A PROJECT APPROACH TO AGRICULTURE FOR POVERTY REDUCTION IN THE TSOLO DISTRICT, EASTERN CAPE, SOUTH AFRICA

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DECLARATION

By submitting this thesis electronically, I, Lubabalo Gqesha, declare that the entirety of the work contained therein is my own, original work; that I am the sole author thereof (save to the extent explicitly otherwise stated); that reproduction and publication thereof by Cape Peninsula University of Technology will not infringe any third-party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Lubabalo Gqesha

Date: 2021

Abstract

The history of the African child is littered with misery and poverty perpetuated by the absence of meaningful leadership. The continent has the largest arable land on the globe, and yet the children of such rich a continent with a per capita land occupation of 2.7 hectares sleep hungry. Not only are they under nourished, but there is no food security for these natives. Not only is it that bad, but there should be stated the unpleasing condition of affairs when the African child is fed by chicken from United States and China. The continent at large depends on one country or another from outside feeding the continent, at a time when this continent has an outcry for land to the blacks. This paper addresses the food security issue and considers the importance of agriculture as a compulsory subject for all learners. Every province is premised to have at least one agricultural college to facilitate the development of agriculture and the food security. The Number of landowners by land type, parcels, suggests that rural poverty is a deliberate choice made through bad leadership in the government. The absence of these visionary leaderships has impacted negatively on the economic welfare of the chronically poor. The model therefore suggests that agriculture becomes the fundamental kingmaker for the development of the economy.

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DEDICATION

This thesis is dedicated to my late mother Nozukile Gladys Gqesha, who could have witnessed her seed and my family for interceding and providing the necessary support to make this a success.

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Chapter 1

1.1 Introduction

This study seeks to construct a model and generate ideas to establish agriculture as an essential poverty eradication tool. This will be a tool in rural development that involves government agricultural extension offices, citizens, agricultural colleges, farmers, and —specifically—the youth of Tsolo. Different concepts and ideas relating to rural development and growth will be discussed. The study will summarise agricultural history and combine the sources from which the definitions of the concepts were drawn. To narrow the broader context and overview, Gammage and Bill (2011: 10) postulate that in a high-level context, agriculture cannot pinpoint its origin to a single place. Instead, it was a worldwide choice, where each continent or region was involved in different ways of farming. To elaborate further, different systems were invented to make farming more opportune and motivating (Chantrell and Glynnis, 2012: 13).

Agriculture was then improved from where it was before, and these inventions made things possible for everyone during the era, which took farming to another level with improvements such as faster production (Evershed and Richard, 2015: 19). This has further led to commercial agriculture being described as the profitability industry by substituting manufactured composts and pesticides with work, water contamination, and farming endowment (Bauerkamper and Arnd, 2014: 09). The industry cannot ignore the role of research in commercial farming since 1950 in horticulture incorporating hereditary control and the improvement of financial reasonability.

The recorded events reveal that rural harvests and commercial farming have been supported and permitted to be developed from that period because of the massive role in economic development (Penguin, 2012: 23). This may clarify that horticulture will keep on being the foundation of individuals' prosperity.

Because of colonial history, it is disappointing to note that when we refer to urban migration in the African context, specifically in South Africa, it refers to the movement of African people from rural to urban areas (Jowah, 2011: 15). This concept sounds insulting to the South African as it implies pre-destiny where blacks must stay in the rural areas, and others like whites and coloureds are the rightful inhabitants of towns. Also, few studies reveal that governments have developed effective, sustainable empowering strategies for these rural people. It is important to note that. For example, out of six districts and two metropolitan municipalities at independence, there are three agricultural institutions in the whole province.

Though this paper is not on urban migration, it is important to state here that the so dreaded urban migration should be seen as a benefit; it is easier to provide electricity and water to people in one small area against people scattered in the tribal trust lands, children do not have to travel long distances to learn about how to feed themselves. Therefore, the onus should be on the government to build enough institutions for these migrants and allow them to have their fundamental constitutional rights.

1.2 Background

This section will discuss the brief description and history of agriculture from the review of other researchers, the inconsistencies of any previous studies or the gaps identified by existing literature. The following descriptive context on agriculture is provided below. As Bauerkamper and Arnd (2014: 89) stated, agriculture is planting and harvesting crops to provide medicines and food and animal harvesting and production to support the living. Farming has been one of the critical developments in the growth of human civilisation, so the agriculture of domestic food created has created a kind of excess that has allowed people to live in the city.

The term agriculture was adopted from the English of the Middle East, originating from the Latin language (Chantrell and Glynnis, ed. 2012: 33). So, we clearly cannot escape from the fact that agriculture is associated with different purposes; broadly speaking, agriculture is associated with many activities to support the survival and living of human beings (Schultz and Ted, 2009: 89). The description of the origins of agriculture is found in the following section.

1.2.1 Origins

This section will focus briefly on elaborating the 'birthplace' of farming at large (Broudy and Eric 2011: 90), supporting the fact that agriculture was the primary source of living back in the first century, mainly in North Africa where agriculture was the primary source of living it originated. Then agriculture continued to advance as time went on because of its development in communities (Broudy and Eric, 2009: 38). Of course, there are other obvious reasons why rural people took farming seriously initially, but the most important one is that agriculture has been their source of living.

The leaders made the first error; they laid off the training when it was needed to double the number of skilled rural folk to cater to other disadvantages from the lack of farming skills. The farming training institute was shut down when there was a need for re-focus and extensive training for existing and new farmers to counter the effects of apartheid; skills that would eventually bring them to the middle-income quartile. Some of the farming crops not found in South Africa were

first propagated in China, to mention a few, such as rice, peas, and lentils. In the following section, the civilisation or societies of agriculture and their antiquatedness will be elaborated.

1.2.2 Civilizations

This section will be more about the civilisation, or the societies of agriculture, and their antiquatedness is elaborated here. There were fundamental crops for each area; for example, grains and wheat were more important in the Eastern Cape, and citizens relied very much on these two essential crops (Speller and Camilla, 2010: 47). Moreover, South Africa has been an essentially growing country; this indicates that agriculture was their primary source of living in many societies, but the government did no ongoing preparation to invest more in rural folk to support their primary source of living. Nevertheless, everyone knew the fact that their lives are meaningless without agriculture. Hence this research seeks to fill that gap of addressing the need for and importance of development to rural provinces like Eastern Cape communities to utilise the only assets at their disposal; the land and themselves.

In Northern Cape province, one of the South African 'agricultural' provinces, for instance, the primary crops were beans and olives, where the goats and cattle were only raised for dairy items, unlike Eastern Cape, where you can find commercial farmers. Biss and Pamela (2016: 73) supported the fact that innovation and creativity in different provinces of South Africa became necessary simply because of the passion and eagerness people had, the need for farming was never only meant for feeding themselves, but other than that, people were competing towards farming creativeness, making it more interesting and fun, (Conolly and James, 2010: 34). Nevertheless, regardless that no support has been done to develop all that, for instance, 'developed' cities like Randfontein and Cape Town were and are still places that received massive support from government, instead of applying the same with other provinces with the known fact of large amounts of natural resources.

Rural 'citizens' have never been 'lucky' to receive assistance from their leaders then and now because there was no good education in general for them, specifically in agriculture and rural development. No other technical skills or training were given to them. No assistance from government was provided except for rhetoric towards elections and reminders of previous years of oppression. It was only sizeable tribal trust land available to them during that time that was not lying fallow; they sold tomatoes and other crops they grew to each other. Labour resources were not that lying to waste and need training and re-channelling into economically active resources.

All this led rural communities to move from their birthplaces to the nearest cities, for instance, from Eastern Cape to Western Cape. Even after apartheid, few studies recommended developing

rural communities; people in rural areas were not trained for any skilled labour, no formal education was introduced to support agricultural activities. There should be much basic education relating to agriculture; for instance, it is needed from the foundation phase (Conolly and James, 2010: 34). The government should have enforced technical and agricultural school subjects to all learners entering the secondary school system. Hence this research will exploit more on that gap.

1.2.3 Status

The government of South Africa knew from the outset that after the apartheid era, South Africa would not be the same anymore, most notably in the form of independence. According to Smith (2017: 87), provision for the new era should have been made from the beginning. This was the time for the rural communities to be exposed to their capabilities. Although, Eastern Cape is one of the cornerstones of agriculture in South Africa, the importance of their arable land has never been considered as such by the leaders of South Africa. Smith (2017: 87-89) also argues that Eastern Cape was never considered independent providing education and basic living conditions, meaning nothing 'important' would come from the province; hence there was no need to give it any serious attention.

Out of the three colleges of agriculture that have been established, not any of those making an essential subject like agriculture a 'by the way.' After so many years from 1994 being free from apartheid, the following are only colleges of agriculture that have been established and registered under the provincial body of schools and training in the whole Province of Eastern Cape, which offers agricultural 'related' short and long courses:

a. Grootfontein Agricultural Development Institute
b. Tsolo Agriculture and Rural Development Institute
c. Fort Cox College of Agriculture and Forestry

The absence of skill like farming amongst the rural youth from a small town like Tsolo should be embarrassing to the provincial officials; this is simply because the location has enough resources at their disposal, but the same government that restricts them should be supporting them. Biss and Pamela (2016: 73) also believe that starting with the Mandela error, nothing was done for rural folk in connection to support their standard of living, rather than restricting them with processes that should be followed during the applications of land and reform, small town like Tsolo it will never be easy to develop and being independent with the corrupt leaders they have. This research will emphasise and exploit this gap to show and reveal the importance of Eastern Cape arable land lying waste.

Eastern Cape provincial leaders seem to have no vision when it comes to rural development. According to Boucher and Jude (2018: 68), the province of the Eastern Cape is the second

province with fertile soil in the country after Northern Cape province, but this argues the fact that when it comes to commercial farming, the province is the second last. However, this only clearly indicates that no one from the government seems to have any vision about developing the province using what they have. Therefore, this paper seeks to propose an approach in agriculture to assist in developing the province to alleviate poverty.

Tsolo is not an island; in other words, there is no way to develop the area without consulting the provincial heads. Starting with the province's schools, whose structures are poorly maintained, there is much to say regarding the educational system. Clutton (2016: 58) argues that the South African educational system does not support the standard of living of South African, primarily in the country's rural areas. 99,9% of people in rural areas rely on agricultural activities. This seeks to say that the development of rural communities should rely on agricultural activities to develop people's standard of living.

This does not seek to oppose service deliveries that the province of Eastern Cape renders to people. Service delivery is for temporary solutions, and people will keep asking them repeatedly as we live under the leadership of the ANC government. However, the community relies on the government to empower and teach the community to be self-sustainable and independent. The South African government lacks vision from the Ministers down to their Provincial departments. Bauerkamper and Arnd (2014: 09) states that there is a lack of strategic development for the future of South Africa.

This paper proposes to expose the importance of agriculture and the need for development in South Africa. Evershed and Richard (2015: 19) indicated that all countries have their cornerstones that they can rely on to survive; ours is the country's natural resources and agricultural potential. The importance will be determined by our leaders and owners of the cornerstones. Hence, rural communities of South Africa are still hungry and starving in poverty with arable natural resources at our hands.

1.2.4 Contemporary and subsequent production

The current situation of our starving rural communities is the flawed strategic rural development plan our government had embarked on. Schultz and Ted (2009: 89) advances the concept that failure to plan for followers is failure on the part of leadership because the development of followers results from the dedication and work of leadership. According to Smith (2017: 87), the development of natural agribusiness can only be restored by questions about elective advances, for example, investing more in specific reproducing. The most recent mechanical improvements incorporate hereditarily changed foods.

Changes in standard horticultural strategy show progressive rural appropriations connected to crude materials. Richards (2011: 46) argue that the interest in the advancement of previous farmland, rising, environmental change, rising customer request in the Eastern Cape and populace development undermine food security of the province. The subsequent ANC presidents' unwillingness to change the education system and revolutionise education and technical skills remains a puzzle beyond comprehension. However, it may not be fair to accuse them as they may know certain factors that we are not privileged to know.

According to Broudy and Eric (2011: 90), many farmers in big cities, such as Stellenbosch in the Western Cape, as compared to those in the rural areas, are given funding. Government officials themselves are aware of this, and hence their children are sent to private schools with better systems, including how to embark on pure farming. As a result, Eastern Cape agricultural development has been neglected despite the tremendous need for and room for development in the area, demonstrating the most extensive agrarian creation in the country.

The government's unwillingness to change the education system and empower more blacks through technical expertise means that the trend of poverty and massive inequality can never change; children of rural communities will then continue to have to ask for food to feed themselves. Boucher and Jude (2018: 68) support the fact that the basic education all blacks receive, specifically the rural blacks, leave them with one option, to go to town to look for employment from the whites who have experienced generations of skills training and continue to pass that to their progeny.

1.2.5 Agricultural science

The different agricultural purposes have continued with divergent and general business objectives for two centuries and kept developing along the same lines. In of spite the fact that agricultural science was first for different urban provinces, it has then developed to rural areas and to impact the nation's economy at large (Acuaah, 2012: 20). The rural economy has never stopped ever since then, despite the lack of support from the local governance. Unfortunately, the ultimate underdog of these innovations and creativeness was the people of remote areas. They had no opportunity of substituting backgrounds with skills training with relevance to their needs. This is more like the advanced effectiveness farming process that is revealing the worthiness of agriculture.

1.2.6 Disciplines and effects

With the lack of support and empowerment to rural youth, the following remains the same:

a. Unemployed people are unsustainable with no lifelong operation
b. Poor surviving environments
c. Inadequate agricultural products
d. The lack of self-development
e. No extensive training means a community uneducated in business

1.2.7 Proposed solution and sustainability

This paper will no longer serve its purpose without the suggested solution; rural communities, including places like Tsolo, never found it easy to access government subsidies, with challenges such as government offices being far away from their locations. However, this reinforces that developing remote areas will never be easy too for the government. Hence this paper is an approach intended to invest more in youth. South Africa, as a developing country, has a large rural population, predominantly not active in the economy and aspiring for better conditions. Clutton-Brock and Juliet (2016: 58) believes and support the fact that investing more in the youth of the nation is the most crucial strategy that any government can utilise.

Developing young people with scarce skills like agricultural training will be one of the most advantageous steps government should never regret. Speller and Camilla (2010: 47) support that youth is the most powerful and motivated group of individuals considered most when investing. In this case, they should be trained by local government how to participate in farming, mostly commercially farming. Hence this paper will emphasise and explore the needs of standalone Colleges of Agriculture to train and inculcate the agriculture mentality in the black population alienated from farming because of the previous systems.

According to Acquaah (2012: 54), It stands to reason that; if the exclusion of blacks from the farming economy was deliberate and effective, therefore, the deliberate inclusion of the blacks into these sectors should be deliberate and successful. No colleges of agriculture were established since the coming into power of the ANC government; colleges of education were closed when they needed to be multiplied. This is not the time to give up, even though the government has already failed some Eastern Cape areas. The rural population remained unchanged except for the electrification of parts of the countryside. Their life has not changed meaningfully.

Hillison (2016: 12) defines the lack of policies from the government in farming as the failure of government and concludes to call out the private sector to intervene and support those who desire to embark on farming but lack financial and training capabilities. The private sector never disappoints because their desire is always on results. It has been clear that when the private sector come forward to support every crisis facing young people, the intention is to achieve success out

of that situation. In most cases allowing the private sector to intervene has led to success even though government restricts them with policies and regulations.

The solution to every failure of the project is to include and engage with all required and possible stakeholders during the initiation and planning phase of the project to avoid such miscommunication. In this case, the government should start this process with all required stakeholders, to mention few Chiefs of Tsolo and surroundings to discuss the planning phase, to reach agreements on how they will work together to develop the area. The area, as mentioned before, is conducive to agricultural activity, such as:

a. Lots of rain.
b. Wide free metres of arable grounds – lots of fields.
c. There is access to both Durban and the Eastern Cape hinterland.

Bosso and Thelma (2015: 321) state that South Africa imports rice even though it is essentially part of the national diet and should be a priority for farmers. The reasons behind this varied; one critical reason is the product is imported. Even though the rand is weak against the USD, there is a shortage of rice production in the country, supplemented by importation. This implies that the country lacks creative thinkers who can utilise and further develop their own resources before asking for help from others.

1.2.8 Crop alteration and biotechnology

Tsolo has sufficient arable land to produce different and sufficient crops and feed the community. As Acquaah (2012: 54) also argues, most of the land is lying to waste in the Eastern Cape at large without consideration of its importance. Tsolo specifically has a variety of crops that can be full-grown. To mention few names of the places around Tsolo with massive tracts of potential agricultural land, from Maclear to Tsolo, there is a vast number of hectares that small farmers are currently utilising to develop the place.

According to Jowah (2014: 45-50), farming and utilising the land does not mean there must be a specialist to show guidelines; in other words, anyone with space and water access can harvest. This seeks to support the fact that anyone can grow anything anywhere if they know what to do. Therefore, rural farming does not require too much from the South African Government but only primary support. This includes proper training on how to handle those dangerous animals and how to comply with the environmental policies.

It is additionally stated by Clutton (2016: 58) that harvesting can be done in many different approaches when if the land is available. In places like Tsolo and Maclear, as mentioned above, they are advantageous almost to everything in agriculture because a waterfall called Tina-fall is

around the place and is one of the most valuable natural resources to be utilised for water. Moreover, other crops can be introduced into the area of Tsolo and full-grown easily and quickly; the list is endless.

Therefore, this paper suggests that the wheat, for instance, can be converted into flour at Tsolo (as a business enterprise generating a secondary industry) and sent to the consumers in towns from the factories established in the rural settings themselves. For instance, some is going to be supplied for wheat and flour conversion unit every year, this could work out to 1 000 000 bags of 10 kgs flour and wheat bags from few hectares surrounding the town, therefore that alone is going to be for Tsolo shops if the farmers want to adopt to commercial farming.

The author Chantrell and Glynnis (2012: 13) suggested an approach to our rural communities that no matter who owns the land in that area, there should be a cooperative. A project manager should be appointed to run this project, with a given start date and end time, during which time the community needs extensive training in farming and raising crops and poultry. Each 'farmer' or homestead should be taught how to run an agriculture business and that the success of their enterprise depends on their ability to manage their business and finances.

1.3 Problem Statement

The section provides the motivation behind the research and provides specific questions about the situation and what is to be investigated.

Deliberate planning to eradicate chronic poverty and hunger amongst the citizens is feasible. However, the history of the African child is littered with misery and poverty perpetuated by the absence of meaningful leadership. The continent has the most extensive arable land globally, yet the children of such rich a continent with a per capita land occupation of 2.7 hectares sleep hungry. Not only are they undernourished, but there is no food security for these natives. Not only is it that bad, but there should be stated the unpleasing condition of affairs when the African child is fed by chicken from the United States and China.

The continent depends on foreign countries feeding the continent while there is an outcry for land to be accessible and ownership granted to the blacks. This paper addresses the food security issue and considers the importance of agriculture as a compulsory subject for all learners. Every province is premised to have at least one agricultural college to facilitate agriculture and food security development. The paper suggests that rural poverty is a deliberate choice made through inefficient leadership by the government. The absence of these visionary leaderships has impacted negatively on the economic welfare of the chronically poor. The model, therefore, suggests that agriculture becomes the fundamental driver for the development of the economy.

1.4 Research Objectives

This is a prerequisite for a dynamic social order, given the fact that human beings do not operate under controlled positions but operate under ever-changing conditions like; economic environment, psychological environment and social environment. Therefore, as we look at research in our modern-day setting, two critical aspects must be considered: it must inform the economic, political, and socio-cultural environment. To emphasise the aims of the study in relation with the deductive theories nowadays.

1.4.1 Primary objectives:

a. To suggest that agriculture becomes the fundamental kingmaker for poverty reduction.
b. To address the food security issue and consider the importance of agriculture.

1.4.2 Secondary objectives:

c. To suggest a sustainable wealth distribution to every Citizen
d. To emphasise agriculture transformational as a highpoint for the eradication of chronic poverty
e. To substitute education with skills training relating to agriculture programs and to emphasise the importance of farming.

1.5 Research Question

This section is vital in providing the required focus, eliminating other unnecessary material and side questions, and clarifying the variables to be studied. The research problem is a critical, indispensable building block for the research process and assists in constructing an effective research design. So, the question to be answered is:

Where did agriculture as the foundation for national development go wrong?

1.6 Research Design

Jowah (2011: 81) suggest that the research method is appropriate to access the required data optimally. This is about the; how, where, and from who? The research process sought to expand existing knowledge, find a solution to existing problems, and investigate phenomena: that is the order that it followed. From this quest for knowledge or solutions is derived the research methodology, the general principles and guidelines based on which we gather data and analyse it into knowledge.

These are theoretical analyses of the method used to gather the necessary data for analysis and conclusions. That assist in drafting the conclusion of this research and in providing recommendations.

Whilst the population may be huge, the research population had to be determined that can be described as the population of interest in the study. The primary reason for sampling is because the statistical sample infers the population characteristics accurately. The larger the population, the more the need for sampling, as research can be conducted on smaller populations with greater accuracy. If, for example, research was done on the entire population in the same way a census is conducted, the research might be considered exhaustive and all-encompassing. However, the cost and time constraints outweigh the advantages of a census as sampling can give accurate inference of the characteristics of the population.

In a census, everyone is interviewed and is classified according to pre-determined biographical variables. For example, the classifications for the population may be gender, age, earning capacity, level of education or place of residence. The objectivity of the census is to count the number of people in the different sections of the population or their standards of living in the country, for instance. Other problems with conducting a census are that it is expensive, time-consuming, sections of the population are inaccessible, the process is very cumbersome, and the fieldworkers need constant checking as they may cheat.

The sample will always have problems with accuracy. For instance, two researchers working with the same population may not have the same findings. More often than not, they will not be able to interview the same people. Besides, even if the same people are interviewed, they may give differing responses. Every sampling procedure has a sampling error that depends on the value n, the population. The larger the sample, the higher the chances of getting close to an accurate answer and the lower the sampling error. Sampling also suffers from interviewer biases if the sample is not perfectly representative of the population. People may be taken from one section of a population, and generalisations made which do not reflect the characteristics of the entire population. Sampling biases can be corrected, unlike sampling errors which are generally too difficult to control.

The researcher may also make judgment errors during the collection of data. Too often, the tools and instruments used to collect the data are faulty, ambiguous questions are asked, or illegible responses also mar the research results. In addition, there are certain questions considered sensitive by the respondents. Issues like sex, salaries, and body mass are generally not truthfully reflected. Such information can be informed indirectly. Well-planned questionnaires and well-trained field workers are critical assets to accurate research surveys.

These are the techniques and tools that will assist in guiding the process of this research. The questionnaires will be distributed to all members of the Tsolo community.

1.7 Research Tools

Tools that have been used to collect this data will be questionnaires in the form of soft copies to email to potential farmers and hard copies for face-to-face interviews. These are the most reliable tools to collect such data simply because questionnaires are the most common means of field research, where a pre-designed / structured set of questions are asked to the respondent. The questions will be open, and a few closed because of the objectives of this research. They will ask specific questions and will be easy to quantify.

1.8 Method of Data Collection

The tools for analysis are critical and will never be taken for granted. Whatever the tools and techniques, they need to relate to the type of research and the research design. Decisions are made early in the planning phases as to what research design should be used. This, in a sense, pre-determines the tools that will be relevant to the study. Are we going to collect qualitative or quantitative data? Will the research be exploratory, descriptive.? After the data has been analysed, the data must be interpreted into usable information in the laymen's language. The report will generally come from interpreting graphs and tables, as these were used for that purpose. The statistical report may show comparisons of data and the correlations between variables and phenomena. The interpretation, analysis and writing of the report will be a critical element of the esearch process because it is a mixed method.

1.9 Data Analysis

Data taken from real-world situations can be 'organised confusion' if I may be polite with the condition. There are many possible causes for this; population wrongly identified; responses wrongly recorded. Data capturing may have errors, inappropriate software, infected software, a difference of data formats, and wrong labelling of units by analysts. It becomes inevitable to initiate a data cleaning process, even though this is constantly ignored. Whilst these problems may be considered minor, they have a disastrous impact on the research results.

The findings should not reflect the correct situation, leading to wrong theories or decisions. Raw data should be scrutinised for any identifiable error before it can be allowed or subjected to analysis. Checking on the raw data may save much unwanted extra work trying to identify possible

causes of anomalies after the findings are seen to be outrageous. Failure to do that may cost the researcher's reputation, credibility and make people question all future work undertaken.

1.10 Conclusion

Because of colonial history, it is disappointing to note that in South Africa, when we refer to urban migration, it refers to the movement of the rural folk to urban centres. This notion sounds insulting to some South Africans as it implies pre-destiny where blacks must stay in the rural areas, and whites and coloureds are the rightful inhabitants of towns. Sad to say that no governments have come up with effective, sustainable empowering strategies for these rural people. More talk is given about fears of urbanisation, in a sense, to confirm the ***swart*** *gevaar* mentality since migration is noted clearly as the overcrowding of blacks in urban centres. It is important to note that there were 3.5 whites for every formal house at independence, while in turn, there were 43 blacks for every formal house.

Though this proposal is not on urban migration, it is important to state here that the so dreaded urban migration should be seen as a benefit; it is easier to provide electricity and water to people in one small area against people scattered in the tribal trust lands, children do not have to travel long distances to schools, hospitals, and other vital amenities. Therefore, the onus should be on the government to build houses for these migrants and allow them to have their fundamental constitutional rights.

It is now clear that rural poverty is a deliberate choice made through bad leadership in South Africa. The absence of these visionary leaderships has impacted and will still negatively impact the chronically poor's economic welfare if research and recommendations in this area are not addressed.

Even though agriculture is one sector that poorly contributes to the GDP, it is not leveraged to provide employment opportunities and development to rural communities, thereby turning its underperforming financial contribution into a profitable sector.

Therefore, to summarise the suggestions and recommendations of this proposal:

a. Livestock Sector: Introduce a livestock industry development fund. The bulk of products from these species should be sold on the local market
b. Crops Sector
c. Agricultural Education and Training Sector: Agricultural extension officers and a minimum of 5 agricultural colleges per province. As a compulsory subject for all learners at the school level, agriculture must be introduced to emphasise the importance of farming.

Chapter 2 Literature Review

2.1 Introduction

The literature review on the research topic is outlined in this section. Different theories relating to a global approach to agriculture are outlined in the first section. This will be followed by outlining the history of agriculture in the country, the role of agriculture in the economy of the country, the distribution of land and the occupation, concluding with the status of land possession. All in all, the primary purpose of this chapter is to establish a context for a project-based approach to the rejuvenation of agriculture as the pinnacle for chronic poverty eradication, as is the case of Tsolo in the Eastern Cape.

2.2 A Global Approach to Agriculture

After a thorough reading of several agricultural works of literature, it has been supported that agriculture is the domestication of plants and animals and the development and distribution of techniques for raising them productively (Chantrell and Glynnis, 2012: 25-62). Agriculture never began in just one country; it began independently in separate parts of the world. Plants such as sugarcane and some root vegetables were domesticated in New Guinea, whereas Sorghum emerged in the southern region of Africa. Animals such as pigs and sheep were domesticated in Mesopotamia. Cattle were domesticated from the wild aurochs in the areas of modern Turkey and Pakistan. Modern agriculture has developed from these primitive origins, bringing social, political, and environmental issues including water pollution, biofuels, genetically modified organisms, tariffs, and farm subsidies. In response, organic farming developed in the twentieth century as an alternative to synthetic pesticides (Gerritsen, 2006: 29–30).

Most people all over the globe then started to change their communities for their benefit through means such as fire-stick farming and forest gardening very early (Gammage & Bill 2011: 2-18). It is hard to determine the exact time and date, people collected and ate seeds before domesticating them, and plant characteristics may have changed during this period without human selection. These time crops were first to be grown and harvested on a significant scale. At around the same time, there were selected trees such as fig trees, were domesticated,

Suggestions from agricultural writers worldwide, such as Samuel Hartlib, Walter Blith and others, indicate that communities started to begin farming in different ways led to more productive techniques in England in the mid-17th century (Acuaah, 2012: 40). However, the main problem in sustaining agriculture in one place for a long time became the major concern, as it is even now. Crop rotation was used to allow the soil to regenerate in some places. Then British agriculturist Charles Townshend in the 18th century popularised the Dutch four-field rotation system. The

system opened a food crop and grazing crop, allowing livestock to be raised year-round. Most researchers agree and suggest that the mechanisation and rationalisation of agriculture was another critical factor, but still, there was a considerable innovation gap concerning agriculture. It was around that time when most innovation started to take place. Robert and Coke (2015: 03-20) introduced selective breeding and initiated a process of inbreeding to maximise desirable traits from the mid-18th century, such as the New Leicester sheep. Machines were invented to improve the efficiency of various agricultural operations in the second half of the 19th century.

The huge gap remains the same regarding the fact that sustainability needs more attention than before because Maxted (2011: 561-576) is of the view that considering the growing worry over the potentially devastating impacts on animal farming and food security of climate change and the massively growing world population, taking action to conserve crop and animal production, is no longer an option - it is a priority. This is all true simply because crop production is a critical component of plant heritable resources for food and agriculture, have already made significant contributions to the generation before and is vital for future food security. Because of the drawing lesson learnt from past initiatives, researchers continue to suggest and propose a global approach concerning conservation, the key elements of which are: systematic approaches to crop wild and animal conservation, current conservation status, enhancing the use of crop wild relatives' diversity, crop wild relatives informatics, estimating global crop wild relatives numbers so forth.

Barth and Melin (2018: 183-192) agreed that increased global competition in the agricultural sector is rapidly changing the structure of farms and farming. Because the number of small and diversified farms (often family-owned) decreases, and the number of large and specialised farms (often corporate-owned) is increasing. After that, in this transformation, the agricultural sector is more concerned with strategy, innovation, and competition to be more productive and profitable. Hence, many studies took an action-oriented approach that focuses on implementing a Green lean approach at 34 Swedish farms using various lean tools. The drivers of agricultural industrialisation are specialisation, formalisation, and standardisation, which link to the trend toward fewer and larger farms (Kimming, 2015: 32-56, and Winkler 2016: 35, as quoted by Barth and Melin 2018:188). Associated with this development is the growing awareness that agricultural production may negatively affect the world's climate, not least because of greenhouse gas emissions from milk and meat production.

Different countries around the globe have different levels of vulnerability to risks regarding the approach to sustainable agriculture because of several factors such as a degree of development, governance, and infrastructure. However, the probability of occurrence of certain risks as drought

and unfavourable tax policies directly impact the development of the agribusiness in each country, as confirmed by Bornhofen (2019: 281-288).

A large and growing body of literature has investigated that the agriculture industry has created an emerging need for agricultural education in every country to take a more globalised approach to prepare students for future careers in agriculture. The purpose of this approach is to identify international agricultural concepts for the agricultural education curriculum. It is encouraging to compare this approach with that found by Conner, Gates and Stripling, (2017: 118-130), who found that more than 24 overarching concepts were identified to incorporate into an internationalised agricultural curriculum within the Agriculture, Food, and Natural Resources Career Cluster. The overarching concepts were placed into five categories: production, business, culture, environment, and global awareness. After that, the author concludes by recommending that curriculum specialists use the 24 concepts to internationalise curriculum for school-based agricultural education. Future research should investigate the utility of the concepts and best practices for teaching international content in school-based agricultural education.

It was widely recognised that agriculture and its training at schools are critical to sustaining it for the future of every nation, people must know about agriculture and related fields and parents should support and encourage their children to study agriculture. This corroborates the ideas of Dhindsa (2015: 441-465), who suggested after the study conducted in Brunei that for every nation, in order to minimise dependence on food imports and to achieve this government should promote agriculture as dynamic and marketable driven agribusiness through the implementation agriculture-based knowledge and the agriculture sector should attract a considerable number of the intelligentsia from society to take up leading roles in the development of the fields as well as to establish well-developed training facilities, and school, therefore, have a vital role to play as well.

It is interesting to note that at any age in order to embark on agricultural activities and related fields, training is an effective way to enhance practising and mastering farming regardless of which level of formal education a person has but within accordance with the Farming Regulation and Rules (Polat, 2015: 78) as quoted by (Guiné, 2017: 52). Even though in general, people present different education necessities relating to their areas of interest, professional or intellectual development or even diverse needs along the life cycle. However, the social environments change at a high rate, and the amounts of new information and knowledge available increase very rapidly in this developing world, the “Life-long Learning” practices become more and more a reality and a necessity Ozdamli & Ozdal, (2015: 718–725), Guiné, (2017: 32). It is important to note that this is of the view with Swaggerty and Broemmel, (2017: 80-86), Guiné et al., (2017: 89) findings

which showed that in Western Europe, people with higher education seem to have participated more often in training activities when compared to those with lower levels of education. This might be related to the more developed learning habits and necessities of those who completed university graduation.

A strong relationship between agriculture and technology has been reported by writers globally, but seemingly what is left behind is the adoption of the technology into agricultural practices. That is a real issue in some developing countries like South Africa. The innovation approach should be a participatory approach to agricultural development Adekunle (2016: 87); Makate (2019: 51) can help take agricultural technologies. In this approach, more issues, for instance, problem identification, solution identification and mainstreaming, selection and prioritisation of challenges, are much easier to undertake (Ajayi et al., 2018; Jonasova and Cooke, 2012: 89). Environmental challenges like climate change are a significant risk to smallholder farmers in Africa and some European countries. Climate-related risks are more associated with low productivity, food insecurity and poverty. However, the researchers are widely promoting technology to transform agriculture in a changing environment. To date, the adoption of Climate-Smart Agriculture (CSA) practices is demonstrated worldwide but is low across Africa (Makate, 2019: 37-51).

Analysis has been done that sustaining the development of agriculture does not mean after adopting each and trend of new agricultural technology the battle is won, but also, most notably to strengthen the new generation to become analytical and critical thinkers. This is the view of Mckim's (2017: 203–218) that strengthening knowledge and skills is critically important to preparing the next generation of innovators, problem solvers, and interdisciplinary thinkers. This seeks to say that school-based agricultural education should also offer a valuable context to co-develop knowledge and skills together with knowledge and skills in agriculture, food, and natural resources. Furthermore, current studies discovered that some school-based agriculture education does possess a positive attitude towards supporting those willing to learn, even though not all of them.

Many analysts now argue that being productive and participative in agricultural activities and related fields has nothing to do with the acquired knowledge and skills. Mukembo (2015: 16-34), for example, argues that participation in agriculture has to do with gender.

