



The Food Value Chain Development Project in Tanzania

A Theory-Based Impact Evaluation

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Abstract

We are evaluating an aid project in the southern parts of Tanzania called the Food Value Chain Development Project. The project objective is to help farmers increase the quality and quantity of their produce to enable the farmers to sell their produce to a high-end market. To enable farmers to meet the high-end market demands, the project aims to organize groups of farmers into businesses. Our research questions are based on these producer businesses (PB), what extent functioning PB has been established, what extent these PB have been connected to high-end markets and if these activities have resulted in higher income among the farmers. During the implementation of the project the pigeon peas market collapsed, this collapse impacted many of the farmers involved in the project. We therefore have a research question about the extent the project participation helped the farmers adapt to the collapse. To answer these research questions, we travelled down to the project area and conducted qualitative interviews in three of the eight districts who has been part of the project. In our evaluation, we have used Howard White's theory-based impact evaluation approach to give a better understanding of why interventions have succeeded or not. The results of our study have been mixed. There are some PBs who have been well established and are functioning well, while other PBs are barely operating. Only three of the PBs have been able to reach high-end markets and only half of the PBs we talked to have sold after they became part of the project. The project has in other words not been able to connect most of the PBs to high-end markets. 24 of 50 farmers we interviewed said their income had increased as a result of training and/or sales to better paying markets. The farmers adapted variously to the pigeon peas collapse based on how dependent they were on pigeon peas. Only a few of the farmers we interviewed said that their participation in the project helped them adapt to the collapse.

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1. Introduction

The recent discovery of huge gas reserves in Tanzania has created new opportunities for economic growth and development of the country. Tanzania is expected to be one of the leading producers and exporters of natural gas in Africa the coming decade. However, 88% of poor Tanzanians live in rural areas and two-thirds of the labour force is engaged in agriculture. Most of them have little education, and lack of basic knowledge in their chosen field in agriculture.

The expected projected boom in the extractive industry may open new market opportunities for farmers to supply food items for high value buyers such as caterers, restaurants, supermarkets and processors. However, to benefit from rapidly expanding high-end food markets, farmers need to have both the capacity and the incentives to supply their produce at the desired quantity and quality.

One program aiming to enhance poor farmers' capacity and incentives to participate in the higher-paying markets is Aga Khan's Food Value Chain (FVC) Development. The project takes place in the southern regions of Mtwara and Lindi in Tanzania, and targets three types of food items that have high demand on the market. These targeted food items are vegetables, poultry, and pulses. The FVC project has over the last three years been working on organizing and training farmers to able them to meet the quantity and quality required to sell to high end buyers.

April 2019, we travelled to Southern Tanzania to see the impact of the FVC project. We travelled to three different districts and conducted a qualitative survey on farmers who has been a part of the project. We managed to get 60 good interviews in our three weeks in the element, which is about two-thirds of our original plan of 90 interviews. Conducting the interviews according to our plan was challenging due to long distances between farmers and some communication problems. Even dough we did not manage to conduct as many interviews as we hoped, we believe our data set is big enough to say something about what activities the project has implemented and whether these activities has had the intended outcome or not.

Our evaluation is based on Howard White's theory-based impact evaluation. By using this method, we have evaluated the impact the food value chain project has had on the farmers in the project. Almost every farmer we interviewed has been impacted by the project in different degrees. Some have improved their farming practises and have been able to establish functioning

producer businesses (PB). While others have received some training, which has improved their understanding of farming, but have not been able to implement what they have been taught in their own farming, or in the PB they are in.

To understand the setting in Tanzania we will first give some background information about Tanzania. This includes a brief introduction of Tanzania's politics, villagization, economy and agriculture which will be useful to know when reading our impact evaluation. Further on we will introduce the Aga Khan Foundation, which is the organization responsible for the implementation of the project. Next, we will introduce the food value chain project (FVC). To understand the FVC project, we are explaining how the project intend to use PB to solve the problems farmers are facing in farming and selling of their produce. We also give a brief introduction of the pigeon pea market collapse, which is a case that occurred during the implementation of the project that has impacted the results in the pulses value chain. After this background information we will present our study objective and research questions.

In chapter three we will present our methodology, which include subchapters about theory-based impact evaluation, the program theory, and data collection. In the last subchapter in chapter three we will present scopes and limitations in our analysis. Further on in chapter four we present the data we have found and the project impact, before we in chapter five have a discussion on the impact the project has had. In the discussion we answer the research questions and look at the sustainability of the project. Lastly, we conclude in chapter six.

2. Background

In this chapter we will present the background information relevant to the impact evaluation. We will first give background information about the political, economic and social setting in Tanzania, as it is important for understanding the context in which the project is set. Further on, we will present the organization responsible for the implementation of the project we are evaluating, before we present the Food Value Chain project. We will further on look at some external factors that have influenced the project. Lastly, we will present the study objective and research questions we will be answering in this impact evaluation.

2.1 Tanzania

United Republic of Tanzania (Central Intelligence Agency, 2019)

<i>Population</i>	55m.
<i>Official languages</i>	Swahili, English
<i>Religions</i>	Christianity, Islam, others
<i>Capital</i>	Dodoma
<i>Area</i>	947 300 km ²
<i>Currency</i>	Tanzanian Shillings (TZS)
<i>President</i>	John Magufuli

Tanzania is located on the coast of East-Africa, between Kenya in north and Mozambique in south, and have a population of around 55 million people (Central Intelligence Agency, 2019). The United Republic of Tanzania is a union between the mainland Tanganyika and the islands of Zanzibar. Tanzania is a popular travel destination due to its beautiful beaches and rich wildlife. The country has a tropical climate, with a short rain period in November-December and a long rain period in March-May.

There are more than 120 different tribes in Tanzania, with respectively about equal numbers of languages (Central Intelligence Agency, 2019). Each tribe speaks their own language, making

Tanzania have about 130 different languages. Even though most people in Tanzania speak their tribe language as their first language, only Swahili and English are official. Swahili, also called Kiswahili, is a bantu language spoken by many countries in east Africa, including Mozambique and Kanya.

The official capital in Tanzania is Dodoma, but Dar-es-Salaam is the largest and economically most important city with a population of more than 5 million (Central Intelligence Agency, 2019). Tanzania has a young and predominantly rural population, with a median age of 17.4 years and an estimated 66.8% of the population living in rural areas.

Before the colonial period in Africa, Tanganyika did not exist as a political unit (United Nations, 2018). A range of different-sized tribes lived in the area, and multiple small kingdoms were located around Lake Victoria. In the late 1800s, Germany and Great Britain shared East Africa between them. Tanganyika became a part of German East Africa, while Zanzibar became a part of the British Empire. In 1920, after World War 1, the British also took control over Tanganyika. Tanganyika remained under British control until 1961 when it gained its independence, while Zanzibar gained independence two years later, in 1963. In 1964, the United Republic of Tanzania was formed by the two states Tanganyika and Zanzibar.

2.1.1 Politics

Julius Nyerere established the party Tanganyika African National Union (TANU) in 1954, and he became the first president when the country gained independence in 1961 (The Economist, 2017). Nyerere was inspired by Marxism and feared ethnical conflicts, therefore the country started out as a one-party state. Despite some improvements in education and health services, the country was one of the poorest in the world when Nyerere resigned in 1985. In 1977, TANU and Afro-Shirazy Party, the only political parties in Tanzania, merged to form Chama Cha Mapinduzi (CCM). Tanzania changed their constitution to allow multiple parties in 1992, but CCM has been the dominant party and has won every election since its establishment in 1977. The current president is John Magufuli, who has been in office since 2015 (The Economist, 2017).

Tanzania is divided into 26 regions (mikoja) and 99 districts (wilaya) (Embassy of the United Republic of Tanzania, 2019). Each district has at least one council, created to further increase local authority. On a more local level, the districts are divided into wards, which are again divided into villages. The government is present in the local community through ward officers. In addition, each village has a village leader that represents the villagers.

Corruption is a widespread problem in all layers of society among African countries, including Tanzania. According to Transparency International, Tanzania was ranked as 99 out of 180 on the Corruption Perceptions Index for 2018, with a score of only 36/100 (Transparency International, 2018). However, President John Magufuli has started a war on corruption since he was elected to office, and it seems to have given results. In a comprehensive study published by Transparency International, they have looked at the current state of corruption in African countries (Transparency International, 2019). The participants in the study were asked if they felt any change in corruption over the past 12 months. In 2015, 66% thought corruption had increased and only 13% thought it had decreased. In 2019, only 10% thought it had increased, while 72% thought it had decreased. Even though the fight against corruption has improved, it is still a long way to go. The sector where most Tanzanians experience corruption is in the legal sector. Corrupt police and courts are giving the population limited legal protection, which is essential in any developed country.

2.1.2 Cooperatives

Cooperatives are people-centered enterprises owned, controlled and run by and for their members to realize their economic, social and cultural needs and aspiration. They exist all over the world, and an estimated 12% of the world's population are members of cooperatives (National Cooperative Business Association CLUSA International, 2019). Tanzania has a long story of cooperatives. Informal cooperatives were started by peasants already in 1925 to capture a part of the trade profit for their crops (Maghimbi, 2010). The Kilimanjaro Native Cooperative Union (KNCU) was established in 1933 as the first cooperative union consisting of 11 cooperatives producing coffee. By 1968 had the largest cooperative movement in Africa and the third largest in the world. Both the colonial and the independent government had been supportive of the cooperative model.

Traditionally, the type of model that has been dominant in Tanzania is the one that has focused on marketing of peasant's agricultural crops and is known as the Chayanovian model (Chayanov, 1919). This model was published in 1919 by Russian agrarian economist Alexander V. Chayanov. In this model peasant crop marketing cooperatives dominate, and it considers situations of developing countries where millions of peasants dominate. Chayanov was especially interested in organizations and how cooperatives would help the peasantry to not be overrun by large scale production organizations. According to Chayanov, the cooperative advantage is that it can advance the position of the poor without making any special changes in the economic equilibrium and without destroying the organizational plan of the small-scale rural economy (Chayanov, 1919). Large-scale production has undoubtedly an advantage when it comes to certain technical activities, but Chayanov believed that this could be organized in cooperatives to level out the playing field. For example, farmers could go together and hire a car to transport their products to the market, instead of going alone. This would neutralize the advantage of the large-scale farmers on that particular input cost. Other examples of this model can be found in Russia before the revolution in 1917, as well as in present day India. The Chayanovian model was dominant in terms of members and volume of trade in Tanzania since the beginning in the 1920s until they were abolished in the 1970s.

The cooperatives in Tanzania were owned and ran by the farmers until the late 1960s. At the end of the 1960s, the government got engaged in the cooperatives by having government employees overlook the cooperatives, and they started taking a fee from the farmers who used the cooperatives (Maghimbi, 2010). The farmers did not respond well to this. The fee decreased the farmers' profit, and it also led to lack of trust in the cooperative model. This led to apostasy among many of the farmers, which started a trend to abandon the cooperatives. When many of the farmers stopped bringing their produce to the cooperatives, the quantity went down making many buyers who approached the cooperatives leave empty-handed, or with less than they intended to buy. The trend continued into the 1970s when the cooperatives were abolished by the government (Maghimbi, 2010).

2.1.3 Villagization

Many African countries can be characterized by the abundance of land and low population density (Osafo-Kwaako, 2011). Because of this, central authorities have often struggled to broadcast their power throughout their territories. Scattered population limits the state's ability to raise taxes, defend its territorial boundaries, and to provide public services. In addition, the scattered hinterland population also tend to avoid the control of central governments. According to Alexander Chayanov, peasants in pre-capitalist countries are primarily concerned with subsistence production, catering to the needs of their household, and preserving their traditional forms (Osafo-Kwaako, 2011). However, many farmers in countries with similar demography are dependent on the market and the state for survival. Smallholder farmers in Africa have land in abundance and regular rain which kept them from being dependent on the state. This made it difficult for the authorities to bring rural communities under state administration.

The government made an attempt to raise taxes from the smallholder farmers in rural areas by introducing a fee through the cooperatives. The attempt on raising taxes from rural areas through cooperatives was unsuccessful due to the abolishment, leading to a government experiment to strengthen local authority. Starting in 1973, a number of development villages were created in rural areas of the country (Osafo-Kwaako, 2011). The villages were created to concentrate the rural population and introduce local authorities in the shape of village councils. The village councils were responsible for collecting taxes, enforcing property rights, and provide public services. The program ended in 1982 following the commencement of an IMF economic liberalization program. The villagization program was criticized by James C. Scott, who described it as a failed example of large-scale state planning with adverse economic and ecological consequences for peasants (Scott, 1999). Even though the villagization program was abolished in 1982, it is still possible to see the effects in the rural communities today. The rural areas are organized in villages and every village has a village leader. The organizational history of the rural communities will be useful knowledge in the evaluation later in the study.

2.1.4 Economy

Tanzania has a mixed economy with an active private sector. The government remains heavily involved in some industries, including telecommunication, banking, energy and mining. In the

first decade of the 2000s, Tanzania had an economic growth averaging 6.7% per year, which was well above the region average, and one of the highest in Africa (The World Bank, 2019). The country is still experiencing economic growth, but it has cooled off over the past few years. Financially, 2018 was a mixed year for Tanzania. Inflation remained low and stable at 3%, and the shilling also remained stable. However, foreign direct investment has declined from high levels in 2014, when it accounted for 5% of GDP¹, and export growth has stagnated. The national poverty rate has declined steadily from 34.4% in 2007 to 26.8% in 2016, but the number of poor people in absolute terms remains the same due to population growth.

Agriculture is by far the biggest sector of the national economy, employing two-thirds of the population (Oxford Business Group, 2018). Coffee and cotton are the most important export cash crops, but other exports include cashew nuts, tea, tobacco, and sisal (OEC, 2017). Despite employing two-thirds of the population, agriculture export accounts for only a fifth of the total exports. The single most exported good is gold, which made up 29% of total exports in 2017 (OEC, 2017).

The country has considerable potential for economic development, mostly due to the abundance of natural resources like minerals and natural gas (Britannica, 2019). It is expected that the access to natural resources will increase the income rapidly, and the government wants to use this to industrialize the country. The Tanzanian government has ambitions of becoming a middle income country (MIC) by 2025 (Moyo, Simson, Jacob, & de Mevius, 2010), and their reported GNI² per capita for 2018 was US\$1,020 (The World Bank, 2018). The World Bank currently defines MICs as countries with a GNI per capita ranging from US\$1,026 to \$12,475 (The World Bank, 2019), which means they are close to achieving their target ahead of time. However, the country has considerable challenges related to poverty, access to healthcare, quality of education, weak infrastructure, and low productivity.

Tanzania has been one of the most important countries for Norwegian development cooperation for decades (NORAD, 2018). The aid cooperation between Tanzania and Norway has been going since their independence in 1962, and Tanzania has for decades been the largest receiver of aid from Norway. In 2018, Tanzania received NOK 397.3 mill. in aid from Norway. The aid was

¹ Gross Domestic Product

² Gross Net Income

spread across multiple sectors, including agriculture, renewable energy, health and education. Norwegian aid is managed by the Norwegian Agency for Development Cooperation (NORAD).

2.1.5 Agriculture

The Tanzanian government is focusing on agriculture as one of the main sectors to achieve economic growth. This is because the agriculture sector accounts for almost one-third of the country's GDP and employs two-thirds of the population (Oxford Business Group, 2018) (Oxford Business Group, 2018)^[10]. Smallholder farmers in Tanzania are facing several challenges, including the following:

- Infrastructure deficits that limits access to domestic and international markets
- Limited access to high-yielding inputs such as seeds and fertilizer
- Limited irrigation and dependency on rainfall
- Poor access to credit
- Limited knowledge in general and in their respected fields

These constraints are keeping a large part of the country's farmers from being included in the major value chains, and it is one of the reasons why the country has been unable to exploit its abundant agricultural resources.

Many initiatives have been started by the government and other private organizations to overcome the challenges and improve the value chains. Similar projects to the FVC project have been carried out in Tanzania and other Sub-Saharan countries for years, and the FVC project is based on experiences from these projects. A methodological guide prepared for the World Bank in 2007 takes on various tools that can be used to improve value chains (Webber, 2007). It discusses several case studies, with focus on how they managed to strengthen the value chains through different types of interventions. Developing value chains in the developing countries in Sub-Saharan Africa is not easy, as there is a wide range of challenges to face. What may seem to work in one place, may not work in a different setting in a different country. However, we can use the acquired knowledge from these projects to constantly improve the accuracy of the interventions, and further use this to develop stronger value chains in SSA and other regions.

2.2 Aga Khan Foundation

The Aga Khan Foundation (AKF) is the organization responsible for the implementation of the project we are evaluating. AKF is a private, non-profit, international development agency, and is one of multiple agencies included in the Aga Khan Development Network (AKDN). It was founded by the 49th Aga Khan³ in 1967 (AKDN, 2019). AKF brings together human, financial and technological resources to address some of the challenges faced by the poorest and most marginalized communities in the world. Their objective is to invest in human potential, expand opportunities and improving the overall quality of life, especially for females. They work primarily within six areas: Agriculture and food security; economic inclusion; education; early childhood development; health and nutrition; and civil society (AKDN, 2019).

AKF is largely a field-based organization with program units located in rural areas across the Middle East, Asia and Africa. They also operate in urban areas in Europe and North America to support poor immigrant communities. AKDN have been involved in Tanzania for more than a century, where they have contributed to operations of hospitals and health clinics, education facilities and insurance companies (AKDN, 2019). In 2009 AKF launched their Coastal Rural Support Program Tanzania (CRSPT) in collaboration with the government, aiming to improve quality of life in Mtwara and Lindi regions through multiple interventions. The AKF have since been working on similar projects in the regions. They have also had an Agreement of Cooperation with the Tanzanian government since 1991, to facilitate effective utilization of financial and human resources.

2.3 The Food Value Chain Project

We will now introduce the Food Value Chain (FVC) project, which is the project we will be evaluating in this study.

The Food Value Chain Development Project is an Aga Khan Foundation project, funded by the Skills for Oil and Gas Africa (SOGA). SOGA is an initiative established by the German Federal Ministry for Economic Cooperation and Development (BMZ) and UK's Department for International Development (DFID) aiming to address skill gaps in the oil and gas and associated

³ Imam of the Nizari Isma'ili Shia Muslims

sectors in East Africa, as well as assisting partner governments in preparing their workforce for upcoming opportunities in the private sector. NORAD (Norwegian Directorate for Development Cooperation) is also among the organizations supporting this project. The initiative is implemented by Deutsche Gesellschaft für International Zusammenarbeit GmbH (GIZ).

The FVC project covers the Mtwara and Lindi regions in southern Tanzania, two of the poorest regions in the country, and aims to enhance the local farmer's capacity and incentives to participate in the higher-paying markets. The project targets three types of food items that are projected to have high demand from the extractive industry and which currently have high demand from other local markets such as restaurants, hotels, regional markets and exporters, but are not being supplied by local producers in the required quantity and quality. The targeted food items the FVC project have focused on are vegetables, poultry and pulses.

From the proposal the project had as objective and output to:

- Increase cash income of 5,000 individuals (producers, entrepreneurs and value chain actors)
- Establish and/or strengthen 200 Micro, Small and Medium Enterprises (MSMEs) linked to supported food value chains.
- Generate employment or self-employment for up to 400 individuals engaged in targeted MSMEs.
- Improve sustainable livelihoods for 2,000 women (40% of the target beneficiaries) engaged in supported food value chains.
- Catalyse allied industries in Mtwara and Lindi including but not limited to nurseries, storage, packaging, transport, poultry feed industry, hatcheries, brick making from rice husk, and seed production.

2.3.1 Producer businesses

The project aims to create producer businesses (PB) as the first step towards reaching the outputs. PBs are groups of farmers registered and supervised by the AKF. The purpose of these groups is to coordinate, help, guide and train the farmers to make them better equipped to sell to

a high-end market. There are many difficulties farmers meet when trying to sell to high end markets, the most important ones being:

- The quantity required
- The quality required
- Money required to buy the needed inputs
- The network or knowledge about potential buyers and sellers of inputs.
- The ability to meet a given contract demand
- The logistics required

The first problem that occurs is the quantity required to be able to sell to high end markets. Farmers in the rural areas do not have big industrial farms with the modern technology required to produce at a big scale. They normally have some acres they tend to themselves, and the outputs from their farms can variate, but is not enough to sell to for instance a supermarket. For this reason, the project aims to create PB with up to 85 members with an average of 55 to 60 members. With this many farmers working together the problem of required quantity is hopefully met.

The next issue is the quality of the produce. The quality of the produce is varying, but not up to high-end market standards. The farmers are lacking farming knowledge to meet the quality demanded by the buyers. To help with this problem the project plans to have group-based training on a group demo plot, where they educate the farmers on good farming practices. A group demo plot is a piece of land the group tend to together. The training includes showing the farmers how to plant and tend to their produce to take advantage of the seeds they plant. The importance of quality inputs is also an important aspect of their training. For PBs who farm poultry the group training is based on how to best raise chicken, with information on how to handle the difficulties the farmers meet in the poultry industry. This can for instance be about the importance of vaccination for the chickens, to decrease illness and mortality.

