The sunflower value chain: a case study in Babati, Tanzania

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Abstract

The aim of this bachelor thesis was to investigate how local farmers of sunflower and local processors of sunflower oil in Babati, Tanzania perceive constraints and possibilities to value chain upgrading by conducting a case study. Open-ended interviews were conducted during a period of eight weeks with local sunflower farmers, local sunflower processors and other actors with knowledge of the sunflower value chain. The results from the study show that the main constraints perceived by farmers were lack of capital and incentive to buy new seeds, lack of knowledge of how to re-plant old seeds, their lack of bargaining position and market knowledge which together put restrains on their market access. The main constraints, perceived by local processors, were lack of access to credit, lack of market access with regard to sunflower cakes, a bi-product of sunflower oil production, and a shortage of sunflower seeds on the local market. With regard to the shortage of seeds produced in the area this was discussed further with the respondents as it seems to be connected with actors need for diversification as a form of risk aversion. The main upgrading options as perceived by farmers were value addition by also processing and selling the sunflower oil and different forms of horizontal integration. The main upgrading option perceived by local processors of sunflower oil was an insourcing of the labelling and packaging of sunflower oil which would create access to higher value markets.

Key words: Upgrading, diversification, value chain analysis, risk aversion

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1. Introduction

Today, eighty percent of the agricultural land in sub-Saharan Africa is managed by smallholders that work up to ten hectares of land (OECD/FAO 2016). Organisations such as FAO and the World Bank are increasingly recognizing the importance of agriculture in poverty reduction. The development of the contemporary global food system has led to changes affecting consumption, marketing, production and trade, changes that have come to affect not only food systems in high income countries but also the characteristics of food-systems in low and middle-income countries[1] (McCullough, Pingali, Stamoulis 2008). These changes, in many cases driven by globalization, have both positive and negative effects for low and middle-income countries and the need for further research within the subject has resulted in a growing amount of literature concerning the constraints, possibilities and analysis of value chains (Kaplinsky, Morris 2001).

This study positions itself in a political and scholarly debate on how small-scale framers and producers in low and middle income countries can improve their income by value chain upgrading. It does so by an empirical case study of small scale farmers in Tanzania with a focus on the production of sunflower. Tanzania is a low-income country where agriculture engages roughly 67% of the active population (FAO 2016). Sunflowers are one of many crops that are grown in Tanzania and the sunflower oil produced by local processors meet 40% of the national cooking oil requirements (Zhihua Zeng 2017). This study will discuss possibilities and constraints for value adding activities within the sunflower value chain in Babati, Tanzania by conducting open-ended interviews with mainly local producers of sunflowers and processors of sunflower oil. The theoretical framework will build mainly on Trieneken's (2011) framework for value chain analysis in low and middle-income countries but also parts of the global value chain (GVC) literature (i.e. Mesquita and Lazzarini 2008; Bamber and Fernandez-Stark 2013; Lee, Gereffi and Beauvais 2012).

1.1 Definitions

A value chain describes all the activities which are included from the production to the consumption, use or disposal of a product. A simple value chain could include the primary producer, a processer (packaging, transforming of product etc.) and a retailer (Kaplinsky,

[1] The term "developing countries" is frequently used in earlier literature however the term has in this paper been replaced with "low and middle-income countries" in accordance with how the World Bank translates between the terms (OECD n.d.).

Morris 2001). In each of these links there is a process of value adding and these can be called value added links. In real-life however, a value chain tends to be much more complex than the linear example given above. If one considers the production of timber, this production will lead to a number of different end-products such as charcoal or furniture. Each of these end-products will thus have gone through their own separate value adding links making the value chains increasingly complex (Kaplinsky, Morris 2001).

With regard to this it is also of importance to bring up what may be referred to as upgrading. Upgrading has been defined slightly differently by different scholars where for example scholars looking at global value chains focus on how firms, regions or countries can increase benefits from participating in global production (Gereffi, Fernandez-Stark 2016). The different definitions of upgrading may differ slightly in wording and geographic scope but tend to encompass a similar meaning. In short, upgrading can be defined as different value adding activities, that is: "to make products more efficiently, and to increase value adding activities by making more sophisticated products and taking on more sophisticated processes" (Humphrey, Schmitz 2000, 3).

So as to clarify the use of different terms in this thesis the term "processor" is used throughout the paper and refers to processors of sunflower oil and can encompass workers in processing factories, owners of processing factories and people who rent processing factories. If the distinction between these categories of processors becomes relevant this information will be presented. Secondly, the term "constraint" when referring to "constraints to upgrading" may be interchanged with either the term "hinder" or "obstacle" and in this paper the terms have the same meaning.

2. Background

2.1 Tanzanian agriculture

Agricultural production in Tanzania is one of the main driving forces of the country's economy. In 2014 the agricultural sector contributed 31% to the gross domestic product (GDP) of the country. Even if this is a decrease by 14 percentage points compared to 20 years earlier agriculture still employs 67% of the active population making it an important factor for both the country's economy and peoples sustenance. 14 million hectares of land is used by smallholders cultivating 0.5-2 hectares of land while commercial farming covers only 1.5 million hectares (FAO 2016). It is also noteworthy that a large part of the agriculture in the

country consists of sustenance farming and is therefore not a part of the formal economy (Ackson, Masabo 2013). FAO in collaboration with the Tanzanian government has set out a number of goals for improving agriculture in the country. One of these is to increase the profitability of agriculture within the country by improving market access for smallholders and traders by, for example, strengthening value addition (FAO 2017).

Babati district is a district of Manyara Region in northern Tanzania and consists of five agro-ecological zones. Babati town is also the capital of the Manyara Region. It is a district characterised by many different forms of agriculture (The United Republic of Tanzania Ministry of Agriculture. n.d.), making it an interesting region for value chain research. One important actor in the district is the Tanzania Chamber of Commerce Industry and Agriculture Manyara Region, known as TCCIA Manyara. TCCIA operates in all 26 regions of mainland Tanzania and links the private sector to the government by providing a platform for dialogue. TCCIA Manyara is a semi-autonomous organization which represents the private sectors interest within industry, commerce, agriculture and other crosscutting sectors of the economy. With 900 members within Manyara region they have a broad overview of the agricultural sector in the region (TCCIA n.d.; TCCIA Manyara 2016).

2.2 Production of sunflower oil in Tanzania

The sunflower (Helianthus annuus) is a flower grown as a crop mainly for its edible seeds and the oil produced from the seeds. Sunflowers were introduced in Tanzania during the epoch of European colonialism and in 2012 fifteen out of twenty-one regions in the mainland produced sunflowers (TEOSA 2012). The widespread production of sunflowers in Tanzania is partly due to that sunflowers cope well in dry regions compared to for example wheat or maize. In addition, there is generally little need for costly inputs which is beneficial, especially in relations to the fact that a lot of sunflowers are grown by small farmers. There is a large demand in the local market for oil, increasing with a growing population. Sunflower oil is the most important vegetable oil for cooking in Tanzania (Zhihua Zeng 2017).

In 2008 29´244 metric tons of sunflower seeds were produced in Manyara region, a sharp increase from previously measured years (Ugulumua, Inanga 2013). Sunflower production is, for farmers in the region, mainly a cash crop. The biggest cash crop of the region is however pigeon peas, sunflowers making up 5-10% of the cash income for local households (The United Republic of Tanzania Ministry of Agriculture 2016).

3. Problem-statement, aim and research questions

As mentioned in the introduction changes in agriculture is increasingly being recognised as an important part of poverty reduction strategies (McCullough, Pingali, Stamoulis 2008). The growing integration of the global economy has potential to provide low and middle-income countries opportunities for increased industrial growth and the upgrading of manufacturing and service activities. However, there has also been an increasing tendency towards growing economical gaps between and within countries (Kaplinsky, Morris 2001).

Sunflower oil is an important part of Tanzania's economy and one of the most valuable vegetable oils on the international market. There has however been an erratic trend in the production of sunflower oil over the last few years in Tanzania contributed to factors such as poor producer prices, weak research services, weak extension services and so on (Ugulumua, Inanga 2013). The importance of research on how low and middle-income countries can increase the value of their production and participate on a global market is therefore difficult to refute. Especially in relation to that a growing number of households in Sub-Saharan Africa are becoming more reliant on markets for their food supply, both within urban and rural areas (OECD/FAO 2016). Research within the area will therefore be an important contribution to strategies aiming at value chain upgrading in low and middle-income countries.

The aim of this specific study is to investigate how local farmers and processors within the sunflower oil value chain perceive different constraints and possibilities of value chain upgrading in Babati, Tanzania. To do this the sunflower oil value chain in Babati, Tanzania will be mapped out and the main hinders and possibilities of value chain upgrading as perceived by local farmers and processors will be identified. Most value chain research has a rather slim focus on only the product which is being researched. To gain a better understanding of the context of the sunflower production in Babati, Tanzania, farmers and processors will also be asked questions about their other value adding activities as this will hopefully give a better picture of what role sunflower farming or processing has in the different actor's lives. The main research question is:

How do local farmers and processors in Babati, Tanzania perceive constraints and possibilities of value chain upgrading within the sunflower value chain?

To answer this question two sub-questions have been developed, these are:

How is the sunflower value chain composed and what other value adding activities do the respondents engage in?

What are the main constraints and possibilities to value chain upgrading within the sunflower oil value chain perceived by local farmers of sunflowers, processors of sunflower oil, and other actors in the sunflower value chain?