This is followed by the study conducted in Uganda that the decline of youth engagement in agriculture worldwide among an increasing global population remains a significant challenge to ensuring food security for future generations. The author continued to proclaim that the shortage of professional female agriculturists worsens this. However, they comprise about 60% to 80% of

the traditional workforce in the agriculture sector of most developing countries Beintema & Di Marcantonio, (2009) as quoted by (Mukembo, 2015:16-34). Therefore, Mukembo's argument relies too heavily on qualitative analysis of what needs to be done and by who. It is interesting to note that additional research needs to be conducted on attracting more females to study and train in agricultural activities at an educational level, more especially in developing countries, to maintain the existing difference between sexes pursue agricultural-related careers and, most importantly, sustain it for the future.

2.3 The History of Agriculture in South Africa

The South African history books show that agricultural activities were first brought to South Africa by the Bantu expansion by about the 4th century AD. However, according to Agri Fats and Trends report (2017/2018) (AFT), the earliest written record of farming life in South Africa start slightly after 1500.

Africa is a rich and diverse country. It has a vibrant cultural diversity and a vast range of vegetation types, biodiversity, climates, and soil types. The country is divided into separate farming regions, and farming activities range from intensive crop production to cattle ranching in the bushveld and sheep farming in the drier regions.

To illustrate further, firstly, Cereals and grains, as already mentioned at the beginning of the study, are South Africa's most critical primary pillars when it comes to sustaining the locals, and in the productive years, wheat imports have increased massively to meet local demand. However, concerning other crops, the meeting of local expectations is satisfactory. AFT continue to report that because of the climate changes around the continent when the country continues to produce domestic maize is expected to export some of the crops like maize to neighbouring countries to help ease the regional impacts of the drought. The findings` from the Agri stats 2006/07 discuss challenges that sometimes South Africa, usually during bad times, faces, such as the drought which eased in 1993. Officials estimated the 1994 harvest at approximately 12 million tons. The (2006/07) report also stated that below-average rainfall in late 1994 again threatened to reduce maize output in 1995, and officials expected to import some 600,000 tons of maize in that year. However, plentiful rain in late 1995 provided for a bumper crop in 1996. This resulted in more exports than imports, with an increased quantity of domestic maize used for local purposes.

To finalise the list of pre-mentioned South Africa's primary farming activities, secondly, the fruit and wine farming, including grapes for wine, earn as much as 40 per cent of agricultural export earnings in some years. Bauerkamper and Arnd. (2014: 09) stated that fresh fruit finds a good market in Europe because it matures during the northern hemisphere's winter. Almost 1 million

tons of deciduous fruits were sold fresh locally or were exported each year in the early 1990s, as found on the ATF report. So, this now gives a clear indication that more than half of citrus production is exported in most years. The history of South Africa's agriculture has been doing quite well regarding the revenues because statisticians estimated and quoted that around 40 million cartons of citrus fruit in 1994 were exported, earning roughly R1.34 billion, according to industry sources (Clutton, 2016: 58).

In addition, Sugarcane is a vital export crop; world agricultural sources reported that South Africa is the world's tenth-largest sugar producer. The other important fact that we must not forget to report is that Sugarcane was first cultivated in mid-nineteenth-century Natal. The production is still centred there, but sugar is also grown in Mpumalanga (Boucher and Jude, 2018: 68), where irrigation is used when rainfall is insufficient. This now supports the fact that land under sugar cultivation has steadily increased, and the industry estimated that it produced more than 16 million tons of sugarcane in 1994 (Evershed and Richard, 2015: 19). Hence it is necessary and interesting to note that all the above mentioned but not limited critical findings are not just reported to entertain and impress, but to educate, to enlighten and to bear in mind the fact of South Africa's aptitude and richness when the agricultural activities should be noted as the major role player and the pinnacle of the chronic poverty.

The increasing demand for food from limited available land, considering declining soil fertility and future threats of climate variability and change, have increased the need for more sustainable management of agricultural activities, as stated by (Thierfelder et al., 2014). This seeks to paint a picture that, yes, it is essential to focus on the critical fields of the country first but not forgetting and neglecting other fields as well because of their comprehensive changes, wheat harvest volumes vary widely; for example, roughly 2.1 million tons were produced in 1991 and only 1.3 million tons in 1992. Industry sources and Richards (2011: 46) also indicated that production in the early 1990s failed to meet local demand for about 2.2 million tons per year. That lead the country to wheat imports in 1992, for example, cost more than R 72,5 million (US$5 million).

Interesting to note that it is widely recognised that the organic (chemical-free) industry is the fastest growing industry segment worldwide. World organic food sales jumped from $23 billion in 2002 to $52 billion in 2008 (Datamonitor, 2009: 54) as quoted on the AFT analysis (2017/18) report. So, South Africans have already shown exciting changes in food consumption since the 1970s. However, thanks to increased wealth and post-apartheid reforms, the country's middle class has increased but not enough by 30% between 2001 and 2004 (Agricultural Statistics, 2008) even though sometimes declining farming profitability and water scarcity (drought, declining

rainfall or over-demand for water) have left South Africa with less than two-thirds of the number of farms it had in the early 1990s, that did not become the barrier to the industry.

Agriculture is the foundation of developing economies. As one of these economies, South Africa needs to ensure a healthy agricultural industry that contributes to the country's gross domestic product (GDP), food security, social welfare, job creation and ecotourism, while adding value to raw materials. However, Smith (2017: 87-89) mentions that the agricultural sector's health depends on the sustainability of farming methods. Farming practices must, therefore, not only protect the long-term productivity of the land but must also ensure profitable yields and the well-being of farmers and farmworkers.

2.4 The Role of Agriculture in the Economy of the Country

The importance of agriculture in the economy is most likely to be seen as not meaningful, and the public see agriculture, not as an economic activity like many others. However, it is interesting to note that the importance of agriculture in the economy appears statistically to be very similar to other economic activities in the country in terms of employment creation, as a share of the total employment and the contribution of agriculture as a share of the total economy.

The role of agriculture has been receiving increasing attention from food security scholars in recent years (Candel, 2014: 585–601) stated. However, according to AgriStatsSA 2017/18, the overall contribution of agriculture in South African formal employment is around 10%, relatively low compared to other parts of Africa, providing work for casual labourers and contributing around 2.6 per cent of GDP for the nation. Therefore, the current role of the agricultural sector in the South African economy must be investigated. This has been the subject of several studies.

However, despite the poor recognition of employment matters, current knowledge of food security is somewhat fragmented. However, much of the food security and development focus on the selected rural areas has been doing well and has had a strong bias towards production-based solutions. In addition, Crush and Frayne (2010: 39), as quoted by Battersby (2011: 545–561), review the primary recent framing documents of the FAO, World Bank, G8, NEPAD and UN addressing food insecurity and identify a persistent focus on rural food insecurity and assisting small-scale farmers. All in all, this seeks to say that for a country to achieve economic growth and development, scarce and organic economic resources should not be ignored and must be optimally managed to meet the sustainability financially, socially, and environmental.

This shows a need to be explicit about precisely what strategies need to be implemented to sustain and maintain agriculture to remain one of the active economic growth pinnacles to minimise food importation and increase the country's GDP. Conolly and James (2010: 34), assuming the full

support and capital from every corner of the government, this combined strategy can be implemented over several phases. Related enterprises can be grouped and linked according to their product line and ability to be sustainable. The following are the logical, integrated business units as some can be found on Agriman & Associates report,

2.5 Crop production

Current market prices for maize and other feed ingredients are high, and crop farmers with economies of scale are sustainable subject to good rainfall. A feed mill can be loosely integrated with crop farmers as contract growers. Developing crop farmers can have a captive market in the feed mill. According to FAOSTAT, South Africa is one of the world's largest crop producers of which whereas at the same time, grains and cereal are South Africa's most important, occupying more than 60 per cent of hectare under cultivation Usually in particular maize production exceed 10 million tons in good years.

2.6 Feed Mill, Broilers and Breeders

The breeders have a captive market in the hatchery, and the broilers have a captive market in the chicken abattoir. So, if the broilers and breeders can own a feed mill to shift the miller's margin to their operations to make them sustainable, even though current feed prices have made breeders and broiler farmers less profitable as prices have not responded to increased feed costs.

2.7 Cattle farms, feedlots, and abattoirs

Cattle farms can be significant with high capital investment in land and livestock and provide a relatively high return on investment. Beef abattoirs, however, are not expensive to build and operate. They turn their money over quickly and are currently making good returns. The cattle farms will own the feedlot and abattoir and benefit from their high profit. (Schultz and Ted, 2009: 89) articulated that the cattle farms have a captive market in the feedlot, and the feedlot has a captive market in the beef abattoir. However, this simply supports and imply the strategic fact that these can be excellent returns in terms of investments.

2.8 Hatchery

The hatchery business is a mark–up on cost type of business that passes all increases on the purchaser. As the broiler industry is under pressure, sales are down at present, but it does have a captive market of 40,000 chicks per week (60% of average production) in the broiler farms. Therefore, a supply contract can loosely integrate the hatchery and broiler farms.

2.9 Chicken Abattoir, Frozen Meat Depots and Shops

Chicken abattoirs are capital intensive, and trading conditions are challenging at present, although stocks and so as soon as prices start to move, the abattoir will be associated with the profits generated by several frozen meat depots and franchised retail frozen meat shops. Both depots and shops can be mark-up type businesses with relatively low risk and potentially high profits.

It appears that closing the gap will take more time than it would have after the 20 years of being free. The country seems to be operating in slow motion when it comes to development, below most observers' expectations. It is much slower than expected five or six years ago, including in agriculture. Changes in the structure, area, size of the agricultural holdings are occurring much slower than any predictions (Underlying et al., 2019: 1-16). Thus, it is hoped it will not take another 20 years to achieve the expected rate of growth and development.

The effects but not limited to the following:

a. Unemployed people will not get sustainable lifelong operation

b. The standard of living cannot be uplifted to reduce urban migrations

c. Food security cannot be enhanced, and importation increased

d. People cannot be able to save money and buy other requirements

e. The government cannot be pushed to move towards the next stage of rural development.

Hence, it was repeatedly said by Nyamekye and Ntoni (2016: 125), as quoted by Pfunzo, R. (2017: 7), that most farmers in the underdeveloped areas often lack tools, money, knowledge, and skills to respond to agriculture's development challenges. To mention a few, some of these challenges are pests and diseases destroying crops and livestock, while climatic factors also play a role in reduced production.

2.10 The Distribution and Occupation of Land

It has been reported that in South Africa that approximately 82 million hectares of commercial farmland, 86% of total agricultural land, of which 68% of the total surface area was in the hands of the white minority 10.9% of the population and concentrated in the hands of approximately 60,000 owners (Levin and Weiner 1991: 92) as repeatedly quoted by AgriSA2018 report. It is sad to note that over thirteen million black people, the majority of them impoverished, remained crowded into the former homelands, where land rights were generally unclear or contested, and the system of land administration was in disarray (Hendricks 1990; Cousins 1996; Lahiff 2000)

as quoted by (Louw, 2014: 54–65), and these areas were characterised by meagre per capita incomes and high rates of infant mortality, malnutrition and illiteracy relative to the rest of the country.

This had led the country into an 87:13 ratio of white to black ownership of land originates from an apartheid plan based on the Land Acts of 1913 and 1936 that had not been entirely implemented by 1994. (Walker, 2012: 7) is of the view that under apartheid South Africa was divided between a core of about 85% of the country deemed 'white' politically and a side-line of ten ethnically defined 'African' 'homelands', plus several tiny 'coloured' reserves. This land dispossession and relocation caused suffering and hardship for millions of black South Africans but failed to realise the master plan. Throughout the twentieth century growing numbers of 'Africans' and most 'coloureds' continued to live in so-called white South Africa, with varying levels of tenure security: on white-owned farms and conservation lands, in urban areas, and even on a small number of black-owned properties that escaped forced removals.

This seeks to say that despite considerable support for land reform in South Africa and internationally, there is intense conflict about such programmes' means and objectives. A review of the literature, including policy documents, reveals the lack of a clear theoretical link, or argument, between land distribution and poverty alleviation in the South African context, although a range of commentators states such a link. Furthermore, the South African land distribution and occupation are not designed or implemented to address poverty explicitly; indeed, it is just that this led to significant benefits for a small minority of the already better off. However, this is not to suggest that some relatively poor people have not benefited from land reform and may even have found a way out of poverty, but that this is not the usual outcome, and it is unlikely to become so under current policies as (Lahiff 2015: 1-45) argues. A short classification of such land distribution and occupation in the table below can also be found in the Walker (2012: 7-8) report:

Table 2-1:Land distribution and occupation of the total area of South Africa: 122 081 300ha

Description:	Portion (%)
'White' Commercial Agricultural Land	67%
Remainder, including urban areas	8%
Metro	2%

Other, including non-metro urban areas	6%
'Black' communal areas (most state-owned)	15%
Other State Land	10%
Former 'coloured' reserves	1%
Ingonyama Trust (former KwaZulu)	2%
Other customary lands held in trust by the state	2%
Former 'homelands' other than KwaZulu	10%
Other provincial, including schools, hospitals, agricultural	1%
Other national, including Home Affairs Justice, Agriculture	1.6%
Military, police, prisons	0.4%
Conservation Areas	7%

Source: Fact Checks (Walker, 2012: 1)

Table 2-1 implies the aggregate figures for the number of hectares acquired by the state are poor indicators of adequate land and agrarian reform; land targets need to be regionally calibrated and judiciously applied

Table 2-2:Number of landowners by land type, parcels, extent in hectares and landowner type

	Parcels	Extent	Owners

Land Parcel Type	No.	%	Ha	%	No.	%
Erven	6 839 985	94	3 197 760	3	8 469 845	93
Agricultural Holdings	50 253	1	340 272	1	60 623	1
Farms	419 005	5	110 685 243	96	572 422	6
Total	7 309 243	100	114 223 276	100	9 057 890	100

Source: *Land Audit report stats 2017/18*

Table 2-2 shows that 7 309 243 land parcels and a total of 114 223 276 ha (or 94% of SA land) in the Deeds Office have 9 057 890 owners in the country. A total of 6 839 985 erven or 94% of total land parcels has 8 469 845 or 93% owners at an average of 0.4 ha per owner. Table 2 also shows 50 253 agricultural holdings, a relic of subdivisions of large estates in the Union of South Africa, constituting 340 272 ha or 1% of total land and parcels. They are owned by 527 422 or 6% of the total owners at 6 ha per owner. They are now being converted to non-agricultural commercial, residential, and industrial land uses. Table 2 further shows 527 422 or 6% of the total who own 419 005 farms with 110 685 243 ha or 96% of farmland, at an average of 210 ha farmland per owner.

(Lahiff, 2015: 1-45) stated that the focus of most policy debate in recent years has been on the pace of reform (i.e., the rate of land transfer), with some attention of late to the widespread failure of land reform projects to deliver material benefits to their members, but this has not included a specific focus on poverty alleviation. The critical elements of a more poverty-focused programme must include reform of the process of beneficiary selection to target poorer households, project design that emphasised low input, labour-intensive production for direct consumption and local markets, extension services and easily accessible small-scale credit. None of these has featured pointedly in recent debates, and where they have, it has not been pro-poor. Emphasis has been placed on project 'viability', which means selecting better resourced and experienced beneficiaries, more 'commercial' forms of production and continuity in land use between old and new farm owners. Subdivision of land does not feature prominently in these arguments.

The South African government has targeted agricultural development as the primary mechanism for improving the livelihoods of the rural poor (Cloete, 2013: 346). It has started various policies

and programmes that focus on redressing the historical injustices of the past. However, it seems reasonable to argue that to date, most of these development initiatives have not translated into improvements in agricultural productivity in the rural areas or the livelihoods of the targeted beneficiaries. This is primarily accredited to the low level of success of these initiatives. A recent official statement by the government indicated that approximately 90% of all land reform projects targeted at agricultural development have failed, then this reinforces the fact that land distribution and occupation need serious research before any decisions are made.

Fundamental differences exist concerning the role of the state in the land redistribution process. Authors repeatedly report that Advocates of private sector-led land redistribution argue that the state cannot plan and manage land redistribution. Michael (2019: 32-78) point to widespread corruption and fundamental misalignments of state functions, which means that beneficiaries do not receive adequate support. Speller and Camilla (2010: 47) stated that the industry sources argue to rebuild the state from below, requiring mass mobilisation and new power relations. Because the distribution of the pre-apartheid era hampered the development of rural folk, this is still going to continue.

While close to half of the black (African) population continue to reside in rural areas, most are engaged in agriculture on a very small scale, if at all, and depend primarily on non-agricultural activities, including migration to jobs in the urban areas, local wage employment and welfare grants for their livelihood. In the early twentieth century, South Africa had a thriving African peasant sector, but the white settler regime systematically destroyed this on behalf of mine-owners demanding cheap labour and white farmers demanding access to both land and cheap labour (Bundy, 2014:23).

Any discussion of land reform in South Africa is hampered by the lack of reliable estimates of land demand among the historically disadvantaged population in general, or more specific estimates of the demand for land for various purposes (e.g. grazing, cropping, residential) or in different areas (e.g. per province). Lahiff (2015: 1-14) stated that one such estimate is found that, among black rural households, 67.7% considered themselves in need of land. Sadly, this is particularly the case in the Eastern Cape (Tsolo), with provincial figures ranging from 40% in the Northern Cape and Northwest to 78.3% in KwaZulu-Natal. The amount of land required was typically minimal; 48% of those wanting farmland want one hectare or less (Marcus et al. 1996: 16) as quoted by (Van den Brink et al. 2016: 28). The analysis of trends in land reform of that time was also hampered by a lack of reliable data on the programme's performance and its impact on either the agricultural economy or the livelihoods of the intended beneficiaries. Thus, the reality is somewhat fuzzy.

This has led to an increased focus on land reform because only 12% of South Africa is suitable for rainfed cropping while only 3% of agricultural land can be regarded as highly fertile. Of the remainder, slightly less than 70% is suitable for grazing, with much of this on rangelands with meagre carrying capacity (Michael, 2019: 32-78)). What does this mean for land reform and redistribution has yet to be addressed? Also lacking are meaningful conversations about climate change and its implications for the land reform programme and agricultural production at all scales.

Against this, one must set some striking unities, concerning the land question, in the experience of the background of the country, which has a history of state-supported or state-led dispossession of indigenous people for the benefit of white settlers, who later received massive state subsidies to make a long-lasting change to efficient commercial farming. Broudy and Eric (2011: 90) stated that farming, at first highly successful in supplying the emerging markets, was deliberately undermined by policies aimed at developing white agriculture. Most of the rural population was confined to increasingly smaller 'native reserves', governed on behalf of the state by chiefs, which provided a source of cheap migrant labour for white-owned farms, mines and industries

Redistributed land should be used productively to secure employment, full-time livelihoods, and economic growth in rural South Africa. To be specific, that means it should be farmed or grazed, and beneficiaries should be expected to use it in a manner that optimises the broader economic spill-over effects. (Kirsten, 2019: 1-20) suggest that markets cannot be relied upon to produce these optimum impacts: the appropriate support services should be effectively provided and well-coordinated for this to happen. At the same time, beneficiaries should not be placed under an unreasonable financial burden, and therefore the cost of land acquisition and access to working capital and assets should be made affordable. However, in a risky industry such as agriculture in today's globalised and deregulated environment and impacted by rapid climate change, the characteristics and ability are also critical to ensure a sustainable and successful enterprise. For this reason, the selection of beneficiaries should be made with great care.

Additional land for the rural poor must not be seen as supporting only 'food safety net farming' or 'survival agriculture', and small-scale production within communal occupation systems must also see as inherently limited in its developmental potential. As in Zimbabwe, a combination of inherited professional prejudice and effective lobbying by commercial farmer groups (such as the National African Farmers Union) has led agricultural officials to underestimate the real economic value of land-based livelihoods in the former homelands. Recent research estimates that these contribute a gross aggregate value of R13.3 billion per annum or two and a half per cent of GDP. Enhancing this through infrastructural development and more effective support services,

combined with increased and more secure access to land, would begin to attack rural poverty directly – and more effectively than job creation on the farms of emerging commercial farmers.

2.11 The Current Status of Land Ownership

This overall view of land ownership in South Africa must now be used usefully in redistribution matters, occupation reform, administration, and various developmental decisions to enhance the effectiveness of the land reform programme because results show that some 14% is registered State land and 4% recently surveyed State land, while 79% is in private hands. Of this 79%, a significant percentage is owned by private individuals, companies, and trusts. Unfortunately, this makes it unable to identify foreign ownership because the system does not provide that analysis. Therefore, the Policy on Land Owned by Foreigners (PLOF) should revise the regime governing land ownership by foreign nationals. In this way, we will be laying proper foundations towards achieving the target of restoring ownership of a significant portion of productive land to the black majority in the following years to come.

Despite such stark differences between white and black agriculture, it is also important to recognise high uneven development levels within the two. For example, white agriculture "can be divided between a productive core and a large unproductive periphery" (Cooper, 2018: 53). 6 per cent of white farm units produced 40 per cent of total income in the subsector. Data for the 2017/18 agricultural season show an average net income of R146,200 ($124,270 using 2018 exchange rates) for the top 20 per cent of white farms as compared with R9,100 ($7,735) for the remaining 80 per cent (Marcus, 2015). Many farmers are absentee landlords. Others are in strategic border areas and receive large subsidies to remain. Some farms are located in low potential agro-ecological zones.

Even though some of the following findings have been stated before this section but here are discussed, 67% White' Commercial Agricultural Land the racial classification of national land as 'white' and 'black' bears testimony to the past. However, it fails to do justice to current economic, demographic and environmental conditions. In the early 1990s, just under 60 000 white-owned farms accounted for about 70% of the country's total area. Today this is now under 40,000 farming units covering about 67% of the country (Stats SA 2016/17). The agricultural quality of this land varies, with only 13% classified as arable and over a third located in the arid Northern Cape, where just 2% of the population resides. Most farmers are white, but some blacks with access to capital acquire land independently of land reform (Walker, 2012: 1-30).

The recent stats continue to reveal that 15% of 'Black' Communal areas, the former 'homelands', or communal areas, cover some 17,2 million hectares, of which around 14,5 million hectares were

classified as ‘agricultural’ in 1991 (DAFF 2011). The balance includes small towns and protected areas. Most of this land is state-owned and densely settled by black households under various forms of customary tenure, with tenure reform a contested but neglected area of state policy. As a result of regionally specific histories, the extent of black communal areas varies considerably across the provinces, from over 36% in KwaZulu-Natal to under 0.05% in the Northern and Western Cape (DLA 2002). In addition, former ‘coloured’ reserves comprise a further 1,28 million hectares, mainly in the Northern and Western Cape.

Then 10% Other State Land cannot be conflated with black ownership, nor seen as an informal source of land for redistributive reform. Most state land outside the communal areas is defined for public purposes directed towards the common good. State-owned protected areas accounted for about 7% of the country by 2012 (DEA 2012). The 8% Remainder, including urban areas.

Some 60% of the total population reside in urban areas (National Planning Commission 2012), which applies to over 95% whites. The eight metropolitan areas account for just 2% of the country's land area but are home to 37% of the total population and are primary centres of private wealth (SAIRR 2012). Increased black ownership of land can be achieved through the market, but a land reform programme aimed at improving livelihoods and tenure security for the rural poor must be driven by the findings from the stat.

Private land vs State land Table 2-3 below shows the extent of both private land and State land. Unaccounted extent is the difference between the province extent and the sum of private land.

Table 2-3: Private land vs State land

Province	Province Extent (Ha)	State-Owned Land Extent (Ha)	Private Owned Land Extent (Ha)	State Land %	Private Land %	Total Extent Unaccounted	Unaccounted Extent	Extent (Ha) (%)
Eastern Cape	16,891,700	1,510,553	11,370,084	9	67	12,880,637	4,011,063	24

Source: *Land Audit report stats 2018/19*

It has been revealed that ever Since 2003, restitution has been prioritised by the government and has received growing budget allocations and political support. This tells us that the priority placed on it in recent years makes sense. Because land restitution, particularly, is a source of political capital, it symbolises a tangible way the post-apartheid government is seen to be successfully engaged in restorative justice. It also involves specific groups whose land-related complaints must

be addressed. By 2007, a total of 74 417 claims had been settled, involving a quarter of a million households, at a total cost of nearly R11 billion (CRLR 2007). However, since most of these were urban claims settled with cash compensation, it is far from clear how much restitution has contributed to land reform; a small minority of claims has involved land being returned and people settling on it and using it to improve their lives.

A sizeable and growing land area has been earmarked for redistribution – about 1.6 million hectares – of which one-third was earmarked in the past financial year – but nobody can say when this land must be handed over to the claimants and how much has been handed over so far. Nevertheless, the fact that most claims (and the vast bulk of the simpler ones) are now settled is a testament, albeit limited, to land reform's success story.

While this project, a new policy framework must be designed, and the resulting Land and Agrarian Reform Project (LARP) was publicly announced in February 2008 (RSA 2008). This institutionalises co-operation as a joint programme of the DLA and the Department of Agriculture (DoA). It sets new targets for scaling up land delivery, intending to transfer 5 million hectares (more than the total land delivered to date) to 10 000 new agricultural producers. It is proposed that beneficiaries include black entrepreneurs, other emerging farmers, farm dwellers and communal area farmers, the same broad spectrum already targeted.

This proposes 'one-stop shops' to provide coordinated planning and post-settlement support, to improve production and trade, although these are yet to be created. This step is also proposed in a settlement and implementation support (SIS) strategy. For now, however, it remains unclear whether LARP is to complement or supersede existing redistribution initiatives and whether it will introduce new mechanisms or merely establish new and more ambitious targets that will remain unrealised (Cliffe and Part, 2012: 13-34).

This dispossession of farmers (in primary accumulation) together with the growth of (labour) productivity in farming 'frees' labour required by the development of industry (and associated non-agricultural activities/sectors).

The growth of (labour) productivity in farming – especially in food staple production – also lowers the reproduction costs of an increasingly industrial and urban public, thereby contributing to poverty and inequality.

One of its typically informative analyses, the South African Institute of Race Relations (SAIRR), exposes the 13% myth. Although this is one of the more accurate analyses there has been, it repeats some of the myths, such as the supposed 13% being black-owned. As noted above, most of what people have in mind belongs to the government, much of it held and administered by chiefs "in

trust". The SAIRR declares that of the total surface area of 122 million hectares and 31 million hectares or 25% must be in the hands of the State. This figure has been floating around for decades as the informed guess of experts. It is probably a conservative minimum. It excludes some land that is state land, such as urban "reserved" land. Reserved land is probably the most valuable state land. It is seldom considered because it remains registered in the name of private property developers when they have land proclaimed.

One of the things that we consistently underestimate in land reform is the extent to which the inner workings and even outcomes are surprising, generally because the programme design leads to patterns of implementation that are different to what was intended. In some cases, this results in a range of narrower outcomes than what is provided for in the policy or programme. For example, under SLAG, the small grant size combined with the fact that it was a so-called demand-led programme meant that in some, if not most provinces, projects were seller-driven, which was certainly not the intention, was barely acknowledged and proved hugely problematic (Tu *et al.*, 2019).

In addition, controversy surrounds the respective roles of the state, the private sector and an active citizenry within the land ownership and land redistribution programme remains the issue. Much research still needs to be conducted because massive differences exist concerning conceptions of agriculture, especially the 'viability' of small-scale production systems. After that, recognising and cater for a diverse range of needs across a wide variety of scales, spatial settings, and agro-ecological conditions, best addressed through decentralised and simplified processes of area-based planning and monitoring, recognise that those acquiring land need long-term support and access to subsidised finance, as well as the (re)-allocation of water.

2.12 Conclusion

This chapter focused on theories that can projectify agriculture to rejuvenate the pinnacle for chronic poverty eradication. Section 2.1 discussed the theories on a global approach to agriculture. These theories focus more on the governance and strategies used before in the agricultural sector. It turns out that even though agriculture is seeming to be neglected but it does not fade. Section 2.2 presented the findings on the history of agriculture in the country; the findings presented that South Africa is full of rich and diverse agricultural history. It has a vibrant cultural diversity, and a spectacular range of vegetation types, biodiversity, climates and soil types, so proper approach and sustainable farming is about meeting the needs of South Africans today and in the future.

Section 2.3 presented the role of agriculture in the country's economy as the foundation of South Africa's economy. Further presented that South Africa needs to ensure a healthy agricultural

industry that contributes to the country's gross domestic product (GDP), food security, social welfare, job creation and ecotourism while adding value to raw materials. However, the health of the agricultural sector depends on the sustainability of farming methods. Farming practices must, therefore, not only protect the long-term productivity of the land but must also ensure profitable yields and the well-being of farmers and farmworkers in the rural areas.

Section 2.4 the distribution of land and the occupation. It is now clear that increased black ownership of land can be achieved through the market, but a land reform programme aimed at improving livelihoods and occupation security for the rural poor must be driven by the state. Then section 2.5 followed by the current status of land possession where the section made it clear that results show that some 14% is registered State land and 4% recently surveyed State land, while 79% is in private hands. Of this 79%, a significant percentage is owned by private individuals, companies, and trusts.

Chapter 3 The Economics of Agriculture

3.1 Introduction

This chapter reports the historical information about the agricultural economic performance in South Africa, specifically on a regional level. The researcher used different sources to analyse the Eastern Cape agricultural economy. The sources that are mainly used are data from Statistic South Africa for different years. 12.6% of the national population is found in Eastern Cape, with a surface area of 13.8% (168 966 km^2). Its capital is Bhisho, but its two largest cities are Port Elizabeth and East London. Kirsten (2019: 1-20) also stated that the Eastern Cape is divided into two metropolitan municipalities (Buffalo City and Nelson Mandela Bay) and six district municipalities for government purposes. The district municipalities are divided into thirty-one local municipalities. Under those local municipalities, Mhlontlo Local Municipality with Tsolo is found with an area of 2 880 km^2 with a population of 189 176.

In conclusion, this chapter will focus on reviewing the literature that will support the historical information concerning the economics of agricultural performance in Tsolo. However, since Tsolo is not an Island so the first section will broadly give an overview of the performance generally in South Africa, then to Eastern Cape and then lastly narrow it down to Tsolo. The outline of this chapter will be divided into different subsections, namely Origins, Agricultural environment and natural resources, Food and consumer economics, Production economics and farm management, and Development economics. So, the description will be outlined respectively in the following.

3.2 Origins

The farm sector is frequently cited as a prime example of the perfect competition economic paradigm (Mordecai 2018:24; Waugh 2018: 30; Griliche, 2017: 87). This is simply because the agricultural economists have made it clear and revealed the facts that sometimes the South African agriculture performs very well and will continue to be the origin of the economic strength of the country because the sector created 876 000 jobs in the first quarter of 2016, which is an increase of 2% from the previous quarter but down by 2% from the same period last year. However, despite the quarterly increase, employment in agriculture declined by 15 000 compared to a year ago. This means that most jobs were created in primary agriculture, as the rest of the value chain generally falls within manufacturing. The manufacturing sector contracted by 6% quarter-on-quarter and 7% year-on-year, and that higher employment and poverty alleviation figures in agriculture are attributed to the increasing number of hectares under irrigation. So, the expansion of irrigation farming is one of the strategies that can continue to create a million jobs in agriculture

and cease poverty. It seems as if there should be more land under irrigation than in the past; the more land is farmed under irrigation, the more employment per hectare increases compared to non-irrigated production.

Such strategies would benefit agriculture predominates like Eastern Cape because now the Eastern Cape is one of the poorest provinces in South Africa that only contributes 8% of GDP to the country's economy. This is due primarily to the poverty found in the former homelands, where subsistence agriculture predominates. The Eastern Cape is a province of South Africa. It was formed in 1994 out of the Xhosa homelands or Bantustans of Transkei and Ciskei, together with the eastern portion of the Cape Province. It is the landing place and home of the 1820 Settlers.

The central and eastern part of the province is the traditional home of the Xhosa people. There is much fertile land in the Eastern Cape, and agriculture remains important. To mention a few, the fertile Tsolo in the southwest has massive deciduous fruit orchards and crops, while sheep farming predominates in the Karoo. The Alexandria-Grahamstown area produces pineapples, chicory and dairy products, while coffee and tea are cultivated at Magwa. Hence, the suggestion of farmed under irrigation must be the key.

People in the former Transkei region are dependent on cattle, maize and sorghum farming. Hence, collaboration like an olive nursery with the University of Fort Hare to form a nucleus of olive production in the Eastern Cape should continue to be developed. Domestic stock farming is slowly giving way to game farming on a large scale, fuelled by the commercial benefits of eco-tourism and the lower risk needed to protect wild game against drought, the natural elements and poaching. The area around Stutterheim is being grown extensively with timber plantations. The basis of the province's fishing industry is squid, recreational and commercial fishing for line fish, collecting marine resources, and access to line catch of hake. After that, once the land is irrigated, employment per hectare will decline over time because of new technology, but the trick is that if we can put new hectares under irrigation fast enough, total employment will increase

3.3 Agricultural Environment and Natural Resources

In the field of environmental economics, agricultural economists have contributed in three main areas designing incentives to control environmental externalities such as water pollution due to agricultural production, estimating the value of non-market benefits from natural resources and environmental facilities such as an appealing rural landscape, and the complex interrelationship between economic activities and environmental consequences (Catherin et al., 2016: 17). Regarding natural resources, agricultural economists have also developed quantitative tools for improving land management, preventing erosion, managing pests, protecting biodiversity, and

preventing livestock diseases (Erik, James, Wilen, David & Zilberman, 2010: 56-89), and such quantitative tools are much needed in our agricultural sector because South African agriculture is currently among the less productive of the world because of low use of available water resources and of limited fertilizer input.

A significant increase in agricultural production is needed to meet the increasing food requirements of the growing population of South Africa, augmenting the risk of environmental pollution. In order to limit this risk, the adoption of sustainable irrigation and fertilization practices is required. However, the efficiency of these practices depends on numerous and conflicting objectives, which lead to a complex multi-objective decision process (Pastori, M.; Udías, A.; Bouraoui, F.; Bidoglio, 2019). So, this seeks to support the fact that this multi-objective analysis indicates that farmers can significantly increase their income in most provinces while preserving the environment by adopting efficient fertilization and irrigation strategies.

Furthermore, adopting these strategies is not enough because results indicate that the inadequate training of extension personnel on crop production technology influences the perceptions of rural farmers of crop production technology and awareness of its stewardship requirements. Generally, personnel have a low level of awareness of processing technology as a high yield strategy. Therefore, these extension personnel should distribute processing technology, which they generally perceived as a high-yield technology, to smallholder farmers using participatory approaches and inclusive (Kotey, Assefa, Obi, & van den Berg, 2016: 45). After that, this will ensure safe and sustainable adoption of production processing technology on smallholder farms in Tsolo because this will require a more participatory extension office approach that emphasizes smallholder farmers' access to information as well as the training of extension personnel on the requirements and distribution practices associated with technological maize cultivation that is full of Tsolo.