After learning about what the farmers should do and the inputs they need in order to reach high-end markets, the problem of capital occurs. The farmers have limited income making it hard to save money for later investments. The option of loaning money can also prove difficult for many

farmers. To help with this problem the project has different initiatives to help them save in savings groups or help them meet requirements needed to access loans as a group.

Another problem the farmers meet is the problem of finding buyers for their produce and sellers who sell quality inputs. To find buyers the project aims to connect the PB to buyers in the high-end market. In order to fill in gaps in the value chain like gaps where farmers need inputs for their farming, the project aims to strengthen the capacity of MSMEs along the three value chains and connect them to the PBs.

The last problems are about the ability to meet contract demands and figuring out how to transport the produce. The project has not been able to get to the stage where they have implemented any of the planned activities when it comes to contracts and transportation. The planned activities to meet this requirement is also a bit unclear. The problems with meeting contract demands is that for instance a supermarket needs a steady flow of produce all year. This is a difficult demand to meet when the farmers harvest their produce two to three times a year depending on the produce. The problem with transportation is that it is costly when it is done on a small scale, and therefore it is not profitable for smallholder farmers to transport their produce to markets further away than their local village market. It is also difficult to drive for instance tomatoes from the Mtwara or Lindi regions to high-end markets in Dar-Es-Salaam without damaging the tomatoes in the process because of poor road conditions.

These are the problems connected to reaching high-end markets and the project's plans for the PB to help solve these. There are also functions within the PB that are important for the PB to internally function well. These are aspects around the organization and leaderships within the PB. In order to function well the PBs must have:

- Strong leader
- Committed members
- Constitution

The first aspect that is important is that the PB has a strong leader who is eager to learn, has a vision and can motivate a group. The project aims to identify farmers who are already leaders in the value chains, those who demonstrate entrepreneurial qualities, such as interest in leadership positions, understanding of finance and creativity in problem solving or entrepreneurial

graduates of agriculture colleges. These leaders will be followed up by the AKF and be appointed as leaders in the PBs.

In order to secure strong members, the project have made criteria for the producers to participate in the project and in a PB. These are:

1. Demonstrate a level of interest or experience in the particular value chain
2. Interest in improving productivity and quality
3. Interest in investing along with peers to reach larger markets
4. Access to land and water required for the selected value chain
5. Access to finance through a savings group or other mechanism.

After the group is made, the project plans to help the PB make a constitution. The constitution is there to help the PB work together, with rules, principles and established precedence written to be followed by the PB members.

The PB model is based on the same principles as the cooperative model that was common across Tanzania in the 1900s. Chayanov explained how smallholder farmers could compete with large-scale producers by organizing as cooperatives, and the same idea is used in the organizing of PBs. However, there are some difference between the PB model and the cooperative model. The cooperatives were based on collaboration between the farmers to share input costs and increase their bargaining power to get a higher price for their produce. The farmers produced individually, and the income was shared based on how much they sold. The PB model is also based on collaboration between farmers to share input costs and increase bargaining power, but instead of operating individually, they produce and sell as groups. This means that every PB member must contribute equally, and they must find a way to share the income among the members.

2.3.2 Economies of scale

The PB model is based on the assumption that the PBs will achieve economies of scale by producing as groups instead of as individuals. The theory behind economies of scale is a good tool for explaining how the PB can enable the smallholder farmers to compete with large-scale producers.

Economies of scale are cost advantages gained by companies when production becomes efficient (Kenton, 2019). If a company can produce goods on a larger scale, but with fewer input costs, it will have achieved economies of scale. Economist Alfred Marshall made a distinction between internal and external economies of scale (Heakal, 2019). Internal economies of scale are explained above, while external economies of scale occur when outside factors have an impact on production costs (e.g. a new road lowers transport cost). There are several ways to achieve economies of scale. The following inputs may cause increased production efficiency in a company:

- Lower input costs – If the PBs are big enough they may be able to get a bulk discount on buying inputs.
- Costly inputs – Increased production can lead to increased efficiency with costly inputs. For example, an irrigation system can be expensive to the farmers, but if a PB produces large quantities, the price of the irrigation system per unit will decrease.
- Specialized inputs – Improved farming knowledge can lead to increased efficiency in production, and therefore lead to lower input costs per unit.

2.4 External factors

The project was negatively impacted by some external factors, and they must be taken into consideration when evaluating the project. Both the collapse in the pigeon peas market and the underwhelming increase in economic activity were out of the project's control, but both had a negative impact on the outcome of the project.

2.4.1 Pigeon peas market collapse

The market for pigeon peas collapsed during the summer of 2017 as India introduced a restriction on importation of a number of pulses. Many farmers involved in the project were growing pigeon peas individually and/or in groups. The collapse negatively affected many, and forced the farmers to adapt to the situation as prices dropped from 1,000-1,500Tsh./kg to 0-200Tsh./kg. Many were not able to sell their produce. It is therefore interesting to see what they have done to adapt to the situation, and if their participation in the project had any impact on their ability to adapt.

2.4.2 Extractive industry

The FVC project was meant to help local farmers take advantage of the expected economic boom in the region, due to the discovery of huge natural gas reserves. However, the declining petroleum prices and the uncertain political situation has limited the involvement of international companies in the region. As a result, the increase in economic activity was far from what was expected. This had a major impact on the project as they had to adapt to the situation and find other target markets for the participating farmers. It also resulted in far less demand for quality produce than what was expected from the increased activity by the extractive industry.

2.5 Study objective and research questions

The objective of this study is to evaluate the FVC project in Mtwara and Lindi through project documents and interviews with key informants. We are going to evaluate the impact of the project interventions according to the indicators in the logical framework, provided by AKF at the outset of the project. Furthermore, we are going to identify possible gaps and constraints that are keeping the project from unleashing its potential, as well as identify possible support services that could improve the value chains.

To best determine the impact of the FVC project on the participants, as well as identifying possible gaps and constraints, we have developed the following research questions:

1. *To what extent have well-functioning producer businesses been established?*
2. *To what extent have these producer businesses been connected to high-end markets/target markets?*
3. *To what extent has the establishment of producer businesses increased the income of the involved farmers?*

The market for pigeon peas collapsed in the early stages of the project, and it is likely that it had a significant impact on the participating farmers. Therefore, we have also included the following research question to our study:

4. *To what extent did the project participation help the farmers adapt to the collapse of the pigeon peas market?*

The first three research questions are based on the logical framework of the project, and they are interesting as they are the best indicators on the success of the project. Each question represents one stage of the project process. The first stage of the process is to establish well-functioning PB. The next stage is connecting the PB to the target markets. The last stage is generating extra income through the PB for the participating farmers. These questions will be the foundation for this study and our evaluation of the FVC project.

3. Methodology

The purpose of this chapter is to provide an introduction to the theoretical framework and methods this study is based on. The presented concepts are based on existing frameworks and models that have been used regularly in evaluating similar programs. We will perform a theory-based impact evaluation of this study, based on the works of Howard White (White, 2009). In the first part of the chapter we present the principles of the theory-based impact evaluation, including the use of qualitative/quantitative and recall methods. In the second part we present the program theory, and in the following part we present our methods for data collection. We will conclude the chapter by looking at the scope and limitations of this case study.

3.1 Theory-Based Impact Evaluation (TBIE)

The theory-based impact evaluation is a well-established approach in research and has been used extensively in evaluations of similar development programs (White, 2009). TBIE is a great tool for evaluating development programs, as it allows the use of both qualitative and quantitative data. Quantitative methods have been popular for measuring the impact of programs, but they are limited when it comes to see why programs have succeeded or failed. Programs usually have a range of interventions that are being implemented, and the degree of success is probably not the same for all the interventions. By using both qualitative and quantitative approaches, factual analysis and assumption-testing, we can determine the interventions that have been successful and those who must be improved or replaced. The TBIE also takes into consideration that the

same interventions may have been implemented differently in the same project due to messy field conditions, and therefore, they may have different outcomes. Furthermore, it evaluates the context of the program, which includes the political, economic and social setting. What works in one place, may not work in a different place.

TBIE is a framework for an impact evaluation, developed by Howard White. It explains what should be taken into consideration, and which methods to use, to give the most precise evaluation of the interventions implemented by the project. White identified six key principles that must be followed to successfully apply the approach:

- Map out the causal chain (Program theory)
- Understand context
- Anticipate heterogeneity
- Impact evaluation using a counterfactual
- Factual analysis
- Mixed methods

These six principles are all parts of the impact evaluation. The program theory outlines the underlying assumptions for the project. By testing the assumptions for the project, we can determine which ones are correct and which ones must be replaced. We must also understand the political, economic and social setting, to determine if an intervention was (un)successful only due to the circumstances. Heterogeneity must be anticipated as field officers may interpret and implement interventions in different ways, which could lead to different outcomes. To measure the project's impact, it needs to be compared to a credible counterfactual. Furthermore, factual analysis must be done to determine if the program has reached the intended audience. We must also collect data for measuring impact, and the TBIE approach encourages a mix between qualitative and quantitative methods. We are going to take a closer look at the six principles of the TBIE approach below.

3.1.1 Map out the causal chain (program theory)

The first step in a theory-based impact evaluation is to map out the causal chain. The program theory, also known as the theory of change, describes the project every step along the way from input to output, outcome, and finally, impact. The causal chain is already outlined in the logical

framework (appendix X), but the program theory adds to the framework by including the underlying assumptions the project is based on.

Assumptions are essential for the project, as they are used to determine the input needed to reach the desired outcome. For example, one of the desired outcomes of the FVC project is increased income among the participants, and therefore, they will have to provide inputs that will eventually lead to this outcome. One of the assumptions is that increased production volume and quality will help the farmers reach high-end markets and increase their income. Therefore, the project has focused on providing training and organizing PBs hoping that the assumptions are correct and that it will lead to increased income among the participants.

Furthermore, the program theory needs to be able to adapt to changing circumstances in the field and to take on board competing theories and unintended consequences. The process of forming a program theory for the project is divided into two different phases. The first phase is creating the framework for the program theory based on the logical framework from the project documents. The second phase is making sure that the program theory is up to date by involving the project manager and his team. Projects rarely go as planned in the field, and it is therefore important to update the program theory with information from the project leaders on any activities and goals that have been revised.

The causal chain approach is linear, and it has therefore often been criticized for being unidirectional or presenting a deterministic approach. However, this evaluation tests the underlying assumptions in the program theory, and one of those assumptions is that the observed outcomes are the result of project activities and outputs. In some cases, selection bias can cause reverse causality, which means that the outcome variables affect who participates in the project. For example, resourceful farmers with strong connections to the local government are more likely to benefit more from the project than the poorest and least resourceful farmers in an area. It is important to uncover this type of selection bias and reverse causality because the impact evaluation may reflect pre-project differences rather than project impact.

The TBIE approach has also been criticized for being too static, while interventions usually adapt and evolve. The program theory will typically be able to cover adaptations related to overall

activities and goals for the project through discussions with the project manager and his team. However, field officers often interpret things differently and may have liberal approaches to the project procedures, which can lead to differences between what was supposed to be done and what was actually done. Thorough field work will help us to better understand why these differences have emerged and how they have affected the project performance.

By focusing on the causal chain, the evaluation may miss out on unintended effects caused by the project. This can be resolved by applying the program theory carefully, with attention to possible unintended effects like environmental implications. Furthermore, field work will enable us to pick up on any unintended consequences, which we will then be able to work into the evaluation framework. Taking into account competing theories is also an important part of the evaluation. Through field work we can get input from project managers, local government, field officers and participants. Different perspectives may have different opinions on the project, which can lead to a better evaluation.

3.1.2 Understand context

It is important for the evaluation to understand the context in which the project is set, because the political, economic and social setting can influence how the causal chain plays out. This information is crucial to understand the impact of the program and how we design our evaluation. Therefore, we have presented some background information on the political, economic and social setting in Tanzania to help us better understand our findings later in the study. It is near impossible to implement identical projects in different places due to different field conditions, and understanding context will help us anticipate heterogeneity, which will be further outlined below. It is also important to read the project documents thoroughly and be familiar with literature related to the study.

Understanding context can also help in understanding whether evaluation findings can be generalized. Whether an intervention is successful or not, could depend on the given circumstances, and it will therefore not always be applicable in other projects. For example, the FVC project depends on the local government to help them organize groups. Good cooperation has been essential for going through with this project, and they have received considerable support from the government. If they were to start up a program in a different country, they may

have to search for different methods as the government may not be as supportive. Therefore, understanding context can help us understand which project components are applicable independent of the situation, and which components are dependent on the political, economic and social setting.

3.1.3 Anticipate heterogeneity

The same project will have different impact in different places due to different settings, as explained earlier. Understanding context will help us anticipate possible impact heterogeneity. Exposing likely heterogeneity can be done by examining the underlying theory, and it is important because it will influence the evaluation design to accommodate for impact heterogeneity. Heterogeneity occurs due to “messy” field conditions. Even though two projects are identical, the impact of those two projects will be different due to a range of factors that eventually decides the impact of the projects. Skills and knowledge among the field officers, motivation and skills among participants, weather and soil conditions are just a few of the many factors that played a role in the impact of the FVC project.

3.1.4 Impact

One of the key components in the TBIE is evaluating the project impact by using an appropriate counterfactual. The most precise way to conduct an impact evaluation would be to establish a baseline at the start of the project, using a control group as reference. At the end of the project period, an endline survey would be conducted to compare the project participant with the control groups and thereafter determine the impact of the project. However, in this evaluation we will be using *recall* as the counterfactual for the evaluation.

Using the *recall* method means that we compare the farmers’ situation before and after the project intervention (de Nicola & Giné, 2013). During the interviews we ask the informants about their experiences and try to capture what the situation is like now, compared to before the project intervention. Remembering exact information from two to three years ago can be difficult for the informants, but research shows that the *recall* method can be very precise when it comes to determine tendencies. This will be further outlined below. Therefore, this method is good for performing qualitative studies, as we are looking for tendencies rather than comparing exact numbers.

It is important to understand that using *recall* may be an inaccurate source of information for the evaluation, depending on the time frame (de Nicola & Giné, 2013). The longer we go back, the harder it will be for the participants to remember things as they were, and they will be more exposed to inference. The FVC project started up three years ago, and it will therefore be necessary for the participants to recall information from the period before 2016. This can be difficult as research shows that people will have a hard time recalling precise information from three years before (de Nicola & Giné, 2013). However, the same study also shows that even though people will struggle to remember exact information, they are much more likely to remember tendencies. For example, a farmer may not be able to remember what his income was at the start of the project, but he may remember if his income has increased or decreased since then. Therefore, *recall* can be a useful tool for determining tendencies in this evaluation.

Furthermore, research shows that establishing time cues will help the informant remember more accurately (de Nicola & Giné, 2013). Time cues are significant events that happened around the time we want the informant to recall information from. In this study we used the collapse of the pigeon pea as a time cue due to its significance among the participating farmers. It helped us retrieve more information as the informants would remember what happened at the time of the market collapse, instead of just trying to remember what happened two or three years ago. However, the use of time cues can backfire, as research shows that using time cues not relevant to the informant may worsen the accuracy of the information (de Nicola & Giné, 2013).

3.1.5 Rigorous factual analysis

Many of the links in the causal chain are based on factual analysis, and it is therefore crucial to implement factual analysis in the impact evaluation to supplement the counterfactual analysis. The most common form of factual analysis is called targeting analysis. Targeting analysis looks at who benefits from the program. Most programs are directed towards a target group that is defined in advance in the project documents. For example, the FVC project is trying to reach poor farmers in rural areas that are involved in either poultry, horticulture or pulses value chains. Sometimes a project can benefit a different group than what was originally intended, and therefore exclude the target group from the project. If we have representative data sets and

defined target groups, we can identify and measure the target errors through targeting analysis to see whether the program has been able to reach the intended target group.

A different form of factual analysis is testing whether the project participants that have been exposed to training have learned something useful and later put it into practice. In this case the farmers have been attending training to improve their farming practices, and for the project to have an effect, they need to have learned something new and useful which they also have implemented on their farms. For example, an agricultural research project in Kenya was supposed to develop agriculture by funding research stations that would pass on lessons to extension officers⁴, who, again, would pass the lessons onto farmers. However, a study showed that the lessons were not passed onto the extension farmers and they ended up teaching the farmers about farming practices they had already implemented a long time ago. By using factual analysis, we are therefore able to uncover flaws in the project's causal chain.

3.1.6 Mixed methods – Qualitative and quantitative approaches

“Mixed methods” refers to using both qualitative and quantitative approaches to supplement each other in a single evaluation. While the quantitative approach can give us exact numbers on the impact of a project, the qualitative approach can give us more insight as to why – or why not – interventions have been successful. By spending time in the field talking to participants and field officers, as well as see the real-life setting for the project, we may discover other aspects of the evaluation that we have not taken into consideration. We will also be able to better understand the data set, which may lead to different conclusions and a more accurate evaluation.

We will predominantly be applying a qualitative approach to this analysis. While quantitative analysis is restricted to measure the progress of the actual project activities, they are often not suited for assessments of what should be improved in order to have stronger impacts. For example, if some services are not working in accordance with intentions –or if they can be improved through the experiences of the participants, then a qualitative study could reveal such potential and create value added to the quantitative study.

⁴ Extension officers are local government officers.

Another shortcoming of quantitative studies is that for more complex projects, it is not feasible to distinguish between the project components in contributing to the measured effect. In this project for example, it is not easy to quantitatively identify to what extent the increase in production is associated with the farmers forming a PB, adopting improved agricultural practices, improved input or other service availability or support from the MSMEs.

Moreover, we are also interested in the degree to which the participants are reaching out to new markets, new buyers and whether the farmers are becoming more efficient and competitive in other ways than captured by the quantitative indicators. Hence, the impact estimates are valid for the overall project, but we would not know if any sub-component is contributing more or less than the others, or whether the PBs are in the process of entering the high-end markets. Perhaps the results are driven by a smaller subset of activities? If that is the case, then one could design more efficient (more value for money) projects by focusing on those activities. This point derives from the interest in assessing the mechanisms behind any successes that may be achieved – does any particular activity play a lead role in unleashing the potential in value chain development? Are there any binding constraints, or project activities that must be included in order for the project to be effective?

The qualitative approach is well-suited for assessing project impacts where there are a small number of beneficiaries, such as individual successful entrepreneurs that have been able to grow fast, or MSMEs where the number is too few to be included in quantification (such as those focusing on niche markets or other outliers in terms of business area). Moreover, this methodology is also suited to discuss whether there are some specific mechanisms believed to be important for the results. One issue raised at the concept stage is to assess how securing market demand by creating links with private sector companies may change the producers' behavior along dimensions such as commitment, quality, business thinking etc. Moreover, the study also intends to assess the sustainability dimension of the intervention.

Even though we are mainly using a qualitative approach, we also apply a quantitative approach to some degree. The interviews consist of both open-ended and structured questions, which has given us both qualitative and quantitative data. We have used the quantitative data to determine trends among the participants (e.g. increased income, members per group, etc.), and we have

tried to look at the reasons behind the trends by applying qualitative data from the open-ended questions. Applying both qualitative and quantitative data is a good way of determining what has happened, and why has it happened, and it is one of the key principles of the theory-based impact evaluation.

3.2 The Program Theory

We will now assess the program theory for how the FVC project is intended to reach the envisaged objectives. In the proposal made by the AKF the logical framework is mapped out, the framework shows us the objectives and the result the project wishes to achieve and the indicators and targets of the project. To achieve these results the AKF made a causal chain (figure below), to describe the project every step of the way from inputs needed to the impact the project aims to achieve.

