

SEEKING A DEEPER UNDERSTANDING OF THE QUALITY OF
RELATIONSHIPS IN THE SMALLHOLDER MAIZE PRODUCTION
SYSTEM IN MSINGA

by

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DECLARATION

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ABSTRACT

In South Africa, the majority of inhabitants rely on agriculture as the main source of livelihood. Agricultural crop production remains the primary source of subsistence, employment, and income. Due to policies put in place by the apartheid government, agriculture remained divided into large scale commercial farming and subsistence small scale farming. The 1913 and 1936 Tenure Acts and the 1927 Administration Act favoured white farmers of large scale commercial farms who produced and supplied markets. These acts were effective until 1994. Smallholder farmers were not supported to operate at commercial farming levels and instead remained as subsistence farmers. However, the present government has been putting policies in place to encourage smallholder farmers to operate at commercial farming levels.

Smallholder farmers are faced with many challenges that restrict them from being commercially active in crop production. Their challenges range from the lack of land, equipment, and financial resources. They may also struggle to meet the quality and safety standards set by food processors, large retailers, wholesale buyers, and exporters. Smallholder farmers are also constrained by limited support services provided by government.

When addressing problems that smallholder farmers are facing it is a common practice to focus on increasing production rather than to look at issues that affect production. It is thus important to look at the whole production system when the aim is to address problems affecting production and to understand the linkages in the system.

The objective of this research was to seek a deeper understanding of the quality of relationships among smallholder farmers, extension officers, input suppliers, and output buyers in the maize production system in Msinga, South Africa. This objective was addressed in the application of social learning which was informed by systems thinking in order to gain a deeper understanding of the perspectives, practices, and experiences of all role players involved in maize crop production.

This research was conducted through five levels of deeper learning where the first level was the review of literature. Semi-structured interviews and focus group discussions were carried out as tools for data collection in the other four levels of deeper learning. The second level sought to

gain individual role player's perspectives, practices, and experiences on the linkages and the quality of relationships in maize crop production. The third level consisted of two separate focus group discussions that brought together role players that worked together and were familiar with one another. The linkages and the quality of relationships were explored further. The fourth level brought together all role players into one group discussion where there was reflection on the findings of the previous group meetings and a cause and effect analysis on the quality of relationships. The fifth and final level was to establish strategies to improve the quality of relationships among role players in the maize production system.

Communication, trust, communal and exchange relationships, control mutuality, satisfaction, and commitment were through a review of literature established as being important indicators of quality of relationships,. It was established that these indicators are interrelated where communication is the most important construct of the quality of a relationship and that the rest of the indicators are developed through communication.

However, the findings of the research showed that weak linkages and poor quality relationships among role players of the Maize Production System occurred as a result of farmers' practices, low literacy levels, lack of financial resources, inappropriate extension approaches, weak production input distribution channels, and farmers' lack of information and access to output markets. Moreover, limited communication among role players in the system resulted in poor quality of relationships because communication is the most important construct of the quality of relationships. Communication is also the construct through which other indicators are developed.

Nevertheless, through social learning, the awareness of the quality of relationships that exist among role players informed new thinking and, as a result it was recognized that change was required. These new insights led to multi-stakeholder conversations over the development of strategies to improve the quality of relationships among role players. These strategies were aimed at improving not only the quality of relationships among role players, but also the forward and backward linkages which would be beneficial to all stakeholders in the maize production system..

DEDICATION

I dedicate this dissertation to my family, Thembeke, Abongwe, Yethaba, and Elihle, who gave up their family time, and supported and allowed me time to work on my thesis.

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INTRODUCTION AND OVERVIEW

1.1 Background

Agriculture remains a key driving force for economic development in South Africa since most people rely on it directly or indirectly as their main source of livelihood. Farming remains the primary source of subsistence, employment, and income (Reardon and Barrett, 2000). According to Sautier, et al. (2006), South Africa is characterized by high levels of concentration in food production and 46000 commercial farmers out of about 3 million farmers produce 95% of the formally marketed production, processing, and retailing. The country has a dual agricultural economy: a well-developed commercial sector and a predominantly subsistence sector. Commercial farming was seen as the predominant model for farming success and, as a result, the capacity of agricultural service providers to support the emerging sector of smallholder farmers is still relatively low. The South African government is working hard at bridging the gap in the divided agricultural production between previously disadvantaged smallholder farmers and established white commercial farmers by putting policies and programmes in place to assist in developing smallholder farmers to produce commercially.

The divide was brought about by past policies that were initiated and implemented by the apartheid government of the Republic of South Africa. These policies included the 1913 and 1936 Tenure Land Acts and the Administration Act of 1927, which favoured white farmers and prevented black people in the former homelands from becoming economically independent. White commercial farmers were able to establish themselves due to subsidies received while black farmers were not supported in any way. As a result, black farmers became subsistence farmers and had no access to proper equipment, technology, and markets (Gilimani, 2006).

De Clerk (1996) argues that it is in agricultural communities' interest to show willingness to bridge gaps between white commercial farmers and disadvantaged South Africans with credible

programmes, among others, to induct smallholder farmers into commercial production. The induction of smallholder farmers into commercial production will have a positive effect on food security and the well-being of people living in rural areas. In South Africa and the rest of Africa, attainment of food security is a challenge not only to government but also to all sectors of society. Moreover, increased agricultural productivity in rural areas will enable smallholder farmers to grow more food, which will translate into better diets and, under market conditions that offer a level playing field, into higher farm incomes. Maize crop production is essential as maize is the staple food for the majority of the South African population and production, availability and affordability of the crop ensures food security for communities in rural areas.

Smallholder farmers are faced with various challenges which restrict them from reaching their full potential regarding crop production and marketing. Among the many challenges, they have difficulties in making the transition to a more commercial food system. This is due to the farmers' inability to meet the quality and safety standards set by food processors, large retailers, wholesale buyers, and exporters. Smallholder farmers are also constrained by limited support services provided by governments due to policy reforms, market liberalization, and fiscal and governance problems. All of these have an effect on crop production by the rural poor smallholder farmers. High transport costs and legal arrangements such as quota entitlements and limited representation and participation in policy formulation restrict smallholder farmers' opportunities to compete in agricultural markets. Their access to the land market and institutional membership of various support services were until recently limited by legal restrictions on racial grounds (Singini and van Rooyen, 1995; Baiphethi, et al., 2003).

Hemson, et al. (2004) emphasize the fact that rural areas of South Africa are awaiting an initiative to bring the rural poor smallholder farmers from subsistence farming to commercial farming. One of the ways to achieving this can be done through investigation crop production systems and aspects that may impede farming commercially. According to Singini and van Rooyen (1995), it is important to promote crop production systems and technical support to smallholder farmers that will result in a positive situation for all role players involved. The quality of relationship that exists among role players in the maize production system is key to successful maize production. Role players' actions can impact on the economic and social

development of one another to enhance their capacity in crop production (Ledingham and Bruning, 1998). It is thus important to understand the underlying hindrances that affect farmers in the maize production system in relation to the quality of relationship and ways to overcome those (Stanton, 2000).

1.2 The need for the research

Dearlove (2008) describes Msinga, as a poverty-stricken area where there are few economic resources and little economic activity. There is a heavy reliance by the majority of the population on social services, government activities, and remittances from people working outside the area. In this way, the community of Msinga cannot develop and be self-sustainable. The local municipality identified agriculture as one of its priorities for poverty alleviation and stimulation of the local economy. The area has a potential to assist farmers to operate at commercial farming levels and to make a substantial contribution towards the economy through cultivation of maize and vegetables on irrigated plots. In addition, the Msinga municipality sees agricultural entrepreneurship as a strategic development intervention that could accelerate the rural development process and which could provide autonomy, independence, and a reduced need for social support (Dearlove, 2008).

Dorward, et al. (2004) emphasize the fact that agricultural growth through improved productivity is an important route to reducing poverty in rural areas. However, the literature on recent trends in agricultural development emphasizes the importance of extension and research practitioners participating with smallholder farmers in order to improve agricultural development, providing various cases to illustrate this point. The same body of literature also provides examples of networks amongst smallholder farmers that make a crucial difference to local agricultural development by supporting smallholders. These networks are seemingly made up of more or less homogeneous resource poor individuals sharing their skills, knowledge and inputs to ensure their ability to produce and to survive (DFID, 2004; Gilimani, 2006; Hart, 2008).

A point missed in agricultural developmental initiatives is a strategy that looks at the promotion of opportunities of crop production, harvest, and marketing which requires development of sustainable farming enterprises that would alleviate poverty through promoting agricultural

production systems linkages and technical support to emerging farmers. Important in this is the effective forward and backward linkage coordination that ensures that benefits of agricultural growth reach the poor smallholder farmers. It requires the breaking down of farmers' isolation and the incorporation of them into the mainstream of agricultural business. While subsistence farming can be undertaken independently, commercial farming relies on a range of service providers, advisers, suppliers, processors and markets (Dorward, et al., 2004, DFID; 2004; Gilimani, 2006; Hart, 2008).

The promotion of opportunities, harvest and marketing can be achieved through improving production systems of various commodities and would improve farming skills and crop production among smallholder farmers, thus improving their livelihoods. If this is so, it is thus important to understand the relationships of all role players involved in crop production because this will lead to a deeper understanding of why smallholder farmers' skills have not improved and how they can be improved (Oerke and Dehne, 2004)

Effective integration of smallholder farmers into the agri-business system is a challenge. According to Hart and Burgess (2005), smallholder farmers are not brought into coordinated networks in crop production. Integrating smallholder farmers into production systems requires that their needs be addressed with regards to markets and providing commercially viable and sustainable solutions that will in the long term benefit all the various role players of the system. These crop production systems are an effect of the forward linkages (input supplying) and backward linkages (buying of outputs) held together by the quality of relationships among role players involved.

This research therefore seeks to understand the quality of relationships among role players in the maize production system in Msinga. This will give an indication of why the system has been successful or unsuccessful in improving maize production. By seeking an understanding of the current linkages and relationships, new ways of improving or maintaining the relationships among smallholder farmers, input suppliers, and output buyers can be developed which could eventually lead to an improved maize production system. As a result, there could be a change in the quality of rural living standards of smallholder farmers and increased quality and quantity of the area's food production.

1.3 Problem statement

The government of the Republic of South Africa at the national, provincial, and local levels has good intentions of changing the face of agriculture and developing smallholder farmers to become self-sustainable commercial farmers. However, most of the initiatives have involved providing land to black farmers even though they have no proper support services in place.

Literature indicates that smallholder crop production in South Africa is constrained by weak linkages between agricultural training and extension, access to quality production inputs, credit, processing, and marketing (Dorward, et al., 2004). According to DFID (2004), smallholder farmers have the challenge of restriction from accessing commercial markets to enable them to profit from agriculture. They also lack productivity-enhancing technologies, appropriate research and extension programmes and at the same time they are disadvantaged with restricted access to land and other production resources.

It is thus important to understand the maize production system in terms of relationships. Such understanding will give an indication of why smallholder farmers' skills have not improved and how they can be improved (Oerke and Dehne, 2004).

As a result the main research question addressed was:

What is the quality of relationships that smallholder farmers, input suppliers, and output buyers have amongst one another in the maize production system in Msinga?

1.4 The main objective

In order to address the research problem in an organized and systematic manner, the following main objective was formulated:

To seek a deeper understanding of the quality of relationships among smallholder farmers, input suppliers, and output buyers in maize production system in Msinga.

1.4.1 Sub-objectives

The main objective of this research will be addressed by:

- establishing indicators of quality relationships among smallholder farmers, extension officers, input suppliers, and output buyers through examination of appropriate literature;
- determining the existing linkages in the Maize Production System (MPS) in Msinga;
- determining the quality of relationships existing in the MPS in Msinga;
- determining the causes and effect of these relationships among role players in the MPS; and
- establishing strategies with all role players to improve the quality of relationships.

It is through these sub-objectives that this research will seek an understanding of the relationships that exist among smallholder farmers, input suppliers, and output buyers in the maize production system in Msinga.

1.5 Clarification of concepts

It is important to understand the different key concepts related to this research and the context in which they have been applied. These include the following concepts:

1.5.1 *Smallholder farmers*

South African agriculture is comprised of mainly two categories of farmers - the subsistence farmers in the former homeland areas (mainly black) and the large-scale commercial farmers (mainly white). In the context of this research, smallholder farmers are small-scale farmers characterized by low levels of income and resource base on which they operate (Kirsten and van Zyl, 1998). These are farmers whose production objective may range from subsistence to inconsistent surplus production which is then sold to various local markets. Such farmers make use of family and casual labour and mostly receive only a portion of their gross income from farming. They live mainly in communal lands governed by tribal authorities and have production rights rather than ownership of land as the land belongs to tribal authorities (Kirsten and van Zyl, 1998; Agbola and Saini, 2002).

In the context of this research, the term farmer is used to refer to smallholder farmers and not commercial farmers.

1.5.2 Input suppliers

Input suppliers refer to companies and agents responsible for producing and marketing of agricultural inputs primarily seed, fertilizer and agro-chemicals. The seed companies are responsible for breeding, processing, and supplying of seed requirements to the farming community. The fertilizer industry is responsible for the mining, processing, and supplying straight and compound fertilizers. The agrochemical industry is responsible for the manufacturing and distribution of agricultural and crop protection chemicals including herbicides, insecticides, fungicides, and various other associated products (Esterhuizen, 2006; Guenette, 2006).

1.5.3 Output buyers

Output buyers refer to agricultural markets that buy, handle and/ or transform farm produce before it reaches the consumer. These are small- to medium-scale and even large operations that are responsible for transporting and processing raw agricultural materials, wholesaling and retailing, and selling agricultural commodities (Sautier, et al., 2006; Kirsten, 1999).

1.5.4 Agricultural extension

Agricultural extension is a system of non-formal education mainly for adults in rural areas. It involves a process of technology transfer as well as working with the people, not for them but in order to improve their standards of living. In the context of this research, agricultural extension refers to the process of helping farmers to become aware of and adopt improved technology from any source to enhance their production efficiency, income and welfare. It is a process of assisting farmers to help improve their know-how, efficiency, productivity, profitability and contribution to the good of their families, community and society (Mollen, 2007; Morris, et al., 2007; Swanson, et al., 1990; Röling, 1991; World Bank, 1995).

1.5.5 Maize production system (MPS)

The concept and term of a maize production system will be regarded as a sustainable and economically viable process of producing maize. It has various stages ranging from input acquisition, production, and marketing. Included is the implementation of crop management

practices that provide adequate high quality maize food and feed that is produced in an economical way. Stakeholders of the system include smallholder farmers, extension officers, input suppliers, and output buyers.

1.5.6 Social learning

The term social learning means a multi-stakeholder process for enquiry and learning that takes place within a social context to support collective decision-making and action as described by Kilvington, (2007). The process is used to bring together different role players from different backgrounds and knowledge sources to learn about and make decisions about complex problems. People learn by observing and engaging with others and as they change, the learning process moves to the wider communities. Social learning provides both an analytical and facilitative process that can be used to support collective decision-making and action in complex situations (Kilvington, 2007; Schuler and Decker, 2003; Allen and Kilvington, 2005 Keen, et al., 2005)

1.5.7 Systems thinking

Systems thinking is a approach based on the notion that the component parts of a system can best be understood in the context of relationships with one another and with other systems, (Aronson, 1996). As in the case of this research, smallholder farmers, extension officers, input suppliers, and output buyers are viewed as parts of the maize production system that is viewed in a holistic manner. Systems thinking help in the understanding complex and messy situations systematically. This understanding of a system is achieved through examining the linkages and interactions between the elements that comprise the whole system. In the case of this research, the quality of relationships will be examined to reveal a bigger picture of the existing relationships. From this broad examination, multiple leverage points that can be addressed to support constructive change can be identified, such are strategies to improve the quality of relationships (Checkland and Scholes, 1990; Aronson, 1996).

1.6 Research methodology

In this section, an overview is given of the procedure and methodology employed in this research to understand the linkages among smallholder farmers, input suppliers, and output buyers.

1.6.1 Research design and methodology

The research is informed by social learning and systems thinking approaches where the process of enquiry and learning take place together with a group of Msinga smallholder farmers, extension officers, input suppliers, and output buyers. The aim is to bring an understanding of the quality of relationships that exist and to improve cooperation among them. It is a process of problem identification and reflection using a systems approach, where the aim is to seek an understanding of the quality of relationships that exist and are supposed to exist among role players (Checkland and Holwell, 1993). Semi-structured interviews and focus group discussions were conducted as part of the process of enquiry within social learning and systems thinking processes.

1.6.2 Sampling

This research was conducted in the Msinga Local Municipality in KwaZulu-Natal. This area was selected due to the land reform and agricultural development processes taking place in this area with the support of role players in the maize production system. The focus is on the existing smallholder farmers, and those who are the beneficiaries of the land reform and agricultural development programme, and also on the activities of the extension service of the Department of Agriculture, Rural Development, and Environmental Affairs. Sale representatives from seed input suppliers, such as Pannar Seeds, Monsanto, and Pioneer Hybrid International (PHI) formed part of this research. Other input suppliers included were agronomists from fertilizer input supplies companies, YARA Fertilizers, Sasol Nitro, and chemical input suppliers, Bayer Crop Science. Of the output buyers that were included in this research sample, there was one manager from Umkhumbi Maize Milling and one from AFGRI's grain section. Extension officers from the Department of Agriculture, Rural Development, and Environmental Affairs were included as they are part of the day-to-day activities of smallholder farmers.

1.7 Delimitation

This research focuses on maize producing areas of the Msinga Local municipality in KwaZulu-Natal, with the particular focus on maize producing smallholder farmers. Other types of crop production will not be examined.

Due to this research's objective of seeking a deeper understanding of the quality of relationships that exists among role players in maize production and due to time constraints, this research would not be in a position to link smallholder farmers to the market and would not link input suppliers, and output buyers to the smallholder farmers for marketing purposes. The research will also not be in a position to initiate any infrastructural projects. This research will serve only to understand the existing quality of relationships and how they affect the maize production system and thereafter to develop strategies for improving the quality of relationships.

1.8 Sequence of chapters

The chapters are structured as follows: In Chapter 1, the introduction and overview is provided. The problem that is intended to be investigated, the broad context within which the problem exists, and the research objectives are described. Key concepts in the context in which they are applied in this research have been clarified. Social learning informed by systems thinking has been outlined as the research methodology employed in this research. Sampling followed during research was outlined.

In Chapter 2 a review is presented of literature regarding the importance of maize in South Africa, the maize production system that involves smallholder farmers, input suppliers, output buyers and extension officers. The indicators of quality relationships among role players, which will enhance quality linkages in the Maize Production System are established.

In Chapter 3, the use of social learning that is informed by systems thinking as a methodological framework is put into context. An outline is given of the research setting, the research sampling, and the research methodology and design.

In Chapter 4, findings of the research are presented as gained through the social learning process, where deeper understanding was achieved through five different levels of learning.

In Chapter 5, reflections are presented on the benefits of the social learning process, a summary is made of the main findings of the research, and conclusions are drawn regarding the indicators of relationship qualities, the main objective of the research as well as the social learning approach. Recommendations are made for practice, and for further research.

1.9 Summary

In this chapter, the following were described: the background, the need for the research, the research problem statement, the research objective and sub-objectives which revolve around seeking a deeper understanding of the quality of relationships between small-holder farmers, input suppliers, and output buyers in maize production. In Chapter 2; an outline is given of the importance of maize in South Africa and the maize production system which involves smallholder farmers, input suppliers, output buyers and extension officers. The indicators of quality of relationships among role players are established, and social learning is outlined as a approach for seeking the understanding among role players in the MPS.

2.1 Introduction

Chapter 1 described the research question, the main objective and sub-objectives of this research. The main objective of this research is to seek a deeper understanding of the quality of relationships between small-holder farmers, input suppliers, and output buyers in the maize production system.

Smallholder farmers remain as subsistence farmers due to a number of reasons. The high transaction costs that discourage rural traders, input suppliers, and output marketing companies from doing business with smallholder farmers contributes to farmers becoming subsistence farmers. Past policies developed and implemented by the apartheid government of South Africa were among the reasons that resulted in black farmers becoming subsistence farmers. In dealing with such an injustice, it is in the government's interest to develop smallholder farmers to operate at commercial farming levels. To achieve this, it is important to develop production systems and technical support to smallholder farmers. Most important is that the survival and effectiveness of the production system is dependent on the quality of relationships that role players establish with one another.

Chapter 2 contributes towards the development of the theoretical framework by focusing on smallholder farmers, input suppliers, output buyers and extension officers in the context of maize production. The indicators of quality relationships among role players, which will enhance good linkages and promote success in the maize production system is also described. Furthermore, social learning is described as a learning process employed in seeking a deeper understanding of the quality of relationships in maize production.

2.2 The importance of maize in South Africa

Maize (*Zea mays* L.) is the most important grain crop in South Africa as it is used for both feed grain and as staple food for the majority of the population. Walker and Schulze (2006) make the following statement about the importance of maize in the country: “At present, maize is undoubtedly South Africa’s most important field crop... more than a rugby field of maize is planted for every South African family every year...” (Walker and Schulze, 2006).

Du Toit, et al. (1999) state that one third of South African’s calorie intake is supplied by maize. The presence and dominance of maize in the South African diet makes it the staple food for the population. Maize is affordable to the majority of the population and families are able to produce and process maize in households. Maize is the basis for many different food types, including corn on the cob, soft porridge, fermented porridges, dry porridges, non alcoholic fermented gruel and even low alcohol beer (du Toit, et al., 1999).

