td>-</td>
<td>0.01</td>
<td>0.03</td>
<td>0.60</td>
<td>1.87</td>
<td>0.337</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>80.87</td>
<td>104.40</td>
<td>55.04</td>
<td>247.84</td>
<td>134.36</td>
<td>238.314</td>
</tr>
</tbody>
</table>

**Source:** Ministry of Agriculture (2012)
Farmers in Singida Rural District often cite limited farmland and inadequate equipment, seeds or soil quality as persistent problems. Many farmers engage in intercropping to mitigate the problems associated with erosion and lack of irrigation systems (James, 2010). In addition, the sunflower is the major cash crop in this district instead of the livelihood of this community still low. Singida Rural is among the main producers of sunflower in the Region, wards that have the highest production in the District are Mtinko, Ntuntu, Msange, Makuro, Mudida, Ughandi and Muhintiri. Total production has grown steadily over time from about 13,000 mt in 2007 to about 40,000 mt in 2011 as Table 1.2 shows.

**Table 1.2 Sunflower Production in Singida Rural District**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (mt)</td>
<td>29,441</td>
<td>44,162</td>
<td>58,922</td>
<td>47,358</td>
<td>47,167</td>
</tr>
<tr>
<td>Output per/h</td>
<td>2.23</td>
<td>1.57</td>
<td>2.00</td>
<td>1.20</td>
<td>1.20</td>
</tr>
<tr>
<td>Per acre</td>
<td>0.90</td>
<td>0.64</td>
<td>0.81</td>
<td>0.49</td>
<td>0.49</td>
</tr>
<tr>
<td>No. of 65Kg bags/acre</td>
<td>14</td>
<td>10</td>
<td>12</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

**Source.** Singida Rural District (2015)

The increase came from expansion of area cultivated while output per acre declined. Singida Rural District Council has prioritized sunflower sub-sector development in its District Agricultural Development Plans, it has adopted the value chain approach with interventions covering not only production but also marketing, processing and related services. The District Council is investing in Warehouse Receipt System, at the time of the study there were 24 sunflower processors, 4 suppliers of inputs (agro-dealers) and 24 transporters as the key actors in the value chains. Given the importance of the commodity in the District’s economy, issues around sunflower are among key agenda with the Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA). RLDC has been supporting development of market linkage under contract farming (TEOSA Report 2012). Although the District council is doing
all these still the more effort is needed because the challenges facing sunflower at the studied need collective power of number of stake holders

1.2 Statement of the problem

Sunflower production has emerged as a major source of income in Singida Region (Repoa 2010). Despite the sunflower been the major cash crop in Singida region, however there are number of factors constraining sunflower production in Singida region. Whereby according to (SNV, 2009), factors constraining sunflower production in Singida region are; low prices received by farmers, poor market infrastructure such as processing facilities, road facilities, poor contract entered middlemen and lack of market information by farmers. According to (REPOA, 2010) the sunflower market in Singida Rural District is dominated by wholesalers. The common practice is for wholesalers to buy the sunflower crop before the harvest and ultimately farmers obtain low prices. This market practice seems to erode a greater portion of market margin to the farmers.

Based on the afore-said, there is a need of addressing the existing knowledge gaps, especially on factors affecting income of smallholder sunflower farmers in Singida Rural District, Tanzania. Therefore, this study carried out in order to contribute towards these knowledge gaps in order to provide basis for formulating policies which will suit the existing problem.

1.3 Research Objectives

1.3.1 General objective

The general objective is to assess factors affecting income of smallholder sunflower farmers in Singida rural district, Singida Region.

1.3.2 Specific objectives

i. To identify and assess the roles of actors in the sunflower value chain in the study area

ii. To assess how production and marketing arrangements of sunflower influence income of farmers in the study area.
iii. To assess income margins generated by sunflower farmers in the study area,
iv. To assess constraints affecting development of sunflower production and reduction of income poverty in the study area,

1.4 Research Questions
i. What is the role of actors in the sunflower value chain in the study area?
ii. How production and marketing arrangements of sunflower influence income of farmers in the study area?
iii. What are income margins generated by sunflower farmers in the study area?
iv. What are constraints affecting development of sunflower production and reduce of income poverty in the study area?

1.5 Significance of the Study
The study will contribute to the understanding on the factors affecting income of smallholder sunflower farmers in Singida rural district, Singida Region in Tanzania. The study would also add literature review to the already established literature and articles about the finding hence acting as a source of literature review to the future academician at that field.

Further the study will help the government to formulate the policies which will improve production and add value of the sunflower products within the market channel. The study also will help the researcher to acquire practical skills that would help in carrying out more researches in other area in some future time.

1.6 Scope of the Study
The study focused on assessing the factors affecting income of smallholder sunflower farmers in Singida rural district, Singida Region in Tanzania. Further, factors were assessed to find out how they affect the income positive or negative.

In this study the smallholder sunflower farmers, traders, processors, ward extension officers village, village executive officers were taken as sample of the study. The study considered information collected covered the period from 2009 to 2014. The period of five years was chosen because it was long enough for the researcher to
establish the bases of assessing the factors affecting the smallholders sunflower farmers income.
CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction
Tanzania resembles many countries in sub-Saharan Africa in that it suffers from economic problems due to rampant rural poverty and poor performance of the agricultural sector. Tanzania has a huge potential for agriculture with an estimated 43 million hectares suitable for farming. However, only an average of 6.3 million hectares is cultivated annually, mostly by small scale farmers. Large-scale commercial farms account for less than four percent of all farms in Tanzania (Menda, 2005). Deemed the backbone of the Tanzania economy since independence from Britain in 1961, that agricultural sector is poorly performing and its current contribution to GDP is about 24.5 percent, though it employs over 80 percent of national labour force(NBS,2013). According to government statistics, the agriculture sector growth had high correlation (i.e. 0.995) with the growth of the national GDP during the period 1998 to 2007 (URT, 2008). During 1999, the GDP grew by 4.8%, while the agriculture sector GDP grew by 4.1%. However, due to expansions and significant investments in other sectors, the GDP grew by 7.1% in 2007 and agriculture sector grew by 4.0%. The results show that the agriculture sector grew at an average rate of 4.4% over the last decade, the growth that was not at an increasing rate.

In Tanzania, small scale farmers comprising about 95% of the farm population depend largely on expertise from extension services provided by the Ministry of Agriculture, Food Security and Cooperatives and the Local governments. However, within the ministry, a systematic farm management programme has never existed. Extension advice has been commodity based, often targeting at technological transfer (husbandry and therapeutic) rather than participatory and education approaches, where farm problems are addressed simultaneously in a holistic manner (Joseph, 2009). Tanzania is endowed with high potential base for agricultural development. Agriculture (including crop production, livestock and natural resources) is one of the leading sectors of the economy. Apart from providing food, it remains to be the
country’s main source of income for the rural population, which forms 80% of the total population and employs 70% of the active labour force. In the year 2005 agriculture contributed about 50% to GDP; crop production alone contributed 55% of the agricultural GDP followed by livestock, which accounted for 30% (Ugulumu, 2008) and natural resources accounted for 15%. Smallholder farmers dominate agriculture with farm sizes ranging from 1 to 3 hectares. Wide variety of crops can be grown in Tanzania due to its wide climatic variation and agro-ecological conditions. Maize and rice are principal food crops as well as commercial crops, while cassava and banana are important subsistence crops. Traditional export crops include coffee, cashew nuts, cotton, tea and sisal. Other widely grown crops include beans, sorghum, millet, sweet potatoes, and a wide variety of fruits, vegetables, oilseeds and flowers (Mpagalile, 2008).

The Tanzania economy is still depending on agriculture as its main stay. During the period between 1995 and 2000, the contribution of the agriculture to the total GDP has been around 50%. In 1998 agriculture contributed 70.8% to the total employment and 55% of the country’s foreign currency. Agriculture is still the main source of its performance significantly, and hence determines the overall improvement of the living standard (Mariam, 2003). Agriculture sector faces a multitude of problems which hamper growth of agricultural sector. These problems includes low priority accorded to agriculture in public resources allocation and disbursement, poor rural infrastructure, farmers’ limited capital and access to credit, inadequate support services, weak and inappropriate legal framework and tenure and tax policy. Also the current national crop marketing system does not guarantee returns to offset production costs and hence discourages small scale farmers who constitute the bulk of producers in this sector.

2.1 Sunflower Production and its Income Contribution in Tanzania

The sunflower gets its name from the Greek words *helios* meaning sun and *anthos* meaning flower (Rindels, 2008). There are some 67 species within the Helianthus genus. Most oilseed and ornamental sunflowers are *Helianthus annuus*. Sunflower
has being one of the most important oilseed crops in Tanzania. The crop is adaptable over a wide range of environments and therefore it is widely cultivated in Tanzania.

The crop is popular in the Eastern, Central, Northern and Southern Highlands of Tanzania. Sunflower is gaining popularity and current data shows that local production of both factory and home extracted oils contributes to about 40% of the national cooking oil requirement with the remaining 60% being imported (ARI, 2008). The production of sunflower oil seeds varied between 75,000 to 100,000 tons from year 2001 to 2005. However, production increased in the season of 2007/2008 dramatically to more than 350,000 tons and to almost 90,000 tons of oil per year (MAFSC, 2008).

Sunflower growers could increase their income from oilseed cultivation by a net margin of about 75%. From each mill the community of users have earned an additional income of 10,000 to 15,000 USD per season. Farmers who do not use the milling services benefit indirectly through higher prices for their sunflower seed in their areas and lower prices for cooking oil in the village shops. Employment and income generation has been initiated through the presence of mills: tea shops and restaurants next to mills, mechanical workshops that provide repair and maintenance services and the demand for transport services (ox charts) for carrying sunflower to the mill. The income level of small farmers increased due to agriculture project which contributing to modernize agricultural processing methods (Mtui, 2008).

Rural Livelihood Development Company (RLDC) has embarked on a serious mission to transact the sunflower sector into high yield per acre cash crop in the central corridor of Tanzania. Success initiatives and experiences in the previous phase indicate that improving the sunflower sector would help immensely in reducing income poverty for many small scale farmers. The approach at RLDC now overhauling sunflower production from the bottom to the top, such as from production and distribution of quality seeds to producers at affordable prices, provision of extension services, collection and storage services, processing and marketing of oil and other sunflower products (Joseph, 2009).
2.2 Constraints Facing the Sunflower Sub-Sector in Tanzania

Based on the importance of sunflower, the MAFC carries sunflower research from ARI Ilona in Kilosa District. In 1999, the oilseeds research sub programme at Ilona, imported 20 accessions to start testing them in multi-location trials (ARI Ilona, 2008; Mpagalile et al., 2008). It has been observed that from these accessions, two of them PI 364860 and PI 289624 recorded high yields and oil contents. Plans were underway to take them for on-farm, farmer’s verification and assessment before they are officially released. However, the issue of seeds is still a problem because of lack of readily available high yielding varieties. Most farmers use their own seeds from previous seasons mainly because of high price.

The sunflower sub-sector is faced with a number of constraints which include: lack of improved and sufficient seeds; this force farmer to use own seeds; unreliable market and low prices for sunflower seeds; diseases such as downy mildew; insect pests and other pests before and after germination; inadequate improved tillage implements such as ox-plough or tractors; unreliable rainfall; inadequate knowledge on improved sunflower production techniques due to poor extension services; and stiff competition from edible oil imports. Generally sunflower sub-sector in Tanzania is constrained by the following narrated problems.