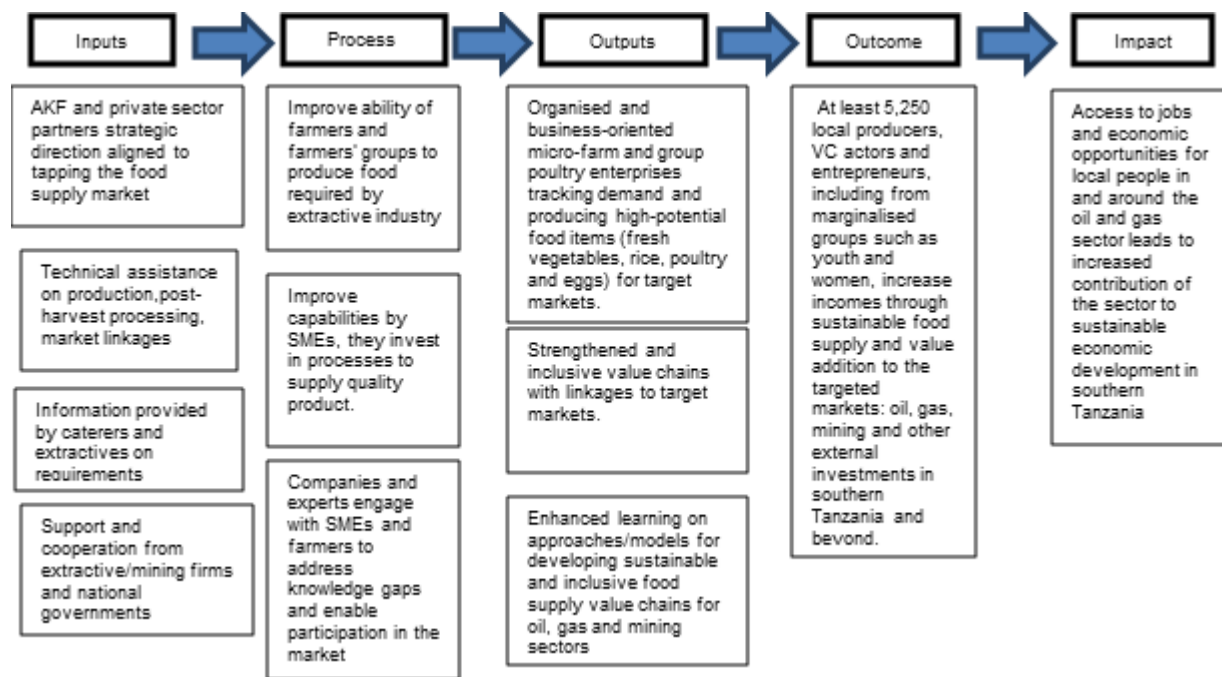


Figure 1. Causal chain. Source: Project proposal FVC project (Appendix 2)

The figure was made in the early stages of the project with the proposed activities leading to the desired impacts. When we got to Tanzania, we came to understand from the AKF that the plans and activities had somewhat changed along the way. In the presentation by the AKF in the end of

April 2019 they presented what inputs and activities that have been implemented during the implementation of the project. Based on this information, the logical framework⁵ and the causal chain, we made the program theory, with implicit and explicit assumptions on the impact of the project. This framework is more detailed than the causal chain and includes different assumptions and warrants we believe is required for the project to succeed.

⁵ Logical framework is found in appendix 1.

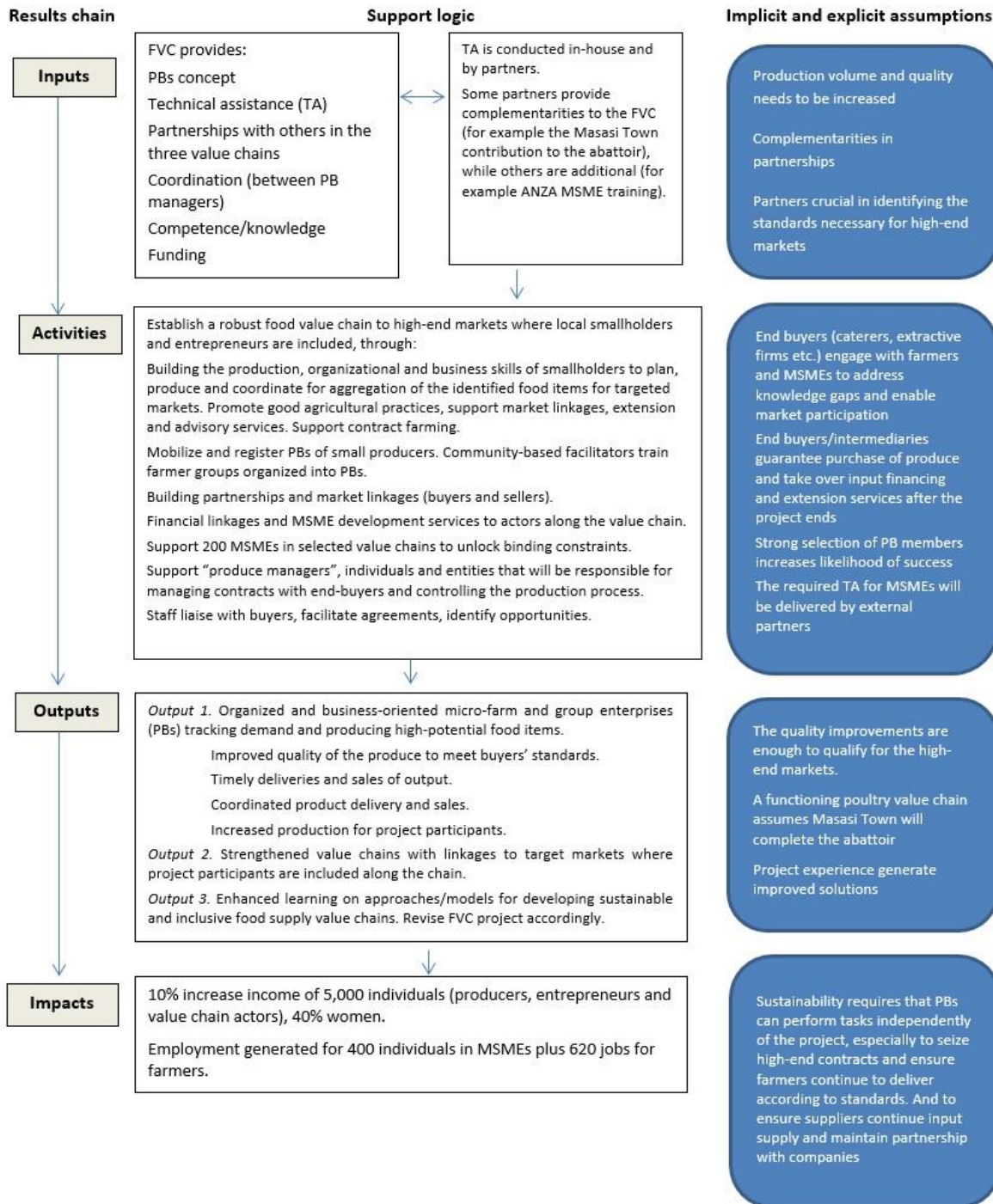


Figure 2. Program theory. Source: Espen Villanger (edited by AKF, Lise Rekdal, and Simon Johnstad)

To create a logical framework for a project, the project managers must plan activities based on assumptions of how things will work out. These assumptions can sometimes be wrong, and it is

therefore important to conduct studies to evaluate the assumptions connected to the project. This study will focus on evaluating the impact of the FVC on the participants, and thereafter test the underlying assumptions to determine which ones are correct and which ones need to be revised. As shown in the program theory, the project will eventually lead to three different outputs:

- Output 1: Organized and business-oriented micro-farm and group enterprises (PBs) tracking demand and producing high-potential food items.
- Output 2: Strengthened value chains with linkages to target markets where project participants are included along the chain.
- Output 3: Enhanced learning on approaches/models for developing sustainable and inclusive food supply value chains.

Outputs 1 and 2 include the establishment of PB and MSMEs, as well as strengthening the value chain. Output 3 is the learning output from multiple studies and progress reports. These outputs will then lead to higher employment and increased income among the participants. The project includes a wide range of activities to be able to eventually reach the expected outputs and outcome. One of the assumptions the activities are based on, is that production volume and quality needs to be increased for the farmers to be able to sell to high-end markets.

The first activity leading to this assumption is the formation of the PBs in the different value chains. Using criteria from the AKF entrepreneurship development program, the project will identify farmers who shows qualities in leadership, entrepreneurship, finance, creativity in problem solving or have a relevant degree from college to become leaders in PBs. These leaders will be trained to; manage the more complex and higher volume businesses to serve extractives, make a constitution for the group in order to register with the government, build relationships with clients and select members based on criteria made by the project. A strong selection of PB members is another aspect we assume to be of importance for the project to succeed. Because of this assumption the project has criteria that the member selection will be based on, including the right skills and motivation for being part of the project.

The training of the leaders should mainly be done within the first year of the project, the project staff will within this year provide direct business support. After this the project staff will continue to facilitate and give advice, as they slowly let the leaders take full control of their PBs. To help the PBs increase the volume of production, the project staff will help PBs to apply for loans.

Through the whole project the staff will provide training to the members of the PBs in their value chain. The training will be in three areas: technical skills on good agriculture/ horticulture and poultry practices, organizational skills and entrepreneurial skills. The training will be conducted within a training module made by AKF. Based on these activities the assumption is that they can increase production volume and quality, which hopefully will help the PBs to reach high-end markets.

The second output is to connect the PBs in the different value chains to target markets. The assumption for this output is that the connection will be upheld after the project ends, and that it will be beneficial for both parties. The project staff will meet with potential buyers and firms who show willingness to invest and capacity to implement. The project will support the selected companies with technical assistance, extension support and linkages to PBs. As part of this activity the project staff will help the PBs and companies to write contracts where the extent of their partnerships and agreements are written.

There are some binding constraints related to different aspects of the value chain. To fill the gaps in the value chain the project is strengthening the capacity of MSMEs within the selected value chains. MSMEs is short for micro, small and medium enterprises, these enterprises are operating in different value chains and supply numerous of different items or services. The project staff will identify and support MSMEs in the three value chains who can contribute to unlock binding constraints. One of the constraints the project focuses on is to facilitate and strengthen quality input suppliers. This is based on the assumption that the quality of the products needs to increase, in order to meet the market demands. The project will identify existing and new input suppliers for fertilizers, pesticides, seeds, herbicides, vaccines poultry feed, irrigation equipment and other farming equipment in the three value chains and link them to the PBs.

3.3 Data collection

In this chapter we will talk about the data used in this study. First, we will give a brief introduction to the documentation the evaluation is build upon. Before we talk about the interview process and sample selection.

3.3.1 Project documentation

The data in this study is based on project documentation and in-depth interviews with key informants. We have collected data from the following project documents:

- Project proposal by AKF, March 2016⁶
- AKF presentation, April 29th 2019, Mtwara, Tanzania

The project proposal includes objectives, scenarios, assumptions and activities for the FVC project. This study is based on the information found in the project proposal, and the study evaluates whether the inputs presented in the proposal have led to the expected outcome or not. It also looks at the activities planned out to see if they have been implemented according to project plans or implemented at all. AKF also held a presentation for our research team in Mtwara on the project activities which gave us updated information on the activities proposed in the project proposal. This information was especially helpful in forming the program theory.

3.3.2 Interviews

We conducted a qualitative survey in April/May 2019 in the Mtwara and Lindi regions in southern Tanzania. Over the course of three weeks we interviewed 60 key informants in, and around, Mtwara (Mtwara), Masasi (Mtwara) and Ruangwa (Lindi). Key informants include MSME owners/managers, PB leaders and PB members. Most of the interviews were conducted at the respondent's home, but some of them were done at the farm, at the shop, or at the ward office due to logistical constraints.

The interviews were based on a questionnaire with open and semi-open questions, this way the respondent had more freedom to speak his mind. The questionnaire is presented in appendix 3.

⁶ Appendix 2

The questions are based on the main activities described in the project concept note. The questionnaire is designed in order to provide information that will be used to answer the four research questions. The key topics in the questionnaire are:

- Producer business concept
- Forming of the groups, selection of members, selection of leaders
- Sales through producer business, new buyers, price increase
- Pigeon peas market collapse impact, adaption
- Role of women⁷

These key points were important for the interviews so that we could cover all aspects that this project was supposed to affect. Through probing we were able to better understand the project's impact on the individual farmers, and it helped us point out which activities were successful and which activities were not. For every PB we talked to, we planned to interview one leader and one member. The PBs we talked to had different understandings on the title leader. The lead farmer who we assumed was the leader of the group, could be the one who worked most on the group farm and had nothing to do with the functioning of the PB. The different understandings also lead us to interview PB leaders who called themselves chairman or secretary but functioned as a leader for the group. The questionnaire for the leaders were slightly different from that of the member. The leader had a better overview of the PB, and therefore it was better to talk to that person about the general activities in the PB. The member, on the other hand, could provide us with more information on how it was like to be a member of a PB and what had changed since he became a member.

3.3.3 Sample selection

The FVC project focused on activities helping establish and strengthen PBs and MSMEs. We struggled to get an overview of the MSMEs connected to the project from the AKF. Without the overview we could not do a selection of the MSMEs. Some MSMEs were interviewed, these were selected by the AKF. We are taking it into consideration that there could be bias in the

⁷ The Role of women was included in the questionnaire but have not been part of the impact evaluation. This because we saw the role of women to be outside the boundaries of our research questions. To see the findings from the interviews on the role women has had in the project, see annex one.

selection by the AKF, it could be that AKF selected MSMEs based on what they wanted to show us. Since we could not conduct the selection ourselves and secure a selection without bias, we chose to focus on the PBs and use the MSMEs interviews as a supplement to better understand the value chain.

There are 191 PBs registered in the project, these PBs are spread across eight districts within the Mtwara and Lindi regions. The first step in our sampling was choosing which districts we were going to visit. We decided on districts in collaboration with AKF during our meeting in Mtwara, and due to time and financial constraints, we could only select a couple of districts to visit. Because of this we could not ensure that there was an unbiased selection. This makes our study non representative for the whole project but can rather be used to understand why and why not the projects interventions has been successful or not. We decided on conducting some interviews in Mtwara district to test our questionnaires, before moving on to other districts. We also wanted to reach some of the PBs in the more remote areas, to see if the project had reached out of the central areas. We chose Masasi district due to its accessibility from Mtwara and placement for accessing remote areas. The last district, Ruangwa, was chosen because CMI had conducted baseline interviews there in 2018, which made it possible for them to compare the data from the interviews to the survey data. We also wanted to interview farmers from a district in the Lindi region, as both Mtwara and Masasi districts are in the Mtwara region.

For each district, we put the different PBs into different strata to make sure that females and males were equally represented. We got the tree different value chains represented, and we reached PBs in central and remote areas of the districts. The last strata we made was based on a rating that the AKF had made, were they categorized the PBs into three statuses: low, medium and high. These statuses were made by the field officers in the different districts and were meant to give an indication on how functioning the different PBs are. By including this strata, we made sure that we interviewed PBs with different statuses to cover the PBs who were defined as high, medium and low functioning. After establishing the strata, we selected 45 PBs to take part in our survey. In Masasi there were 28 PBs, in the Mtwara district there were 63 PBs and Ruangwa had 22 PBs. We selected 20 PBs from Masasi, seven PBs from Mtwara⁸ and 18 PBs from Ruangwa.

⁸ Only 7/63 PBs in Mtwara District were interviewed because we wanted to reach more PBs in remote areas

We sampled 90 interviews, with the hopes of getting 70 good interviews. We knew that some of the farms were in remote areas and could be difficult to access, that some of the farms took longer to get to and that some of the farmers would be in their fields working without phones, making it difficult to contact them. We also knew that we needed to take into consideration that unplanned problems could occur, which could make some interviews take more time to conduct or make them not applicable for our research. We ended up with 50 good interviews, 25 PB leaders and 25 PB members, in addition to 10 MSMEs.

3.4 Scope and limitations of the analysis

We would like to draw attention to the scope and limitations of our study, including the use of a qualitative study and the theoretical framework.

Qualitative study: This study is conducted as a qualitative study to understand why – or why not – the project interventions have been successful. According to the TBIE, it is important to use different methods, including qualitative and quantitative studies to best understand the impact of a project. Ideally, therefore, this study should have complemented a large-scale impact study, e.g. a randomized control trial, in order to understand better the overall impact of the project. It is therefore important to underscore that the data collected for the study is not representative for the project's impact on all participants in the Mtwara and Lindi regions.

Recall: Control groups are often used both in quantitative and qualitative work to measure the impact a project has had, because it makes it possible to compare farmers in the project with similar farmers not in the project. This method is also the preferred method of White's TBIE, but in this study we have used recall to compare the situation before and after the project was implemented. This can be inaccurate as the informants will have to remember what the situation was like 2-3 years ago. We got many conflicting stories between members of the same PBs due to this, and sometimes we had to favor the leader's opinion in the evaluation.

External factors: Especially the collapse of the pigeon peas market had a major negative impact on the groups within the pulses value chain. Many of them had stopped producing while others had started producing sunflower/sesame. It made it extremely difficult for us to evaluate the PBs connected to this particular value chain. Also, the expected growth in the extractive industry did

not happen, and it is likely that it has negatively affected the project's ability to connect the PBs to high-end markets, no matter what AKF would have done.

Limited time horizon: The project has only been going for three years, none of the PBs are older than this. Many of them have also been operating for less, some even for just a few weeks. This may have affected the result as it can be difficult to measure the impact of the project over such a short time period. Many groups are still in the start phase, and we may see better results from the project in a few years.

4. Impact evaluation of the FVC project

In this chapter we will try to understand the impact of the FVC project on the participants, by analyzing the collected data and see if the project interventions have led to the expected outcome.

4.1 Establishment of the PB

The project is based on establishing PBs to enable farmers to meet demands from high-end markets and hopefully increase their income as a result. Therefore, it is crucial to the project to establish good PBs that cooperates well. Like we have presented earlier in this study, the project documents have multiple criteria for selection of members and leaders, as well as detailed information on how the PBs should work. In this section we will look at how the PBs work in the field, based on the experience of the farmers included in the project, as well as our own field experience.

4.1.1 Establishment

According to the project documents, most of the PBs would be already existing groups, and this seems to be accurate from the interviews. The majority of the PBs were based on already existing saving groups, political groups, groups from former projects, and groups from different government initiatives. This may have been an advantage as they seemed to be familiar with working in groups and how to organize themselves. Furthermore, according to the same documents, the PB members were supposed to fit certain criteria to be able to participate in the project. These criteria were:

- A demonstrated level of interest or experience in the selected value chain
- Interest in improving productivity and quality
- Interest in investing along with peers to reach high-end markets
- Access to land and water required for the selected value chain
- Access to finance through a savings group or other mechanisms

One of the underlying assumptions in this project is that a strong selection of PB members will increase the likelihood of succeeding. Therefore, it is important to take the selection of participants into the evaluation. From our experience there was no rigid selection process connected to the groups implemented in the project, and it seems like most of the participants joined the project as they were already part of a group. In a few cases, the project arranged village meetings through extension officers or arranged training for farmers in an area, in order to form groups. Key informants told us however, that the project was not involved in selecting the members of the PBs, and AKF were mainly teaching them about the benefits of working in groups and urging them to form groups.

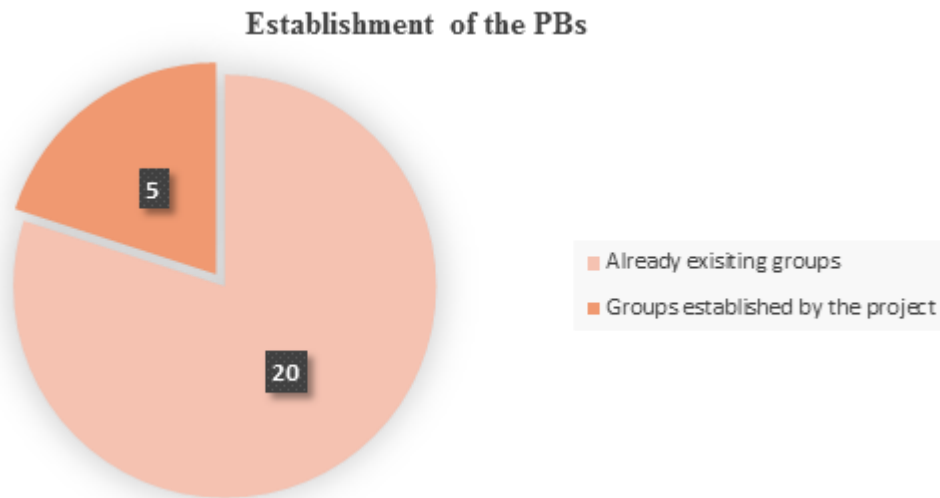


Figure 3: Establishment of the PBs

From the diagram we can see that most of the groups included in the project were already existing prior to the start of the project, and it made sense to ask the key informants about why their group was selected to participate. The criteria for PB members would only apply to newly

formed groups, we therefore tried to figure out if groups were selected on similar criteria. The majority of the groups did not have an answer to this question, as many of them were approached based on the reasons that they were already an existing group and they were operating within a certain value chain. This makes it difficult for us to determine precisely how the selection process was conducted.

Furthermore, there is a conflict related to the selection process. Most of the PBs in the project were already existing groups when they were implemented in the project, which is according to the project documents. However, by approaching existing groups, the project will have less influence when it comes to selecting participants and forming groups. A rigid selection process is crucial to achieve well-functioning PBs, according to the project documents, and there seems to be a conflict in the selection process between approaching already existing groups and selecting motivated and skilled farmers to the project.

Despite the unclarity when it comes to selecting the participants, two of the 25 groups gave the impression of having been selected based on their well-functioning organizations and achievements. One of them was a woman only group in Mtwara. They were very organized and seemed to get along well. They would work on the group plot from 7am to noon, and then on their own plot from 2pm to 5pm. They had accessed a loan of 2,000,000Tsh. a few years ago for investments, and they sold most of what they produced as a group. The other group was five young men in Masasi who were running a poultry farm and seemed to be working well together. They were all invested in the project and were ambitious about expanding their business. There are good examples on the types of groups that should have been included in the project, and there is reason to believe that they have been selected based on a thorough selection process.

According to the project documents, the project was aiming to establish PBs with an average of 55 to 60 members each. However, we found the number of members to be significantly lower than that. The 25 PBs we interviewed had an average of 12.9 members, the biggest group had 40 members and the lowest had 5. The group size was one of the important aspects in order to reach the quantity high-end markets demand. The small group size may therefore have had an impact

on the PBSs’ ability to produce the required quantities to reach high-end markets, as we will discuss further in the next chapter.