The purpose of identifying the agricultural environment and natural resources is to have the most significant impact on the economy and the net savings in the whole country. Moreover, consider that agricultural sector development is essential in confirming the usefulness of a significant increase in natural agricultural production in the agrarian sector. For example, according to the World Bank data from 2009 to 2017, South African and 13 other countries that are neighbours of South Africa belong to the lower middle-income group (Lyudmyla, 2019: 34).

There is much fertile land in the Eastern Cape, and agriculture must remain important in the province's and the nation's development plans. During the fertile years, according to Stats South Africa (2016), the total gross value of agricultural production (total production during the production season valued at the average basic prices received by producers) for 2016 is estimated

at R263 201 million, compared to R232 490 million the previous year, an increase of 13,2%. The gross value of animal products contributed 46,9% to the total gross value of agricultural production, while horticultural products and field crops contributed 30,0% and 23,1%, respectively. The poultry meat industry made the most significant contribution with 15,2%, followed by cattle and calves slaughtered with 12,5% and maize with 10,7%. With all this, South Africa can sustain its economy and shift to being among the upper-class income because that is a choice.

However, a sustainable agricultural environmentally friendly production system for processing crop production into finished products in the rural area is not yet established in South Africa. Because recently, conservation of agriculture has gained research focus because of its benefits as a sustainable crop production system. Therefore, agricultural conservation offsets intensive agronomic practices' negative impact during biofuel crop production (Malobane, 2010: 67-100). So, this simply says that conservation agriculture leads to sustainable crop production because it enhances soil quality, reduces carbon dioxide emissions, and increases related cereals' yield. It was concluded that conservation could potentially enhance production as a biofuel feedstock under semi-arid conditions in South Africa. Therefore, local field experiments on production under conservation can be desirable in South Africa.

This can address food shortages and poor nutrition issues that affect many households in Tsolo. Furthermore, a combination of unpredictable and insufficient rainfall contributes to food insecurity among households involved in primary production in Tsolo. This food insecurity is compounded by dependence on introduced and un- adapted crops that require high water and fertility levels, which are almost always limited in the smallholder farming sector. However, the affected people usually live among a wide range of adapted indigenous vegetables, which they are not utilising on as significant a scale as vegetables (Mavengahama, 2013: 14). The reasons for the low consumption are not yet well understood. Furthermore, the availability of these vegetables at Tsolo is also seasonal, and they are primarily available in summer. This means vulnerable families who rely on gathering them during summer are left without a part of their diet for the greater part of the year, from autumn through winter to spring.

This seeks to advocate that organic foods production will and always places a strong emphasis on environmental protection and natural resources. Because recently, according to Agri Stats SA (2017/18), the demand for local, sustainable and organic food production has increased. Organic farming tends to improve sustainability within rural communities and has become one of the fastest-growing segments of agriculture with 82 per cent growth between 2006 and 2008 (Willer & Yussefi 2007) as quoted by Kearney (2010: 82).

Currently, however, the ability of organic agriculture to contribute significantly to the local food supply has been questioned owing to low yields, increased land use and insufficient quantities of organically acceptable fertilizers (Badgley & Perfecto 2017: 88). Therefore, it is unlikely that organic agriculture would produce enough food to meet the expected increases in local food demand. Therefore, it is essential to find new solutions to the problems caused by growing populations and environmental degradation in impoverished local communities like Tsolo.

The threats to food security are significant, as climate change is expected to increase various climatic risks. Thus, climate change is expected to make it more difficult for maize farmers to catch up with potential crop production in the long run. Therefore, the challenge for the farmers is to reduce maize yield loss under ongoing climatic variations and thus be food secure. However, in Tsolo, the plot areas exist as small patches of land, gardens located next to the homestead, and large tracts of land ranging from 0.5 to 15 ha located far away from the homestead. Therefore, mixed vegetable gardening is a common practice for substitution even though maize, spinach and cabbage are the most preferred crops in Tsolo. Farmers cited resistance to both diseases and climate variability as the reason for preferring these crops.

The other significant but minor crops grown by farmers in Tsolo are potatoes, beetroot, Spinach, Cabbage and carrots (Table 3-1).

Table 3-1: Number of farming systems practised and farming households in Tsolo

Number of farming systems practised and farming households					
	Ward 3	Ward 4	Ward 16	Ward 26	Ward 30
Farming system	N	N	N	N	N
Dryland farmers	25	12	14	7	14
Irrigated agriculture	2	2	11	15	11
Crop	%	%	%	%	%
Beetroot	18.8	0	3.6	4.5	4
Spinach	29.6	20	60.7	50	53

Cabbage	25.9	6.67	60.7	54.5	56
Potatoes	25.9	21.4	87.7	50	36
Carrots	14.8	0	7.1	9.1	4
Maize	66.7	46.7	53.6	63.6	80

Source: *Economic Review of the South African Agriculture 2016*

Furthermore, because of the likely increase of various climatic risks, other crops that can be introduced into Tsolo and grown with astounding results are beans (both soya and sugar beans), packaged and distributed countrywide. Maize can be grown, milled and packaged at the centre with direct benefits to the community of Tsolo. The benefits can be far-reaching, and many other agricultural products can be brought together, depending on the type of crops that would grow in a particular area. A shortlist of such crops is put in the table below.

Table 3-2: List of related crops that can be grown in Tsolo

Dried beans	Packaged mushroom	Tinned sweet corn
Tinned baked beans	Tinned tomatoes	Packaged spinach
Sunflower seed	Sunflower cooking oil	Pea-nut cooking oil
Tinned fresh beans	Boxed fresh tomatoes	Packaged mixed vegs
Dried peas	Tinned onions	Packaged pumpkins
Tinned baked peas	Fresh onions boxed	Packaged peanuts
Tinned fresh peas	Tinned beetroot	Pea-nut butter
Tinned mushroom	Boxed beetroot	Samp
Packaged mealie meal	Tinned beef	Packaged chicken

The list is too long to enumerate fully; this is merely an indication of many things that could be done at Tsolo, given their climate. This is repeatable in many parts of the country, dependent on

the political will (political drive to mobilise people) and the availability of the resources to effect the change(Jowah, 2014: 131).

Farmers are shifting towards climate changes and drought-resistant crops and vegetables, resulting in a low crop mix. The above finding regarding preferred crops illustrates critical links between climate change, plant diseases and food security. Low garden crop or vegetable mix has direct implications for dietary diversity, a proxy for food security. The promotion of farming and crop production in the study area should undertake an integrated approach, where both the impact of climate change and the resultant incidence of crop limitation should be addressed as problems that co-exist (Ndhleve, 2017: 80). In conclusion, rather than perpetuating the familiar rhetoric that social grants are a disincentive to production in South Africa's rural areas, it is essential to recognise and support the essential role that household and small-scale production plays in supporting household consumption and the provision of essential micronutrients.

3.4 Food and Consumer Economics

While at one time, the field of agricultural economics was focused primarily on farm-level issues, in recent years, agricultural economists have studied diverse topics related to the economics of food consumption. In addition to economists long-standing emphasis on the effects of prices and incomes, researchers in this field have studied how information and quality attributes influence consumer behaviour. Agricultural economists have contributed to understanding how households make choices between purchasing food or preparing it at home, how food prices are determined, definitions of poverty limits, how consumers respond to price and income changes in a consistent way. South Africa is only food secure at the national level. However, the majority of households still live below the poverty line. The number of people has increased from 11 to 13.8 million between 2011 and 2015 (StatsSA,2017).

So, changes in agricultural practice over the past 50 years have increased the country's capacity to provide food for its people through productivity increases, greater diversity of foods and less seasonal dependence. Food availability has also increased because of rising income levels and falling food prices. This has resulted in considerable changes in food consumption over the past 50 years. Along with an exploration of food consumption (availability) trends and projections to 2050, nationwide and for different regions of the country, the drivers primarily responsible for these observed consumption trends still need to be examined (Kearney, 2010: 45). Those drivers of food consumption are variably affected by a whole range of factors, including food availability, food accessibility and food choice, which may be influenced by geography, demography, disposable income, urbanization, globalization, marketing, religion, culture and consumer

attitudes. The author continued to describe how some of those drivers specifically related to the nutrition transition influence the economy in the following.

3.4.1 Income

The economies of South Africa are expected to expand at twice the rate of those in industrial countries. Rising incomes mean an increase in diets that are fat intensive. For example, where overweight used to be a sign of wealth, it now more often reflects poverty. Increased incomes or lower prices have led to the increased consumption of animal-based foods and processed foods. While well-educated people can choose to adopt a healthy lifestyle, the poor have fewer food choices and more limited access to nutritional education. The consumption of edible oils increased sharply across all income fertile, and this is partly explained by price, making them affordable even for low-income people. In addition, increased income has led to increased income disparity and health inequality.

3.4.2 Urbanisation

Urbanization has numerous consequences in that it leads to new and improved marketing (with greater access to modern mass media), distribution infrastructure, attracts supermarkets dominated by multinational corporations, and results in better transportation systems, thereby improving access to foreign suppliers and the importance of imports in the overall food supply.

3.4.3 Consumer attitudes

Consumer health awareness continues to grow with the increasing availability of health information going hand in hand with the ageing of populations and increased risk for lifestyle diseases. As a result, the selection of foods acceptable to an individual increasingly takes place in a context where the food industry and food retailers substantially influence availability.

Despite having multiple benefits and promises towards contributing to household food security, nutritional diversity and nutritional quality, the reality is that small crop's production remains low, resulting in the documentation of low consumption. Therefore, considering the claimed benefits in the face of low volumes, there is a need to appraise consumption dynamics from a rural perspective to understand shared perceptions by society. Nengovhela (2015: 78) advocates that after using cross-sectional survey data from rural Eastern Cape of South Africa, the study estimated consumer awareness, consumption frequency, perceptions and determinants of consumption. So, literature review a high level of awareness, consumption and positive perceptions, which presents an opportunity for the research, government, private sector and NGO community to reconsider the role that rural farming spaces can play as a household food security strategy, especially in rural South Africa.

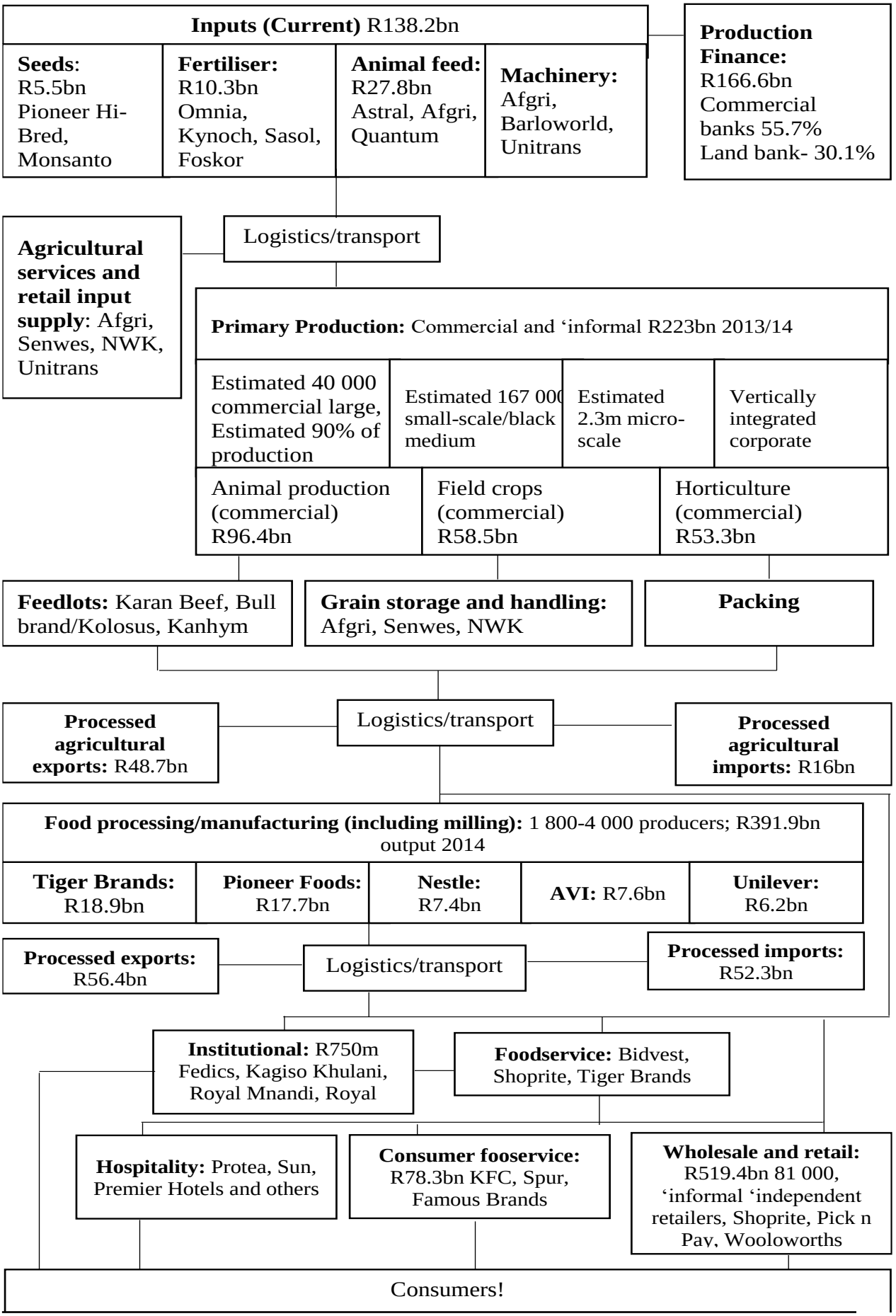
Results in literature review. Has led us to findings that support previous conclusions by several authors who argued that today's youth perceive farming negatively, considering it as weeds or food consumed by the poor (Hildreth et al. 2018: 89). Concerning education, the results indicate a significant negative influence on consumption. This seeks to confirm earlier findings by Erik (2010: 23), which link more consumption of farming-related products in rural areas by less educated households than their educated counterparts, most probably due to affordability. On the other hand, the positive sign of the availability of farming products on the market reveals its positive influence on consumption.

The value chain approach usefully breaks down the life cycle of commodities into different phases in the production and value addition process and analyses the relations in each of these nodes. The overview of the food system here is structured based on specific nodes of activity through which agro-food commodities pass and value is added, focusing on companies that operate across multiple commodity chains.

Figure 3-1 provides a rough diagrammatic overview of the South African agro-food system, highlighting key corporate actors. Figure 1 provides a preliminary quantification of the value of different nodes or parts of the agro-food system. The most prominent activity node is wholesale and retail, followed by food manufacturing and primary agricultural production. This is total value rather than value addition, so it is not surprising that downstream nodes are more extensive than upstream ones. However, it does indicate the relative value under control in each node.

Some nodes tend to be dominated by corporations, for example, input supply, grain storage and handling, and feedlots for commercial livestock. Other nodes usually have a robust corporate core, but there is a far wider periphery, such as primary agricultural production, food manufacturing, wholesale and retail. The latter three are also the most prominent nodes in the system by value. Finally, it is essential to note that nodes have their centres of power and control and the system's distribution of power and control (Greenberg, 2017: 5).

Figure 3.1: Schematic overview of South African agro-food system structure



Source: STATS/SA - South African agro-food system structure.

Therefore, this contribution maps the South African agro-food system focusing on corporate ownership and power, inspired by value chain work applied to the food system. Corporations tend to dominate some nodes; this wide number of participating interest groups could point to possible areas of intervention to boost livelihoods by supporting their economic activities. Hence, Greenberg (2017: 49) considers the influence of corporations in structuring consumer perceptions on food quality and health, from input into apparently neutral dietary-based guidelines to advertising. Financialisaton in the food system, including the institutionalisation of share ownership and the rise of agri-investment companies, and the multi-nationalisation of South African agro-food capital, especially into rural areas, must have implications for the ability of the nation-state to regulate activities of such agro-food system

There is a brief overview of the strong corporate influence in shaping the consumer food environment. This deals with the factors affecting the environment in which consumers make their food choices. Hence, powerful corporate players should actively shape the availability, affordability, and acceptability of foods in rural areas. Furthermore, these dynamics should be implicated in the nutritional transition to unhealthy diets and subsequent public health concerns. Therefore, the corporate-dominated agro-food system is a crucial mediator of food security for South Africans (see Mirowski, 2014: 76).

A clear direction and picture of food consumption (availability) trends and projections to 2030, both provincially and for different of the nation, along with the drivers primarily responsible for observing consumption trends, should always be the subject of review. Significant shifts in dietary patterns are occurring throughout the world, even in the consumption of basic staples towards more diversified diets. Kearney (2010:101) stated that accompanying changes in food consumption at a global and regional level had been considerable health consequences.

Population in South Africa undergoing rapid transition are experiencing nutritional transition. This diverse nature of this transition may result from differences in socio-demographic factors and other consumer characteristics. Hence, among other factors, including urbanization and food industry marketing, trade liberalisation policies over the past two decades have health implications. So, future food policies must consider both agricultural and health sectors, thereby enabling clear and sustainable policies that will ultimately benefit agriculture, human health and the environment.

3.5 Production Economics and Farm Management

Many sources revealed that agricultural economics research had addressed falling returns in agricultural production and farmers' costs and supply responses. Much research has applied economic theory to farm-level decisions. Jean-Paul (2010:325) believes that risk and decision-making under uncertainty have real-world applications to crop insurance policies and understand how farmers in developing countries make choices about technology adoption and managing the farming processes. Interestingly, it is also widely recognised that these topics are essential for understanding prospects for producing enough food for a growing world population, subject to new resource and environmental challenges such as water scarcity and global climate change.

This seeks to paint the picture of why it is important when considering future food policy that a sustainable pattern of food consumption and management be considered, ensuring sufficient supply of staples and micronutrient-rich foods without encouraging unnecessary energy consumption and nutrient-poor foods. Provinces such as Eastern Cape need food systems that diversify beyond subsistence farming and include fruits, vegetables, legumes, and animal products result in improved nutritional status. In order for the 'healthy' agriculture to be the goal whereby nutritional considerations become part of global agricultural policy-making, whereas, on the other side of the coin, agricultural considerations can be incorporated into the improvement of nutrition and health. As Kearney (2010:101) advocates that we should endeavour towards a collaborative effort to build more locally based, self-reliant food economies, one in which sustainable food production, processing, distribution, and consumption are integrated to enhance economic, environmental and social health.

Therefore, food policies will only be effective if they are developed with input from both the agricultural and health sectors, thereby enabling the development of clear policies that will eventually be beneficial to agriculture, human health, and not forgetting the economics of the country.

Prospects for producing sufficient food for a growing country's population should be the influence of agricultural extension officers on the adoption of irrigation innovations. In a developing country, extension offices play a more significant positive role in influencing soft technology adoption. The use and availability of agricultural extension officers in six irrigation schemes in Tanzania, Mozambique and Zimbabwe are presented. Although the use of government agricultural extension officers varied significantly, with more support from agricultural extension

offices, the results suggest the need for more diverse sources of advice and promotion of institutional reform in south-eastern Africa (Wheeler et al., 2016: 76).

Hence, future threats such as climate variability and change and accelerated soil degradation in South Africa have and will continue to increase the need for irrigation innovation for more sustainable and "climate-smart" agriculture practices to meet halfway with the growing population. Manual conservation agriculture systems such as seeding into planting basins or direct seeding techniques also need to receive increased attention. Economic Review of the South African Agriculture 2016/17 suggests a critical review of the pros and cons of the different manual seeding systems under different agro-ecologies has also been lacking.

Results show that the conservation agriculture systems perform differently in various provinces of South Africa. For instance, direct-seeded treatments had greater maize yields than conventional tillage practices by an average of 12–27% and outperformed the conventional practice in nine out of fourteen yield comparisons, as per Agri Stats SA 2017/18. However, the strongest factor influencing maize grain yields in the more variable provinces of South Africa was the quality of season and the location, whereas labour treatment and location were more important in the higher rainfall areas such Eastern Cape province of South Africa. In addition, direct seeding systems out-yielded other treatments in higher rainfall areas and responded better to a favourable environment than conventional tillage practices.

Agricultural conservation with proper management showed greater financial returns to investments and labour productivity in rural areas due to reduced labour costs and higher yields. Hence this research, the results of this research highlight the need for site-specific recommendations and adaptation of properly managed agricultural conservation systems to different 'agricultural' provinces like Eastern Cape environments. (Thierfelder *et al.*, 2016: 114) also enlightened that blanket recommendations of one agricultural conservation system across many provinces, has often been done in the past, had only led to underperformance of conservation of some areas and rejection by smallholder farmers if yield benefits are not achieved.

The unpredictable climatic conditions, frequent droughts and potential future impacts of climate change in South Africa (Lobell, 2018: 87 & Cairns et al., 2013:30) together with continued population growth (Godfray, 2010;43) have increased the need for more resilient, water-conserving and sustainable cropping systems (Pretty et al., 2011:64). Conservation of agriculture in deferent forms is one of (Thierfelder et al., 2015: 76) such systems that combines three basic principles: minimum soil disturbance to avoid soil inversion by the hoe or the mouldboard plough; crop residue retention of available plant material on the soil surface and diversification through

crop rotations or associations to reduce and overcome pest and disease problems associated with monocultures, and for nutrient management.

It was repeatedly said that prospects for producing sufficient food need analysis that points out how the increase of farmer benefit is always related to higher nitrates losses. Knowledge of these sets of solutions helps decision-makers to choose optimum alternative strategies specifically tailored to the country. For example, analysis indicates that most South African farmers can significantly increase their income by adopting efficient irrigation strategies while preserving the environment.

Many agricultural studies agree that dry spells and climatic hazards are responsible for maize output decline, sometimes to levels below potential yield levels. Consequently, there is a need to reduce the gap between actual and potential maize yield/ha, especially among farmers in rural regions. The potential role of supplemental irrigation and its differential impact on maize yield in the Eastern Cape Province of South Africa needs to be determined via maize yield data generated from information recorded over 20 years by farmers in Tsolo.

Agricultural economists revealed the analysis that maize yield analyses show a maximum attainable yield of 0.234 t/ha and average farm yield of 0.146 t/ha when there is proper management in Provinces like Kwazulu-Natal and Eastern Cape with high maize 'capabilities' And also rescheduling planting date from the traditional planting times to earlier or later planting dates, assisted by the use of weather reports and forecasting, to some extent curbs the impact of delays or slow onset of rainfall on yield. Ndhleve (2017:222-228) suggests that supplemental irrigation is instrumental in reducing the impact of mid-season drought (rains break for a week) and light rainfall throughout the season. Analyses of actual yields and yield decline against each of the experienced climatic hazards provide insight into management possibilities to stabilize maize output in those mentioned provinces.

According to agricultural experts concerning falling returns in agricultural production, agriculture in general and farmland can be considered an emerging asset class. Ducastel and Anseeuw (2017: 199-209) advocate that specialized 'financial vehicles', such as private equity and mutual funds, are emerging and competing to attract potential investment in this asset class. There has been no significant development of such vehicles targeting South Africa's farming sector in recent years. These innovations should be led by a group of market intermediaries (such as asset managers or consultants) who endeavour to 're-shape South African agricultural sector as an opportunity for institutional investors. These 'pioneers' should also engage in a multifaceted mediation process between global financial investors on the one hand and the South African agricultural sector on the other.

The research gap remains to analyse the concrete mechanisms that facilitate this particular form of commodification. Hence, therefore, the comparison between intermediaries and giving particular attention to their structure, governance mechanisms and asset allocations within this 'market in the making' needs to be undertaken. This can describe how intermediaries develop different paths of assets to unlock the 'financial value' of South African farmlands (i.e. 'liquifying', standardizing, neutralizing, and depoliticizing agriculture as an asset). However, even though many authors also highlight some of the difficulties faced in the process of translating between international investors and local managers, questioning the 'land-asset fiction' that is materializing through the subordination of farmland to the needs of financial society, mostly in rural areas where huge unused land is located.

A descriptive closing remark analysis technique was employed by (Khapayi & Celliers, 2016: 25-41) to investigate the main limiting factors faced by farming households from rural areas like Tsolo in migrating towards commercial agricultural markets, which prevent emerging farmers from progressing from subsistence to commercial agricultural farming in the whole Eastern Cape Province. Is that farmers face poor physical infrastructures such as poor roads, lack of transportation to the markets from the farms, lack of marketing skills and information, inadequate market infrastructure, and high transaction costs, lack of agricultural implements to better production, insufficient production and farm management skills, as well as low education levels which results in an inability to interpret market information to be used in production planning and marketing.

Therefore, the government should provide planned workshops to all farmers in order to equip them with marketing knowledge because the government has a crucial role to play in increasing market participation of emerging farmers in rural areas through encouraging group marketing, upgrading of roads to enable smooth accessibility of farmers to output markets and the establishment of local point sales in farming rural areas.

3.6 Development Economics

Development economics is broadly concerned with improving living conditions in low-income countries and with high inequality like South Africa and improving economic performance in low-income settings (Douglas 2016: 160-164). Because agriculture is a large part of most developing economies, both in terms of employment and share of GDP, agricultural economists have been at the forefront of empirical research on development economics, contributing to our understanding of agriculture's role in economic development, economic growth and structural transformation. For example, Peter (2012: 98) and many agricultural economists have shown interest in the food

systems of developing economies, the linkages between agriculture and nutrition, and how agriculture interacts with other domains, such as the natural environment.

In most rural areas, chicken infestation with external parasites poses a challenge to their productivity and associated. They are mainly controlled by commercial remedies, although resource-limited farmers resort to using alternative remedies which are available and affordable. A study that was conducted in the Eastern Cape province by (Moyo & Masika, 2015: 87) to document external parasites of free-range chickens and their part in developing and maintain a sustainable economy, and as well as some of those controls and remedies used by resource-limited farmers that sometimes become barriers in the economy of the country.

The author indicates that the farmers considered several external parasites to be a problem: mites (79.6%), stick-tight fleas (64.5%), lice (10.8%) and ticks (6.5%). Various ethno-veterinary remedies were used to control the parasites, which included ash (28%), madubula (26.7%) and Jeyes Fluid (10%) both of which are comprised of 13% carbolic acid, paraffin (8.4%), plants (5.2%), used engine oil (2.8%), dip wash (2.5%), doom spray (d- phenothrin 0.4%), blue death (permethrin 0.03%) (1.9%), diesel (1.9%), smoke (0.9%) and a few (4.2%) used conventional insecticides namely karba dust (carbarly 5%) and (mercaptothion 5%). A small proportion (7.5%) does not use either of the remedies. These materials used by resource-limited farmers in controlling parasites were identified without any help from the government agricultural extension officers or experts concerning the benefits and dangers of the usage.

Thousands of people in the Eastern Cape province of South Africa depend on smallholder subsistence agriculture as their primary source of livelihood because subsistence agriculture will always predominate. However, in that province, the sector is underdeveloped, stagnant and bound to decline, slowing down development and hindering poverty alleviation. Therefore, there is a need to understand the determinants of production efficiency for increased food security and poverty reduction.

That is why Kibirige and Obi (2015: 98) view the allocative and technical efficiencies and determinants of technical efficiency of smallholder farmers at the Eastern Cape irrigation scheme. The author indicates that farmers were inefficient in maximising the value of resources, underutilizing seeds, pesticides and herbicides and incurring higher costs in fertilizer use. However, smallholder farmers are technically efficient at approximately 98.8%. The determinants of this efficiency included household size, farming experience, use of agrochemicals, off-farm income, gross margins earned from maize, and household commercialization level. Therefore, this seeks to propose key policy options that must be considered to address the inefficiencies include improved quality of extension services, provision of training in farm business management skills,

and policies that promote investment incentives for agro-input/output small-scale industries in the developing and smallholder farmers in the Eastern Cape.

Smallholder subsistence agriculture in the rural Eastern Cape province is recognised as one of the significant contributors to food security among resource-poor households. However, it is sad to agree that subsistence agriculture is thought to be unsustainable in the ever-changing social, economic and political environment and climate of South Africa. This contributed significantly to stagnate and widespread poverty among smallholder farmers in the Eastern Cape. For a sustainable changeover from subsistence to smallholder commercial farming, the government and NGOs need to employ strategies like accumulated social capital through rural farmer groups/cooperatives.

Therefore, studies and research must be established to aim at the impact of social capital on farmers' household commercialization level of maize in the Eastern Cape in addition to farm/farmer characteristics in that province. (Kibirige, 2016: 73) stated that smallholders' average household commercialization index (HCI) of maize was 45%, and this very little compering with the level of maize can be found in Tsolo in Eastern Cape. Household size, crop sales, source of irrigation water, and bonding social capital had a positive and significant impact on the commercialization of maize, while off-farm incomes and social values have a negative and significant impact on the same. Innovation, adoption and use of labour-saving technology will improve access to irrigation water and farmers' access to training to strengthening group cohesion are crucial in promoting smallholder commercial farming of maize in the area.

The discussions on agri-food economies and how they need to evolve remain the problem, and the analyses on how these economies, which often have contradictory dynamics, need to be theorized. Different theoretical representations reflect the differences in agro-economies and their developmental tendencies and are also essential drivers that actively shape the flights that they describe. (Ploeg, 2016: 58) advocate that more often than not, the newly emerging alternatives are taking the initiative, responding to changing socio-economic demands, while the governance systems are merely reacting to the emerging alternatives. While it is possible that the alternatives might be appropriated and 'conventionalized' by the hegemonic systems, it is equally possible that the alternatives, especially when interconnected and rooted in democratic institutions, might encourage a generalized crisis in the food systems that are currently dominant.

3.7 Conclusion

This chapter reported the historical information about the agricultural economic performance in South Africa and specifically on a regional level. The researcher used different sources to analyse

the Eastern Cape agricultural economy. The sources that are mainly used are data from Statistic South Africa for different years.

This chapter had focused on reviewing the literature that provides support on the historical information concerning the economics of agricultural performance in Tsolo. However, since Tsolo is not an island, the first section broadly gave an overview of the performance generally in South Africa, then to Eastern Cape and then lastly narrowed it down to Tsolo. Thus, the outline of this chapter was divided into different subsections, namely Origins, Agricultural environment and natural resources, Food and consumer economics, Production economics and farm management, and Development economics.

In summary, levels of food insecurity and vulnerability are still high in rural areas of South Africa. So, for succession planning in the farm's leadership, the rural, uneducated youth must see farming as a viable economic activity and engage in skills development activities. In addition, there is a need to boost their psychological capital—targeting their confidence, hope, optimism and resilience - the cheapest way to ensure the importance of rural food security. To this end, the government have to facilitate their participation in established programmes such as the "Comprehensive Agricultural Support" and "Landcare" On sustainable rural development grounds, decision-makers also need to focus on vulnerable groups (currently food secured or in-secured).

Chapter 4 Research Methodology

4.1 Introduction

The purpose of this study is to projectify an approach to the rejuvenation of agriculture as the pinnacle for chronic poverty eradication; the case of Tsolo in the Eastern Cape. We base all research on some research structure to solve a problem or answer a research question. It is a series of logical decision-making processes where choices have to be made to be aligned with the purpose of the study, how to conduct the study (exploratory, descriptive), the setting of the study in the whole research mix, and conformation to expected norms (existing investigation research techniques), and the ability of the researcher to influence the process (Jowah, 2011: 66). Research is a process that collaborates with objective methods and procedures to gain scientific knowledge that can derive solutions to identified problems. Welman, Kruger and Mitchell (2015: 2). Testing the methods to verify their validity and reliability may be necessary before assessing whether they are currently authentic to address the problem in question.

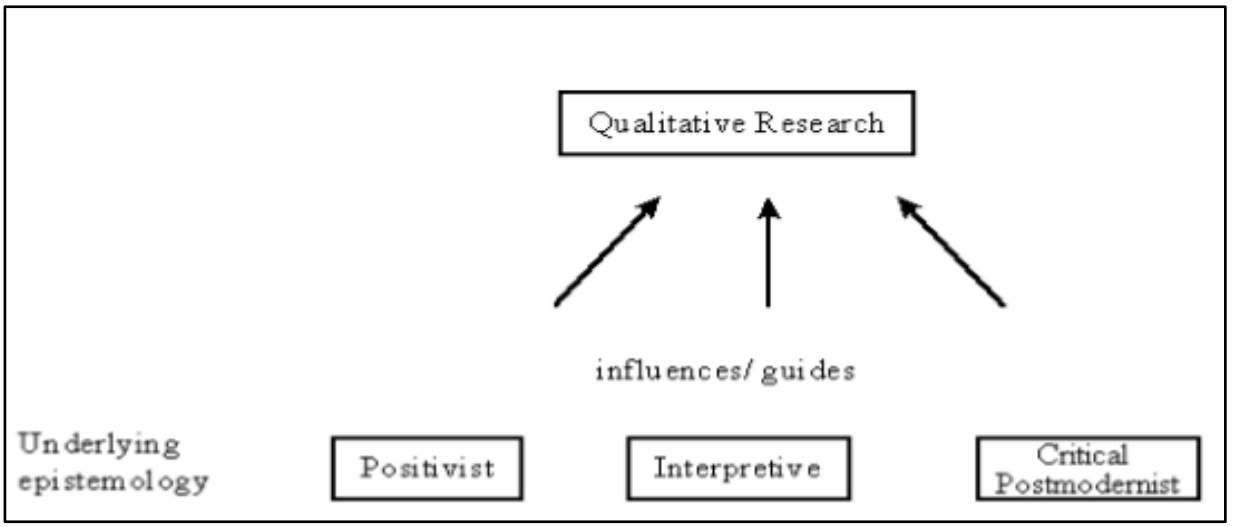
The research carried out has been conducted and incorporate its results into the area of Tsolo in the Eastern Cape to eliminate the conditions that cause agriculture to decrease the value in the rural community. The next chapter discusses the research methods used to obtain the results. According to Collis and Hussey (2019: 3), research can be applied to obtain the information needed to solve problems and increase knowledge. This is because of its mathematical and systematic nature and because it is a process.

4.2 Research design

According to Yin (2013: 12), the research design process is a framework or action plan that provides detailed guidelines for carrying out surveys. Thus, a well-acquired research project is relevant and provides tangible information on the requested sample. The steps in the research design process and the methodological framework include selection of the research approach, sampling plan design and design of experiments.

The researcher adopted the previous design and applied it while conducting this survey. Thus, this research considers the design of qualitative and quantitative research.

Figure 4.1 Qualitative Research



Source – Benincasa (2012).