4. Previous research and theory

4.1 The development of value chain research

With regard to the fact that production and trade has existed for a long time, research done within value chains comes from a large variation of disciplines, ranging from sociology to history to economics to management studies and more. This has also resulted in a number of different terms describing similar phenomena. The term value chain, can be compared to terms such as supply chain, commodity chain or production network, however it is important to bear in mind that the different terms may have slightly different emphasis and may be used within different disciplines (Bair 2008; Gereffi et al. 2001). It is also important to clarify that value chain analysis consist of different levels of analytical prowess. At the simplest level, value chain analysis consists of plotting out the flow of products and services up and down the chain and between different chains. Here the value chain is a descriptive construct enabling the generation of data. However, value chain analysis may also be used in a more theoretical way, providing insight into determinants of global income distribution and identification of effective policy strategies to decrease trends towards an unequal income distribution (Kaplinsky, Morris 2001).

Within management studies, or management philosophy there is a theoretical stream called supply chain management which like value chain analysis looks at product flows within value chains. The approach focuses on the management of product flows between different companies, and information and communication systems are from this perspective seen as vital for a well-functioning value chain (Trienekens 2011). One reason for the large interest in supply chain management is that the practical adoption of supply chain management in companies has resulted in many different gains, such as being able to cut supply costs or streamlining information flows resulting in lower costs for the companies involved (Stadtler, Kilger 2005).

With regard to the global economy and international trade there is a stream of literature and theory focusing on global value chains as a way to conceptualize and analyse globalization. A large part of this literature has its roots in world system theory which introduced concepts and ideas that lead up to the more contemporary ideas of global value chains. One feature of world system theory is the focus on how the global division and integration of labour into the world economy has evolved over time. World system theory also investigates the unequal distribution of gains throughout the value chain, something that has become a prominent aspect of research within global value chains today (Bair 2008).

With foundations in world system perspectives, the dependency tradition and radical development theory the global commodity chain (GCC) approach developed. The book *Commodity Chains and Global Capitalism*, edited by Gereffi and Korzeniewicz (1994), was seen as the start of a relatively coherent paradigm of global commodity chain analysis (Bair, 2008). However, this concept has developed over time and in 2000 a group of researchers, all working on value chains, came together to try and develop a common framework for value chain research, especially in regard to creating a standard set of terms and key theoretical variables for value chain analysis. Here, the global value chain (GVC) concept was chosen over other terms such as commodity chains or supply chains as it was seen as the most inclusive out of the terms (Gereffi et al. 2001). The GCC concept was thus replaced with the GVC approach and has today developed even further and the main dimensions of GVC analysis are today: input-output structure, geographic scope, governance, upgrading, local institutional context and stakeholder analysis. The former three dimensions have a top-down (global) perspective and are related to the dynamics of the industry at a global level while the later dimensions have a bottom-up (local) perspective and explain how individual countries participate in global value chains (Gereffi, Fernandez-Stark 2016).

GVC analysis includes an analysis of governance. The term governance, within GVC analysis, requires some further explanation. In the same book that was mentioned above Gereffi defined governance as “authority and power relationships that determine how financial, material and human resources are allocated and flow within a chain” (Gereffi, Korzeniewicz 1994, 97). This can be seen as a non-market coordination of economic activity where firms who create governance structures make decisions that has consequences for actors access to international markets and what activities firms in low and middle-income

countries can undertake (Gereffi et al. 2001). It is however important to clarify that governance is rarely executed by a single firm and a certain value chain may be characterised by many different actors and firms influencing the governance and coordination functions (Kaplinsky, Morris 2001). According to Gereffi and Fernandez-Stark (2016) the analysis of governance in practice requires identification of lead firms, how they are dispersed globally, how they interact with their suppliers and how they can influence and execute power over them.

4.2 Value chain research in low and middle-income countries

With regard to the local level within low and middle-income countries the GVC approach can be especially useful in its focus on upgrading options, the local institutional context and how lead firms use their position of power to set the conditions for entry into value chains (Gereffi, Fernandez-Stark 2016; Lee, Gereffi, Beauvais 2012). Trienekens (2011) uses the GVC approach together with supply chain management studies, new institutional economics studies and social network theory to develop his own framework for value chain analysis in low and middle-income countries.

Taking these different approaches as a starting point Trienekens (2011) builds his own framework for value chain analysis in low and middle-income countries. His framework characterises value chains by the way they are structured (network structure), the different ways value is added (value added) and how they constitute different forms of governance (governance form). Trienekens (2011) understanding of network structure builds on Lazzarini, Chaddad and Cooks (2001) work on netchain analysis where supply chain management and network theory are combined to provide a holistic picture of both horizontal and vertical relationships within the value chain (Lazzarini, Chaddad, Cook 2001).

Value added looks at where and how value is added through the value chain and divide value adding options into five categories. However, all value adding options may be limited by certain conditions such as availability of resources or infrastructure. The governance form entails the governance and bargaining positions of value chain actors and how this affects value adding. In low and middle-income countries governance form focuses on how transactions are organized vertically between different actors, power relationship, position of the lead firm and consequences of how value is distributed throughout the value chain (Trienekens 2011).

Trienkens identifies three types of market systems in the developing world. The first system, an A-system, mainly consists of traditional producers who sell their products to low-end markets locally but also further away. In general, this system is characterised by a large number of intermediary parties making the value chain relatively long. These systems deliver a big share of the agricultural production but generate relatively low value. The second system, or a B-system, consists mainly of small to medium sized producers who sell to the emerging supermarket sector in the developing world. These producers tend to be grouped into cooperatives or work through sub-contractors. Value chains within the B-system hold a smaller share of the agricultural production compared to the A-system but tend to generate a higher value. The third system, the C-system, is export oriented and consist of an even smaller share of the agricultural production while generating a relatively high value. These export-chains have become more integrated with direct foreign investments and fewer actors (Trienekens 2011).

4.3 Constraints and upgrading

Constraints to upgrading are highly dependent on the institutional context of the country and Trienekens (2011) groups constraints in low and middle-income countries into three categories. The first is market access which is related to, for example, technological capabilities of the producer, market knowledge, market orientation and bargaining position.

The second is resources and available infrastructure which could include both physical resources like roads, electricity, credit and water or resources related to specialised skills or information. An example which is related to both of these categories is private labels, for example fair trade and public standards, such as health standards. Related to market access producers or processors need to have the proper market knowledge to be able to participate in private or public labelling. However, according to Lee, Gereffi and Beauvais (2012) knowledge about the myriad of different labels is not enough as participation here tends to require considerable financial, informational, and network resources. Bamber and Fernandez-Stark (2013) exemplifies this by a study of the horticulture industry in Honduras where it is shown that the capacity to comply with more stringent public-standards (such as health standards) can be a hinder for producers to take a bigger part of a global value chain.

The third constraint category is institutional voids where institutions are grouped into; regulative institutions, which encompass government regulation; normative institutions, which are embedded in business practices such as ethical standards; and cognitive institutions, which frame the way people interpret the world such as cultural values and belief systems (Trienekens 2011).

All in all, there is a large range of upgrading options however they differ both by the structure of the value chain and the local institutional context of the country in which the upgrading takes place (Gereffi, Fernandez-Stark 2016). Trienekens group upgrading options into three categories: upgrading of value added production, value chain-network upgrading and upgrading of governance form.

Most approaches looking at upgrading of value chains focus on upgrading of value added production (Trienekens 2011). One form of this is upgrading of the production or product itself. This could include process upgrading where the production becomes more efficient by restructuring the production system or introducing new technology whereas product upgrading could include innovative products or packaging, product differentiation and marketing activities (Gereffi, Fernandez-Stark 2016; Trienekens 2011). Another way to upgrade the value added production would be adding more activities to the already existing one, for example if someone works with solely production they could also start packaging the products as a way to receive more value (Bamber, Fernandez-Stark 2013), something commonly referred to as functional upgrading. Finally upgrading of value added production could also include inter-sectoral upgrading where actors introduce new products or activities to their already existing one, for example, if a farmer also introduces tourism activities (Trienekens 2011).

Value chain-network structure upgrading concerns being a part of the right market channel. For example, one could be producing a product for a local value chain and then switch to, for example, a global value chain where the producer may receive more value for his or her product (Trienekens 2011). However, value chain-network structure upgrading also relates to vertical and horizontal upgrading. One study which investigated horizontal and vertical relationships of Argentinian furniture small-to-medium-sized enterprises (SME's) found that SME's operating in countries with weak infrastructure and institutions could benefit from, a horizontal integration (cooperation between local peer firms) which could promote better

collective efficiencies and integration into the global market through collective sourcing of materials and higher innovation rates (Mesquita, Lazzarini 2008). This strategy could thereby result in both process upgrading where the production process becomes more efficient but could also assist in upgrading of the value chain into high end global markets. However, it has also been noted that with small and micro-enterprises, where the labour force is fragmented across many small firms, this can weaken the potential for horizontal integration (Bamber, Fernandez-Stark 2013). It thereby becomes evident that constraints and possibilities to upgrading are complex and even if certain upgrading options may seem beneficial they may be hindered by the institutional context.

Finally, upgrading of governance form is about choosing the right organizational form and may consist of rearranging contracts or by shortening the value chain so that producers and retailers have a more direct relationship.

These are a few examples of constraints and possibilities of upgrading, however, in most cases it seems that the possibility of upgrading depends on attention to many different business aspects. This can be exemplified by a study of an Indian grape cooperative where it was found that the possibility to upgrade was connected with both attention to marketing in export markets and provision of technical assistance, inputs and market information to producers (Roy, Thorat 2008).

5. Theoretical framework

As argued, a value chain analyses can focus on different aspects of the value chain and different forms of constraints or possibilities to add value to the production. It can be used to identify different processes a product goes through and also to distinguish the different actors that are involved in the chain. In this study Trienekens (2011) framework for value chain analysis provides a structure for analysing the production, processing and trade of sunflowers and sunflower oil and helps define different actors of the chain. The sunflower oil value chain will thus be plotted out and Trienekens value chain concept will enable the identification of different linkages and actors in the chain. Trienekens identifies three different market systems in low and middle income countries, that is, the A, B and C market systems. This classification will be used to identify which market systems exist within the sunflower oil value chain in Babati, Tanzania as to better understand how they function and relate to one another.