Members per PB	
Max.	40
Min.	5
Average	12.9

Table 1: Members per PB

4.1.2 Selection of leaders and members

Almost all PBs we talked to were open to take in new members, but it did not seem like they were familiar with the criteria set by the project for selecting members. The PBs had their own selection criteria, but usually it was rather easy to become a member. Living in the village and operating within the same value chain was enough for most PBs. Age and gender restrictions were in use as well. Some of the criteria set by AKF may have been fulfilled by new members, but it is likely that it was by default and not due to the selection process. The key informants we talked to were often hesitant on this question, and it seemed like many of them came up with some criteria on the spot. None of them could list the criteria set in the project documents.

The PBs have a structure where they have three leaders in form of a chairman, a secretary and a treasurer, who worked as a leader could variate between the three titles. These three leaders are usually appointed by the group nominating members for the positions and then voting for them. None of the PBs had any criteria for who could get into leader positions. According the project documents, the project should identify leaders who are demonstrating entrepreneurial qualities in form of management skills, financial understanding and education. It seems, however, that the groups are in control of picking their own leaders without any intervention from the project. At the briefing in April this was confirmed by AFK staff, the project had not helped the PBs select leaders for the group. Furthermore, the project aimed to have people in part-time or full-time position as business managers for the PB, but every PB leader we talked to volunteered to do the extra work and did not get any compensation. In addition, all the PB leaders were full-time

farmers and had limited experience in business management, as well as having limited education. This may have limited the PBs in developing their business.

4.2 Producer business functions

For the PBs to be successful, it is important that they work properly as groups. However, according to our informants, there were big differences in how the groups were organized. Some of them worked well as a group, while others were struggling to keep the group together. Most of the groups were doing good when it came to the functions of the PB. The majority had meetings once or twice a month to discuss group business, including challenges, opportunities and development projects. The leader was usually the spokesperson and in charge of engaging the member and organize activities. The treasurer took care of the finances and the secretary kept records and took minutes at the meetings.

On the other hand, some of the PBs were struggling to organize themselves properly. Three groups did not have meetings at all anymore, and eight groups had experienced conflicts within the group. Conflicts were due to mistrust, disagreements on how to share group income, and members who did not show up to group activities. The reason for why some PBs are struggling might be bad leaders who does not have any experience in management, but it can also be due to lack of support from the project. Almost every key informant claimed they were lacking support from the project to organize themselves, even if the group was doing well. Two of the PBs we talked had not yet registered as businesses, and they claimed they did not get the support they needed to complete the registration.

Did the PBs receive sufficient support from the project to organize the group?

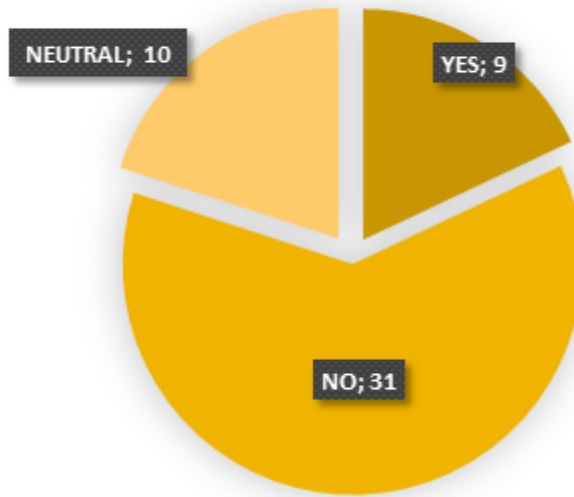


Figure 4: Organization of groups

Did the PBs experience any conflicts?

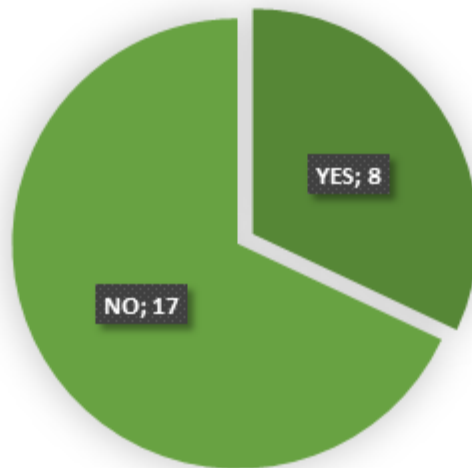


Figure 5: Conflicts in PBs

How often do the PBs meet?

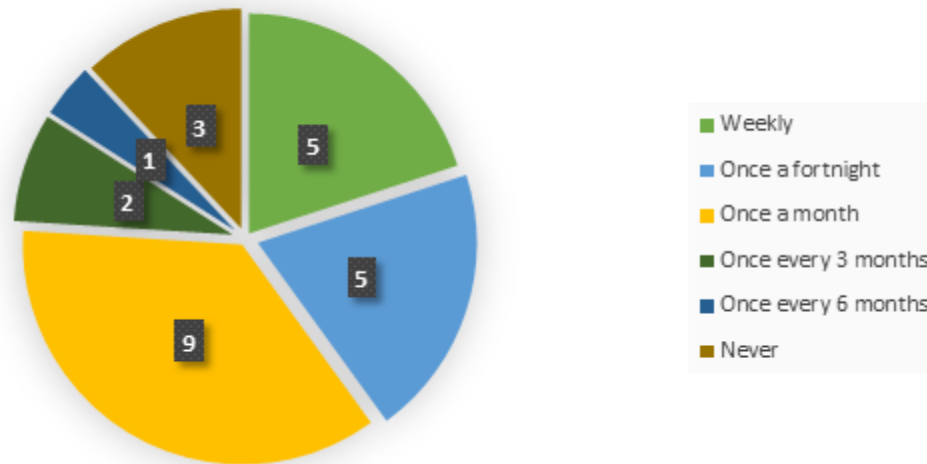


Figure 6: PB meetings

As mentioned earlier, Tanzania has a long story of trying to engage the farmers in economic groups, or “cooperatives”. We asked the informants if they had been involved in cooperatives before participating in this project. Out of the 50 farmers, 11 had previously been a member of cooperatives. They also said cooperatives had been somewhat different to the PBs. One of the farmers we talked to said that cooperatives usually were more of a social security than actual businesses. In that they stood alone in the process of farming their produce but had the security of a cooperative to sell the produce. In the PBs they do everything together, buy input, grow crops, and sell the produce together, which is a more dependent model.

Were the farmers previously members of cooperatives?

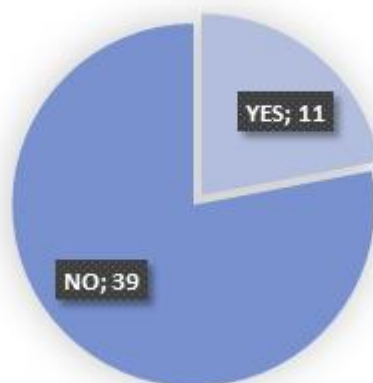


Figure 7: PB members previously in cooperatives

4.3 Sales through producer businesses

The FVC project aimed to form groups as a means to increase income among the poor farmers in Mtwara and Lindi. By selling their produce as a group, they have significantly higher bargaining power, which means they can possibly get a better price for their produce. Also, they can sell larger quantities, which enables them to sell to high-end markets. Despite this, many of the PBs we talked to had not had a sale through the PB after the implementation of the FVC project. Some of them had not sold anything at all as a group, while others had sold once or twice before the project started.

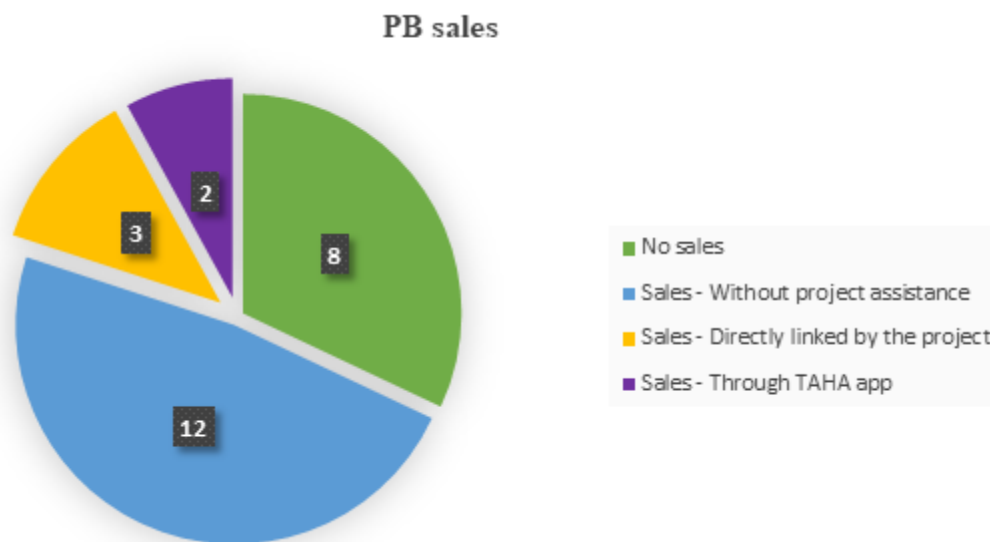


Figure 8: PB sales

One of the underlying assumptions is that production volume and quality needs to be increased. The interviews tell us that the whole value chain is needed for the income to increase, and not just increased production volume and quality. Increased production volume and quality may increase income a little, but a stronger value chain will have a much bigger impact on the economy. The key informants we have interviewed for this study are generally satisfied with the training they have received, and it seems like the farmers have been able to increase both production volume and quality by using good farming practices. However, most of them do not see the point of selling as a group, as there is no market for bigger quantities in the area.

Another reason for why farmers have not been selling through the PBs is the collapse of the pigeon peas market in the 2017/2018 season. Some of the PBs produced pigeon peas and they were not able to sell their produce after the price collapse. Therefore, they stopped producing as a group and focused on other cash crops on their own farm. Some of the groups started growing sunflowers and sesame plants instead of pigeon peas, but those crops are not a part of this project and will not be taken into consideration. We will get back to the pigeon peas market collapse towards the end of the chapter.

4.4 Connection to high-end markets

Serving high-end markets require bigger quantities and higher quality on the products they are buying. Therefore, training was given, and groups were formed to enable the farmers to sell their produce to target markets. The project also aimed to connect the PBs to new markets through meetings, training and other media. Strengthening the value chains and connecting the PBs to high-end markets is crucial to the project, otherwise the group members will keep selling individually to local agents and neighbors, as they will not benefit from selling as a group.

4.4.1 Target market

The intended market for the project when it first started out was the extractive industry. Huge gas reserves had been discovered in southern Tanzania and they wanted to connect the local farmers to the international companies expected to start operating in the area. However, due to an uncertain political situation in the country and decreasing petroleum prices, increased economic activity was limited, and far from what was expected. For this reason, the project had to look to other markets as possible target markets for the farmers. The project is currently trying to connect the farmers to bigger local markets in Mtwara and Masasi, including hotels, restaurants and more. This change in target market is likely to have had a negative impact on the effects of the project for two reasons. First, the lack of economic activity has not given economic growth and more money in circulation, as was expected. Second, it is harder to reach already established town markets than new markets that would have increased the demand significantly.

Another negative outcome from the lack of economic activity and the failure to reach new markets is the consequences for the already established local markets. For the goals of the project to succeed the farmers in the project needed to increase their income, with the original plan to

reach new markets the following problem would not be an issue. The issue that rises is not directly towards the project, but the externalities of the project. Because some of the local markets are supplied by local farmers, the project- by targeting these do not increase any value to the country as a whole. It rather gives an advantage to the farmers who are getting help from the project to take over the sales and demand from the local markets. Which leaves the farmers who previously supplied the markets with produce unsold, and the need to find new markets. This is normally not a problem in an industrial country, it is the supply and demand with the best produce winning the sales. It is however a problem when you take into consideration that the project and funds supporting the project is meant to help Tanzania, not only some of its people. Helping only a select few can result in the problems of poverty among farmers, not get better but rather push the problem to the farmers not getting help. This outcome is possible to avoid by making sure that the farmers in the FVC project get connected to buyers who previously imported their produce.

4.4.2 New buyers

In this section we will look at what our key informants said about their customers. The project aimed to connect them to high-end markets, and therefore we asked farmers about their customers before and after the project was implemented. This section relies on using recall to compare before and after, and some of the answers may be somewhat inaccurate because of that. Despite that, we were able to see tendencies in the answers, and we had some informative discussions with the informants.

Did the PBs sell to different buyers compared to before the project started?

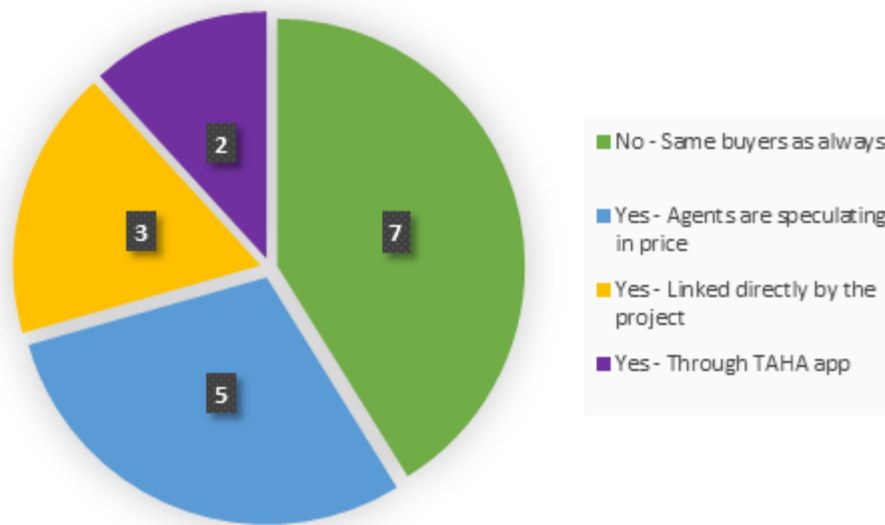


Figure 9: PB sales to different buyers

From the interviews we got that most of the farmers were still selling to the same buyers/markets as they had always done. Some of them were selling to new people, but that was to travelling agents who were speculating in price. Many of the farmers were selling their produce at the farm gate, and it was quite normal for agents to travel around and try to get the best price. Five of the informants could tell us that the project had helped them sell to new customers. One of them had gotten in touch with a restaurant in Masasi where they could sell their chicken. They got the same price as at the local market, but they could sell bigger quantities. A different PB managed to sell their tomatoes to the town market in Mtwara where he got a higher price per bucket, as well as the buckets were smaller than the agent's buckets.

It is important to remember that the recall method can be inaccurate, and we have heard some conflicting stories about the project's involvement in facilitating these sales. As described earlier, we interviewed both the leader and a member in every producer business, and especially in the two cases mentioned we had conflicting stories about how they got in touch with the buyers. However, the leader does in most cases sit on more accurate information than the members regarding group sales. Despite some conflicting stories, the project seems to have struggled to connect the PBs to high-end markets. The lack of economic growth might be one of the reasons,

and another reason may be transport cost. A farmer we talked to said that the project had helped him reach the town market in Masasi, but the cost of transport was higher than the increase in price, resulting in the group selling locally like before.

Two of the groups we talked to were able to reach new buyers through a phone application developed by Tanzania Horticultural Association (TAHA). TAHA monitors prices from different local markets making it possible for the farmers to sell to the market that gives them the best price for their produce. This seemed to work great for those farmers that were familiar with it, and they were able to both find new buyers and get a higher price. However, the app did not help them reach high-end markets, just the local markets with the highest price. Therefore, they were still selling individually as there is no demand for large quantities in these markets. This seems like a good initiative by the project, and if it can be developed further, it can help the PBs reach high-end markets and increase the market information among the farmers.

4.4.3 Price increase

As we can see, a limited number of PBs have been able to reach new buyers, but what we found was still interesting. We asked the three PBs who had reached high-end markets if they had received a better price. Two of them had been able to get a better price from selling to bigger buyers, while the last one had been able to sell at the same price, but at a higher volume. This shows that if the project can help the PBs reach high-end markets, they will be able to increase their income.

4.5 Income

Approximately half of the farmers we interviewed told us that they had increased their income because of the project. It was difficult to verify if the income actually had increased. When asked to evaluate the extent of their increased income, we came to understand that many of the farmers did not quite understand the question. Many of the farmers answered that their income had increased, but when asked how their income had increased the answers did not explain activities who would increase income. To assess whether the income had increased or not we therefore had to look at the whole interview to try to get the most accurate data. However, it is hard to

determine what exactly led to the increased income, and in many of the cases it seems likely that factors out of the project's control played a big role. Weather, market supply and demand are factors that have a major impact on the price the farmers get for their produce. As mentioned earlier, the market for agricultural products is highly volatile, and that makes it hard to determine the exact impact on the income in a qualitative study like this.

Did the project help the farmers increase their income?

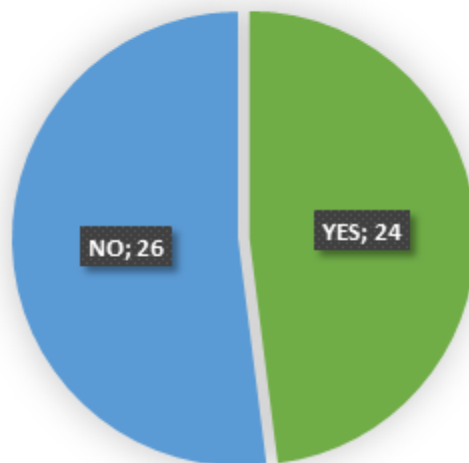


Figure 10: Increased income among farmers

Most of the informants seem to be satisfied by the training they have received, and by using better farming practices they have been able to produce efficient and increase income. Some of them also got a higher price from selling to high-end markets, as well as using the TAHA app. Individually, the project might have helped some farmers increase their income.

However, we are also interested in the impact of being in a PB since the main logic of the project is to organize farmers into PB to make them more competitive. Therefore, we chose to also focus on measuring the benefits of being in a group.

According to the survey, most of the PBs do not produce as groups but try to sell their individual produce through the group. A few of the groups are producing together on a group plot that is either rented or owned, as well as producing at their own farm. This has enabled them to increase their income by selling both their own produce, as well as getting a share from the group income. Even though they have not reached high-end markets, they are complementing their income by producing as a group on the side. Most of the PBs have only been operating for a season or two,

and therefore they have only been saving or investing the group income so far. The members may see benefits from this a few years down the road.

One of the reasons farmers choose to join PBs is because they can be eligible for loans from the district council through government initiatives, especially for women and youth. Some of the groups we talked to accessed loans from the district council and lent it out to the members. By doing this, they could invest in more and/or better input, and therefore increase their income. Group loans could also be used as security nets for the group members in case of diseases or bad crops, and it could prevent them from having to sell off assets such as chicken, goats and cows.

4.6 Adaption to the pigeon peas market collapse

In the 2017/2018 harvesting season the market for pigeon peas collapsed as India introduced a restriction on importation of a number of pulses. Prices used to range between 1,000Tsh. and 1,500Tsh. per kg, but when the prices fell it became almost impossible for the farmers to find buyers. Some of the farmers managed to sell at 200Tsh./kg and lower, some did not sell at all, the harvest among these farmers either went bad or it was given away to friends and family. The market collapse affected everyone, but some more than others. Informants we talked to lost up to 90% of their expected income, while others only produced for self-consumption or relied on other cash crops for income. Also, people who did not grow pigeon peas were affected, as there was less money in circulation, and they were struggling to sell their produce.

Pigeon peas are included in the pulses value chain, which was one of the value chains the project was trying to improve. Therefore, many of the PBs we talked to used to produce pigeon peas either as a group or as individuals. We learned in the field that many of the PBs that were producing pigeon peas had been enrolled in a different project for producing sunflowers and/or sesame and were therefore not a part of the value chains included in the FVC project anymore. Other groups that were producing pigeon peas had stopped producing completely as a group after the market collapse. Some of the groups we talked to had only produced pigeon peas for one season, but since they could not sell their produce, they stopped producing all together and focused on their individual farms. Only two individuals were still producing pigeon peas as a cash crop, hoping for the price to recover.

We asked every individual about their own pigeon peas production and how they adopted to the collapse. Almost everyone had stopped producing pigeon peas and had increased production of other cash crops or started growing new cash crops. Especially sunflowers and sesame were popular new cash crops as they can get good prices on these produces. Others expanded tomato/maize/onion production and bought more cashew trees. Some very poor farmers had to engage in work on other farms, sell cake and tea on the side, or sell off assets such as cows, goats and chicken.

It was difficult to get good interviews with PBs involved in the pulses value chain as most of them were struggling after the market collapse, and many of them had been enrolled in a different sunflower project. It is very likely that the market collapse had a negative impact on this particular value chain, and that makes it difficult to determine the project's impact. Even though the PBs were struggling, it seemed like many of the individual farmers managed to limit the losses due to other cash crops they were producing. Some of the informants were talking about being taught about the importance of diversifying, and it seems like it may have helped some farmers to adapt more easily.