4.3 Research Methodology Theoretical Aspects

Jowah (2011: 81) agrees that the research method is the manner or order used in the data collection process. This is about the; how, where, and from who? During the research process, the process of expanding existing knowledge, finding a solution to existing problems, or investigating the phenomenon, an order is followed. Cleland (2016: 32) suggests that from this quest for knowledge or solutions is derived the research methodology, the general principles and guidelines based on which we gather data and analyse it into knowledge. Edin (2015:54) believes that these are theoretical analyses of the method used to gather the data for analysis and conclusions, comprising individuals, objects, groups of measurements or characteristics, depending on what is to be studied. It is a collection of related units or elements with standard variables that can be studied together to draw conclusions.

Whilst the population may be infinite, there is a research population of interest in the study. The primary reason for sampling is because the statistical sample infers the population characteristics reasonably accurately. Ferraro (2018: 2) states that the more extensive the population, the more the need for sampling, meaning census can be conducted on small populations with great accuracy. However, the cost and time constraints outwear the advantages of a census if the sample can give accurate inference of the characteristics of the population. In a census, every population object is interviewed and classified according to pre-determined biographical variables. Iqbal (2011: 87) describes the classifications for the population as to be gender, age, earning capacity, level of education or place of residence. The objective of the census is to count the number of people in the different sections of the population or their standards of living in the country, for instance. Problems with the census are it is expensive, time-consuming, sections of the population

are inaccessible, the process is very cumbersome, the fieldworkers need constant checking as they may cheat.

According to Humphreys (2017: 87), the sample will always have problems with accuracy. For instance, two researchers in the same population may not have the same findings. More often than not, they will not be able to interview the same people. Besides, even if the same people are interviewed, they may give differing responses. John (2016: 46) posits that every sampling procedure has a sampling error on the population value N. The more significant the sample, the higher the chances of getting close to an accurate answer and the lower the sampling error. Sampling also suffers from interviewer biases if the sample is not perfectly representative of the population. People may be taken from one section of a population, and generalisations made do not consider the characteristics of part of the population. Sampling biases can be corrected, unlike sampling errors which are generally too difficult to control.

The sampler may also make judgment errors during the collection of data. Northouse (2010: 43) suggests that too often, the tools and instruments used to collect the data are at fault, ambiguous questions are asked, or illegible responses also mar the research results. Kippenberger (2012: 42) support that there are specific questions considered sensitive by the respondents. Issues like sex, salaries, body mass are generally not honestly answered. Such information can be informed indirectly through well-planned planned questionnaires and well-trained field workers. These are critical assets to accurate research surveys. Jeff (2019: 43) defines research methodology thus: it explains how the techniques will be used to execute what is stipulated in the master plan, the research design. Alternatively, research methodology is methodical execution or implementation of the research plan as in the research design. The questions to be answered are generally; How will the data be collected, the interviews be conducted, observation engaged in, mailing accomplished, and the literature effectively and comprehensively reviewed?

4.4 Approach to Research

The research was conducted to projectify an approach to the rejuvenation of agriculture as the pinnacle for chronic poverty eradication; the case of Tsolo in the Eastern Cape. The relevant variables related to the problem were analysed**,** and a wide range of the literature was reviewed in this study to see if they were pertinent. According to Punch (2013: 118), the goal is also the research strategy. Furthermore, the strategy may consist of one or both qualitative and quantitative methods. It is known that quantitative methods help produce results in the form of numbers and statistical figures. Thomas (2013: 1) also mentions that quantitative methods focus on quantities and measurements that detail comparisons of quantities if (larger and smaller, more or less, similar or different). The qualitative approach focuses on descriptive data.

4.5 Target Population

Projects are often associated with limitations, so that their delivery requires careful competence and experience. The Eastern Cape has seen an increase in the demand for skills as more and more organizations adopt various development strategies in agriculture, hence the project management methodologies to enable them to survive the hostile economy. This survey was conducted purely from literature review and in Eastern Cape in an information and training institute of agriculture. Second (Jowah, 2011: 9) posits that population is the complete set of units that will be studied and analysed to arrive at an inference or conclusion. (D and Gates, 2018: 301). The paper alternatively defines 'population' as the entire group the study will obtain information from and select units of analysis. The method used to select the respondents will be random sampling. The data of the project teams involved in the training of specialists, trainers, administrators and managers will be collected.

4.6 Sampling of the Target Population

According to Burns and Burns (2012: 28), a researcher conducting an investigation may not be able to use the entire population of interest and, therefore, it may be necessary to select a part of that population and use it for analysis. Therefore, we define the sample to collect the data necessary to analyse and represent the population studied. Finally, the paper will extract inferences on the population from the sample.

Stratified sampling was selected as the preferred method for sampling. Stratified sampling is when the researcher divides the popular total into different subgroups or data (Welman et al. 2011: 24). This sampling method was chosen so that employees of different levels participating in the development of the province can participate in the survey to eliminate prejudice and ensure that it fully represents the target population

4.7 Sample Size

Collis and Hussey (2019: 209) argue that a sample is a subset of the total population being evaluated. Therefore, several factors are considered when selecting a sample. When selecting a sample, the factors include population, costs, time, parameters of interest, and sample size (Blumberg, 2018: 237). However, Gerrish and Lacey 2010:147 mention that when choosing a sample, the researcher may need to calculate the standard variation to observe the differences in variability.

The sample used in this research is 100 from the total of population 7,794 (Census updated 2011), who comprise Tsolo residents, the community the research identified the subject for study. These residents are involved in the daily implementation of any agricultural activity. Furthermore, the

data collected from the literature was reviewed to formulate some general opinions that are relevant to the main research question.

The characteristics of the researched sample are shown in the following table.

Figure 4.2: Population Distribution

Population groups	Number of the responded	Percentage
Black	86	86.3 %
Coloured	8	8.3%
White	5	4.7 %
Indian or Asian	1	0.4%
Languages	**Number of the responded**	**Percentage**
Xhosa	79	78.8%
Afrikaans	12	10.6%
English	6	5.6%
Sotho	3	2.5%

Source – StatsSA (2017/18)

This is the actual number, 7 794, of individuals in the sample. This includes the entire target population. The research is being done in the Mhlontlo Local Municipality. The sampling frame is the district HR database which lists the names and contact details of every ward.

Systematic sampling is adopted:

Individuals are selected at regular intervals from the sampling frame. The intervals are chosen to ensure an adequate sample size. For example, from a population of 7 794, every population/nth individual will be selected for the sample. Thus, if a sample size of 300 from a population of 7,794 were required, the formula used would be 7 794/300 = 25,98th members of the sampling frame (Mukembo, 2015: 25). Even though, in this case, the bias is obvious and should be easily corrected, this may not always be the case.

4.8 Data Collection Method

The primary tool mainly used to gather information from the literature survey was a questionnaire composed of open and closed questionnaires. According to Panneerselvam (2014: 14), five steps must be followed to get an effective questionnaire. These include the identification of research problems and the hypothesis. Secondly, it is necessary to ask the questions and decide the desired

format to use. Next, it is necessary to evaluate the appropriate formulation for the questions. Furthermore, the sequence of questions should be reviewed, and therefore a previous test should be performed to reduce the possibility of errors and distortions. Finally, a final review of the amendments and corrections is necessary.

The primary tool that was used to gather information in this model was the pure reviewing of literature. In addition, more sources were studied concerning the central question under consideration. The researcher is looking forward to testing the model to provide a solution to the crises at hand. Questionnaire was used to collect data, this was done to identify any bias, incorrect formulations or ambiguities and findings that could be present in the sources. The investigator noted slight discrepancies and ensured that they were modified before concluding on the collection method.

4.9 Questionnaire Design

This is the primary tool that was used to gather information in this model, as well as the pure reviewing of literature. More sources were studied concerning the central question under consideration. The structure of the questionnaire used to support literature reviewed together the additional information was relevant because the first section is where the respondent is required to provide the information based on the biography, followed by open-ended questions then closed questions. This was done to identify any bias, incorrect formulations or ambiguities and findings that could be present in the sources. The investigator noted slight discrepancies and ensured that they were modified before concluding on the collection method.

4.10 Data Analysis

Babbie et al. (2018: 583) indicate that the statistical program for the social sciences [SPSS] is useful in collecting, evaluating, and critically examining the data collected. Furthermore, this software is easy to use and helpful in visualizing correlations and cross tabs. However, it is vital to ensure that the data analysis is evaluated in such a way as to address the objectives, questions and hypotheses of the research. According to Baxter and Pack (2018: 454), the purpose of data analysis is also to ensure that the variables' impacts, relationships, and impact are assessed and compared with the environment. Data collected edited, cleaned and coded before captured on SPSS for analysis, this will help establish the relationship between challenges success of agricultural activities.

4.11 Sampling bias

The researcher has chosen a representative sample that crosses the various locations of Tsolo and at different levels of municipalities to eliminate any form of prejudice during the investigation.

Sampling distortion occurs when a particular group is preferred in a population and is more likely to be selected than others. To combat this, Collis and Hussey (2019: 209.) suggest using the random sampling method to give all population participants equal opportunities to be selected. Distortion occurs when an unexpected factor obscures the precise compilation of data that can mislead the investigator's results. Therefore, a sample of bias is different from the population under examination (Johnson and Christensen 2012: 217). Therefore, the researcher must make a conscious effort to control the distortion from and through random samples to ensure that each participant has the opportunity to be selected. The researcher paid attention to this and selected the sample without prejudice.

4.12 Ethical considerations

According to Brian and Burstow (2018: 109), the ethics of research is linked to the protection of the integrity of the interviewees and the protection of their rights during the entire process of carrying out the investigations. Ethics forces the researcher to treat the interviewees with respect and confidentiality during the entire investigation process. First, the researcher must be ethical in recruiting candidates. They should not force or force anyone to participate in the process. It is easier to work with respondents who are willing to participate in the survey. Secondly, although the researcher may know who the interviewees are during the entire investigation process, he cannot use it against them, even if they are in an imbalanced power relationship that favours the researcher.

Finally, when the results need to be published, the researcher must maintain professionalism and confidentiality. In light of this, during this study, anonymity was underlined, and the arrangement was considered essential throughout the process. Respondents were informed that their names and details would not be disclosed at any stage of the study. The organization itself also had the certainty that the research carried out would only be for academic purposes. The researcher will also adhere to professional conduct as requirements of the ethics committee of the Cape Peninsula Technology University, Wellman et al. (2015: 201) agree with the above and emphasize that primarily a researcher should consider the following ethical factors when conducting the investigation:

1. privacy
2. Informed consent
3. Damage protection
4. the involvement of the researcher in the study

As a form of support, the researcher will clarify respondents in areas that they may not understand. It was again stressed that they were free to express their opinions without fear or prejudice. The researcher also had time to express the objectives to the interviewees to understand the purpose of the study.

4.13 Limitations of the Study

The study mainly focuses on rural households based in the Eastern Cape province, Tsolo area. However, the various areas around Tsolo ensured that the group was diversified and included technical and non-technical employees involved in the various implementation phases with the Provincial projects. This was the combination of management, administrators, facilitators, consultants, moderators and specialists who completed the questionnaires.

4.14 Assumptions

The participants participated freely in this survey and gave authentic answers to the questions in the questionnaire. The questions included in the questionnaire were not insensitive and did not offend or discriminate the respondents based on race, creed, religion or any other factor. The research will benefit the organization in which the research was conducted and will contribute even more to project management professionals. Any project manager involved in the process will not limit data collection, even if a conflict of interest arises. Respondents fully understood the language used—English—and had sufficient time and resources to complete the questionnaire.

4.15 Summary

The purpose of this chapter was to work out the methodology that will put into use the model of a project-based approach to the rejuvenation of agriculture as the pinnacle for chronic poverty eradication; the case of Tsolo in the Eastern Cape. This chapter was based on some structure of the research to be undertaken to solve a problem or answer a research question. It is a series of the logical decision-making process where choices have to be made to be aligned with the purpose of the study, how to conduct the study (whether exploratory or descriptive), the setting of the study in the whole research mix, and conformation to expected norms (existing investigation research techniques), and the ability of the researcher to influence the process (Jowah, 2011: 66). Research is a process that collaborates with objective methods and procedures to acquire scientific knowledge that can be used to derive solutions to identified problems. Welman, Kruger and Mitchell (2015: 2). Testing the methods to verify their validity and reliability may be necessary before assessing whether they are currently authentic to address the problem in question.

The research carried out has been conducted, and its results will be incorporated into the area of Tsolo in Eastern Cape to eliminate the conditions that cause agriculture to decrease the value in

the rural community. The next chapter discusses the research methods used to obtain the results of this study. According to Collis and Hussey (2019: 3), research can be applied to obtain the information needed to solve problems and increase knowledge. This is due to its mathematical and systematic nature and also because it is a process.

Chapter 5 Data Analysis and Interpretation

5.1 Introduction

This chapter analyses and interprets the research findings, which will be illustrated utilizing different graphs, bar charts, pie charts, figures and tables. The objective of the investigation is to construct a model that can projectify agriculture to eradicate chronic poverty. This will assist in developing a model that can assist all communities in taking agriculture as their primary source of sustainability. The setting for the research was to be understood from both the economic and social aspects of the communities in the Tsolo district. The population is inclusively black coming mainly from the surrounding. The Tsolo district is characterised by high levels of semi-literacy, lack of skills and unemployment.

5.2 The Empirical Investigation and Objectives

The study showed that most community members have a passion for agriculture and sustaining their livelihood. The main barriers are scarce resources and theft. Lack of support from the government. Lack of knowledge with regards to farming.

5.3 Data Analysis

Jowah (2011: 89-95) states that data analysis is a process undertaken to convert the raw data into practical information by converting the data to illustratable diagrams from which relationships of the variables are identified. Thus, the collected data was edited, cleaned, coded and then captured onto an excel spreadsheet from whence the charts (bar, pie), graphs, histograms, and frequencies distribution tables were constructed. The following is a detailed report on the relationships identified between the variables and the ensuing explanation of the illustrations.

5.4 The Reporting Method

The reporting format has been deliberately structured to provide specific information for specific questions in the order in which they appear in the research instrument. The need for adopting this method was precisely to avoid overshadowing other questions and responses and the reporting.

Therefore, the intention is that all the high points will be covered under conclusions and recommendations, which appear in the last chapter. The format, therefore, involves the question or statement to be ranked, as it appears in the research instrument, this is followed by a response on a question-by-question basis. Since the questionnaire was divided into three sections, namely:

- Section A – Biographical Information,
- Section B – Likert scale questions
- Section C – Open-ended questions.

This same order and format are followed in the reporting. The findings are reported under responses, with each response followed by an illustration as constructed from the research data.

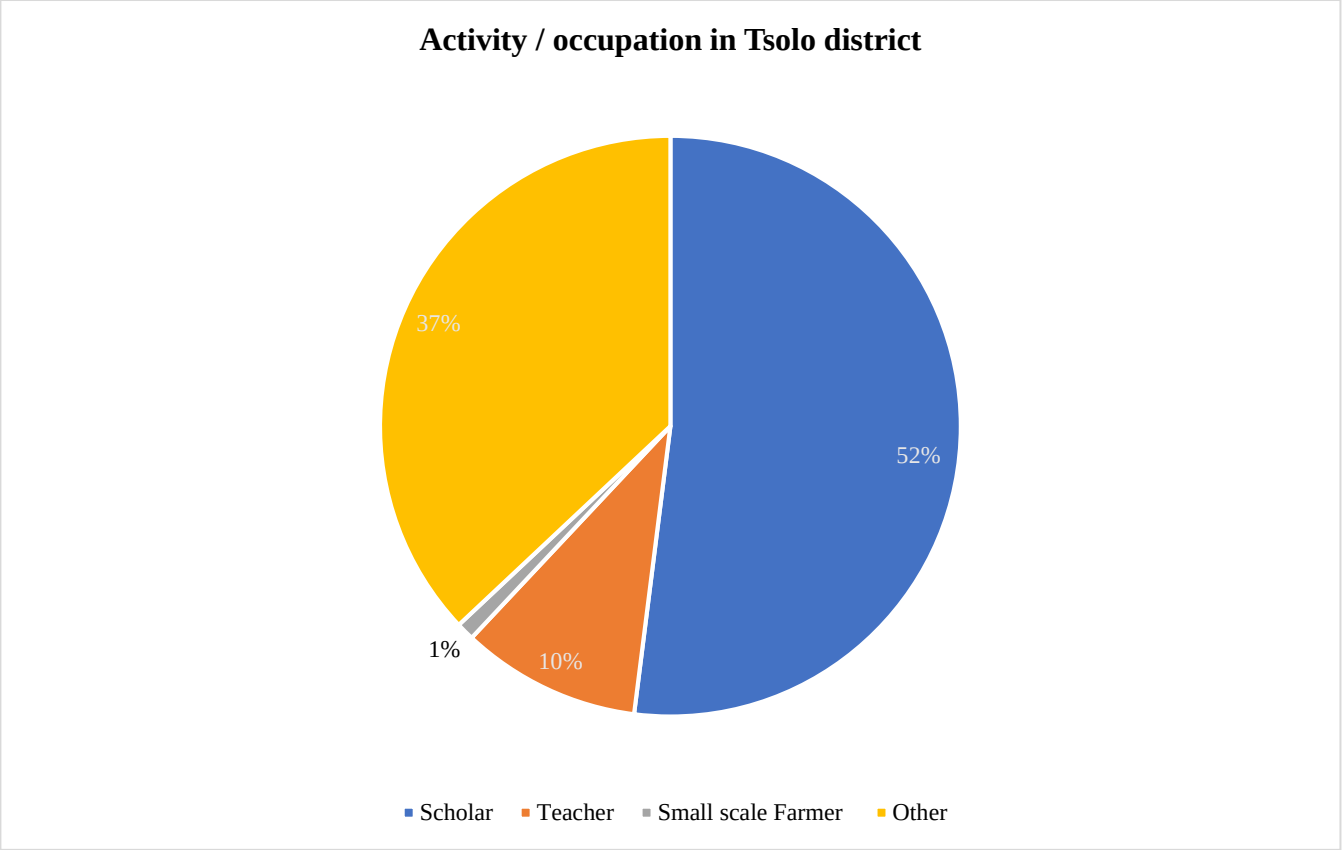
5.4.1 Section A: Biographical information

This section focussed on the biographical information used to qualify the respondents and determine those that may not be ideal for the research. Thus, this section explicitly dealt with the biography of the respondents, primary to investigate the suitability of the candidates for the survey.

Question 1: What is your status / activity / occupation in Tsolo district?

Response: The response is illustrated in figure 5.1 below; the district comprises all kinds of occupants. Some of the subjects were not interested in participating in the survey. The respondents were separated into Scholars, Teachers, Small-scale farmers, and Others. Half of all the participants in this research were Scholars (52%), with a small number of Small-scale farmers (1%). This, therefore, shows that in the district, farming is not highly considered.

Figure 5.1: The status/activity/occupation participating in the survey



Source: Author's construction.

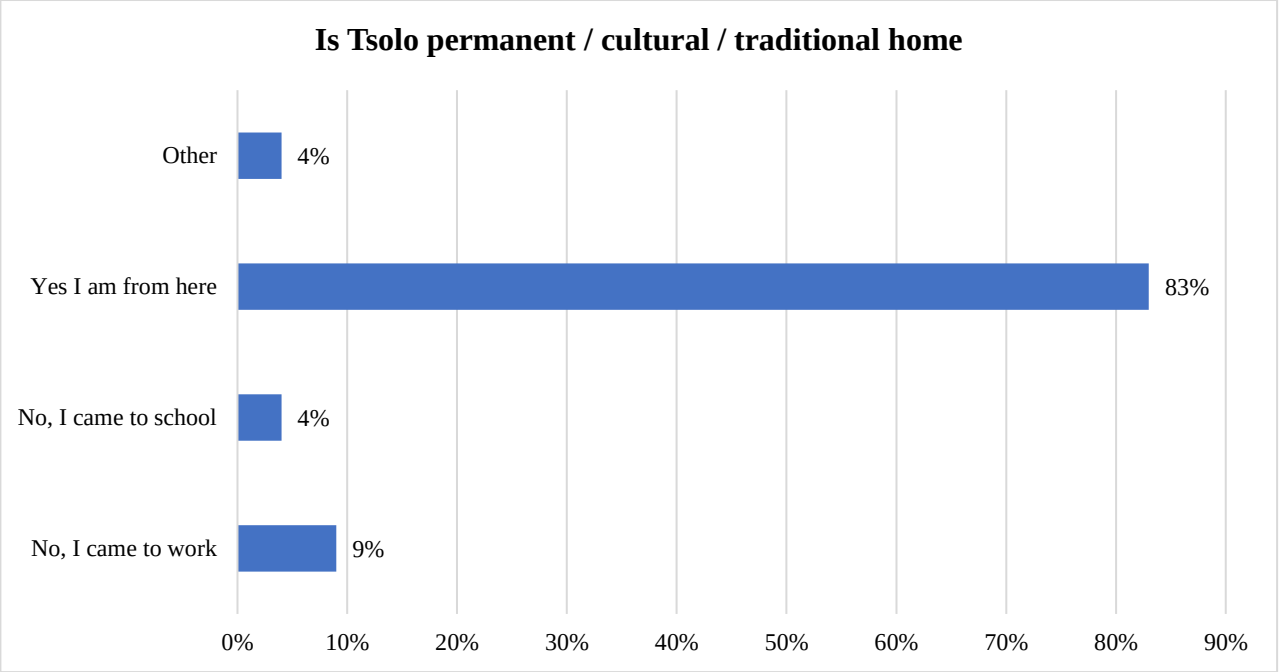
Question 2: If other, please specify in space below.

Response: Knowing that South African provinces are different from each other regarding minerals, resources and economic activity, the survey recognized the important contribution of those in the district who had come there for employment or others from the district who were willing to be employed but were not able to find employment. Both groups were willing to participate in the research.

Question 3: Is Tsolo your permanent/cultural/traditional home?

Response: This question was asked with the understanding that not everyone was initially from the area, as mentioned above, that the provinces are different in economic development.

Figure 5.2: Permanent/cultural/traditional home



Source: Author's construction

Most of the respondents were people that were born in the district (83%), followed by the ones that came to work (9%), followed by a group of students (4%), followed by other (4). Thus, the findings agree with the known fact that persons from the district do not consider agriculture as a source of food, with 83% from the area leading the way in this thinking.

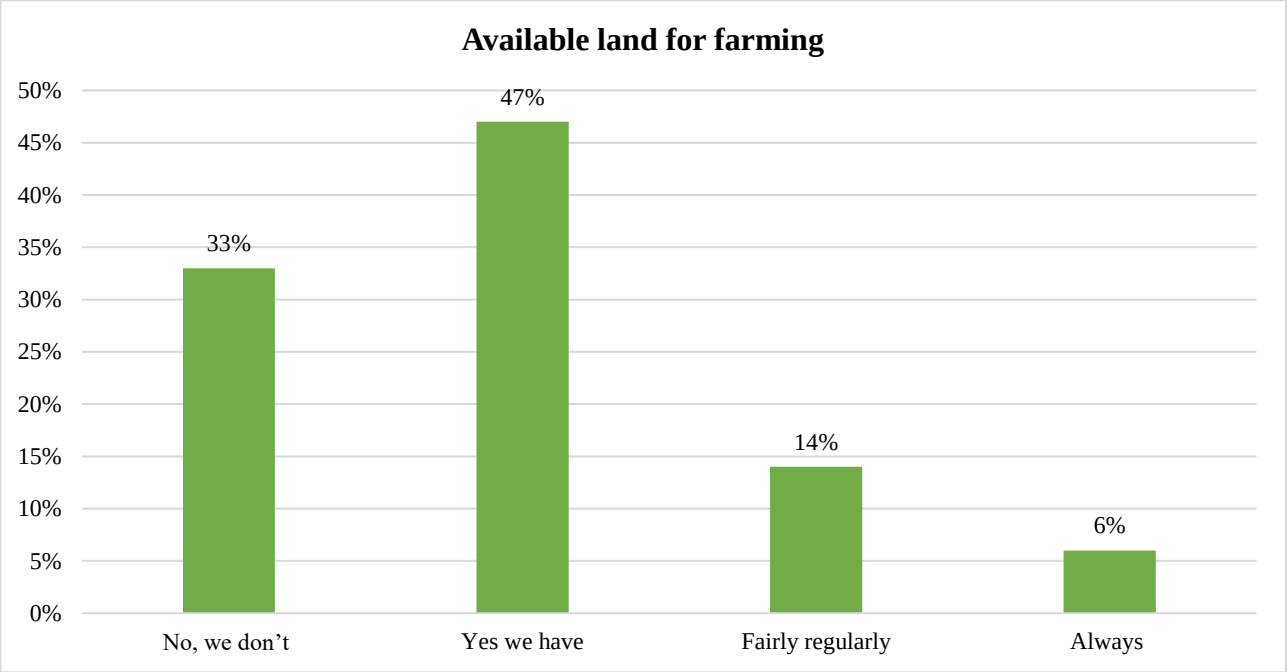
Question 4: Other please specify.

Response: Knowing that South African provinces are different from each other with regards to minerals, it was estimated the importance of those who are in the district to work but willing to participate in the research

Question 5: Do you or your family have land that you can farm?

Response: Figure 5-3 below shows that most of the respondents have the land available for farming (47%), followed by those who do not have at all (33%), the fairly regular, that have availability of small gardening in their yards (14%) followed by those who always have (4%), meaning those do not even to rent the land.

Figure 5.3: Available land for farming

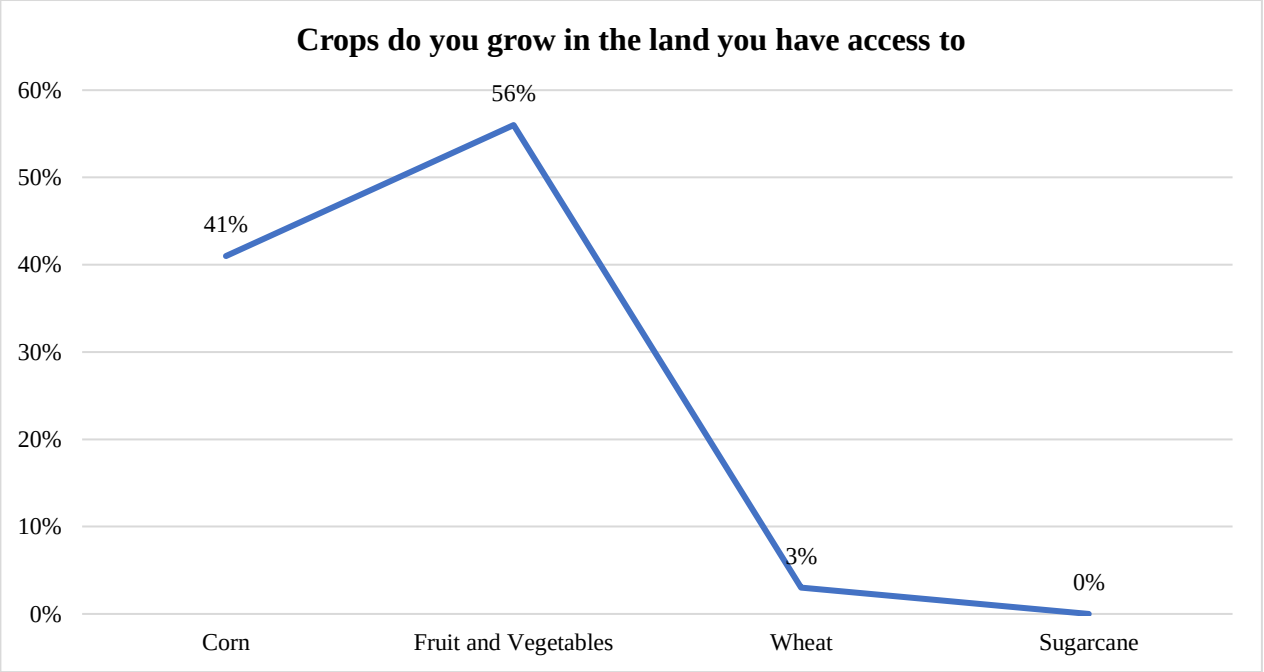


Source: Author's construction

Question 5: What crops do you grow in the land you have access to?

Response: Most of the respondents were perceived to have access to land by the researcher. Through asking this question, the researcher had in mind that most defaulters they have known how to crop. Figure 5-4 below depicts the results obtained.

Figure 5.4: Crops you grow to which you have access



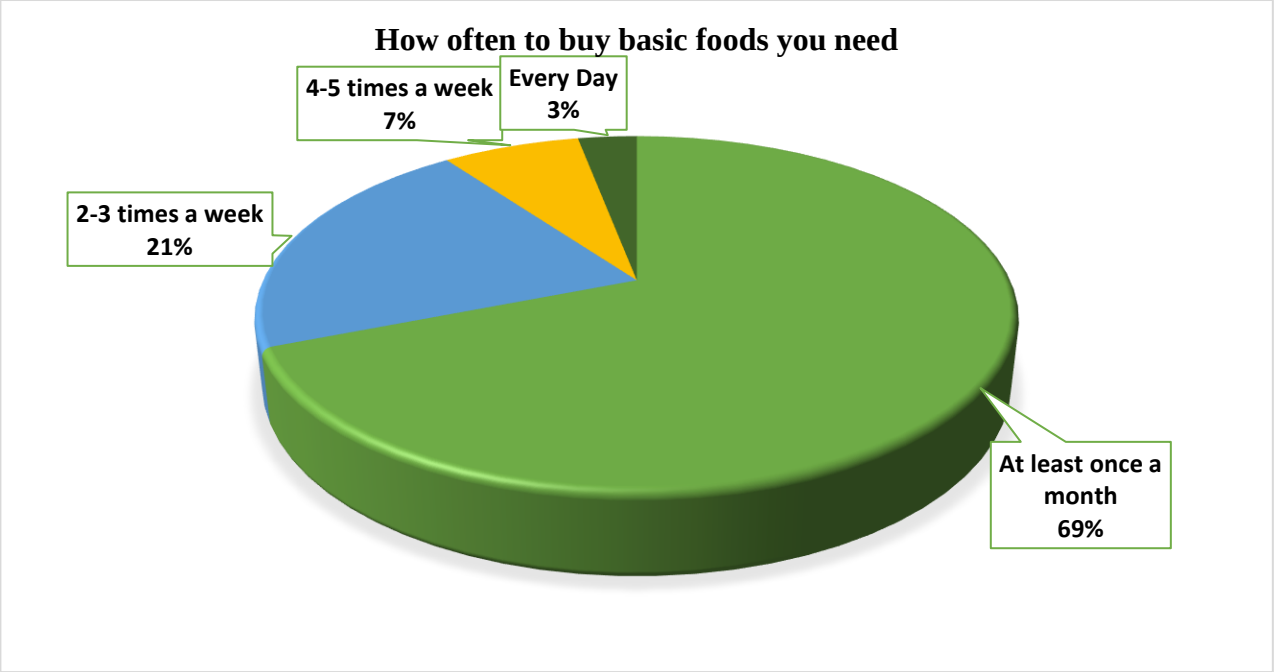
Source: Author's construction

Many respondents grow fruit and vegetable (56%), followed by those who grow corn (41%), followed by those who grow wheat(3%). These results proved or clarified the researcher's perception. This means that those with access to land need to grow on a larger scale, meaning growing for their families and growing to sell.

Question 6: How often do you buy basic foods you need?

Response: Most of the respondents were perceived to have access to land by the researcher. Through asking this question, the researcher had in mind that most community members they had known how to crop. Figure 5-5 below depicts the results obtained.

Figure 5.5: How often are basic foods bought



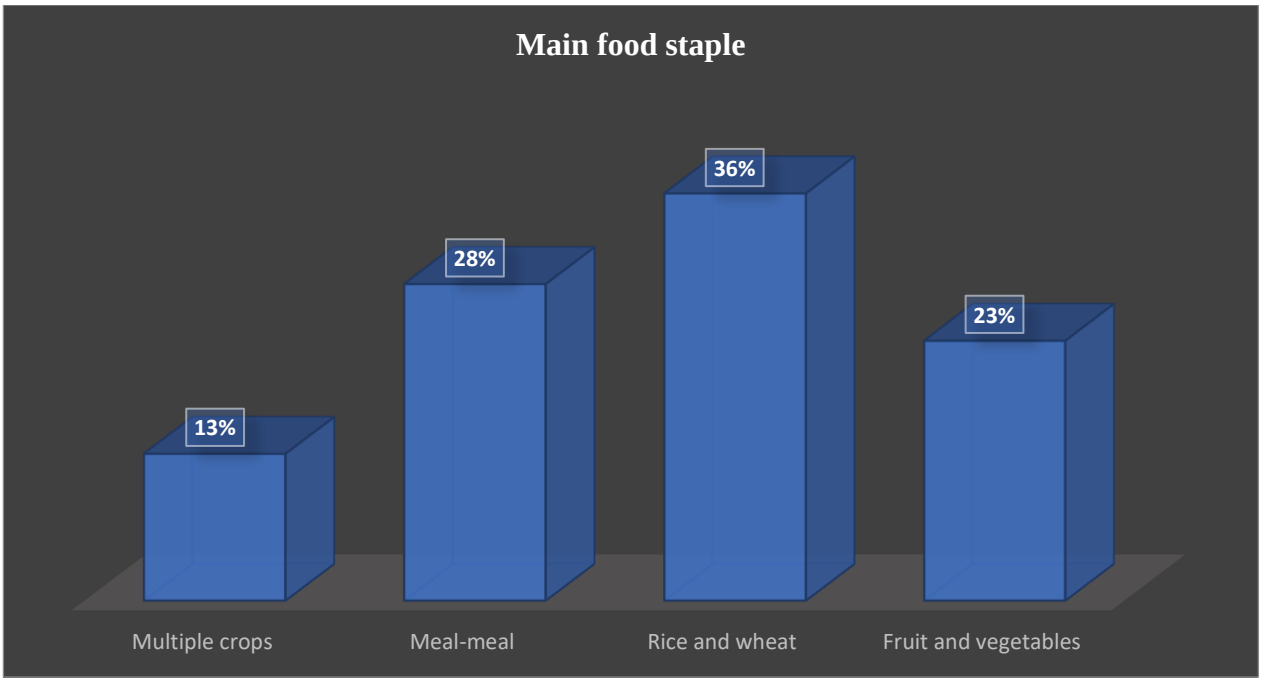
Source: Author's construction

The question had not explicitly required the respondents to state why they buy specific food at that specific time or season, but the indication is that 69% at least they buy once a month, 2-3 times a week (21%); 4-5 times a week (7%); every day (3%) this seem to say whatever they buy from the market they buy on a large scale to last for the month. Therefore, it can be generalized that the majority prefers to buy from the market than grow for themselves, so if a community member can decide to grow to sell, there are high possibilities of higher returns.

Question 7: What is your main food staple?

Response: Through asking this question, the researcher had in mind that most community members they had known when to crop. Figure 5-6 below depicts the results obtained. Though most community members have access to the land, they still do not prefer the same food staple. Most of the respondents were perceived to have access to land by the researcher.