When looking at different constraints to value chain upgrading Trienekens (2011) three constraint categories will be used to frame and contextualise the different constraints identified in this study. With regard to Trienekens constraint category "market access and market orientation" this category will enable the identification of different issues that hinder access to markets, such as, for example, the available market knowledge and understanding of the market orientation. Trienekens second constraint category "available resources and physical infrastructure" will also enable the identification of different resources such as knowledge and inputs that may create hinders to value chain upgrading. Trienekens final constraint category "institutional voids" will be used to look at hinders faced by farmers and processors and see how these relate to different institutions such as regulative institutions, which encompasses government regulations, normative institutions and cognitive institutions.

With regard to government regulations which may hinder upgrading different certification schemes or labels may become relevant and even if Trienekens does mention this briefly the GVC literature here has a more extensive framework which will be used in this study. In their article *Global value chain and agrifood standards,* Lee, Gereffi and Beauvais (2012) have created a framework for classifying standards and certifications and understanding how they relate to the local and global development of food standards and certification.

Finally, Trienekens framework for value chain upgrading will be used to frame the different upgrading options identified by farmers and processors and to better understand how these upgrading options may be beneficial for the actors involved. When looking at horizontal integration which according to Trienekens framework is a form of value chain-network structure upgrading other research which has investigated this further will be helpful in analysing the results. Mesquitas and Lazzarinis (2008) takes a closer look at how horizontal integration could benefit small-to-medium-sized enterprises while Bamber and Fernandez-Stark (2013) find that a fragmented labour force may weaken the potential for horizontal integration, something that may help to analyse and understand the results from this study.

6. Method

6.1 Case study

A case study was chosen as the most appropriate method of investigation for this study. The main aim is to investigate how stakeholders perceive the constraints and possibilities of rural farmers and sunflower oil processors in Babati, Tanzania to upgrade their value chains. According to Yin (2014) there are three conditions worth considering when choosing what research method is most suitable. The first condition concerns the type of questions asked. If the research question focuses on "how" or "why" a case study may be appropriate. The second condition is whether the researcher has control over actual behavioural events. This study has mainly relied on semi-structured interviews and therefore there was little or no control over the behavioural events, something that was suitable for a case study (Yin 2014). The last condition is whether the study focuses on contemporary or historical events. If the study is concerned with historical events a historical study is most appropriate but if it concerns contemporary events, as is the case with this study, a case study will be most appropriate.

The strength of a case study compared to a historical study is that one can use many different forms of evidence, such as documents, artefacts, interviews and observations (Yin 2014). This was vital to the study as value chains tend to be complex and require the mapping of many different processes. Furthermore, a case study allows the researcher to examine complex social phenomena while at the same time retaining a real-life perspective (Yin 2014). One of the most mentioned weaknesses of a case-study is the ability to generalize. A single case will not provide evidence to make statistical generalizations. However, a case study can be a contribution to a continuing theoretical proposition (Desai, Potter 2006).

6.2 Open ended interviews

Open-ended, or semi-structured, interviews were chosen as the most appropriate way of collecting data for this case study. This was because open-ended interviews tend to provide a deeper understanding of the phenomenon and the complex structures of decision making within the area. In-depth discussion with a smaller number of people may also result in more reliable information compared to other ways of collecting data (Desai, Potter 2006). When looking at constraints and possibilities of value chain upgrading open-ended interviews are also beneficial to enquire bottom-up explanations on constraints and possibilities that may not have been previously documented. An important part of the study was identifying how the

chosen value chain is structured and it would therefore have been inappropriate to have, for example, a standardized interview or data collection through surveys as this could result in certain parts of the value chain going unnoticed (Desai, Potter 2006).

6.3 Limitations/ Demarcations

Babati, Tanzania was chosen as the geographical area for this study since, as mentioned in the background, agriculture employs a large part of the population in the country and could become a more important part of Tanzania's economy making it an important area for agricultural value chain research. Babati is a district characterised by many different forms of agriculture, making it an interesting region for value chain research. The sunflower oil value chain was chosen for this study due to several reasons. The most important reason was that it is a value chain where one of the end markets are in Babati, the chosen area for the study, making it possible to interview people throughout the value chain. Apart from this the sunflower value chain is interesting because there are also bigger national and international markets creating a possibility for many different kinds of upgrading. Lastly, sunflower oil is the most used cooking oil, with an increasing demand, in Tanzania and is therefore an important part of the country´s economy (Zhihua Zeng 2017).

In this study neither gender nor age was controlled for. The aim of the study is not to make comparisons between gender nor age groups and due to the time limit it was decided that since age nor gender is vital for the results no control would be made for this. Another demarcation that was made due to the limited time frame was the choice of respondents throughout the value chain. As the main focus of the study is upgrading it was decided that farmers and processors of sunflowers and sunflower oil would be the main respondents as upgrading tends to revolve around these actors. So as to have enough time to conduct thorough interviews with farmers and processors no interviews were done with consumers nor sellers of sunflower oil, even though some of the respondents also sold sunflower oil.

6.4 Respondents

The interviews were conducted with different actors within the sunflower oil value chain with the main groups being local farmers of sunflowers and local processors of sunflower oil. The other actors interviewed, that is the key-informants, were agricultural extension officers, a value chain director at an NGO called Farm Africa, Mr. Calyst Kavishe, a retired district advisor and Mr. Kianga Mdundo, a retired natural resources and land officer. Apart from this

a lot of help was received from the staff at TCCIA-Manyara. Mrs. Mwanahamisi Hussein, the regional executive officer at the organisation acted as field-assistant and translator throughout the case study. She organised all the interviews and also acted as a key-informant.

As mentioned the interviews were organised by Mrs. Mwanahamisi Hussein at TCCIA-Manyara. As they have a large network with members from many different agricultural sectors this was a very beneficial setup. All in all 15 farmers were interviewed during the case study. The farmers interviewed were both small scale and large scale, that is, large scale in relation to the local measurements, their farms ranging from two to forty acres. This was desired in the selection as small-scale and large-scale farmers may have different perceptions of hinders or possibilities of upgrading. The farmers came from a few different villages surrounding Babati town mostly villages within Bonga and Gallapo ward although one farmer had his farm in Katesh which is in Hanang district.

Eleven people who either worked in a sunflower oil processing factory, owned a sunflower oil processing factory or rented one were interviewed. Six out of the interviewed processors owned or had owned a processing machine, three were workers at processing factories and two rented processing machines. As most owners did not work with the processing itself, and some did not have time to talk to us, it became relevant to talk with the workers at the factories as they had just as much, if not more, insight into the business and sometimes even handled the selling of the sunflower oil. Four sunflower oil processors had their business in Gallapo ward, one in Katesh and the rest in Babati town.

Almost all respondents were men with the exception of two extension officers and one processor. As mentioned earlier the study does not have a gender perspective and this is therefore not a major obstacle for the results of the thesis. The age of the respondents varied roughly between twenty and seventy years something that will not be presented further as age is not an analytical category in this study and no analysis between age groups was made.

6.5 Interviews and interview questions

The interviews were conducted with the assistance of a translator, Mrs. Mwanahamisi Hussein who translated between English and Swahili. Some of the interviews were also conducted in English in the case that the respondents knew English and felt comfortable speaking in English. The interviews with farmers were either conducted at their farm, in the

closest village or in Babati town. Most interviews with processors were conducted at the processing factories or just outside the processing factories.

Initially in the interviews the respondents were asked questions about their part within the sunflower oil value chain, what they thought were the biggest hinders, and what they thought could be done to improve the situation. To gain a better understanding of the context of the sunflower oil production farmers and processors were also asked questions about their other value adding activities. Farmers were asked about what other crops they farmed, how big part of the farm was dedicated to sunflowers and if they had any other value adding activities. Processors were also asked about their other value adding activities however this proved to be a bigger challenge. This may be partly due to that there has been a change in politics in Tanzania where the government has toughened the tax collection systems to try and receive more taxes as Tanzania has a large informal sector which goes untaxed (Reuters 2017). This may result in people being less inclined to share information about their assets.

After about two thirds of the interviews it became apparent that one constraint was that producers wanted farmers to grow more sunflowers while at the same time there was no apparent explanation to why farmers did not grow more sunflowers. Due to this six farmers were asked questions concerning why they choose to plant many different crops and why they did not choose to grow more sunflowers.

The main questions of the study, such as how different actors perceive the main hinders and possibilities of upgrading, were asked to all respondents. However, as the study is based on open ended interviews some questions at the beginning of the study differ slightly from the questions asked later on. For example, in one interview it was brought up that the disease powder mildew sometimes affects the sunflower crops and this lead to more questions being asked about the disease in the following interviews. Therefore, some of the questions have only been asked to some of the respondents and if the number of respondents to a certain question becomes relevant this will be presented in the results.

6.6 Ethical considerations

The study was carried out with the support of a local field-assistant which provided more insight into the local situation and also provided information on cultural formalities so that the interviews could be conducted in a way appropriate to the local context. The respondents

were informed of the purpose of the study and that it was not connected to any development project and will not in any direct way lead to benefits for the respondents. Furthermore, the respondents were promised anonymity and were informed that they had the ability to withdraw from the interview at any moment. This is an important aspect since even if the research questions do not seem overtly sensitive it is essential that the results of the study do not affect the respondents in a negative way, something that may be minimised by providing anonymity (Desai, Potter 2006). The only question which seemed to be somewhat sensitive was the ones that concerned the respondent's other commercial activities, which, as mentioned earlier, may have to do with the governments toughened tax collection. The respondents were not coerced into answering any of these questions and were also, like most respondents, provided with anonymity. Some of the key-informants did however not wish to remain anonymous whereas their names and titles are presented. The questions asked during the interviews were not of a very sensitive nature, however it is difficult to determine what issues are sensitive and advice given by the field assistant on how to for example formulate interview questions was always headed. The respondents who asked to see the results of the study will be contacted and receive a copy of the study.