The following diagram shows the impact the pigeon peas market collapse had on the informants. Only ten farmers barely noticed the market collapse as they were not growing pigeon peas, or they only grew for self-consumption. That means 36 of the 50 farmers we talked to notice the market collapse on their personal economy. 16 of them reduced their income but could rely on other crops or savings to cover the losses. 20 informants reduced their income by 50-90% and had to sell off assets and engage in casual labor to make ends meet. This means that almost half of the informants had a significant income loss connected to the pigeon peas market collapse.

What impact did the pigeon peas market collapse have on the farmers?

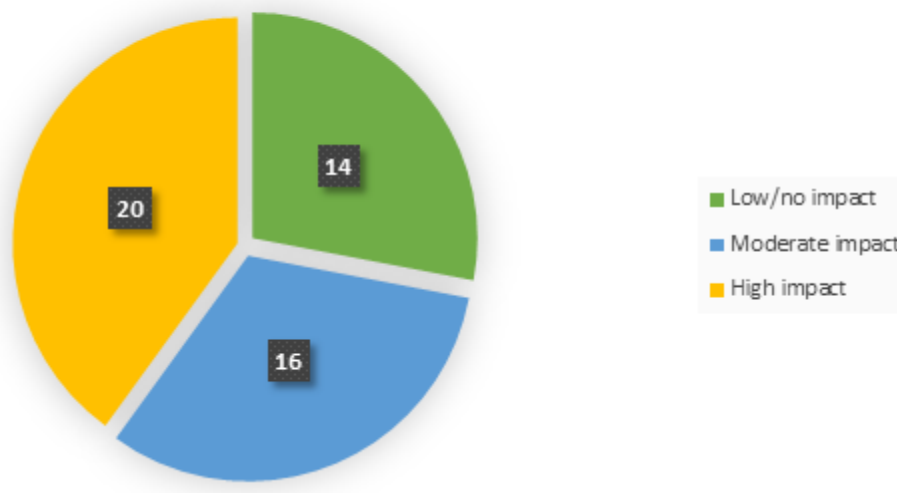


Figure 11: Impact pigeon peas market collapse

4.7 Micro, small and medium enterprises

The FVC project was supposed to establish new MSMEs and strengthen already existing MSMEs, to support the value chains, according to the project documents. MSMEs involves many different types of businesses, also businesses that are essentially bigger farmers with one or two employees. These types of businesses are not likely to strengthen the value chains because they do not have support roles in the value chains. Due to logistical constraints, we were only able to interview ten MSMEs, including eight poultry/tomato businesses and two agrovets.

The owners we talked to were satisfied with the training they had received through project partners, including other organizations and companies. As mentioned before, most of them were farmers operating on a larger scale and as a result they were also wealthier. Some had one or two employees, while others operated alone or with husband/wife. Through training they had learned about good farming practices, but also about different aspects of running a business, including marketing, law, bookkeeping and so on. Some of them had been able to run their businesses more efficiently, and furthermore increase their income. Despite this, it is unlikely that these types of MSMEs contribute to strengthen their respective value chains.

The project also aimed to increase employment through the MSMEs, and some of them had hired more employees since the start of the project. A tomato business in Ruangwa had been able to hire two more employees as the training had enabled him to run the business more efficiently, and therefore also increase his income. However, it can be difficult to determine the difference between the project's impact and the market's impact, as it can be highly volatile. A different tomato business in Mtwara had reduced her income because there was no demand for her tomatoes, despite being able to produce more after implementing good farming practices from training. In this case, the project has helped increase efficiency, but there is no measurable impact from the project due to the highly volatile market.

Agrovets, however, have a bigger potential of strengthening the value chain as access to quality inputs often can be a constraint on the production. Agrovets are supply stores for farmers, dealing with seeds, fertilizers, animal feed, animal medication etc. We talked to two shop owners in Ruangwa about the project's impact on their businesses. They had both received training as the other MSMEs, and they felt like they earned skills that made them improve their businesses significantly. However, they were both still selling to the same customers, including local farmers and village-based agro-dealers (VBAs), as before they were enrolled in the project. On the other hand, the project had put one of them in touch with bigger supply companies in Arusha and Dar-es-Salaam, and he was now able to buy bigger quantities of high-quality inputs for his shop. This makes high-quality input more easily accessible for the local farmers as well, this seems like a positive intervention in the value chain by the FVC project.

5. Discussion

So far, we have looked at the impacts of the project, based on interviews with farmers in the Mtwara and Lindi regions. This chapter will be more explorative, as we discuss possible gaps and binding constraints in the value chains, as well as likely mechanisms behind the results. The discussions will be related to the research questions stated earlier, and it will be based on the information and findings presented earlier in this study.

5.1 To what extent have well-functioning producer businesses been established?

In the previous chapter we presented our findings on the establishment of the PB. Some of them were successful, while others struggled to work as a group. In this sub-chapter we are going to take a closer look at some of the possible reasons why some of them are successful and some of them fail.

First, it is possible that the project would have been better off trying to reach fewer farmers. One of the underlying assumptions for this project is that a strong selection of the group members would increase the likelihood of success. It has also been presented criteria for selection of the participants in the project documents, based on this assumption. However, as the project seems to have tried to reach as many farmers as possible, the motivation and skills of some of the farmers may have been overlooked. Instead of focusing on creating strong PB, the focus may have shifted to recruiting as many participants as possible to the project. Most of the farmers we talked to were recruited to the project because they were already member of a group or involved in a specific value chain, not because they showed extra motivation or skills.

This argument can go both ways. If the marginal cost of including extra farmers is low, then it would make sense to try to reach many farmers. Even though they do not have top motivation or the skills necessary, they might have been able to benefit from the project. However, if the marginal cost of reaching more farmers is high, and the marginal effect of more resources to the motivated farmers is high, then trying to reach many farmers could negatively impact the outcome of the project. We believe that the project could have benefitted from focusing resources to the most motivated and skilled farmers. The reason is that some of the informants did not seem motivated to put in extra work for the PBs to succeed, in addition to the lack of support many participants expressed.

A more rigid selection process could probably have had a positive impact on the project, which also supports the underlying assumption that a strong selection of PB members would increase the likelihood of success. However, we realize that it can be difficult to create groups in rural areas. The farmers live in small villages spread across large regions, and with limited mobility. A strong selection process may be the right idea on paper, but it can be difficult to go through

with in rural regions like Mtwara and Lindi. This might be one of the reasons why so many groups have been struggling to establish themselves, as they have a limited pool of potential PB members.

A different reason may be due to the structure of the PBs. If they are going to sell their produce as a group, they are going to have to share the income between the members, one way or another. This can be difficult as there are no specific guidelines to how the PBs should solve this, and it applies to both groups that sell individual crops together and groups that sell group crops. If they go together and sell individual produce as a group, how should they divide the income among them? It would make sense to divide the income based on input to the sale, but what if some members produced a little less, but at a higher quality, and therefore helped the group get a higher price? Suddenly, that farmer would lack incentives to try and improve quality as the income is shared based on volume.

It is even harder for those who produce and sell as a group, because in many cases there is a difference in the input each member contributes. One of the groups we talked to had a group plot where they were growing tomatoes and onions. Every member worked the same amount and they used the income from their sales to invest in new inputs and shared the rest equally among the members. This group did very well on sharing the income, but many groups seemed to struggle on this part. Many group members contributed different amounts of work, money or other inputs, which made it difficult to share the group income in a way that satisfied everyone.

Many PBs also made the members contribute a lump sum as they entered the group (entry fee) or 500-2000Tsh. every week for group investments. These factors seem to have limited the development of some groups, because the members do not feel like they get any benefits from contributing to the group. Therefore, they choose to sell individually due to lack of incentives. A few groups expressed concerns about sharing the group income, and they had experienced conflicts between members as a result of this. Help to develop a clear strategy or guidelines for income sharing in the individual PB could solve this problem. By helping the members make clear guidelines for what share of income they will receive based on their contribution, the share they receive will be clearly stated in a way that can help farmers be proactive in their work in the group. Making the guidelines together with the PB members, will also make sure that the

members sees the guidelines as fair and may therefore give the farmers better incentives to work together in groups.

Furthermore, it seems like many farmers failed to see the benefits from working as a group immediately, and therefore decided to go back to selling individually. Almost every group we talked to had lost members since the start, although some more than others. However, this indicates that something has not been working properly in the PBs. Lack of strong members, disagreements over income sharing, and limited immediate benefits may be some of the reasons, but also limited help in organizing the PBs is likely to have had a negative impact on the participating groups. As we found in the previous chapter, most of the groups were disappointed in the lack of support from the project to organize themselves, and some groups had yet to register because they did not get the help they needed. A better strategy and increased focus on organizing the PBs is likely to have been more beneficial to them.

In addition, PB leaders most likely do not have the necessary skills to run a business, as most of them are farmers without any education or management experience. Managing a business group and negotiating with potential buyers is a demanding task, and it can be overwhelming if you do not have the knowledge and experience to handle it properly. It is a difficult task for the leaders of the PBs to get good deals with bigger companies, and the lack of management skills among the leaders could prevent the PBs from releasing their potential.

Many of the PBs have also been struggling to sell as groups due to lack of demand. As mentioned earlier, the target market for the project was the extractive industry, but due to the political situation and the struggling global petroleum market, the growth in the extractive industry in the area did not happen as expected. This has been out of the project's control, and it has likely had a negative impact on the project's impact as they were forced to find new target markets. The new target markets in towns like Mtwara and Masasi do not provide the same demand as the extractive industry would have, and it has likely been one of the reasons why PBs have been struggling to sell big quantities. Most of the PBs have struggled to reach high-end markets and have kept selling their produce locally. As there is no demand for large

quantities in the local market, the farmers choose to sell their produce individually instead, and fail to operate as PB.

5.2 To what extent have the producer businesses been connected to high-end markets?

The main focus of the FVC project has been to strengthen the value chains for three types of foods, including poultry, pulses and horticulture. In this sub-chapter we will take a look at some of the possible gaps and constraints in the value chain that we uncovered through interviewing project participants, and we discuss which parts of the project could improve to get rid of these constraints and close the gaps.

One of the clear constraints in the value chains is the gap between the farmers and the high-end markets. The majority of the farmers in Mtwara and Lindi regions sell to local markets, including village markets, neighbors and travelling agents. The low quantities give them limited bargaining power and therefore low prices. The idea of the project is for the farmers to go together and form groups in order to increase their bargaining powers and sell larger quantities to larger buyers. However, it seems like the project has been struggling to connect the participants to high-end markets.

As mentioned earlier, the PBs are struggling to find buyers for large quantities of produce, as most buyers in the rural areas are small buyers. For the PBs to have any advantage compared to individual farming, they depend on being successfully connected to larger buyers, (hotels, restaurants etc.) for them to sell larger quantities. While some of the PBs we talked to were able to connect to these markets, most of them were still selling locally. Missing out on the demand from the extractive industry may have had negative impact, but other factors may also have played a role in this.

Even though many farmers have improved their crops, quality is often still not good enough for the biggest buyers. The same goes for the volume. High-end buyers have high standards when it comes to the food they choose to buy, and local farmers seem to be struggling to reach the requirements, even as groups. As most of the participants in this project live in rural areas,

transporting the crops can also be an obstacle. The roads in the area are in poor condition, and it can be very expensive to transport crops to bigger markets. One of the key informants in this study told us he had gotten in touch with buyers in Masasi where he could sell his tomatoes at a higher price, but he chose to sell locally, as the extra cost of transport was higher than the extra income he would have made.

One of the reasons for why they have not been able to produce the necessary quantities may be the low number of members in each PB. The project was targeting 55-60 members in each PB, but among the 25 PBs we talked to, the average was only 12.9 members. Many of them had even lost members since they started, and the low member count could possibly prevent the PBs from reaching the desired markets. Bigger groups can be hard to organize, but they will benefit from more bargaining power and ability to deliver bigger quantities.

Most of the PBs included in the project had not yet been able to find new buyers, but we found something interesting while looking at those who had reached buyers in high-end markets. All of them had been able to get higher prices and/or sell in bulks. This is an interesting observation as it confirms the assumption that selling larger quantities in groups enables the farmers to increase their income. Since the farmers increased their income, we believe that the price when selling to high-end markets is higher than the price they get in the local market. The buyer might get discount when buying in bulk, but the price might still be the same or higher than the price they get when selling to the local markets. They will be able to increase their income, even though they sell at the same price, because they can sell larger quantities to high-end markets. The issue, however, is the lack of demand from high-end markets in the area, in addition to not being able to connect the PBs to the potential buyers. More focus on directly connecting PBs to high-end buyers would probably benefit the participants in the project.

5.3 To what extent has the establishment of producer businesses increased the income of the involved farmers?

In the following section we are going to discuss the project's likely impact on the individual farmer's income. Our focus has mainly been on how being a member of a producer business has

affected their income, but we will also go a little broader in this discussion to better cover the overall impact on the participants' income.

As presented in the previous chapter, 24 of 50 farmers had reported increased income thanks to the project. Training had seemingly helped most participants improve their farming practices, and as a result many informants had been able to sell more and at a higher quality. However, it is hard to determine the exact impact of the project in a qualitative study like this. Instead, we are going to focus on why – or why not – the participants' income increased, and also try to uncover constraints that are keeping them from increasing their income after receiving support from AKF.

As mentioned, many farmers increased their income after receiving training on good farming practices. Increasing efficiency to improve output is a good way to increase income, but it also has its limits. Without investing and expanding, the production will increase only slightly and then stabilize again. For example, a farmer can practice good farming and increase production by 20%, and therefore also increase income. However, good farming practices cannot improve income any further, and the farmer will therefore be limited to the 20% increase. This means, if a farmer wants to increase his income by more than 20%, he will need to invest in more input and larger plots, and thereafter try to look to bigger markets to sell all his produce.

This is where the PB can help the farmers increase income, by producing more as a group and try to sell the produce to high-paying markets. As the businesses increase their income, they can invest in new plots and high-quality inputs to expand the business. Only a few of the PBs have been able to reach this stage, as only five PBs had been able to reach high-end markets and get higher prices. Most of the PBs were still struggling to establish themselves for different reasons, as mentioned earlier, but some of them seemed to have potential for future improvements.

As we can see, the project has likely done right in trying to engage the farmers in PB to increase their income. If the project can give the groups better support to organize themselves and

increase focus on connecting them to bigger buyers, it is likely that some of the participants can benefit from being a member of a PB.

5.4 To what extent did the project participation help the farmers adapt to the collapse of the pigeon peas market?

Many of the participants in the project had been encouraged to grow pigeon peas, as it was very profitable at the beginning of the project. However, less than a year into the project, the market for pigeon peas collapsed. 72% of the informants in this study were moderately or highly affected by the market collapse, and had to make adjustments to make up for the lost income. As the pigeon peas market collapse had such an impact on the performance of the project, we wanted to see if the project had helped the participating farmers adapt to the circumstances.

PB that had previously been growing pigeon peas, were not producing as groups anymore, or had been implemented in other projects (e.g. sunflowers). The groups in this project only focused on one produce each, and that makes it almost impossible to adapt to sudden market fluctuations. Some of the individuals, however, told us about how they had learned about the importance of diversifying in training. The markets for vegetables and pulses are extremely volatile, and it is therefore crucial to the farmers that they learn to diversify. As the pigeon peas market collapse happened already in the first season of the project, it had little to no impact on how the farmers adapted to the market collapse. More training on diversity, as well as more diversity in group produce, may have a long-term positive effect on the farmers' ability to adapt.

5.5 MSMEs

As discussed in the previous chapter, we have been focusing on how the MSMEs included in the project can help strengthen the value chains for the respective food groups. Ten MSMEs were interviewed, but only two of them could potentially strengthen the value chain. Both were agrovets located in Ruangwa town and could strengthen the value chain by making high-quality input more accessible to poor farmers in rural areas. They had been given extensive training by project partners on how to run a business, and one of them had gotten in touch with bigger supply companies in Dar-es-Salaam and Arusha. Integrating the MSMEs in the value chain could

potentially be a significant upside to the economy as the market would be more efficient and products would be more accessible.

Still, we discovered that many of the MSMEs were just farmers on a bigger scale. Most of them seemed to be doing well and the training seemed to have helped them improve their businesses. However, an important part of the project is to establish and strengthen MSMEs so they can strengthen the value chains by being “middlemen”. For the market to run more efficiently, all the steps in the value chain must work flawlessly. If one step is lacking, the whole chain will struggle, as the weakest point will always be the biggest constraint. For example, poultry keepers can struggle to sell their chicken as the quality is uncertain, and high-end markets request better quality. If the local town constructs an abattoir, they can take the chicken there and get it slaughtered in a healthier environment. This will immediately increase the price and make it easier to sell, as the buyers will know the chicken meets a certain standard. In this example, the abattoir works as a “middleman” between the farmer and the buyer, and it strengthens the value chain by serving the interests of the seller and the buyer to make the market more efficient.

By focusing more on MSMEs that sell inputs (seeds, medicines, fertilizers etc.), as well as MSMEs that provides services such as transport, slaughtering and hatching, the project would likely have a bigger impact on the value chains. Developing MSMEs involved in the services mentioned above, could potentially improve the value chains by closing gaps and removing constraints to increase efficiency. According to our key informants, both transport and post-harvest services seemed to be lacking, and by focusing more on these types of MSMEs, the project could have probably had a bigger impact on the targeted value chains.

5.6 Sustainability

Creating a sustainable economy is an important part of the project. The participating farmers must be able to continue to operate in PBs and try to reach high-end markets even after the project period is over. Another one of the underlying assumptions in the program theory is that the PBs are able to secure contracts with bigger buyers through the project. This will create more stability and it can continue long after the projects ends.

Most of the PBs have yet to reach high-end markets. This can have a negative impact on the sustainability of the project, as it seemed like the farmers were struggling to get in touch with new buyers on their own. If the project cannot push them towards high-end markets, then it does not seem likely that they will be able to do it themselves. Many farmers are limited by the distance to high-end markets, as well as lack of quality and quantity. Also, lack of benefits has made almost every PB lose members since they were founded. The individual farmers do not see the point of spending time and effort in a PB without getting any benefits from it, which leads to members leaving the PB. This does not seem very sustainable, and it is likely that many PBs will struggle to continue operating after the project ends.

However, farmers have received extensive training on their own through this project, and many have adopted good farming practices and increased their production. Three groups were also actively using the TAHA app to target local markets where they could get good prices for their produces. These factors could have a minor impact on the economy, but it will leave them exposed to the markets as they have no bargaining power on their own.

Also, groups can be exposed to the market, as we saw in the case of the pigeon peas price collapse. Many of the groups operating within the pulses value chain stopped producing as they could not sell their produce. By teaching the farmers on the importance of diversifying the cash crops, they will be less exposed to radical market changes. This is especially important in a volatile market sector like agriculture. This will also make the groups more sustainable after the project ends, as they will be less likely to collapse.

6. Conclusion

In this study we have evaluated the impact of the Food Value Chain Development Project in Mtwara and Lindi regions in southern Tanzania. The project includes multiple interventions to connect the local farmers to the growing extractive industry in the area. We have evaluated the impact of these interventions and uncovered possible gaps and constraints that is keeping the project from unleashing its potential. The findings of this study can hopefully be used to improve similar projects in the future.

Establishing well-functioning PB was a crucial part of the project, but the results are seemingly mixed. Some PBs have been partly successful, but many of them have been struggling to cooperate and function properly as economical groups. One of the reasons may have been the selection of members/groups, as the given criteria in practice were not followed in the selection process. This also applies to the selection of leaders, since all the groups appointed leaders themselves through various methods, instead of being appointed by AKF, as according to the project documents. Some of the groups had also not yet been registered as businesses. This could be improved by giving the groups more support in organizing themselves and introduce a more rigid member selection process to the project. As we found earlier, most of the farmers felt like they did not get enough support to organize as PBs, and this should be paid more attention to in future projects. In addition, some conflicts arose due to disagreements over sharing the group income. By planning a structure for how income-sharing should be practiced in the PBs, this problem could be avoided. This could also be solved by focusing on giving the groups more support to get organized. If the project is trying to reach too many farmers, AKF could benefit from cutting down on the target numbers to focus the efforts on more motivated and skilled groups. If they succeed, other farmers in the community may try to follow their lead despite not being a part of the project.

Only about half of the PBs we talked to had been able to sell their produce after the project was implemented, and only five PBs had been able to reach high-end markets. It seems like the project has been struggling to connect the PBs to the target markets. One of the reasons is lack of demand, as the expected growth in the extractive industry did not go as planned. There is no demand for large quantities in the rural areas, the farmers end up selling their produce individually as they normally do. Furthermore, transportation costs seem to be a constraint for the farmers as it often takes away their profit from going to bigger town markets to sell their produce. However, all of those who were able to reach high-end markets managed to get a higher price and increase their income, focusing more on overcoming the obstacles and connecting the PBs to high-end markets could potentially benefit the participants.