Figure 5.6: Main food staple



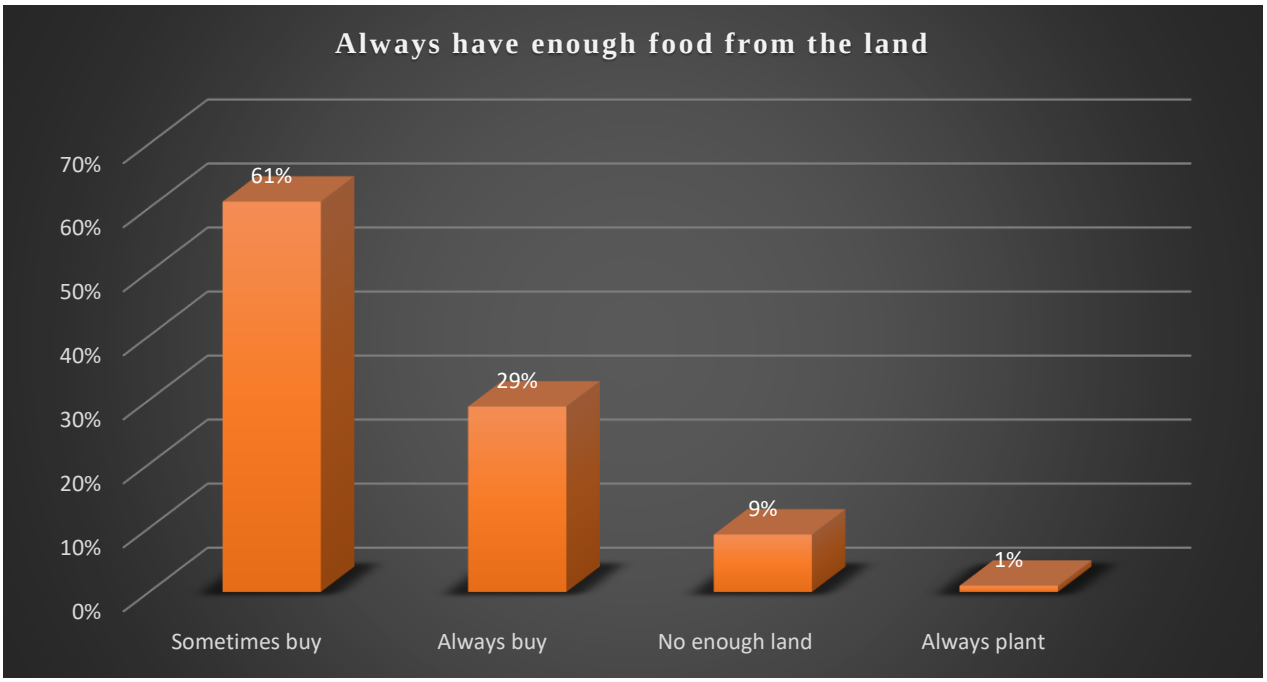
Source: Author's construction

Rice and wheat (36%) are the most preferred crops. Meal-meal is at (28%) with Fruit and Vegetables (23%) and other crops (13%).

Question 8: Do you always have enough food from the land, or do you buy some?

Response: Through asking this question, the researcher wanted to determine whether the respondents buy food out of need or want.

Figure 5.7: Always have enough food from the land



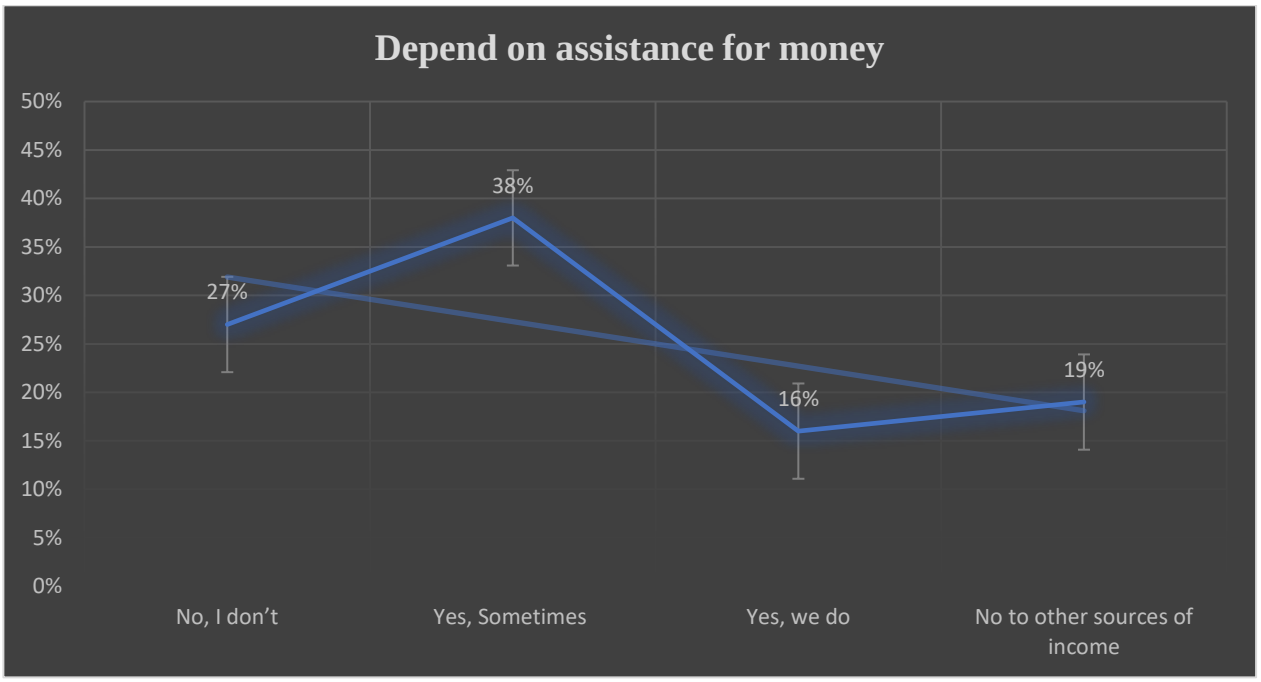
Source: Author's construction

Figure 5-7 above illustrates the results obtained through the buying decision, influenced by the food shortage challenge. However, it is evident because people buy food sometimes even if they have land, but in this case, they just prefer to buy because most of the community members have access to the land, but still, they buy sometimes (61%); Always buy (29%); Not enough land (9%) and Always plant (1%).

Question 9: Do you depend on assistance for money from children in town somewhere?

Response: Most of the respondents were alleged to be dependent instead to make money on their own. Through asking this question, the researcher sought to determine if most participants had access to land. Figure 5-8 below represents the results obtained.

Figure 5.8: Depend on assistance for money



Source: Author's construction

The findings represented above in Figure 5-8 demonstrates that most people would instead ask for other means of surviving than utilising the natural resource at their disposal. Because most respondents agreed that yes sometimes (38%); (27%) No they don't; Then (16%) they do, and then (19%) do rely on other sources of income. This simply means that most community members of the Tsolo district do have access to most resources because other than waiting for resources subsidies, the money they receive from their spouse can be used to obtain needed supplies instead of developing alternative sources of income, such as from agriculture.

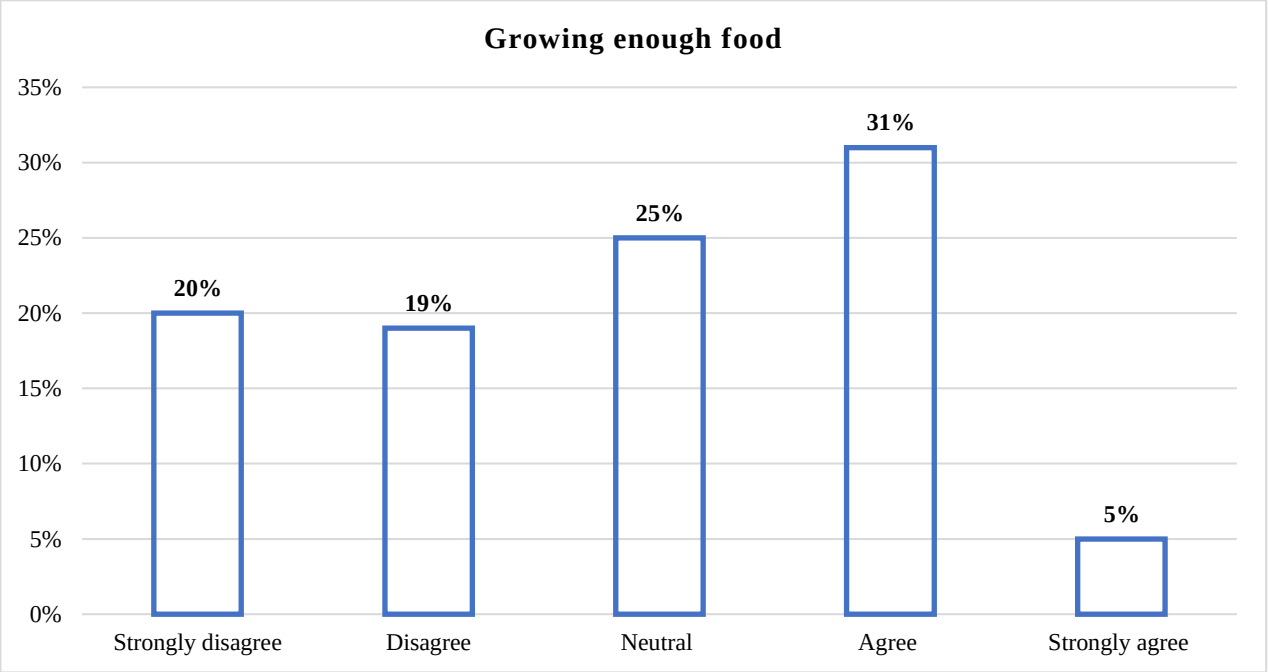
5.4.2 Section B

In this section, statements were developed based on the literature review on agriculture as a project in order to rejuvenate poverty. These statements were to be ranked by the respondents on a 1-5 scale; 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. This section was divided into sections and the statements to be ranked focused on the specific areas and subjects for which evaluations were required.

Statement 1: We grow enough food for ourselves every year

Response: The respondents seem to agree that they are capable of growing their food themselves. Figure 5-9 below support the findings from the members of the community within the district of Tsolo.

Figure 5.9: Growing enough food



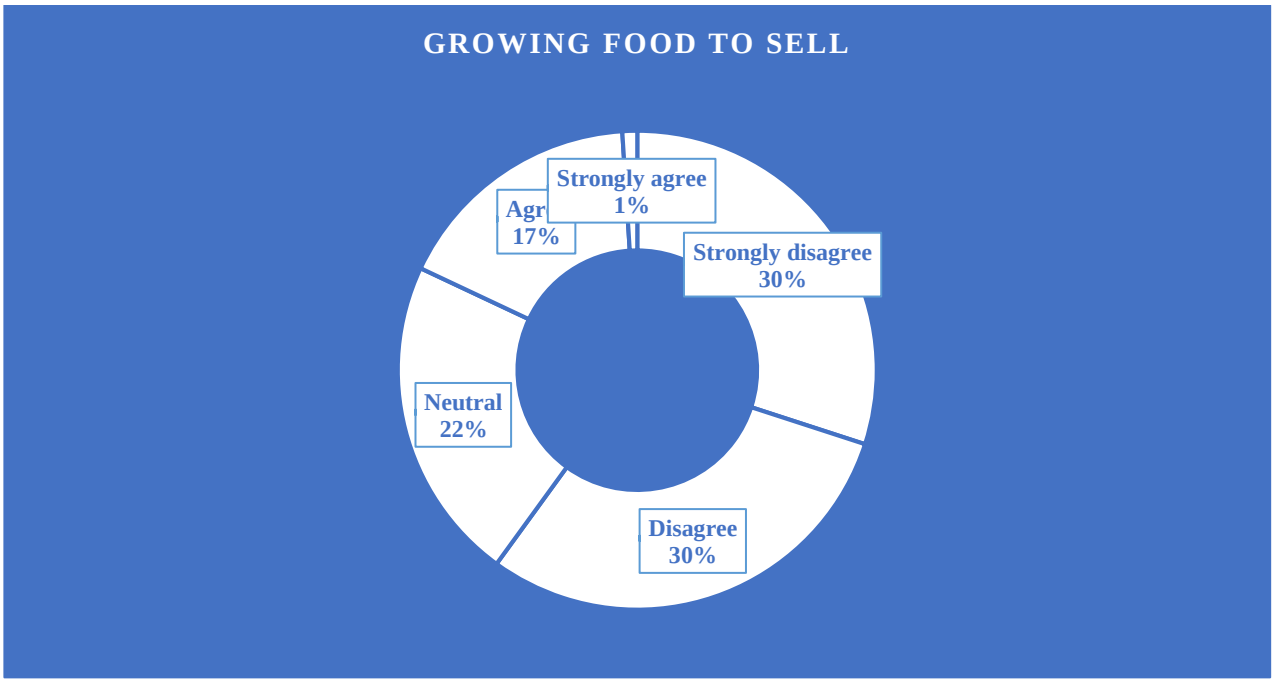
Source: Author's construction

From the findings represented above from figure 5.9, people of Tsolo district can grow food to sustain themselves and shy away from poverty because (31%) agreed; (19%) disagreed that they can grow enough food for themselves. Whereas (25%) do not sure. Then (20% and 5 %) strongly disagreed and agreed, respectively.

Statement 2: We grow food that we regularly sell to the market

Response: The researcher intended to clarify if people of the community cannot grow food for themselves, can they at least grow to sell. The figure below illustrates the findings from participants of the Tsolo district community.

Figure 5.10: Growing food to sell



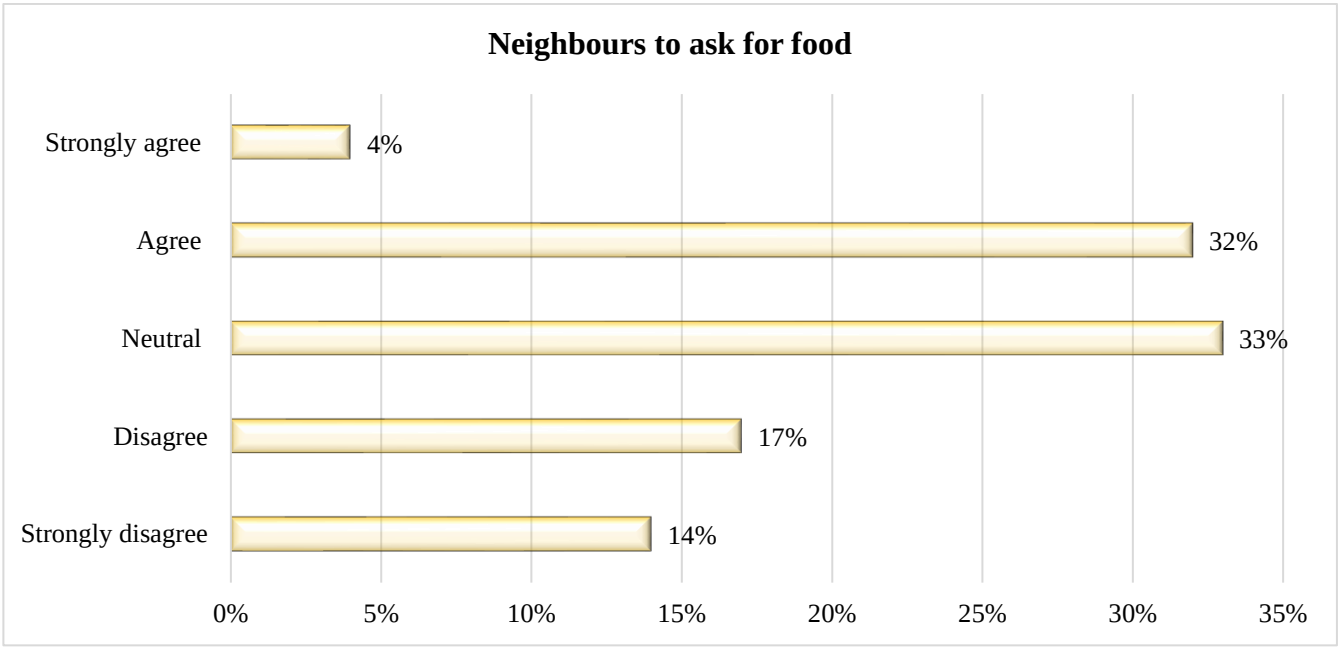
Source: Author's construction

Figure 5-10 above shows that (30%) strongly disagree that most people grow to sell. Only (1%) strongly agreed, and (17%) agreed that they grow food to sell.

Statement 3: Neighbours always have to ask for food from us

Response: Here, the researcher seeks to confirm that if the rest of the community does not know how to grow food themselves, does the rest of the community share.

Figure 5.11: Neighbours to ask for food



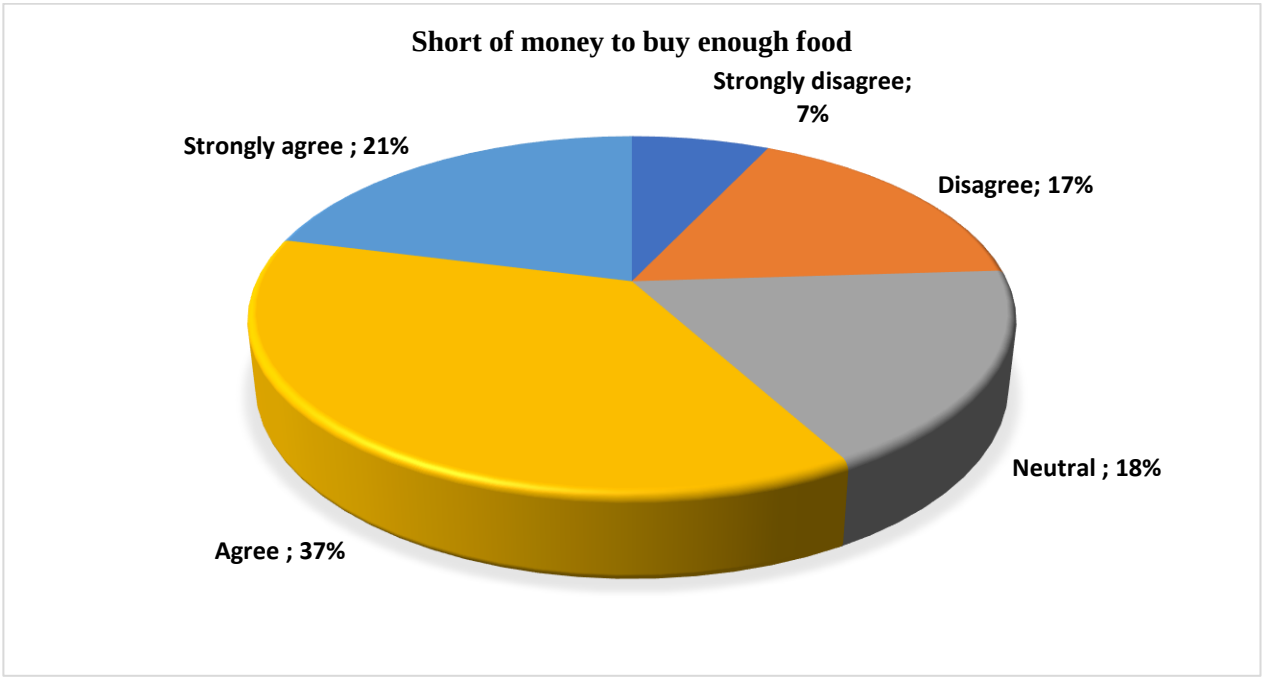
Source: Author's construction

The participants seem to agree with the fact that when others do not have food, they share. Because (32%) agreed, (33%) Neutral; (17%) disagreed and strongly disagreed (14%).

Statement 4: We are always short of money to buy enough food

Response: The assumption was made that some households have enough land to grow food for themselves, hence the earlier question on whether they have enough land to grow enough food. The responses are given in the pie format below in Figure 5-9.

Figure 5.12: Short of money to buy enough food



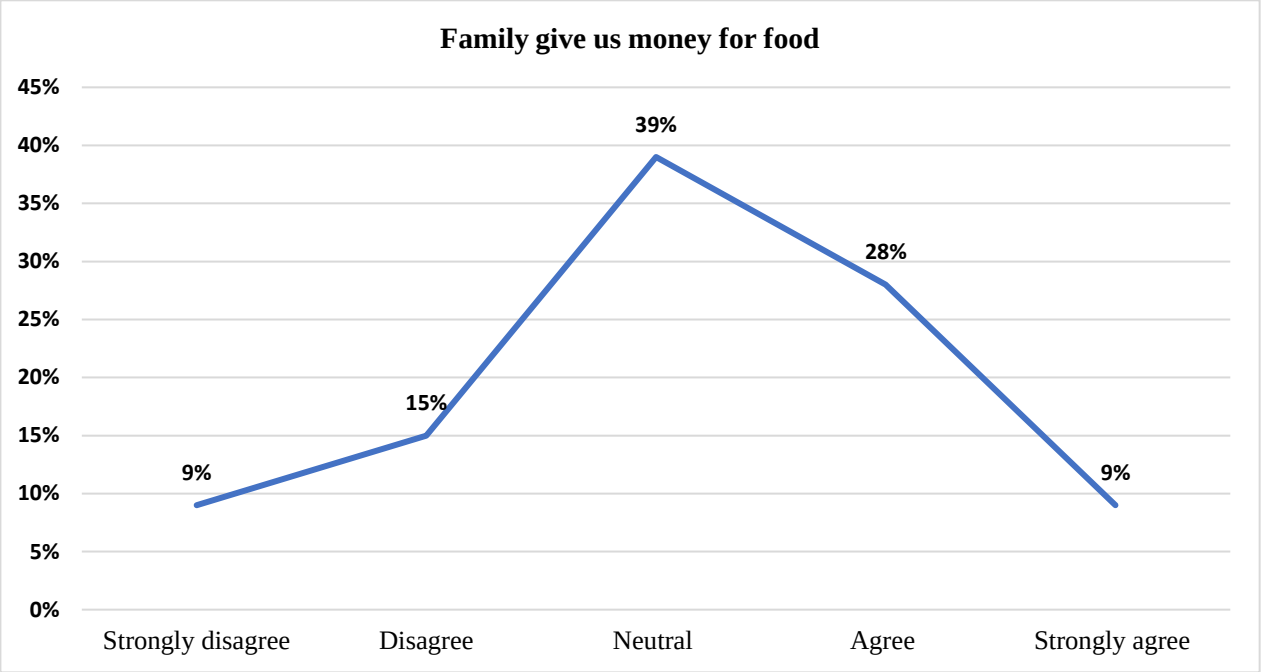
Source: Author's construction

Most households are always short of money to buy food because 37% agreed and 21% strongly agreed. On the other hand, 17% and 7% disagreed. Hence, it can be generalised that most ignore the fact that they grow enough food for themselves.

Statement 5: My sons/daughters/sisters - give us money for food

Response: It was assumed that most households would rather ask for money from their sons/daughters/sisters money for food. Considering that most people agreed on the earlier questions, they have enough land to grow for enough food. The following figure illustrates the findings.

Figure 5.13: Family give us money for food



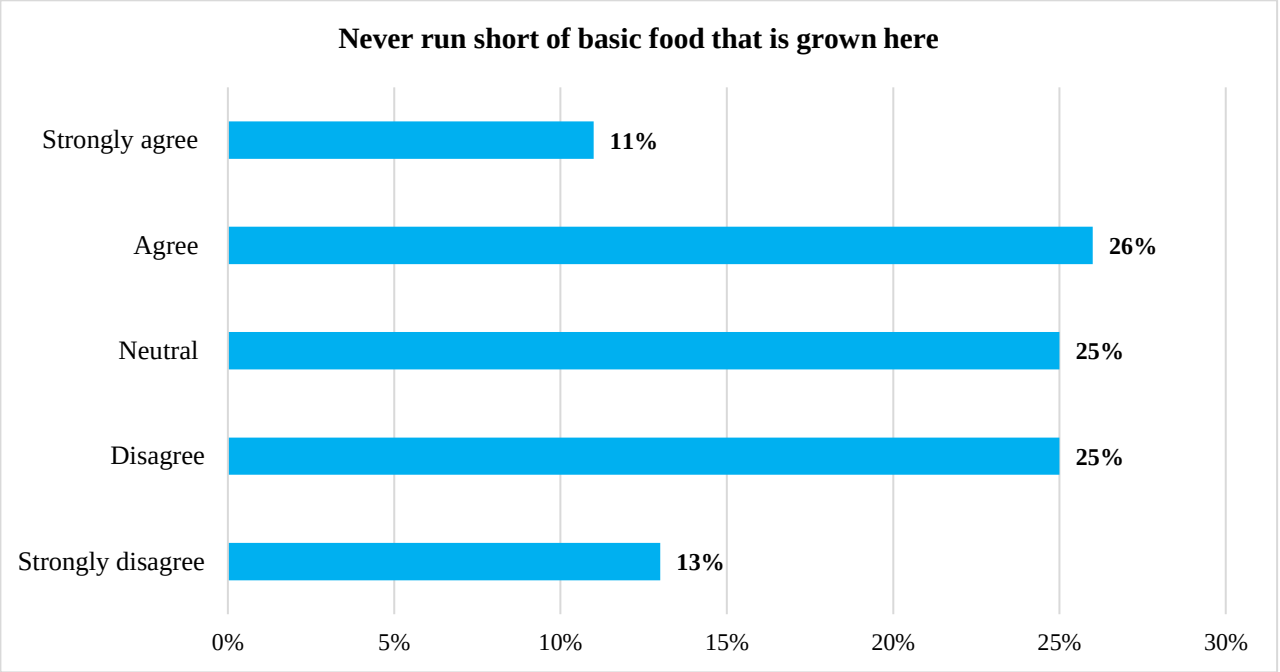
Source: Author's construction

Many households seem not to disagree or agree that their sons/daughters/sisters provide the money for food. Because for the first time neutral 39% become the highest percentage. However, 28% agree that their extended families assist; then 15% disagree, and both strongly disagree and strongly agree 9%.

Statement 6: We never run short of basic food that is grown here

Response: The respondents were expected to support their side of the story that which crop grow well from the land of Tsolo. The finding in the following figure portrayed in the bar graph will support that.

Figure 5.14: Never run short of basic food that is grown here



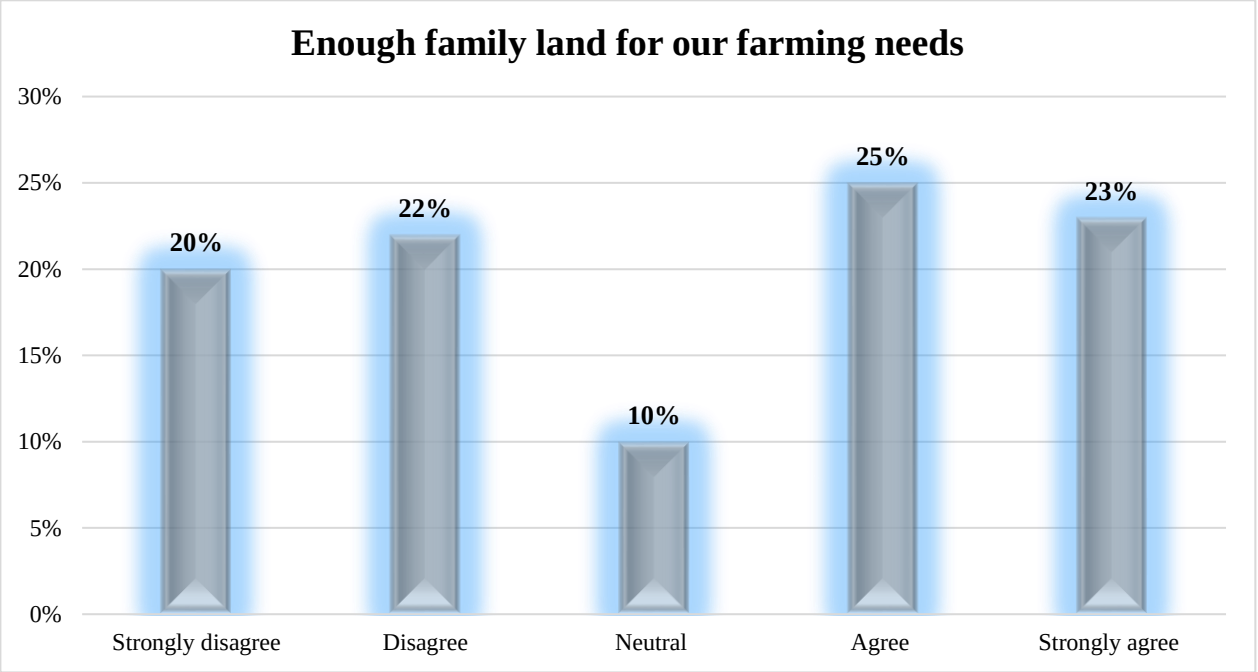
Source: Author's construction

Neutral has escalated to 25%, with those disagreeing at a total of 38% (13% - strongly disagree and 25% - disagree). No generalization can be made on this issue, with those agreeing standing at a combined 37% (strongly agree – 11% and agree – 26%), meaning that not many people seem to be run short of basic food. It should be cause for concern since there are no decisive "happenings" to allow for generalisations.

Statement 7: We have enough family land for our farming needs

Response: It was perceived that Land is not an issue in the district. Since the researcher assumed that the area households complain a lot about access to resources, it was anticipated that most of the families have enough land.

Figure 5.15: Enough family land for our farming needs



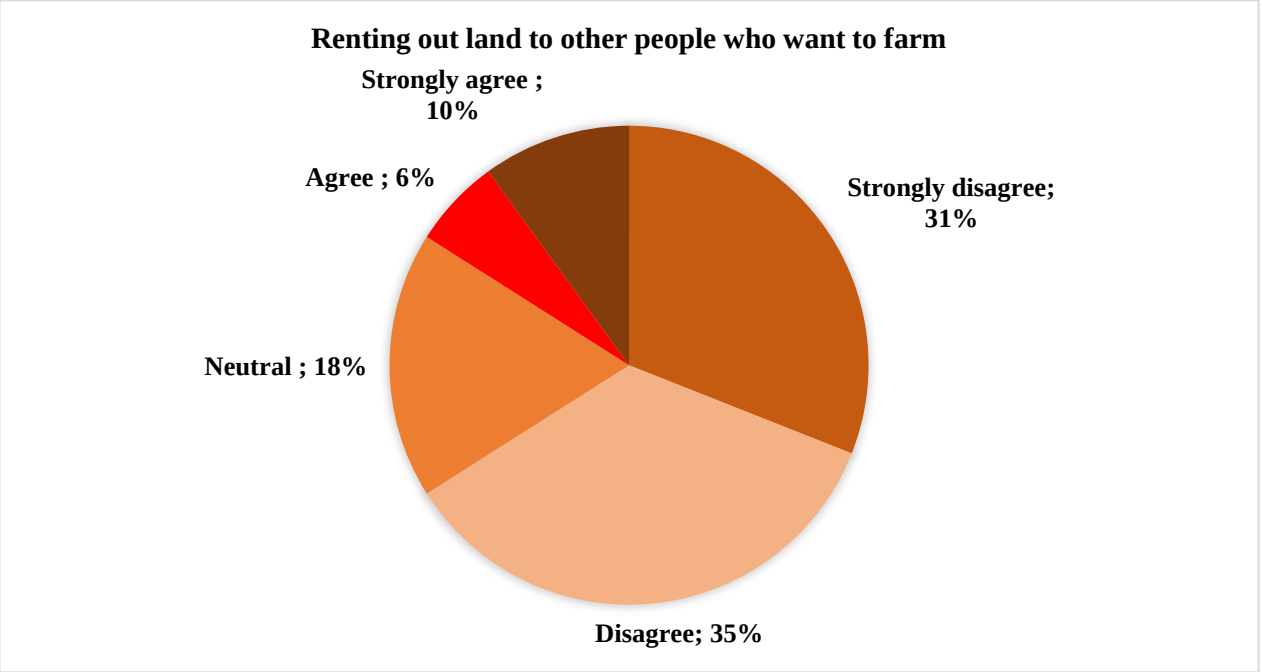
Source: Author's construction

The findings illustrated above show that there are contradictions between what is enough land. Because 42% (20% Strongly disagree and 22% disagree) from 48% (25% agree and 23% strongly agree) supposedly the reason seems to be the differences between enough land. Only 10% neutral.

Statement 8: We rent out land to other people who want to farm

Response: The researcher had perceived the fact that Land at Tsolo district is not an issue. The results would be illustrated in the pie chart below.

Figure 5.16: Renting out land to other people who want to farm



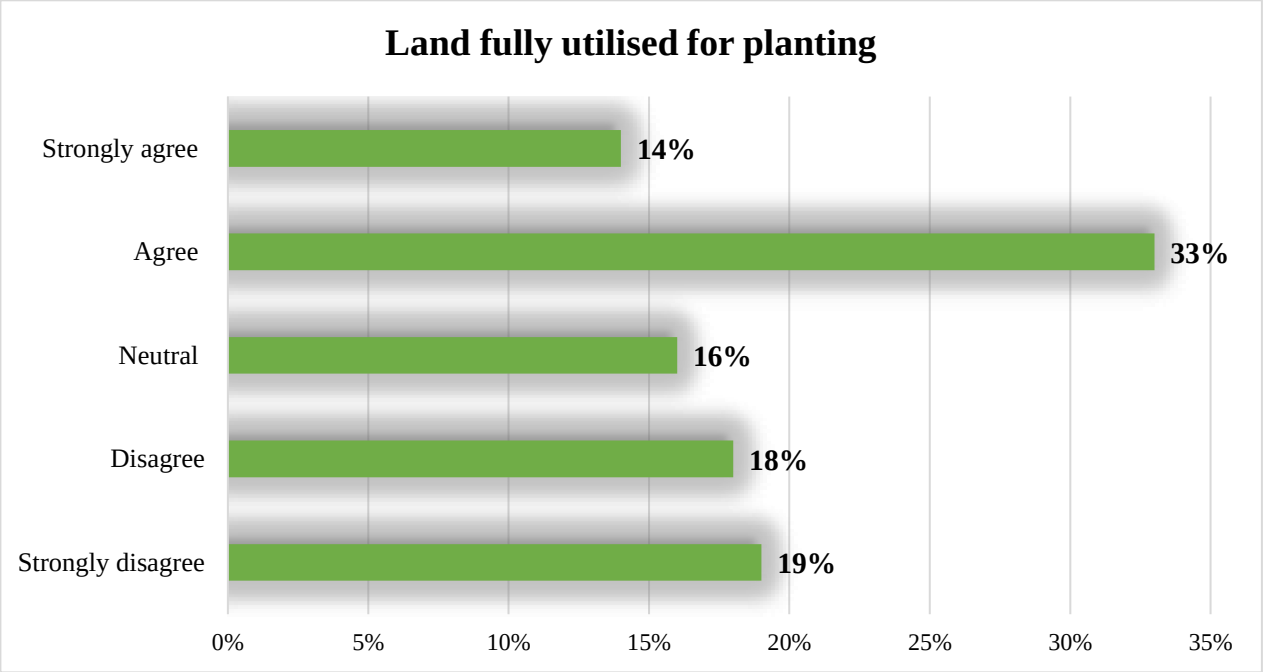
Source: Author's construction

The findings suggest that though there is enough land in the district, renting it out to other people to utilise does not seem viable at all. Because more than half, 65%—31% strongly disagree and 35% disagree—few respondents agree to rent their land.