6.7 Secondary data

Within value chain research there is a large variety of disciplines and theories to choose from as demonstrated in the presentation of previous research within value chin research. For this study Trienekens (2011) framework for value chain research has been chosen as the main analytical tool. The GVC framework is useful in certain aspects however large parts of the GVC literature has a top-down perspective and the studies that do employ a bottom-up perspective tend to have a focus on power structures and how individual countries participate within global value chains. This study rather wishes to present a bottom-up perspective of a value chain that does not necessarily participate on the global market. For this Trienekens framework becomes useful as he combines theory with concrete suggestions and examples resulting in a rather straightforward framework for structuring the results of research in low and middle income countries. Other disciplines or frameworks within value chain research were also presented either because certain aspects may be useful in analysing the results of the study or because they have led up to and shaped the GVC approach and Trienekens framework.

It may be relevant to note that no literature on clusters was presented in this paper. Cluster research does have many similarities to value chain research but instead of focusing on one value chain or product the research tends to have geographic scope and can focus on different relationships among firms such as core technologies, skill requirements, distribution channels and so on (Rosenfeld 2002). Cluster research can therefore become very broad and require considerable research and it was therefore seen as more suitable to use the value chain concept for this study.

6.8 Methodological obstacles

One weakness of this case study, is the use of a translator. Most interviews were carried out with a translator except for a few which were done in English. This is a hinder that is of course difficult to overcome except by learning the language, something that isn't plausible for a shorter case study. As all translation was done by the same person who also acted as field assistant this provided the possibility to discuss questions beforehand so that it was clear to the translator what was being asked, something that made the interviews run more smoothly.

It was at times difficult to get processors to give information regarding value adding activities besides the sunflower oil processing. Therefore, questions regarding this were sometimes reformulated or asked more than once. As also mentioned earlier, it was at times difficult to get a hold of the owner of processing factories, however, this did not turn out to be a big issue as the workers were often well informed of the industry.

One limitation that tends to influence the reliability of interviews in a country like Tanzania where aid is a large part of the country's economy is that the respondents hope or believe that the study will be connected to an NGO or future interventions. This could result in respondents for example exaggerating problems in hopes that it will lead to investments from for example an NGO. This issue was dealt with by making it clear to the respondents that this was a research project which was not connected to any development projects.

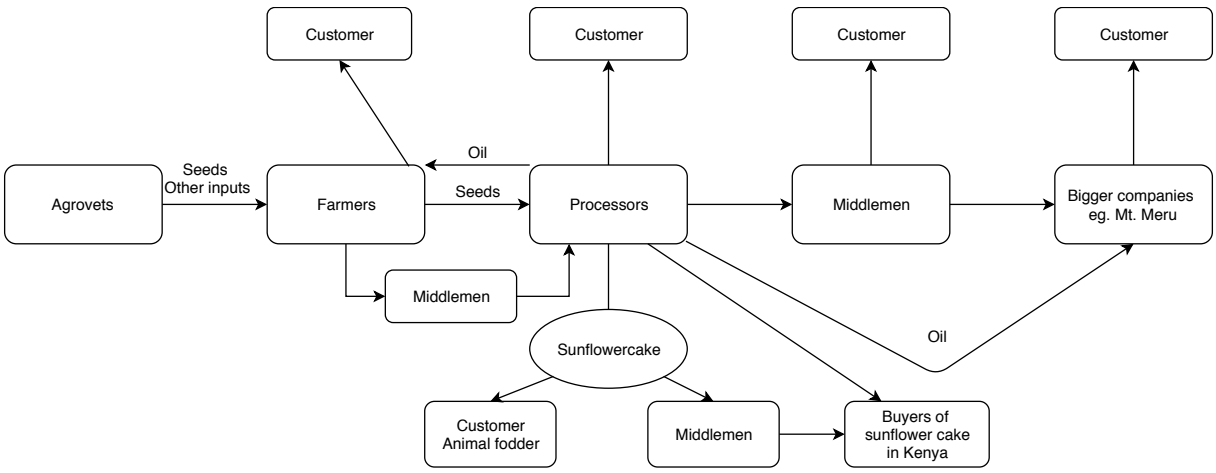
As mentioned earlier all actors within the sunflower value chain were not interviewed. However, as the study's focus is upgrading and there was a limited time frame it was decided that it was of more value to the study to have through interviews with farmers and processors

as these actors are the ones for whom upgrading strategies are most relevant as opposed to, for example, consumers which were not interviewed in this study.

7. Results

In this section the sunflower value chain in Babati, Tanzania will be outlined according to the information collected during interviews with farmers, processors and different key-informants. The different hinders and possibilities of value chain upgrading identified by the respondents will also be presented throughout the outline of the value chain. The value chain will be presented in a linear fashion where farming inputs will firstly be covered, followed by a section on the farming of sunflowers, a section on different pests and diseases that affect sunflowers in Babati and a section on the selling of sunflower seeds to processing industries. This will be followed by a section on the processing of sunflower oil, the selling of sunflower oil and the selling of sunflower cake. Finally, there will be a section on agricultural and economic diversification. This section is presented last as it does not fit into the presentation of the value chain per se considering that this section also includes information regarding the informants other value adding activities.

Figure 1: The sunflower oil value chain in Babati, Tanzania.



7.1 Inputs

Sunflowers are relatively drought resistant and in general require few inputs. The most obvious input required is seeds. The most common practice among the interviewed farmers is to re-use old seeds from the previous harvest. One respondent said that this is the case for about 60-70% of sunflower farmers in the region. Mr. Kianga Mdundo mentioned that some people prefer the local seeds as they think they taste better. Some farmers felt that they did not have the knowledge for choosing seeds for re-planting whereas others thought it was easy.

Mr. Kianga Mdundo said that the older generation tended to have this knowledge while younger people weren't as aware.

Some farmers also buy seeds from neighbours who have seeds left from the previous harvest. The remaining farmers buy seeds from different agrovets such as Tanganyika Farmers Association (TFA) or private agrovets although many farmers felt that these seeds were too expensive and that they did not have enough capital for them. During the interview at Farm Africa, whom are trying to get farmers to grow a form of hybrid sunflower seed, this was discussed. However, the value chain director at the organisation claimed that most people do have the capital to buy seeds from agrovets but that the investment is relatively large and that they do not wish to put in the investment unless they are sure it leads to larger profits.

A large variety of sunflower seeds are available in Babati region and what seed used varied between the interviewed farmers. There is also a lot of different thoughts on what seed is most suitable. This may be due to the fact that Babati consists of many different agroecological zones which may result in different seeds being suitable for different parts of the area (The United Republic of Tanzania Ministry of Agriculture. n.d.). Seeds are an important factor in the production of sunflowers but both farmers, processors and other key-informants agreed that how one prepares the earth, plants and takes care of the plants is also an important factor in how well the production goes.

Six out of the interviewed farmers were asked about their use of chemical fertilizers, pesticides and fungicides. Out of the farmers asked no one used chemical fertilizers or pesticides, however, everyone except for one used manure when they considered it to be necessary. One key informant, Mr. Kianga Mdundo, a retired natural resources and land officer, said that some farmers do not like chemical fertilisers because they believe that it depletes the soil in the long run and also mentioned that if chemical fertiliser is applied the sunflowers grow too quick and the seeds will not have time to mature and produce a sufficient amount of oil.

The same six farmers were also asked what they thought about chemical fertilisers in general and why they thought people don't like them. One felt that people merely needed training on how to use it while most felt it was a risk since once you begin using it you cannot go back to using manure, making the farmer dependent. One of the farmers who said this was still

planning to start using chemical fertilisers in the future. It is also worth noting that two out of the six farmers asked about chemical fertilisers claimed to have no opinion about chemical fertilisers. The low use of chemicals in the sunflower production may also be because, as respondents have reported, sunflowers do not require a very fertile soil and partly because there are few pest and diseases that affect sunflowers.

7.2 Sunflower farming

Intercropping is the most common way to grow sunflowers among the interviewed farmers, and the most common practice is to intercrop with beans. According to all key informants such as extension officers and experienced farmers, beans, or other legumes plants, is the best plant to intercrop with sunflowers. This is because beans are nitrogen fixing, their roots break up the soil (which is important for the sunflowers if they are to root properly) and they grow very low and therefore do not compete with the sunflowers for sun, as, for example, maize would. However, extension officers and the value chain director at Farm Africa claim that mono-cropping is the best for sunflowers, preferably with a hybrid or composite seed and the use of fertiliser. Most farmers own or rent a tractor for the first ploughing and use an ox-plough for the second ploughing and finally hoes for weeding. One interviewed farmer was trying to get his village to come together to buy better machines however he said it would take more time to convince them.

7.3 Pests and disease

Sunflowers are not affected by many pests nor diseases however the fungus, powder mildew, is a problem according to the farmers interviewed. There seems to be some differing thoughts as to what causes the disease, the most common explanations being cold weather and/or too much moisture. However, regarding the solution most respondents seem to be unified in saying that the way to avoid the disease is to plant early in the year, before the short rains. Mr. Kianga Mdundo and the value chain director at Farm Africa mentioned that there were some fungicides that were effective to treat the fungus. It is also worth noting that Mr. Kianga Mdundo added that farmers tend to avoid using it as they consider that the application of it may be harmful for the health. However, the availability of fungicides does not seem to be common knowledge as only one of the farmers interviewed knew of any fungicides that would be effective. None of the three extension officers interviewed knew about any fungicides to treat the disease.