The maize plant is important and can be utilized in many different ways. Grain from the maize plant can be used for human food and animal feed and the plant can be used as a fodder crop. Every part of the maize plant from the plant’s grain, stalk, leaves, cobs, tassels, and silks all have commercial value, although that of the grain itself is the highest. Maize production in South Africa is estimated to be 60% white and the remaining 40% yellow maize. White maize is primarily used for human consumption, while yellow maize is mostly used for animal feed (Brett, 1994). The crop is also responsible for the largest contribution of all crops (14%) to the total gross value of agricultural production in South Africa with a gross value of R9.5 billion (du Plessis, 2003).

Since maize production is such an important part of overall food production in South Africa, it is important to investigate ways to support maize farmers for optimum production. The next subsection describes the maize production system in South Africa and the linkage between the role-players in this system.

2.3 The linkages in the maize production system (MPS)

Successful maize production is dependent on the strong linkages informed by the good quality of relationships among smallholder farmers, input suppliers, output buyers, and an effective agricultural extension service. Each role player's importance in crop production and how each role player fits into the maize production system are explained.

2.3.1 Smallholder farmers

South African agriculture has two forms of farming namely, subsistence farming in the former homelands and large-scale commercial farming. Among other reasons, the differentiation is largely a result of unequal distribution of land, water, and technology because black South Africans were denied access to productive farming areas (Kirsten and van Zyl, 1998). As a result of such a divide, smallholder farmers have problems of insecure and fragmented land rights, communal tenure arrangements, non-viable and small farm units, and over stocking and deterioration of land in the former homelands (Luswazi, 2005). Van Rooyen (1999) also mentions the fact that smallholder farmers lack support infrastructure, water suppliers, transport networks, financial support, and extension and research services.

Subsistence farming has been defined in many ways. Gilimani (2006: 9) describes subsistence farming as "the mode of agriculture in which a plot of land produces enough food to feed the family working on it." However, this definition leaves out the fact that surplus production may be sold for cash or exchanged for some other goods needed at home. Moreover, what stands out in the definitions is the relative lack of resources and the low income levels and resource base with which smallholder farmers operate. Smallholder farmers are farmers working on small pieces of land, with low income, inputs, management levels, and technology. Moreover, they have little support and multiple livelihoods. Their farming objective becomes that of feeding their families and selling the surplus produce (Agbola and Saini, 2002; Jacobs, 2002; Hart, 2008; Gilimani, 2006).

Maize forms an integral part of crop production for smallholder farmers. It is grown for home consumption as most families obtain the greater part of their income from wage-earning and remittances. However, commercial maize production has expanded over the years. Improved

methods of cultivation are being adopted increasingly as a means of obtaining better yields. May (1996) argues that maize production by smallholders is characterized by low yields, which are often significantly lower than the potential of the land. This affects the sustainability of household food security and farmer and community well-being. Inefficient production and marketing in the maize sub-sector contribute to economic stagnation and poverty (Derek, 1991; Brett, 1994; du Toit, et al., 1999; du Plessis, 2003).

2.3.2 Input suppliers

While there are many farm inputs like labour, mechanical and animal power, storage of chemicals, and packaging materials, for the sake of this research, “input suppliers, ” refers to companies and agents responsible for producing and marketing of agricultural inputs, primarily seed, fertilizer and agro-chemicals.

Input suppliers are vital in linking farmers and consumers and in adding value to primary production. Guenette (2006) uses the metaphor of seeds being the vehicle in maize production, while fertilizer serves as the fuel in the tank to allow the vehicle to move. To extend the metaphor, he says that agro-chemicals such as pesticides, fungicides and herbicides are the wipers, heater and air-conditioning. Such are the tools that help the driver optimize performance and deal with environmental conditions encountered along the way. These production inputs have a huge potential to increase yields and income and as a result leverage the efforts of hard-working farmers. Used appropriately, these inputs can mean the difference between a good harvest and starvation (Guenette, 2006; COMMARK, 2006).

2.3.2.1 Seed inputs

Central to sustainable agriculture and for increased crop production, good quality seeds and crop varieties adapted to the local conditions need to be readily available for farmers to access and use (FAO, 2005). Seed supply is considered to be a key factor to improve agricultural productivity. As Guenette (2006) used the metaphor of the seeds as being the vehicle in maize production, the importance of seeds for a successful crop production is emphasized. Hybrid seeds are bred and produced to improve yields, achieve uniformity, and disease resistance, and contribute to production output. Most of South Africa's seed requirement is produced locally under contract

with farmers, and extensive use is made of irrigation to ensure good seed quality (Guenette, 2006; Van der Walt, 1997).

The current and common trend in seed distribution is that private retailers, supplied by private distributors, are responsible for the seed input sales (du Toit, et al., 1999). However, this practice has implications for smallholder farmers who have to identify input suppliers, and retailers that have the least expensive and affordable products for sale. At times, the retailers in the farming communities run out of supply and farmers have to take care to buy inputs before they run out (Guenette, 2006; du Toit, et al., 1999; du Plessis, 2003).

Smallholder farmers plant mostly their own varieties and the local varieties are usually not robust, hence the focus of seed companies and extension agents is to increase use of alternative varieties (du Plessis, 2003). However these local varieties comprise qualities important to them. There are many factors that contribute to smallholder farmers' continuous use of farm saved seeds or traditional varieties. Unavailability of seeds locally, lack of information on high yielding varieties, and poor adoption of improved crop production technology as a result of economic backwardness of the farmers are some of the factors (FAO, 2005).

Pschorn-Strauss (2005) points out that the advantages of farm saved seeds are that farmers do not have to buy seed and the taste and type remains the same as that of the previous crop. These varieties have the qualities of early maturation and higher yield under drought and low soil fertility conditions as well. However, in as much as the farm saved seeds have good characteristics, their yields cannot be compared to those of hybrids. Hybrids provide higher yields as compared to the farm saved seeds. The implications of this for smallholder farmers are that hybrids are expensive, while farm saved seeds although cheaper are low yielding (Brett, 1994).

The seed industry and extension services have an important role to play in informing smallholder farmers of the advantages and benefits of using certified hybrid seeds (FAO, 1995). This has been practised from the earliest times and has played a significant role in crop development, as farmers are made aware of the processes of seed production and its importance in achieving high yields in crop production. This information dissemination has led to many smallholder farmers embarking on using certified hybrid seeds (Brett, 1994; FAO, 1995).

2.3.2.2 Fertilizer input suppliers,

According to Venter (1999), fertilizer input suppliers are manufacturers responsible for the mining, processing, and importing of raw materials and the manufacturing of straight and compound fertilizers. These manufacturers can market their fertilizers directly to farmers but in most cases fertilizer is supplied through agents that store and distribute fertilizers on behalf of manufacturers

Primarily fertilizers are sold in bulk and often packed and sold in 50kg bags in South Africa. For the smallholder farmers, efforts have been made by suppliers and retailers to package the products to suit farmers' needs. Larger bags are broken into smaller units that are cheaper and more sized for smallholders. This has meant not only the right input varieties are available but that they are available in the right amounts as well (Guenette, 2006; Rugube, 2005).

Fertilizer input suppliers, play a major role in ensuring that the farmers' soils remain fertile for successful maize production. Their representatives offer an extension service to carry out soil tests for their clients who are mostly commercial farmers, while extension officers assist smallholder farmers in this regard. These soil tests are carried out to measure soil fertility and indicate deficiencies that need to be rectified in the soils. Soil samples are then analysed to determine nutrient content, composition, and other characteristics, including contaminants on the farmers' fields. Once these soil analyses are carried out, recommendations are made on the fertilizer that a farmer could use for his maize crop in order to meet the nutrient requirements of the crop. Demonstrations are carried out by input supplier representatives and extension officers to give firsthand information on the seed varieties, chemicals and fertilizers that are on the market to farmers (Venter, 1999; Batanio, 2009).

2.3.2.3 Agro-chemical input suppliers,

“Agro-chemical” is a generic term for various chemical products used in agriculture. In this research, the term is used for agro-chemical input suppliers that manufacture and supply insecticides, herbicides, and fungicides which are all used for crop protection in the maize crop. A good maize harvest is a result of good crop protection practices. The maize crop has to be

protected from weed infestation, pests, and diseases, which have negative effects on yield, which in turn have a negative effect on the farmers' income (Oerke and Dehne, 2004).

In South Africa, the agro-chemical industry is organized into agents and distributors. The agents and distributors play a role of ensuring that the chemicals reach farmers. There are companies that trade as agents and local representatives of multinational chemical companies and compete directly in the marketplace. Chemical companies are actively involved in demonstrations and information dissemination to farmers, promoting products that could be effectively used in maize production (Kirsten, 1999; Esterhuizen, 2006).

While agro-chemicals in crop protection can increase short term crop yields, Altier (2000) and Singh (2009) argue that they come with their share of detrimental environmental and health effects. They argue that agro-chemicals can cause significant harm to public health and the environment as most pesticides contain potentially toxic chemicals that can cause cancer and neurological and reproductive disorders. This occurs as a result of some chemicals having a residual effect and continued application may cause contamination of food and imbalance in the ecosystem by killing non-target species. These authors also argue that most of these chemicals are not biodegradable and they enter the food chain and persist in plant and animal bodies. Furthermore, pesticides can flow into streams and rivers when it rains and could cause oxygen levels to drop, killing aquatic life and posing risks to other species (Jaeger and Carlson, 1999; Altier, 2000; Singh, 2009).

Nevertheless, if used correctly, agro-chemicals can mean better yields and improvement of livelihoods. However, there are alternative strategies available that can be used which include organic farming and integrated pest management (IPM). Most smallholder farmers still use indigenous ways of crop protection. IPM is still a common trend and weed control is done by hand-hoeing or animal traction. Smallholder farmers still use natural solutions to pest problems such as using predators and parasites of pests, although they may not be as effective at times and may lead to low yields. Suppliers play a major role in advising farmers on alternatives or if there are less toxic alternatives and environmentally friendly products that can be used (Beierlein, et al., 1995; Bationo, 2009).

2.3.3 Agricultural output buyers

In the present times of market freedom, globalization and growing agri-businesses in the world, smallholder farmers still find difficulty in fully participating in the production and marketing of agricultural output. Smallholder farmers are faced with challenges of meeting the requirements and quality standards set by corporations. Such requirements and quality standards act as barriers for participating in the markets, as a result, marketing opportunities are limited (Kirsten and Sartorius, 2000). There are many agricultural market outlets for marketing agricultural outputs. Smallholder farmers in rural communities have exploited some of the non-formal marketing channels, like cash market sales (Stanton, 2000).

2.3.3.1 Cash market sales

Cash markets which include informal sales to the surrounding community, hawkers, market stalls, and contract markets are those mostly used by smallholder farmers. According to Machete, et al. (1997), most smallholder farmers market their maize crops directly from their gardens to the surrounding communities. They also supply hawkers who visit them with their own transport to sell the produce in the local town and or cities. They also market their produce on the farm and/or market stalls, in urban, peri-urban and rural areas that are used as points of sales. Contract markets, such as government feeding programmes, schools, retail contracts, and tourism outlets are becoming more and more available as market outlets, and a few farmers add value to their produce and market products through the various marketing channels mentioned above (Kirsten and van Zyl, 1996).

Cash market sales have the advantages of costs being reduced as there are no transport costs involved. Produce can be sold by the farmer, thus costs are reduced although prices achieved may be lower. It is a form suited to the smallholder farmers. The negative part is that once the local market's demand is supplied, the farmer has to look to more distant markets or has to accept the local price for the produce and will not necessarily be well located to sell the products (Machete, et al., 1997). As a result, the produce is sold in the nearest village.

Taking their produce to the nearest village encourages the development of marketing from the farm, as it goes some way towards taking the product to the consumer. In most cases, farm stalls

are used and operated by farmers selling their own produce. In other cases individual stall holders sell on behalf of local farmers (Machete, et al., 1997).

This type of marketing farm produce in the nearest village has an advantage in that a larger market can be exploited. Farmers are also able to take advantage of more favourable prices and price fluctuations are generally small. Some of the disadvantages are that transport of the produce may pose difficulties, the quality of the produce may have to be higher to cater for the needs of the more discerning consumers, a constant supply of produce must be available to satisfy the needs of the market and flexibility on pricing of produce is needed (Mbongwa, et al., 1996).

2.3.3.2 Storage market

Storage markets are operations in rural areas that either store and process raw agricultural materials or provide marketing, transport, and other services to farmers (Kirsten and Sartorius, 2002). These are activities that occur after harvest and prior to final sale to consumers. The range of services provided by these enterprises is wide. Sorting, grading, and packing facilities take raw output and consolidate it into useful categories for shipment to wholesalers and distributors. Transport companies specialize in agricultural commodities and establish strong market links. The size of these enterprises varies from individual households to small groups of neighbours, to larger cooperative and even village wide efforts. Although this type mainly benefits large commercial farmers, the key element is that there is an effort to locally capture value added services after harvest (von Braun, 1994; Stevens and Jabara, 1988; Kirsten and Sartorius, 2002).

In this form of marketing channel, smallholder farmers are faced with various challenges. Such challenges include meeting the quality standards required by this form of market, poor transport infrastructure and transport links, finance, and communication (Kirsten and Sartorius, 2002).

2.3.3.3 Contract production

According to Madigan (2005), contract production is a way of managing risk in crop production. Such contracts offer farmers favourable commodity prices and provide contractors with a reliable and predictable supply of agricultural produce. Although contract production has been practised by large commercial farmers over the years, Hull (2000) states that there has been a trickle of

involvement of smallholder farmers. Smallholder farmers in maize production have not been able to fully participate in this form of market due to constraints such as lack of adequate infrastructure, storage facilities, access to credit, and the seasonality of maize grain (Hull, 2000; Madigan, 2005).

However, according to van Rooyen (1999), a few of the maize producing smallholder farmers have focused on the concept of vertical coordination which is a form of contract production that provides well organized market structure. The process ensures that each successive stage in the supply of inputs, production, and marketing of a product is appropriately managed and interrelated. Decisions about what to produce and how much are communicated as efficiently as possible from the market to the producer. The advantages with this form are that production inputs and services are provided. Such contract production provides credit from the sponsor, new technology and skills, and reduction of farmers' price risk ensuring new markets and market guarantee for farmers (van Rooyen, 1999; Emeksiz, et al., 2005; Madigan, 2005).

In as much as contract production has advantages as mentioned above, there are risks involved such as market failure and production problems, inefficient management or marketing problems, unreliable sponsoring companies, and corruption among the staff of sponsoring organisations (Williamson, 2000).

Nonetheless contract production becomes helpful as it provides market guarantee for farmers, supply of production output continuously to markets and gives opportunity to farmers to produce and supply crops suitable prices (van Rooyen, 1999; FAO, 1996).

2.3.4 Agricultural extension

Agricultural extension plays an important role in the success of any crop production activity. Agricultural extension has evolved over time, and researchers and extensionists have defined it in various ways. This research will not seek to go into depth defining what the term "agricultural extension" means, but will rather emphasize its importance, role, and effect it has in changing the livelihoods of rural communities. Presently, there is no widely accepted definition of "agricultural extension". According to Duvel (2003), the term "extension" has a wide variety of meanings and interpretations and it often becomes what a person wants it to be.

Among other things, the role of agricultural extension is to raise productivity by offering advice, helping farmers to identify problems and opportunities, sharing information, and supporting group formation. Extension is also about acquiring agricultural knowledge as the result of agricultural research and taking it to farmers. It involves working with farmers in group settings and as individuals where advice and assistance is given to the farmers to find new solutions to problems. It allows those involved in the discussions to contribute their knowledge and experience. Agricultural extension requires participation of extension officers, farmers, and researchers in trying to solve problems that affect all of them. According to Jones and Garforth (1997), a successful programme with smallholder farmers is achieved when knowledge and opinions of farmers are considered to be just as important as those of researchers or government officials. Such an approach encourages participation and knowledge sharing amongst the farmers. Participatory approaches that involve information-sharing and joint decision-making, interactive and the so called "bottom-up" approach among all participants involved are crucial to successful extension (Röling, 1988; Röling and Wagemakers, 1998; Jones and Garforth, 1997; Saville, 1965; Duvel, 2003; Mollen, 2007; Kamau, 2006).

Communication is vital to agricultural extension, as is continued interaction among extension officers, farmers, researchers, and the private sector, which could include input suppliers, and output buyers. The activities of extension and communication thus cannot be separated. They are a process where role players are able to raise issues to one another constructively, reaching mutual agreement, and in a manner that will enhance development without compromising the other's interests. It is through communication that collaboration and cooperation occur in extension services (Rivera, 2003; Röling, 1988).

The FAO (2005) laid emphasis on the fact that extension services should be market driven integrated services that are tailor made to meet the needs of the smallholder farmers in crop production. When farmers have not been linked to agri-business, then extension services is not complete. Furthermore, Rivera (2003) emphasizes the importance of developing sustainable extension systems that are demand-driven and efficient with closer linkages to clients. Kamau (2006) states that the aim of extension is achieved if communication is aimed at:

- the dissemination of agricultural knowledge, information, and technologies;

- linking farmers and other actors in the economy; and
- transformation of subsistence farming to modern and commercial agriculture.

A successful agricultural extension programme would be achieved if communication strategies enable farmers, input suppliers, and output buyers to know and understand issues that affect others. Extension and communication provides means and spaces for role players to articulate their own perspectives. When there is communication, role players would have an understanding of the others' challenges and would be able to create an environment that would meet the needs of others. Communication creates the capacity for all role players to make their voices heard and this paves the way for participation and ownership of the process (Hutt, et al., 2004).

2.3.5 Summary of the linkages in the maize production system (MPS)

The challenges faced by smallholder farmers and the consequences of the past government policies had effects in smallholder crop production practices. Maize is an integral part of crop production for smallholder farmers where it is grown for home consumption. Most smallholder farmers do not have access to input suppliers, due to unavailability of seeds locally, lack of information on high yielding varieties, and poor adoption of improved crop production technology as a result of economic backwardness of the farmers. Smallholder farmers still find difficulty in fully participating in the production and formal marketing of agricultural output as they are faced with challenges of meeting the requirements and quality standards set by corporations. The quality standards act as barriers for smallholder farmers to participate in the markets. Agricultural extension plays a vital role in enhancing success in crop production for smallholder farmers.

2.4 Indicators of quality relationships

According to Pencheon (2007) and Hon and Grunig (1999), indicators are measurement tools that briefly and clearly explain the quality of relationships between role players in the system. Indicators point to the state which exists between role players in the system, in which the actions of either can impact on the economic, social, cultural or political well-being of the other. What this definition is implying is that role players in the MPS affect one another with their

behaviours. Indicators are measurement tools which can help in the understanding, comparing, and improving of systems. Indicators have three broad ways in which they can be applied. For research purposes, indicators can be a useful tool in understanding how a system works and how it might be improved. Indicators can also be used to measure performance of the relevant system against standards that have been set (Pencheon, 2007; Hon and Grunig, 1999; Bronn, 2008).

Hon and Grunig (1999) developed a guide or an instrument for assessing the quality of relationships between institutions and communities. The indicators of quality of relationships have been developed and guiding questions formulated to assist in the assessment. This is a guide that has been widely used to assess the quality of relationships among role players in different systems.

Based on Hon and Grunig's (1999) instrument for assessing the quality of relationships among role players, the following indicators have been identified as being important characteristics representing the quality of relationships between organizations and communities: trust, communal and exchange relationships, control mutuality, satisfaction and commitment. According to Hon and Grunig (1999), these indicators have proven to be good measures of perceptions of relationships, strong enough to be used in evaluating relationships. Stafford and Canary (1991) also state that such indicators are interrelated and they support the idea that these indicators can be used to conceptualize and measure the quality of relationships among role players (Hon and Grunig, 1999). However, the quality of a relationship is built through communication and it is the cornerstone of any successful relationship (Saville, 1965). Therefore communication cannot be left out of the list of indicators of quality of relationships. Based on the above, these indicators have been selected to be used in seeking a deeper understanding of the quality of relationships among role players in the maize production system.

Following is a brief discussion and outline of the indicators of quality of relationships between smallholder farmers, input suppliers, and output buyers in the Maize Production System.

2.4.1 Communication

According to Saville (1965), continued interaction among farmers, input suppliers, and output buyers, is vital for successful crop production and marketing for farming communities.

Saville (1965) states that many, if not most, of the problems that occur in organisations are the direct result of people failing to communicate. Failure to communicate may lead to confusion and can cause a good plan to fail. The interaction in communication is about the adoption of new technologies, assessment of the results, and the sharing among members of information learned during the processes.

Hutt, et al. (2004) argue that communication strategies enable people to know and understand issues that affect them, and these strategies provide people with the means and spaces to articulate their own perspectives in public and political debate. Without knowledge of issues that affect a person, and without the capacity to make his own voice heard, there can be no participation or ownership. This is particularly the case for smallholder farmers in crop production. Repeated surveys of people living in poverty have found that people consistently treasure one thing more than money: that is having a voice in their own development. Communication for development is an essential component of a good linkage between stakeholders and any strategy designed to guarantee that voice.

Severin and Tankard (1979) define communication as being the exchange and flow of information and ideas from one person to another, which involves a sender transmitting an idea to a receiver. Effective communication occurs only if the receiver understands the exact information or idea that the sender intends to transmit. Hutt, et al. (2004) later also define communication as the imparting or interchange of thoughts, opinions, or information by speech, writing, or signs. They perceived it to be a two-way process in which there is an exchange and progression of thoughts, feelings, or ideas towards a mutually accepted goal or direction. It requires that all parties have an area of communicative commonality. Communication is thus a process by which people assign and convey meaning in an attempt to create shared understanding. This process requires a vast repertoire of skills in intrapersonal and interpersonal processing, listening, observing, speaking, questioning, analysing, and evaluating. The communication process in most cases takes the form of verbal explanations and practical demonstrations whilst some information takes a more durable form as systems of writing have been developed. It is through communication that collaboration and cooperation occurs in crop production (Severin and Tankard, 1979; Hutt, et al., 2004).