Statement 9: The land we have is always fully utilised for planting

Response: There is a perception that land in the area of Tsolo is not enough. Here the researcher will figure out from the findings below.

Figure 5.17: Land fully utilised for planting



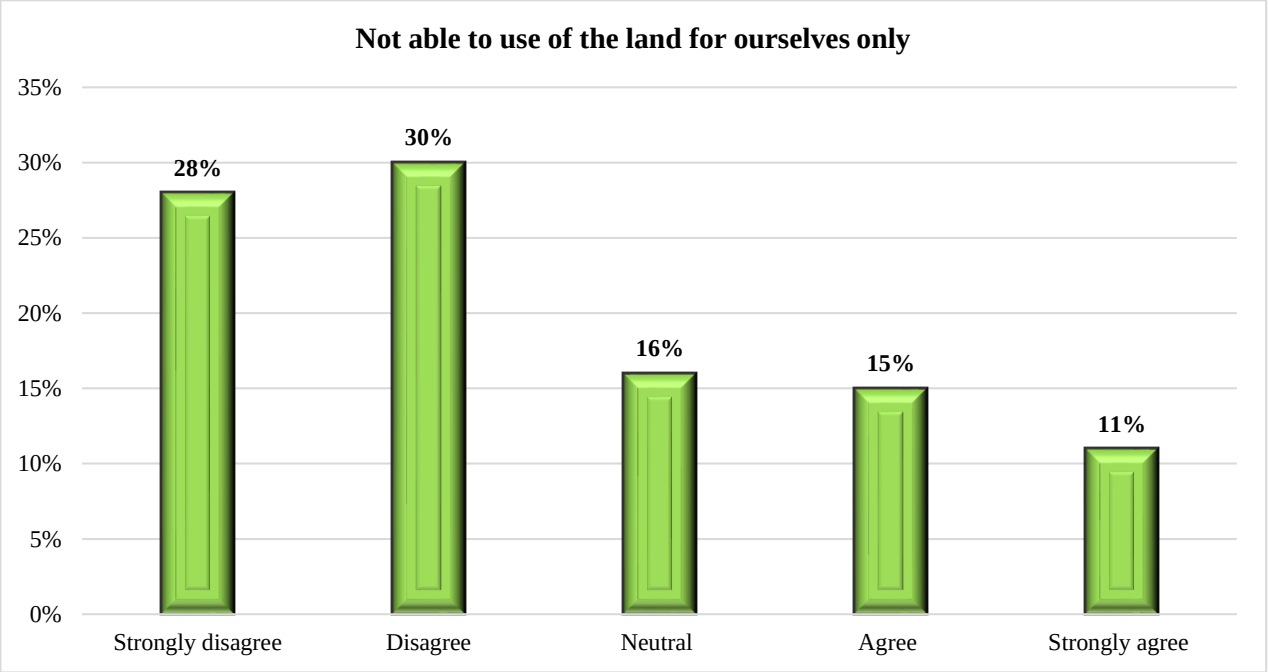
Source: Author's construction

The land in the area seems to be fully utilised because a significant 33% agreed that it is fully utilised, almost equal to 37% (of strongly disagree and disagree).

Statement 10: We are not able to use the land for ourselves only

Response: This statement is meant to try and gauge the extent to which the households ask for money to buy food but never to buy resources, in as much as they use the money to buy resources to grow food and plant for themselves.

Figure 5.18: Not having the use of the land for ourselves only



Source: Author's construction

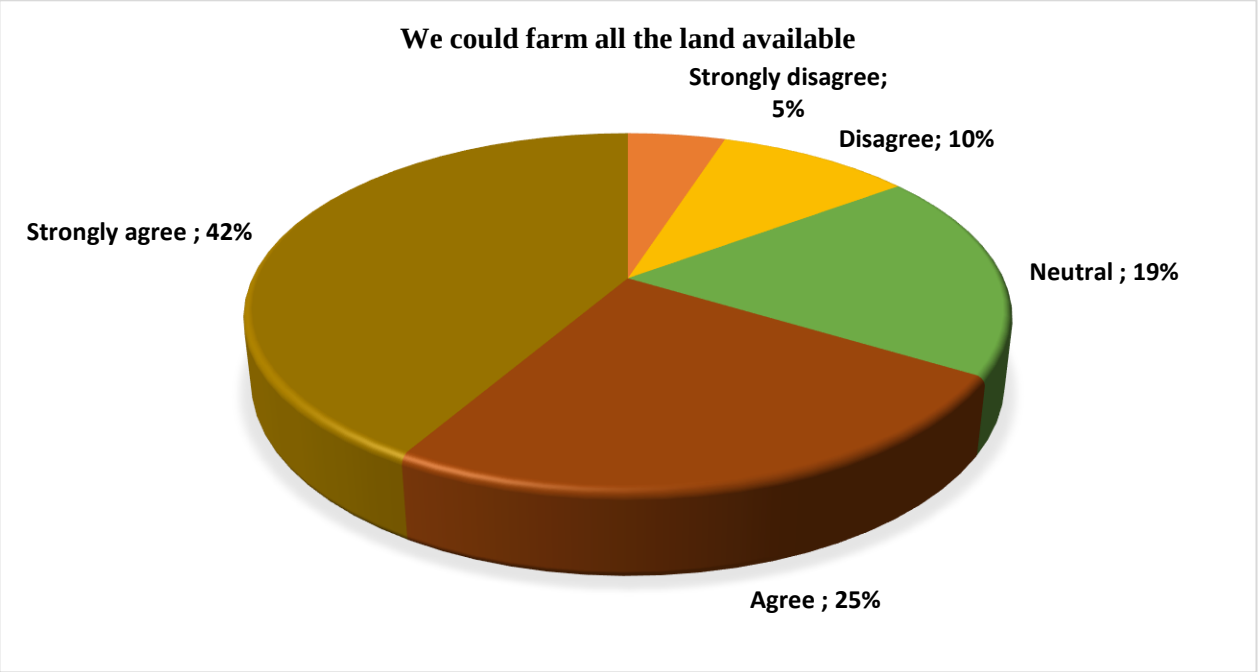
Because 30% disagree, 28% strongly disagree, 16% not sure, 15 % and 26%(15% and 11%) agree with the statement.

Statement 11: If we had money, we could farm all the land available

Response:

The reason behind this statement was to get the clarity behind so-called 'excuses' on harvesting. The respondents made it clear that if they can have money, they can consider farming a lot.

Figure 5.19: We could farm all the land available



Source: Author's construction

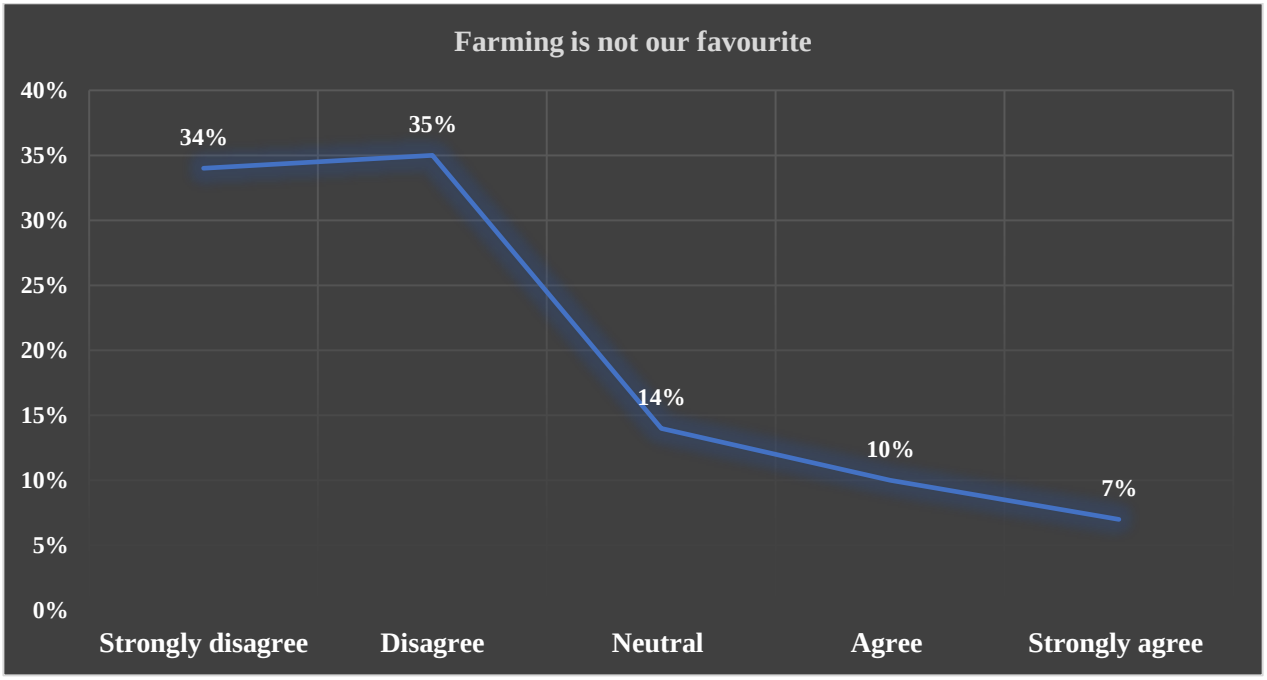
Respondents made it clear that they could farm all land available if they had money because 77% of all respondents agreed (25% and 42%), whereas 19% were not sure and 15% disagreed (10% and 5%).

Statement 12: Farming is not our favourite occupation at Tsolo

Response:

The reason behind this section was to understand the main reasons behind the lack of motivation in farming, the researcher wanted to know that farming is their favourite because if they do not like farming at all, that only could be a problem.

Figure 5.20: Farming is not our favourite



Source: Author's construction

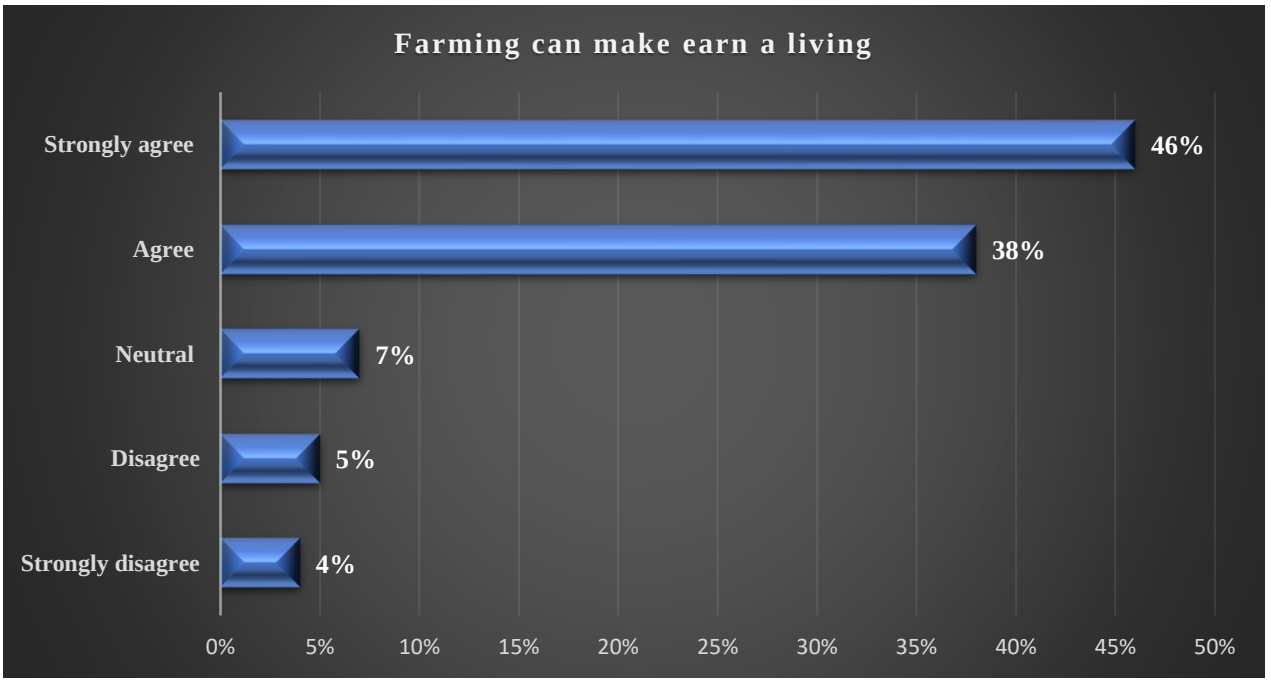
The potential is there within the area because about 69% (34% and 35%) disagree with the statement. In other words, they believe that farming is in their veins. They love it; they live it. 17% agree (7% and 10%) when 14% are uncertain.

Statement 13: Farming can make earn a living without dependence

Response:

The reason behind the statement was to get the sense that it is possible to make a living within agricultural activities (such as opening businesses, starting projects and selling their produce). Below the responses are illustrated in the bar graph.

Figure 5.21: Farming can make earn a living



Source: Author's construction

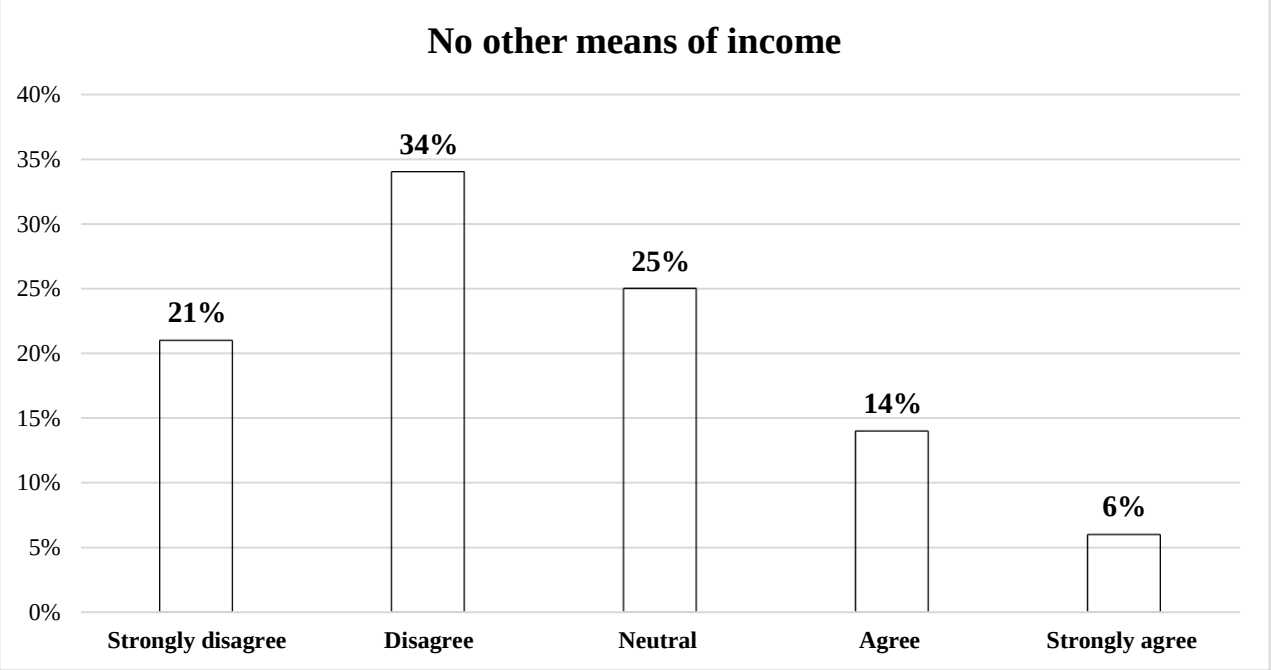
From the stats above, generalization can be made because 84% agreed that farming could make a living (64% - strongly agreed and 38% - agreed). Neutral – 7% of those who are not sure, and only 9% believe that farming cannot make a living (disagree 5% and 4% strongly disagrees).

Statement 14: We do not have other means of income

Response:

Most families in the Tsolo district within the Eastern Cape rely on farming to survive. Therefore, a questionnaire with a similar statement was distributed to cross-reference and confirm if the findings and facts support this perception. The findings are illustrated below in the bar graph.

Figure 5.22: No other means of income



Source: Author's construction

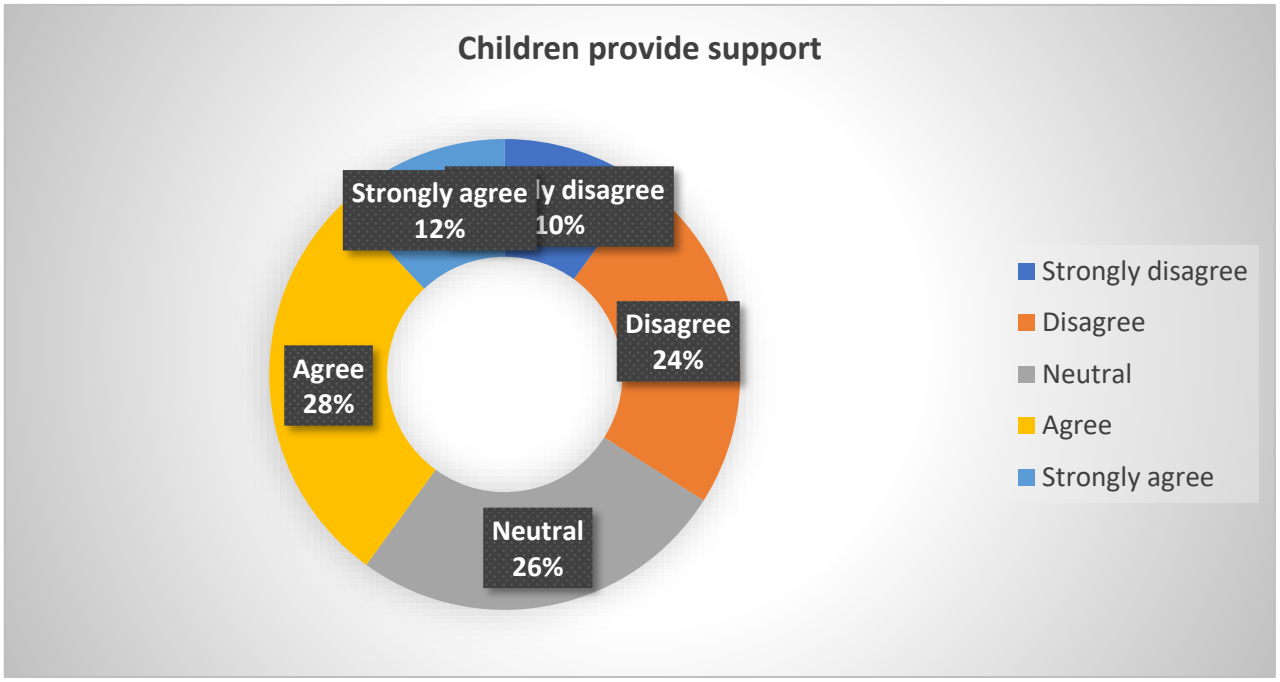
More than half of respondents (55%) disagreed that there are no other means of income within the district, whereas those who are not sure (Neutral -25%) whether there is or no means of income to support their living within the area. Furthermore, this left only 20% agreed that there is no means of income to survive; this cannot be generalised simply because, for those who are in the neutral space, it could be possible that they did not understand the statement.

Statement 15: Our children provide support with their earnings

Response:

It had been believed that people who make the majority in the Rural areas are Elders, whereas Youth relocated to nearby Cities. This raised the perception that those who left for Cities support their families in the Rural area through their earnings. Below the results from the statement are captured in the pie chart.

Figure 5.23: Children provide support



Source: Author's construction

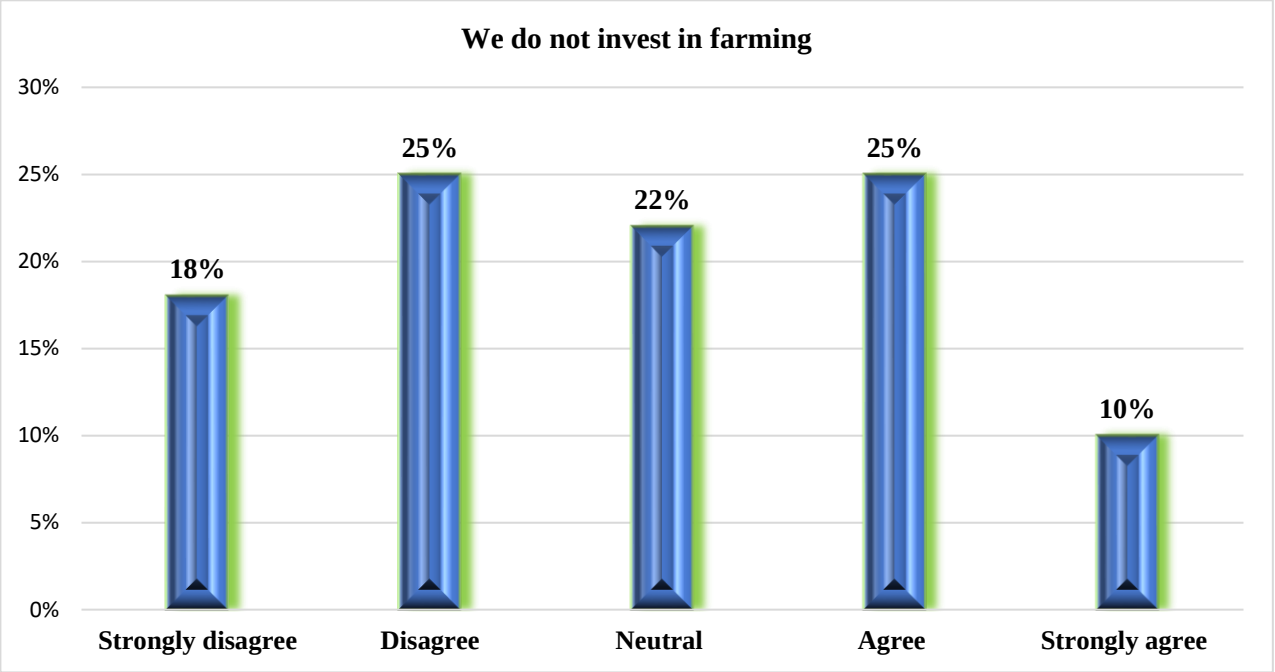
Again, here the author did not find generalisation simply because those who agreed did not make up 50% of the respondents; in other words, 40% agreed (strongly agree, 12% and agreed, 28%) and 34% disagree, whereas 26% were neutral. So, in conclusion, the majority receive support from their children.

Statement 16: We do not invest in farming

Response:

Investing in farming is a gamble like any other investment to any other business because any other form of business can either reap profits or losses. However, it is much better to invest in farming because seasons for the whole year can be determined at the beginning of the year by analysing the past year's seasons, which can easily guide you on which crop would be the best to invest in that year. Below figure 5.23 illustrate the results of the tested statements that the majority of the Households in the area do not bother to invest in farming.

Figure 5.24: We do not invest in farming



Source: Author's construction

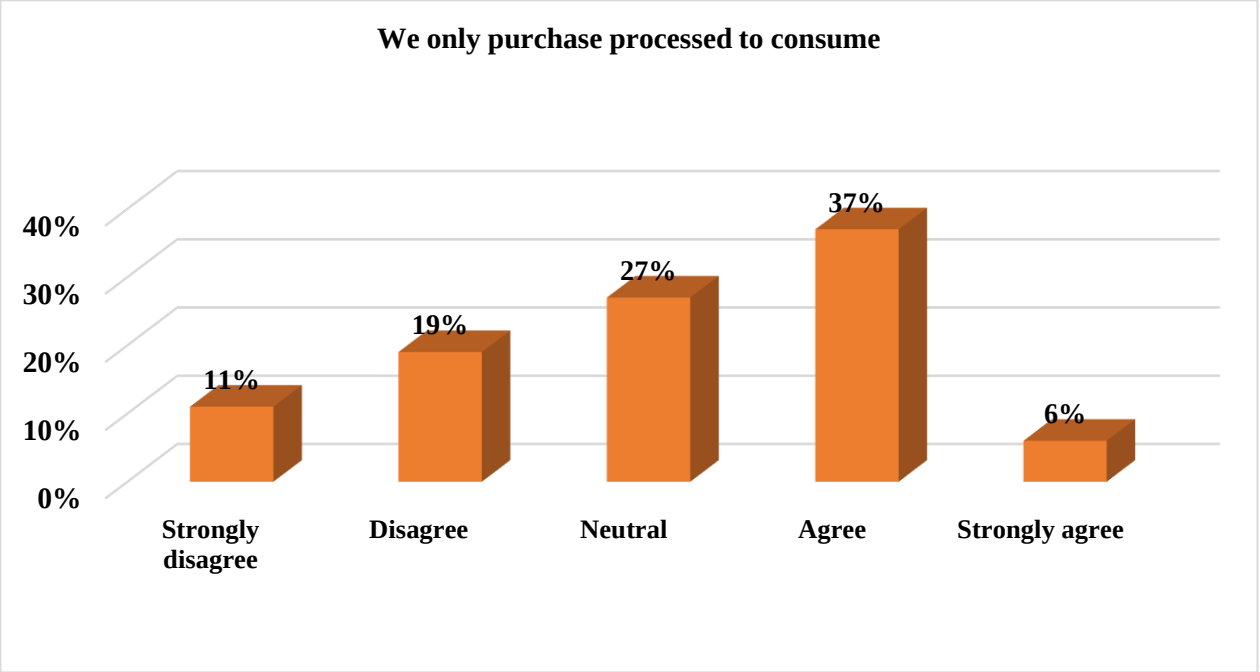
From the above figure 5.23, it can be slightly concluded or generalised that people invest in farming activities. Because from the figure above - 43% disagree (Strongly disagree– 18% and 25% -disagree) even though not more than half. 35% agree (Agree – 25% and ten strongly – 10%), and those who are not sure make 22%.

Statement 17: We only purchase processed to consume

Response:

In the rural communities' food manufacturers are not enough; in other words, even if they want to do everything for themselves, starting from planting up to the processed final product, it remains challenging for them. Of course, there are various reasons, including lack of suppliers for stable electrical power, proper water suppliers, and the most basic processing plants. The perception was tested, and results are provided in the historical graph below labelled figure 5.24.

Figure 5.25: We only purchase processed to consume



Source: Author's construction

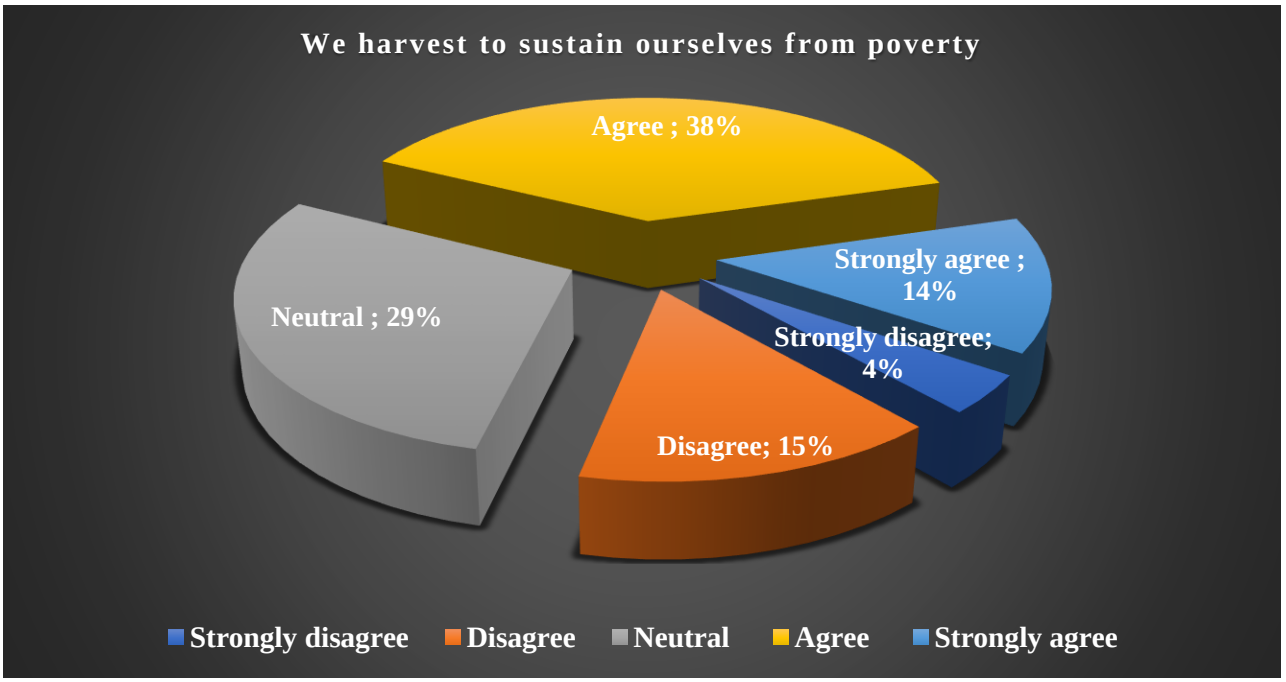
37% agree, and 6% strongly agree that they do not purchase everything to consume; they only purchase processed food to consume. Whereas 19% disagree and 11% strongly disagree with the statement, and 27% remain neutral. This simply means that most households do not buy everything to consume, though they are not even half of the tested population.

Statement 18: We harvest to sustain ourselves from poverty

Response:

Poverty in the Eastern Cape is a deliberate choice; this is simply because most people in the district sustain themselves from poverty by harvesting, even though not everyone. This simply seeks to say those who do not harvest it is because of their choice, and also the perception has been supported below with the response from the area.

Figure 5.26: We harvest to sustain ourselves from poverty



Source: Author's construction

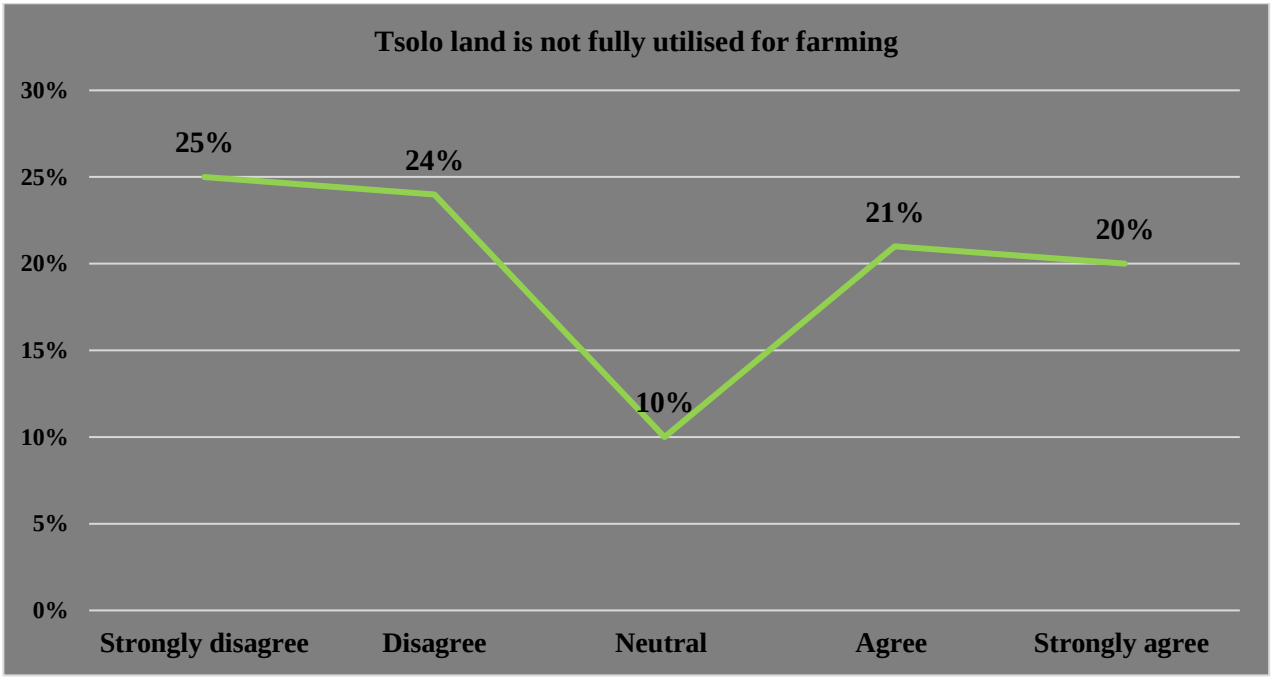
From the statement tested, 33% agree with 14% strongly agree, and 29% remain neutral, whereas only 19% disagree (disagree 15% and 4% strongly disagree). So, it can be easily generalised that most people in the area harvest to sustain themselves from poverty, followed by those who are not sure (neutral) or uninterested in giving the proper response.

Statement 19: Tsolo land is not fully utilised for farming

Response:

STATS-SA stated many times that much of the land in the Eastern Cape area is not fully utilised; in other words, there is enough space, but not all the available space is utilised. This notion has been tested, and below, the results are illustrated in the line graph labelled figure 5.26.