Birds are also mentioned as a problem by seven out of the fifteen farmers interviewed, with six of these stating that it is their biggest problem. Two out of these had someone at the farm all the time so they could chase away the birds. When asking farmers about what solutions they would suggest to deal with the issue of birds all answered that the solution is to grow more sunflowers or to have neighbours also plant sunflowers close to their fields so that the damage is spread out over a larger field.

7.4 Selling of sunflower seeds after harvest

The seeds can then be sold by farmers who go into the closest town to sell directly to the processors whereas some may sell to middlemen, or the processors go out into the villages to buy the seeds directly from farmers. However, none of the processors or farmers interviewed have any sort of contractual relationship with one another. Regarding the price of sunflower seeds most farmers and processors said that it was the processor who set the price with a few also mentioning that "the market sets the price" and a few saying that there would be some sort of bargaining for the price. One farmer also suggested that it would be good to have a common market place to sell the seeds as this could increase the farmers bargaining position.

The market information that was available to the interviewed farmers tended to travel from mouth to ear through middlemen or through farmers who went into town to sell their seeds. Most key-informants also state that the price is set by the processors with one saying that it would be beneficial for farmers to work together in some form of cooperative as this would give the farmers more power to bargain regarding the price. The price fluctuates depending on both the year and high or low season with one respondent saying that the price for a bag of sunflower seeds sometimes rises from around 35´000 Tanzanian shilling during high season to 70´000 Tanzanian shilling during low season.

There is also another option for what to do with the sunflower seeds after harvest and that is for the farmers to rent a processing machine, produce the oil and then sell the oil on the local market. This was only done by two of the farmers interviewed and it is worthwhile noting that these two farmers only grew sunflowers on about 2-4 acres with much of it being intercropped. One other farmer reported that he would do the same but only with part of the seeds as it was very time consuming considering he grew sunflowers (intercropped with beans) on 20acres of land. Even if this was not very common with the farmers interviewed,

six other farmers reported that they did rent processing machines to produce oil for their own home consumption.

7.5 Processing

Only three out of the eleven interviewed processors make sunflower oil all year around. However, one of these has about double the staff during the high season and another one of them does not own the machine but rents it. Some processors rent out their machine for the remainder of the year when people who have the capital to buy a lot of seeds during the high season and can store the seeds until the low season can come and process.

Some processors rent the house in which they process sunflower oil which can pose a problem if the owner decides to terminate the contract. One processor said that this can be a problem because then their customers will no longer know where to find them. Another former processor said that he had to leave the house he was using as the person who had previously rented the house had not paid the electricity bills and it therefore fell on him to pay for it, something he did not have resources for. Another issue regarding housing was expressed by a processor who had his processing industry in town. He said that the area was not suitable for processing and that it is actually not allowed since it was too close to town, however there were no good areas to move to. The government has made an industry area close to town however the plots there are very expensive and there is no infrastructure as the area has no access to neither water nor electricity, only a road leading up to the area.

To be allowed to process sunflower oil in Tanzania one needs a certificate from Tanzania Food and Drugs Authority (TFDA). One respondent said that the requirements are mainly about having sufficient space for storing seeds, the processing and storing of oil. The certificate costs 300´000 Tanzanian shilling and needs to be renewed every year. When looking at the TFDA webpage no specific information about requirements for sunflower oil production could be found, however, a general guideline for "good manufacturing practices of food products" (TFDA 2013) was found. This document seems to be a general guideline for food manufacturing practices and "will also be used as a reference for inspectors while carrying out inspections of local and overseas food manufacturing premises" (TFDA 2013, 1).

When comparing small parts of this document with observations made at the processing industries they do seem to defer from one another, especially in regard to hygiene. For

example, concerning the general maintenance of the facilities the document states that "buildings, fixtures, and other physical facilities of the plant should be maintained in a sanitary condition…" (TFDA 2013, 3). When visiting processing industries however, there did not seem to be much concern with sanitation as the oil was often stored in re-used bottles while the processing took place in the midst of sunflower cake spread out across the floor. Since the document referred to was the only one found there may be more specific guidelines for the production of sunflower oil making it difficult to know to what extent the guidelines are followed and enforced.

The sunflower oil processing has three main parts. The first is the cleaning of the seeds where a large form of sieve is used to rinse out, for example, rocks and dirt. As mentioned earlier there are a lot of different sunflower seeds available in Babati but during the processing all different seeds are processed together. Secondly, the seeds are brought to the processing machine where the seeds are crushed and the oil is separated from the seed which produces a crude sunflower oil and sunflower cake. The oil is then taken to a filter which rinses out dust. This is at least the case with the smaller processing factories available in Babati while bigger filters may also remove for example, small amounts of iron or unwanted colouring according to one processor. To have these types of machines, or machines that also package the oil after filtering it was something that a couple of processors said would be beneficial. One issue with the machines, which were often bought in Dar Es Salaam or imported was that it was difficult to acquire spare parts with some processing factories needing to close down for days until the spare parts had arrived from bigger cities.

7.6 Selling of sunflower oil

The oil is then sold to different middlemen or sold by the processor themselves directly to customers. Sometimes the oil is stored to be sold when the prices are higher with one processor saying the oil can be stored for up to ten years. Most of the oil is sold at local markets in re-used bottles. Some people come with their own plastic bottles, often old water bottles, to buy the oil directly from processors. There are however a few exceptions as with the largest processor in Babati who also sells to a large company called Mt. Meru in Arusha and to a bigger buyer in Singida. Mt. Meru re-processes the oil and then packages and labels it to be sold in supermarkets. The buyer from Singida packages and labels the oil before selling it to supermarkets. To sell the oil in re-used bottles, which is the case with most of the oil sold in Babati, is officially not allowed according a key-informant as one actually needs to

have proper packaging and labelling to sell sunflower oil. However this rule is not enforced in Babati according to respondents.

To be allowed to package, label and then sell the oil officially one needs a certification from the Tanzanian Bureau of Standards (TBS). However, after discussing this with a person who has tried to get a TBS certification for sunflower oil production and an extension officer who was a part of project where the village collectively started a processing industry with the TBS-certification it has become clear that this is far from simple. As the headquarters of TBS are in Dar Es Salaam one needs to travel there and go through many procedures. One also needs to pay for someone from TBS to come to the processing factory in Babati and also pay for the inspections. If something is not up to standards you will need to pay them to come again until they are satisfied. An example of the standards is that you need at least three rooms which is a lot for a small processor. All in all, the process is expensive and time consuming. However, many processors also mentioned that if they had enough capital it would be beneficial to be able to sell packaged sunflower oil to supermarkets and maybe even to export.

A mayor hinder for local processers for manufacturing sunflower oil on a larger scale is the lack of recourses and capital, something that was brought up by many processors. Taking loans from the bank was not an option for any of the processors who brought capital up as a hinder. This was partly because many of them did not have enough collateral and also because, as one processor pointed out, the interest rates are up to 20%, in addition to different administration fees. One key-informant said that there are some microfinance options available in Babati however this was not something that was brought up by the local farmers nor processors as a solution and is probably therefore not well known or it does not seem like a good option for the local farmers and processors.

7.7 Sunflower cake

Sunflower cake is a bi-product from the production of sunflower oil and consists mainly of the shells of the seeds. The sunflower cake is packed into big bags and can then either be sold to middlemen from Kenya or be sold locally. The most common practice among the interviewed processors is that middlemen from Nairobi, Kenya come to buy the sunflower cake. The most common perception is that the sunflower cake is later used in Nairobi to produce animal fodder. There were also a few people who mentioned that it may also be used

to produce car parts and that it can sometimes be taken to stronger machines which can press out more oil from the sunflower cakes. A small part of the sunflower cakes is sold locally as animal fodder to pigs, chickens and sometimes cows. Informants consider this option to be more profitable but the demand is not very high which is why most of it is sold to middlemen from Kenya. Only one processing industry had direct contact with a buyer in Kenya who transferred money electronically and sent trucks to Babati to pick up the sunflower cake.

There were in some cases concern regarding the middlemen from Kenya with one worker at a processing factory mentioning this as the largest problem for the processing factory he was working at. The worker said that the middlemen were not always reliable and even if you had contact with them for a long time they could all of a sudden take the sunflower cake and not pay for it. He saw that the only solution would be to have direct contact with the buyers from Kenya but that it was difficult to know how to get contact with them. When asking other processors if they found this to be a problem most agreed. Considering that these middlemen are from Kenya it is also very difficult to hold them accountable making it a difficult problem to handle.

7.8 Agricultural and economic diversification

None of the farmers interviewed had sunflowers as their only crop. Twelve out of fifteen farmers intercropped their sunflowers with different plants, in some cases with as many as three other crops. The three respondents that monocroped did however not use their entire farm for sunflowers but had other crops in the rest of their farm. It is also interesting that the farmers who monocroped sunflowers were smaller farmers with the largest one farming sunflowers on eight acres of land and the others only had two and three acres. The farmers with the largest farms (up to 40 acres) did however intercrop. Mr. Calyst Kavishe, a retired district advisor, also added that people tend to monocrop sunflowers in areas where the rain is very poor considering how drought resistant sunflowers are. Eleven out of fifteen farmers also had other activities apart from farming the most common being livestock keeping even though some had other value adding activities such as owning a small shop and working as a pastor.

Five processors who owned processing machines were interviewed and none of these had processing as their only activity. One also bought and sold crops, three also had farms and one had several activities such as selling of many different types of hybrid seeds and crops and

owning an electronics store. The workers interviewed all worked full time at the processing industries but also had small farms of one to two acres where they farmed food for sustenance. Only one processor who rented a processing machine claimed to not have any other activities and he also processed seeds all year around. However, when comparing this to farmers for whom sunflowers is merely one crop of many, sunflower processing tends to be the biggest or one of the biggest activities undertaken by the interviewed processors.