2.2.1 Production related problems

According to the study conducted by the Rural Livelihoods Development Company (RLDC) in 2008 in the six regions of the Central Corridor, the problems related to sunflower production are related to three major issues which are quality of seeds, agronomic practices and sales practices (RLDC, 2008).

2.2.1.1 Quality Seeds

Most of the small farmers do not use quality seeds, instead they use recycled seeds and traditional seeds from other farmers. The use of the wrong seeds is often a mixture of ignorance, lack of capital, and non-availability of quality seeds. Sometimes the farmers buy seeds that have not been certified for their area and they then face a low and disappointing germination rate, although the use of the same seed in the certified areas can produce a high germination rate (RLDC, 2008).
On the other hand, quality seeds were not available in sufficient quantities so that interested farmers had to source seeds from different suppliers. Another problem is even when quality seeds were obtained they were often planted in smaller quantities as per requirement so that yield per acre was still low although the germination rate was high (RLDC, 2008).

2.2.1.2 Agronomic Practices
Many small farmers do not apply proper agronomic practices in land preparation, planting, weeding and using of fertilizer. Where land is not a limiting factor, crop rotation and intercropping is not properly practiced, although it would allow soil replenishment. The government extension service does not provide enough support in introducing better agronomic practices. The yield is therefore much lower than expected. Inadequate agronomic practice is the result of ignorance, low motivation, and in some cases the lack of fertilizer (RLDC, 2008). This issues of poor extension services is an emerging challenging issue as most of the farmers now days tend not to recognize the support of such professionalism, as the extension themselves fail to show their importance versus farmers needs, although in real sense the need for such support is highly needed as it was found in this survey most of the farmers use their individual experiences rather technical skills in agricultural production, hence incur unnecessary costs i.e. labour which can be used in other production activities. Farmers should understand that the issue is not only the level of production but also they should consider the level of land productivity which have a greater implication to the cost.

2.2.1.3 Sales Practice
The common practice makes small farmers vulnerable to manipulations by middlemen, mainly traders and, processors. Moreover, the practice of off-farm sales gives away the opportunity of bulking and possible the direct contact with traders or processors. The lack of weighing scales makes it necessary to sell the crop by volume rather than weight which in most cases are to the disadvantage of the small
Based on these sales practices, the smallholder farmer receives low prices (RLDC, 2008).

2.2.2 Processing related problems
The oil processing companies can be broadly grouped into small scale seed crushing companies and oil refinery companies. The constraints of these companies are as follows:

2.2.2.1 Capacity and Supply Mismatch
Like most agricultural produce, sunflower seeds are mainly available at the end of the harvest. Since most small farmers do not have storage facilities, they want to sell their produce as soon as possible, and it is left to the processor to balance the purchase of sunflower grains, process them to oil, and meet the regular demand of the consumer markets. While the crushing equipment is a relatively small investment, the processor has to spend much money for buying and storing the sunflower grains to enable him to meet demand continuously. For example, a processor has installed a crushing capacity of about 50 bags per day, he would need to purchase about 10,000 bags if he wanted his machine to be active during 200 days. The purchase requires a capital of about Tshs 300 million which is far in excess of the machinery investment costs (RLDC, 2008, Hawassi et al., 2011).

At the same time, processors are sometimes not able to buy sufficient quantities of sunflower seeds at going prices. This is mainly the consequence of not having a reliable and trustful business relationship between the small farmers and the processors. In past projects, even in the case of contract farming, relationships were unstable and a lot of side-selling rendered the contracts almost useless (RLDC, 2008).

2.2.2.2 Oil Quality
According to the Tanzania Food and Drugs Authority (TFDA), sunflower oil for human consumption should be refined. If raw sunflower oil is consumed shortly after expression or extraction, it probably does not do any harm. If raw sunflower oil has however been stored for a long time or exposed to high temperature fluctuations, it is
not advisable to consume it any more. As most raw sunflower oils are not labelled or the date of processing has not been indicated on the label, it is difficult for the consumer to know whether the oil is still safe for consumption (RLDC, 2008).

2.3.3 Marketing relating problems
Marketing is a process that involves planning and executing ideas from production, pricing, meeting people (customers) through distribution, and promotion of ideas, goods and services to create and maintain exchange that satisfy individuals, organization and meet societal objectives in the systematic situation of global environment (Czinkota et al., 1997). According to (Kotler, 2008) marketing is also defined as an activity, set of institutions, and processes of creating, communicating, delivering, and exchanging goods and services that have value for customers, clients, partners, and society at large. It generates the strategy that underlies sales techniques, business communication, and business developments; therefore, it is an integrated process through which companies build strong customer relationships and create value for their customers and for themselves. Agricultural marketing refers to all activities essentially associated with agricultural production and with food, feed and fibers assembly, processing and distribution to the final consumers. It also includes analysis of consumer’s needs, motivation, purchasing and consumption behaviour (Ashimogo, 1994).

2.3.3.1 Marketing Segmentation
Most sunflower seed crushing companies sell the oil almost like a commodity in unidentifiable containers without proper labelling. As there is also hardly any market segmentation, promotion or advertising effort, one cannot help noticing that most oil mills need to develop a marketing concept for increasing their sales (Hawassi et al., 2011).

2.3.3.2 Customers
Tan sunflower local customers include individuals, Bakeries, schools, colleges, hotels, foreign countries etc. The oil products will also be sold abundantly in supermarkets and big malls in cities. There is a growing market for sunflower cake
from nearby countries including Kenya, Comoro, Zambia and Malawi. Sunflower oil is now on the move to be exported to Turkey, Israel and North American countries.

2.3.3.3 Market size and trends
The market for sunflower oils and related products is now increasing. Many people are shifting from imported edible oils to the locally natural and organic products. It is estimated that almost 4 million people will be potential buyers of TAN Sunflower oils and this market size is expected to grow 10% annually for the first year and about 20% annually for the second and 35% for the third year.

2.3.3.4 Competition
Tan Sunflower competitors include Arab countries sunflower oil providers and local sunflower oil producers. There are two kinds of competitors. The first group of competitors is Substitute competitors. These are manufactures and sellers of substitute seed cooking oils such as groundnuts, olive, cotton et c. These competitors have less impact to Tan sunflower business as the products are not directly related, they are consumed with special purposes and they are in most cases more expensive compared to sunflower business. The second group is direct competitors. These are manufacturers and sellers of sunflower oils within Tanzania and abroad.

2.4 Meaning and Rationale of Value Chain

2.4.1 Value chain
Value chain refers to description of the full range of activities from conception of the idea about a good or service through to its distribution, consumption and beyond (UNCTAD, 2010). These activities can be carried out within a single firm or among different firms in the same geographical area or different areas. The concept of Value Chain is associated with Porter (1985) who described a chain of activities for a firm operating in a given industry where each business unit form or builds a line for value.

According to Porter (1985), there is a sequence of activities found to be common in wide range of activities. Value chain generally implies a full range of activities which include designing or conception of an idea about the goods or service, through
to production, distribution, and consumption and final disposal of a commodity or service (UNCTAD, 2010).

The concept of value chain proposes that basically “the chain of activities give the products more added values that are over and above the sum of added values of all activities. According to Porter (1985), a summation of value chains of upstream supplier and downstream channel and customers form value system. In this case, the system includes linkages of value chain within or between firms and they are basis for forms development of its competitive advantage.

2.4.2 Essentials of the value chain
According to Porter (1985), primary value chain includes:

i. Backward linkage: Receiving inputs and distributing them as they are required.

ii. Processing: Transforming inputs into outputs goods/services.

iii. Forward linkage: Storing and distribution of finished goods

iv. Forward linkage: Identification of customer and generation of sales.

v. Forward linkage: Support of customer after goods and services are sold to them.

These activities have complimentary activities such as technological development, human resource planning and management and infrastructure development. Firms profitability depends on how efficiently and effectively if performs collectively and sequentially all these activities. A firm may generate superior value if it competitively manages to lower cost and upgrade quality or achieve some differentiation. The value chain model detects and defines a firm’s competitive advantage in the aspect of cost and differentiation. Sources of comparative advantage include:

2.4.2.1 Cost advantage
If a firm manages to reduce one value chain activities the outcome may be cost advantage, but if may develop even more cost advantages if control all the drivers cost are Porters analysis there are ten cost drivers, institutions and policy frame (regulation, taxation etc) geographical location, economies of scale, learning process, capacity utilization linkage among activities, degree of vertical integration, timing of,
violating entry, firm’s policy of cost or differentiation and interrelationships among business units. But also through structural changes such as development of a new production line or new distribution channels etc., (e.g. acquiring own equipment).

2.4.2.2 Differentiation or uniqueness creation
Product uniqueness at any part of the value chain may be a basis for competitive advantage product differentiation may be achieved in the final stage product or in the process. Porter identified sources of product differentiation as scale of operation, where unique product or service arises from the economies of scale, the firm enjoys. Others are policy and decisions, timing, leaving, location, interrelationship, integration and institutional factors. Differentiation is often costly and therefore always tradeoffs between cost and benefits of achieving differentiation need to be considered.

2.4.2.3 Value chain and technology
Value chain of a firm can also be restructured or re-shaped new technology is adopted and used in activities. New technology may set in competitive advantage, thus bringing new backward or forward integrations when for example a firm gains capability to undertake activities that were initially undertaken by its customers. It has forward linkage in the same way if with the new adopted technology can extend its control over the inputs. It has backward linkage if technology can have its impact at a point of the value be it in primary activities or support activities.

2.4.3 Market chain analysis
Lundy et al. (2004) clearly stated that a market chain is used to describe the numerous links that connect all the actors and transactions involved in the movement of agricultural goods from the farm to the consumer. It means agricultural goods and products flow up the chain and money flows down the chain. FAO stated (2005), market chain is defined as a process of following a product from production to consumer, by looking at all points of the chain, prices in and out of each point, functions performed by each point, market demand and supply (trends), market constraints and analyzing the market opportunities for the particular product. Harahap (2003), also defined market chain analysis as a way of gaining insight into
the (1) operations of specific market channels while focusing on their growth potential, (2) activities and efficiency of actors along the chain, (3) business support services involved, and (4) policy and regulatory frameworks. Using the information from the analysis, opportunities and constraints can be identified within specific market chains, and ways can be seen to improve a defined client's capacity to compete more effectively.

2.4.4 Supply chain analysis
Supply chain analysis refers to the overall group of economic agents or a physical person (such as a farmer, trader or consumer) as well as legal entities (such as business, an authority or a development organization) that contribute directly to the determination of a final product. Thus the chain encompasses the complete sequence of operations which starts from raw material or an intermediate product and finishes downstream, after several stages of transformation/ value addition of one or several final products at the level of the consumer (FAO, 2005). Supply chain can also be defined as i) a network of retail, distribution and storage facilities supply that participate in the sale, delivery and production of a particular product, and ii) the flow of goods or services from the raw material, intermediate products to final products through processes that are performed by firms that are owned by various actors who are linked in trade and services, each adds value to the product. According to FAO (2005), the supply chain analysis involves working across multiple enterprises or companies to shorten the supply chain in time so as to deliver the goods and services to consumers. It mainly involves the following: reducing inventories, improving forecasting, improving scheduling and planning, and increase returns. The ultimate goal of the chain is to facilitate an increase in efficiency and thereby, increase the total generated value and competitiveness of the intended actors to increase their shares of the total general income.