Communication is the tool for agricultural extension which was defined earlier as a service or system which assists smallholder farmers,, through educational procedures, in improving farming methods and techniques, increasing production efficiency and income, bettering their levels of living and lifting social and educational standards (Rivera, 2003).

For a successful programme with smallholder farmers, it is vital that their knowledge and opinions are considered to be just as important as those of researchers, government, input suppliers, and output buyers. Calls by Jones and Garforth (1997) for participatory approaches that involve information-sharing and joint decision-making, interaction and the so called "bottom-up" approaches are a step closer to successful crop production and marketing. He supports this statement by explaining that successful extension activities take place within a knowledge system consisting of many actors who play different roles at different times. Rivera (2003) alludes to this by emphasizing that some actors in the knowledge system have more authority than others and that communication involves negotiation rather than a transmission. What takes place is a dialogue, with actors collaborating in the construction of shared meanings rather than simply exchanging information. From this, there is no doubt that, for any success with rural smallholder farmers, it is important to make them part of the process by acknowledging their views and knowledge in the development processes.

Ferraro (2002) regards a communication process to be aimed at social changes through participation, knowledge sharing, policy dialogue and to be dependent on a free flow of communication. He adds that, from a relationship point of view, communication for development appears in two forms. The first type is the intervention: this is where the overall objectives are directly linked to the communication intervention, for example empowerment or social changes attained through access to information and a voice. This type of intervention will often include establishment of communication structures as vehicles for social change processes. The second form is an integral part of development or sector programmes to facilitate the achievement of the overall development objectives, for example, communication aiming at increasing the knowledge of crop production and marketing. This type of intervention includes support for development of communication strategies and activities that promote participation, knowledge sharing, and dialogue among the various participants in a development process.

Therefore, communication is an important construct of the quality of relationships. This is so when it is a two-way, planned process that flows in different directions and promotes the active participation of key actors in a development process. Moreover, maps out the necessary flow of communication at all levels (Ferrero, 2002; Butler and Hope, 1996).

2.4.2 Trust

Boon and Holmes (1991) define trust as being the level of confidence that both parties have in one another and their willingness to open themselves to the other party. Trust has three dimensions namely integrity, dependability, and competence. Integrity is a belief that an organisation is fair and just. Dependability is present when members have a firm belief that the organisation will do what it says it will do. Competence is a belief that an organisation has the ability to do what it says it will do (Dirks and Ferrin, 2001).

Trust is a state in which people reveal their vulnerabilities believing that their openness would not be taken advantage of and are aware of possible gains or even losses, but are willing to give in to the other person with the hope that they will behave in an acceptable manner (Coleman, 2000).

Trust in the context of relationships is built over time through ongoing communication and dialogue. Church, et al. (2003) emphasize the fact that trust is the key to building successful networks, achieving successful “communities of practice” (Wenger, et al., 2002), and to significantly impacting on partnerships. Church, et al. (2003) further mention that trust itself is promoted in the long run through relationships that reflect accountability, openness, and transparency.

Accountability means companies need to assume responsibility for the impacts of their practices, policies, and processes and the decisions that are behind those practices (Waddock, 2002). Transparency implies openness, communication, and accountability. According to Waddock (2002), transparency means allowing corporate actions and decisions to be visible to interested stakeholders and need to indicate why the information matters. Transparency is important for it is seen to be an important counter to public distrust and lack of confidence among role players.

As technology provides greater and greater access to information, the public demands more openness and completeness of information from institutions (Senge, 1990).

Valuable relationships of mutual respect and trust are likely to occur if farmers are treated as colleagues whose opinions are valued. In such a relationship, farmers would be given open access to information and an opportunity to participate in decisions that affect them in crop production. Transparency of information and openness to development and interpretations of that information are highly desirable as a mechanism for building trust. However, where there is no trust, projects can fail, especially if this lack of trust has not been identified and addressed. Individuals and institutions that are in relationships characterized by high levels of social trust are more apt to openly exchange information and to act with caring benevolence toward one another than those in relationships lacking trust (Senge, 1990; Waddock, 2002).

2.4.3 Control mutuality

Control mutuality is the degree to which stakeholders in a relationship are satisfied with the amount of control they have over their relationship, according to Arvey and Murphy (1998). They suggest that in any relationship, there will be some degree of power imbalance. Input suppliers, and output buyers should have positive and stable relationships when there is a degree of control over the other. Central to this is trust, as the other party will not give up control unless there is trust in the counterpart. For example, smallholder farmers can have control mutuality with a seed or fertilizer company as farmers have confidence in the products.

Control mutuality is important for stakeholders in the MPS as it builds loyalty amongst members. When there is loyalty, there will be healthy working relations built on trust. This can be identified in the cases where there is no dictatorship, the corporate entity does not impose its ideas on farmers and farmers do not manipulate the business people (Arvey and Murphy, 1998).

2.4.4 Communal and Exchange relationships

According to Clark and Mills (1979) indicators of communal and exchange relationships are concerned about the distribution of benefits in a relationship. In a relationship with a smallholder

farmer, input supplier, and output buyer, one asks what benefit does one draw or of what advantage does the relationship provide (Clark and Mills, 1979; 1982).

In a communal relationship, members have an obligation to show concern for others' well-being (Clark and Finkel, 2005). As a result, support is given in order to meet and show concern to the other person's need. However, the person is not obliged to return favours. Of importance, as Bartsch (2005) cites is that communal relationships focus on being responsive to others' needs and imply long-term relationships. Love and Forret (2008) also allude to the fact that, in a communal relationship, parties are willing to provide benefits to the other because they are concerned for the welfare of the other, even when they believe they might not get anything in return.

According to Love and Forret (2008), company representatives should convince management that companies also need communal relationships with the publics such as the community. In so doing, value would be added to an organisation when it develops communal relationships with all those affected by organisational behaviors, not just those who give the organisation something in return. Communal relationships are important if organisations are to be socially responsible and are to add value to society and client organisations.

In an exchange relationship, members feel no special sense of responsibility for another's welfare. In this form, benefits are given on the bases of what one gave in the past. This is a common tendency among businesses. Love and Forret (2008) claim that, in an exchange relationship, one party gives benefits to the other only because the other has provided benefits in the past or is expected to do so in the future. In this case, a party is willing to give benefits to the other because it expects to receive benefits of comparable value from the other. In essence, a party that receives benefits incurs an obligation or debt to return the favour. Exchange is the essence of marketing relationships between organisations and customers and is the central concept of marketing theory, (Love and Forret, 2008). However, an exchange relationship usually is not enough for communities. Communities expect organisations to do things for them in which organisations sometimes get little or nothing in return, at least in the short run. However, this is not to say that exchange relationships are bad for an organisation or that

representatives should not attempt to develop them. As Blau (1986) states, relationships often begin as exchanges and then develop into communal relationships as they mature.

Existence of these forms of relationships can be attributed to corporate social responsibility which is a principle of companies to contribute to the welfare of communities. This is where corporate entities proactively involve themselves with communities and address concerns that the public might have. The concerns that communities might have are not necessarily in line with the core business of the corporation (Kaliski, 2001).

2.4.5 Commitment

Commitment is a duty or a pledge that a person or organisations make for a certain purpose or line of conduct (Walter, et al., 2006). Moreover, commitment is the extent to which affected role players believe and feel that the relationship is worth spending energy on to maintain and promote it. In addition to the definition, Goulet and Frank (2002), add that such a duty or pledge has patterns of behaviours, motivating force or an attitude towards the relationship role players have. The term is used to reflect positive emotional attachment and feelings of obligation that people have towards such a purpose (Allen and Meyer, 1990).

The loyalty, duty, and pledge that people make refer to many different forms of commitment. For the sake of this research, commitment is examined regarding individuals who look at personal growth and role players who are members of different organisations. This is related to social commitment as directed obligations are from one agent to another to perform certain actions to bring about a certain state of affairs. This will also involve brand commitment which refers to the strength of the relationship among role players in the system and loyalty to a particular brand or service.

In the case of the MPS, members would show commitment in different ways. Goulet and Frank (2002) comment on the fact that commitment among role players may be reflected in behaviours associated with or demonstrating the willingness of the individuals in smallholder farmers, input suppliers, and/or output buyers, to make extra efforts on behalf of their organisation. The willingness may be that individuals would do more than required to accomplish the task. Committed persons may at times go as far as doing something that is not within their expected

duties but just because there is work to be done. Most importantly, role players would show their commitment by their level of understanding of each other and others' needs. Effectively committed members of the system would at all costs desire to remain and make the system work (Allen and Meyer, 1990, Goulet and Frank, 2002).

According to Bartsch (2005), commitment can be developed and maintained through role players' involvement in supporting other role player's development and improving their livelihoods. From the input suppliers, and output buyers' side, the development could be to enrich, empower, and provide developmental activities for smallholder farmers. From the smallholder farmers' side, they can offer continued support for agribusiness products and services. Fundamental to genuine support is that commitment be developed in the minds and hearts of others, whereas improving livelihoods builds optimism about the future. The commitment practice is achieved when it is made up of the supporting and improving behaviours which together provide a needed balance (Bartsch, 2005).

2.4.6 Satisfaction

Joby (2003) describes customer satisfaction as a measure of how products and services supplied by a company meet or surpass customer expectations. Customer satisfaction is a state of contentment and the extent to which an organisation and its customers feel favourable towards each other's products and services (Arvey and Murphy, 1998). Satisfaction occurs at a point when members believe that others are yielding positively in maintaining the relationship. This is a behaviour that organisations desire to have when engaged in business and want at all times to achieve it. Customer satisfaction is seen as a key performance indicator within business as a result of the competitiveness of the market place. Businesses compete for customers, and in order to remain competitive they have to maintain and ensure that their customers are satisfied (Abram, et al., 2003; Berry, 2002).

2.4.7 Summary of indicators of the quality of relationships

In order for the role players in the maize production system to achieve and sustain success, they need to have the ability to master the development of long-term quality of relationships among one another. Communication, trust, communal and exchange relationships, control mutuality,

commitment, and satisfaction have been identified as being important characteristics representing the quality of relationships between organizations and communities as shown in the Figure 2.1 below.

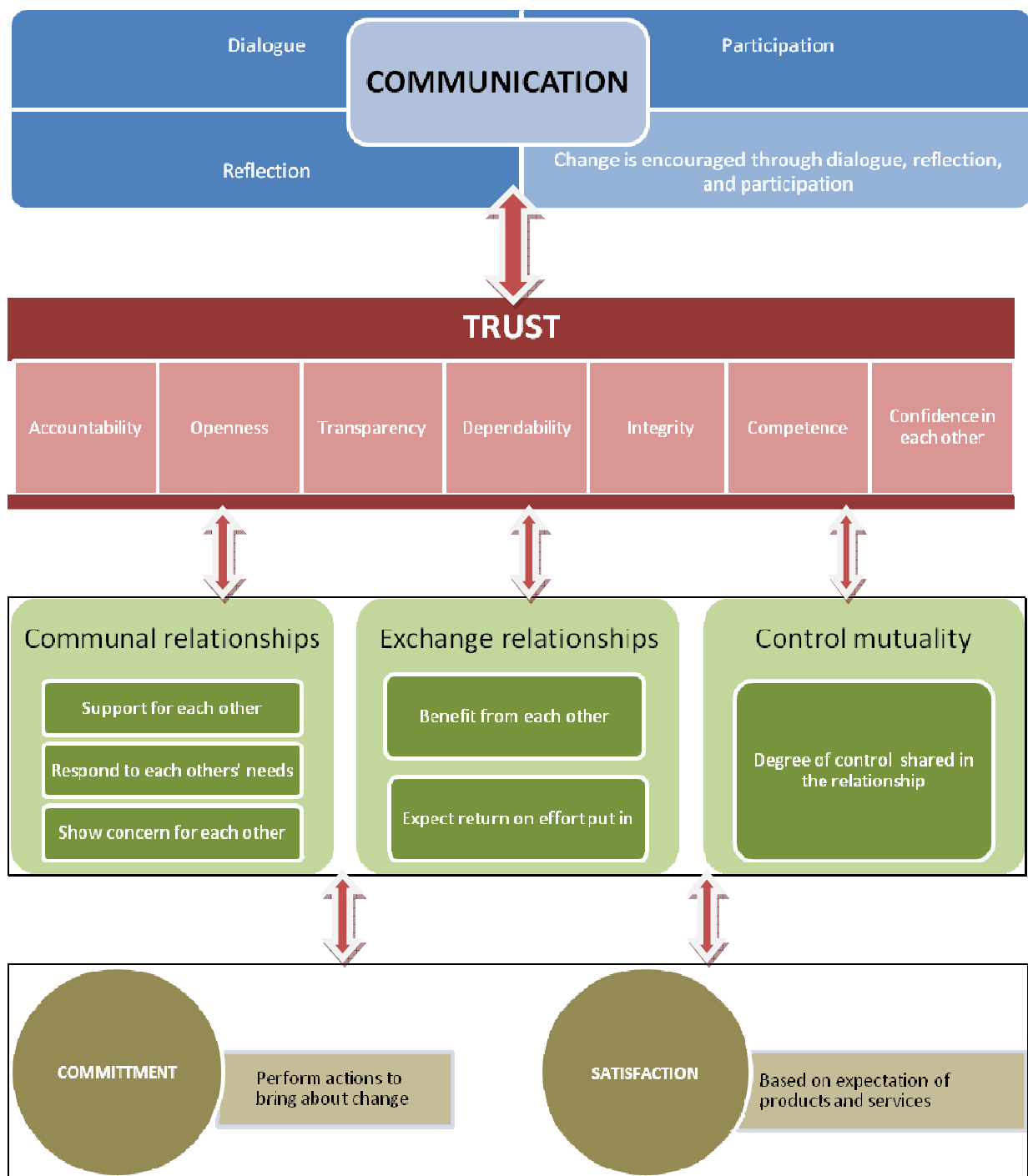


Figure 2.1: Indicators of the quality relationships (based on the work of Hutt, et al., 2004; Rivera, 2003; Ferraro, 2002; Fletcher and Clark, 2004; Hon and Grunig, 1999)

The relationship indicators that can be used to evaluate the quality of relationships in the maize production system, is illustrated in Figure 2.1. Communication engender trust which also breeds communal and exchange relationships, control mutuality, and commitment and satisfaction occurs as a result. Trust is developed through openness, accountability, and transparency. These are indicators that have been established as being important outcomes of the quality of relationships among role players in the MPS.

2.5 Social learning theory

Social learning theory which is also known as social cognitive theory rests on the notion that people learn by observing others, a process of enquiry, reflection, engagement and that human thought processes are central to understanding personality (Ormrod, 2003). According to Bandura (1988), social learning is a process of acquiring knowledge or learning that is related to the observation and of imitating what was observed.

Ormrod (2003) states that the social learning theory focuses on the learning that occurs within a social context and considers that people within that social context learn from one another. Schusler and Decker (2003) also regard social learning as a form or a process of enquiry and learning that occurs when people engage with one another, sharing different and diverse perspectives and experiences to develop a common framework of understanding and basis for joint action. The concept of social learning refers to learning processes among a group of people who seek to improve a common situation and take action collectively. Kilvington (2007) adds to the definition by stating that social learning is used as a tool for learning about social issues and social aggregates and is a form of learning that results in recognizable social entities such as collective decision-making procedures.

Social learning is regarded as a multi-party engagement in communication, learning, and knowledge. It occurs when learning by individuals happens through observation or interaction with their social context. Social learning is a concept developing understanding about the ways in which different stakeholders and different knowledge sources can be brought together to learn about and make decisions about complex problems. Most importantly, social learning provides the platform for an analytical and facilitative framework that can be used to support collective

decision-making and action in maize production and resource management settings (Buck, et al., 2001; Pahl-Wostl and Hare, 2004; Keen, et al., 2005).

As this process occurs among a group of people, one of the mechanisms through which social learning occurs is deliberations. Deliberation includes any process to communicate, raise and collectively consider issues, increase understanding, and arrive at substantive decisions. Deliberation occurs in many formats from individual interviews to public meetings. Forester (1999) views deliberative processes as able to empower action, enhance public learning and democratic practices, and make meaning of the decisions already made. The emphasis is on the importance of dialogues or negotiations between groups to better understand different points of view and develop processes for collective action and reflection over time. The dialogues and negotiations allow participants to discover existing public values that they did not know about and have in common with others. In the process of deliberations, new values are created. This leads to participants identifying areas that need their action and voluntarily acting on them together to uncover goals and commitments that transcend their narrower self-interests (Reich 1985).

According to Schusler and Decker (2003), in as much as social learning may be a process of people learning from one another and of an outcome of the learning that occurs as a result of these social interactions, it is often described in relation to the wide range of additional potential outcomes it may have. Reed, et al. (2010) add to this by stating that social learning contributes to collaboration by creating new relationships, building upon cooperative relationships, and transforming adversarial ones. These changes occur as people learn about the character and trustworthiness of others and develop new networks and norms of interaction that can enhance their capacity for joint action (Greenwood and Levin, 1998; Forester 1999). In this way, people are able to accommodate others as their attitudes change and this leads people to see new possibilities for working together that go undiscovered when issues are debated from polarized positions. Therefore, the success of social learning lies in the active participation of multiple role players already active in the problem context.

Reed, et al. (2010) summarize the outcomes of social learning as those that should demonstrate that a change in understanding has taken place in the individuals involved. The change goes

beyond the individual and become situated within wider social units or communities of practice. It also occurs through social interactions and processes between actors within a social network.

2.6 Summary

This chapter has emphasized the importance of maize to South Africans as it is a staple food for most communities. Successful maize production is dependent on coordinated backward and forward linkages, which are networks responsible for the supply of production inputs, and output buyers. Important in these networks is agricultural extension which plays a vital role in enhancing successful crop production. Agricultural extension is responsible for the dissemination of agricultural knowledge, information, and technologies, linking farmers and other actors in the economy. Important in the backward (supply of production inputs to farmers) and forward linkages (the supply of production output to markets) is the quality of relationships that role players build and that have an effect on the system as behaviour of a role player have an effect on the other.

Organisations that achieve and sustain success have had the ability to master the development of long-term quality of relationships with their customers. Communication, trust, exchange relationships, communal relationships, control mutuality, satisfaction and commitment have been established in the literature review as being indicators that describe the quality of relationships that smallholder farmers, input suppliers, and output buyers have in the maize production system.

As the research is a multi-stakeholder study, the social learning approach would assist in the deepening of understanding of the quality of relationships among these role players. Social learning is an approach that focuses on the learning that occurs within a social context and considers that people within that social context learn from one another.

The following chapter, Chapter 3 puts the use of social learning that is informed by systems thinking as a methodological framework is put in context. An outline is given of the research setting, the research sampling, and the research methodology and design.

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

Chapter 2 set out the theoretical framework of this research by introducing maize as an important crop and a staple food for the South African population. The linkages in maize production in relation to smallholder farmers, input suppliers, and output buyers, which includes vibrant extension services is described in this chapter. Chapter 2 established high quality relationships are important for effective linkages in maize production. Social learning was described as a process that could be used in seeking a deeper understanding of the quality of relationships among role players in the MPS.

Chapter 3 describes the methodology applied in this research as well as the setting, sampling, selection criteria, appropriate design and methodology, and approaches to data collection and analysis applied. The methodology design was developed in the context of the main objective, which is to seek a deeper understanding of the quality of relationships that smallholder farmers, input suppliers, and output buyers have in maize production.

This research was guided by a social learning paradigm and was influenced by systems thinking at the stages. Five levels of deeper learning were followed. The first level was to establish indicators of relationship quality through the literature review. The second level was to conduct semi-structured interviews with all role players to get their perspectives on the linkages and the quality of relationships in the MPS. The third level was to conduct focus group discussions with role player representatives, to get their perspectives and validate the findings of the second level about their perspectives on the linkages and the quality of relationships in the MPS. The fourth level was to bring together all role players in the MPS to understand their perspectives on the linkages and the quality of relationships in the MPS and the cause and effect

of poor quality relationships in the MPS. The fifth level was to establish strategies for improving quality of relationships thereby improving the linkages.

3.2 The research setting

This research took place in Msinga, a rural area in the uMzinyathi District Municipality of KwaZulu-Natal. The area comprises six traditional authority areas namely, Qamu, Mchunu, Bomvu, Ngome, Mabaso, and Mthembu. The size of this area is 2 500 km² with an estimated population of 171 071 people, 58% females and 42% males (Stats SA, 2008). It is a largely rural area with 70% of its area being traditional authority land held by the Ingonyama Trust. The remaining 30% of land is commercial farm land. Approximately 99% of the population live in traditional areas as opposed to the towns of Tugela Ferry, Keates Drift, and Pomeroy.

According to Dearlove (2008), Msinga is poverty-stricken with few economic resources and little economic activity as the area functions as a dormitory with economic activities taking place outside its borders towards bigger towns. The unemployment rate in this area is at 63%. Households are heavily reliant on social services and on remittances from people working outside the area. There is a high illiteracy rate with more than 68% of the population being illiterate. The majority of illiterate people are female. Agriculture is practised at subsistence levels. Stock farming is therefore largely a cultural practice rather than an economic activity. The Department of Agriculture and Rural Development plays a major role in crop production in this area. Farming contributes about 18% towards the local economy through cultivation of maize and vegetables on irrigated plots and on land obtained through the government's land reform processes (Dearlove, 2008).