Better and cheaper transportation options can be increased by focusing more on MSMEs that offer transportation services. Also, talking to the local government about improving the road network could be worth the effort. Furthermore, efforts need to be increased when it comes

to connecting PBs and high-end buyers. More meetings and network building could potentially improve the contact between the farmers and the big buyers. One of the MSME owners we talked to has a WhatsApp group with farmers and big companies to facilitate for sales, and something similar could be implemented in future projects. However, they were struggling to organize sales as the big companies demanded larger quantities and better quality. Even though the PBs were supposed to improve this, it seems like volume and quality still does not meet the requirements for selling to high-end markets.

We mentioned more focus on MSMEs providing transportations services, but also input and output services are needed to strengthen the value chains. To strengthen the targeted value chains, the project should focus more on MSMEs that provide services along the value chain that will increase efficiency. The two agrovets we talked to in Ruangwa are good examples on MSMEs that should be prioritized, because they make high-quality input more accessible to local farmers. Because of this, farmers can produce more high-quality crops that they can sell at a higher price to high-end markets. More support to MSMEs that contributes to the value chain is likely to improve the outcome of the project.

The income among the farmers involved in the project has increased for almost half of the participants we interviewed. The reason for the increased income was mostly due to training. Like we have discussed, the income can increase for a farmer by increasing the knowledge in farming practices, but when the farmer reaches a certain level of productivity, the income cannot increase much more without other interventions. Therefore, the project should focus on connecting them to high-end markets and developing the producer businesses, in addition to training, to facilitate for long-term economic growth.

As we discovered, the groups that were involved in the pulses value chain were struggling because of the pigeon peas market collapse. Most of the groups had either stopped producing or been implemented in a different sunflower project. Many of the farmers were able to take a loss because they had multiple cash crops they could rely on. Most of the PBs, however, were only producing a single cash crop, which made it difficult to adapt to a market collapse. The agricultural market is highly volatile, and we should use this experience in future projects to make sure the PBs diversify across multiple value chains. Only a few had received training on

diversifying their crops, the rest had not received any help in the participation of the project to adapt to the collapse.

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Annex 1

Women

The project has also targeted women and youth for the PB. We have focused on women in this study, as the number of youths involved in the project is limited due to lack of young farmers. According to the project documents, 43% of participating farmers are women, which shows that women are well-included in the project. Several of the PBs we talked to are also women only groups. We asked PBs with both men and women about the women's role in their group, and the answer was always that women are equal to men. Only one group said that women in the group were exempted from doing hard labor. Women seemed to be engaged in leadership as well, as several were working as leaders, treasurers or secretaries for their groups. Some of them mentioned that by participating in the project they can be role model for other women in the community. Overall, women seemed to have been successfully included in the project.

Appendix 1. Logical framework

Result	Indicators	Targets
Outcome: Increased income of local producers and entrepreneurs, including from marginalised groups such as youth and women, through sustainable food supply businesses to the targeted markets: oil, gas, mining and other external investments in Lindi and Mtwara regions and beyond.	Number of targeted producers and value chain actors reporting increased income from sale of food crop/items Percent increase in income of producers from sale of targeted food crops/items Number of trained MSMEs with increased volume of businesses in food value chain Number of MSMEs established /strengthened	5,000 producers, entrepreneurs and value chain actors increase their cash income from sale of food items 200 MSMEs with improved business viability and increased volume of business in food value chain
Output 1: Organised and business-oriented micro-farm and group poultry enterprises tracking demand and producing high-potential food items (fresh vegetables, rice, poultry and eggs) for target markets.	Number of producer-businesses organised and functioning as business entities Number of targeted producers adopting promoted GAPs and techniques required by the targeted markets Number of producers supplying fresh vegetables, eggs, chicken and rice to gas and mining catering services and other markets	4,800 micro-farm and poultry enterprises (18,000 with Scenario 2): • FV: 2,800 (25% f) • Eggs: 200 (75% f) • Poultry: 800 (65% f) • Rice: 1,000 (35% f)
Output 2: Strengthened and inclusive value chains with linkages to target markets	Number of firms, suppliers and buyers forming agreements with targeted producers/producer businesses (PBs) Number of trained MSMEs Number of people employed in target MSMEs as compared to start of the project. Number of agro-dealers supported by the project	Up to 6 business agreements signed 200 MSMEs* trained (600 in Scenario 2) 400 individuals employed/self-employed in 200 MSMEs 100 agro-dealers
Output 3: Enhanced learning on approaches/models for developing sustainable and inclusive food supply value chains for oil, gas and mining sectors	Learning reviewed biannually and taken up in project implementation Number of learning pieces produced and disseminated during the project Number of learning forums organised/participated in	Baseline study 6 learning pieces Four forums

Appendix 2. Food value chain project proposal



AGA KHAN FOUNDATION

PROPOSAL

**FOOD VALUE CHAIN DEVELOPMENT FOR GAS AND MINING INDUSTRY IN
SOUTHERN TANZANIA**

Proposed Implementation Period: April 2016 - March 2019

Submitted to GIZ-Skills for Oil and Gas Africa

March 2016

FOOD VALUE CHAIN DEVELOPMENT FOR GAS AND MINING INDUSTRY IN SOUTHERN TANZANIA

Background

In recent years, mineral and gas reserves have been discovered offshore and within Mtwara and Lindi Regions of Tanzania, placing a spotlight on the two regions. Discoveries include graphite, nickel, uranium, gold, coal and huge offshore gas deposits. With the discovery of gas deposits along the coast, Tanzania is set to become one of the largest natural gas-producing countries in the world. Currently, three multi-national oil and gas companies (Statoil, Chevron, and Shell/BG) partnering in a joint venture are considering investment for commercial production of the huge offshore gas deposits. A decision regarding the construction of a Liquefied Natural Gas (LNG) Plant in Lindi is likely to be made within the coming 12-18 months, resulting in investment of up to USD 15 billion that will bring approximately 10,000 into the workforce during the construction phase. Three smaller companies are already involved in commercial production of gas from sites at Songo Songo in Lindi Region and Mnazi Bay in Mtwara Region. A graphite-mining project in Ruangwa by the Australian company Magnis Resources is expected to start by the first quarter of 2016 with nearly 1,000 workers at campsite for developing the mine while commercial production will commence by mid-2017. Decisions on commercial operations at the nickel, uranium and gold exploration sites in Mtwara and Lindi regions are likely to be made over the next 12 months. Commercial exploitation of coal resources hinges to a large extent on the energy-related plans of the upcoming cement factory of the Dangote Group in Mtwara. Limestone extraction in large quantity will commence as production of cement starts at the Dangote factory which is expected to engage over 5,000 workers. It is therefore likely that Mtwara and Lindi will become one of the busiest centres for the extractive sector in Tanzania within the next five years with the likelihood of increased inflow of revenues for the national and local governments, increased economic activities, some infrastructure development, and an influx of migrants and expatriates. Indeed, growth of extractives will have huge implications – potentially positive and negative (social, environmental) – for the regions.

Alongside expected growth in extractives revenue in the region has come growing demand for government and companies to ensure that they maximise the potential from these resources, both for the benefit of local communities and for Tanzania as a whole. Local content policies have been passed, and extractives companies are prioritising local procurement wherever possible. Food supply has been identified as a sector with significant local content potential. Food producers, if well connected to markets, can supply food to gas, mining and construction camps, hotels and restaurants, urban centres and growing local populations. In addition, food producers' skills can be transferred to supplying other markets – domestic and for export. This project seeks to develop southern Tanzania's producers, as well as traders, entrepreneurs and caterers, to access extractives food supply markets as they grow. It is informed by Aga Khan Foundation's (AKF) significant experience in the agriculture value chains in the two regions, studies undertaken by others working in Lindi and Mtwara, and a dedicated project design study undertaken on behalf of AKF by Absolute Options, financed by the Skills for Oil and Gas (SOGA) programme. As summarised in the last section of this plan, AKF⁹ is in a unique position in Tanzania to facilitate the development of inclusive food value chains for oil, gas and mining industry and beyond. In

⁹ Since 2009, AKF has been implementing its multi-sectoral Coastal Rural Support Programme Tanzania (CRSPT) in Lindi and Mtwara regions working in rice, sesame and horticulture value chains, and financial inclusion, education and health sectors.

doing so, it will contribute to job creation and sustainable income earning opportunities for the local population.¹⁰

Current Context in Food Supply

Studies and field experience indicate that food supply is one of the most likely avenues for local residents to benefit financially from the development of the extractives sector in Lindi and Mtwara. According to a World Bank, UK and EU-commissioned study, the catering value chain will provide up to \$100 million in revenue during the first three years that the LNG plant is being constructed. Estimates of this project’s own scoping study envision a potential economic impact of \$50-90 million on local producers and buyers. However, with the current inconsistent quality and volume of supply, even the exploration and construction camps, restaurants and hotels currently operating in the regions are reliant on imports of basic goods for significant stretches of the year. According to the project scoping study, average local vs. non-local procurement to meet current demand breaks down as in Table 1. As demand increases, quantities sourced from outside Lindi and Mtwara regions will increase given the current limited supply capacity of Lindi and Mtwara regions.

Table 1. Location of products sourced

Food Group/Source	% Value	Action Needed to meet Demand
Vegetables		
Local	33%	Increase local production within irrigated areas to reduce seasonal outside sourcing.
National	59%	
Combination	8%	
Protein		Increase local poultry and egg production. Improve logistics on red meat transport.
Local	73%	
National	24%	
Combination	3%	
Grains & Beans		Improve local production and processing to enable local purchase at quality required.
Local	62%	
National	15%	
Combination	23%	

Intervention areas required are listed below, as identified by AKF experience and the scoping study:

Horticulture – A focus on the horticulture value chain, with professional organisation of producers, offers opportunities to meet an immediate local supply-demand gap, while positioning for future scale to meet

¹⁰ AKF is also considering similar food value chain development initiatives for oil and gas sector in Coastal Kenya (Kwale and Lamu), northern Mozambique (Cabo Delgado) and north-west Uganda where it has long standing programmes.

development and gas and mining sector demands. To achieve this, standardised producer business models will be developed so that produce marketers can aggregate supply consistently across seasons and in response to buyer demand. Producers will need centralised coordination to ensure market linkages and compliance with buyer requirements. The coordinator role will be a central figure or company and should not be underestimated in its importance. This is being recommended based on the identified gap between buyer's needs and producers understanding and ability to meet those needs. Additional upgrading interventions will focus on support services, such as product finance and technological support, provided by lead firms from within the value chain wherever possible.

Poultry – There is an identified opportunity for poultry value chain development in layers, eggs, day old chicks (DOC), and broilers in Lindi and Mtwara. Average demand across Africa is for 108 eggs and 6.8 kilograms of chicken per person per year (FAO statistics), equalling over 220 million eggs and 14 million kilograms of meat per year in Lindi and Mtwara. This demand is currently only partially met by small levels of local production and transport of product from other parts of Tanzania. To facilitate the development of local poultry value chains, input suppliers can be engaged to extend their services to Lindi and Mtwara via Village-Based Agro-dealers (VBAs)¹¹. To assist producers, standard financial models have been prepared by the scoping study, and standard business packages will be promoted that meet producers' desired labour and financial targets. The poultry value chain offers the opportunity to have a large impact on female producers' assets and their households' need for increased access to protein, as well as increased income. Women who are currently members of savings groups¹² in Lindi and Mtwara make an attractive target producer, as they are already able to access small levels of finance and are used to coordinating with each other. The project can facilitate savings groups as a platform to aggregate their need for poultry production inputs (vaccines, feed, equipment, day-old chicks), as well as their produce, to engage larger markets together. Local, hybrid and exotic varieties of chicken can be introduced to meet different markets' preferences. As mentioned above, there will be SME development opportunities to support technical poultry extension, feed, and medical and veterinarian supplies and services. In some cases, these will be coordinated through the VBAs and government Agriculture Extension Officers (AEOs) who will be part of the project¹³. Financial and technological support will be critical, which in most cases will be established as embedded services from within the value chain.

Rice – Rice is a key staple and is under-supplied in the market by 40-75% according to interviewees questioned during the scoping study. There is good potential to produce high quality rice in the regions and interventions that reduce producers' costs and enable producers to sell rice instead of paddy will translate into higher profitability for smallholders. Mills have been identified as lacking grading equipment and milling machinery that does not crack rice grains, and do not often market their bran. All of these could

¹¹ VBAs are local entrepreneurs trained and supported by AKF to operate as agro-dealers. A network of 130 VBAs trained by AKF are doing profitable business and acting as a last mile link for farmers in Lindi and Mtwara regions. VBAs are not paid by AKF as they are independent individual businesses operating commercially, generating revenues as a result of their own income activities of working with input suppliers and farmers. AKF provides linkages, training, and exposure visits, which includes per diem only.

¹² AKF has mobilised 175,000 members (65% women) in over 9,000 Community-Based Savings Group in the two regions which are now cumulatively saving approximately Tsh 45 billion (\$22 million) annually.

¹³ AEOs are government employees that are part of the District Agriculture, Irrigation, and Livestock departments, and are responsible to provide information on technologies, techniques, and experience in agriculture production. AKF provides training and support for AEOs, but does not pay their salary. AKF and local District Agriculture and Irrigation Cooperative Offices (DAICOs) have a Memorandum of Understanding in which AKF provides training and supervision to mentor the extension officers. AKF provides motorcycles and monthly fuel allowance. At the village level, AKF works through Community Based Facilitators (CBFs) which are lead farmers with unique facilitation skills that are trained in Good Agricultural Practices. These facilitators are paid a monthly salary during the training period to deliver and follow up on training sessions at the village level.

improve miller margins, with the former impacting rice supply contract opportunities and the latter impacting animal feeders and especially the poultry value chain.

In summary, local producers have the potential to supply needed vegetables year-round. Research also found that well-organised producers could supply eggs and poultry locally.

Possible Scenarios

There are two possibilities for extractives development in southern Tanzania. This is because while the LNG plant is planned to be developed, plans are currently on hold due to uncertainty from the Tanzanian government and global natural gas prices. Therefore, the project scoping determined two possible scenarios for food supply development:

Scenario 1: Status Quo

Graphite & Nickel mining, cement, and public infrastructure projects continue; no LNG investment, and normal population growth. Increased demand = approximately \$8 million over five years in local fresh vegetables (FV) and poultry

Increase in demand over baseline/year of 5,600 new meals each day:	Estimated value chain actors directly engaged in the programme:
<ul style="list-style-type: none"> • FV¹⁴: ~ 1,000,000 kg (measured in kg, bunch and piece) • Eggs: 16,000 trays • Poultry: 145,000 chickens • Rice: 300,000 kg dry • Red meat: 200,000 kg 	<p>Total: 5,000 producers/VC actors</p> <ul style="list-style-type: none"> • FV: 2,800 (25% f) • Eggs: 200 (75% f) • Poultry: 800 (65% f) • Rice: 1,000 (35% f) • Entrepreneurs: 200 (15% f)

Scenario 2: LNG Investment Commences 2017

Large Investment Scenario: LNG plant goes ahead and approx. 10,000 new employees/workers for LNG plant and other infrastructure and services come into the area; population increases for 5 years. Increased demand = \$50 million-\$90 million over five years in FV and poultry

Increase in demand over baseline/year of 30,000 new meals per day:	Estimated value chain actors directly engaged in the programme:
<ul style="list-style-type: none"> • FV: ~ 12,000,000 kg (measured in kg, bunch and piece) • Eggs: 235,000 trays • Poultry: 1,700,000 chickens • Rice: 600,000 kg • Beans: TBC • Red meat: over 1m kg 	<p>Total: 18,200 VC actors</p> <ul style="list-style-type: none"> • FV: up to 12,000 • Eggs: 400 • Poultry: 1,500 • Rice: 2,000 • Beans: 2,000 • Pastoralists: 500 • Entrepreneurs: 500

The proposed project design is built around a first year of implementation under the first scenario. This first year will enable the project field team to hone delivery models, which would enable rapid scale-up of production through replication of producers groups if the second scenario becomes confirmed. Should scale-up to scenario 2 be required, additional project funding may be needed.

Project Objectives and Outputs

In line with the objectives of the SOGA initiative, the overall vision of the Food Value Chain Development (FVC) Project is to establish a sustainable and inclusive food value chain in Mtwara and Lindi serving gas

¹⁴ Fresh vegetables include, but are not limited to, onions, tomatoes, brassicas, green peppers, egg plants and okra. AKF will pick a selection of fresh vegetables and possibly fruits based on demand and production efficiencies and profitability.

and mining industry and beyond. The project will integrate smallholder farmers and local entrepreneurs from the two regions at appropriate stages along the food value chain, linking them to catering services for oil, gas and mining industry and other markets. By the end of year three, the FVC Project will contribute to establishing a robust food value chain in the two regions that will:

- Increase cash income of 5,000¹⁵ individuals (producers, entrepreneurs and value chain actors) from sale of supported food crops/items
- Establish and/or strengthen 200 Micro, Small and Medium Enterprises (MSMEs) linked to supported food value chains
- Generate employment or self-employment for up to 400 individuals engaged in targeted MSMEs
- Improve sustainable livelihoods for 2,000 women (40% of the target beneficiaries) engaged in supported food value chains
- Catalyse allied industries in Mtwara and Lindi including but not limited to nurseries, storage, packaging, transport, poultry feed industry, hatcheries, brick making from rice husk, and seed production

The project will start with market demand using the project scoping study's estimates for selected value chains (fresh vegetables, poultry and rice), and partnerships with key catering firms and end-market actors. It will then link value chain actors to the identified markets through:

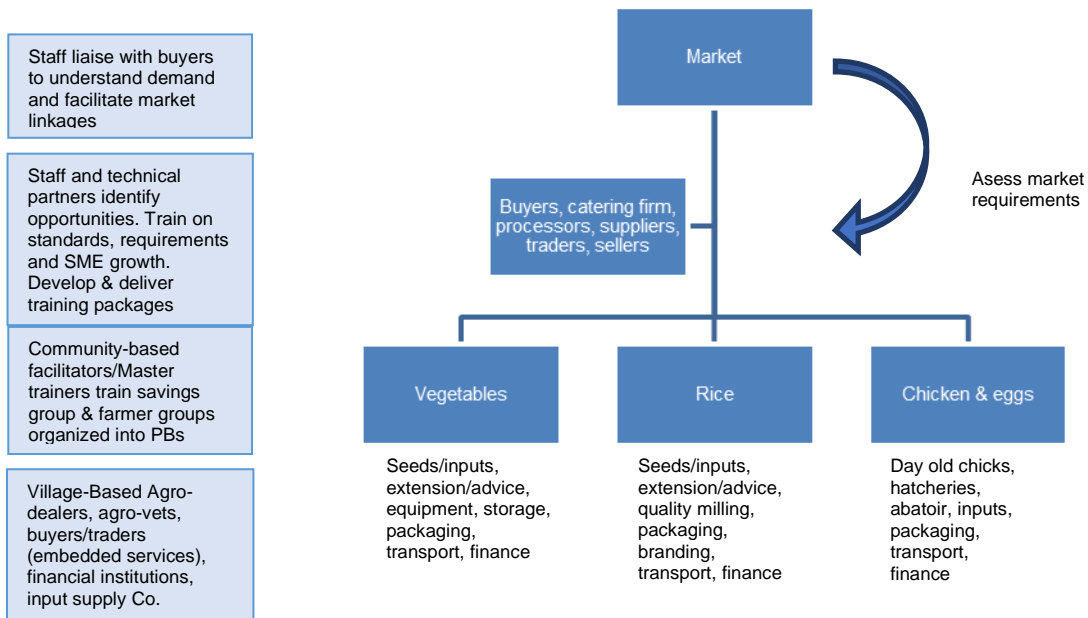
- Building the production, organisational and business skills of smallholder farmers¹⁶ to consistently plan, produce and coordinate for aggregation of the identified food items for targeted markets;
- Providing skills development, organisational capacity-building, financial linkages and MSME development services to actors along the value chain (inputs, sorting, quality control, storage, processing, packaging, transport and marketing) of these food items to supply local markets, catering firms for gas, mining and other companies and urban centres outside the target area. Within this, the project will focus on 'produce managers', individuals and entities that will be responsible for managing contracts with end-buyers and controlling the production process.

The FVC project will be a catalytic investment under GIZ-SOGA that will strengthen existing MSMEs and create new enterprises to serve extractive industry and other markets, and in the process will increase livelihood opportunities, create jobs, strengthen local businesses and ultimately foster economic growth in the region. A project logframe is attached at Annex I while a summary diagram of the project's implementation approach is presented below:

¹⁵ These are direct beneficiaries of the project. If we add their family members, the number of project beneficiaries will be close to 20,000 women, men and children. An additional 2,500 individuals are expected to have adopted horticulture, rice or poultry production and supply to markets by learning from the direct beneficiaries. These individuals and their families could be counted as indirect beneficiaries.

¹⁶ AKF views smallholder farmers (avg farm size of 1 hectare) as potential micro-farm enterprises if these are operated by farmers with a business approach. The proposed project will leverage the opportunity created by expansion of gas and mining industry in Lindi and Mtwara to transform smallholder farming into micro-farm business enterprises.