2.5 Empirical studies
According to Ugulumu, and Inanga,(2014) in their study on assessment of market access in developing countries like Tanzania, an imperative aspect which seems to hinder small scale farmers from accessing both domestic and international markets a
case study of Singida. Based on the analysis, it was established that the perceptions of sunflower producers as regards identification of sunflower buyers and quantity demanded was pessimistic as indicated by a whopping 76.6% of respondents, an attitude that implies poor coordination and clarity of information flow between sunflower producers and buyers. On the other hand, respondents were asked to rate whether there were buyers’ quality preference specifications attached to the sunflower produced. Responses indicated no clear association between buyers and producers of sunflower on the aspect of quality. 64.2% of respondents disagreed while only 18.8% agreed that there were buyers’ specifications on quality. Majority of sunflower producers however agreed that sunflower value chain essentially contributed to value addition as well as cost reduction. 57% of respondents ascertained that the sunflower value chain facilitated them in value addition while 79% implicated that it aided the cut down of operational costs.

Mamelo,(2014) studied the study titled “The assessment of sustainability of sunflower as a diversification crop projects in improving community the rural smallholder farmers livelihoods”. Findings show that the crop value addition has been managed in the area, profitability of sunflower products in different actors and viability of sunflower projects in poverty reduction among the smallholder farmers. Furthermore it was evidenced that, failure to achieve goals and objectives are caused by lack of education and knowledge on sunflower production, lack of government support to farmer which bases on provision of agricultural inputs, like seeds, fertilizers and different seminars concern agricultural production. In order to facilitate farmers to profitability in the study recommended measures to be taken by various stakeholders of sunflower sub sector to work together with the farmers so as they can together address the challenges farmers are facing in the production and marketing of the products.

Lekunze et al. (2011) examined the socio-economic constraints to sunflower production in Bojanala farming community in the North-West province of South Africa. In this study, output of sunflower in tons per hectare was the dependent variable and the independent variables were: cost of sunflower seeds, sex of farmers, employment, machinery cost per hectare, total income per year, storage cost of
output, land size under sunflower production, market selling price per ton of sunflower, use of extension services, access to market and access to credit. Simple random sampling was carried out to select 150 farmers from a list of 257 farmers. Data were collected using questionnaires and analyzed using a double log function of the linear multiple regressions. Results of the analysis showed that, very few young people below 30 years of age are engaged in sunflower production. Significant determinant of the socio-economic constraints included number of plantings per year, storage costs, price, and income, access to market and farm size.

Baloyi (2010) conducted a study on analysis of constraints facing smallholder farmers in the agribusiness value chain; the study discussed the factors such as: lack of human capital, high transaction cost, lack of information on markets, transport problems, technological barriers. The study discovered that many smallholder farmers were illiterate, with poor technological skills, which were seemed to be obstacles in accessing useful formal institutions that can disseminate technological knowledge. It showed that majority of emerging producers lack knowledge on financial and marketing skills and it was found that producers were not able to meet the quality standards set by fresh produce markets and food processors. Baloyi (2010) argued that since smallholders were poor, they find it difficult to compete in competitive markets due to high transaction costs, traders with higher social capital are better able to enter more capital-intensive marketing activities such as wholesaling and long-distance transport, whereas traders with poor social networks face major barriers to entry into the more lucrative market segment. Also rural producers, and especially small farmers, had little information about the markets demand, which was costly to obtain. Smallholder farmers lack information about product prices at the local level, about quality requirements, about the best places and times to sell their products, and about potential buyers. This in turn reduces their ability to trade their products efficiently and to derive the full benefit from the marketable part of their production.

Habwe (1992) conducted a study on constraints of sunflower in Uganda, the study revealed that a number of constraints affect sunflower yield in Uganda. The study
used descriptive analysis only. The study revealed that sunflower yield is affected by three factors namely, number of heads per hectare, number of seeds per head and average weight per seed. The study revealed that the number of heads per hectare influences yield more than other two variables. It was noted that sunflower adjusts to low population by increasing weight/seed and seeds/head and to high populations by decreasing weight/seed and/head.

Hamad et al. (2002) studied the production and marketing constraint of sunflower in Pakistan in which the study was divided into production factors and marketing factors. The production factors included yield of sunflower as the dependant variable and, number of ploughings, seed rate, number of irrigations, and number of bags of urea, sowing methods, pests attack as independent variables. The marketing constraints examined were non existence of proper markets for sunflower producers and absence of a government procurement centers. The study used a sample of 70 farmers whose responses were analyzed using regression analysis. The study revealed that ploughings, irrigation, urea and the use of drill sowing contributed positively to the per acre yield of sunflower in the study area. The results on the marketing constraints indicated that government procurement system was found completely lacking. The study showed that this lead to farmers dispose of their produce to both villages, oil mills and private companies which exploited farmers by paying low price for their produce.

Based on these empirical studies reviewed above, this study finds that the problems are not comprehensively covered and well assessed during the study like Marketing performance which involve net margin and price margin, contracting farming, credit facilities. Hence this study is going to assess factors affecting income of smallholder sunflower farmers in Singida rural district, Singida region.

2.6 Conceptual Framework

Sunflower production is one of the economic activities that if properly managed can contribute so much to income and hence improve community livelihoods. Many studies has indicated that households income earned from sunflower production
could be increased if the production, processing and marketing related factors are managed appropriately (Hawassi et al. 2011)

In addition According to SNV value chain analysis conducted in 2008 and 2010 reveals a number of institutional and functional issues constraining the performance of sunflower and sesame value chains development in Tanzania and includes: a). Institutional issues Domestic policies on price setting and taxation distort the edible oilseeds market, and discourage farmers to engage in oilseed production as a business. b) Edible oilseeds actors and enterprises are not coordinate, which limits their capacity to influence domestic policy changes and to collectively access inputs at favorable rates and to demand relevant services. c) Local Government Authority planning and budgeting overlooks edible oilseeds development, resulting to undeserving of oilseeds producers in extension services. d) Weak knowledge and institutional framework to support contract farming arrangement as alternative.

Based on the aforesaid, households that would adopt effective strategies for addressing the aforesaid factors they are likely to increase income from the crop and thus improve livelihood.
As figure 2.0 shows it implies that improved contracting farming and mobilize and formulating the strong small scale farmers associations, having good marketing performance and favorable Institutional framework in sunflower production will lead to increase the Income of small holder and Improve the live hood of the community.
CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction
The chapter presents the methodology that were used in carrying out this study (Msabila 2013). Hence, consisted of study area, research design, population of the study, data collection methods, sample size and sampling procedures, data analysis methods, reliability and validity of data.

3.1 Description of the Study Area
The study was conducted in Singida Rural District which is one of the six districts of Singida Region (Map 3.0). Singida Rural is one of the six districts of the Singida Region of Tanzania. It is bordered to the east by the Manyara Region, to the south by the Ikungi District, and to the west by the Mkalama District. According to the 2012 Tanzania national census, the population of the Singida Rural District was 225,521 (URT, 2013). Despite the sunflower production in Singida Rural District being the major cash crop, still the livelihoods of household sunflower farmers is poor. Based on this factor above, this situation has motivated the researcher to carry out this research in this study area.

The study was carried out in four wards namely; Itaja, Mtinko, Mwasawia and Msange where in each ward two villages were selected by considering the high volume of sunflower production.
Figure 3.1: Map of Singida Rural District

3.2 Research Design
A cross-sectional research design was used in this study. This design allows the collection of data in a single point in time (Msabila 2013).

3.3 Population of the study
The population of the study consisted of sunflower farmers, processors of sunflower products, traders (wholesalers and retailers) of sunflower products, village executive officers and ward agriculture extension Officers. The inclusion of different groups was of vital in order to analyze the linkages in sunflower value chain.
3.4 Sample size and sampling procedures

3.4.1 Sample size
The sample size consisted 149 respondents. Out of 149 respondents, 80 respondents were small scale sunflower farmers, 15 processors of sunflower products, 30 traders (15 wholesalers and 15 retailers) of sunflower products, 8 village executive officers and 4 ward agriculture extension Officers and one district agriculture extension officer. The sample size of 149 is reasonable for this study as noted by Bailey (1994) that a sample size of 100 is sufficient to be used for most of the researches.

3.4.2 Sampling procedures
Multiple stage sampling procedure was used in this study. The study was done in singida rural district. The study focused on four wards of Singida rural District namely Itaja, Mtinko, mwasawia and Msange. These four wards were selected purposively because of high volume of sunflower production in the region. From each ward, two villages were selected purposively based on the volume of sunflower production to get eight villages. Therefore, a researcher collected lists of farmers from each village for data collection. From the list of farmers in the respective village, the study randomly selected farmers randomly from the villages were selected.

3.4.2.1 Selection of sample of smallholder sunflower farmers
The smallholder farmers were selected by using simple random sampling method from the list of the farmers in the respective village. Whereby according to the villages selected, every 10 smallholder sunflower farmers were selected. Ultimately the study selected 80 smallholder sunflower farmers.

3.4.2.2 Selection of the sample of sunflower processors
The selection of the sunflower processors was of purposive based on the experience information and skills that sunflower processors hold. This helped to get the reliable information about processing. In the study area, therefore 15 processors were selected for this study.
3.4.2.3 Selection of the sample of sunflower wholesalers
The wholesalers were selected based on their convenience time to participate in this study especially to respond the questions about the subject matters. Therefore the study selected 15 wholesalers for inclusion in this study.

3.4.2.4 Selection of the sample of sunflower retailers
The selection of the retailers in the study area based on their convenience time to participate in this study especially. Therefore 15 retailers were selected to give the information about sunflower market behaviour include prices, costs and quantities operation costs.

3.4.2.5 Selection of the key informants
The selection of the key informant involved district and ward agriculture extension officers, village executives officers was purposive. This was purposive due to the crucial information, Knowledge and skills key informants have about the sunflower sector.

3.5 Data Collection Methods
A triangulation in data collection techniques especially in both primary and secondary data was used for successful implementation of the study as discussed below:

3.5.1 Primary Data Collection Methods
The primary data were collected in the study area by using Interview and questionnaire methods. The exercise was carried as it is explained hereunder;

3.5.1.1 Interview Method
Semi structured schedules was used in the data collection where 6 extension officers, and 8 village executive offices were interviewed in order to get their experience and perception about the production and marketing related issues of the sunflower in the area. In this study, interview guide instrument of data collection was used.
3.5.1.2 Questionnaire Method
The questionnaires were administered by the researcher with the help of ward agriculture extension officers responsible (research assistants) for each ward. Under administered questionnaire method, Individual farmers were interviewed at their homes or while processors and traders were interviewed in their places of work. Therefore, questionnaire method collected primary data from the farmers, processors, wholesalers and retailers.

3.5.2 Secondary Data Collection Methods

Documentary Review
Secondary data were collected through documentary review of relevant reports from the Singida regional offices, and Singida district offices, relevant published and unpublished reports from various sources such internets, government offices, and non-governmental organisation offices.

3.6 Data Analysis Methods

3.6.1 Quantitative Data Analysis methods
Collected data were compiled, coded and analysed using appropriate statistical packages. Descriptive statistics (such as frequencies, percentages and means) and ANOVA were analysed. The Statistical Package for Social Science (SPSS) was employed to assist data analysis. Figures, tables and charts will be used in data presentation.