3.3 Research sampling

Agriculture plays an important role in the South African economy and more so in rural areas whereas the majority of poor people live and depend mainly on agriculture for their livelihood. There has been a renewed commitment by the government for agricultural and rural development in South Africa because increasing crop production and ensuring efficient utilisation of agricultural land has become a national priority. The department of agriculture and rural

development has been tasked with the responsibility to carry out this mandate. The KwaZulu-Natal provincial government has embarked on high-level initiatives to address poverty and hunger with a new focus on agriculture in rural areas, where most poverty and hunger persist. Extension officers (EOs) play a major role in ensuring that crop production occurs in rural areas. However, increased crop production is enhanced through cooperation among all role players involved. These include smallholder farmers (SHFs), input suppliers (ISs), and output buyers (OBs) as key role players. Table 3.1 describes the involvement of these role players in the research.

Table 3.1: Outline of the participants (sampling) in this research in relation to the different sub-objectives of this research and the data collection methods applied

| Sub-objective | Data collection method | Sampling | Sampling size |
|---|----------------------------------|-------------------------|---|
| Through literature review, establish indicators of quality relationships among smallholder farmers, input suppliers, and output buyers. | Review of literature (Chapter 2) | | |
| To determine the existing linkages in the MPS; and determine the quality of relationships existing in the MPS. | Semi-structured interviews | SHFs, EOs, ISs, and OBs | 25 SHFs, 5 EOs, 5 representatives involved from ISs and OBs |
| | Focus group discussions | | 2 SHFs per ward (10 farmers), 5 EOs 5 Representatives of ISs and OBs |
| To determine the cause and effects of these relationships among role players in the MPS. | Semi-structured interviews | SHFs, EOs, ISs, and OBs | 25 SHFs, 5 EOs, 5 Representatives of ISs and OBs |
| | Focus group discussions | | 2 SHFs per ward (10 farmers), 5 EOs, 5 Representatives of ISs and OBs |
| To establish strategies with all role players to improve the quality of relationships. | Focus group discussions | SHFs, EOs, ISs, and OBs | 2 SHFs per ward (10 farmers), 5 EOs, 5 Representatives of ISs and OBs |

3.4 Selection criteria

Participants were selected through a systematic process called a “community reference system” or “peer reference system” (Emery and Purser, 1996). This is a process where the community determines and identifies members that are known to be actively concerned about a particular issue. In the context of this research, participants were identified based on their interest and involvement in maize production. Based on the extension officers’ and farmers’ experience and knowledge of the area, EOs were asked for the names of potential participants in this research. Furthermore, farmers were also asked about other community members that were actively involved in maize crop production who would be in a position to take part in this research. Through the extension officers, the participants were requested to take part in the interviews and focus group discussions. This produced a matrix of potential participants that reflected community interests in maize production as well as community and economic development. Farmers’ representatives in the focus group discussions were selected at the initial focus group that involved smallholder farmers and extension officers. These representatives were selected by farmers to represent them and to report back to the farmers on the proceedings (Schusler and Decker, 2003).

Extension officers were selected on the basis of their work which focused on providing extension services to crop farmers in the different wards. Input suppliers were selected on the basis of their operation in the area. That is their involvement in the supply of production inputs in the area. Output buyers were selected as potential market outlets that are close to the community and that have a potential of sourcing production output from the area.

3.5 Research design and methods

The main objective of this research was to seek a deeper understanding of the quality of relationships that smallholder farmers, input suppliers, and output buyers have amongst one another in the maize production system. In order to gain the understanding, various processes had to be followed as described by the research design. The research design clarifies the process followed in examining the main objective using various designs and ensures that the findings

obtained are aligned to the sub-objectives and thus the main objective (Hopkins, 2000; Creswell, 2003).

3.5.1 Research paradigm

The term 'research paradigm' refers to the framework that supports and forms the basis of the research process (Henning, et al., 2004). The present research is linked to the interpretivist paradigm, where understanding of the maize production system is developed and a deep understanding of how each part (role player) relates and is connected to the system (Voce, 2004).

The interpretivist paradigm seeks an understanding of things within their context and considers the subjective meanings that people bring to their situation (Hopkins, 2000; Creswell, 2003). In the case of the present research, understanding is sought within the context of maize crop production and the relationships at play. Also, the role players' opinions and understanding of their situations are considered.

3.5.2 Research methodology

There are various sets of systems or working techniques that are used in conducting enquiries. These systems or working techniques are guided by appropriate rules and regulations. The techniques that guide and monitor the inquiry procedure and the research process are known as the research methodology. In the case of this research, the framework that is employed is the social or collaborative learning that is informed by systems thinking (Creswell, 2003; Guba and Lincoln, 1989; Patton, 2002).

3.5.2.1 Social learning

According to Schuler and Decker (2003) the importance of social learning lies in the idea that people engage with one another, sharing different and diverse ideas and experiences to develop a common framework of understanding in their social context. Social learning begins when a researcher joins a group of people in social institutions wanting to enquire and learn from their situation to bring about change that will improve their situation. In this research, the researcher joined a group of smallholder farmers, extension officers, input suppliers, and output buyers as social institutions that wanted to improve and increase the production of maize by developing

quality relationships among them. These are role players or social institutions that formed part of the enquiry and learning processes, whose context is maize which begins from the supply of production inputs, the production of maize, and the supply of production output as their culture. The challenge associated with maize production in Msinga is the poor quality of relationships in the forward and backward linkages.

Social learning was applied in the research as a process of enquiry and learning where new knowledge was developed and formed the basis of change with role players in maize production. Social learning was not used to explain the process of change but rather assisted by providing information about the change required by creating understanding about relationship issues.

In gaining a deeper understanding of the quality of relationships among smallholder farmers, input suppliers, and output buyers, the process of social learning was applied in five levels of deeper learning. In Figure 3.1 below, the different levels of deeper learning that were applied in the research to inform learning are set out.

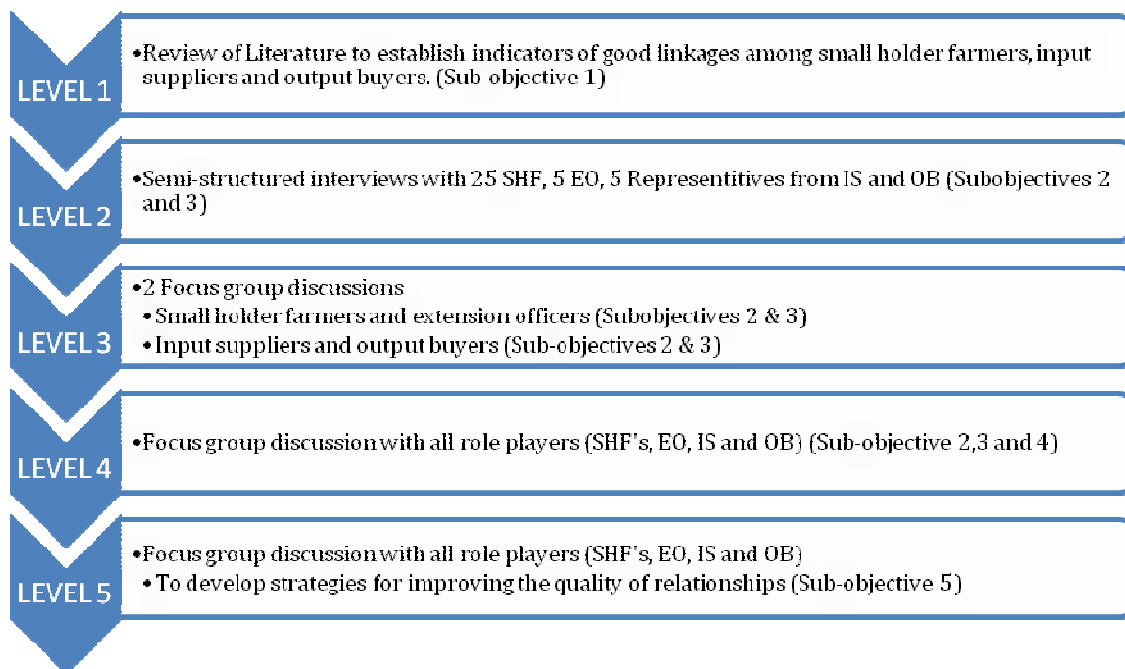


Figure 3.1: Five levels of deeper learning followed in this research

These deeper levels of learning created increasing awareness of the bigger picture of the situation in the maize production system, both as it was initially and as it evolved. According to Senge, et

al. (2005), actions taken in the various levels of deeper learning shape awareness and encourage the creation of new alternatives.

In the present research, the information gathered on a particular level was used and built upon on the following level for continuity, to encourage deeper learning, and to inform changes required by role players.

3.5.3 Data collection methods

The data collection methods used in the research were semi-structured interviews (SSI) and focus group discussions. In this section, these methods and the instruments that were used together with them are discussed. Semi-structured interviews

Semi-structured interviews (SSI) (Level 2) were conducted with role players in the maize production system following an interview guide (Appendix A). The purpose of semi-structured interviews was to capture role players' perspectives on the existing linkages and to determine the quality of relationships existing in the MPS (Sub-objectives 2 and 3).

The interview guide had the following important issues for discussion which led to follow-up questions that the role players were asked:

- Focus on the individual in their environment
 - Could you tell me about yourself?
 - What do you do for a living?
- Focus on the individual as farmer/extension officer/input supplier/ output buyer
 - What is your area of expertise?
 - How long have you been doing this?
 - What challenges do you face in your work?
- Focus on the linkages and the quality of relationships
 - How do you supply or acquire production (inputs or output)?
 - Would you begin by telling me what are the first things that come into your mind when you hear the term of smallholder farmers, input suppliers, output buyers?
 - What and how is your relationship with smallholder farmers/ input suppliers, /output buyers?

These questions served as guides to the interviews while various other questions emerged based on these and were adjusted according to the answers that were given. Added to these were Hon and Grunig's (1999) instrument for assessing the quality of relationships between organisations and other groups, which is a standard set of questions developed to measure and assess the quality of relationships in organisations. In the case of smallholder farmers, the questions were asked in Zulu in order for them to understand and to be able to speak freely when giving responses.

3.5.3.1 Focus group discussions

Focus group discussions took place in Levels 3, 4, and 5. In Level 3, two separate focus group discussions were conducted: the first focus group discussion included smallholder farmers and extension officers, while the second included input suppliers, and output buyers. In Levels 4 and 5 the focus group discussions included all role players' representatives. Focus group discussions were used to collect data related to role players' experiences, perspectives and practices in a group setting that allowed for interaction and dialogue. Focus groups allow interviewers to study people in a more natural setting than in a one-to-one interview. In combination with participant observation, they can be used for gaining access to various cultural and social groups (Flood and Jackson, 1991; Straus and Corbin, 1990).

i) Level 3 focus group discussions: smallholder farmers and extension officers; and input suppliers, and output buyers

The purpose of the two focus group discussions was to encourage dialogue and participation among group members to enable them to share their perspectives and experiences regarding practices in maize production. The focus groups were different and separated from one another on the basis of role players that were familiar with each other, and each other's working environment.

Farmers' representatives and extension officers from different wards were selected to form part of one group, and input suppliers' and output buyers' representatives formed another group. The aim of the focus group discussion was to consolidate the findings gathered in Level 2 related to farmers and extension officers and to further deepen the understanding by discovering issues that could have been left out during semi-structured interviews and to allow members of the focus

group to deliberate and validate the issues. Data related to farmers and extension officers gathered during the semi-structured interviews was used as framework for discussions in their focus group while data related to input suppliers, and output buyers was used in their focus group meeting.

The purpose of the focus group discussions was to generate information related to:

- backward and forward linkages in relation to smallholder farmers input suppliers, and output buyers (Sub-objectives 2 and 3);
- the quality of relationships between smallholder farmers, input suppliers, and output buyers (Sub-objectives 2 and 3); and
- ways in which linkages and the quality of relationships could be improved (Sub-objective 4).

After the deliberations had taken place, a summary of responses from the discussions was given. The causes and effect of the nature of the quality of relationships were discussed. A brainstorming of the strategies to improve the linkages and relationships took place.

ii) Level 4 focus group discussion with all role players

As part of creating a deeper understanding of the quality of relationships that smallholder farmers, input suppliers, and output buyers have in the maize production system, a focus group discussion was conducted which involved all role players. The purpose of this focus group discussion was to engage role players in an analysis of the cause and effect of the nature of the quality of relationships. The discussions began by consolidating the findings that emerged from the semi-structured interviews in Level 2 and the two focus group discussions in Level 3. In this focus group, information from two different perspectives and experiences on practices in maize production and supply of production inputs and output were brought to the fore.

The focus group discussion was guided by the following topics:

- backward and forward linkages in relation to smallholder farmers, input suppliers, and output buyers (Sub-objectives 2 and 3);
- the quality of relationships between smallholder farmers, input suppliers, and output buyers (Sub-objectives 2 and 3);

- the cause and effect of the quality of relationships (Sub-objective 4); and
- brainstorming on ways in which linkages and the quality of relationships could be improved (Sub-objective 5).

iii) Level 5 focus group discussion with all role players

The aim of the focus group in Level 5 was to develop strategies to improve the quality of relationships in the maize production system. Information and data obtained in Levels 2, 3, and 4 revealed the changes needed to improve the quality of relationships in the MPS. During the semi-structured interviews (Level 2) and focus group discussions (Levels 3 and 4), various practices that needed to change in the maize production system were identified, and information and data on the cause and effect table were used as a base to develop the strategies. All role players' representatives took part in this focus group discussion.

This focus group discussion was guided by the following questions:

- What are the specific changes required for the quality of relationships to improve?
- What are the required actions to bring about change?
- Who is responsible to bring about those changes?

All role players' representatives chose to develop strategies that would build and improve on the current relationships among role players, a process that is normal and ongoing which forms part of any effective organisation. Like any relationship, group, or system, as people and processes work together, better ways of living and operating together emerge to help the system run more smoothly, effectively, and efficiently.

3.5.4 Data analysis

The research was implemented through the social learning approach. Five levels of deeper learning were used. The qualitative data obtained through the social learning approach, including the focus group discussions, were analysed by using the comparative analysis method through a process of open, axial, and selective coding (Creswell, 1998; Merriam, 1998).

Open coding is the initial stage where data is analysed through the process of selecting and naming categories where the overall distinctive aspects of the situation that is seen to exist under

study are described. These aspects are identified, labelled, categorized, and related in an outline form. The next process is axial coding, which is a form of coding where categories and sub-categories are identified according to their relatedness. The aim of axial coding is to make explicit connections between categories and sub-categories. This involves explaining and understanding relationships between categories in order to understand the phenomenon to which they relate. Selective coding involves the process of selecting and identifying the core category and systematically relating it to other categories. It involves validating those relationships, filling in, refining, and developing those categories (Creswell, 1998; Merriam, 1998).

The six steps that were followed in the data analysis in the various levels of deeper learning, the relationships among the six steps and the grounded theory coding principles are illustrated in Table 3.2 .

Table 3.2: Six steps used in data analysis in relation to the comparative analysis method

| Coding categories | Steps taken for data analysis |
|-------------------|---|
| Open coding | <ul style="list-style-type: none"> • In Level 1 of deeper learning, a theoretical framework was developed which specified keywords that would need consideration when looking at the data. • Data gathered through the semi-structured interviews (Level 2) with smallholder farmers to get their perspectives, practices, and experiences in maize production was synthesized. Emerging and recurring categories were identified. • Data was then examined in a manner that ensured that all the aspects which appeared in all the data gathered throughout the focus group discussions (Level 2, 3, 4, and 5) emerged. |
| Axial coding | <ul style="list-style-type: none"> • The categories were compared with the literature and divided into six themes as set out in Section 4.2 Table 4.1. |
| Selective coding | <ul style="list-style-type: none"> • The themes were used as the basis for data analysis using data collected throughout the five levels of deeper learning. • In instances where similar questions were asked and similar answers given, a numerical value was displayed alongside that answer to give weight and truer representation of the number of respondents. |

It is vital for a test to be valid in order for the results to be accurately applied and interpreted. Validity refers to the degree to which a study accurately reflects or assesses the specific concept that was attempted to be measured and is also concerned with the research's success at measuring what was set out to be measured (Kirk and Miller, 1986).

Validity was ensured during this research process and data analysis by:

- using data from multiple sources and methods for data collection to ensure consensus in opinions;
- using information on the basis that other participants agreed and that it represented the feelings of group members as findings of semi-structured interviews were also consolidated and validated in focus group discussions (Levels 2, 3, and 4); and
- ensuring that the findings were verified during the social learning process to make sure that the researcher interpreted the data correctly.

3.6 Summary

In Chapter 3, the methodological framework applied in the research was described.. This research took place in a social learning approach which was informed by systems thinking. Data was collected through the use of semi-structured interviews (Level 2) and focus group discussions (Levels 3, 4, and 5), and coding principles of the grounded theory were used in data interpretation and analysis.

In the he following chapter, chapter 4, findings of the research, as gained through the social learning process, where deeper understanding was gained through five different levels of learning (Subsection 3.5.2.1), are presented.

ANALYSIS OF RESULTS

4.1 Introduction

The previous chapter outlined social learning as the methodology of this research conducted in the social learning process, informed by systems thinking. The main objective was to seek a deeper understanding on the quality of relationships that smallholder farmers, input suppliers and output buyers have amongst one another in the maize production system. In order to gain a deeper understanding, five sub-objectives were used to guide the research process. These sub-objectives were to:

- establish indicators of quality relationships among smallholder farmers, extension officers, input suppliers and output buyers through literature;
- determine the existing linkages in the MPS in Msinga;
- determine the quality of relationships existing in the MPS in Msinga;
- determine the cause and effects of these relationships among role players in the MPS; and
- establish strategies with all role players to improve the quality of relationships.

In Chapter 4, the research findings, as gained through the social learning process are analysed, where deeper understanding was gained through five different levels of learning (Subsection 3.5.2.1). Semi-structured interviews and focus group discussions were conducted to gain this deeper level of understanding.

Social learning requires that as people engage in learning and reflection, awareness takes place and as a result, new alternatives are created. In the different levels of deeper learning, suggestions were made for improving the quality of relationships among role players as new alternatives. The strategies discussed in Subsection 4.9 do not include these suggestions, but specifically those strategies that were developed in the presence of all role players in Level 5 of deeper learning. The other subsections (Subsections 4.3 to 4.7) describe these suggestions (strategies).

4.2 Development of categories and themes to guide discussion

The data in Levels 2, 3 and 4 was analysed by following the method of comparative data analysis (Merriam, 1998) where categories and themes were developed (Subsection 3.4.4).

The issues identified in Level 2 were grouped into thirteen categories as listed below (see Subsection 3.5.4 and Table 4.1):

- literacy levels of farmers;
- the participation of youth in maize production;
- farmers' dependency on the government;
- farmers' lack infrastructure and financial resources;
- farmers' crop production practices;
- production input supply in the MPS;
- production output supply in the MPS;
- extension practices and approaches applied by extension officers;
- challenges faced by extension workers;
- role players' perspectives of one another in the MPS;
- the importance of communication, trust, and commitment as indicators of the quality of relationship according to the role players in the MPS;
- causes of and effects on the quality of relationships in the MPS; and
- strategies for improving the quality of relationships to enhance backward and forward linkages in the MPS.

These categories were based on the role players' day-to-day activities and how they view one another in the maize production system. These thirteen categories were further developed into six themes (Subsection 3.5.4). These six themes formed the framework for achieving the deeper understanding of the quality of relationships existing among role players (Subsections 4.3 to 4.7 and 4.9).

The six themes that were developed are:

- smallholder farmers in MPS;

- extension and support services to support farmers in the MPS;
- input suppliers and output buyers in the MPS;
- role players' perspectives of one another in the MPS;
- the quality of relationships in the MPS; and
- strategies to improve the quality of relationships in the MPS.

In Table 4.1 the different categories and themes and how they are related to the sub-objectives of this research and the literature reviewed are illustrated.

Table 4.1: The development of themes as the basis for data analysis

| CATEGORIES | THEMES | SUB-OBJECTIVES | LITERATURE |
|---|---|--|---|
| Literacy levels of farmers. The participation of youth in maize production. Farmers who are dependent on government. Farmers who lack infrastructure and financial resources. Farmers' crop production practices. | Smallholder farmers in MPS. | To establish the existing linkages in the MPS (Sub-objective 2). | Smallholder farmers (Subsection 2.3.1). |
| Production input supply in the MPS. Production output supply in the MPS. | Input suppliers and output buyers in the MPS. | To establish the existing linkages in the MPS (Sub-objective 2). | Linkages in the MPS (Subsection 2.3). |
| Extension practices and | Extension services | To establish the | Agricultural |

| | | | |
|---|---|--|---|
| <p>approaches applied by extension officers.</p> <p>Challenges faced by extension workers.</p> | <p>to support farmers in the MPS.</p> | <p>existing linkages in the MPS (Sub-objective 2).</p> | <p>extension (Subsection 2.3.4).</p> |
| <p>Role players' perspectives of one another in the MPS</p> | <p>Role players' perspectives of one another in the MPS.</p> | <p>To determine the quality of relationships existing in the MPS.</p> | <p>Indicators of quality relationships (Subsection 2.4).</p> |
| <p>Communication, trust, and commitment: important for components in the quality of a relationship according to the role players in the MPS.</p> <p>Causes of and effects on the quality of relationships in MPS.</p> | <p>The quality of relationships in the MPS.</p> | <p>To determine the quality of relationships existing in the MPS.</p> <p>To determine the cause and effect of these relationships among role players in the MPS.</p> | <p>Indicators of quality relationships (Subsection 2.4).</p> |
| <p>Strategies for improving quality of relationships to enhance backward and forward linkages.</p> | <p>Strategies to improve the quality of relationships in the MPS.</p> | <p>To establish strategies with all role players to improve the quality of relationships.</p> | <p>Linkages in the MPS (Subsection 2.3).</p> <p>Indicators of quality relationships (Subsection 2.4).</p> |

4.3 Smallholder farmers in the MPS

It became evident in the findings of this research that smallholder farmers' practices are affected by the farmers' level of literacy, the participation of youth in maize production, and the farmers' dependency on outside sources to acquire skills and knowledge and obtain financial resources. In addition, farmers' crop production is affected by the availability of infrastructural and financial resources as well by their (farmers') practices.