Figure 5.27: Tsolo land is not fully utilised for farming



Source: Author's construction

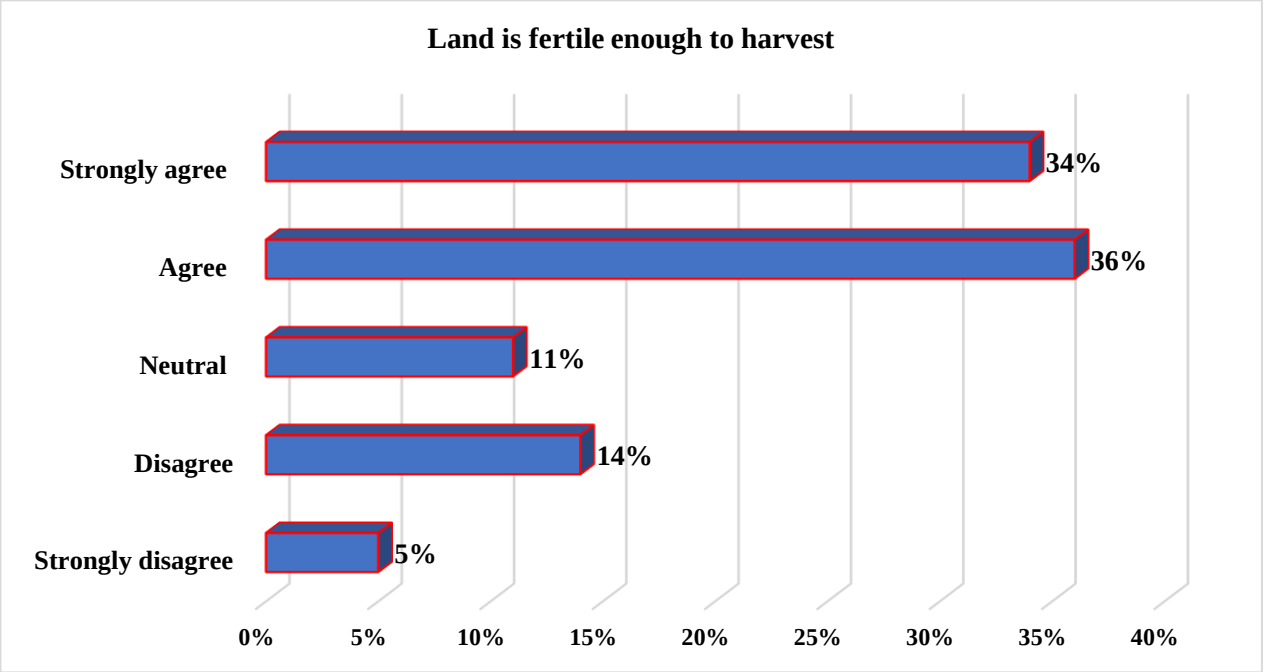
49% disagree (25% strongly disagree and 24% agree) with the statement that their land is not fully utilised for farming, and 41% (agree and 20% strongly agree). For those who are neutral (10%), this simply means that the majority of households in the area believed that land in the area is not fully utilised, and this cannot be generalised in the sense that it could be the size of the land do not support farming activities.

Statement 20: Our land is fertile enough to harvest for a long time

Response:

Land in most areas of the Eastern Cape is fertile to harvest, followed by Limpopo that cannot be augured. This has been tested to figure out the well-known truth.

Figure 5.28: Land is fertile enough to harvest



Source: Author's construction

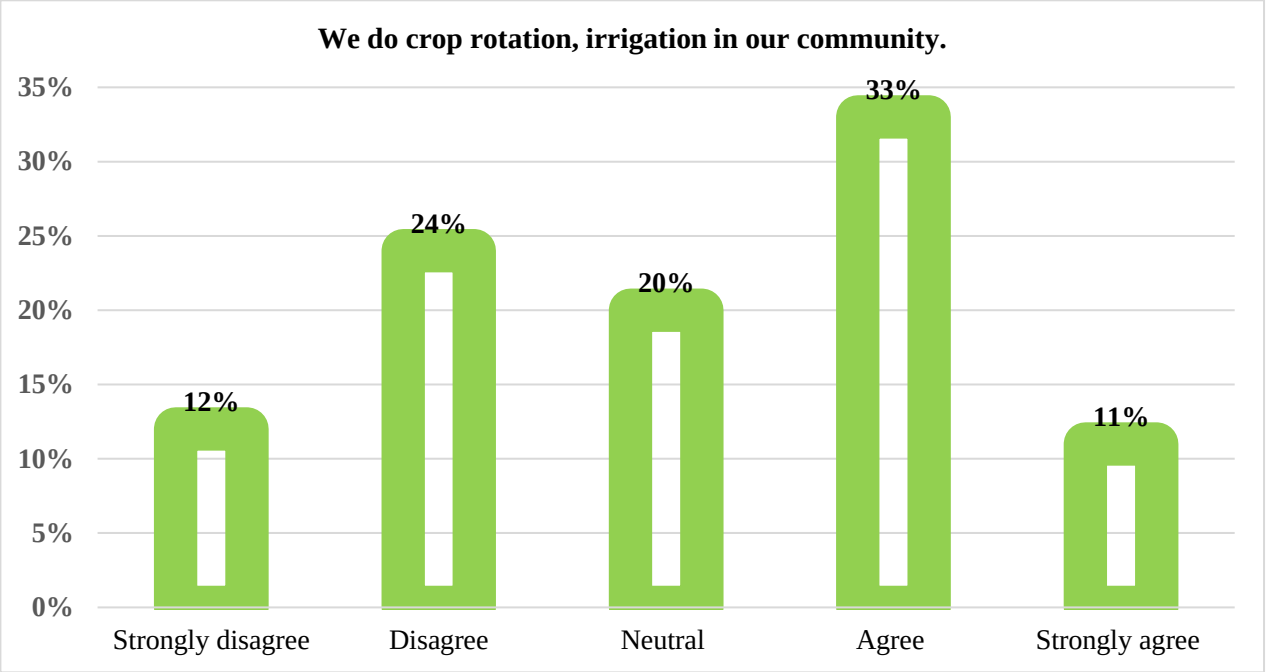
The figure above, labelled 5.27 give clarity and support the statement that the area is full of fertile land to harvest because more than half agree with the tested statement 70% (34% strongly agree and 36% agree), and one of the reasons was the fact that everything they harvest it gives encouraging results. Then 19% disagree (14% disagree and 5% strongly disagree), the reason – are those that never test their available land or perhaps harvest anything, only 11% neutral.

Statement 21: We do crop rotation, irrigation in our community.

Response:

With this importance behind the statement, the researcher wanted to analyse other ways of keeping the land fertile used in the area. Below are the responses grouped into percentages from the nearby households within the district.

Figure 5.29: We do crop rotation, irrigation in our community.



Source: Author's construction

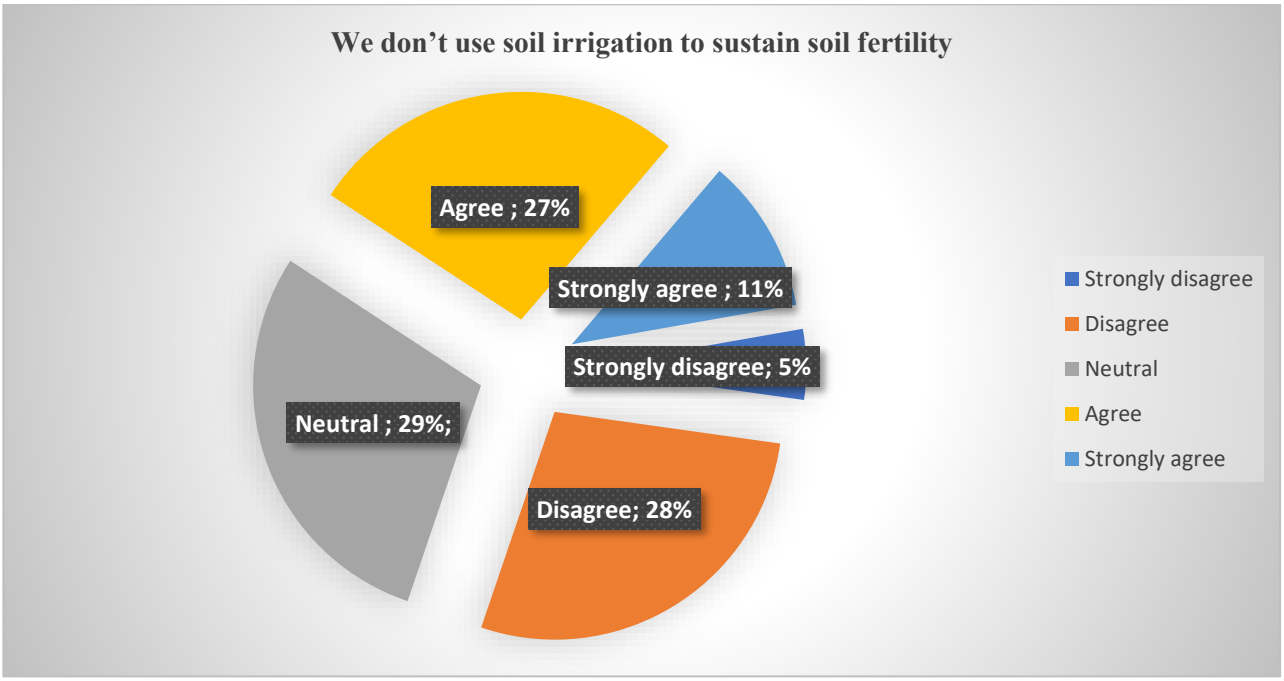
From the respondents, the above bar graph shows that 44% agree (33% agree and 11% strongly agree) that crop rotation is essential to assist the growing of crops. However, 36% disagreed (12% strongly disagree and 24% disagree), and 20% remained neutral.

Statement 22: We do not use soil irrigation to sustain soil fertility.

Response:

The statement before this figured out that some of the households within the area confirmed that they use crop rotation and irrigation to sustain their harvesting land. So this time, the second statement was tested in support of the above. The below pie chart presents all responses from the community.

Figure 5.30: We do not use soil irrigation to sustain soil fertility



Source: Author's construction

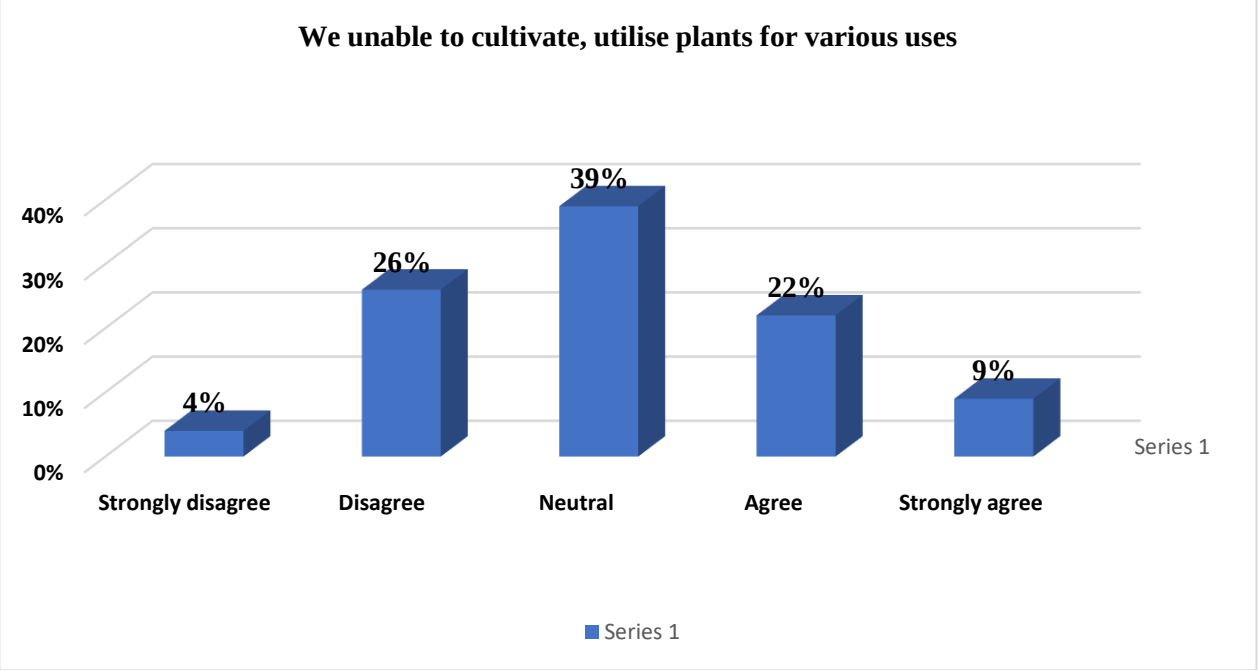
This cannot be easily generalised in the sense that both disagreements and those agreed, both under half of the tested population. However, 38% agree in the sense that (27% agree and 11% strongly agree), neutral 29% and those who do not use soil irrigation to sustain soil fertility 33% disagree (28% disagree and 5% strongly disagree).

Statement 23: We are unable to cultivate, utilise plants for various uses.

Response:

In each province in South Africa, there is one crop of specialization within each Province; this simply means that each Province has one outstanding crop you could find. For instance, in the Eastern Cape Province, corn is the best crop to consider within the area. Below are the results of the tested notion.

Figure 5.31: We are unable to cultivate, utilize plants for various uses



Source: Author's construction

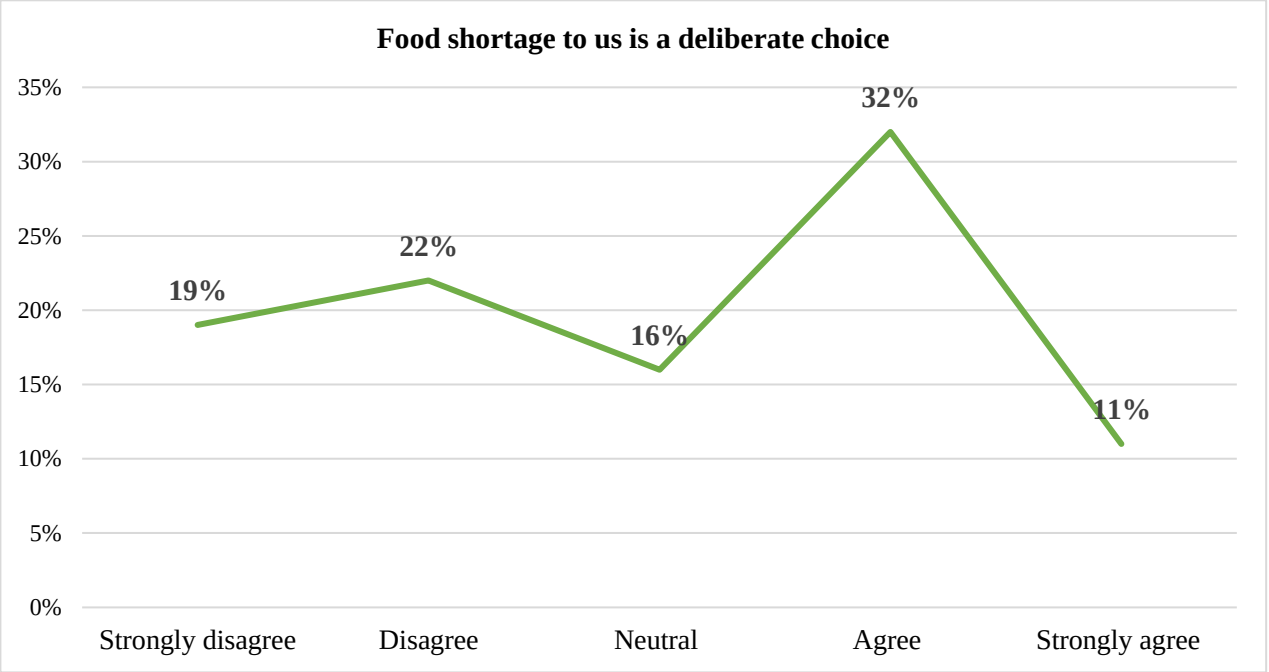
From the results above, it is clear that most of the respondents never tested the other crop to prove that they cannot cultivate and utilise plants for various uses. Because almost half of the tested population, 39%, remain neutral, followed by those who disagree (26%) and agree with (22%), strongly agree (9%) and strongly disagree (4%).

Statement 24: Food shortage to us is a deliberate choice.

Response:

Food shortage is a deliberate choice in the Eastern Cape at large, simply because people relocate from the fertile Province run to the nearest Cities. Therefore, a statement was issued to test how accurate this notion is. The below results are from the respondents in the line graph.

Figure 5.32: Food shortage to us is a deliberate choice



Source: Author's construction

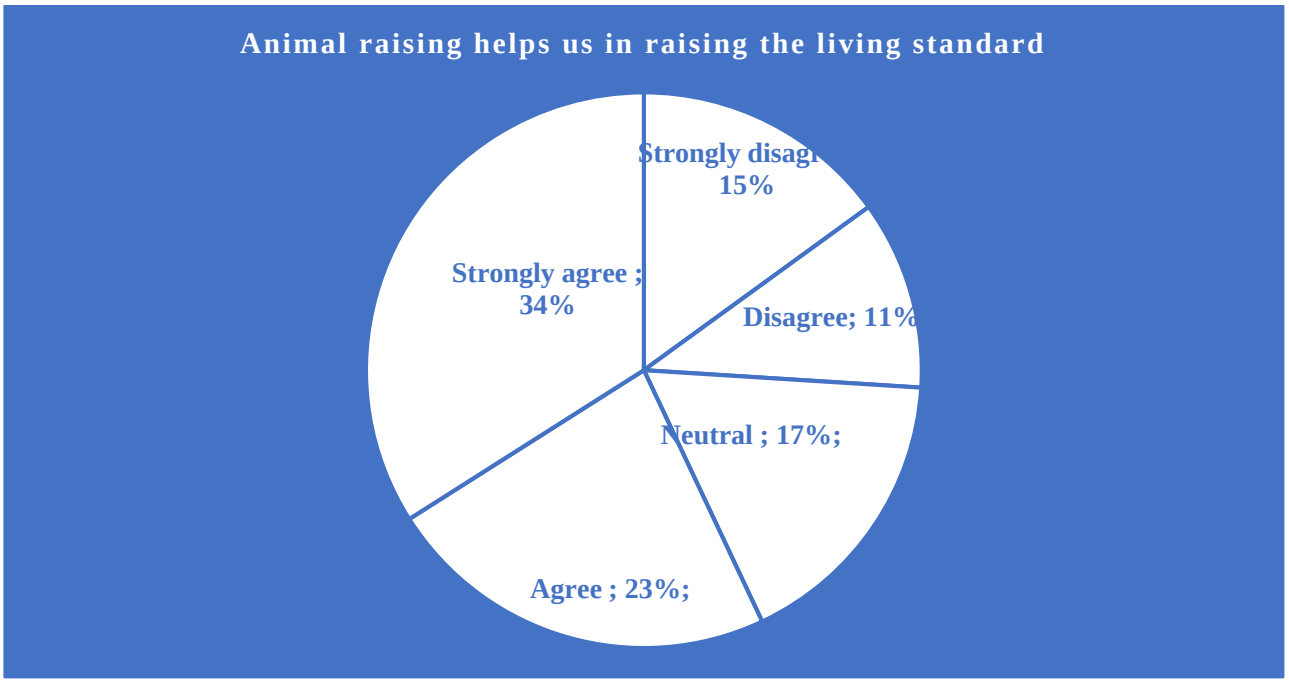
32% agreed with the statement, with 11% strongly agree to make 43% which is nearly half of the tested population, that it is indeed a deliberate choice to drown below the poverty line in the district. 41% disagreed (22% disagree and 19% strongly disagree), and 16% remain neutral.

Statement 25: Animal raising helps us in raising the living standard.

Response:

The above-quoted statement simply means that raising animals is also falls under agricultural activities. However, the statement was issued to see if people within the area take the trouble to raise animals to sustain their living standards, and the results are portrayed below.

Figure 5.33: Animal raising helps us in raising the living standard.



Source: Author's construction

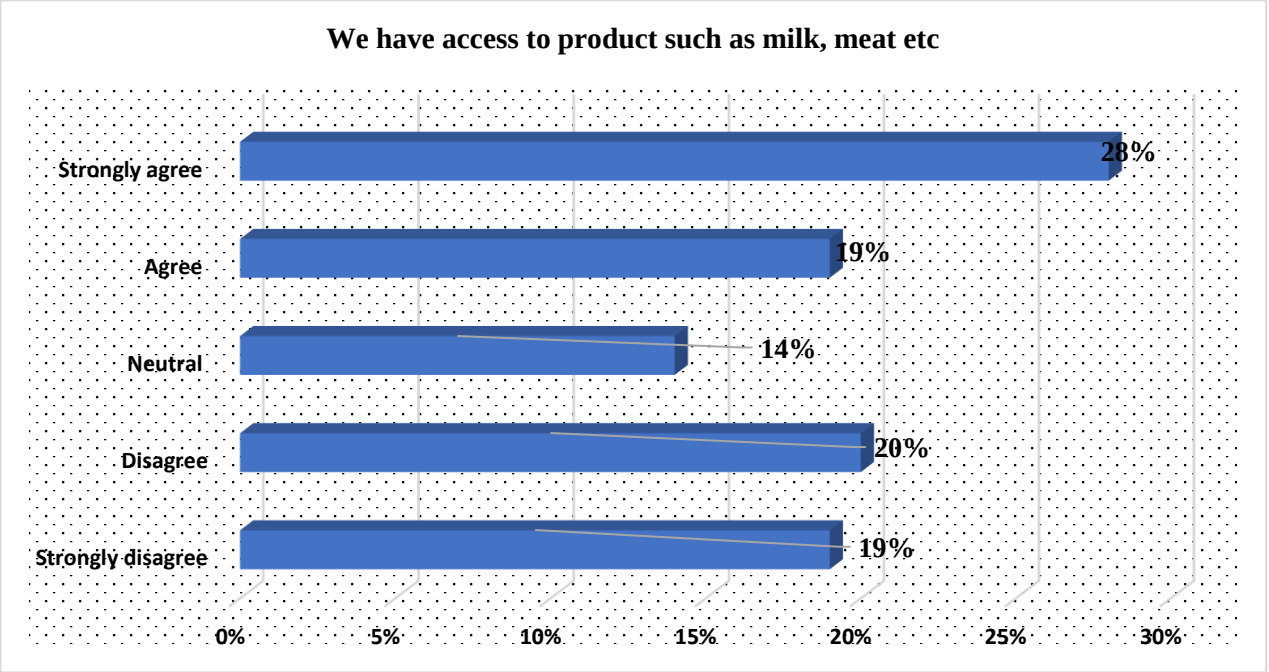
57% (34% strongly agree and 23% agree) of the tested population agreed that raising animals to sustain their living standards is very important for them, and that is more than half of the tested population, 26% disagree (strongly disagree15% and disagree 11%) and neutral 17%. To conclude, those who do farming believe and rely on animal raising.

Statement 26: We have access to products such as milk and meat.

Response:

When your farming involves animal husbandry, milk and products like eggs are not scarce for you. This was to assess other varieties of farming activities and their benefits to the community who do farming. Below it is clear from the respondents that those who are farming reap the most benefits.

Figure 5.34: We have access to products such as milk and meat.



Source: Author's construction

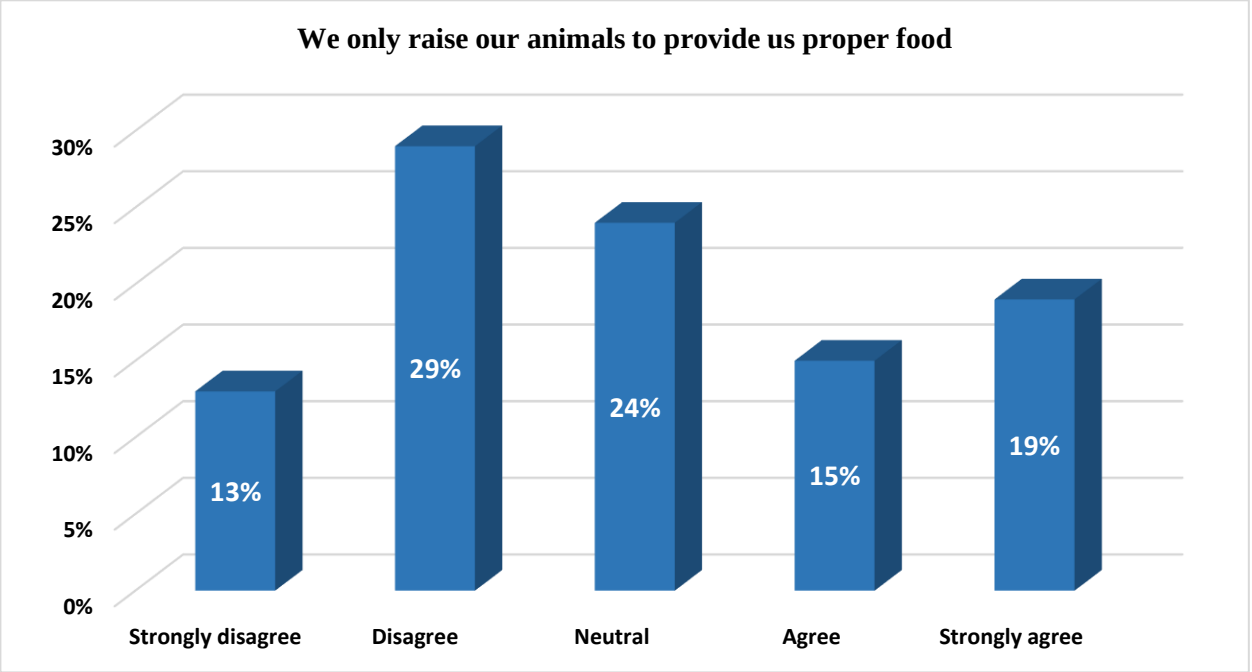
All 28% strongly agree, 19% agree, and that only simply means most people do have access to other 'vitamins' as well. Conversely, 14% were neutral, 20% disagree, and 19% strongly disagreed.

Statement 27: We only raise our animals to provide us with proper food.

Response:

It has been believed that most farmers in the district never consider farming for business. Instead, it was believed that most of them only raise animals to provide proper feed. Below, responses from the households are recorded.

Figure 5.35: We only raise our animals to provide us with proper food.



Source: Author's construction

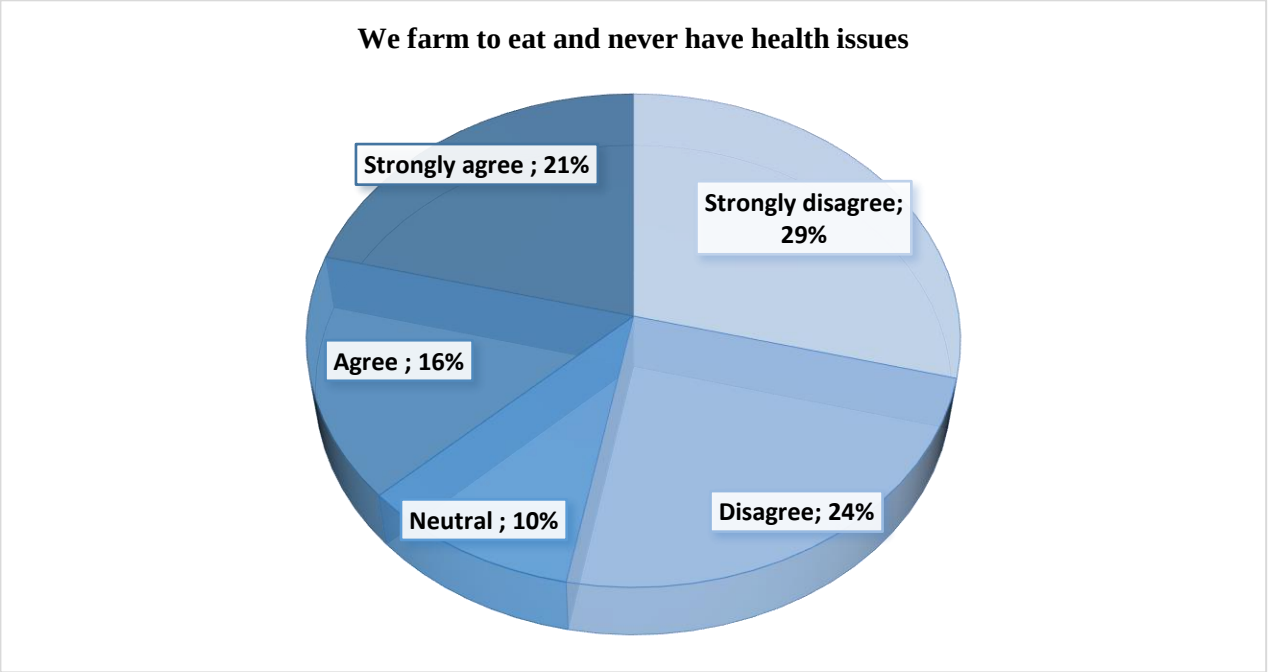
Most responded replied, contradicting the statement in that about 29% disagreed, and 14% strongly disagreed. That remains with 34% agreeing (15% agree and 19% strongly agree) with the statement they only raise their animals to provide them proper food, neutral 24%. Thus, some still farm for selling within the area.

Statement 28: We farm to eat and never have health issues

Response:

Everything organic is always healthy and what does not kill you is healthy. The statement was issued to test if what are health-related issues farmers face. Below, responses are captured from the households of the community.

Figure 5.36: We farm to eat and never have health issues.



Source: Author's construction

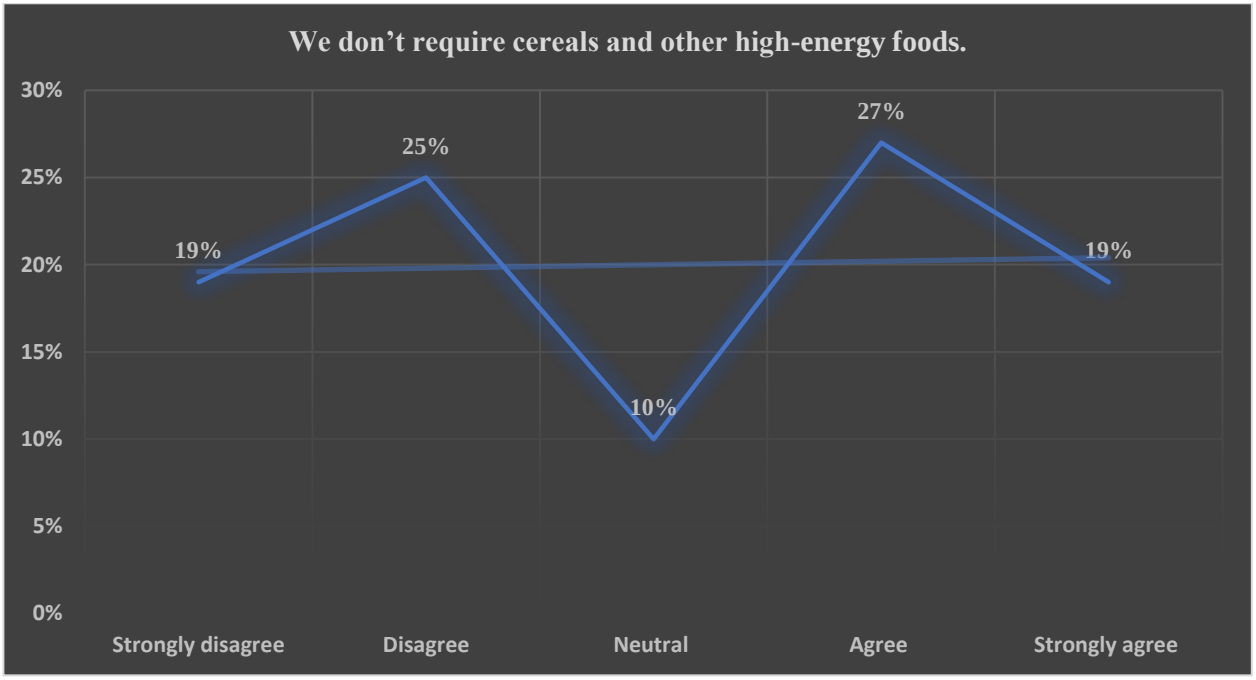
They usually face health-related issues because they could be chronic diseases other than those caused by agricultural activities. Because 29% disagree and 24% strongly disagree, 37% agree, and neutral remains at 10%. In general, many households still face health issues though they do farm.

Statement 29: We do not require cereals and other high-energy foods

Response:

Other products help farming activities to become the norm within the community, like harvesting corn. Cereals come from corn, so in those communities where corn is normal, cereal is nothing to them and other high-energy foods because they eat healthy fresh foods. Below is a detailed line graph giving responses from the tested population.

Figure 5.37: We do not require cereals and other high-energy foods.



Source: Author's construction

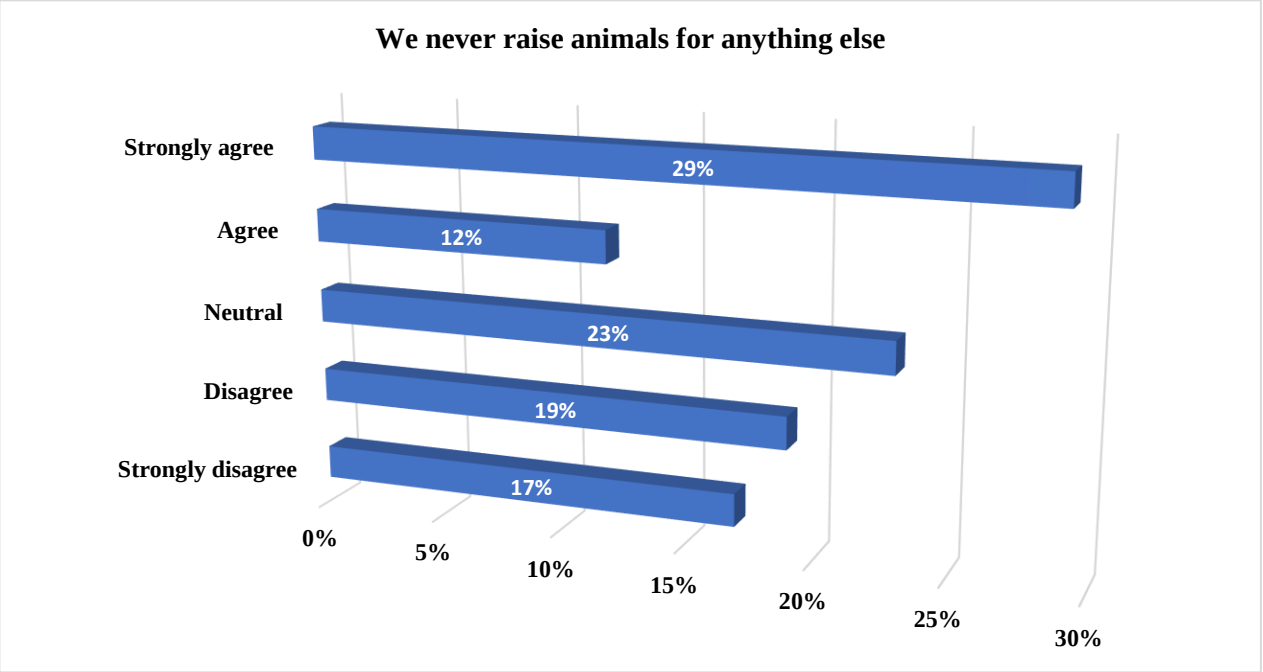
27% agree, 19% strongly agree, 10% are neutral, and 25% disagree, while 19% strongly disagree.