3.6.2 Qualitative Data Analysis method
The process of qualitative data analysis was based on data interpretation. The volume of the data that were collected from the transcribed interviews and documents were reduced to contents, sub-contents and categories. These categories and codes systematically formed the basis for the emerging story that was revealed by the researcher. The researcher made mark quotes that was useful in generating the contents and carefully considered information that were contrary to the emerging contents.
3.7 Reliability and Validity of Data

3.7.1 Reliability of Data Measurement
Reliability refers to consistency of results that an instrument will give when applied repeatedly in the investigation (Saunders et al 2000). Similarity of results from employing the same tools in interviewing different respondents is one of the methods for assuring reliability of the research.

To control reliability the method of pre testing questionnaires was used to check if they were comprehensive enough to collect the required data. After the pre testing modification was made to the questionnaires and some improvement were made.

3.7.2 Validity of Data Measurement
Validity is the quality that an instrument used in research is accurate, correct, true, meaning and right (Msabila, 2013). In this research the language used in the instruments like questionnaire were translated to the background of the respondent which is from English to Swahili to check for clarity and accuracy so as to maximize validity.

To control validity the method of questionnaires administration was used where a researcher supervised the exercise close to respondents in order to clarify more about questions asked and give the clear meaning. This helped in obtaining the accurate data.
CHAPTER FOUR

PRESENTATION OF FINDINGS

4.0 Introduction

This chapter illustrates the general information regarding the findings obtained from the study about factors affecting income of smallholder sunflower farmers in Singida.

Table 4.1 General characteristics of farmers

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Category</th>
<th>frequencies</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td></td>
<td>19 - 25</td>
<td>11</td>
<td>13.8</td>
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<td></td>
<td>26 - 56</td>
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<td>81</td>
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<td></td>
<td>56+</td>
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<td></td>
<td>Secondary level</td>
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<tr>
<td></td>
<td>Female</td>
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<tr>
<td>Main sources of income</td>
<td>Farming activity</td>
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<td></td>
<td>Livestock</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Business activity</td>
<td>9</td>
<td>11.2</td>
</tr>
<tr>
<td></td>
<td>both activity</td>
<td>15</td>
<td>18.8</td>
</tr>
</tbody>
</table>

Sources field data (2015)

Description of characteristics of respondent

4.1.1 Age of respondent’s

Regnard (2006) urges that the total accumulation of wealthy is highly dependent on age of an individual, whereby a direct relationship is experienced. Likewise, age determines individual maturity and ability to make rational decisions. Moreover, Mlambiti, (1994) shows that age structure can be used to facilitate an understanding
about labour potential of a specific population. Farmers across the study area were middle aged ranging between 26-55 years with an average of 45 years of age. This means that majority of sunflowers farmers were within the working age group. This brings an implication on the roles and responsibilities in the society in terms of sunflower production and marketing throughout the year.

4.1.2 Education Level of Respondents
Existing literatures show that education contributed 50% of variation in the total agricultural output in Tanzania (Amani et al., 1989). Table 2 gives a summary of education levels of the sunflowers farmers participants interviewed. Results show that majority of farmers (76.2%) have acquired primary education. This implies that sunflower farmers in the study area have a modest basic knowledge that can be used to improve production of sunflower which does not require much agronomic skills since it is a perennial crop that is self caring (Ohler, 1979). Moreover, results indicate that majority of the traders (66.7%) have acquired primary education. This implies that traders in the study area have a basic knowledge that can be used to improve agricultural marketing for sunflowers. This literacy level of the traders is encouraging because it has an influence on carrying out basic marketing activities at optimal level. However, sunflower marketing has still remained underdeveloped in these areas. It is also shown that large populations (80%) of the respondents from the companies have acquired certificate. This gives an indication that most of the companies are controlled by people who were well trained both formally and informally.

4.1.3 Gender of respondents
As shown in Table 1, both men and women were sunflowers seeds producers. Men accounted for about 55% This is probably because, in most poor to average income Tanzanians’ families, men are in charge of family activities involving cash transactions while women are in charge of taking care of their homes and children and therefore, spending most of the times at home. In addition, access to capital might be another reason for this pattern since women especially in developing countries, do not have access to means of production and support services such as.
The reason behind this observation could be that women were the main participants of the trading activities in their villages. Results also indicate over fifty percent (90%) of the workers from Processing industries while women only 10%.

4.1.4 Main source of income
Most of the interviewed farmers (60%) were involved in other income generating activities such as farming and only (16%) conduct both agriculture farming and non agriculture farming activities. The reason for diversification is probably that sunflower marketing is still an emerging market and cannot be relied upon as a sole source of income to cater for the basic needs during the whole year.

4.1.5 Land Ownership
All of the studied farmers owned land, the ownership can be inherited from the ancestors (father, mother, grandparents etc), bought from other farmers in the village, rented or given by the village government. However, this ownership seemed in large extent to be affected by the age, as it was seen during the study that most (above 50%) of the middle age farmers (26-56 years old) preferred long term land ownership (i.e. inherited, bought or given by the Village government) rather than short term land ownership (i.e. renting), it is contrary to old age farmers who observed to prefer short term land ownership (i.e. renting).

4.2 The roles of actors in sunflower value chain in study area.
The market channel baseline analysis undertaken found that there were various channels through which sunflower seeds pass from the producers via middlemen and finally to the ultimate consumers. The assessment of market channels aimed at explaining roles played by sunflower market participants in the chain in order to provide the product with time, form and place utilities. Market efficiency thus requires a well planned network that assigns well defined functions to its members. From this network, market participants attained their individual and social targets.

During focus group discussion with extension officers at the study area the following were identified by researcher as figure 4.1 shows. The sunflower value chain analysis involves a number of functions and Institutions. It has both backward and forward
integrations. Small holder farmers as growers are at the central point. Farmers are linked with input suppliers (backward integration). The inputs include sunflower seeds, fertilizers, and chemical. Other linkages with sunflower growers involve oxen and tractors owners who do farm tillage operations for farmers. After harvesting sunflower seeds, a number of routes are involved in the forward integration. In order to reach sunflower seeds processors, farmers may sell directly to the processors or sell through the middlemen who buy seeds from farmers. Under this route, transporters have a function of transporting sunflower seeds to the mills. In Tanzania, some processors do own trucks and therefore can directly buy from farmers and collect the seeds for processing or may work in conjunctions with middlemen on contractual basis to buy and transport sunflower seeds from farmers. Processors have linkages with suppliers of machineries, utility suppliers, spare parts and packaging materials. There a number of activities involved after oil production by processors. The activities include-transporting, wholesaling, retailing, and distribution. In many places of studied area, growers do extract oil from sunflower seeds for home consumption and some oil extractors depend on well equipped processors to filter their crude oil.

In this study, the following market participants in the sunflower market chain were identified: i) Farmers from allwards i.e Itaja, Mtinko, masange, ii) traders (including both wholesalers and retailers from both villages), iii) processing companies from Singida and iv) consumers who are the buyers of the sunflower products such as oil or fuel.

During focus group discussion with extension officers at the study area the researcher noted that, The sunflower value chain analysis involves a number of functions and Institutions. It has both backward and forward integrations. Small holder farmers as growers are at the central point. Farmers are linked with input suppliers (backward integration). The inputs include sunflower seeds, fertilizers, and chemical. Other linkages with sunflower growers involve oxen and tractors owners who do farm tillage operations for farmers. After harvesting sunflower seeds, a number of routes are involved in the forward integration. In order to reach sunflower seeds processors, farmers may sell directly to the processors or sell through the
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4.2 Farmers

Farmers were the first link in the sunflower market chain, since they were the primary producers of sunflower seeds. On average the use of improved agricultural equipments is not good, as it was observed that, most of farmers using plough for cultivating their farms. However, it was also seen that a remarkable number of those who using hand hoe. The emphasis should be given to the areas where mechanization is still a problem. Results in table 4.2 below show that sunflower farmers sold their seeds through different channels. The main three buyers identified were the retailers, wholesalers an company. However, according to these results the most prominent buyers of sunflower seeds from farmers were the local buyers(middlemen) its about (58.8%). This might be attributed by that the majority of farmers relied on middlemen to facilitate their trading activities and moreover they were unable to facilitate transportation costs to market places in town, where many companies are located. It was also observed that about (26.2%) of the farmers (included those who sold to either individual companies or to both the local buyers and companies) also (15%) sold their seeds to the whole sales. As graph 1.1 shows the farmers are benefited much from this cash crop including building their house, paying school fees, getting the capital to start small business, and pay other necessary bills like medical and electricity bills.
Table 4.2 Major buyer of sunflower

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retailers</td>
<td>47</td>
<td>58.8</td>
</tr>
<tr>
<td>Wholesalers</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Companies</td>
<td>21</td>
<td>26.2</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

Sources field data (2015)

Table 4.2 Shows major buyers of sunflower at market channel at Singida Rural

4.2.1 Benefit of sunflower to Farmers

As figure 4.1 shows the farmers are benefited much from this cash crop including building their house, paying school fees, getting the capital to start small business, and pay other necessary bills like medical and electricity bills.

Figure 4.1 Benefit of sunflower to Farmers

Source Field Data 2015
The figure 4.1 shows the benefits gained by farmers at studied including building house, paying school fees, getting the capital to start small business, and pay other necessary bills like medical and electricity bills.

4.2.2 Middlemen

The wholesalers go straight to farmers where they negotiate prices. Once they have reached an agreement, middlemen purchase the seeds from the farmers. Farmers reported sometimes middlemen do not stick to the agreements made and fail to buy the seeds at the agreed prices and normally tend to bring the big bags which exceed the normal weight of 70kgs, therefore when this happens farmers directly sell their Seeds to companies. Middlemen are (often local) traders who buy from farmers and sell to processors/buyers and their collectors/agents. They may be small traders who know very well the households and their financial conditions, or larger traders who buy from them. Often middlemen have their own storage facilities or have agreements with larger traders for storage, giving them a strong market position and allowing them to speculate on the market. Middlemen are known to offer very variable prices throughout the year, to temporarily increase prices when buying small parts of harvest, after which prices fall again.

4.2.3 Processors /Company

The company agents usually buy the seeds either from the farmers directly or from the traders. The farmers and the company agents negotiate prices and once an agreement is reached, the processors purchase the seeds from the villages and transport them to their processing companies in Singida town. Annual Production of oil, seed cake and slurry (ugido) is mainly affected by availability of sunflower grain throughout the year. It is very clear that, in all studied wards availability of sunflower from January up April is very minimal during that time some of processors are even not in production. The maximum production of oil and by products is attained from May to August when supply of sunflower is high and start to fall from September. This is a common trend for all 4 wards. It is also very clear that the prices of oil and by products are highly affected by supply and demand. The processors are losing very much income by stopping production at all or by producing very small
amount of oil and by products. The utilization of their processing machines are also under capacity. Therefore the intervention should support processors and farmers to increase production.

4.2.3.1 Processing stages of one Bag of sunflower
As figure 4.2 shows the processing of one bag of 65-70kg normally can produce 18-22 litres of oil, 45kg of sunflower cake and 1-3kg of slurry Ugido all these products are sold by processors whereby oil is sold to retailers, oil cake is sold to animal feeds manufactures and slurry Ugido to soap industry. During the study revenue of all products was ranging between 87,500Tsh to 95,000Tsh. The package of oil in containers is done by consider the group of customers whereby the at studied area the package was of 1litre, 3litres, 5litres, 10litres and the highest was of 20litres.
Figure 4.2 Processing stages of one Bag of sunflower

Source Field Data (2015)

Figure 4.2 illustrate Average production chain of one bag of sunflower as it was found at studied area.