4.3.1 Literacy levels of farmers

The participants that took part in this research were between the ages of 23 and 72 (Table 4.2). Most of the participants (n=11) were in the 36 to 59 age bracket and nine participants were older than 60 years. There were only five participants in the youth bracket (18 to 34 years).

According to the farmer participants in this research, most of the Msinga farmers have not had the opportunity to go to school and this is borne out by the education levels achieved by the participants of this research. The participants younger than 35 finished their schooling, whereas no participant older than 35 finished school (Table 4.2).

Table 4.2: Participants highest grade at school

| Participants' ages | Never been to school | Grade 1 to 4 | Grade 5 to 7 | Grade 8 to 10 | Matric |
|-----------------------|----------------------|--------------|--------------|---------------|--------|
| Youth (18 to 35) | - | - | - | - | 5 |
| Adults (36 to 59) | 5 | 3 | 2 | 1 | - |
| Participants above 60 | 4 | 2 | - | 3 | - |

The low level of schooling of the farmers has resulted in their being illiterate or having low literacy levels as reflected by the following statements:

“We are not able to read or write as we did not have the opportunity to go to school.” Farmer 11

“In as much as we can read and write Zulu, most of the information is in English which we cannot read and understand.” Farmer 7

“The tradition was that we would go to school and when we were able to write a letter to our parents in Johannesburg, we were taken out of school to either look after the livestock or go and look for employment elsewhere.” Farmer 4

The above statements reflect the difficulties that farmers faced with reading and writing information that is important for their development as crop producers. Even though most of the participants (Table 4.2) had the opportunity to attend school, 28% (n=7) of these participants' levels of literacy are low due to the low grades that they achieved in school. These 7 participants can read and write in Zulu to a limited extent, but they do not understand English. This is a constraint as most written information related to crop production given to farmers is in English. This means that 64% of the participants cannot access information that is given to them to improve their maize production practices. The consequence of low literacy levels is that farmers cannot get additional information to that which is given to them verbally by Zulu speaking extension officers.

According to Stefano, et al. (2005), illiteracy has an effect on people having access to basic information that is distributed via books, newspapers, or the Internet. These sources of information are important in providing practical advice in crop production, production skills and a variety of production inputs. Therefore, all communication with farmers should be in Zulu, and written material should be supported by pictures. This will mean that farmers have access to information that is critical for their success, and they can use this information to advance their crop production practices. In this way, maize production and food security can be enhanced, and as a result, the lives of smallholder farmers could be improved.

4.3.2 Participation of youth in smallholder farming activities

Only 20% of participants of this research were young people (between the ages of 18 and 35). Even though it is not evident how many youth are involved in maize production in Msinga, the findings may indicate that the youth are not as actively involved in crop production as those older than 35. This is confirmed by the following statements:

“They (the youth) are not interested in farming, we hardly have young people in our area that are farming, instead they go to cities to look for better employment.”

Farmer 9

“Young people want quick cash, and unfortunately crop production does not provide that, and they go and look for better jobs elsewhere.” Farmer 2

“I failed to convince my own children; they were not interested in farming; they think that it is for poor people who cannot find jobs.” Farmer 7

Farmers’ concerns about the youth’s lack of interest in farming emanates from the little income that they think crop production provides and the association of the idea of farming with poverty. Young people view cities to be the only sources of employment which will help in taking care of their needs.

In order to address this problem of lack of youth involvement in agriculture, extension officers implemented a youth in agriculture programme in Msinga, but it was not successful. The reason for its failure is that the youth never stay longer than three months on the programme, if they find something perceived to be better employment elsewhere. The consequence of the reluctance by the youth to take part in maize production is that:

- there will be no continuous maize production in Msinga when older people die;
- indigenous knowledge will be lost if older farmers don’t have opportunity, before they pass on, to share it with the younger generation; and
- the older generation will not get assistance from the younger generation to help them in reading and understanding information.

Bennel (2007) states that the absence of young people in crop production is evidence that inequalities resulting from under-investment and slow growth are increasingly visible to people

living in rural areas. Young people are choosing not to pursue livelihoods in the agricultural sector, especially as farmers. It is widely alleged that rural youth are increasingly uninterested in smallholder farming, which is viewed as ‘dirty work’. Their parents often hold the same view, preferring their children to move away from rural areas entirely because they associate rural life with poverty (Bennel, 2007). As much as this has an effect on the future of agriculture in rural areas, the current effect is on information dissemination as the findings in this research showed that people involved in agriculture are elderly and illiterate. The effect is that information and knowledge becomes unavailable to rural communities. This affects crop production and networking with all role players involved in agriculture (Dorward, et al., 2004, Bennel, 2007).

Regarding changes related to youth involvement, the following statements were made:

“We need to encourage our young people to take an active role in agriculture so that the crop production will still continue to provide food security even in the future”. Farmer 7, Level 3

“I would like to encourage our extension officers as qualified people to assist us in mobilizing the youth on the importance of agriculture; they (youth) are sitting at home and are unemployed, as they (youth) will not listen to us as they (youth) are only interested in money”. Farmer 6, Level 3

The statements reveal the fact that farmers realize the need to involve the younger generation in crop production as it will ensure sustainability in the long run. The request for an extension officer to come up with ways of encouraging and mobilising the youth is a step in the right direction.

Extension officers mentioned a number of programmes that were available through the department that would assist in mobilising and encouraging youth to get involved in agriculture. The following programmes and support services were mentioned as being available to young people to access and use in crop production:

- agricultural extension and training services;
- agricultural economics and marketing;
- the Massification Programme;

- the Comprehensive Agricultural Support Programme (CASP); and
- the Youth in Agriculture and Rural Development (Yard) programme.

The following statements were made in support of the various programmes that The Department of Agriculture, Rural Development and Environmental Affairs offers to the young people:

“We have a Youth in Agriculture programme where we encourage young people to get involved in agriculture. Here they are encouraged to form cooperatives and are trained in various skills which include entrepreneurship and crop production skills, where possible and if funding is available, projects are identified and funded in order for the youth to enhance production and make a living out of farming.” Extension officer 5

“All our programmes are available for the youth to access and as young people, they stand a better chances of success in acquiring funding and assistance to pursue crop production.” Extension officer 3

Involving the youth in agriculture will bring great benefits to the communities but also to the country as a whole. According to Bennel (2007), involving the youth in agricultural crop production will enable young farmers to replace the ageing producers and the production of food will thus not be compromised.

Involving the youth in agriculture will also benefit the MPS. Their involvement will mean greater access to information as most of the youth have a higher literacy level than that of older farmers in the area. Access to information and technologies could result in increased productivity and production, positively affecting food security in the area.

4.3.3 Farmers’ dependency on outside sources to acquire skills and knowledge and obtain financial resources

Sustainability in crop production for smallholder farmers is reliant on a number of factors. Included in these is the ability of farmers to acquire knowledge and skills, and to use these to enhance crop production and become self-sustaining. Furthermore, their ability to make their

own decisions and to use local resources and assets enhances sustainable success in crop production.

Findings of this research revealed that the farmers are dependent on outside for improving maize crop production. This includes the following:

- technical knowledge, and skills;
- financial resources;
- transport;
- equipment; and
- production input subsidies.

The following statements were made regarding farmers' dependency on outside sources:

“If we don't provide them with the necessary information, they are unlikely to progress successfully in crop production.” Extension officer 3

“We rely on the assistance of our advisers to tell us what to do and what we are doing wrong in our crop production practices.” Farmer 5

“Our project has been struggling for a long time and the government (Department of Agriculture, Department of Social Welfare and the local municipality) has been assisting us with the buying of production inputs.”
Farmer 11

“We rely on the municipality and other people's tractors to plough the lands for us since we do not have our own.” Farmer 7

As is evident from the above statements, that farmers rely on outside sources to acquire skills and knowledge and to obtain finances, equipment and transport for crop production. The government plays a major role in providing farmers with production inputs and even cultivating their lands. Such practices have implications on the development of a smallholder farmer. They will always need resources and will not take ownership of farming activities while they are still reliant on outside sources.

Such practices have effects not only on the MPS but also on the farmers' welfare and the local economy. In the event of these subsidies and assistance they are receiving being discontinued, farmers will be left helpless and unable to produce and make income for their families, and they will not be able to grow and sell crops. Moreover, they will not be in a position to buy production inputs which have the potential to increase their yields.

In the levels of deeper learning (Levels 3 and 4), role players agreed that this issue of dependency needed to be addressed. The following statements were made in support and raising the need to address it:

“This (dependency) will destroy the very purpose of farmers' existence if dependency is not dealt with.” Chemical input supplier

“This thing of subsidies will not work in the long run; farmers should be assisted in raising awareness and the use of local resources and assets as this will ensure participant ownership for sustainable success.” Seed input supplier 1

“We need to provide useful and valuable information, skills, and knowledge to farmers in a manner that when we are not there, they will still be able to use and sustain their livelihood.” Chemical input supplier

“It is important that we encourage farmers using farm-based peer training and farmer-to-farmer approaches to skill sharing and learning, which provides hands-on, practical exercises.” Extension officer 5

These statements reflect suggestions made by role players to decrease the dependency of the farmers. These suggestions were welcomed by farmers (in Level 4), because they want to see an improvement in their crop production and a decreased dependency on outside sources as reflected by the following statement:

“We would accept any suggestion that would bring a positive change in our lives as farmers.” Farmer 7

Even though evidence shows that farmers are dependent on outside sources, this statement reveals that farmers are also dependent on someone that would help them to become

independent. The findings of this research show that the approaches that have been used by extension workers and input suppliers have not assisted farmers to become independent but rather fostered dependency. This calls for a change in approach rather than withdrawing assistance to prevent dependency.

Through the social learning process, role players' perspectives of farmers' dependency on outside forces has changed, as further discussed in Subsection 4.6.1.

4.3.4 Availability of infrastructural and financial resources

Lack of resources like agricultural land, implements, access to finances for increasing production, and transport were identified by farmers and extension officers as being major factors affecting success in crop production among smallholder farmers.

4.3.4.1 Land resources

Land ownership in Msinga is communal and governed by tribal authorities. The findings of this research show that such ownership has the following implications for farmers:

- they cannot buy or sell their land, as reflected by the following statement:
“This is the only piece of land I have, I cannot buy more as the land belongs with the chief and the land cannot be sold.” Farmer 12
- they cannot use their land as collateral when seeking finance:
“When we seek finance in the commercial banks, we do not get any assistance as they say that we do not own the land.” Farmer 5
- they cannot expand their land operations because of the minimal allocation of land for each household:
“This is the only piece of land that was allocated to our family and we cannot expand it as the area is congested and more people need farming land.” Farmer 15
- land is communally owned which hinders effective management of the land, protection of their crops, other farming enterprises and the producing of quality products.

“Our biggest challenge is that there is livestock roaming around and not looked after which gets into the farming areas and destroy our crops due to the fact that they are not looked after.” Farmer 10

As a result of communal land ownership the farmers produce mainly to feed their families, and excess is sold to informal markets. Luswazi (2005) states that the lack of private land ownership restricts farmers’ competitiveness in agricultural production. This was revealed in the findings of this research, that none of the participants (farmers) produced for the formal market. These farmers are thus prevented from contributing to food security and transforming from subsistence to commercial farming.

This will affect the MPS in that farmers are not able to buy production inputs, because they cannot expand their farming operations. Forward linkages (supply of production inputs to farmers) are thus affected. Subsequently, farmers cannot generate more income which in turn affects their acquisition of production inputs to increase production and thus they cannot supply markets with their products. This again influences backward linkages (supply of production output).

In the focus group discussion (Level 3) farmers agreed that, in order to overcome this problem of communal farming, they need to find ways of responding to this challenge, by forming associations to collectively utilise their cropping fields and manage them together. This is reflected by the following statement.

“The amaKhosi (Chiefs) have been encouraging us that we learn to work together and speak with one voice on issues of land so that more land can be allocated to us for crop production.” Farmer 7

The statement above is an indication of the state of affairs in that farmers are not cooperating with one another which hinders their success. The local leadership also has been calling for them to cooperate with one another.

Benefits of establishing cooperative organisations were identified as follows:

“If farmers work in groups, associations, and/or cooperatives, they could easily access infrastructure funds within the government to assist in the fencing of the

cropping fields; they (farmers) could also get access to funds for production inputs if they are organized.” Extension officer 5

Farmers’ cooperation with one another has many benefits which could impact them positively in maize crop production.

4.3.4.2 Lack of financial resources

The findings in this research showed that farmers are faced with the challenge of lack of access to finances. Lack of finances has the following implications for farmers:

- production inputs cannot be bought;
- use of farm save seeds,
- use of kraal manure;
- low soil fertility; and
- constraints on expansion of their maize production.

Farmers mentioned two consequences of the lack of finances. The first one is that the farmers cannot afford to plant hybrid seeds, as reflected by the following statement:

“Production inputs are expensive and (we) cannot afford using them (seeds) at all times as we rely on pension money to produce for our families”. Farmers 2, 6, and 7

The second consequence is that farmers cannot afford fertilizers that supplement plant nutrients in the soil. They use kraal manure instead, which does not provide the required nutrients. Fertilizers enhance the natural fertility of the soil or replace the chemical elements taken from the soil by previous crops. On the other hand, kraal manure has the disadvantage of a slow release of nutrients. Crops require a steady supply of nutrients and the slow release of nutrients has the effect of nutrients becoming unavailable to plants. As a result, there is a need for an immediate supplementing of nutrients. Kraal manure is not able to provide that needed supply, whereas fertilizers can provide plants with an immediate supply of nutrients when the situation demands it (McCubbin, 2000). Kraal manure could still be used in crop production however with its slow release of nutrients it becomes less effective when the demands for nutrients to the plants are high.

Farmers' responses concerning the use of kraal manure are reflected by the following statement:

“I have always used kraal manure for soil fertility, I do not have money to buy fertilizers and can't afford having labourers.” Farmer 7

The inability of farmers to buy production inputs as a result of lack of finances affects yields. The use of farm saved seeds and kraal manure affects the yields as it lowers production, which in turn lowers income on produce sold. In contrast, production inputs like hybrid seeds and fertilizer enhance crop performance through supply of needed nutrients, protect the crop from pests and diseases, and provide character traits in the plants needed to enhance high yields.

Regarding the MPS, lack of finances has an effect on forward and backward linkages because farmers are unable to buy production inputs and therefore cannot produce high quality crops which they could supply to formal markets.

During the focus group discussions (Level 3) with farmers and extension officers, possible ways to address the lack of financial resources were discussed. These strategies include the organising of farmers that work close to one another to form farmers' associations and study groups. In doing so, farmers would be able to access some of the government funding like the “Massification Programme” of the Department of Agriculture, Rural Development and Environmental Affairs. This is a programme where people in farmers' associations producing in areas of more than five hectares can be provided with production inputs depending on the success of their request (Mudhara, 2009). Farmers' associations would also enable the farmers to acquire production inputs as farmers could acquire them at discounted prices when buying in bulk.

4.3.4.3 Transport and farming implements

The research findings revealed that there is lack of farmers' own transport and farming implements. This has the following implications for farmers:

- high prices are paid for other people's transport and implements;
- farmers are reliant on other people's transport to take produce to markets;
- farmers are reliant on other people's implements to cultivate their farming fields.

These implications were supported by the following statement made by a farmer:

“We cannot cultivate our farming fields at the time we want to because we rely on the municipality’s and other peoples’ tractors” Farmer 7

The inability of farmers to access transport and farming implements has a negative effect on maize crop production. It results in the increased costs of production as money has to be paid for transport. Smallholder farmers do not have farming equipment like tractors and implements of their own, but are reliant on other people with such implements to do land preparation on their behalf. Planting times could be delayed which could result in low yields and farmers not being able to meet the quantities required by output buyers.

During the focus group discussion (Level 3), farmers suggested an action plan to deal with these issues as they affect their success in crop production and at times result in delayed plantings, harvesting, and selling of produce. One of the plans was to organise transport collectively in order to share the costs, thereby lowering them. Farmers emphasised the importance of working as a team that would assist them in many ways:

“We need to start working together and cooperate with one another and there are so many things to achieve when we earnestly do that.” Farmer 5

“If we can work together, we could even buy our own pick-ups and tractors that could assist us and even generate income for us.” Farmer 3

“Government programmes are currently available to well organized farmers more than individuals, this enables them the ability to access tractors through the mechanization programme.” Extension officer 5

Cooperation among farmers will have positive effects on the MPS as they would be able to arrange transport collectively which could lower the costs of production and allow more people to produce and could supply output buyers with large volumes of production output. The availability of farming equipment would also mean that farmers are able to plant at the right times and achieve higher yields which could affect their incomes as well.

4.3.5 Farmers' practices in crop production

It was found that smallholder farmers' crop production practices were as follows:

- farm saved seeds and kraal manure were used more than hybrids and fertilizers;
“In order to keep producing, I would keep some good looking cobs, leave them to dry-off and shell them to plant in the following season, where I mix my seed with the seed I buy from the shop.” Farmer 6
“I have always used kraal manure for soil fertility; I do not always have money to buy fertilizers and can't afford having labourers.” Farmer 7
- chemicals are used for the control of stalk borer and cutworm on maize;
“We use chemicals (stalk borer granules) to control stalk borer and cutworm on the maize.” Farmer 3
- weed control is done by hand hoeing; and
“We normally would assist one another and work as groups to cultivate our lands for weed control by using hoes.” Farmer 5
- they produce mainly for home consumption and excess sold to local informal markets.
“What we can't eat at home, we sell to our next door neighbour or on farm to people seeking to buy.” Farmer 13

Smallholder farmers use reduced-input practices where farm saved seeds and kraal manures are used more than hybrids and fertilizers. Their preference for weed control practices is that of hand hoeing. Food produced is mainly for home consumption and excess is sold for cash.

According to Walker and Schulze (2006), seed, fertilizers and chemicals determine the success or failure in crop production. To achieve high yields, high quality seed of hybrids need to be planted. Farm saved seeds have low or no seed costs and there is no need for the farmer to buy seed every year, because he/she can keep part of the crop for seed and are tolerant to environmental stress. However, farm saved seeds are low yielding. In order to get high and stable yields hybrids perform better than farm saved seeds. Hybrids are at least 98% pure, have a germination percentage of at least 90% and are treated against seed-borne diseases. Plants making up a hybrid are genetically the same and perform uniformly (Benhin, 2006).

From the above mentioned reasons, farmers' production practices have negative implications on MPS as farm saved seeds cannot achieve high yields, which result to low production and the quantities required by output buyers cannot be easily achieved. The use of kraal manures cannot help in achieving high yields as well.

4.4 Input suppliers and output buyers in the MPS

In this research, data collected revealed that input suppliers and output buyers' roles in maize production is to:

- manufacture, produce, and supply fertilizer production inputs;
“One of our important components in the company focuses on agriculture where we mine to produce and supply different kind of fertilizers to our agents and farmers”. Fertilizer representative
- manufacture, produce, and supply crop protection chemical production inputs;
“We are a company with headquarters based overseas and manufacture agro-chemicals needed for crop protection from weeds, pests, and diseases infestation on crops.” Chemical input supplier representative 1
- breed, produce, and supply seed varieties needed for crop production; and
“We ensure that seeds are available for crop production, and we breed, produce and supply various types of seeds to farmers, agents, and retail shops.” Seed input supplier representative
- acquire, process and/or store maize production outputs.
“We buy dry maize grain from farmers which we process to make either maize meal, samp and or animal feeds.” Output buyer representative 1
“The maize in our silos is mainly supplied by commercial farmers and is stored to be sold and used out of season when the prices have gone up as well.” Output buyer representative 2

Input suppliers (forward linkage) are important role players in crop production as they manufacture, produce, and supply production inputs that are needed to enhance crop production and ensure food security in the rural areas. Guenette (2006) states that production inputs are

important to increase production among smallholders and that, if used appropriately, can mean a good quality harvest. Also, output buyers (backward linkage) are just as important as they are responsible for the processing of the production output resulting from these production inputs. Output buyers acquire the product output from farmers which makes the forward and backward linkages complete. That means that the availability of production inputs supplied by input suppliers and the ability of farmers to sell their produce to output buyers, which is a desired state in crop production, is achieved.

Input suppliers and output buyers have a great effect on the MPS. Their accessibility ensures that better products are supplied to the farmers to enhance crop production since their contribution could add value to maize crop production and help improve the lives of smallholder farmers. The findings of this research revealed that farmers are willing to use improved products and new technologies for maize production. However, the farmers' access to these products is impeded by their inability to afford them and not as a result of their indigenous crop production practices (further discussed in Subsection 4.4.1.3).

The next three subsections describe how input suppliers make production inputs available to farmers (Subsection 4.4.1.1), how output buyers acquire production outputs from the farmers (Subsection 4.4.1.2), and how farmers buy inputs and supply products (Subsection 4.4.1.3).

4.4.1.1 Production input supply in the MPS

The research data showed that production inputs are supplied:

- directly to farmers buying in large quantities;
- to agents who also sell to farmers;
- in small packs to retail shops for farmers needing smaller quantities; and
- to government and farmers' cooperatives and associations who then distribute to farmers.