Statement 30: We never raise animals for anything else.

Response:

In agriculture, animals are being raised to produce and provide some basic proteins like meat, eggs, and milk. In addition, some use animals to perform basic farming tasks in other parts of the Eastern Province, like cattle and horses to plough. Below responses are illustrated.

Figure 5.38: We never raise animals for anything else.



Source: Author's construction

41% agree (29% strongly agree and 12% agree) with the statement, believed to be a fact within the area of Tsolo district. 36% disagree (17% strongly disagree and 19% disagree) and remaining neutral—23%.

5.4.3 Open-ended questions

This section was deliberately provided for an open-ended section to allow for views and opinions of the respondents regarding certain aspects of this research. Therefore, the respondents were requested to indicate anything they want to add or comments. Furthermore, they were requested to express their opinions about food production. The responses to all these were grouped and are reported below.

Knowledge about food production and additional comments from all answered questionnaires were grouped and tabulated. An overwhelming number (91%) stated that they were aware of food production but not interested in farming. On the other hand, a small number of 9% does not want anything to do with farming and food production; the reason behind all that was theft.

5.5 Conclusion

This chapter analysed and interpreted the findings of the research, which will be illustrated as graphs, bar charts, pie charts and tables. The objective of the investigation was to construct a model that can projectify agriculture to eradicate chronic poverty. This will assist in developing a model that can assist rural communities in taking agriculture as their primary source of

sustainability. The setting for the research was to be understood from both the economic and social aspects of the communities in the Tsolo district. The population is exclusively black, coming mainly from the surroundings of Tsolo district characterised by high levels of semi-literacy, lack of skills and essentially unemployable.

Chapter 6 Summary of Findings, Conclusion and Recommendations

6.1 Introduction

This section will summarise the dissertation purpose, from the objectives to the findings, then conclude and provide recommendations. This project started with creating the proposal, which was the result of a comprehensive literature review. The structure of the proposal includes an introduction, background, the problem statement, the aim and objective of the research, research question was developed, design and methodology, ethical consideration.

The second chapter also outlines the literature review on the research topic and different theories relating to a global approach to agriculture. Furthermore, the history of agriculture in the country, the role of agriculture in the economy of the country, the distribution of land and the occupation, followed by the current status of land possession, are dealt with in the last section of the chapter. The primary purpose of the chapter was to establish a context to develop an approach to alleviate poverty through agriculture. Finally, chapter six summarises the findings and conclusions reached and sets out the limitations and recommendations.

6.2 The Findings

This research has shown that most households of the Tsolo area are willing to embark on agricultural activities, but they lack motivation from Government and each other. The fifth chapter analysed and interpreted the research findings, illustrated as graphs, bar charts, pie charts and tables. This chapter will summarise the findings from chapter 5 of this research and conclusions reached given the findings, as well as limitations and recommendations.

6.2.1 Section A: Biographical information

This section focussed on the biographical information used to qualify the respondents and determine those that may not be ideal for the research. This section dealt specifically with the biographical information of the respondents. Finally, the conclusions and recommendations will be provided detailing the significance of the findings.

QUESTION 1: What is your status / activity / occupation in Tsolo district?

The respondents were separated into Scholars, Teachers, Small-scale farmers, and Others. Half of all the participants in this research were Scholars (52%), with a small number of Small-scale farmers (1%). This evidence, therefore, shows that in the district of Tsolo, farming is not considered an essential primary tool that can be used to alleviate poverty.

Summary: Therefore, most respondents of the Tsolo households involved in the research are scholars, with a few individuals in the area looking for work opportunities.

Recommendation: People in the area of Tsolo are demonstrate a great concern about education because the majority in the area are scholars. This evidence, therefore, shows that in the district of Tsolo, farming is not considered an essential tool that can be used to alleviate poverty. Therefore, the recommendation is that students need to be taught agriculture by high schools and colleges.

QUESTION 2: Is Tsolo your permanent/cultural/traditional home?

Most of the respondents were people that were born from the district (83%), followed by the ones that came to work (9%), followed by a group of students (4%), followed by other (4%). Thus, the findings agree with the known facts that those from the district do not consider agriculture a source of food, as 83% come from the area.

Summary: Most respondents of this research are originally from the area; clearly, more than half of the respondents are people of Tsolo. People who know the place very well.

Recommendation: This research was conducted amongst people who know the area very well and are also willing to see change in the district. People around the area need to be trained and educated about the importance of agriculture. At schools, the government needs to promote agricultural activities by all means, not only in the Tsolo district but also in the entire Eastern Cape—a province rich in agricultural potential.

QUESTION 3: Do you or your family have land that you can farm?

The response shows that most respondents have land available for farming (47%), followed by those who do not have access (33%). Finally, there are those that have availability to small gardening in their yards.

Summary: In the district, most people have land for farming, even though some would say they only have small gardening in their yards. However, some people in the area responded, saying they have enough space for farming; those are people who have a vast number of hectares to use.

Recommendation: The question posed to those who claim to have enough space for farming is why do they not utilise the land, but they all agreed that theft and lack of support from the government is a problem for them to use the Land at their disposal. In other words, they have land but no resources to work it. This is the problem in the sense that we do not know that even when government provide the assistance required will they embark on farming, but the government should at least provide what is required from their side.

QUESTION 4: What crops do you grow in the land you have access to?

In the above question, some of the respondents claimed to have access to land; now, the reason behind this question asked in this section was to assess whether they use the land or not after claiming that some of them do have space for farming. Also, by asking this question, the researcher had in mind that most of them have known at least how to harvest corn. Results obtained many respondents grow fruit and vegetable (56%), followed by those who grow corn (41%), followed by those who grow wheat (3%). These results proved or clarified the researcher's perception. This means that those with access to land need to grow on a larger scale, meaning growing for their families and growing to sell.

Summary: Those who claim to have land do not farm for long-term sustainability; they harvest only to provide for short-term and immediate needs. Because more than half only plant fruit and vegetables, they do not plant maize or other crops that can be harvested commercially. On the other hand, some grow corn for sale and will only grow corn; the same applies to those who plant wheat.

Recommendation: This seeks to suggest that regardless of how few hectares a person might have, that does not mean that they cannot utilise the land to its full potential. As the stats suggested, only 3% of the community harvest wheat at least.

QUESTION 5: How often do you buy basic foods you need?

The question did not explicitly require the respondents to state why they bought specific food at a specific time or season, but the indication is that 69% buy at least once a month, 21%, 2-3 times a week, 7%, 4-5 times and 3% daily. This suggests that whatever they buy from the market, they buy on a large scale to last for the month. Therefore, it can be generalized that the majority prefer to buy from the market than growing for themselves. So, if a community member can change to small farming for own needs and sale, there is the possibility of high returns.

Summary: Most of the respondents were perceived to have access to land by the researcher. Through asking this question, the researcher had in mind that most community members they had known how to crop. However, the results suggested otherwise in this case; because more than half of the community still buy food, though they buy at least once a month, they still consider buying. Therefore, the intentions and goals of this research are to instil to reduce the purchasing of food that can be replaced by crops grown for own use and sale.

Recommendation: People need education and motivation when it comes to agricultural activities, there is much potential for most of them, but there is a lack of motivation from those who can assist. From the respondents, now we can say that a lot can be achieved if the government can assist.

QUESTION 6: What is your main food staple?

Most of the respondents were perceived to have access to land by the researcher. Rice and wheat (36%) are the most preferred crops among Meal-meal (28%), Fruit and Vegetables (23%), Multiple crops (13%) in the district.

Summary: It is evident that some people in the area have access to lands to practise some agricultural activities. A minority confirmed that they consider different crops when they harvest, meaning they try different crops to check which is the best, followed by less than a half who mainly focus on harvesting only rice and wheat.

Recommendation: It is essential to note that life would be difficult in the area without agriculture. This is a rural area far from the Town, and it would be a good thing for them to grow what they eat and eat what they grow. Because it will not make sense for them if they grow what they do not need and want.

QUESTION 7: Do you always have enough food from the land, or do you buy some?

The reason behind the question was to determine if people in the area grow what they eat. The results showed that people buy food sometimes even if they have land because in this case they just choose and satisfy their desire to buy because most of the community members have access to the land, but still, they buy sometimes (61%); Always buy (29%); No enough land (9%) and Always plant (1%).

Summary: The answers seek to say that people can own the land, but even though they can and still purchase some of the food, the reason is to satisfy their desires. Because they grow what they eat and continue to purchase.

Recommendation:

People need to stop wasting energy looking for what they can purchase and eat. Instead, they need to harvest to eat. Moreover, grow what they need and eat.

QUESTION 8: Do you depend on assistance for money from children in town somewhere?

Most households responded to the above question that they depend on their children, (38%), they request money for assistance from their children; (27%) state they are independent of their children and, finally, (19%) rely on other sources of income.

Summary: Most of the respondents were dependent on other sources of income rather than to generate money on their own. Through asking this question, the researcher sought to determine that most participants agreed that, while they have access to land, they are not self-sufficient

Recommendation: This simply means that community members of the Tsolo district have access to most resources, because other than waiting for a resources subsidy from the government, they utilise the money they receive from their children to obtain what they need, instead of finding ways of generating an income through the usage of their land.

6.2.2 Section B: Likert scale

In this section, statements were constructed based on the literature review on agriculture. These statements ranked in the Likert scale, the respondents ranked the statements provided to them on a scale of 1-5, 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. The findings of the Likert scale have been grouped (as they appeared in the questionnaire) under sub-topics as well.

6.3 Agriculture as Career

The reason behind this section was that the researcher wanted to obtain a general perspective of people in the area as to when they start to learn about agriculture and when education is introduced to young people in Tsolo.

STATEMENT 1: We grow enough food for ourselves every year

Summary: Tsolo district can grow food to sustain themselves and shy away from poverty because (31%) agreed; (19%) disagreed that they can grow enough food. Whereas (25%) do not sure. Then (20% and 5 %) strongly disagreed and agreed, respectively. This simply means that it depends on who is willing to escape from poverty because a small percentage of respondents disagreed with the statement that they grow enough food for themselves every year.

Recommendation: To escape from poverty in rural areas like Tsolo, it is important to consider agriculture as critical. If there is no access to resources as they proclaim, all they need to do is set up supporting extensions for each other.

STATEMENT 2: We grow food that we regularly sell to the market

Summary: The results were that (30%) strongly disagree and disagree that most people grow to sell. Only (1%) strongly agreed, and (17%) agreed that they grow food to sell. People who have access to lands utilise the land to harvest to feed themselves rather than sell what they do not have.

Recommendation: It is imperative to note that the best solution to fight poverty in rural areas is to shift the main focus to harvesting so that people can feed themselves.

STATEMENT 3: Neighbours always have to ask for food from us

Summary: The participants seem to agree that when others do not have food, they share. Because (32%) agreed, (33%) Neutral; (17%) disagreed and strongly disagreed (14%). The participants seem to agree with the fact that when others do not have food, they share. In other words, they treat each other with love, and if they can harvest more than they usually do, that would be the weapon to fight poverty.

Recommendation: Harvesting on a large scale can be beneficial to rural areas to escape from poverty because no one would be starving, and sharing would be a practical thing for themselves.

STATEMENT 4: We are always short of money to buy enough food

Summary: Most households always short of money to buy food because 37% agreed and 21% strongly agreed. 17% and 7% disagreed. Hence, it can be generalised that most people ignore that they can grow enough food for themselves. People do not trust themselves because almost half of the respondents agreed that they are always short of money to buy enough food. That simply means growing food for themselves; it is not what they prefer because even if they harvest, they do not harvest for a long run to sustain themselves.

Recommendation: People need to learn farming whether they feel like it or not. In other words, people need to learn how to feed themselves because they will continue relying on others to survive.

STATEMENT 5: My sons/daughters/sisters - give us money for food

Summary: Many households seem not to disagree nor agree with the statement that their sons/daughters/sisters provide the money for food. Because for the first time neutral 39% become the highest percentage. However, 28% agree that their extended families help; then 15% disagree, and both strongly disagree and strongly agree 9%. This simply means that people can have the space to practise farming, even though they will continue to look for an excuse. In this case, the majority is neutral because they have access to land, but they do not like to farm for themselves.

Recommendation: The recommendation is simple; people need to be encouraged to stand up for themselves and do what they are supposed to do. People will never realise the reason for farming until they learn some lesson, whether their relatives stop giving them money or any form of support.

STATEMENT 6: We never run short of basic food that is grown here

Summary: The finding in the following figure portrayed in the bar graph will support that. Neutral has escalated to 25% with those disagreeing at a total of 38% (13% - strongly disagree and 25% - disagree). No generalization can be made on this issue, with those agreeing standing at a combined

37% (strongly agree – 11% and agree – 26%), meaning that not much fewer people seem to be never run short of basic food. It should be cause for concern since there are no decisive "happenings" to allow for generalisations. To generalise this, the area's households seem to agree that they never run short of basic food grown in the area, such as maize and vegetables like potatoes and spinach. In other words, even if they do buy some stuff but not what they utilise daily. Thus, not much fewer people seem to be never run short of basic food. It should be cause for concern since they do not have the land.

Recommendation: This is simply, people only deserve land—that is all. If people can have enough space to harvest their basic food, even the small portion of those who sometimes run short of food can look at others and be motivated to feed themselves.

6.3.1 Land availability

The reason behind this section is to find out if those that have land do not use it, and to those that do not have land, what is the main reason for not having land while others do. This is also to find out to what extent those who have access to it use it.

STATEMENT 7: We have enough family land for our farming needs

Summary: The findings illustrated above show that there is a contradiction on what enough land is. Because 42% (20% Strongly disagree and 22% disagree) from 48% (25% agree and 23% strongly agree) supposedly the reason seems to be the differences between enough land. Only 10% neutral. It was perceived that land is not an issue in the district. Since the researcher assumed that the area households complain a lot about access to resources, it was anticipated that most of the families have enough land.

After findings constructed from the answers provided by the households, it is clear that the people of the area do have access to land, but the contradiction remains because they cannot differentiate between enough land and land per se. Because all those who disagree seem to believe that even though they have access to land, it is not enough in the sense that they cannot do business out of it. Whereas those that seem to agree with the statement believe that if they have land to harvest and feed themselves, that is enough.

Recommendation: It is important to note that those who have the space to harvest do so regardless of what they believe in when it comes to the size. This is because everything starts small with what you have, and they can continue to ask and claim for more land afterwards.

STATEMENT 8: We rent out land to other people who want to farm

Summary: The findings suggest that though there is enough land in the district, renting it out to other people to utilise does not seem viable. Because more than half, 65% (31% strongly disagree and 35% disagree), few portions agree to rent their land.

In general, this is quite clear because the people of the district do not believe in giving away their land. After all, wealth is generational. Moreover, they know that if they give away what they have currently, their families will suffer the consequences, as we know that in the province, all you need is to own a portion of land to be rich and manage to escape the poverty line.

Recommendation: It is vital to note that the whole province of the Eastern Cape its primary resource is agriculture. Sadly, the province could collapse; this simply means that anyone living in the province cannot survive without harvesting for basic needs.

STATEMENT 9: The land we have is always fully utilised for planting

Summary: The researcher found out that the land in the area seems to be fully utilised because 33% agreed that the land is fully utilised, almost equal to 37% (of strongly disagree and disagree). This says all those who have access to land in the area have utilised the space. Meaning those households without space for harvesting are those struggling with poverty.

Recommendation: Everyone with land but not using the land to harvest for children should be disowned their land because this will assist those who have no means to survive. People will no longer drown in poverty, whereas there is a space to harvest and avoid poverty.

STATEMENT 10: We are not able to use the land for ourselves only

Summary: In as much as to use the money to buy resources to grow food and plant for themselves. Because 30% disagree, 28% strongly disagree, 16% not sure, 15 % and 26% (15% and 11%) agree with the statement. The intentions are there for farming, but the lack of support is a problem. As discussed earlier, they own land and do not rent out the land to others, which means they are interested in harvesting, but support is a problem. Because even the number says the same, 30% disagree, 28% strongly disagree, 16% not sure, 15 % and 26% (15% and 11%) agree with the statement.

Recommendation: This is government extensions need to have a representative that will assist all the community members interested in farming by providing support and everything that can assist these residents to realise dreams and avoid the slide into poverty.

STATEMENT 11: If we had money, we could farm all the land available

Summary: Respondents made it clear that they could farm all land available if they had money. Because 77% of all respondents agreed (25% and 42%). Whereas 19% are not sure and 15% disagree (10% and 5%). This is clear that farming is not an issue if they can have money for resources because they have land.

Recommendation: The government needs to provide the necessary support to these residents to utilise the available land. Not necessarily money per se; it could be secondary resources like tractors and boreholes.

STATEMENT 12: Farming is not our favourite occupation at Tsolo

Summary: The potential is there within the area because about 69% (34% and 35%) disagree with the statement. In other words, they believe that farming is in their veins—they love it, they live it. Moreover, only 17% agrees (7% and 10%) when 14% do not know. This simply means poverty is forcing them to see farming as a solution to their woes because there are no other means to sustain themselves; this left them developing a new respect for farming.

Recommendation: These people need to be introduced to agricultural basics; in other words, they need to know what to start with and what is required when they embark on farming full-time. That is all that agricultural extension officers can do just to force educational basics onto the households.

6.3.2 Poverty and farming

The reason behind the statement was to find out if the respondents considered farming as a means to survive and make a living via agricultural activities (opening businesses, projects, and selling). Most families in the Tsolo district within Eastern Cape only engage in farming to survive. Therefore, a questionnaire with the related statements was distributed to support this perception to get the necessary findings and facts. A summary of the responses to the questionnaires is given below.

STATEMENT 13: Farming can make earn a living without dependence

Summary: From the stats obtained generalization, can be made simply because 84% agreed that farming could earn a living (64% - strongly agreed and 38% - agreed). Neutral – 7 % of those who are not sure, and only 9% believe that farming cannot make a living (disagree 5% and 4% strongly disagrees).

Recommendation: A rural province like Eastern Cape needs agricultural policies that will suit the peasants at their level and allow them to develop the upward ladder as they feed their produce into the provincial economic grid.

STATEMENT 14: We do not have other means of income

Summary: More than half of respondents (55%) disagreed that there are no other means of income for most inhabitants around the area because income does not mean they should only receive income from farming. This could also relate to other sources of income.

Recommendation: In conclusion, farming can be a secondary income for those who can make it a secondary income; in other words, farming can be done while busy with other forms of generating income like being employed and doing farming activities.

STATEMENT 15: Our children provide support with their earnings

Summary: From the respondents here, the author did not find generalisation simply because those who agreed did not make up 50% of the respondents; in other words, 40% agreed (strongly -12% and agree –28. In conclusion, the majority does get support from their children, according to the respondents from the released statement.

Recommendation: Those who have the means to provide support to their family with their earnings can be utilised to the sizeable tribal trust lands lying waste whilst they look for jobs to buy tomatoes and other crops they could grow.

STATEMENT 16: We do not invest in farming

Summary: This can be slightly concluded or generalised that people do invest in farming activities. Because - 43% disagree (Strongly disagree– 18% and 25% -disagree) even though not more than half, but even though conclusion could be made based on the highest percentage from the respondents of the tested population.

Recommendation: These peasants require some basics of the importance of farming, which is not necessary for them currently. In other words, they are creating wealth for their generation to come so that it would be easy for them to continue where they left.

STATEMENT 17: We only purchase processed to consume

Summary: 37% agree, and 6% strongly agree that they do not purchase everything to consume; they only purchase processed food to consume. This means that most households do not buy everything to consume, though they are not even half of the tested population. In conclusion, there are some products that they are required to pay for – processed products like canned beans, canned peas and other products they do not harvest.

Recommendation: Ambition, inspiration, and passion are there, but no other technical skills or training to help them to generate ideas on how to relate to other means of producing and create employment whilst they live in their environment.

STATEMENT 18: We harvest to sustain ourselves from poverty

Summary: From the statement tested, 33% agree with 14% strongly agree, whereas only 19% disagree (disagree 15% and 4% strongly disagree). So, it can be easily generalised that most people in the area harvest to sustain themselves from poverty.

Recommendation: This simply means that chances are high for rural folk to stay away from poverty because, at some point, they understand the need to address the economic needs by using resources at their disposal, namely land. Sad to say, instead of leaving agriculture as an unimportant profession amongst them.

6.3.3 Benefits of agronomy for earning

STATS-SA stated many times that vast tracts of land in the Eastern Cape area are not fully utilised; in other words, there is enough space, but not all the available space is utilised. This notion has been tested. The researcher wanted to analyse other benefits of farming and ways to keep the land fertile. Below, responses are provided and grouped into percentages from the nearby households within the district.

STATEMENT 19: Tsolo land is not fully utilised for farming

Summary: 49% disagree (25% strongly disagree and 24% agree) with the statement that their land is not fully utilised for farming. This is not more than half, but this generation is made from most of the tested population.

Recommendation: In conclusion, seemingly these people believe that the space within the area is fully utilised in the sense that there is nothing else that can be done but to leaves them with one option, to go to town to look for employment from the whites who have experienced generations of skills training and continue to pass that to their progeny. Good education to force them to think about farming is required because the nature of their education, specifically in the district of Tsolo, forces them to seek employment in the white community.

STATEMENT 20: Our land is fertile enough to harvest for a long time

Summary: The perception of the statement that the area is full of fertile land to harvest seems to be true because more than half agree with the tested statement 70% (34% strongly agree and 36% agree) and one of the reasons was the fact that everything they harvest it gives encouraging results.

Recommendation: To beat the absence of pro-active government programmes to develop the rural population economically, supporting programmes such as farming-related training should be introduced to meet halfway the youth interested in farming, which could also lead to uninterested individuals.

STATEMENT 21: We do crop rotation, irrigation in our community.

Summary: From the respondents, the flowing results show that 44% agree (33% agree and 11% strongly agree) that crop rotation is important to assist the growing of crops. This simply means that the idea is there; most people have a vision of farming strategies.

Recommendation: The only assets at their disposal are the land and themselves. This simply means working around these two valuable assets; solid solutions can be found to escape from the mushrooming poverty within the district of Tsolo.

STATEMENT 22: We do not use soil irrigation to sustain soil fertility.

Summary: This cannot be easily generalised in the sense that both disagreements and those agreed, both under half of the tested population. 38% agree in the sense that (27% agree and 11% strongly agree), 33% disagree (28% disagree and 5% strongly disagree). This could simply mean that peasants use these options as a choice.

Recommendation: Rural populations need to be trained and forced to think around these strategies in the sense that they can be able to change their lives meaningfully.

STATEMENT 23: We are unable to cultivate, utilise plants for various uses

Summary: From the results of the tested statement, it is clear that most of the respondents never tested the other crops to prove that they cannot cultivate and utilise plants for various uses. Because almost half of the tested population, 39% remain neutral. This simply means peasants have never done this or never work around this strategy.

Recommendation: A small district like Tsolo needs agricultural education that will suit the peasants at their level and develop the upward ladder as they feed their produce using different strategies and skills necessary for farming.

STATEMENT 24: Food shortage to us is a deliberate choice

Summary: 32% agreed with the statement, with 11% strongly agreeing, making 43%. This is nearly half of the tested population showing that it is indeed a deliberate choice to remain below the poverty line in the district. This means agriculture as a solution in the district is not seen as an option for their escape.

Recommendation: The opportunity to substitute their bad education with skills training relevant to their needs is required for these impoverished members of the community. The emphasis on the importance of farming was never introduced, let alone implemented, in the first place.

6.3.4 Benefits of Animal Husbandry

This section intends to get a sense that if inhabitants within the area bother to raise animals to sustain their living standards as part of their agricultural activities, the questionnaire was issued, and the results are portrayed below. When farming involves animal husbandry, milk and eggs are natural by-products as they form part of the basics of animal husbandry. This was also assessed and gave a variety of farming activities and benefits to the farming community. Below it is clear from the respondents that those who are in farming reap the most benefits.

STATEMENT 25: Animal raising helps us in raising the living standard.

Summary: 57% (34% strongly agree and 23% agree) of the tested population agreed that raising animals to sustain their living standards is very important for them, and that is more than half of the tested population, whereas only 26% disagree (strongly disagree15% and disagree 11%). To conclude, those who do farming believe and rely on animal raising.

Recommendation: To maintain the excellent spirit within the small farmers, government officials should add more educational extensions for agricultural colleges to produce large and best results.

STATEMENT 26: We have access to products such as milk and meat

Summary: All 28% strongly agree, 19% agree, and only that simply means most people have access to other 'vitamins' as well. That should not end there, meaning economic activities must be within their activities, such as selling meat, selling unprocessed chickens, and exchanging life stock with money.

Recommendation: The government's unwillingness to change the education system and empower more blacks and peasants through technical expertise, skills and business thinking training means that the trend of poverty and the master-servant relationship between the whites and the blacks will continue, with whites always having the skills. Government should and must introduce these necessary strategies within the rural population.

STATEMENT 27: We only raise our animals to provide us with proper food.

Summary: Most responded replied, contradicting the statement in that about 29% disagreed, and 14% strongly disagreed. That remains with 34% agreeing (15% agree and 19% strongly agree) with the statement that they only raise their animals to provide them proper food.

Recommendation: Raising animals within the rural population is part of their survival; that is why support is required to these inhabitants in the sense that being introduced to commercial farming for their animal husbandry.

STATEMENT 28: We farm to eat and never have health issues.

Summary: They face the usual health-related issues other than those that agricultural activities might cause. Because 29% disagree and 24% strongly disagree. In general, many households still face health issues, although they do farm.

Recommendation: In this case, the government should provide extra general support with standard basic programmes to develop the province, such as running water, structural support such as nearby animal clinics, to inspire the economy and promote improved conditions in the district.

STATEMENT 29: We do not require cereals and other high-energy foods

Summary: 27% agree, 19% strongly agree, and 25% disagree, with 19% strongly disagreeing. These percentages show us that some of the respondents are not sure what their intentions are from the farming at large. In addition, basic farming activities vary from each province; from these responses, it is hard to generalise, but seemingly, a great deal of research and information is still required from different parts of the province.

Recommendation: Assistance from the government is required to instil and promote the importance of research into farming instead of engaging in endless rhetoric about elections and constantly reminding the country of the previous years of oppression.

STATEMENT 30: We never raise animals for anything else.

Summary: 41% agree (29% strongly agree and 12% agree) with the statement; this is believed to be a fact within the area of Tsolo district. This has been part of the lives of rural populations; animals have been part and parcel in the sense that people just raise their animals to slaughter only.

Recommendation: A lot can be introduced beyond animal slaughter, besides things like livestock selling and meat. After slaughter, they can open small factories to make and sell leather belts and jackets.

6.4 Open-Ended Questions

This section was deliberately provided as an open-ended section to allow for views and opinions of the respondents regarding this research.

REQUEST: Anything else you want to say, please write here.

The respondents were requested to indicate anything they want to add or comments. Furthermore, they were requested to express their opinions in view of the food production. The responses to all these were grouped and are reported below.

Relating to knowledge about food production and additional comments from all answered questionnaires, it revealed that an overwhelming number of 91% stated that they were aware of food production but not interested in farming. A small number (9%) do not want anything to do with farming and food production; the reason behind all that was theft.

6.5 Summary

This chapter was the summary of the findings from chapter 5 of this research and conclusions reached given the findings, as well as limitations and recommendations. This section has summarized the paper's primary purpose, from the objectives of the paper to the findings. An overwhelming response of 91% alleged that they were aware of food production to sustain a standard of living but not interested in farming. A small number (9%) do not want anything to do with farming and food production; the reason behind all that was theft.

In conclusion, seemingly these people believe that farming for them is not a solution to beat hunger in the sense that there is nothing else that can be done but to leave them with one option, to go to town to look for employment from the whites who have experienced generations of skills training and continue to pass that to their progeny. Good education to force them to think about farming is required for these communities because their education, specifically in the district of Tsolo, forces them to seek employment from others for survival.

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APPENDICES

QUESTIONNAIRE

TITLE: A project approach to agriculture for poverty reduction in the Tsolo District, Eastern Cape, South Africa
This is an academic investigation, we want to construct a project model to eradicating poverty inTsolo by making your resources (the land) be a solution to your poverty problems and make you have a descent earning. Your identity is protected and responses are confidential. Please do not write your name anywhere on this questionnaire – no one should / will know anything about your answer.

SECTION A. BIOGRAPHY

1. What is your status / activity / occupation in Tsolo district?

Scholar	**Teacher**	**Small scale Farmer**	**Other**

2. If other please specify in space below……

3. Is Tsolo your permanent / cultural / traditional home?

No, I came to work	No, I came to school	Yes I am from here	Other

4. Other please specify

……

5. Do you or your family have land that you can farm?

No, we don't	Yes we have	Fairly regularly	Always

6. What crops do you grow in the land you have access to?

Corn	Fruit and Vegetables	Wheat	Sugarcane

7. How often do you buy basic foods you need?

at least once a month	2-3 times a week	4-5 times a week	Every Day

8. What is your main food staple?

Multiple crops	Meal-meal	Rice and wheat	Fruit and vegetables

9. Do you always have enough food from the land or you buy some?

Sometimes buy	Always buy	No enough land	Always plant

10. Do you depend on assistance for money from children in town somewhere?

No, I don't	Yes, Sometimes	Yes, we do	No to other sources of income

11. Anything you would want to say about food production in your place, list below.

a. ……

b. ……

c. ……

d. ……

12. State the food that you always buy from the shops for your daily needs;

a. ……..

b. ……..

c. ……..

SECTION B THE LIKERT SCALE

Please rank the following by crossing the most applicable. The weightings are; 1 to 5 onan increasing scale (1- least up to 5 - critical / always)

	AGRICULTURE AS CAREER	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
1	We grow enough food for ourselves every year	1	2	3	4	5
2	We grow food that we sell regularly to the market	1	2	3	4	5
3	Neighbours always have to ask for food from us	1	2	3	4	5
4	We are always short of money for to buy enough food	1	2	3	4	5
5	My sons/daughters/sisters - give us money for food	1	2	3	4	5
6	We never run short of basic food that is grown here	1	2	3	4	5
	LAND AVAILABILITY	0	0	0	0	0
7	We have enough family land for our farming needs	1	2	3	4	5
8	We rent out land to other people who want to farm	1	2	3	4	5
9	The land we have is always fully utilised for planting	1	2	3	4	5
10	We are not able to use of the land for ourselves only	1	2	3	4	5
11	If we had money we could farm all the land available	1	2	3	4	5
12	Farming is not our favourite occupation at Tsolo	1	2	3	4	5
	POVERTY AND FARMING	0	0	0	0	0
13	Farming can make earn a living without dependence	1	2	3	4	5
14	We don’t have other means of income	1	2	3	4	5
15	Our children provide support with their earnings	1	2	3	4	5
16	We do not invest in farming	1	2	3	4	5
17	We only purchase processed to consume	1	2	3	4	5
18	We harvest to sustain ourselves from poverty	1	2	3	4	5
	BENEFITS OF AGRONOMY FOR EARNING	0	0	0	0	0
19	Tsolo land is not fully utilised for farming	1	2	3	4	5

20	Our land is fertile enough to harvest for a long time	1	2	3	4	5
21	We do crop rotation, irrigation in our community.	1	2	3	4	5
22	We don't use soil irrigation to sustain soil fertility.	1	2	3	4	5
23	We unable to cultivate, utilise plants for various uses	1	2	3	4	5
24	Food shortage to us is a deliberate choice	1	2	3	4	5
	BENEFITS OF ANIMAL HUSBANDRY	0	0	0	0	0
25	Animal raising helps us in raising the living standard.	1	2	3	4	5
26	We have access to product such as milk, meat etc	1	2	3	4	5
27	We only raise our animals to provide us proper feed.	1	2	3	4	5
28	We farm for eat and never have health issues.	1	2	3	4	5
29	We don't require cereals and other high-energy foods					
30	We never raise animal for anything else.	1	2	3	4	5

SECTION C [Open ended section] Please read through the section before you startfilling in to avoid mixing your responses.

REQUEST 1; Please state / identify at least 5 difficulties you have in Tsolo about

farming [crops or animal husbandry]

- ……
- ……
- ……
- ……
- ……

REQUEST 2; Please state in your own thinking / experience 5 possible causes of the problems you encounter in terms of agriculture in Tsolo.

- ……
- ……
- ……
- ……
- ……

REQUEST 3; Please identify what you consider [5] to be your own weaknesses as individuals / community in relation to the state of agriculture in Tsolo.

- ……
- ……
- ……
- ……

RREQUEST 4; Please state at least 5 very important steps / actions you would take [if you were government / or had the power and means]to help remove poverty in the TsoloDistrict.

- ……
- ……
- ……
- ……
- ……

REQUEST 5; Please indicate anything else you would need to discuss or bring to the attention of the researcher in connection with poverty / agriculture and the related inTsolo.

- ……
- ……
- ……
- ……
- ……

THANK YOU FOR PARTICIPATING IN THIS SURVEY – because of your participation we may be able to find a solution to the age-old poverty in the Tsolo District.

- ……

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for a master's thesis entitled

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- *I have completed the work independently and did not sub-contract it out*
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Office of the Chairperson Research Ethics Committee	FACULTY: BUSINESS AND MANAGEMENT SCIENCES

The Faculty's Research Ethics Committee (FREC) on **04 May 2021**, ethics APPROVAL was granted to **Lubabalo Gqesha (213119307)** for a research activity for **M Tech: Bus Admin in Project Man** at Cape Peninsula University of Technology.

Title of dissertation / thesis / project:	A PROJECT APPROACH TO AGRICULTURE FOR POVERTY REDUCTION IN THE TSOLO DISTRICT, EASTERN CAPE, SOUTH AFRICA Lead Supervisor (s): Dr L Jowah

Decision: APPROVED

Signed: Chairperson: Research Ethics Committee	**5 May 2021** **Date**

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the CPUT Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study requires that the researcher stops the study and immediately informs the chairperson of the relevant Faculty Ethics Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, notably compliance with the Bill of Rights as provided for in the Constitution of the Republic of South Africa, 1996 (the Constitution) and where applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003 and/or other legislations that is relevant.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
7. No field work activities may continue after two (2) years for Masters and Doctorate research project from the date of issue of the Ethics Certificate. Submission of a completed research ethics progress report (REC 6) will constitute an application for renewal of Ethics Research Committee approval.

Clearance Certificate No | 2021_FBMSREC_016

A PROJECT APPROACH TO AGRICULTURE FOR POVERTY REDUCTION IN THE TSOLO DISTRICT, EASTERN CAPE, SOUTH AFRICA

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