4.2.4 Retailers

The results show that majority of traders (59.8%) were the retailers of the sunflower seeds. This group occupies a larger percent of sunflower seeds traders, and provides necessary marketing information such as prices and customers’ preferences to other functionaries.
Figure 4.3  Retailer Point

Source Field Data(2015)

Figure 4.2 shows the point where most of retailer are selling their products.

The study revealed that existing sunflower market channel involved a number of channels and not one single channel in (figure.4.1) were identified.
Figure 4.4 Market Sunflower actors in Singida

Channel I: Farmers – Middlemen – Processor- Retailers-Consumers

Chanel III farmer- Processors- Wholesalers- Consumer
4.2.5 Place where farmers meet with their buyers

It have been revealed (81.2%) of farmers sold their sunflower seed at home place this is due to fact that most of farmers fail to afford transportation cost to meet the market place. also (10%) of farmers sold at farm field while only (8.8%) of farmer sold at market place this indicate that most of their traders come directly to negotiate price with their farmers at home place. This is shown in table 4.3 below

<table>
<thead>
<tr>
<th>Area to meet</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>At home</td>
<td>65</td>
<td>81.2</td>
</tr>
<tr>
<td>At farm field</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>At market place</td>
<td>7</td>
<td>8.8</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

Source. field data (2015)

Table 4.3 Shows the transaction point of farmers and buyers

4.3 Analysis on Sunflower production and Marketing arrangement

Sunflower producers in the study area were not different from the producers of other crops such as maize. Majority of them diversified production so as to allow economies of scale i.e. planting other crops apart from sunflower on the same field. Results show that about 80% of the sunflower farmers reported that they grow other crops such as maize, beans, onion, bananas, and mixed some crops in same farmers. None of these farmers rented a farm for sunflowers production.

During focus group discussion with the extension offices, it was reported that most smallholders are often too poor to purchase fertilizers and they use it occasionally if they have financial means. In the cultivated fields, maize and beans were grown without nutrient inputs. Few crop residues remain on the fields and are incorporated into the soil but often complete residue removal for fodder and fuel. However, this contributes to the depletion of soil organic carbon. Major reasons reported by these farmers for growing more than one crop were to earn more
income and to ensure food security for their families. The study also revealed that the contracting farming and producers’ organizations still are doing poorly to the study area.

4.3.1 Contracting farming

As per table 4.4 results show (97.5%) of sunflower farmer agreed on any contract with buyers. Which result poor conditions for the production and marketing of a farm product or products typically (2.5%), of the farmers agreed to provide agreed quantities of a specific agricultural product. These should meet the quality standards of the purchaser and be supplied at the time determined by the purchaser. In turn, the buyer commits to purchase the product and, in some cases, to support production through, for example, the supply of farm inputs, land preparation and the provision of technical advice. Both partners engaged in contract farming can benefit. According to Extension officers at the study area they stated about agricultural production carried out according to an agreement between a buyer and farmer(s). The agreement or contract establishes conditions for the production and marketing of a farm product or products. Within the traditional way of contract farming, the farmer agrees to provide established quantities of a specific agricultural product, meeting the quality standards and delivery schedule set by the buyer. In turn, the buyer commits to purchase the product, often at a predetermined price. The contracts can be formal or informal. In some cases the buyer also commits to support the production through, for example, the supply of farm inputs (sometimes on a credit base included in the contract), land preparation, the provision of technical advice and the arrangement of transport of produce to the buyer’s premises.

Trust-based’ contract farming is a type of contract farming whereby the delivery of inputs to the farmer by the buyer is determined by contract, but not the price the buyer will pay, or the quantities of products that the farmer must deliver. In general, a buyer bound by a trust-based contract does more to provide services and inputs, to win the trust of the farmer in order for the latter to sell his produce to the particular buyer. Contract farming offers producers a number of possible benefits, including assured market and minimum prices and access to support services. Indirectly,
producers also gain a stronger market position, because they have a reference market channel where they can sell their produce anyhow. It is also a system of interest to buyers who are looking for assured (timely) supplies of produce of certain quality for sale or for processing. Processors are among the most important users of contracts, as they wish to assure full utilization of their plant processing capacity. The better farmers are organized (for sales) and the better the local enabling environment (roads, collection centres,), the more attractive the concept is for buyers in order for them to reduce transaction costs. In traditional contract farming there is a risk that one of the contracting parties does not respect the contract. With a trust-based contract, it is a matter of building a long-term relationship between the two parties, based on a fair distribution of benefits. In traditional contract farming, an adequate legal framework is a crucial condition. This is less the case for

The trust-based contracts. Side-selling by farmers to competing buyers is perhaps the greatest problem constraining the growth of (traditional) contract farming. Also contractors may default by failing to pay agreed prices, by buying less than the pre-agreed quantities, or offering fewer services than promised. If farmers are not well organized or if there are few alternative buyers for the crop, or it is not easy to change crops, there is a danger that farmers may end up with an unfair deal. Strengthening farmers’ organizations to enable them to access appropriate services such as credit, extension services and market information, and improving their contract negotiating skills can help to reduce the risk of exploitation under both traditional and trust-based contract farming.

Table 4.4 Contract Farming

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>78</td>
<td>97.5</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

Source. Field data (2015)
Table 4.4 Shows the Percentage of contract farming between farmers and Processors and Traders

4.3.2 Farmers organizations
Most of Sunflower producers were working individually not belonging to any farmer’s group. Working in groups or collectively, farmers would be able to exploit some advantages and opportunities offered by organized farmers groups such as a link to various market networks. Organized farmers groups could exploit economies of scale by performing some of the functions like marketing and purchasing inputs together and sometimes working together in the farms. Organized farmers groups could powerfully bargain for better prices of their produce. It is also easy to provide business development services and other support services to farmers who are organized into groups than to those working individually. The study revealed that (25.%) of sunflowers farmer have been join in farmer cooperative like KONE, SEDA ,and AMKOSI while (75%) have no idea about cooperative farming as it is shown in table 4.5. Since cooperative farming enable farmer have power on price, and quality of product and avoid to be exploited by buyers in one way or another. This is challenge for agricultural sector like MUVI whose major role is to organize farmers into groups and networks so that they could fight for their rights. Working individually makes farmers operate with high transaction costs. Famers in groups can be able to share market price information, transport sunflower to distance market jointly and enjoy cost benefit advantages in sunflower production as well as in marketing process.

Table 4.5 Farmers organization

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>No</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

Source. Field data (2015)

Table 4.5 Shows the situation of farmers organizations formulation at Singida rural
4.4 Income Margins generated by sunflowers farmers in field area

Income margin will cover and measure the profitability in market performance of sunflower earned by farmers by considering the profit earned by all actors in sunflower market.

4.4.1 Gross margin analysis

The profitability of marketing was estimated using the Gross margin analysis (GM). The results in Table 4.6 give a summary of the GM for farmers, traders and processors. The results show that the GMs for farmers, traders and processors were 12,875Tsh/bag, 26,266Tsh/bag, and 52,230 Tsh/bag respectively.

This indicates that sunflower processing is the most profitable (52,230Tsh/bag) marketing enterprise compared to sunflower farming and trading. These observations could be attributed by the fact that sunflower processing involved value addition to new products such oil cake, which when sold they bring profit to the companies. Moreover, value addition of the products tends to allow the processors to fetch relatively higher selling prices at the market compared to that for farmers and traders. The GM for farmers was (12,875Tsh/bag) which still very low. This could be due to the fact that majority of sunflower farmers sold their seeds at lower prices and they are still facing a number of production and marketing challenges, the most critical being high production costs incurred during farming activities. Therefore, this shows that the sunflower farmers are still not benefiting from Sunflower production due to the lower returns earned.
Table 4.6 Gross margin of farmers traders and processors

<table>
<thead>
<tr>
<th>Actors</th>
<th>Description</th>
<th>Sales/Costs 70kg inTsh</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers</td>
<td>Average Revenue</td>
<td>31,875</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Less: Average Costs</td>
<td>19,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Gross Margin</strong></td>
<td><strong>12,875</strong></td>
<td><strong>40.4</strong></td>
</tr>
<tr>
<td>Middlemen</td>
<td>Average Revenue</td>
<td>55,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Less Average Cost</td>
<td>35,400</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Gross margin</strong></td>
<td><strong>19,600</strong></td>
<td><strong>40</strong></td>
</tr>
<tr>
<td>Traders</td>
<td>Average Revenue</td>
<td>59,500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Less: Average Cost</td>
<td>43,234</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Gross Margin</strong></td>
<td><strong>16,266</strong></td>
<td><strong>34.24</strong></td>
</tr>
<tr>
<td>Processors</td>
<td>Average Revenue</td>
<td>92,750</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Less Average costs</td>
<td>40,480</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Gross Margin</strong></td>
<td><strong>52,230</strong></td>
<td><strong>56.63</strong></td>
</tr>
</tbody>
</table>

Source: Field Data (2015)

The Average Revenue and Cost are taken at the rate of a Bag of 70kg in Tshs

4.3.2 Marketing and Operations cost analysis

FAO (1999) describes marketing costs as expenses that are incurred when the commodity moves from the farm to the final market, whether they are moved by farmers, intermediaries, cooperatives, marketing boards, wholesalers, retailers or exporters. Marketing costs can also reflect the state of a country’s development in terms of increased standards of living, smaller proportions of income expended on raw products of the farm and greater proportions of income that are spent on additional and improved marketing services. Increasing the value added means, among other things, that more people in developed countries are involved in marketing agricultural products than in producing them. Marketing costs include
labor, transport, packaging, containers, rent, utilities (water), depreciation allowances and interest charges (FAO, 1999). A review of the marketing costs would estimate how much expenses are incurred for each marketing activity. It would also compare marketing costs incurred by different actors in the channel of distribution. These are discussed with respect to farmers, traders and processors in the following sections.

4.3.2.1 Marketing and operation cost of farmers
Marketing costs of farmers at the studied area were including the cost of production, storage, loss due to damage, cost of empty bags, labor cost, harvest cost and cost incurred in transportation as table 4.7 below shows average cost at the studied area was 19,000Tsh per bag of 70kgs. The farmers are still not benefiting from sunflower production. This might be led by factors such as lower selling prices compared to the total costs that are incurred during farming activities, which therefore; reduces the total returns earned.

4.3.2.2 Marketing and operation cost of traders and Middlemen
The main costs covered by the traders included storage costs, loss due to damage, cost of empty bags, labor/wage cost and transportation cost. Moreover, the marketing costs of the traders are not higher compared to those of the farmers. The table 4.7 shows that the average costs of traders of studied area was 35,400Tsh for middlemen and 45,900Tsh for wholesalers and retailers.