The following are some of the statements that were made in this regard:

“We offer huge discounts to farmers buying direct from us, and we deliver free of charge as these are large quantities of seeds.” Seed input supplier representative 2

“Farmers can buy our chemicals from our agents whom we supply; we do not supply them directly to farmers.” Chemical input supplier representative 1

“Farmers can buy directly from the company where the fertilizer quantity is above eight tons, anything less than that, can be obtained from our agents.” Fertilizer supplier representative

Production inputs are made available to farmers in various ways included direct sales to farmers, agents that sell to farmers and government and farmers associations that distribute to farmers. They are also accessible in different quantities according to the farmers’ needs and requirements. This shows that the production inputs are widely accessible and in various ways for farmers to use. However, due to farmers’ lack of financial resources, access to inputs is impeded (Subsections 4.3.4.2 and 4.4)

4.4.1.2 Production output supply in the MPS

The findings revealed that maize production output is supplied to output buyers:

- direct from farmers supplying large quantities; and
“We take produce from farmers who are able to supply us in large volumes.”
Output buyer representative 1
- agents.
“We have agents that constantly supply us with maize and when there is a shortage, we buy from stored grain in our off season.” Output buyer representative 2

Output buyers require production output in large quantities that could be supplied direct to them or through agents. This requirement has an effect on smallholder farmers who produce in small areas and cannot meet the volume requirements that are set by output buyers.

Lack of formal markets was expressed by smallholder farmers to be one of the contributing factors to their inability to generate more income and the reason they do not have any relationship with output buyers.

“We would plant and harvest a good crop but have no way to sell our output after harvesting.” Farmer 7

“We do not have enough information on the formal markets around the area, as a result, we cannot give farmers timely price and market information.” Extension Officer 5

“The bit that we try and sell, is sold locally, either on the farm, village and or on the roadside.” Farmer 5

“I sell my maize as maize on the cob to people in pick-ups and hawkers that buy on the farm and sell in pension pay points and villages.” Farmer 2

“What I could not sell, we eat at home and what is left over, I let it dry-off and feed it to my fowls and goats.” Farmer 9

These statements reveal that smallholder farmers have access to informal markets but not formal markets, which are desirable. Kirsten and van Zyl (1996) also state that it is a common practice that smallholder farmers market their produce directly from their gardens to the surrounding communities and supply hawkers who visit them with their delivery pick-ups to re-sell in the local town and/or cities.

The findings of this research also revealed that output buyers have not acquired output products from smallholder farmers in Msinga as they believe that there is little production of maize and that they require bulk output product.

Output buyers expressed that they were willing to explore markets in the Msinga area and play an active role in acquiring the production output as reflected in the following statements:

“We never knew the potential the area has for maize production as it is commonly known for its vegetable production in irrigated lands.” Output buyer 1

“We will work with extension officers to estimate and quantify the potential product that could come out of the area and allow them a quota to supply that in the future.” Output buyer 2

The above statements reveal that, as an effect of social learning applied in this research, the output buyers gained new insight into the experiences and practices of smallholder farmers and the potential that the farmers have in crop production.

If farmers have no access to formal markets, rural households are prevented from adopting diverse livelihood strategies which are important for ensuring their food requirements and generation of income that is required to satisfy their immediate consumption needs, social purposes, and investments (IFAD, 2003). Access to markets is crucial for improving the living standards for rural smallholder farmers.

4.4.1.3 Production input supply and output buying and the smallholder farmers in the MPS

Production input distribution and output acquisition should encourage the establishment of quality relationships between the role players of the MPS. However, the findings of this research reveal that quality relationships are not developed in the process in which farmers get the production input and deliver the output product. Instead of developing this relation, farmers have to buy their production input from retail shops and supply their output products to agents.

The data revealed the following reasons for input suppliers and output buyers operating through retail shops and agents:

- input suppliers expecting farmers to buy production inputs in large quantities that they cannot afford;
“The seed is packaged in different size packaging and farmers choose from a wide range of varieties, and it makes it difficult to supply individual farmers with different varieties that are required in different smaller size quantities, we thus supply those to retail shops to stock and sell to farmers.” Seed input supplier representative 2
“It reduces our costs of supply to deliver small packs in one place where they can be sold from.” Seed input supplier representative 1
- farmers are not able to make payments in the time stipulated by the input suppliers;
“We supply retail shops and agents to avoid the risk of farmers not being able to pay for our products.” Chemical input supplier
“Farmers are unreliable when it comes to making payments; it becomes easy for us to supply agents and retail shops as farmers buy there on regular basis and can make cash payments.” Seed input supplier representative 2

- output buyers require that large quantities of output produce are supplied; and
“We prefer to be supplied maize product output in large volumes rather than small quantities as there are costs involved and big volumes ensure us product availability that we can process for a longer period.” Output buyer representative 1
- the products offered by the farmers need to be of higher quality.
“Quality is of high importance to us, we cannot accept poor quality produce, since we cannot process bad quality products.” Output buyer representative 1

These statements reveal that input suppliers and output buyers apply these practices due to farmers’ inability to pay and their inability to supply the right quality and quantity of products. Such practices by input suppliers and output buyers in turn have the following unfortunate consequences:

- farmers do not build relationships with input suppliers and output buyers, because of the limited contact;
- information and knowledge is not shared among farmers, input suppliers and output buyers which results in:
 - no feedback to input suppliers on the quality and performance of their products; and
 - no provision of accurate information on the use of products.
- production inputs are more expensive to buy from retail shops; and the agents who buy output produce offer less money for the produce.

In the Level 4 focus group discussion, it was revealed that direct supply of input products to smallholder farmers is the preferred choice of the role players in the MPS. Strategies identified to change this situation include the following:

- farmers to form commodity groups:
 - to be able to buy production inputs in bulk and directly from suppliers to lower the costs, and
 - for collective skills and knowledge acquisition from input suppliers, extension officers and sales agents;

- input suppliers to provide ongoing product training to retail shops and agents, so that proper information and knowledge can be passed on to the farmers; and
- input suppliers to go beyond retail shops and agents by sharing and providing information direct to farmers.

These changes would have a positive effect on the MPS because farmers would then have easier access to production inputs which have the potential of increasing their yields.

4.5 Extension services

Extension services as rendered by government extension officers as well as by input suppliers and output buyers are described in the following sections.

4.5.1 Extension services rendered by government extension officers

Data obtained in the semi-structured interviews (Level 2) revealed that extension officers have the responsibilities for and roles of:

- being advisers;
- being intermediaries between researchers (or any other source providing new information) and farmers; and
- ensuring that appropriate knowledge is implemented in order to obtain the best results for sustainable production and general rural development.

The roles identified by extension officers reveal that they view themselves as being in control of farmers' development rather than seeing themselves as being in partnership with the farmers, where both parties can learn from one another and construct knowledge together. This is also confirmed by the statements that were made by the extension officers:

“Our duty is to advise farmers to use appropriate technologies in crop production.” Extension officer 3

“We are the link between farmers and any other person or company with information that can be useful to be used by farmers.” Extension officer 2

“We have always assisted farmers to make the right decisions by ensuring that knowledge is implemented in order to obtain the best results in terms of sustainable crop production.” Extension officer 5

These statements support thus the view that extension officers consider themselves as playing a leading role where farmers have to follow.

The extension activities applied in the smallholder farming sector were revealed to be as follows:

- training and advice to farmers;
“Our adviser would teach and demonstrate to us on how to do things, like planting and then advise us on methods that we can use to manage our crops.” Farmer 12
- assistance in the ordering of production inputs;
“They help us in the ordering of production inputs since they are more knowledgeable than us.” Farmer 10
- assistance in providing transport to farmers;
“We do not have our own transport and we get help from the extension officer when we need to fetch production inputs.” Farmer 3
- mobilisation of farmers to form commodity groups and farmers’ associations;
“We were encouraged by advisors to form cooperatives and farmers’ associations.” Farmer 7
- organisation of field and farmers’ days; and
“They (input suppliers) do invite us from time to time for farmers’ days that they organize.” Farmer 4
- linking farmers with other service providers.
“They sometimes bring other people to us who would come and tell us about their different products.” Farmer 7

All these activities reveal that a technical approach is used rather than a participatory approach. Technical approaches focus on the provision of technical information and technological innovation to farmers (Röling, 1995). Mollen (2007) also describes the role of extension officers to be technical advisors. However, Chambers (1997, 2005) describes the importance of

participatory approaches when development is the goal. Participatory approaches would encourage farmers to become partners with extension officers where dialogue, learning, and reflection are facilitated (Freire, 1970; Worth, 2006). This will encourage farmers to become independent in reflecting on their practices to inform decisions.

The presence of agricultural extension officers will ensure success in the MPS if their roles and responsibilities are carried out effectively as mentioned above. They play a critical role in ensuring success in the crop production of smallholder farmers. Their active involvement would help in developing knowledge, skills, and favourable attitudes of the farmers, enabling them to benefit from research and technology with the ultimate aim of raising their efficiency and achieving higher standards of living.

In this research, critical reflection on the extension approach as currently used by extension officers, was not encouraged through the social learning process, since the emphasis was on the relationships between the role players rather than on individual practices. However, in further studies, extension approaches should be explored in a social learning process where extension officers could, together with the farmer, reflect on their practices.

4.5.2 Extension services rendered by input suppliers and output buyers

Data collected on Levels 2 and 3 revealed that input suppliers and output buyers in the MPS also have the responsibilities of rendering extension and support services to farmers. Their support and extension services include:

- taking of soil samples for testing and analysis;
- providing fertilizer recommendations for crops;
- providing information on fungicides and herbicides for crop protection;
- providing information and training on product use;
- facilitating backward and forward linkages; and
- monitoring and advising on planting crops.

The following statements were made by input suppliers and output buyers in support of the fact that they also have responsibilities of offering support and extension services to farmers:

“We do not only sell our products to farmers but we are advising farmers on our products.” Chemical input supplier 1

“We assist farmers with the taking of soil samples and fertilizer recommendations as well.” Fertilizer input supplier

“Farmers are entitled to the services of our agronomists to monitor their crops as they grow and get advice on what needs to be done in the process.” Seed input supplier 1

“We have personnel on the ground ready to assist farmers by giving advice and support to farmers to ensure that they achieve good quality yields.” Output buyer 1

Such services are important aspects required to achieve successful crop production. However as described in Subsection 4.5.1 these activities indicate that a technical approach is adopted by input suppliers and output buyers when rendering extension services to the farmers. This may have an impact on the farmers’ ability to learn, reflect, and engage in dialogue to develop new knowledge and to make their own decisions. Input suppliers and output buyers’ perspective of farmers is that they are not willing to change and that they are not knowledgeable enough to make informed decisions (further explored in Subsection 4.8.3). This shows the importance of partnerships between input suppliers, output buyers, and farmers to ensure that development of the farmers in crop production takes place.

4.5.3 Challenges faced by extension officers

Extension officers are faced with various challenges which affect their overall effectiveness in the MPS. Data obtained from extension officers revealed that they are faced by the following challenges:

- Acquisition of up-to-date information on new technologies;
“Unless other service providers provide us with up-to-date information, we are not provided with timeous information technologies and farmers at times tend to know more than we do.” Extension officer 5
- poor support and unavailability of transport;

“We have to share vehicles to carry out our duties and this affects our functioning, as it becomes difficult to work.” Extension officer 3

- interference by government and politicians; and

“Our work is made difficult by the top-down approach by government and politicians on us who want us to serve their desires instead of those of farmers.” Extension officer 5

- farmers’ lack of resources.

“Farmers have challenges that are beyond our control, they lack finances, land, and equipment, which makes it hard for us to help transform them when they do not have the means.” Extension officer 4

Extension officers in crop production may be demotivated as a result of the various challenges they are faced with, if these are not addressed properly and effectively. It is clear that extension officers are succumbing to the negative challenges without any effort to question and critically reflect on how they could deal with these challenges. This will impede on acquisition of information, skills, and knowledge that extension officers are supposed to be passing on and sharing with farmers. The existence of these challenges shows that there is a lack of networking amongst the role players (input buyers, output buyers, and extension officers) as extension officers do not make use of the resources in the MPS to deal with their challenges.

These challenges that extension officers face do not have an effect on the approaches that extension workers apply (Subsections 4.5.1 and 4.5.2) but rather have an effect on their ability to build relationships with farmers, input suppliers, and output buyers.

4.5.4 Strategies to improve extension and support services

In the discussion above (Subsections 4.5.1 to 4.5.3) the following aspects that affect the MPS in relation to extension services were revealed:

1. the extension approaches used creates dependency by farmers, because technical approaches are being applied by extension workers;
2. resources in the MPS are not efficiently shared; and
3. there is poor networking concerning the rendering of services in the MPS.

In Level 4 the role players made suggestions on how to improve these three aspects. For addressing aspect 1, farmers indicated that they would like to fully participate in knowledge development and decisions that affect them in the MPS as reflected by the following statement:

“We would like to see a situation where our needs and knowledge are taken into consideration so that we can work on improving what we have.” Farmer 7

Farmers acknowledged thus that they do have knowledge and would like it to be recognised and incorporated into the extension activities in crop production. This challenges the way extension services are currently rendered.

In terms of number 2 above, the role players suggested that technical skills and up to date information on crop production practices and technologies is not shared amongst role players in the MPS. However, the following statement acknowledges that the role players see the need of sharing resources existing in the MPS:

“We have the skills and knowledge and we need to take an active role in rendering extension and support to farmers.” Seed input supplier 1

The statements indicate role players’ acknowledgement of the fact that they have the resources within the MPS. This is also linked to the third aspect described above, which is the poor networking among role players in the MPS. In order to address this, role players suggested, during the focus group discussion in Level 4, the following ways of improving the poor networking:

“We need to establish a platform where information and skills could be shared among all of us in order to make maize production a success for all.” Output buyer 2

“We welcome the suggestion of establishing a platform for knowledge sharing among all of us, as working together in providing extension services will assist a lot in providing us with up-to-date information technologies, we will also be equipped.” Extension officer 5

Collaboration and working together of all role players in providing essential extension and support services to smallholder farmers will thus be helpful in enhancing crop production and will have a positive effect on the MPS.

4.6 Role players' perspectives of one another in the MPS

'Perspectives' are defined as a person's point of view or a way of regarding situations and facts, and judging their relative importance (Senge, 1990). It is a manner in which a person sees and interprets the world around them (worldview). Senge (1990: 8) explained perspectives and mental models as being: "deeply ingrained assumptions, generalizations, or even pictures or images that influence how we understand the world and how we take action". According to Alavi (2001), understanding role players' perspectives of one another brings out new knowledge and understanding of their actions. It is thus important to understand role players' perspectives within their environment in order to deepen the understanding of their actions towards one another.

4.6.1 Farmers' perspectives of input suppliers and output buyers

Data was collected from the semi-structured interviews (Level 2). The first farmers' perspective evident in the findings is that smallholder farmers view input suppliers' function as being manufacturing and producing inputs of high quality (seeds, fertilizers, and chemicals). This is reflected in the following statements:

“They produce and manufacture high quality production inputs that can be used to get high yields in crop production.” Farmer 7

“These (input suppliers) are companies wanting to see farmers succeed in crop production which will also have positive effects on them.” Farmer 8

Farmers' perspective of input suppliers is that the production inputs manufactured by suppliers have the potential to improve their crop production, having a positive effect on the MPS. The statements are a reflection of the fact that farmers believe in what input suppliers are producing. However, despite this perspective, the findings reveal that farmers do not use the quality production inputs as described in Subsections 4.4.1.3 and 4.3.5.

The second farmers' perspective evident in the findings is that output buyers and input suppliers support mostly commercial farmers and not smallholder farmers as reflected in the following statement:

“They buy output products from large commercial farmers to process and sell to wholesalers and retail shops.” Farmer 7

“These (output buyers) store maize grain for large commercial farmers who sell it later in the season at high prices.” Farmer 1

This reveals poor linkage between farmers and output buyers, because the farmers deal mostly with agents or informal markets (Subsection 4.4.1.2). This results in the farmers and the output buyers not being able to build relationships.

The third farmers' perspective evident in the findings is that input suppliers are not interested in building relationships with smallholder farmers but instead make production inputs available through retail shops (Subsection 4.4.1.3). This is reflected by the following statements:

“They prefer to supply retail shops that make money out of us.” Farmer 2

“These (retail shops) are just companies wanting to make money out of us; their products are so expensive.” Farmer 11

“They pay farmers so little and make so much money out of farmers' hard work to produce the maize output.” Farmer 6

Farmers believe that retail shops only make money out of them and that farmers are not that important to input suppliers which is why the products are supplied via retail shops. Such thinking has a negative effect on the MPS, as farmers do not see the need for using high quality production inputs. This may result in them not using these production inputs and not achieving high yields which will also affect their ability to be sustainable in crop production.

4.6.2 Input suppliers' and output buyers' perspective of smallholder farmers

Findings related to the input suppliers' and output buyers' perspectives of smallholder farmers were reflected as the following and supported by the statements:

- farmers resist change;

“Farmers would never change even though we try hard to teach them of the new technologies; they are comfortable with where they are at.” Seed input supplier representative 1
- farmers have a subsistence farming objective; and

“They only want to produce enough to feed their families.” Fertilizer input supplier representative

“Farmers only want to feed their household and do not produce excess for markets.” Output buyer representative 2
- farmers are dependent on government support.

“They are too dependent on government to provide them with production inputs and even transport to deliver these.” Seed input supplier representative 2

Smallholder farmers, input suppliers, and output buyers had negative perceptions about one another as reflected by the above mentioned indicators that emanated from the semi-structured interviews. Such negative perspectives and perceptions of one another have implications in building quality relationships as Jones (2008) states that a positive or negative perception of a role player is likely to play heavily on whether the relationship is going to continue or falter.

However, role players’ perspectives changed as they engaged one another in the focus group discussions. New insight and understanding of one another was developed. Farmers now understood input suppliers to be:

- important role players in maize production as they:
 - provide advanced technology (seed, chemicals, and fertilizers) to enhance crop production,
 - provide technical information, skills, and advice to advance crop production, and
 - supply and market production inputs.

Farmers now understood output buyers to be:

- output buyers are important role players in maize production as they are:
 - potential markets for farmers to sell their produce, and

- processors of agricultural products needed to feed the nation.

Additionally, input suppliers and output buyers also developed a new insight and understanding that smallholder farmers:

- are resource poor farmers, farming in small areas and in need of clear guidance;
- could contribute significantly to input suppliers' sales and local economies; and
- have a great potential.

Input suppliers and output buyers have developed new thinking and insight of smallholder farmers. Such new perspectives could have positive implications to the MPS. Input suppliers have developed an understanding of the state of smallholder farming in that farmers have few resources. In this way farmers' needs can be seen by the other role players as challenges that farmers experience. The input suppliers' and output buyers' approach to the supply of production inputs and acquisition of production output is likely to change as they view farmers as potential markets that could contribute significantly to their businesses.

The bringing together of role players in group discussions played a major role in changing role players' perspectives about the other. These changes brought about awareness as role players shared their different perspectives, and new understanding was developed. The new understanding informed the desire to change and see the best outcome from the others' situations. These new perspectives could result in improved relationships, although these have not been tested. The new perspectives indicate that role players see the potential each one has, and this could be the foundation for building new and improved relationships.

4.7 The quality of relationships in the MPS related to the indicators

In Level 1 (Sub-objective 1) the indicators of quality relationships among role players were established as portrayed in Figure 2.1. In Levels 2, 3 and 4 (Sub-objectives 2 to 4) the focus was on examining the quality of relationships among role players in the MPS.

In this section the indicators of quality of relationships based on the literature review (Figure 2.1) are used to evaluate the quality of relationships in the MPS. It is important to note that the evaluation does not take into consideration the awareness that has been created through social

learning. This new awareness that has been created is further discussed in Subsection 5.2. Table 4.3 is used to describe the evaluation of the quality of relationships in the MPS.