Figure 1: Implementation Approach

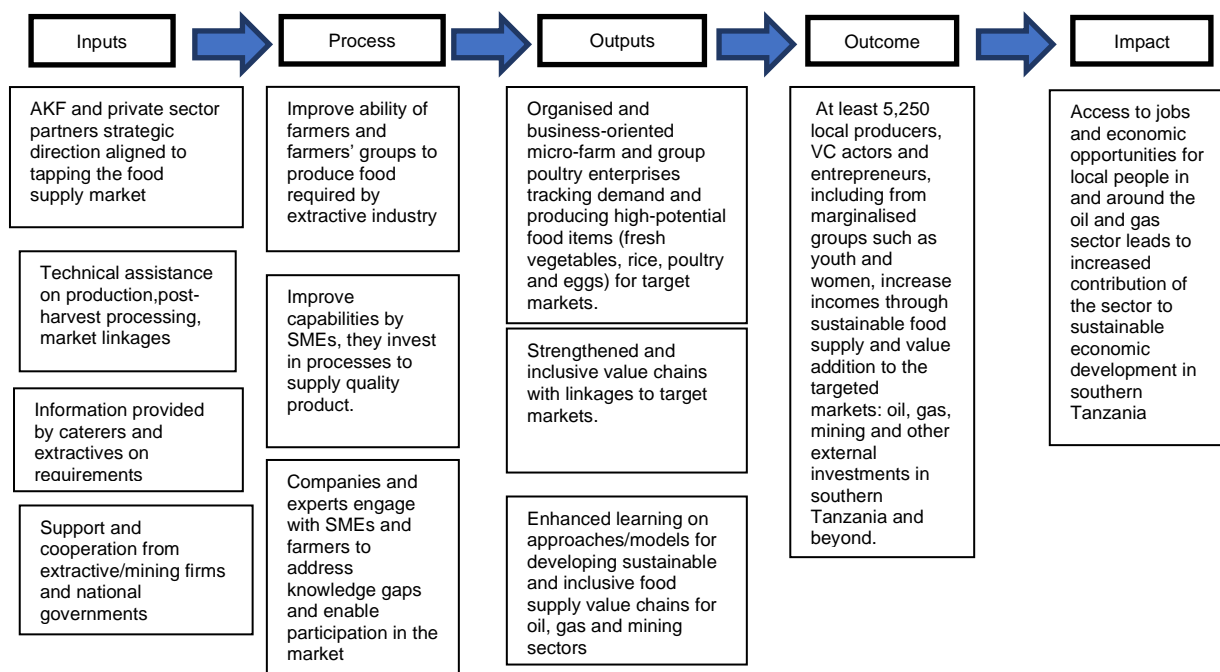


Outcome Statement

Increased income of local producers and entrepreneurs, including from marginalised groups such as youth and women, through sustainable food supply businesses to the targeted markets: oil, gas, mining and other external investments in Lindi and Mtwara regions and beyond.

Output Details

The project will address supply and demand-side constraints to achieve three outputs leading to the overall outcome. These are organised in a process diagram as follows:



These intervention areas are expected to result in a strengthened food value chain across the regions, stimulate the local economy and generate multiplier economic and social gains.

Activities

This section elaborates the activities leading to each output, outlining key stakeholders and private sector partners and the strategic interventions necessary to bring about the envisioned market system change.

Activities leading to Output 1 - Organised and business-oriented micro-farm and group poultry enterprises tracking demand and producing high-potential food items for target markets

This output will work to develop market-responsive producer businesses within food value chains that are: market-led, meet buyer requirements, financially viable, add value to local production, and capture market share. Specific food value chains are: green vegetables, eggs, poultry and rice.

Activity 1.1. Formation of producer businesses (PBs) in horticulture, poultry, egg and rice

The project team will mobilise and register PBs with membership of 4,800 producers. Up to 85 PBs are anticipated, with an average of 55 to 60 producer members each. The mobilisation of the PBs will be done in accordance with agreements to be reached through activities leading to Output 2, between PBs or intermediaries and market associations, catering firms and other larger buyers and farmers, facilitated by the project. These agreements are expected to include the guaranteed purchase of produce (vegetables, eggs, poultry, and rice) meeting quality standards, volumes and consistency. As the relationship develops and trust is established between parties, the agreements will also likely encompass the provision of seed and other inputs including irrigation equipment through seasonal loans, and the provision of extension services as the project withdraws.

Producer business organisational structure: The PBs will be structured similarly to Producer Marketing Groups (PMGs) that AKF has created under other projects, and will build upon learning already acquired. They will be registered as businesses, rather than associations, to enable profit-making within the organisation. The PBs will be channels for training, inputs, and coordination of produce. The PBs will also be managed by semi-dedicated or dedicated individuals depending on their revenue, and the managers will be carefully identified and cultivated through the project (see Activity 1.3).

Mobilisation strategy: PB members will be mobilised according to motivation, willingness to invest, capacity to produce, and opportunity for household-level income impact. Many of the members are likely to already be part of Irrigator Organizations that AKF is working with, making them familiar with organizational principles. The project team will also work through Community-Based Savings Groups (CBSGs) already developed by AKF to readily mobilise motivated, financially literate producers and to maximise the potential of engaging women. Mobilisers will specifically encourage participation by women, and will facilitate participation by selecting meeting times and locations based on consideration for childcare and household responsibilities.

The key criteria for producers to participate are as follows: (1) a demonstrated level of interest or experience in the particular value chain; (2) interest in improving productivity and quality; (3) interest in investing along with peers to reach larger markets; (4) access to the land and water required for the selected value chain; and (5) access to finance through a savings group or other mechanism.

Activity 1.2. Training of producer businesses in their particular value chain

Development of training modules: The project will develop modules for training of producer businesses and farmers/producers in three areas: technical skills on good agriculture/horticulture and poultry practices; organisational skills; and entrepreneurial and business skills. AKF has established high quality training modules for production of rice and green vegetables, as well as for organisational development and business operations. AKF will collaborate with other organisations such as BRAC for training on poultry value chain. The Project will draw upon the Farmers Business School training module developed by the GIZ implemented Competitive African Rice Initiative (CARI) to enhance entrepreneurial skills of rice and horticulture farmers. For all value chains, AKF will synthesize existing training materials available from different organisations and develop a series of training modules in the three areas mentioned above to enable producer businesses and their members to meet and comply with the requirements of buyers and operate as viable businesses. The training modules will be informed by producers' current practices, preferences noted by the project study with end-market actors, their requirements and feedback on the current quality of produce.

Training modules will be staged for different 'levels' of production, from increased output to the local markets up to GAP certified for buyers who require adherence to such standards.

Delivery of training: AKF staff, external experts or professionals from partner organisations will deliver training directly to a core of PBs' membership and management through a series of sessions using participatory learning approaches and practical exercises. This will also be facilitated by mobile learning tools such as recorded lesson summaries. Managers, will also be trained to enable them to enrol additional producers in the PB (or replicate the PB in another area). Local organisations involved in capacity building services will be preferred for delivery of training. The training will enable PBs to

develop business plans and production schedules, organise members according to production calendars, aggregate and supply to buyers.

Activity 1.3. Mentorship to PB leadership/management

Using criteria honed through AKF's entrepreneurship development programme for input supply, the project will identify those who are already leaders in the value chains as businesspeople, those who demonstrate entrepreneurial qualities such as interest in leadership positions in farmers' groups, understanding of finance, and creativity in problem solving, or entrepreneurial graduates of agriculture colleges. These are likely to already be farmers, and thus experienced in the requirements of seeking inputs and selling produce.

Field-based project staff with private sector expertise will work with these identified leaders to hone their skills to manage the more complex and higher-volume businesses required to serve extractives. In the first year, staff will assist with business operations (training on the template business models provided by the project scoping study; registration; relationship-building with clients; reconciliation of accounts; cost and product forecasting; and business modelling). In later years of the project, staff will facilitate and advise, but will not provide direct business support services to ensure that managers gain the experience they need to enable producer business success over the long-term.

Activity 1.4. Set-up of producer business calendars and price monitoring techniques

In the first year of operation, each PB will define their crop choices based on market prices projected, potential deals with buyers, and agro-climatic conditions. The PBs will learn how to monitor pricing for future seasons. They will set up a calendar detailing production and harvest times, calibrated to align with market demand. The calendars will be developed by each business with support from project staff, in line with the production targets and end-buyers they are aiming to work with. A template will be developed for each value chain, which the PB can fill in to suit their particular requirements and aims. For the rice value chain, the project will collaborate with (CARI) in seeking technical advice on developing financial calendar for producers and cost of production analysis. The project team and PB management will also work to coordinate with other businesses and markets, to mitigate risks associated with over- or under-producing.

Activity 1.5. Linkage of PBs to buyers and out-grower companies

A critical determinant of the sustainability and strength of the PBs will be the groups' sense of purpose and their relationships with the project team and private sector actors. The project will support their early introduction to and collaboration with private buyers and service providers and clearly communicate its own time-bound role in group mobilization, training and linkage building. As the project progresses, the project team will steadily reduce its engagement with the groups as they assume a stronger role in engaging buyers. This activity is critical for ensuring the breadth of outreach of the overall action is achieved, and to ease the relationship between smallholder farmers/poultry producers and larger private firms that will require greater vertical integration among value chain-actors to fulfil market requirements for quality and quantity. Without such aggregation and initial capacity building, the current fragmented network of farmers is too inefficient and risky for the private sector to invest in, in any significant way. The PBs will also be networked together to ensure they are able to collaborate to serve larger markets or to engage intermediary companies that are supplying urban and export-oriented contracts.

Activity 1.6: System for tracking volume of fresh vegetables traded in town markets

The project will support the Mtwara and Lindi Market Associations in establishing and maintaining system for record keeping and tracking volume of fresh vegetables traded in the market for each crop and make this information publicly available including to PBs. This will assist PBs in demand assessment as well as coordinate supply in response to demand.

Activity 1.7 Establish Suppliers Appraisal and Certification System

In collaboration with extractive firms procurement departments, develop criteria (Quality, capacity, reliability, registration/formalization status, consistency etc) and an appraisal mechanism through which SMEs and marketing groups will be tested/examined and the qualifying ones be certified/endorsed as Certified Food Products Suppliers. The certified actors will then qualify for linkages and supply transaction with extractive firms.

Activities leading to Output 2 - *Strengthened and inclusive value chains with linkages to target markets*

Activity 2.1. Facilitate agreements with markets and buying firms

Depending on the strength of market demand, solicitations and discussions will be held with lead firms, suppliers, off takers, catering companies and market associations to enter into buying schemes with PBs. Project staff will meet in person with firms interested to determine their willingness to invest and capacity to implement. Meetings will focus on the firms' detailed business plan showing the up-front and long-term costs, and the return on investment. The project will support selected companies with technical assistance, extension support and linkages to PBs. As part of this activity, the project will facilitate the signing of partnership agreements between the buying firms and PBs and their endorsement by local government authorities. The agreements will outline the actions and responsibilities of each party, key produce quality criteria required and pricing determinants. Agreements are expected to include a commitment to purchasing produce that meets the specified standards. As trust builds between the parties, companies will be encouraged to offer additional inputs on credit to high performing PBs along with critical / constructive feedback on sourced produce. This will be an on-going activity throughout the project.

Activity 2.2. Strengthen capacity of MSMEs within the selected value chains

This activity will identify and support MSMEs along the selected value chains to unlock binding constraints related to input supply (e.g. vegetable nurseries, hatcheries, poultry feed), upgrading and value addition of produce (e.g. rice millers, traders, catering firms), to support services (e.g. storage facilities, packaging services, machinery/equipment rentals, veterinary services). Project staff and technical partners will work with entrepreneurs to build their business plans and financial models, to understand their markets and the standards they must reach in order to compete on local content delivery. In recognition of the numerous barriers to MSME operations within national and local government bureaucracies, this activity will also help entrepreneurs understand legal registration processes. MSME technical assistance will be delivered in partnership with GrowthAfrica (a leading SME accelerator in East Africa) and/or other business development support organizations, including local partners and/or specialists. Activities will involve:

- **Identification of local MSMEs to work with as part of the project**, based on key criteria: e.g. track record in selected sectors (i.e. food supply chain and related agribusiness service); track record in selected or similar geographies; ready and keen on grow / invest in target areas; potential to support project objectives (inclusion of smallholders via proposed model); etc.
- **Diagnostics of selected MSMEs** to determine growth plans, capacities and gaps and resource requirements, as well as regulatory hurdles.

- **Tailored agribusiness acceleration programme** including mentorship, coaching, financial modeling, access to vetted service providers, and initial investor communications to guide firm growth as needed and appropriate.
- **Post-acceleration growth programme** including facilitating investor engagement for securing patient growth capital, to continue to expand beyond the life of the project.
- **Reporting on the above**, to support project monitoring, evaluation and learning objectives on necessary support to build inclusive MSME models in Tanzania.

Activity 2.3. Facilitate and strengthen quality input suppliers in the project area

To enable PBs to access the inputs they require, the project will identify existing and new input suppliers for seeds, fertilizer, herbicides, pesticides, vaccines, poultry feed, irrigation equipment and other farming equipment in the selected value chains. After identifying priority inputs, this activity will build on an existing AKF-facilitated network of 130 Village-Based Agro-dealers (**VBAs**), who are already profitably distributing product in rural villages in Lindi and Mtwara. Existing VBAs will be trained on the new products, and training will also support additional VBAs in areas where no other agro-input shops are operating. In these trainings, the input supply companies themselves, whose staff will explain their approach to working with and supplying VBAs and demonstrate how to use their products, will help facilitate. AKF will leverage its existing partnerships with input suppliers such as Yara, Syngenta, Bytrade and Balton. The project will strengthen the two VBA associations in Mtwara and Lindi that AKF helped to establish. In addition, partner input supply companies, VBA Associations and PBs will help to cost-share and organize the trainings as a step up in responsibility from earlier projects. AKF will support VBAs to independently manage their inventory and cash flow and on how to use their mobile phone to order supplies and make payments to wholesalers as appropriate.

Building upon an activity already initiated by AKF and Sibesonke, this project will also help VBAs to use a new mobile platform to manage their customer information, including collecting contact information, tracking purchases and communicating with their customers about product as needed.

Activity 2.4. Establish PB manager network of extension and marketing services

This activity will ensure that PB managers, who will have complementary competencies and skills, are networked to each other and to technical advice providers such as AEOs and private extension workers. This will enable PB managers to draw upon the expertise of others to maximise the production potential of their members.

Activity 2.5. Link PBs and other value chain actors/MSMEs to finance

The project will work with AKF's sister agency Diamond Trust Bank and other financial institutions in the regions to promote appropriate formal financial products to entrepreneurs and to improve outreach and access across the programme area. These financial products include:

1. Cash flow finance for entrepreneurs: PBs, VBAs, processors and traders. AKF will work with financial institutions (discussions with DTB are ongoing) to develop financial instruments that provide working capital to enable entrepreneurs to trade at higher volumes than their savings.
2. Longer-term savings for farmers and other value chain actors: AKF is developing a product to enable people to take up saving as a group using mobile money. This has great potential for small-scale savers (farmers and entrepreneurs) to save for capital or inputs expenses. To serve individuals and groups,

AKF will also work between VBAs, producers and a financial institution to set up a facility for farmers to set savings aside for future purchase of inputs, enabling input suppliers to place orders based on confirmed (and funded) demand.¹⁷

3. Loans and saving products for organized farmers groups/individuals/entrepreneurs to make capital investments: with banks, AKF will assist in training entrepreneurs and groups to customize template business plans to enable strong financial forecasting and access loan products for investments in activities such as farm equipment or technological products, construction of storage or processing facilities, transportation of agricultural product to market, and development of irrigation.

AKF already has MoUs with DTB and Bank of Africa and is working with them on linking savings group with the formal financial system.

Activity 2.6. Support post-harvest investment

As AKF is now nearing two years into a three-year EU-financed horticulture value chain development programme, this activity would co-invest in smart collection, sorting and storage facilities at appropriate locations, and work within the Mtwara and Lindi town markets. For higher value crops, especially perishables, lack of collection and storage facilities is a binding constraint. It is widely agreed that 50% of a perishable harvest never makes it to market. Building from experience in AKF's existing horticulture value chain development programme (in which AKF is already collaborating with Masasi District Council on establishing a collection and sorting facility in a major horticulture area), the project, PBs, and local government will selectively invest in collection facility infrastructure. A small amount will be earmarked in the project to co-finance in collection facility infrastructure. Collection facilities will be managed by PBs or entrepreneurs and linked to consistent and growing markets via traders also working with the programme. As part of this effort, staff will support market actors to understand their markets, especially their buyers, and navigate the agriculture sector development system to plan for appropriately sized and sited infrastructure.

As part of developing the chicken market within the Mtwara and Lindi town markets, the project will collaborate with the district government and entrepreneurs in constructing and establishing at least two abattoirs to improve hygiene, quality and volume of poultry and poultry products in the two regions. Currently there are no communal abattoirs for chicken in Mtwara and Lindi and the procedures are informal and often poor quality. All frozen broiler chicken comes from Dar and Arusha or imported due to lack of facilities and know how. The project will also facilitate halal certification within the regions to access wider markets. The establishment of the two abattoirs will be conducted in a collective manner with selected entrepreneurs, discussed with the association to select a manager for the facility. In addition, the aim is for traders and users to pay a fee for the maintenance and management of the abattoirs. It is also expected for the entrepreneurs to contribute to the establishment of the abattoirs through in-kind contribution, labour, and materials.

¹⁷ AKF would like to explore taking up a product similar to MyAgro, used in West Africa, which provides this service. It has, to-date, not been tried in these regions of Tanzania.

Activities towards Output 3 - Enhanced learning on approaches/models for developing sustainable and inclusive food supply value chains for oil, gas and mining sectors

The activities below are to ensure a strong learning and adaptation agenda throughout the project.

Activity 3.1 Collect qualitative and quantitative information for baseline and ongoing results chain monitoring

The project has planned for baseline data collection, ongoing results monitoring, action research, and end-of-project data collection on indicators agreed in the project logframe. To serve the informational needs of the project in an ongoing manner, the Monitoring, Evaluation, Research and Learning (MERL) team will undertake routine monitoring and other studies to test project assumptions and to understand better why different actors are taking up strategies or not. This information will be fed into project reporting as well as regular review meetings. An important aspect of this monitoring will be to assess changes in farmer and firm behaviour. Once initial models for farmer-market interactions have been set-up, the project role will shift into on-going monitoring of interactions between the private sector and farmers. The insights from this monitoring will lead to follow-up review meetings with the private sector firms beginning in the second year.

Activity 3.2. Action research, learning and coordination

At a project-wide level, monitoring, evaluation, learning and selected research will be critical to the production of valuable learning for the value chains on when and how to introduce different levels of structure to the market interactions between farmers/poultry/egg producers, input suppliers and end market actors. As a critical part of implementation, the MERL team will study programme learning questions from the beginning aimed at providing learning to refine the implementation model and identifying key enablers and drivers of developing inclusive food value chain for oil, gas and mining sector.

The project will develop targeted briefs on key lessons from its experience in implementing food value chain for oil and gas sector/corridors and contribute to GIZ-SOGA forum that bring oil, gas and mining companies, catering firms, agri-businesses and NGOs in Tanzania together to discuss specific issues on the sector, brainstorm on finding feasible solutions and sharing lessons from implementation of the project that can inform practices and programs of various stakeholders.

AKF, in partnership with regional governments, VSO, Africare, Oxfam, WWF, Care, private companies and other NGOs implementing in the regions, will hold annual agriculture development forums to ensure coordination and complementarities across commercial, non-profit and government lines in Lindi and Mtwara.

This set of sub-activities will help to tie together at local levels the efforts being undertaken by the Ministry of Agriculture, regional and local authorities, agriculture research institutes, private companies, and NGOs to improve planning and coordination across the sector and support the growth of a robust food value chain that integrates the population of Lindi and Mtwara. It will also inform business practices and programmes of oil and gas companies, catering firms, and other private players in Tanzania and other SOGA countries.

Risks

A detailed risk and mitigation plan will be developed as part of the inception of the project and reviewed on a semi-annual basis. An initial risk matrix is noted here.