4.4.2.3 Marketing Operation costs of processors
The most important costs covered by the processors included the expelling service fees (processing cost), production cost of, labor transportation cost, tax, package cost seems the cost are higher but they are covered because the processor has already added value to the product. Table 4.9 shows the average cost of processors is 40,480Tsh per 70kg of sunflower
Table 4.7 Marketing and Operations cost of sunflower actors at Singida Rural

<table>
<thead>
<tr>
<th>Farmers</th>
<th>Land preparation</th>
<th>15,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seedlings</td>
<td></td>
<td>12,000</td>
</tr>
<tr>
<td>Planting</td>
<td></td>
<td>12,000</td>
</tr>
<tr>
<td>Harvesting</td>
<td></td>
<td>40,000</td>
</tr>
<tr>
<td>Ploughing</td>
<td></td>
<td>40,000</td>
</tr>
<tr>
<td>Cost of bags,</td>
<td></td>
<td>7,000</td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td>7,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>133,000</td>
</tr>
<tr>
<td><strong>Average Costs per 70kg bag</strong></td>
<td></td>
<td><strong>19,000</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Buyers/middlemen</th>
<th>Buying 70kg bag</th>
<th>31,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bags</td>
<td></td>
<td>1,000</td>
</tr>
<tr>
<td>Labour</td>
<td></td>
<td>1,000</td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td>2,000</td>
</tr>
<tr>
<td>Storage</td>
<td></td>
<td>400</td>
</tr>
<tr>
<td>Total cost</td>
<td></td>
<td>35,400</td>
</tr>
<tr>
<td><strong>Average Costs of 70kg bag</strong></td>
<td></td>
<td><strong>35,400</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Processors</th>
<th>Buying 70kg bag</th>
<th>31,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning</td>
<td></td>
<td>1000</td>
</tr>
<tr>
<td>Transport</td>
<td></td>
<td>1000</td>
</tr>
<tr>
<td>Processing cost</td>
<td></td>
<td>1920</td>
</tr>
<tr>
<td>Utilities</td>
<td></td>
<td>1820</td>
</tr>
<tr>
<td>Tax</td>
<td></td>
<td>1140</td>
</tr>
<tr>
<td>Package</td>
<td></td>
<td>2600</td>
</tr>
<tr>
<td>Total cost</td>
<td></td>
<td>40,480</td>
</tr>
<tr>
<td><strong>Average cost of 70kg bag</strong></td>
<td></td>
<td><strong>40,480</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wholesalers/Retailers</th>
<th>Buying 20 litres</th>
<th>43,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport</td>
<td></td>
<td>1000</td>
</tr>
<tr>
<td>Tax</td>
<td></td>
<td>200</td>
</tr>
<tr>
<td>Other costs</td>
<td></td>
<td>1200</td>
</tr>
<tr>
<td><strong>Average cost of 20litres</strong></td>
<td></td>
<td><strong>45,900</strong></td>
</tr>
</tbody>
</table>
Table 4.7 shows the marketing and operation costs incurred by sunflower actors at market channel.

4.5 **Constraints affecting development of sunflower production as a reflection of farmer income**

The study revealed that most of sunflower farmers faced with two main problems: the problems related to production and problem related to the market.

4.5.1 **Problems related to the production**

The main production constraints facing sunflower farmer. The results indicate that the majority of sunflower farmers reported the most prominent challenges facing them included pests and diseases, lack of farming skills, drought and shortage of farm inputs.

4.5.1.1 **Pests and diseases**

The main production constraints facing sunflower farmer. It has revealed that pests and diseases. In table 4.8 about 70% of the respondents indicated an increase in incidences of crop pests. For instance, the most serious pests reported were birds (kweleakwele & elegant grasshoppers), diseases (fungal diseases [powdery mildew]) were very destructive and decrease the yield of the sunflower.

4.5.1.2 **Shortages of input and tools for production**

Existing of literature show that most of the small farmers do not use quality seeds, instead they use recycled seeds and traditional seeds from other farmers. The use of the wrong seeds is often a mixture of ignorance, lack of capital, and non-availability of quality seeds. Sometimes the farmers buy seeds that have not been certified for their area and they then face a low and disappointing germination rate, although the use of the same seed in the certified areas can produce a high germination rate (RLDC, 2008). Table 4.8 show that (75%) lack farm inputs, instead they use recycled seeds and traditional seeds from other farmers. And use local tools for cultivation which resulted to poor production. In addition, there is no company which gives subsidy for inputs like fertiliser and seeds. Moreover, it was observed
that many farmers are using organic fertilizer (Farm Yard Manure [FYM]), as most of them are doing both crop farming and animal husbandry hence the manure from their paddocks are used to fertilize the crops, although they have some challenges of insufficient amount of FYM to cover the whole planted area as well as the high cost of transporting the FYM to the farms, as many farms are located more than 5 km from their homesteads where cattle are kept.

4.2.5.1.3 Agronomic Practices

The availability of extension worker in the villages is not an issue but the main issue is that some extension workers are not attending the farmers due to inadequate motivation, transport and some of the villages have livestock extensions but not agriculture one. (Repoa 2011) Many small farmers do not apply proper agronomic practices in land preparation, planting, weeding and using of fertilizer. The result in table 4.8 show that (65%) where not follow agronomic practice Where land is not a limiting factor, crop rotation and intercropping is not properly practiced, although it would allow soil replenishment. The government extension service does not provide enough support in introducing better agronomic practices. The yield is therefore much lower than expected. With respect to support and services, the emerging agricultural sector cannot rely only on the government. Other institutions from both the private and public sectors should also be involved in programmes of promoting extension services as well as other activities.

4.2.5.1.4 Shortage of rainfall

However, issues of climate change which disturbed rainfall patterns in many areas causes’ shortage and unpredictable rains hence influences production. 65% of the farmers were the victims of such changes. The study showed that 65% in table 4.8 of respondents were claiming that the rain is insufficient to the extent that most time it affects much their volume of production. This also because most of farmers do not use the seeds which would persist the draught time hence the production of the crop goes down. Discussion with stakeholders at the village level in the study areas has shown that people understand climate as, among others, rainfall, drought, temperature, wind and floods. At levels of extension officers it is perceived as
dynamics in weather conditions that cause changes and/or variability in rainfall patterns, temperature patterns, wind velocity, surface and ground water regimes. Such changes are perceived to lead to years of prolonged drought or unpredictable excessive rainfall often associated with decreased agricultural productivity.

4.2.5.1.5 Lack of farming skill
In table 4.8 the study shows that 75% of respondent were not provided with extension services. This shows how government does not provide enough support in extension services on introducing better agronomic practices. The yield is therefore much lower than expected.

Table 4.8 Production related problems

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pests and diseases</td>
<td>56</td>
<td>70</td>
</tr>
<tr>
<td>Agronomic Practices</td>
<td>52</td>
<td>65</td>
</tr>
<tr>
<td>Lack of farming skills,</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>Drought</td>
<td>52</td>
<td>65</td>
</tr>
<tr>
<td>Shortage of farm inputs</td>
<td>60</td>
<td>75</td>
</tr>
</tbody>
</table>

Source: Field Data (2015)

4.5.2 Problems related to market
Despite the availability of markets, certain barriers with regards to market access were found to be a constraint among small-scale farmers. In this study the farmers were specifically asked to give the problems affecting marketing of sunflower products. The most critical problem according to majority of farmers was low market prices, unreliability of market, transport cost, competition from similar products, poor infrastructures and unaffordability of getting credit/loan.

4.5.2.1 Low market prices
The most critical problem according to majority of farmers was low market prices for their product which accounts for 85%. This implies that the sunflower marketing system was not efficient enough to provide price incentive for farmers in study area. Price of sunflower oil is a bit challenging across all studied areas, the findings shows
that, very few farmers have managed to sell at competitive price, as it is seen in table 4.8,

4.5.2.2 Unreliability of market
The government of Tanzania has been struggling much on promoting the agriculture sector market and especially sunflower subsector. Yet the study revealed that 75% of respondents are not satisfied by the reliable market for the sunflower as per table 4.8 shows. Unsure market for the farmers does not attract them to yield more to increase income.

4.5.2.3 Transport cost
The report showed that the cost of transport contribute much on decreasing the income of the farmers due to poor feeder roads. Poor feeder roads increase the cost of marketing which affect negatively the income of sunflower. In table 4.8 the study revealed that 72.5% of respondents are facing the challenge of higher transport cost during their marketing activities of the sunflower.

4.5.2.4. Competition from similar products
The study showed in table 4.8 40% of respondents claimed about the competition which is growing by importation of oil from outside the country is affecting the price of their local products and other substitute products like grand nuts. Although competitors have less impact to local sunflower business as the products are not directly related, they are consumed with special purposes and they are in most cases more expensive compared to sunflower business. But the is very important for the government to make purposive protection of local sunflower products to secure its existence.

4.5.2.5 Poor infrastructures
Kydd and Dorward (2004) elaborate by stating that the rural areas in developing countries, by virtue of their reality, often exhibit poor roads and telecommunications; lack of a well-developed and diversified monetary economy; thin markets for agricultural inputs, outputs, and finance; weak flows of market information, difficult and weak contract enforcement, and high risk of opportunistic behavior from
contractual partners of agricultural producers. The results in table 4.8 show that 78.75% of respondents are faced with poor infrastructures which involves poor feeder roads, poor communication and lack of storage facilities, this leads to increase the cost of transport to be higher and sometime take long time to reach the market. It affect much the income of the farmer to be low. The government should make sure the periodic maintenance of rural roads for easy transport of the agricultural products.

4.5.2.6 Unaffordability of getting credit / loan

The study revealed that (11.25. %) of sunflower farmers have been getting loans from SEDA and VICOBAs while (88%) have no idea about loans for farming as it shown in table 4.9 below. Since loans are very important in sunflower farmers have power on improve the farming, especially on improve the quality by buying the inputs and tools to make the farming to be easier and yield more product and hence increase the income.

Table 4.9 Market related Problems of sunflower farmers

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low market prices,</td>
<td>68</td>
<td>85</td>
</tr>
<tr>
<td>Unreliability of market</td>
<td>60</td>
<td>75</td>
</tr>
<tr>
<td>Transport cost,</td>
<td>58</td>
<td>72.5</td>
</tr>
<tr>
<td>Competition from similar products</td>
<td>32</td>
<td>40</td>
</tr>
<tr>
<td>Poor infrastructures</td>
<td>63</td>
<td>78.5</td>
</tr>
<tr>
<td>Unaffordability of getting credit / loan</td>
<td>71</td>
<td>88.75</td>
</tr>
</tbody>
</table>

Source Field Data (2015)

Table 4.6 Shows market related problems facing sunflower farmers at study area
CHAPTER FIVE

CONCLUSION AND POLICY RECOMMENDATIONS

5.0 Conclusion
Production of sunflower in the study area has been of greater important and increasing year after year. Households are now earning income that enables them to meet the basic needs. Despite this fact production of sunflower in the Singida rural district still faces a lot of challenges mainly associated with production, and marketing of the product. Among the factors affecting crop production are low prices, unreliable markets, poor extension services, lack of market information, lack of credits, poor infrastructures etc. This calls for deliberate efforts to improve the situation so as to increase productivity of the sunflower and hence increase income of farmers.

5.1 Policy Recommendations
Improvement of marketing for sunflower is unavoidable. Without an improved marketing system, farmers will continue to earn less and thus be difficult to improve their livelihood. There is greater need to make collective effort to alleviate the existing challenges by all stakeholders of this sector. In relation to the findings and conclusion the following were recommended so as to increase the production of sunflower in the study area

5.1.1 Government
Government should play its role in safeguarding the interests of the farmers by streaming the private sector. It should encourage the private sector to setup their purchase points and storage centers in the major sunflower producing areas. Setting up of expellers either in the private sector or public sector for the processing of sunflower in the production areas will not only contribute to enhanced oilseed production but also will greatly benefits the also should act as watchdog to monitor the price mechanism of the private sector in such a way that these private sectors do not exploit farmers’ effort, promote Contracting farming and encourage cooperative organization secure the farmers to be exploited by traders and processors
Government should make sure rural transportation and infrastructures are improved to make them passable in all seasons in order to make many producing areas accessible to input and output market and contribute to timely input delivery. Establishment of rural financial institutions to address farmers’ credit needs on loan terms with low interest rate. Government should make sure smallholder farmers get agricultural technologies such as tractors and irrigating machines at affordable prices as well as increasing agricultural subsidies such as fertilizers.