Table 4.3: Evaluation of the quality of relationship in the MPS based on Figure 2.1

| Indicators | Characteristics | Findings |
|---------------|-------------------|--|
| Communication | Dialogue | <p>There is no platform created for learning and sharing among all the role players on issues affecting maize production by smallholder farmer or for finding ways to develop the farmers (Subsection 4.5).</p> <p>Input suppliers and output buyers do not communicate directly to farmers (Subsection 4.4.1.3).</p> <p>Extension officers are advisers to the farmers and not partners with the farmers in their development process (Subsection 4.5.1).</p> |
| | Participation | <p>Technical approaches are used by extension workers, input suppliers, and output buyers instead of creating participatory learning (Subsection 4.5).</p> |
| | Knowledge sharing | <p>Knowledge sharing is affected by farmers' low literacy level and the inability to understand information shared in English (Subsection 4.3.1).</p> <p>Input suppliers and output buyers use English as a medium for information sharing (Subsection 4.3.1).</p> |
| | Reflection | <p>As a result of lack of network between role players there is no platform created to ask critical questions on how their actions affect one another (Subsections 4.3 to 4.6).</p> |

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| | | <p>There is no evidence that individual role players questioned their own practices but they rather expected the other role players to change (Subsections 4.3 to 4.6).</p> <p>The extension officers were affected by their challenges without finding ways to overcome them (Subsection 4.5.3).</p> |
| Trust | Transparency | <p>Since there is limited communication between roleplayers, transparency is not evident (Subsections 4.3 to 4.6).</p> |
| | Accountability | <p>Since there is no platform created for dialogue and no networking between role players, there is no evidence of accountability.</p> |
| | Confidence in one another | <p>Farmers do not trust the actions of input suppliers and output buyers (Subsection 4.6.1).</p> <p>Farmers are perceived by other role players as being dependent on outside sources (Subsection 4.6.2).</p> <p>Farmers are perceived as being resistant to change because they farm saved seeds (Subsection 4.6.2).</p> <p>Due to farmers' use of farm saved seeds and shortage of production lands, output buyers have no farmers producing high quality and quantity produce (Subsection 4.6.2).</p> |
| | Dependability (Do what has been promised) | <p>Input supplier representatives do not keep their promises to attend farmers' meetings (Subsection 4.3.2).</p> <p>There were cases where farmers had an agreement with</p> |

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| | | input suppliers to buy from them and failed to do so because they use farm saved seeds (Subsection 4.3.2). |
| | Competency (Has the ability to do what has been promised) | Farmers' lack of financial resources causes them to not keep to agreements with input suppliers (Subsection 4.3.2). |
| Control mutuality | Degree of control sharing in the relationship | Farmers are considered as being dependent on the other role players. Since the other role players are considered to have the solution for farmers they have more control (Subsections 4.4 and 4.5). Farmers see themselves doing what they are told to do, as a result of their lack of resources (Subsection 4.3). |
| Communal relationship | Support for one another | Due to poor communication, there is no evidence that role players support one another (Subsection 4.3 to 4.6). |
| | Respond to one another's needs Show concern for one another | Role players do not understand the needs of the farmers and as a result do not respond to their needs (Subsections 4.4 to 4.5 and 4.6.2). Due to farmers' lack of resources they cannot respond to the requirements of input suppliers and output buyers (Subsections 4.3 and 4.6.1). |
| Exchange relationships | Expect return on effort put in | Farmers do not receive good remuneration for their produce due to lack of formal markets (Subsection 4.4). Due to farmers' use of farm saved seeds, input suppliers cannot sell production inputs (Subsection 4.3). |
| | Benefit from one | There is very little selling of production inputs by input |

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| | another | suppliers and no buying of production output from farmers by output buyers (Subsection 4.3 to 4.5). |
| Satisfaction | Products and services | <p>According to the farmers, there are no services provided by input suppliers and output buyers (Subsection 4.4.1.3).</p> <p>According to the input suppliers, farmers use farm saved seeds so they do not have to buy products from input suppliers (Subsection 4.4.1.1).</p> <p>Output buyers do not buy from farmers due to the quantity and quality of produce (Subsection 4.4.1.2).</p> |
| Commitment | Perform actions to bring about change | No attempts have been made to create a platform for change (Subsections 4.3 to 4.6). |

Communication is viewed in the literature as being an important construct of the quality of relationships; trust is built through communication which also creates communal exchange relationships and control mutuality. Satisfaction and commitment is a result of the existence of these (Subsection 2.4).

Based on Table 4.3, it is clear that the lack of communication caused a lack of trust which also affected the other indicators of quality relationships negatively. In the next subsection the cause and effects analysis of poor quality relationships is dealt with to describe what the effects are of the poor quality relationships.

4.8 The causes and effects of the quality of relationships

Cause and effect analysis (Table 4.4) was analysed during the Level 4 focus group discussion on the issues that may affect the quality of relationships in the MPS as identified during data analysis. The following three steps were followed:

- the nature of the relationships in the MPS were determined;
- aspects that cause the nature of these relationships were determined; and

- the effects of these causes were established.

In Table 4.4 the cause and effects related to the nature of relationships are explained. This serves also as a summary for the findings of Subsection 4.3 to 4.7, which reflect imperative aspects that may affect the quality of relationships between the role players in MPS.

Table 4.4: The causes and effects of the quality of relationships in the MPS

| Nature of relationships | Causes | Effects |
|--|---|--|
| Nature of relationships between other role players and smallholder farmers | Farmers' low level of literacy (Subsection 4.3.1). | Information is not shared by other role players with the farmers. |
| | Farmers are perceived by the other role players as being dependent on outside sources for many resources for their development. | No efforts are made to develop the farmers. Farmers are not considered as being partners in their own development process. Technical approaches are used to develop farmers instead of participatory approaches. |
| | Use of farm saved seeds instead of buying from input suppliers. | Low maize production and poor quality. Formal markets cannot be accessed. Relationships between farmers and role players are not built. |
| | Farmers do not have financial resources. | Farmers cannot afford to buy production inputs and pay on time. |

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| | | Farmers tend to use farm saved seeds. |
| Nature of the relationships between extension officer and other role players. | Technical approaches used by extension officers instead of participatory approaches that encourage learning. | Dependency of farmers on extension officers. Extension officers do not understand the farmers' needs. |
| | Extension officers are affected by challenges in their organisation; there is no attempt to overcome them. | Lack of support for farmers. Lack of up-to-date technical information. Lack of networking with other role players. |
| Nature of quality of relationships between input suppliers, and farmers. | Supply inputs to retail shops not the farmers. | Relationships not built with farmers and their extension officers. Required extension services not supplied to farmers to improve their maize production. There is a lack of trust between farmers and input suppliers. |
| | Input suppliers, supplying only to farmers buying in large quantities. | Farmers cannot buy direct from input suppliers, and pay as a result high prices to retail shops. Farmers do not build relationship with the other farmers. |
| Nature of quality of relationships between output | Output buyers only buy large quantities and high quality | Farmers sell their products to informal markets for lower |

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| buyers and farmers. | production outputs. Individual farmers do not qualify as they are producing in smaller quantities. | prices. These markets are unreliable. |
| | Output buyers use agents to acquire production outputs. | The prices are reduced for the supply of production outputs by farmers. Output buyers do not have relationship with farmers. Output buyers market related information to the farmers. |

The facilitation of social learning enabled role players to explore and reflect upon the effects that their perceptions and practices have on the other role players in the MPS. This brought awareness of the changes required to improve the relationships among role players in the MPS. The strategies, as developed by the role players in MPS, are described.

4.9 Strategies to improve the quality of relationships

The development of strategies to improve the quality of relationships among role players was based on the social learning process of enquiry and learning. In social learning, people engage with one another, sharing different and diverse perspectives and experiences to develop a common framework of understanding and basis for joint action (Schusler and Decker, 2003). In the research as levels of deeper understanding took place, role players developed a common framework for understanding the issues that impact the effectiveness of the MPS. In order to improve cooperation and working relations among role players, role players realized the need to develop strategies for improving the quality of their relationships in the MPS. Strategy development

Findings of the fifth level of deeper learning in the research showed eleven objectives that were set by role players as strategies to improve the quality of their relationships and to increase

cooperation among them. The strategies were developed based on the cause and effect analysis (Subsection 4.8; Table 4.5).

The following statements were made in relation to the changes that farmers wanted to see taking place in the MPS:

“We want a change that would allow us as farmers to get access to affordable production inputs, so that we are able to produce and sell our produce.” Farmer 7

“Our biggest challenge is the lack of access to formal markets and if this will help us achieve that, we are more than willing to take up the challenge.” Farmer 5

Input suppliers made statements such as the following:

“Quality relationships with farmers are of utmost importance to us, because they guarantee a market for us.” Seed input supplier 2

“We are required by the government to source production output from smallholder farmers, this would be for us a step in the right direction.” Output buyer 2

In developing strategies to improve the quality of relationships among role players in the MPS, the following four steps were followed:

1. Identifying and describing change that is required, based on the challenges identified (Subsections 4.3 to 4.7)
2. Making strategic choices by establishing what needs to change and what specific changes are required
3. Establishing what actions are required to bring about change; and
4. Identifying actions that would contribute to the desired change.

Table 4.5: Strategies to improve the quality of relationships among role players

| CHALLENGES | STRATEGY | CHANGE NEEDED | ACTION TO BRING ABOUT CHANGE | ACTORS |
|--|--|--|--|---|
| The literacy level of farmers. | Increase information dissemination to farmers. | Better access to information. | Provide information in Zulu and in understandable illustrated format. | Extension officers Input suppliers Output buyers |
| Lack of youth participation in agriculture. | To encourage and mobilize youth to actively participate in crop production. | More participation of youth in agriculture. | Awareness campaigns to introduce youth to programmes available within the department of agriculture. | Farmers Extension officers |
| Farmers' dependency on outside sources. | Minimize dependency, maximize potential, and develop farmers to produce and be self dependent. | Decrease dependency on outside sources for information, knowledge, skills, subsidies, and decision-making. | Raise awareness to encourage use of local resources and assets. Encourage participation among role players to share useful and valuable information, skills, and knowledge. Encourage farmers to use farm-based peer training and farmer-to-farmer approaches. | Farmers Extension officers Input suppliers Output buyers |
| Unavailability of infrastructural and financial resources. | Mobilise farmers to form commodity groups and farmers' associations. | Farmers to collectively apply for obtaining financial resources and land. | Farmers to collectively seek land with traditional authorities and | Smallholder farmers Extension officers |

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|---|--|--|--|---|
| | | Farmers to share transport and implements to lower the costs. | finances with financial institutions. Farmers forming commodity groups to share transport and implements. | |
| Farmers' poor crop production practices. | Increase maize crop production. | Better crop production for higher quality production output. | Provide access to production inputs, extension and support service to farmers. Provide excess of output supply. | Farmers and farmers' associations Extension officers Input suppliers Output buyers |
| Farmers' lack of participation and involvement in role players' activities. | Promote participatory extension services for information sharing and skills development. | Use participatory extension approaches. Minimize farmers' dependency on other sources for skills and knowledge. Share information rather than promote production inputs. | Set a platform for participatory extension approaches. Conduct participatory extension on farm trials and demonstration. | Farmers Extension officers Input suppliers Output buyers |
| Poor production input supply in the MPS. | Provide access to production for farmers. | Minimize indirect supply of production inputs to retail shops and agents. Farmers to change their crop production practices. | Increase supply of production inputs to individual farmers and farmers' associations. Farmers to use high quality production inputs. | Farmers Extension officers All input suppliers |
| Limited output production supply in the MPS. | Provide access to output markets. | Improvement of information on markets and support services | Output buyers to provide information on markets. | Farmers Extension officers Output buyers |

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|--|--|---|---|--|
| | | <p>from output buyers. Discontinue the use of agents to supply production output. Improve farmers' crop production practices.</p> | <p>Output buyers to provide direct access to farmers to supply produce. Minimize the use of agents for the supply of production output. Output buyers to allow advance payments to farmers. Farmers to transform to commercial production. Use of high quality production inputs Increase production and quality. Increase supply of production output.</p> | Seed Input suppliers |
| <p>Inappropriate extension approaches used by extension workers.</p> | <p>To create a platform that will enable role players to participate in knowledge sharing and skill development.</p> | <p>Improvement in extension officers' access to information and support given to extension officers. Minimize dependency of extension officers on government for resources and information. Improve extension approaches to make them more participatory.</p> | <p>Ongoing sharing of information on latest research and development. Stakeholders such as input suppliers, and output buyers to provide support to extension officers. To develop extension approaches suitable for smallholder farmers.</p> | <p>Extension officer Input suppliers and output buyers</p> |

| | | | | |
|--|--|--|---|---|
| Role players' negative perspective of one another. | Promote cooperation and tolerance among role players in the MPS. | Improvement in role players' negative perspective of one another. | Encourage communication among role players by creating a platform for dialogue. | Farmers Extension officers Input suppliers Output buyers |
| The quality of relationships | Promote and encourage communication among role players in the MPS. | Discontinue top-down extension approaches used. Allow direct supply of production inputs and output to farmers. | Role players to communicate direct to one another. Role players to have regular meetings to evaluate progress. Role players to promote relationship quality indicators at all times through interactions. | Farmers Extension officers Input suppliers Output buyers |

The strategies to improve the quality of relationships will have an impact on the MPS. They form the basis of improving the forward and backward linkages which are important for the success and effectiveness of the system. These strategies would ensure that farmers have access to production inputs and output markets together with extension support that provides information, knowledge, and skills needed in crop production (Onyango, et al., 2009; Guenette, 2006; Robbins, et al., 2004).

The use of social learning in the research assisted in creating an awareness of to improve the quality of relationships in the MPS, but it is necessary for the role players to continue with social learning processes to ensure implementation of these strategies.

4.10 Summary

The findings of the research have been presented in relation to the main objective of seeking a deeper understanding of the quality of relationships among role players in the MPS.

The interview information revealed that smallholder farmers' practices are affected by the farmers' level of literacy, the poor participation of youth in maize production, and the farmers' dependency on outside sources to acquire skills and knowledge and obtain financial and infrastructural resources.

Production inputs are developed, manufactured, and supplied by input suppliers. Farmers access them in various ways and, as a result of this practice in the supply of production inputs, the MPS is affected. The supply of production inputs and output buying is influenced by the quantity and quality of product supply to and from farmers and the ability of farmers to make payments. These have effects on the farmers as well as the MPS, in that farmers require production inputs in smaller quantities and are not able to supply bulk production output.

Based on the evaluation of quality of relationships by using the indicators, it was established that there is limited communication which affects all the other indicators. Based on the negative factors which affected the MPS, strategies were developed through the social learning process. This enabled all role players to realize how their perspectives, practices, and behaviours affect each other and the need for change.

The next chapter (Chapter 5) contains a reflection on the benefits of the social learning process, a summary of the findings of the research regarding its sub-objectives, conclusions drawn, and recommendations made for practice and for further research.

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The main objective of this research was to seek a deeper understanding of the quality of relationships that smallholder farmers, extension officers, input suppliers, and output buyers have in the maize production system.

To gain a deeper understanding of the quality of relationships among role players, several sub-objectives were used. These sub-objectives were to:

- establish indicators of quality of relationships among smallholder farmers, extension officers, input suppliers, and output buyers through examination of appropriate literature;
- determine the existing linkages in the MPS;
- determine the quality of relationships existing in the MPS;
- determine the causes and effects of these relationships among role players in the MPS; and
- establish strategies with all role players to improve the quality of relationships.

The sub-objectives were addressed through social learning methodology which was informed by systems thinking. The comparative data analysis method was used to analyse and interpret the data.

Chapter 5 thus contains a reflection on the benefits of the social learning process, a summary of the findings of the research regarding its sub-objectives, conclusions drawn, and recommendations made for practice and for further research.

5.2 Reflection on the benefits of social learning

The bringing together of farmers, extension officers, input suppliers, and output buyers to seek a deeper understanding of the quality of relationships among them in maize production through the social learning process was beneficial not only to the research process, but also to the participants and the researcher. This section seeks to reflect and outline the benefits of social learning to the researcher, role players as well as the research process.

5.2.1 Benefits of social learning for the research process

Social learning was applied to gain knowledge and understanding of the quality of relationships among role players in the MPS. Various stages of deeper learning were encouraged through the research process. This happened at the following levels:

1. Baseline knowledge on the indicators of quality of relationships was acquired through the literature, which brought about understanding on how one would assess quality of relationships in maize production systems.
2. Individual's (each role player) perspectives and practices on the quality of relationships that exist among role players in the MPS were ascertained.
3. Two groups of role players that work closely together (farmers and extension officers in one group and output buyers and input suppliers in another) were brought together in a focus group discussion to confirm findings of individual interviews. A platform was created through dialogue where individual perspectives were revealed and questioned. These perspectives were thus confirmed or probed with deeper enquiry. As a result, a common understanding was developed about the expectations of each role player and the roles that each role player should play in the MPS.
4. All the role players were brought together in one focus group discussion to assess the findings that emerged in Level 3 and to engage in dialogue to understand the cause and effect of the nature of relationships in MPS. This enabled role players to understand the reasons people act the way they do or why the situation is the way it is.
5. Strategies were developed to improve the quality of relationships among role players in the MPS.

As a result of this process of social learning, new knowledge was gained and understanding was deepened on each level as additional role players came to the discussion at different levels. This raised awareness of how perspectives differed among role players, and this caused role players to question their perspectives and practices. As a result, the findings obtained through this research process are an authentic reflection of the quality of relationships that were questioned through the various levels among role players. The findings reflect previously unscrutinised individual perspectives. Since social learning emphasizes not only reflection on practices but also reflection on strategies for change, role players became aware of the actions that they should implement to bring about change. Thus, the findings reflect the changed perspectives of individual role players.

As a result of power differences among role players, the effectiveness of dialogue could be negatively influenced and could result in the role players with more power imposing their perspectives on others. However, in this research the different levels of social learning encouraged all role players to share their perspectives. This was achieved because, firstly, all role players participated in a non-threatening environment through semi-structured interviews. Secondly, role players participated in a focus group discussion in which only two role player groups took part, where they learnt how to engage with each other and their views were seen as being important and taken into consideration. Thirdly, role players took part in a focus group discussion that involved all role players, but this time role players were confident about sharing their perspectives. At this stage, participants already understood what was expected of them in the discussion, since the framework of discussion was developed with them at Level 2. Participants were thus familiar with what had been discussed and how it had been discussed. Moreover participants realized that the research would benefit them in the future and therefore they participated fully.

Social learning is an effective approach for research when a multi-stakeholder perspective is required to unveil and question perspectives through dialogue which could inform change. However, it is essential that participants understand the benefits of taking part in the social learning process. Dialogue among all role players should not happen as the first process but should gradually develop through non-threatening dialogue sessions.

5.2.2 Benefits of social learning for the role players

As a result of social learning, the role players gained immediate benefit from the research, since the participants were not mere research subjects but rather partners of the research process.

Initially, as determined in Level 2, participants were not aware of the effect of their actions on other role players. They viewed the way they operated as being correct, and they saw no reason to change it. The strategies for bringing about change that were proposed at this level were blaming other role players and hoping that this would induce appropriate changes in those being blamed.

At Levels 3 to 5, role players learnt from one another and new understanding of one another was developed. This caused role players to probe the others' practices and perspectives with deeper. Where participants were initially blaming each other, with new insights role players became aware of the role they should be playing in the MPS to bring about transformed relationships.

On the basis of the above described, participants benefited in the following ways:

- participants understood the role that they play in the MPS and how their actions affect the whole system;
- participants gained a changed perspective of other role players in the MPS;
- participants discovered the opportunities that exist in the MPS; and
- a basis for networking among role players was established because they experienced the benefit of dialogue among all role players.

In as much that the social learning process allows for the collection of data, as required for research purposes, the process benefits the participants through their questioning and becoming aware of their own and each others perspectives and actions, which can inform change.

5.2.3 Benefits of social learning for the researcher

The application of social learning in the research benefited the researcher in two distinct ways.

The identification and involvement of relevant people resulted in the researcher having to build relationships with role players. The effect of building these relationships made it easy for people to talk about their needs and challenges to share information, and to work together. Participation

was achieved as these relationships were built, as common understanding of the perceived issue with role players was developed and as the roles that each person was going to undertake were clarified. This assisted in initiating collaboration through identifying and gaining the active involvement of the right people within the process.

Secondly, an important aspect that was brought about by social learning was the ability to work with role players by facilitating learning and critical reflection that assisted role players in providing their own solutions to their problems. Solutions are thus not imposed by the researcher. The process assisted in identifying role players' needs, bringing those to other role players' attention, and allowing role players to understand the needs of other role players. The awareness of needs of others that took place brought new insights and thereafter options to role players in the MPS.

5.3 Summary of findings of this research

The in-depth analysis of the research findings and results were presented in Chapter 4. This section provides a summary of the findings of this research. The following subsections (5.2.1 to 5.2.5) are based on the five sub-objectives of the research.

5.3.1 Establishing indicators of quality of relationships among smallholder farmers, extension officers, input suppliers, and output buyers through examination of appropriate literature

Sub-objective 1 sought to establish indicators of quality of relationships which are measurement tools that briefly and clearly explain the state which exists among role players in the system. These are tools that would help in the understanding, comparing, and improvement of the MPS.

The indicators were developed according to the literature where communication, communal and exchange relationships, control mutuality, trust, satisfaction, and commitment were established as being important indicators for assessing relationships (Hon and Grunig, 1999). These indicators have been widely used to assess relationships, and it is against this background that they were used to assess the quality of relationships among role players in the MPS.

In this research, indicators as illustrated in Figure 2.1 were used to assess the quality of relationships. Each indicator in Figure 2.1 is separated into different characteristics to assess the presence of the indicators. Through the application of Figure 2.1, as shown in Table 4.3, it was established that:

- communication should be the first construct to assess quality of relationships;
- trust should be looked at secondly since developed through communication and leads to the presence of the other indicators;
- control mutuality and communal and exchange relationships should be looked at thirdly since it is formed as a result of trust; and
- satisfaction and commitment are the result of the presence of all the other indicators.

Based on the findings of this research it can be said that Figure 2.1 is an adequate construct with which to assess the quality of relationships in crop production systems in Msinga. All these indicators were used, and the research findings did not require the use of any other indicators.

The only change that has been made to the indicators presented in Figure 2.1 is that “respond to one another’s needs” and “show concern for one another” under the indicator “communal relationship” were combined to form one characteristic in this indicator (Table 4.3).

These indicators can thus be used to assess the quality of relationship in crop production systems. The application of these indicators is discussed further in Subsection 5.3.3.

5.3.2 Determining the existing linkages in the MPS

Smallholder farmers were described in the literature as subsistence farmers whose cropping activities include maize as it is the staple food for most communities. These farmers face various challenges such as small pieces of land, low income, high costs of inputs, poor crop management level and poor access to technology, little support, and multiple livelihoods. The literature also defined input suppliers as manufacturers and producers of production inputs such as seeds, chemicals, and fertilizers. These are important in adding value to raw production and increase quality and yields for farmers. Input suppliers ensure that production inputs are available for farmers to access and use. Important to crop production is the availability of output buyer markets. These were described as formal and informal markets through which agricultural output

produce is sold by farmers. Critical to crop production is agricultural extension which is important for raising productivity by offering advice, helping farmers to identify problems and opportunities, sharing information, and supporting group formation.