Risks	Mitigations
Ambitious programme targets not met due to complexity of the operating environment	Engage local government, community institutions and partners early to simplify the interventions required in each value chain; focus programme interventions on the most critical bottlenecks.
Disease and pest attack on poultry or horticulture and staples	Integrated pest management training, vaccine supply chain, close collaboration with research institutes and agri-input companies
Erratic rainfall could undermine rainfed and irrigated farmland and reduce yields, as a result of climate change.	Engage farmers in water management training to provide them the knowledge to manage their water risk (including low-water production techniques, basic water catchment infrastructure and drainage, mulching to preserve soil moisture, etc)
Commodity price fluctuation results in low returns for producers	Diversified crop production under this project will minimize the impact of price fluctuations
Failure to meet the requirements of extractives catering firm results in loss of key buyer	Invest in fully understanding the standards and requirements of the catering firm for the companies and LNG plant and develop the training and logistics accordingly. Clear communication about catering firms requirement, training, supply chain system development, quality control protocols, and regular tracking will minimize the probability of failure
Boom and bust cycle fallout for local producers	Establish links to markets beyond the LNG plant, Dar and other urban centers within and outside the region, export market and specialty products, value addition
Lack of coordination with other development actors and government	Work towards establishing a regularly-held Lindi/Mtwara development forum to coordinate activities of NGOs and private sector

Implementation Approach

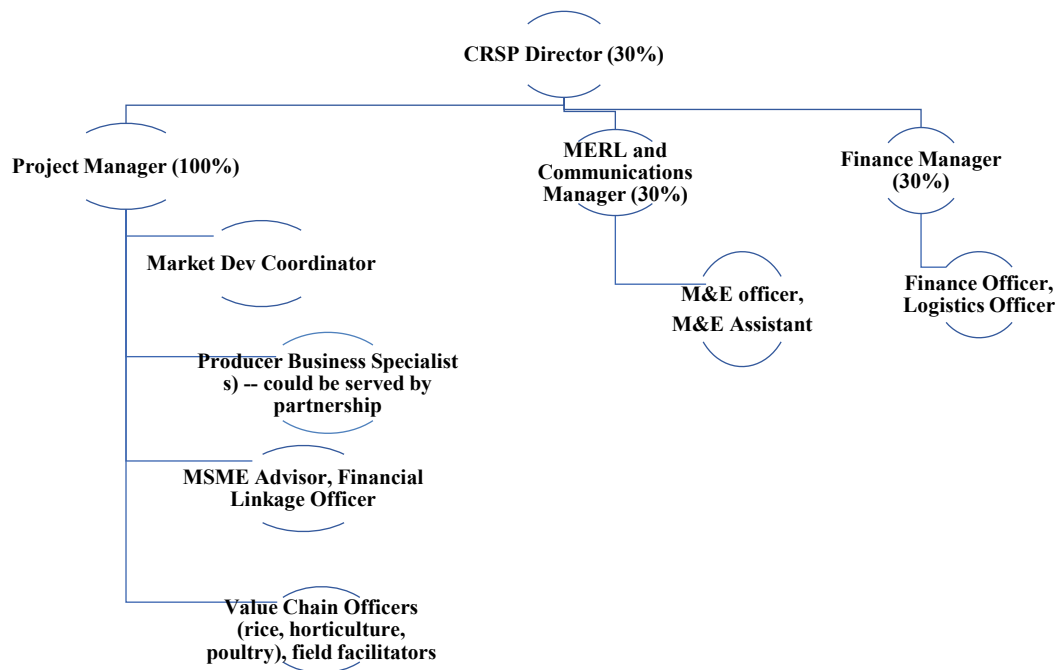
Building on the existing programming in Lindi and Mtwara under the Coastal Rural Support Programme, AKF will initiate this project with an inception workshop to plan out the interventions, activity timeline, indicators for monitoring and evaluation, and budget management. Thereafter, the first year will be focused on developing training modules for producers and training of trainers. This will build from the scoping study, AKF's experience, and other organisations' learning on farmer aggregation and coordination to identify the best practices. The second and third year of the project will be dedicated to scaling up and out, targeting producers and MSMEs, as well as working with the government to ensure coordinated and quality implementation.

Geographic scope

The project will initially focus its activities in four districts (Lindi rural, Ruangwa, Mtwara rural and Masasi) and expand to other districts in Mtwara and Lindi region based on demand and potential to expand the food value chain.

Organizational structure

This project will be implemented by the core staff in AKF’s existing Coastal Rural Support Programme structure, as well as new recruits with private sector expertise. An emphasis will be placed on recruiting local staff with private sector expertise. Some project team members may be staff from partner organisations, though AKF will maintain the core management and technical team. An overview of the project team structure is presented below.



Partnerships

The project will leverage partnerships and collaboration with other non-profit organisations, social enterprises working in agriculture development, agribusiness and the government. Non-government partnerships include:

1. Competitive African Rice Initiative (CARI) which aims to improve livelihoods of rice farmers by increasing competitiveness of domestic rice supply through better linkages among rice value chain actors. The Project will seek to engage CARI to provide technical assistance in implementing Farmer Business School training, and for linking rice producers and millers from Mtwara and Lindi to large trading companies and for developing consortium of producers, processors and traders.

2. VSO's T-LED programme, which aims to build SMEs and MSMEs into firms ready to take on various opportunities afforded by oil and gas investment. There is potential for working together in the poultry value chain.
3. Sibesonke, a social enterprise working on farmer production and marketing information by mobile device. AKF and Sibesonke are already working together to develop a service for VBAs that works as a customer relationship management tool.
4. GrowthAfrica, Matchmaker Associates, and other SME advisors and accelerators. AKF will engage business development professionals to support the financial, technical and business planning of SMEs being started and/or strengthened by the project.
5. Diamond Trust Bank and other financial institutions will be engaged to develop and pilot financial services for the chosen value chains.
6. Caterers, such as AKO and ATS, which are likely to be contract-holders for new extractives investments.
7. BRAC for training on poultry value chain.

Coordination Structure

Within Lindi and Mtwara are a number of organizations and projects around the extractives industry, in line with efforts under SOGA. Under the proposed project, AKF will establish an advisory group, consisting of representatives from GIZ, AKF, local government from the regional council (and district councils when possible), and two NGOs that are involved in similar interventions (for example, VSO and MEDA). AKF will facilitate a semi-annual meeting through this project to convene the advisory group and identify areas that require coordination, sharing of lessons learned, and opportunities for collaboration. This mechanism will be reported on with minutes of the meetings circulated for recordkeeping.

AKF's experience in the value chain development in the regions

The Aga Khan Foundation (AKF) has been active in Lindi and Mtwara Regions (LMR) since 2009 when it launched the Coastal Rural Support Programme Tanzania (CRSPT), a multi-input area development initiative that includes programming in agriculture and market development, access to finance, education, early childhood development, health and nutrition. In agriculture and agribusiness, AKF's programmes include a five year DFID-financed project in Lindi and Mtwara that has received an 'A+' grade for the last 2 years. Interventions include: technical assistance to large producer associations and cooperatives; a viable Village Based Agro-dealers programme that promotes last mile agronomic inputs with reliable advice (linked to input suppliers such as Yara, Syngenta, Bytrade and Balton); the crowding-in of better paying and more dependable downstream market actors (such as millers, processors and exporters); promotion of embedded finance, information and more reliable raw material via contract farming (with Export Trading Group); and adoption of new technologies, such as mobile finance and information systems solutions along value chains. Overall, nearly 100,000 smallholder farmers are benefiting from the programme. AKF's financial inclusion programme that has mobilised 175,000 members is funded by the Financial Sector Deepening Trust (FSDT). In a recent end of project review, the external evaluator hired by FSDT rated it as one of the most successful Savings Group programmes. AKF's education and health initiatives are contributing to improved pedagogical, health and nutrition practices while strengthening overall education and health systems. Over the past five years, AKF has been working in partnership with local government, communities and the private sector, expanding its

programme to all districts in the two regions excluding one, directly and indirectly benefitting approximately 18% of the 2.1 million population of both regions. AKF's experience and existing programme in Lindi and Mtwara provides an excellent platform to build upon and launch the proposed Food Value Chain Project.

Annex I: FVC Project Logical Framework

Result	Indicators	Targets
Outcome: Increased income of local producers and entrepreneurs, including from marginalised groups such as youth and women, through sustainable food supply businesses to the targeted markets: oil, gas, mining and other external investments in Lindi and Mtwara regions and beyond.	Number of targeted producers and value chain actors reporting increased income from sale of food crop/items Percent increase in income of producers from sale of targeted food crops/items Number of trained MSMEs with increased volume of businesses in food value chain Number of MSMEs established /strengthened	5,000 producers, entrepreneurs increase their cash income 200 MSMEs with improved increased volume of business
Output 1: Organised and business-oriented micro-farm and group poultry enterprises tracking demand and producing high-potential food items (fresh vegetables, rice, poultry and eggs) for target markets.	Number of producer-businesses organised and functioning as business entities Number of targeted producers adopting promoted GAPs and techniques required by the targeted markets Number of producers supplying fresh vegetables, eggs, chicken and rice to gas and mining catering services and other markets	4,800 micro-farm and group poultry enterprises (with Scenario 2): • FV: 2,800 (25% f) • Eggs: 200 (75% f) • Poultry: 800 (65% f) • Rice: 1,000 (35% f)
Output 2: Strengthened and inclusive value chains with linkages to target markets	Number of firms, suppliers and buyers forming agreements with targeted producers/ producer businesses (PBs) Number of trained MSMEs Number of people employed in target MSMEs as compared to start of the project. Number of agro-dealers supported by the project	Up to 6 business agreements 200 MSMEs* trained (100 MSMEs) 400 individuals employed in MSMEs 100 agro-dealers
Output 3: Enhanced learning on approaches/models for developing sustainable and inclusive food supply value chains for oil, gas and mining sectors	Learning reviewed biannually and taken up in project implementation Number of learning pieces produced and disseminated during the project Number of learning forums organised/participated in	Baseline study 6 learning pieces Four forums

*MSMEs include:

- 80 Producer businesses (of vegetables, eggs and poultry)
- 10 MSMEs (supplier, trader, packer, storage, transporter, hatcheries, vet service providers, abattoir, agri-equipment/machinery rental service provider etc)
- 100 village agro-dealers and village agro-dealer associations
- 10 rice millers

Total: 200 MSMEs ; Avg No. of persons employed/MSME = 2; Total employment/self-employment = 400

Appendix 3. Questionnaire

Questions and topics for interviews with Producer businesses

1. Introduction to the respondent

Explain about the purpose of the interview. Ask to bring the PB's books.

2. Producer Business ID

Use the following info from the Aga Khan Excel file "FVDCs PBG'S UPDATES-APRIL 2019_ANALYSIS"

Name of PB group:

Number (S/N):

Ward:

3. Basic information about the PB leader

1. Position in PB
2. Gender
3. Age
4. Farm experience in years during lifetime
5. Main employment
 1. work on family farm
 2. work on own farm
 3. hired as farm labor on others' farm
 4. non-farm job/business
 5. homemaker/housewife
 6. student
 7. unemployed
 8. too young, too old or too sick to work
 9. working in the group
6. Main cash crop produced

7. Farm size operated
8. Ownership to the farm land (include all)
9. Main crop for self-consumption (note: if no crop for self-consumption: write it down)
10. Where you previously a member of a cooperative? Yes/ no
If yes, what is the difference between your PB and the cooperative you previously were a part of?
11. Number of household members

1. General questions about the PB

1. Please tell us about how your producer business (PB) was established
2. Please tell us how the PB works / describe the activities of the PB
3. Please tell us about the key persons in the PB

2. PB establishment and sales

1. When was your PB established?
2. When did you become a member of your PB?
3. How was the leader appointed? / Remember when you were appointed? How was that done? SELECTION!

4. Does this leader get any compensation for the work as the leader of the PB?

5. How did you become a member of the PB? (SELECTION!)

6. How was the members of your PB selected? (SELECTION)

The key criteria for producers to participate are as follows: (1) a demonstrated level of interest or experience in the particular value chain; (2) interest in improving productivity and quality; (3) interest in investing along with peers to reach larger markets; (4) access to the land and water required for the selected value chain; and (5) access to finance through a savings group or other mechanism.

7. Do you have any regulations in your PB? (ask to see them if written)

8. When was your first sale through your PB? Date (Note if sales have been individual!)

IF SALE; SKIP TO Q 10

9. Why have you not been able to sell anything through the PB? Explain. Then SKIP to Q13

10. Please tell us about the 3 most recent sales by your PB after the Aga Khan project started. Date, who was it sold to? (write down the buyers) Price? Quantity?

11. For any of these 3 sales, was this to different buyers than before the Aga Khan project?

12. If yes, did you get a higher price from these new buyers than you would have gotten from the buyers that you used before? (Probe)

IF NO PIGEON PEAS, SKIP TO 20

13. Do you remember the collapse of the pigeon peas market? (probe)

14. Did you, on your own farm, produce pigeon peas?

15. How did the collapse of the pigeon peas market affect you? (Probe, include responses to the collapse)

16. How did you adapt to the collapse?

IF NO SALE IN Q8; SKIP TO Q19

17. Thinking back to the time before the collapse of the pigeon peas, did any of the members in your PB sell to the same buyers as you mentioned in Q10?

18. Has the government taken any actions to stabilize pigeon pea market and cashew crop pricing?

19. Are there any pigeon pea processing factories or businesses that you know of in region? (name)

20. What was your role in the last 3 sales? (probe: role of the PB?)

21. Have you done any other activities to strengthen this value chain? (probe)

22. Are you aware of any other activities that this project has done to strengthen these value chains? (If any sales, relate this to the value chains involved in the 3 sales).

6. Functioning of PBs

23. What are your main tasks and responsibilities in the PB?

24. How do you communicate with the other members in your PB?

25. How often does your PB meet?

26. What is usually the topic of discussion in your meetings?

27. How do you keep records of your meetings?

28. Has there been any conflicts within your PB? If so, why?

7. Women (only ask if mixed)

29. Please tell us about how the women have been included in the PB

30. Please tell us about the role the women have played in the PB

31. We have now heard your thoughts on how the producer groups work and function.
Do you have any additional thoughts?

Questions for one PB member in the same PB

Introduction. Emphasize that we will not provide any support and that we are not working for Aga Khan.

1. Basic information about the PB member

1. Position in PB

2. Gender

3. Age

4. Farm experience in years
Main employment
 10. work on family farm
 11. work on own farm
 12. hired as farm labor on others' farm
 13. non-farm job/business
 14. homemaker/housewife
 15. student
 16. unemployed
 17. too young, too old or too sick to work

5. Main cash crop produced

6. Farm size

7. Main crop for self-consumption (if any produced for own consumption)

8. Where you previously a member of a cooperative? Yes/ no If yes, what is the difference between your PB and the cooperative you previously were a part of?

9. Number of household members

1. General questions about the PB

1. Please tell us how the PB works / describe the activities of the PB

2. Please tell us about the key persons in the PB

2. Membership in the PB and sales

1. When did you become a member of your PB?
2. How did you become a member of the PB?

The key criteria for producers to participate are as follows: (1) a demonstrated level of interest or experience in the particular value chain; (2) interest in improving productivity and quality; (3) interest in investing along with peers to reach larger markets; (4) access to the land and water required for the selected value chain; and (5) access to finance through a savings group or other mechanism.

3. How often do you attend PB meetings? (not meet to do work, but to have MEETING)

IF NO PIGEON PEAS; SKIP TO Q15

11. Do you remember the collapse of the pigeon peas market? (probe)

12. Did you with your own farm produce pigeon peas?

13. How did the collapse of the pigeon peas market affect you? (Probe, include responses to the collapse)

14. How did you adapt to the collapse?

15. How has your working environment changes as a result of the project (probe in terms of specific value chain challenges).

16. If POULTRY, ask the volume of their production, the risks and constraints of poultry production

Women (if mixed PB)

17. Please tell us about how the women have been included in the PB

18. Please tell us about the role the women have played in the PB

19. What has your group done to include women in the PBs?

20. We have now heard your thoughts on how the producer groups work and function.
Do you have any additional thoughts?

To what extent do you agree to the following statements?

Use scale:

1=Strongly disagree, **2**=Disagree, **3**=Neither agree nor disagree, **4**=Agree, **5**=Strongly agree

21. These activities (refer to what the respondent has participated in) has not helped us much to increase our incomes.

22. The establishment of the PB have enabled group members to sell products to more high-end markets.

23. The support has not been sufficient to organize the PB in a good way

24. The PB members got valuable knowledge to improve their farming practices

25. How would your ideal PB look like?

MSME questionnaire

1. Basic information

1. Position in the business (Owner or manager)
2. Gender
3. Age
4. Business experience in years
5. Main product produced
6. Number of workers
7. Where you previously a member of a cooperative? Yes/ no
8. Number of household members

1. General questions

1. Please tell us about how your business works/ describe the activities of your business (include the value chain)
2. Please tell us about the key workers in your business/ describe what these workers do
3. Please tell us about the project's contribution to the establishment/improvements of your business

Establishment and sales

4. When was your business established?
5. When did you join the business?
6. How is your business now compared to before the project? (Probe)

7. Do you get higher income in your business now as compared to before the project?
(Probe: role of the project)

8. Do you have more employees now, compared to before the project started? (Probe:
role of the project)

9. Who do you buy inputs from?

10. Who do you sell to?

11. Has there been a change in number and size of the contracts since the start of the
project?

12. Have you received training that has been helpful to improve your business?

To what extent do you agree to the following statements?

Use scale: 1=Strongly disagree, 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly agree

13. These activities (refer to what the respondent has participated in) has not helped us much to increase our incomes.

14. These activities has contributed to increased employment in my MSME

15. My MSME did not get valuable knowledge to improve the business operations.

16. The project has helped my business to strengthen the value chain I am operating in (probe:how?)

Any other thoughts?

Appendix 4. Soga fact sheet.



Jobs – A driver for development in East Africa

The recent oil and natural gas discoveries in Mozambique, Tanzania, Kenya, and Uganda offer an unprecedented opportunity for economic development in these four countries and across the region.

Mozambique and Tanzania have some of the largest offshore gas fields in the world and the development of these will result in a significant change in the industrial landscape. In Mozambique alone, the sector has the potential to double GDP and lead to employment of 700,000 people. Similar figures are estimated for Tanzania.

Uganda has oil and a lower resource potential, yet the sector will have a substantial effect on the economy. The impact of oil discoveries in Kenya - estimated to be worth 40 trillion Kenya shillings (£280 billion) - will multiply in its role as a transit for reserves in South Sudan and possibly Ethiopia.

There is an immediate and significant demand for skilled workers in these four countries. There is a strong commitment from international oil and gas companies active in East Africa to meet both their obligations to employ local workers and to ensure that communities and citizens are able to access the benefits, such as jobs and inclusion in supply chains, offered by their investments.

Yet, this opportunity for increased employment in the region is hampered by a lack of appropriate skills in the local population. Limited technical and vocational education and training (TVET) systems, inadequately staffed technical schools and training that is out of date and insufficiently linked to industry requirements widens the gap between industry demand and supply of trained labour. Associated services such as work placements, entrepreneurship support and financial literacy are also often not available. Individual efforts by oil companies have attempted to address these gaps.

The Skills for Oil and Gas Africa (SOGA) Initiative

Against this background, the German Federal Ministry for Economic Cooperation and Development (BMZ) and UK's Department for International Development (DFID) have established an initiative which aims to address skills gaps in the oil and gas and associated sectors in East Africa and to assist partner governments in preparing their workforce for upcoming opportunities in the private sector. The initiative will be implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ).

Given the UK's expertise gained from North Sea oil and gas extraction and GIZ's distinctive capacity in establishing and reforming vocational training systems, SOGA is ideally placed to improve the quality and relevance of the teaching provided by TVET institutions in the four countries; the SOGA initiative will work to ensure that more value created from resource extraction can be retained locally, giving local people the skills to seek employment, and removing the region's reliance on imported labour.

Our partners

The initiative will work in close collaboration with the international and domestic private sector, host governments, local training providers and other stakeholders active in skills development. SOGA will coordinate with other relevant projects in the region to ensure a demand-driven approach to skills development.

Close cooperation with the private sector is the central pillar for the implementation of the initiative. As international oil and gas companies and their associated suppliers will create jobs, they



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must be closely involved in the initiative so that curricula and training measures match the industry's skills requirements.

Strong buy-in from host governments and government institutions will be ensured by aligning the initiative with national development objectives, building on GIZ and DFID's long-standing relationships with government stakeholders at regional, national, and sub-national levels.

Strategy and Activities

The initiative will deliver support to TVET institutions by improving the quality of their training and ensuring relevance to the demands of the oil and gas sector.

Efforts will focus on capacity building, working with public and private TVET providers, and improving teacher training institutes to ensure that they are equipped to provide the relevant skills to the local labour force. A strong emphasis will be placed on providing practical training and on facilitating access for vocational teachers and students to placements and internships.

The initiative will focus on delivering the relevant training for lower-skilled roles in the oil and gas sector and its supply chains. This focus will ensure that the initiative achieves the greatest impact on poverty rates, and will extend the opportunities brought by the oil and gas investments to a wider labour market. Particular consideration will be given to marginalised groups in the labour force, such as women and youth who traditionally are less able to reap the benefits of formal employment.

Specific activity plans and implementation structures for each individual country will be determined after consultations with the private sector and host governments during the first nine months of the project (2015).

Expected Outcomes

It is expected that the number of the local population in sustainable jobs associated with oil and gas investments will increase by 32,000. Out of these 32,000 people, 35% should be women and 40% young people between the ages of 15 and 24. In addition, the initiative would raise the incomes of 240,000 people by 10%.

Opportunity to join the initiative

DFID and GIZ encourage potential public or private sector partners interested in contributing financial or technical support to this initiative to get in touch. There will also be opportunities for education and skills service providers to register their interest in the initiative, and to bid for future tenders.

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- **Objective:** Improve access to jobs and economic opportunities for local people in and around the oil and gas sector in East Africa
- **Success:** The initiative seeks to increase the number of local people in jobs by 32,000 and raise the incomes of 240,000 people by, on average, 10%.
- **Focus Countries:** Kenya, Mozambique, Uganda and Tanzania.
- **Duration:** 2015 – 2019

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