5.1.2 Agricultural Development Agencies
Development agencies like should prepare conducive environment to smallholder farmers so that they get agricultural inputs such as seeds and fertilizers and agricultural technology such as tractors and power tillers at affordable price but also by subsiding the agricultural inputs and machines to enable farmers to access both technology and agricultural inputs easily. Effective introduction of on-farm seed production should be enhanced so as to enable farmers to produce on farm-seeds within their community in order to alleviate the problem seed shortage and seed agents should ensure that the seed which are sold to farmers are of high quality and not the old ones which do not germinate.

5.1.3 Farmers
Farmers should think of Contracting farming and formulate cooperative organization to secure them from been exploited by traders and processors, also they should seek advice from Agriculture Concerned departments to get advice on how to alleviate problems and control of pests and birds to avoid the yield losses through proper methods and techniques. They should involve themselves in experimentation of innovations such as how to produce new variety seeds, application of pesticides, means of storing and processing sunflower and dissemination of those innovations to their fellow farmers which will motivate them to adopt these scientific achievements.

5.1.4 Processors
The processors are losing very much income by stopping production at all or by producing very small amount of oil and by products. The utilization of their
processing machines are also under capacity. Therefore the intervention should support processors and farmers to increase production. It is very important for them to use backward integration with farmers and use contract farming system to increase their production.

5.2 Areas for Further Studies

The study carried out in order to assessing factors affecting the small holder sunflower farmer’s income. Despite the fact that, the result indicate the inter relationship between those factors used in study and increase of the sunflower smallholder farmers, further study is required to;

i. Assessment of factors limits the small holder sunflower farmers’ contract farming in Tanzania.

ii. Analysis of factors affects effectiveness small holder farmers Market in Tanzania.
REFERENCES


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APPENDICES
SMALL SCALE SUNFLOWER FARMERS QUESTIONNAIRE

APPENDIX I

General information
Questionnaire no. ……………Date of interview……………………………………
Interviewer’s name……………Farmer’s name ………………………………………
Division…………………………….Ward …………………………………………
Village………………………………

SECTION 1: FARMER’S CHARACTERISTICS (Fill the gap or circle one)
1.1 Respondent’s name………………………………………………………………

1.2 Gender i) Male ii) Female

1.3 Age i) under 18 years ii) Between 18-25 years iii) Between 26-55 years
   iv) Above 56 years.

1.4 Marital status i) Single ii) Married iii) Widow(er) iv) Divorced/Separated

1.5 Education level i) No formal schooling ii) Adult literacy classes iii)
   Primary school
   iv) Secondary school v) Certificate vi) Diploma vii) Degree

1.6 Age of household head……………(years)

1.7 Gender of the household head i) Male ii) Female

1.8 What is your household size? i) Adults……………. ii) Children…………….
1.9 Type of shelter owned by respondent *(if more than one, please Characterize the main building)*
   i) Brick walls, tiled or iron sheet roofing
   ii) Consolidated mud walls, with iron-sheet roofing
   iii) Simple mud walls with thatched roofing
   iv) Others

1.10 List your main sources of income
   i) ........................................ii) ........................................iii) ...........
   ...........iv) ........................................v) .................................
   vi) ........................................

1.11 List your most important/main occupation?
   i) ........................................ii) ........................................iii) .............

1.12 Why do you cultivate sunflower?
   i) Hedge/Fence
   ii) Own energy supply
   iii) Rehabilitating degraded land
   iv) Commercialization so as to diversify income sources

1.13 Do you grow other crops apart from sunflower? i) Yes ii) No
   If yes list the crops
   i) ........................................ii) ........................................iii) .............
   ........

1.14 How much land do you own and/or rent?

1.15 What is the total size of your farmland under agriculture (size in acres)?
   ............

1.16 How much income did you get from selling livestock products this season? ..........(Tshs)
   Description Size(area) Value (Tshs/area)
   Owned land ......................
   Rented land ......................
Objective 2.
Production and Marketing arrangement

2.1 Who are the major buyers of your seeds?
i) ................................ ii) ...................... iii) ......................

2.2 Where do you normally meet your buyers?
i) At home ii) At the field/farm iii) At the market iv) Others
(specify) ......................

2.3 Are they the only buyers of your seeds? i) Yes ii) No

2.4 List the reasons for selling to them most of your seeds relative to others?
i) Better price ii) Only buyer available iii) Market convenient iv) Others
(specify) ......................

2.5 Do you supply sunflower seeds throughout the year? i) Yes ii) No

2.6 If yes to qn. 2.4, which months in a year there is a high demand of seeds?

2.7 What is the peak month(s) of sunflower seeds production?
..........................................

2.8 Do you normally have enough seeds to meet demand? i) Yes ii) No

2.9 If no to qn. 2.7, how do you ensure constant supply of sunflower seeds?...........

Challenges hampering the facilitation of flow
2.9 What are the major challenges facing sunflower seeds production?
i ............

ii ........

iii ........

iv ........
2.10 What should be done to improve sunflower seeds production?
   i  ..................
   ii  ............... 

2.11 What are the major challenges facing sunflower seeds marketing?
   i  .................
   ii  ............... 

2.12 What should be done to improve sunflower seeds marketing?
   i  ............... 
   ii  ............... 
   iii ............... 

   **Concentration ratio to assess the market power of the farmers** 

2.13 What is the total quantity (kg/bags) of sunflower seed is purchased by big buyers along the chain? .............

2.14 What is the total quantity (kg/bags) of sunflower seeds did you produce in this production season? ............

2.15 What is the total quantity (kg/bags) of seeds did you sell in this marketing season? ................

**Objective 3**

**Marketing and Gross margins of sunflower seeds farmers**

3.1 Revenue and operational cost of sunflower seeds production

<table>
<thead>
<tr>
<th>Particulars (Tshs)</th>
<th>Units Price/unit</th>
<th>Average price/kgs</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buying price (Bp)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selling price (Sp)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Marketing margin (MM)
Operational Cost
Production costs
Land preparation
Seedlings
Planting
Harvesting
Winnowing
Storage infrastructure cost (if hired)
Loss due damage
Cost of bags, string any protective materials (if any)
Transport cost
Taxes
Insurance cost (if incurred)
Other operational cost (specify)
Total operational costs

Gross Margin (GM)
3.2 Do you have access to any market information? i) Yes ii) No

3.3 if yes to qn. 3.2 list the type of information to you access/get?
i) ........................................ ii) .................................
iii) ........................................ iv) .................................

3.4 Where do you get market information? i) From traders ii) From neighbors iii)
From friends and relatives iv) Radio broadcasting v) Magazines vi) Others
(Specify)

65
3.5 How do you access this information? i) By physical visit ii) By using telephone iii) By asking traders who come to buy iv) By listening to radios and watching televisions v) Others (specify)…………………..

3.6 Do you incur any cost to acquire that information? i) Yes ii) No

3.7 If yes to qn 3.6, how much (Tshs)? ....................
3.8 What strategies do you set to have always this information on time? 
  i)………………………. ii)……………..
  iii)………………………… iv)…………..  

3.9 What kind of marketing costs do you incur on marketing your sunflower seeds?........................................................

3.10 Do you face any market competition from other farmers in doing your marketing activities? 
  i) Yes ii) No

3.11 If yes, how strong is the degree of competition? i) Very strong ii) Strong iii) Moderate/Normal

3.12 How many farmers (roughly) are doing the same activities as the one you are doing? 
  i) Less than 50 farmers ii) 50-100 farmers iii) More than 100 farmers

3.13 Did you face any problem/barriers before you entered/doing this kind of business/marketing of sunflower seeds? i) Yes ii) No

3.14 If yes to qn 3.12, what where the main barriers to entry?
  i)…….. ….. iii)……………..

3.15 Do you differentiate your product? i) Yes ii) No
3.16 If **yes** to qn. 3.14, what criteria do you use to differentiate your products?
   i) ……… ii) ………… iii) …………

3.17 Are you able to respond to any market opportunities? i) Yes ii) No

3.18 If **yes** to qn 3.17; what kind of the market opportunities are you able to acquire?
   i) The use of technology on production and marketing
   ii) Others (specify) …………………

**ASSETS, OFF FARM ACTIVITIES**

<table>
<thead>
<tr>
<th>Type of cost</th>
<th>Unit Tshs/unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation</td>
<td></td>
</tr>
<tr>
<td>Taxes</td>
<td></td>
</tr>
<tr>
<td>Processing</td>
<td></td>
</tr>
<tr>
<td>Labor charges</td>
<td></td>
</tr>
<tr>
<td>Market fee</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
<tr>
<td><strong>Total costs</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Assets**

5.1 Which of the following items does your household own? *(Multiple answers possible)*
   i) Car □ Plough □ Mobile phone
   ii) Tractor □ Television □ Water tank
   iii) Motor cycle □ Satellite dish □ Bicycle
   iv) Radio □ Solar panel/dish

*Please specify others: ______________________________
5.2 Do you have the following financial assets?  
   i) Support from children (e.g. in town or abroad)  
      ii) Savings  
      iii) Money from credits

**Off-farm activities**

5.3 Do you have any of the following sources of off-farm income?

<table>
<thead>
<tr>
<th>Source of income</th>
<th>Frequency/Yr</th>
<th>Income (Tsh)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary from employment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salary from business</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salary as agricultural worker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salary from public work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remittances from family/friends</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income from sale of charcoal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income from renting land</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Specify):</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX II

General information

Questionnaire no. …………Date of interview……………………………………
Interviewer’s name……………Trader’s name …………………………………
Division…………………………Ward name……………………………………
Village/town…………………………

SECTION 1: TRADER’S CHARACTERISTICS (fill the gap or circle one)

1.1 Respondent’s name…………………………………………………………

1.2 Gender of the respondent i) Male ii) Female

1.3 Age of the respondent i) under 18 years ii) Between 18-25 years old iii) Between 26-55 years old iv) Above 55 years old.

1.4 Marital status of the respondent i) Single ii) Married iii) Widow(er) iv) Divorced/Separated

1.5 Education level of the respondents i) No formal schooling ii) Adult literacy classes iii) Primary school iv) Secondary school v) Certificate vi) Diploma vii) Degree

1.6 Age of household head……………(years)

1.7 Gender of the household head i) Male ii) Female

1.8 What is your household size? i) Adults………………
ii) Children………………

1.9 List your main sources of income
i)………………………………ii)………………………………iii)………………
1.10 List your most important/main occupation?

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i) ........................................ii) ..............................................iii) ........................................

1.11 How much income did you get from doing sunflower seed marketing this season? (Tshs).................................

Marketing Performance

2.1 Type of trader i) Wholesaler ii) Retailer iii) Other (specify).............

2.2 Years in business i) Below one year ii) One year iii) Two years iv) Three years v) Above three years

2.3 Who are your major customers/buyers?

i) ..............................

ii) ..............................