A problem which in some ways relates to the fact that almost all respondents have a diversified agriculture and/or economy, is that there are too little sunflowers produced in the region resulting in the processing industries being idle for part of the year, something that was mentioned previously. This issue was identified by both producers and other key informants such as an extension officer and the value chain director at Farm Africa. During the interview at Farm Africa the value chain director said that they had plans to work with the sunflower value chain and when identifying issues with the value chain they also found that too little sunflowers were being produced compared to the demand from the processors. The goal of their project would therefore, partly, be to get farmers to grow more sunflowers.

In the interview with the value chain director at Farm Africa he said that when talking to farmers they found that the farmers didn't produce more sunflowers because they didn't think there was a market available. This does however not concur with the results from this study as one of the reasons many of the farmers interviewed liked sunflowers was because they were easy to sell. As mentioned in the method, when it became apparent that the interviewed farmers reasons for not growing sunflowers were still unclear they were asked questions about why they choose to grow many different plants and why they did not grow more sunflowers.

To begin with, most farmers grew maize or other food crops for sustenance and when asking one farmer if it would not be easier to grow more sunflowers and buy maize for the money he said that growing maize is important as a security. All six farmers interviewed regarding their reasons for their diversified farming felt that it was important to have many different crops. Firstly, the different crops fill different functions, some are for sustenance and some are cash crops. Secondly, farmers felt it would be unsafe to only grow sunflowers in case the weather conditions were not favourable, if the crops attracted powder mildew, if their sunflowers were eaten by birds or if the price fell. When asking what the farmers considered when choosing

which crops to grow the two main factors brought up was pricing and weather. Half of the interviewed farmers stated that they change what they grow from year to year mostly depending on pricing and to some extent, weather. Half of the interviewed farmers also planted sunflowers twice or even three times in the same year. One reason was to receive cash at different times of the year but also to spread out the risk if, for example, the short rains did not come in time and the sunflowers planted early did not get enough rain.

As mentioned earlier the price of sunflowers can fluctuate from season to season and from year to year. However, when talking to farmers many feel that the price of sunflowers is more stable than many other crops such as for example pigeon peas which are exported. One farmer said this was because there is a processing industry in Babati for sunflowers whereas pigeon peas are more effected by the international market. This is not to say that the price of sunflowers is stable as the price, as mentioned earlier, can fluctuate from around 35´000 Tanzanian shilling during high season to 70´000 Tanzanian shilling during low season, according to one informant. However, when comparing this to for example pigeon peas, which one farmer reported that he had previously received 3000 Tanzanian shilling per bag of pigeon peas and now only got 200 Tanzanian shilling per bag, the price is relatively stable. Even though the price is relatively stable it was not reason enough for farmers to begin growing more sunflowers.

One extension officer said that farmers do not see sunflowers as their main crop but rather as a safety net for when the climate is not favourable for other crops. She said that for example this year, when the rains were late, the farmers have grown more sunflowers as they are drought resistant. When asking Mr. Kianga Mdundo if he thinks farmers would be willing to grow more sunflowers he said that the hinders to this are partly the unsafe market with fluctuating prices and partly the unsafe weather. Basically, farmers do not dare to use too much land for one crop in case that crop happens to be ruined by unfavourable weather conditions or the price fluctuates.

8. Analysis

Many different hinders and possibilities of upgrading have been identified by local farmers, processors and different key informants such as extension officers during this study. In this section, the identified market systems found within the sunflower oil value chain in Babati, Tanzania will firstly be covered and analysed. Secondly, the section on constraints to value

chain upgrading will be divided into the three constraint categories identified by Trienekens (2011) so as to make the presentation of the analysis more fluent even if parts of the GVC literature will also be used to help analyse the results. After this the problem that too few seeds are produced in the region will be brought up as it does not fit into Trienekens framework or any other theories found within the value chain framework. Finally, the different upgrading options will be divided into options for farmers and processors and analysed in relation to Trienekens framework and literature from Mesquita and Lazzarini (2008) and Bamber and Fernandez-Stark (2013).

8.1 Market systems

As showed in the result section the main market system in Babati is a local system where the seeds travel from the farmer to the local processing industry and the oil is later sold in the local markets in Babati or in neighbouring villages and cities. One processor also sells his oil to bigger companies in Arusha and Moshi who then packages and sells the oil in local supermarkets. Finally, sunflower cakes are exported to Kenya.

The first, local, sunflower oil market can be compared to Trienekens (2011) A-system. The A-system is a system which delivers a big share of the agricultural output while generating relatively little value. The second market system where sunflower oil is finally sold in local supermarkets can be compared to Trienekens B-system where products tend to be produced according to national and sometimes international quality and safety standards. According to Trienekens (2011) these two types of systems function largely independently but the B-system may receive inputs from the A-system balancing demand and supply, something that is also true in Babati as middlemen who buy oil from local farmers may sell the oil to bigger buyers within the B-system. According to Trienekens (2011) the co-existence of such weakly connected subsystems can pose difficulties in the development of harmonised quality and safety standards in low and middle income countries. The issue of quality and safety standards will be discussed more further on.

Sunflower cakes are the only product from the sunflower value chain which have been identified as being part of an export market. At first glance one might wish to compare this to Trienekens C-system however, apart from the fact that the sunflower cakes are exported, there are not many similarities. For example, Trienekens C-system is “completely focused on export”, “the value added is relatively high” and “chains tend to become more integrated and

with fewer actors" (Trienekens 2011, 54). None of these statements are true in the case of selling of sunflower cakes as some of the sunflower cakes are also sold locally, the selling of the sunflower cakes generates little value compared to the sunflower oil and there tends to be middlemen who facilitate the transactions. Instead it may be more relevant to compare this to Trienekens A-system where Trienekens goes on to add that these market systems can also be connected to markets further away with long transportation distances, more intermediary parties and due to this, limited information on end market orientation. This is the case with sunflower cake where the markets are far away, there tends to be middlemen and there was some uncertainty on what the sunflower cakes would be used for.

8.2 Market access and market orientation

There is limited market knowledge provided to the local farmers and producers interviewed, most of it travelling by mouth to ear through middlemen. No official channels conducting market information have been seen or heard of during this study. This is an issue that has been voiced both by farmers and processors. For farmers, this is especially an issue when selling the sunflower seeds as most informants claimed that the processors are the ones who set the price. Since the farmers in the area are not coordinated and do not have easy access to market information which lowers their bargaining position.

As most of the sunflower oil is sold locally all actors in the value chain are aware of what the end-product will be and what it will be used for. When it comes to sunflower cakes the main idea was that it would be used as animal fodder but there seems to be some uncertainty as some believed it would be used for other things such as car parts while other informants did not agree with this. One example of lack of market information was a processor who said that it would be beneficial to have direct contact with buyers from Kenya, however, they did not know who they were or how they could get contact with them.

These issues are in line with Trienekens (2011) framework where farmers market access is hindered by their low bargaining position which is partly created by their lack of market knowledge. Regarding market orientation, that is, knowledge on what the end user will want from the product, the farmers interviewed seem to have knowledge concerning this whereas the producers are to a greater extent in the dark concerning the market orientation of the sunflower cake which in turn causes a lack of market access.

8.3 Available resources and physical infrastructure

Regarding resources and physical infrastructure there are several points which should be brought up. When asking farmers about hinders to sunflower farming, seeds is one of the most mentioned hinders. Many say that there aren't quality seeds available. However, in Babati there is a large variety of sunflower seeds, there are local seeds which can be re-used year after year and many different agrovets selling a large variety of composite and hybrid seeds. When inquiring further about why farmers feel that seeds are a problem the issue rather seems to be that some farmers do not have the knowledge on how to choose seeds suitable for re-planting or that the cost of the seeds is too high. Even though the actual seeds are available this is rather an issue of available knowledge and capital.

Capital is something that was brought up by several respondents as a hinder however when talking to the value chain director at Farm Africa he said that many farmers do have means to, for example, buy new seeds but they would not be willing to take the risk of buying them unless they are certain it will lead to a bigger profit. Regarding knowledge on how to choose seeds for the next season, when talking to farmers there are some who say that it is easy to choose new seeds while others do not know how to. One key-informant mentioned that it is usually the older people who still have this knowledge while the younger generation may not be as aware. Apart from this it is difficult to say what knowledge is present and what is not since there are differing views on how to best grow sunflowers.

Analysing this in relation to Trienekens (2011) framework one finds that the issue of knowledge on how to choose seeds for replanting is in line with his constraints category of *available resources and physical infrastructure* as the "available resources" may also refer to knowledge or specialised skills and even if the knowledge is present to some extent it does become a hinder to the farmers who do not have the knowledge. The second issue which concerns capital to buy seeds from agrovets is of course a constraint factor however when taking into account what was said by the value chain director at Farm Africa it seems that capital is to some extent available but that it may for farmers be a relatively large investment which would not be made without being certain it will lead to benefits.

Capital, or credit, is one hinder that was mentioned briefly in the previous paragraph but was brought up by several respondents, albeit mostly by processors. As mentioned in the results, taking loans from the banks was not an option for any of the processors interviewed and the

microfinance options available were either not known of or were not seen as beneficial. Another issue brought up by processors was the difficulty of receiving spare parts for the processing machines, the machines sometimes needing to close down for days until spare parts arrive. Both these issues could seriously constrain the development of processing industries as access to credit is an important factor for the development of any kind of business and the availability of spare parts quite clearly affect the reliability of the processing industries. This also relates to Trienekens (2011) constraint category "available resources and physical infrastructure" as both credit and access to technology are factors that tend to constrain value chain upgrading in low and middle income countries according to his framework.