The findings of the research show that the linkages between farmers and other role players is negatively affected by farmers' low literacy levels and poor youth participation in smallholder farming. This in turn has an effect on knowledge sharing and dissemination. Smallholder farmers lack financial and infrastructural resources and produce on small pieces of land through the use of low quality production inputs in which poor quality and low quantity yields are achieved. Such practices have an effect on farmers' ability to access output buyers who require high quality and quantity output produce. Moreover, due to input suppliers' methods for making production inputs available to farmers, as they use retail shops, farmers are impeded from accessing production inputs and information which are important in successful crop production. The extension approaches used by extension officers and input buyers are technical and do not encourage farmer participation and partnering.

However, the use of social learning brought awareness of the poor linkages in the MPS, informed new thinking, and desire to change, which led to the development of strategies to improve the linkages and especially the quality of relationships in the MPS.

5.3.3 Determining the quality of relationships existing in the MPS

The quality of relationships among role players in the MPS was determined through the use of indicators of quality of relationships that were established in Chapter 2 and assessed using Figure 2.1 of the indicators of quality relationships.

This research revealed that there was poor communication among role players in the MPS. This was because there was no platform created for dialogue, participation and partnering, knowledge sharing, reflection, and indirect communication among role players.

Lack of trust in the MPS is the result of role players' failure to keep to their promises, negative perceptions, and lack of confidence in one another. Due to farmers' dependency on outside sources to acquire skill and knowledge and other role players having solutions to farmers' problems, there is poor control mutuality in the MPS. Communal relationships are also lacking

as a result of there being no communal platform for communication, where role players could support each other, respond to others' needs, and show concern for one another. Poor exchange relationships are the result of the unavailability of formal markets where farmers can receive good remuneration for their produce and are the result of the use of farm saved seeds, where input suppliers, access to sell production inputs to farmers is impeded. There is poor satisfaction and commitment on the part of farmers due to the non-use of input suppliers' products and lack of services rendered to farmers.

The relationships in the MPS are of poor quality as a result of poor communication, which in turn affects all the other indicators of quality relationships. However, the use of social learning created awareness in role players through which strategies to improve the quality of relationships were developed.

5.3.4 Determining the causes and effects of these relationships among role players in the MPS

The cause and effect of the relationships among role players in the MPS were determined through the identification of issues that may have affected the quality of relationships in the MPS. The poor quality of relationships among role players is an effect of various causes. These causes occur as a vicious circle where a cause may give rise to another that subsequently affects the first. Some of the components of the vicious circle could be described as follows based on the main causes of poor quality relationships:

1. Extension officers use mainly technical extension approaches which cause poor participation and information sharing with farmers and increase thus dependency.
2. The characteristics (e.g. low literacy) of farmers, farmers' practices (e.g. the use of farm saved seeds), and lack of resources cause the farmers to become dependent on extension officers to develop as farmers.
3. Farmers' lack of financial resources (no 2) to buy high quality production inputs causes input suppliers not to directly supply farmers with inputs.

4. As a result of farmers' practices (no 2), lack of information (no 1), lack of quality inputs (no 3), and lack of resources (no 2), farmers produce low quantity and quality products which cannot be sold to output buyers.

Another cause which may operate within this vicious circle is that extension officers are affected by challenges in their organisation and make no attempt to overcome them.

As a result of these causes the following effects were established:

- no relationships are built between role players;
- there is poor networking among role players;
- there is poor forward and backward linkages; and
- there is lack of farmer development.

These effects described above contribute further to the vicious circle in that, if farmers' practices do not improve they cannot access production inputs and markets, which in turn causes poor relationships with other role players' and this again causes farmers to lack development by the other role players and to stay dependent.

Based on this, the leverage point for change would be the establishment of a platform for networking among role players to foster dialogue and information sharing. This would enable farmers to be independent of outside sources for resources and partners of the development process.

5.3.5 Establishing strategies with all role players to improve the quality of relationships

According to the McRell (2006), improving the quality of relationships among role players in the MPS requires change that is incremental. This is change that is planned, emergent, continuous, and ongoing. This change focuses on a series of initiatives that aim to improve the existing methods of operation without complete alterations to the enterprises and impacts on the role players' day-to-day operational success.

The findings of the research showed that strategies to improve the quality of relationships focused on the changes that are needed to improve the farmers' livelihoods and from which other

role players would benefit from. The changes in role players' actions, attitudes, perceptions, behaviours, and practices required to achieve the strategies were also generated and identified through direct interaction and engagement among role players. This was led by their aspirations for the future and the sorts of opportunities they perceived for change and improvement.

Seeking a deeper understanding of the quality of relationships that exists among role players in the MPS was an institutional analysis in the context of smallholder maize production aimed at using the output of the analysis to design action for change that would result in encouraging farmers to become partners with the other role players in the MPS through participation, dialogue, and networking, described as being the leverage point of change.

5.4 Conclusions

The sub-objectives and the discussion that followed in the research provided background information for the formulation of the conclusions. In this section, the following three conclusions to the research are proposed. The first conclusion is related to Sub-objective 1, the second conclusion is related to Sub-objectives 2 to 5, and the third conclusion is related to the use of social learning that informed the methodology of this research:

1. Communication, trust, communal and exchange relationships, control mutuality, satisfaction, and commitment as indicators are appropriate when assessing the quality of relationships in the maize production system. These indicators are interrelated and cannot be separated or used individually.
2. There is a vicious circle of causes and effects that influence the quality of relationships in the MPS. The leverage point for change would be to establish a platform in the MPS where farmers would become partners with the other role players to improve maize production.
3. The use of social learning is effective when the aim is to assess relationships from a multi-stakeholder perspective since social learning enables:
 - a. participants to equally take part in dialogue where all role players are involved without power difference, since role players learn from the initial stages of social learning to participate in sharing their perspectives and practices;

- b. participants to become immensely involved in the research process and not to be mere subjects of the research process;
- c. participants to understand the effect of their actions on other role players and to plan for change as required; and
- d. the researcher to build relationships with the participants and to facilitate dialogue processes without imposing solutions regarding the issues raised by participants.

5.5 Recommendations

In this section, recommendations proposed are related to practice and, for further research, they are based on the research findings and conclusions drawn from the research.

5.5.1 Recommendations for practice

It is recommended that, where there are problems in crop production systems involving many role players, the application of social learning would be helpful in finding ways of dealing with such issues.

As strategies for improving the quality of relationships were established, if these are not implemented they would constitute little more than academic exercises. The ability to implement these strategies would be the most valuable outcome of the study as they aim to transform intentions into action.

Thus, it is recommended that farmers, extension officers, input suppliers, and output buyers engage in social learning in the implementation of strategies because it has proved to be an approach that brings together role players to learn from one another and to foster change.

5.5.2 Recommendations for further research

Due to the limited scope of this research, the following topics are proposed for further study as they could not be addressed in this research:

- the application of social learning to document the process of implementing the strategies for improving the quality of relationships;

- to deepen the understanding of the extension officers' challenges, the use of social learning to find ways of dealing with those challenges; and
- the application of social learning to develop a framework for linking farmers with the informal and formal markets.

5.6 Conclusion

Agriculture remains one of the major contributors to economic growth, and smallholder farmers in rural areas still directly or indirectly depend on agriculture for their livelihoods. Agriculture provides food security and employment for people in rural areas. There is growing recognition within the government of the need for smallholder farmers to change traditional farming strategies to those of more innovative farming leading to better farm incomes. Developing these smallholder farmers to enable them to operate at commercial farming levels aims at in turn enabling them to increase their production capabilities and improve their access to markets which has become a key element in strategies to promote rural development and poverty reduction. One such innovative approach relates to the establishment of linkages between farmers and input and output markets. This approach, to be effective, requires the establishment of quality of relationship. The quality of relationships implies access to technology and information, institutional arrangements, and support services, capacity building of farmers, and identification of and access to markets, among others.

Thus, the main objective of this research was to seek a deeper understanding of the quality of relationships that smallholder farmers, extension officers, input suppliers, and output buyers have in the maize production system. This was achieved through the application of social learning as a approach in which the research was carried out. The process of enquiry followed five levels of deeper learning in which new insights emerged and were verified through knowledge gained in the previous levels in order to have a concrete rapport. This assisted in the achievement of all sub-objectives.

The literature and the findings of this research showed that farmers are faced with challenges that limit their opportunities to respond to and take advantage of the market opportunities offered. Such limitations are caused by the quality of relationships that exists among role players in the

MPS. These range from farmers being unable to access information, knowledge, and skills needed in crop production as a result of their low literacy and improper extension approaches applied in crop production; lack of financial resources which impedes their ability to access production inputs at a reasonable cost; and the poor production input distribution channels which affects farmers' ability to access production inputs and information due to their lack of transport and the lack of capacity by retail employees. These factors greatly affect the quality of relationships where communication, which is the foundation for building quality relationships, was poor and in turn affected the rest of the indicators of quality of relationships.

In the process of social learning and enquiry, the cause and effect analysis was applied and assisted in the identification of issues that resulted in the poor quality of relationships. Based on the above, the strategies to improve the quality of relationships were developed among role players. The development of strategies to improve the quality of relationships among role players was presented through social learning, as role players engaged with one another, sharing different and diverse perspectives and experiences, thereby developing a common framework of understanding and a basis for joint action.

Therefore social learning is an effective approach to apply when the aim is to seek deeper understanding of the quality of relationships from a multi-stakeholder perspective.

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APPENDICES

APPENDIX A: The interview guide

1. GENERAL INFORMATION

| | |
|------------------------|--|
| Name of the respondent | |
| Occupation | |
| Contact details | |
| Date of the interview | |

1.1 Could you tell me about yourself?

1.2 What do you do for a living?

1.3 How long have you been doing this?

1.4 What challenges do you face in your work?

2. THE LINKAGES IN MAIZE PRODUCTION

2.1 How do you supply or acquire production (inputs or output)?

2.2 Would you begin by telling me what are the first things that come into your mind when you hear the name of smallholder farmers, input suppliers, output buyers?

3. INDICATORS OF QUALITY RELATIONSHIPS AMONG ROLE PLAYERS

3.1 What and how is your relationship with smallholder farmers/ input suppliers, /output buyers?

3.2 Communication measurement (Interaction, involvement, influence and intimacy)

- Interaction:

- i. Do you get an opportunity to interact the smallholder farmers, input suppliers and output buyers?

- ii. How do you raise your concerns in terms of your product, needs and services?

iii. Do you buy or market your products direct from or to (smallholder farmers, input suppliers, output buyers)

• Involvement:

b) What is your level of involvement in smallholders farmers', input suppliers', output buyers' meetings?

li) Do you get ongoing information from smallholder farmers, input suppliers and output buyers on maize production?

lii) How is the information communicated?

Influence:

I) Do you encourage other (smallholder farmers, input suppliers, output buyers to use products from (smallholder farmers, input suppliers, output buyers)?

li) If so, how do you do it?

lii) Are you satisfied with the products', services or customers'' performance (in terms of product awareness/ loyalty/ affinity/ repurchases)?

Intimacy:

I) How do you express your satisfaction or dissatisfaction about people or products to (smallholder farmers, input suppliers, output buyers)?

li) What is the response of (smallholder farmers, input suppliers, output buyers) to invitations meetings and product awareness campaigns?

3.3 ***Control Mutuality***

A) To what extent do you believe that (smallholder farmers, input suppliers output buyers) are attentive to what (smallholder farmers, input suppliers output buyers say? Why?

B) Can you provide any examples that show that (smallholder farmers, input suppliers output buyers) actually have taken (smallholder farmers, input suppliers

output buyers)'s interests into account in their decisions and behaviors or that show that they failed to take those interests into account?

- B) To what extent do you feel you have any control over what (smallholder farmers, input suppliers output buyers) do that affects you? Why?

3.4 Trust

- a) Would you describe any things that (smallholder farmers, input suppliers output buyers) have done to treat (smallholder farmers, input suppliers output buyers) fairly and justly, or unfairly and unjustly? (*integrity*)
- b) Would you describe things that (smallholder farmers, input suppliers output buyers) have done that indicate that they can be relied on to keep their promises, or that they do not keep their promises? (*dependability*)
- c) How confident are you that (smallholder farmers, input suppliers output buyers) have the ability to accomplish what they say they will do?
- d) Can you give me examples of why you feel that way? (*competence*)

3.5 Commitment

Can you provide me any examples that suggest that (smallholder farmers, input suppliers output buyers) want to maintain a long-term commitment to a relationship with (smallholder farmers, input suppliers output buyers) or do not want to maintain such a relationship?

3.6 Satisfaction

- a) How satisfied are you with the relationship that (smallholder farmers, input suppliers output buyers) have had with (smallholder farmers, input suppliers output buyers)?
- b) Please explain why you are satisfied or not satisfied.

3.7 Communal Relationship

- a) Do you feel that (smallholder farmers, input suppliers output buyers) are concerned about the welfare of (smallholder farmers, input suppliers output buyers) even if they get nothing in return?
- b) Why do you think so?

- c) How about (smallholder farmers, input suppliers output buyers)?
- d) Do you think they are concerned about the welfare of (smallholder farmers, input suppliers output buyers)?
- e) What have they done?

3.8 *Exchange Relationship*

- a) Do you feel that (smallholder farmers, input suppliers output buyers) give or offer something to (smallholder farmers, input suppliers output buyers) because they expect something in return?
- b) Can you provide any examples that show why you reached this conclusion? How about (smallholder farmers, input suppliers output buyers)?
- c) Do (smallholder farmers, input suppliers output buyers) only want a relationship with (smallholder farmers, input suppliers output buyers) if they get something in return?
- d) Can you provide examples of how this has happened in the relationship before?

APPENDIX B: Example of selected transcribed interview data:

1. GENERAL INFORMATION

| | |
|------------------------|----------|
| Name of the respondent | Farmer 7 |
|------------------------|----------|

1.1 Could you tell me about yourself?

- Born in Tugela Ferry
- Age > 60
- Highest grade Standard 9
- Worked in Johannesburg and at Church of Scotland Hospital

1.2 What do you do for a living?

- Plant crops and vegetables and sell them to hawkers

1.3 How long have you been doing this?

- 26 years

1.4 What challenges do you face in your work?

- Lack of water for irrigation
- No money to buy production inputs
- Lack of transport
- Lack of land to expand crop production
- Young people are not keen on farming,
- “I failed to convince my own children, they were not interested in farming, they think that it is for poor people who cannot find jobs.” Farmer 7

2. THE LINKAGES IN MAIZE PRODUCTION

2.1 How do you supply or acquire production (inputs or output)?

- Buy at the shops in Tugela Ferry and Greytown
- Sell to hawkers

2.2 Would you begin by telling me what are the first things that come into your mind when you hear the name of smallholder farmers, input suppliers, output buyers?

- SHF: small scale farmers, produce in small pieces of communal land, plant mostly for home consumption, access sold to neighbours and hawkers
- IS: manufacturers and producers of seed, chemical and fertilizer inputs
- produce and supply retailers for farmers to buy and use for crop production
- OB: They are people and places where we can supply our produce after harvesting.

3. INDICATORS OF QUALITY RELATIONSHIPS AMONG ROLE PLAYERS

3.1 What and how is your relationship with smallholder farmers/ extension officers/ input suppliers, /output buyers?

- I have a very good working relationship with my adviser (EO), we talk about things related to crop production. Get advice from him on how to manage my crops. Get assistance when I need to buy fertilizers and even smaller things from Greytown where these are transported in their vehicles.
- It is difficult to say on the part of input suppliers and output buyers as I only buy their products in the shops at Tugela Ferry and from time-to-time would through the extension officers, attend their farmers' days in Greytown.
- There is no information on markets as we do not supply these with our produce, we only supply to hawkers.

APPENDIX C: LEVEL 3 FOCUS GROUP DISCUSSION GUIDE

A. FARMERS AND EXTENSION

1. How do farmers access production inputs?
2. What role do extension officers play in smallholder crop production?
3. Where do farmers market their produce after harvesting?
4. How is information, skills and knowledge shared in the MPS?
5. Suggestions on how the quality of relationships can be improved in the MPS.

B. INPUT SUPPLIERS AND OUTPUT BUYERS

1. How are production inputs supplied and production output acquired in the MPS?
2. What role do input suppliers and output buyers play in information, knowledge, and skills sharing in the MPS?
3. What is the quality of relationships among farmers, input suppliers and output buyers?
4. Suggestions on how the quality of relationships can be improved in the MPS?

APPENDIX D: Level 3 Focus Group Discussions, Farmers and extension officers:

Selected examples of transcribed data:

1. Farmers access to production inputs:

- Production inputs sold: retail shops in Tugela Ferry & Greytown
- Farmers cannot afford them :
 - “Production inputs are expensive and (we) cannot afford using them (seeds) at all times as we rely on pension money to produce for our families”. Farmers 2, 6 and 7
- Farmers dependant on municipality and other people for implements
- “We rely on the municipality and other people’s tractors to plough the lands for us since we do not have our own.” Farmer 7

“We buy seeds, chemicals and fertilizer at the shops in Tugela Ferry.” Farmer 4

“Most of the farmers where I come from are still using farm saved seeds and do not buy certified hybrid seeds.” Farmer 3

“We do from time to time assist farmers in acquiring production inputs on their behalf with input suppliers, where money is collected and the products are paid for.” Extension officer 5

Proposed changes:

“We need to encourage and mobilize farmers to form commodity groups as this would help them in accessing production inputs cheaper” Extension officer 1

“We need to engage input suppliers to provide direct access for farmers to acquire production inputs.” Extension officer 4

“If we collectively work together as farmers, we have the opportunities of direct access to input suppliers, and even financial institutions.” Farmer 7

2. Role of extension officers in smallholder crop production

“We need the extension officers assistance in providing us with information on the crop production practices that can be used to improve ours.” Farmer 9

- Extension officers provide farmers with information, knowledge, and skills
- Our biggest challenge is that we work with the elderly and this at times makes it difficult to teach new technologies to them as they are not educated and there is poor participation of youth in crop production.” Extension officer 3

What needs to be done in order for the youth to actively participate in smallholder crop production?

“We need to encourage our young people to take an active role in agriculture so that the crop production will still continue to provide food security even in the future” Farmer 7

“I would like to encourage our extension officers as qualified people to assist us in mobilizing the youth on the importance of agriculture, they (youth) are sitting at home and are unemployed, as they (youth) will not listen to us as they (youth) are only interested in money” Farmer 6

“We have a youth in agriculture programme where we encourage young people to get involve in agriculture. Here they are encouraged to form cooperatives and are trained in various skills which include entrepreneurship and crop production skills, where possible and if funding is available, projects are identified and funded in order for the youth to enhance production and make living out of farming.” Extension officer 5

3. Farmers access to markets

“Farmers do not have access to formal markets and sell their produce to hawkers, the surrounding villages, and pension pay-points.” Extension officer 3

“Selling our produce is a challenge; we are forced to accept what the hawkers offer us because we do not have any other places to sell.” Farmer 1

4. Farmers’ and extension officers’ access to information, skills and knowledge shared in the MPS.

“We use the academic knowledge that we have acquired to assist farmers.”

Extension Officer 1

“The Department does from time-to-time conduct training courses to equip us in providing extension with proper information to farmers.” Extension 4

“It is through extension officers that we get information on crop production as they would advise us.” Farmer 6

5. Suggestions for improving the quality of relationships in the MPS.

- “It is important that we engage with all role players involved in maize crop production in this area so that we can share knowledge and experiences, this will not only help the farmers, but will also add value to us as extension officers.” Extension officer 2

“We do need to have ongoing talks with all role players involved in this area in order to share ideas and information needed in crop production” Extension officer 5

APPENDIX E: Level 4 Focus group discussion guide

1. Focus group guide

- a. How are production inputs supplied and accessed in the MPS?
- b. How is the output produced supplied and accessed in the MPS?
- c. How is information, skills and knowledge shared in the MPS?
- d. What is the quality of relationships among role players in the MPS?
- e. What are the causes and effects of the nature of the quality of relationships?
- f. Suggestions on how the quality of relationships can be improved!

•

2. Example of selected transcribed data in the focus group discussions:

- a. Assessing the quality of relationships among role players based on the indicators of quality relationships.

| Indicator | Characteristics | Findings |
|---------------|-----------------|---|
| Communication | Dialogue | No platform created for communication Farmers are recipients of advise Top down approach |
| | Participation | Poor participation by farmers in other role players activities Technical approaches used to extension services |

b. The cause and effect analysis

What are the aspects that cause the nature of the relationships and what effects do these causes have on the nature of relationships?

| Nature of relationships between | Causes | Effects |
|---------------------------------|--|---|
| Output buyers and farmers | <p>Output buyers seek output produce that is of high quality</p> <p>Seek high volumes of output produce from the farmers</p> <p>Farmers produce in smaller quantities and do not qualify</p> | <p>Farmers sell their products to informal markets for lower prices. These markets are unreliable</p> |

APPENDIX F: Level 5 Focus group discussion guide

6. Focus group guide

- a. What are the factors affecting the quality of relationships?
- b. What strategy can be put in place to deal with such factors?
- c. What is the required change in order to improve the quality of relationships among role players in the MPS?
- d. What actions need to be taken to bring about the needed change and by whom?

7. Example of selected data in the focus group discussions.

a. Change required by farmers :

“We want a change that would allow us as farmers to get access to affordable production inputs, so that we are able to produce and sell our produce.” Farmer 7

“Our biggest challenge is the lack of access to formal markets and if this will help us achieve that, we are more than willing to take up the challenge.” Farmer 5

b. Change required by Input suppliers:

“Quality relationships with farmers are of utmost importance to us, because they guarantee a market for us.” Seed input supplier 2

“We are required by the government to source production output from smallholder farmers, this would be for us a step in the right direction.” Output buyer 2