2.4 Which months the sunflower seeds are sold mostly? .........................

2.5 Why the seeds are sold mostly in such months? i) Cash demand increases ii) Accessibility of transport to the market iii) Customers demand increase iv) Other (specify)

2.6 Do you sell other crops/seeds apart from sunflower i) Yes ii) No

If yes list the crops

i) ........................................ii) ..............................................iii) ........................................

2.7 What are the major marketing constraints facing you?

i) ..................................................

ii) ..................................................

iii) ..................................................
2.8 What should be done to improve sunflower seeds marketing?
   i) ......................................................
   ii) ......................................................
   iii) ......................................................

**Concentration ratio to assess the market power of the trader**

2.9 What is the total quantity (kg/bags) sunflower seed purchased by big buyers along the chain? ...........

2.10 What is the total quantity (kg/bags) of sunflower seeds did you produce in this production season? ............

2.11 What is the total quantity (kg/bags) of sunflower seeds did you sell in this marketing season? ............

**Marketing and Gross margins of sunflower seed traders**

3.1 Revenue and operational cost of sunflower seeds production

<table>
<thead>
<tr>
<th>Particulars</th>
<th>(Tshs Units Price/unit Average price/kg Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buying price (Bp)</td>
<td></td>
</tr>
<tr>
<td>Selling price (Sp)</td>
<td></td>
</tr>
</tbody>
</table>

**Marketing margin (MM)**

**Operational Cost**

- Storage infrastructure cost (if hired)
- Loading and unloading
- Cost of bags, string any protective materials (if any)
- Transport cost
- Premises charges (if any)
- Labor/wage cost (if any)
- Taxes
Other operational cost
(specify)

Total operational costs

Gross Margin (GM)

3.2 Do you have access to any market information? i) Yes ii) No

3.3 If yes to qn. 3.2 what type of information to you access/get? i) Price of inputs
   Others (specify) i)……………………………….. ii)………………………………
   iii)……………………………….. iv)………………………………

3.4 Where do you get market information? i) From farmers ii) From neighbors iii)
   From friends and relatives iv) Radio broadcasting v) Magazines vi) Others (specify)

3.5 How do you access this information? i) By physical visit ii) By using telephone
   iii) By asking traders who come to buy iv) By listening to radios and watching
   televisions v) Others (specify)……………….

3.6 Do you incur any cost to acquire that information? i) Yes ii) No

3.7 If yes, how much (Tshs)? .................

3.8 What strategies do you set to have always this information on time?
   i)……………………………… ii)………………
   iii)………………………………

3.9 Do you normally know the price in advance before taking your produce to the
   market? i) Yes ii) No. If yes how do you get price information? i) Visit to the farm
   place/market ii) From other traders iii) (Specify)………………

3.10 What is the normal paying condition in Jatropha marketing?
   i) In advance ii) In cash iii) Exchange trade iv) Others (specify)………. 

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3.11 What kind of marketing costs do you incur on marketing your sunflower seeds?
Type of cost Unit Tshs/unit

3.12 Do you face any market competition from other traders in doing your marketing activities?
   i) Yes ii) No

3.12 If yes, how strong is the degree of competition? i) Very strong ii) Strong iii) Moderate/Normal

3.13 How many traders (roughly) are doing the same activities as the one you are doing?
   i) Less than 50 traders ii) 50-100 traders iii) More than 100 traders

3.14 Did you face any problem/barriers before you entered/doing this kind of business/marketing of sunflower seeds? i) Yes ii) No

3.15 If yes to qn 3.14, what where the main barriers to entry?
   i) ........ ii) ..... iii) .................

3.16 Do you differentiate your product? i) Yes ii) No

3.17 If yes to qn.3.16, what criteria do you use to differentiate your products?
   i)... ii) ................. iii) ..............

3.18 Are you able to respond to any market opportunities? i) Yes ii) No

3.19 If yes to qn 3.18; what kind of the market opportunities are you able to acquire?
   i) The use of technology marketing
   ii) Others (specify) .................

Thank you for your cooperation
Sunflower seed processors questionnaire

APPENDIX III

**General information**
Questionnaire no. ……………….Date of interview………………………………
Interviewer’s name…………….Processor /Company name ………………………
Division…………………………Ward name…………………………………………
Village/town…………………………

**SECTION 1: RESPONDENT CHARACTERISTICS (Fill the gap or circle one)**
1.1 Respondent’s name………………………………………………………

1.2 Gender of the respondent i) Male ii) Female

1.3 Age of the respondent i) under 18 years ii) Between 18-25 years old iii)
Between 26-55 years old iv) Above 55 years old.

1.4 Marital status of the respondent i) Single ii) Married iii) Widow(er)
iv) Divorced/Separated

1.5 Education level of the respondents i) No formal schooling ii) Adult
literacy classes iii) Primary school iv) Secondary school v) Certificate
vi) Diploma viii) Degree

1.6 What is your household size? i) Adults…………… ii)
Children………………

**SECTION 2: TRADING INFORMATION**
2.1 Business head i) Male ii) Female

2.2 Experience in business i) Below one year ii) One year iii) Two years iv) Three
years v) Above three years
2.3 What is a form of ownership of your processing company? i) Individual ii) Partnership iii) State/cooperative iv) Others (specify)………..

2.4 How did you obtain the start-up capital? i) Own saving from other activities ii) Informal money lenders iii) Bank loan/SACCOS iv) Others (specify)………..

2.5 How much capital did you use to start this processing enterprise (in Tshs)? i) Below 100,000 ii) Between 100,000-500,000 iii) Between 500,000-1,000,000 iv) above 1,000,000

2.6 How frequently, do you operate the sunflower seed processing? i) Full time ii) Part-time

2.7 a) Do you have any technical knowledge on sunflower seed processing? i) Yes ii) No
b) If yes, how did you obtain the processing knowledge? i) Formal training ii) Informal training.

2.8 Have you registered your processing machine enterprise? i) Yes ii) No
If yes, when………………….. (year)

2.9 Why is it important to register the company?
............................................................

2.10 Did you obtain the license easily? i) Yes ii) No
If no, give reasons……………………………………………………………………

2.11 How did the premises of your processing machine obtained? i) Rented ii) Bought iii) Inherited. If hired, at what rent do you pay per month? ……………….. (Tshs)
Marketing and production of products

2.12 What form of products do you produce from the sunflower seeds?
   i) Oil/fuel ii) Fertilizers iii) Soaps iv) Others (specify)……………..

2.13 who are your major customers/buyers?
   i) Local consumers ii) Local traders iii) Interregional traders iv) Others
   (list)…….. 

2.14 What kind of effort have you made to ensure the customers know your
   processing
   machine? i) Advertisement posters ii)Location of machine is near high population
   area
   iii)Informing friends/relatives iv)Others (list)……..

2.15 Which months do processing mostly done? (Number the months in order of
   highest
   operation).

2.16 Why processing is mostly operated in those months?
   i) Availability of sunflower seeds ii) Market convenient iii) Availability of many
   traders/Middlemen iv) Others (specify)…….

2.17 Do you process other crops/seeds apart from sunflower seed? i) Yes ii)No
   If yes list the crops
   i)……………………………ii)……………………………….iii)………………………….

2.18 What are the major marketing constraints facing you?
   i).………
   ii).………
   iii).………. 
2.19 What should be done to improve sunflower seeds marketing?
   i) ........
   ii) ....
   iii) ....

**Concentration ratio to assess the market power of the processors**

2.20 What is the total quantity (kg/bags) sunflower seed purchased by big buyers along the chain? ............

2.21 What is the total quantity (kg/bags) of sunflower seeds did you process in this season? ............

2.22 What is the total quantity of the processed products did you sell in this marketing season? ............

**Marketing and Gross margins of sunflower seed processors**

4.1 Revenue and operational cost of sunflower seeds

<table>
<thead>
<tr>
<th>Particulars (Tshs)</th>
<th>Units</th>
<th>Price/unit</th>
<th>Average price/kgs</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buying price (Bp)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selling price (Sp)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Marketing margin (MM)**

**Operational Cost**

- Storage infrastructure cost (if hired)
- Loading and unloading
- Electricity bills
- Water bills
- Processing fees
- Labor/wage cost (if any)
- Taxes
Other operational cost
(specify)

Total operational costs
Income from by-products

Gross Margin (GM)

4.2 Do you have access to any market information? i)Yes ii)No

4.3 If yes to qn. 3.2 what type of information to you access/get? i) Price of inputs
ii) Others (specify) i)…………………………………….. ii)…………………………………….. iii)…………………………………….. iv)……………………………………..

4.4 Where do you get market information? i)From farmers ii)From neighbors iii)From friends and relatives iv)Radio broadcasting v)Magazines vi) Others (specify)………..

4.5 How do you access this information? i)By physical visit ii)By using telephone iii)By asking traders who come to buy iv)By listening to radios and watching televisions v) Others (specify)…………………..

4.6 Do you incur any cost to acquire that information? i)Yes ii)No

4.7 If yes, how much (Tshs)? .................

4.8 What strategies do you set to have always this information on time?
i)…………………………………….. ii)…………………………………….. iii)……………………………………..

4.9 Do you normally know the price in advance before selling your produce to the market? i) Yes ii) No. If yes how do you get price information? i) Visit to the farm place/market ii) From other traders iii) (Specify)…………………..
4.10 What is the normal paying condition in sunflower marketing?  
i) In advance ii) In cash iii) Exchange trade iv) Others (specify) ……..

4.11 What kind of marketing costs do you incur on marketing your sunflower seeds?

4.12 Do you face any market competition from other companies/traders in doing Your marketing? i) Yes ii) No

4.12 If yes, how strong is the degree of competition? i) Very strong ii) Strong iii) Moderate/Normal

4.13 How many companies/traders (roughly) are doing the same activities as the one you are doing? i) Less than 5 companies /traders ii) 6-10 companies / traders iii) More than 10 companies /traders

4.14 Did you face any problem/barriers before you entered/doing this kind of business? i) Yes ii) No

<table>
<thead>
<tr>
<th>Type of cost</th>
<th>Unit</th>
<th>Tshs/unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading and unloading</td>
<td></td>
<td></td>
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<tr>
<td>Taxes</td>
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<tr>
<td>Processing</td>
<td></td>
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<tr>
<td>Labor charges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total costs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.15 If yes to qn 3.12, what where the main barriers to entry?  
i) ……. ii) ..... iii) ……………

4.16 Do you differentiate your product? i) Yes ii) No
4.17 If yes to qn. 3.14, what criteria do you use to differentiate your products?
i) ........ ii) iii) ........

4.18 Are you able to respond to any market opportunities? i) Yes ii) No

4.19 If yes to qn 3.17; what kind of the market opportunities are you able to acquire?
APPENDIX IV

General information

Questionnaire no. ……………..Date of interview…………………………
Interviewer’s name……………Processor /Company name ……………………
Division………………………Ward name……………………………………
Village/town……………………

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1.5 Education level of the respondents i) No formal schooling ii) Adult
literacy classes iii) Primary school iv) Secondary school v) Certificate
vi) Diploma viii) Degree

1.6 How many farmers in the village/ ward/ district…………………………

1.7 How many in the percent grow sunflower………………………………

1.8 How is it fertilizer is used in this area…………………………………

1.9 What type of the seed used in this area……………………………...
1.10 What are the challenges faced by small scale sunflower farmers

  i. ..................................................
  ii. ................................................
  iii. .............................................
  iv. .............................................

1.11 What are your views on improvement of sunflower production to the challenges facing small scale farmers

  i. .................................
  ii. .................................
  iii. .................................