8.4 Institutional voids

Regarding government regulations there are a some which should be mentioned and which in some ways pose hinders to upgrading. If one would like to begin packaging and labelling sunflower oil so that it can be sold in supermarkets it is vital to receive a certification from the Tanzanian Bureau of Standards (TBS). However, after discussing this with a person who has tried to get a TBS certification for sunflower oil production and an extension officer who was a part of project where the village collectively started a processing industry with the TBS-certification it has become clear that this is far from simple, the process being both expensive and time consuming. Additionally, one needs a TFDA certificate to process sunflower oil in Tanzania, this certification does however not seem to be a hinder for sunflower oil processors in Babati, Tanzania.

When analysing the situation for local processors with regard to TBS and TFDA it becomes clear that this hinder is in line with Trienekens constraint category *institutional voids* relating to government regulations. The issue of the TBS-certification, shows how government regulations can create hinders for value chain upgrading by making the process of receiving a TBS-certificate time consuming and expensive. However, this example can be better understood when looking at the GVC literature. In their article *Global value chain and agrifood standards,* Lee, Gereffi and Beauvais (2012) propose a framework for dealing with the GVC structure and the agrifood standards system. The type of agrifood standards should, according to them, relate to the degree of concentration within the food production (farmers or producers) and food retail. Where both the food production and retail is fragmented, which is the case in Babati, the value chain is characterised as a "traditional market" with limited

public standards. These markets are characterised by low entry barriers and few safety and quality requirements which is the case with the oil sold locally in Babati for which the producers only need a TFDA certification. However, the authors go on to add that low and middle-income countries, where these types of markets tend to be found, are increasingly adopting similar standards to those of the export markets as retailers are now selling more to an emerging middle class with higher quality standards. This reflects the situation in Babati very well with the local market which has low entry barriers while the increase of supermarkets in larger cities in Tanzania creates a market within the country with higher quality and safety requirements such as the TBS certification.

Another issue that has been brought up by processors is housing. As covered in the results some processors rent the house in which they process the sunflower oil which can pose a problem if the owner decides to terminate the contract creating uncertain condition for the processor, and resulting in customers not knowing where to find the processor. Another example of problems with renting facilities was a processor whom when renting a house would have had to pay the previous owners unpaid electricity bills, something he did not have resources for. As another processor brought up, the underdeveloped industry area without access to water nor electricity is another hinder to the development of the chain.

Analysing the issues with housing one finds that all these issues in some way relate to Trienekens (2011) constraint category, institutional voids with regard to government regulations. Regarding the issues with housing contracts there seems to be difficulties with government regulations which should safeguard contractual relationships and the last issue dealing with the underdeveloped industry area is another example of an institutional void where the government has not made sufficient infrastructural investments to benefit the chain.

An example of an institutional void within Trienekens (2011) category of cognitive institutions is the concern with one of the key informants that some farmers prefer the local seeds over the hybrid or composite seeds because they taste better. This may not be a very large concern and it is difficult to say what impact this will have on possibility of upgrading however it is an important point to make that it is not only for example legislative decisions which shape the value chain but how people perceive and interpret their surroundings will also influence how the value chain is shaped.

8.5 Shortage of sunflower seeds and the need for diversification

The final constraint brought up in the results concerned the lack of sunflower seeds resulting in processing industries being idle for part of the year. When discussing this with farmers many felt it was necessary to diversify one's agriculture as a form of risk aversion due to unstable markets, weather changes and different pests and diseases. When analysing this one may be tempted to place this issue within Trienekens constraint category "available resources and physical infrastructure" as lack of input materials is one example he mentions. However, this issue does not seem to be about lack of resources. There are seeds available to farmers and there are many different inputs such as fertilizers or pesticides to buy if it were needed. Apart from this, sunflowers require few inputs while at the same time being easy to grow and sell. This issue rather seems to be connected with farmers need for diversification as a form of risk aversion, something that becomes difficult to explain through Trienekens framework, the GVC literature or any other literature that has been found on value chain analysis. This issue will be brought up again further on in the discussion.

8.6 Upgrading options: Farmers

Farmers may employ a few different strategies for upgrading. One way to receive more value for the production is to rent the processing machine and then also sell the oil instead of selling the seeds to a processor. This is may be a way for farmers to gain more value. However, this is also time consuming as one respondent pointed out whereas he only does this sometimes. A suggestion made by an agricultural extension officer was for the farmers to work together in a cooperative and sell the seeds together as this would give them more power to bargain regarding the price. One farmer also suggested that the village should come together to buy machines however he said it would take more time to convince them. To have a common market place for selling sunflower seeds was also a suggestion made which may increase the farmers bargaining position.

When analysing these upgrading options one finds that they can be placed within Trienekens (2011) framework of value chain upgrading. The first option of also selling sunflower oil is a form of functional upgrading where another part of the value chain is included in one's own activities resulting in a higher added value. The second suggestion, for farmers to cooperate, either to be able to bargain the price or to buy machines is a form of value chain-network structure upgrading called horizontal integration something that could result in better collective efficiencies and integration into the global market (Mesquita, Lazzarini 2008).

However, as noted in the chapter on the development of value chain research, with small and micro-enterprises, where the labour force is fragmented across many small firms, this can weaken the potential for horizontal integration (Bamber, Fernandez-Stark 2013).

8.7 Upgrading options: Processors

Different suggestions were made by processors on how to improve the processing. One processor mentioned that there are machines which distribute the oil directly from the filter into containers making the packaging easier. Double processors and better filters were also mentioned as possible ways of improving the processing. Another option brought up to increase the value of their production is insourcing of the packaging and labelling of sunflower oil. Today this is not done at all in Babati but is done by for example Mt. Meru, to whom the biggest processer in Babati sells some of their oil. This is however hindered partly by, as mentioned earlier, the need to have the TBS-certificate and partly by lack of capital or credit. A couple of processors also mentioned the possibility to export, however, this would rely on the possibility to package and label the oil to international safety standards but also on the market knowledge and finding appropriate buyers.

When analysing these upgrading options in relation to Trienekens framework the first suggestion to get better machines would be a form of upgrading of the value added production. More specifically, it is a process upgrading where the process of processing becomes more efficient or better through introduction of new technology. The second suggestion of also packaging and labelling the oil is also a form of upgrading of the value added production but rather a functional upgrading as more of the value chain would be included in the processors activities creating access to higher value markets. However, this is constrained by factors mentioned in the previous section such as lack of access to capital, lack of technology, lack of market information, poor institutions and infrastructure. The suggestion, which was mentioned when discussing different constraints to upgrading, that processors could have direct contact with buyers in Kenya so that they could sell their sunflower cakes directly can be seen as a form of governance upgrading. In general, this type of increased collaboration between actors may result in more market power and a better flow of products and information (Trienekens 2011).

9. Discussion

Throughout the study many constraints and possibilities of value chain upgrading were identified which are similar to the ones found in previous value chain research (i.e. Trienekens 2011; Mesquita, Lazzarini 2008; Lee, Gereffi and Beauvais 2012). One of the main constraints for processors, that too little sunflowers are produced in the region could however, not be explained through the value chain framework. To understand this issue, it was necessary to look at the local farmers and processors full range of activities and to try and understand their reasons for not investing more into the sunflower oil value chain. As brought up previously, the farmers interviewed do not dare to focus on merely one crop and seem to use diversification as a form of risk aversion. The two biggest reasons for this need seem to be the fluctuating markets and the uncertain weather conditions. The diversity of crops and the additional value adding activities that many of the farmers engage in leads to a situation where the farmers focus isn't put on one crop and capital may not be reinvested into sunflower farming but used for other activities and crops. Half of the farmers interviewed also tended to change crops from year to year depending on the fluctuating prices. This leads to an uncertain supply of sunflower seeds for processors of sunflower oil.

When looking at the processors interviewed one finds that almost all of them have more activities than merely sunflower oil processing and only a few manage to have their processing industries open all year around. One might argue that in a functioning capitalistic system some of the processors would be outrivaled. However, since most of the processors have other activities these complement and support each other so that if the sunflower oil processing is not profitable for some time it may still be financed by other activities and vice versa. This does however, lead to another issue when trying to develop the processing industries and that is that the profits from the processing may not be re-invested into the industry but may be used to support or start other activities. When looking at the biggest processor in Babati one realizes that the general model for economic activity is not to specialize within one area but to diversify one's activities. The biggest processor in Babati for example has a processing industry, sells hybrid seeds, has an electronics store, an internet café and so on. Even though his processing industry runs all year around the amount of staff is roughly doubled during the high season compared to the low season which shows that even a large processor with access to capital cannot run all year round at the highest capacity.

A prerequisite for value chain upgrading is that the actors involved in the value chain are willing to commit some time, effort or capital into the concerned product. This is not to say that it requires that the actors only focus on one crop or activity but if the value created from the industry is not reinvested into the industry and little effort is put into the development of the value chain this will pose a serious hinder to almost all types of upgrading. That almost all actors interviewed within the sunflower value chain in Babati have many other activities which complement the growing or processing of sunflower seeds results in a value chain where none of the actors are fully invested in solely the sunflower farming or processing. Even if capital is available farmers were, for example, skeptical to buy new varieties of sunflower seeds if they could not be certain that it would lead to bigger profits. For the processors interviewed their industry seems to be at least one of their main activities however even if this is the case upgrading on their part will be difficult without a sufficient and predictable supply of sunflower seeds.

The scope of value chain research has a slim focus on one product or value chain, something that is applicable in the highly specialized markets of high income countries. However, the economy within which the respondents of this study operate doesn't focus on specialization which is partly due to that specialization in many cases would lead to increased vulnerability. The slim focus of value chain research may therefore be problematic in a setting like Babati, Tanzania, or other low and middle income countries, where a crop or industry may only be a small part of the actors livelihood.

Value chain upgrading of the sunflower value chain in Babati, Tanzania may be possible in the way which the value chain framework would suggest however this would require large institutional changes that, for example, provide a relatively stable market, provide institutions which can enforce contracts, provide other safety nets so as to make actors less vulnerable and so on. However, today, this is not the case and actors in places such as Babati, Tanzania will continue to have a need for a diversified agriculture and economy as a form of risk aversion. It is therefore argued that for value chain research to be applicable within low and middle income countries there may be a need to extend the framework so that the slim focus within value chain research may be enriched by a more inclusive study of the value chain where the surrounding environment within which the value chain operates is taken into account. Here, it may be beneficial to take use of other already existing theories that focus on the overall

enabling environment for actors within low and middle income countries such as the sustainable livelihood approach (Serrat 2017).

10. Conclusions

The aim of this study was to investigate how local farmers of sunflowers and local processors of sunflower oil in Babati, Tanzania perceive the main constraints and possibilities of value chain upgrading. In the analysis, it was shown that many different constraints and possibilities to value chain upgrading were identified in this study. The main constraints, perceived by local farmers to value chain upgrading of the sunflower value chain in Babati, Tanzania were lack of capital and/or incentive to buy new seeds, lack of knowledge to re-plant old seeds, their lack of bargaining position and market knowledge which together create a lack of market access. The main constraints, perceived by local processors to value chain upgrading of the sunflower value chain in Babati, Tanzania were lack of access to capital and/or credit, lack of market access with regard to sunflower cakes and a shortage of sunflower seeds being produced in the area. The main upgrading options perceived by farmers of sunflowers was value addition by also processing and selling the sunflower oil and different forms of horizontal integration. The main upgrading option perceived by local processors of sunflower oil was an insourcing of the labelling and packaging of sunflower oil which would create access to higher value markets.

One hinder which was identified by processors, that too few sunflowers are produced in the area, could not be explained through a value chain analysis and seems to be connected with farmers need of risk aversion through diversification. Economic diversification was employed by both farmers and processors and may, as discussed, by a hinder for value chain upgrading.

This summarises the main findings of this study which can contribute to a better understanding of the sunflower oil value chain in Babati, Tanzania and how local actors perceive different constraints and possibilities of upgrading which in turn may contribute to strategies aiming at value chain upgrading in low and middle-income countries. The main contribution of this study to the continuing development of the value chain framework is, according to me, that the need for actors to employ diversification as a form of risk aversion may create hinders for value chain upgrading, something that has not previously been discussed within value chain research. Further investigation of this may contribute to a better

understanding of how value chains function in low and middle income countries and in turn create better premises for investigating value chains in low and middle income countries.

11. List of references

Ackson, Tulia. Masabo, Juliana. 2013. *Social Protection for the Informal Sector in Tanzania*. Presented at SASPEN and FES International Conference on Social Protection for Those Working Informally, 2013, Johannesburg.

Bair, Jennifer [ed.]. 2008. *Frontiers of Commodity Chain Research*. Stanford, California. Stanford University Press.

Bamber, Penny. Fernandez-Stark, Karina. 2013. Global Value Chains, Economic Upgrading and Gender: The Horticulture Industry. In C. Staritz & J. G. Reis [ed.], *Global Value Chains, Economic Upgrading and Gender: Case Studies of the Horticulture, Tourism, and Call Center Industries*. Washington, D.C.: World Bank.

Desai, Vandana [ed.]. Potter, Robert B. [ed.]. 2006. *Doing development research.* Sage Publications Ltd. e-ISBN: 9781847877826

FAO. 2016. *AQUASTAT website: United Republic of Tanzania* [online]. Food and Agriculture Organization of the United Nations (FAO). Retrieved: 29/12/2017. Available: http://www.fao.org/nr/water/aquastat/countries_regions/TZA/.

FAO. 2017. *United Republic of Tanzania and FAO: Partnerships for improved agriculture* [online]. Food and Agriculture Organization of the United Nations (FAO). Retrieved: 30/12/2017. Available: http://www.fao.org/3/a-az489e.pdf.

Gereffi, Gary. Fernandez-Stark, Karina. 2016. *Global value chain analysis: a primer* [online]. 2nd edition. Duke University, Center on Globalization, Governance and Competitiveness. Retrieved: 13/10/2017. Available: http://vareo.co/wp-content/uploads/Duke_CGGC_Global_Value_Chain_GVC_Analysis_Primer_2nd_Ed_2016.pdf

Gereffi, Gary. Humphrey, John. Kaplinsky, Raphael. Sturgeon, Timothy J. 2001. Introduction: Globalisation, Value Chains and Development. *IDS Bulletin*: 32 (3): 1-8.

Gereffi, Gary [ed.]. Korzeniewicz, Miguel [ed.]. 1994. *Commodity Chains and Global Capitalism*. Praeger Publishers. London.

Humphrey, John. Schmitz, Hubert. 2000. *Governance and upgrading: linking industrial cluster and global value chain research.* IDS Working Paper 120, Brighton: IDS.

Kaplinsky, Raphael. Morris, Mike. 2001. *A handbook for value-chain research* [online]. IDRC. Retrieved: 13/10/2017. Available: http://www.prism.uct.ac.za/Papers/VchNov01.pdf

Lazzarini, Sergio G. Chaddad, Fabio R. Cook, Micheal L. 2001. Integrating supply chain and network analyses: The study of netchains. *Chain and Network Science*: 1 (1): 7-22

Lee, Joonkoo. Gereffi, Gary. Beauvais, Janet. 2012. *Global value chains and agrifood standards: Challenges and possibilities for smallholders in developing countries*. Proceedings of the National Academy of Sciences of the United States of America: 109 (31): 12326-12331.

McCullough, Ellen B [ed.]. Pingali, Prabhu L [ed.]. Stamoulis, Kostas G [ed.]. 2008. *The transformation of agri-food systems: Globalisation, supply chains and smallholder farmers.* London. FAO

Mesquita, Luiz F. Lazzarini, Sergio G. 2008. Horizontal and vertical relationships in developing economies: implications from SMEs access to global markets. *Academy of Management Journal*: 51 (2): 359-380.

OECD/FAO. 2016. Agriculture in Sub-Saharan Africa: Prospects and challenges for the next decade. In *Agricultural Outlook 2016-2025*: 2: 59-95. OECD Publishing. Paris

Reuters. 2017. *Tanzania's President Magufuli vows to toughen tax evasion crackdown* (electronic). Reuters.com. Available: https://www.reuters.com/article/tanzania-taxation-idUSL5N1FN7M1. Retrieved: 01/05/2018.

Rosenfeld, Stuart. 2002. *Creating Smart Systems: A guide to cluster strategies in less favoured regions*. Paper prepared for the EU Regional Innovation Strategies Conference. Regional Technology Strategies Carrborto, North Carolina, USA.

Roy, Devesh. Thorat, Amit. 2008. Success in High Value Horticultural Export Markets for the Small Farmers: The Case of Mahagrapes in India. *World Development*: 36 (10): 1874-1890

Serrat, Olivier. 2017. The Sustainable Livelihoods Approach. In: Oliver Serrat. *Knowledge Solutions*. Springer, Singapore. 21-26.

Stadtler, Hartmut [ed.]. Kilger, Christoph [ed.]. 2005. *Supply Chain Management and Advanced Planning*. 3rd edition. Germany. Springer.

TCCIA. n.d. *About* [online]. Tanzania Chamber of Commerce Industry and Agriculture (Tccia). Retrieved: 30/12/2017. Available: http://www.tccia.com/tccia/?page_id=2.

TCCIA Manyara. 2016. *Terms of reference for sunflower value chain expert study* [online]. Retrieved: 30/12/2017. Available: https://groups.google.com/forum/#!topic/arushamailing/4SV3Qm0ZXSE.

TEOSA. 2012. *Assessment of the Potential of Edible Oilseeds Produced in Tanzania: The Case of Sunflower and Sesame* (electronic). Retrieved: 05/03/2018. Available: https://drive.google.com/file/d/0B2VCVi_fxs61c0tsek9rd0hiUGM/view. Research Document No: 01/2012 TEOSA.

TFDA. 2013. *Guidelines for good manufacturing practices of food products* [online]. TFDA (Tanzania Food and Drug Authority). Available: https://www.tfda.go.tz/index/sites/default/files/GUIDELINES%20FOR%20GOOD%20MANUF%20PRACT%20OF%20FOOD%20PRODUCTS.PDF. Retrieved: 30 April 2018.

The United Republic of Tanzania Ministry of Agriculture. n.d. *Agricultural Maps: Babati District.* http://www.kilimo.go.tz. Retrieved: 30/12/2017. Available: http://www.kilimo.go.tz/index.php/en/maps/view/babati-district.

The United Republic of Tanzania Ministry of Agriculture. 2016. *Tanzania Livelihood Baseline Profile: Manyara-Singida Maize, Sorghum, Beans & Sunflower Livelihood Zone (TLZ 25)* (electronic). Available: http://www.kilimo.go.tz/uploads/T25_FINAL_PROFILE.pdf. Retrieved: 18/04/2018.

Trienekens, Jacques H. 2011. Agricultural Value Chains in Developing Countries: A Framework for Analysis. *International Food and Agribusiness Management Review* 14 (2): 51-82

Ugulumua, Enock S. Inanga, Eno L. 2013. Tanzania's Small-Scale Sunflower Farmers: Upgrading the Value Chain. *International Journal of Sciences: Basic and Applied Research* (IJSBAR) 10 (1): 126-145.

Yin, Robert K. 2014. *Case study research: design and methods.* 5th edition. Sage Publications Inc. USA.

Zhihua Zeng, Douglas. 2017. *The Sunflower Sector in Tanzania: A Great Potential for Industrial Competitiveness* (electronic). World Bank, Washington, DC. © World Bank. Retrieved: 05/03/2018. Available: https://openknowledge.worldbank.org/handle/10986/27747 License: CC BY 3.0 IGO.