

**ANALYSIS OF EXTENSION NEEDS OF COMMERCIAL FARMERS IN NORTH-  
WEST PROVINCE, SOUTH AFRICA**

**JEANNETT MONOSI MENONG**

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**FACULTY OF AGRICULTURE, SCIENCE AND TECHNOLOGY, NORTH WEST  
UNIVERSITY, MAFIKENG CAMPUS**

**SUPERVISOR: PROF .O.I OLADELE**

**CO-SUPERVISOR: Dr .L. K MABE**

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**DECLARATION**

IJeannetMonosiMenong declare that the dissertation for the degree of masters of science in agriculture economics at the north west hereby submitted, has not previously been submitted by me for a degree at this university or any other university, that it is my own work in design and execution and that all material contained herein has been duly acknowledged

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## ABSTRACT

The study examines the impact of extension needs of commercial farmers in the North West province. Extension need is one of the most important rural development investment strategies that can have both direct and indirect impact on commercial farming. The sampling frame of the study consists of 88 farmers and a sample of 32 farmers was selected for the study. Data was collected using a structured questionnaire which was subject to analysis using SPSS .Frequency counts and percentages were used to describe demographic characteristics, multiple regression was used to analyze information needs and commercial farmers' socio-economic characteristics. The results of multiple regression analysis show that the significant determinants of commercial farmers information needs were attitude to public extension ( $t = 2.84$ ); Marital status ( $t = -4.00$ ); Educational level ( $t = 2.107$ ) membership of farmers groups ( $t = 2.168$ ,) and Extension contacts ( $t = 1.78$ ).

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## CHAPTER ONE

### 1.0

## INTRODUCTION

### 1.1 Background of the study

South Africa has been severely affected by the apartheid era. During this era, black communities were “robbed-off” their lands and denied many opportunities. The Native Land Act dating from 1913, in particular, formalized the distinction between the African reserves and white farming areas, prohibiting Africans from acquiring, owning, and renting land in the latter. This had the effect of limiting their economic options so severely as to compel many to sell their labor to the mines and white farms (Aliber, 2003). This land dispossession that occurred during the colonial era and decades of apartheid rule produced a highly unequal pattern of land ownership and a widespread rural poverty in South Africa. Morris (2007) has revealed that during the colonial times, only about 14% of the total land and 15.2% of the potentially arable land in the country was available to non-White farmers, mostly in the former Black homelands.

In 1994, land reform programmes were to redress the injustices of forced removals and the denial of access to land. Land reform was to ensure security of tenure for rural dwellers, eliminate overcrowding and supply residential and productive land to the poorest section of the rural population (Adams & Howell, 2001). The land reform program of the South African government is conventionally described as having three sub-programs: restitution, tenure reform and redistribution. While restitution deals specifically with historical rights in land, and tenure reform with forms of land holding, redistribution is specifically aimed at transforming the racial pattern of land ownership (Jacobs *et al.*, 2003). All three aspects of the reform program are ultimately derived from the constitution of South Africa.

Section 25(5) of the constitution states: The state must take reasonable legislative and other measures, within its available resources, to foster conditions which enable citizens to gain access to land on an equitable basis. Land reforms are therefore required to meet multiple needs in different situations, including people’s needs for secure title to residential lands, access to land and related support services to engage in agriculture, and in so doing, to provide historical redress and promote national reconciliation. According to van Zyl *et al.* (1996) the most obvious motivation for land reform is the un-sustainability from a political,

South African has long been characterized as having two agricultures – which originates in the instruments used by the South African State to support white commercial farmers on the one hand and measures to regulate agricultural production and land-use management in the former reserves and homeland areas on the other

Agricultural extension in most of the countries both in the developing and developed world faces a number of challenges today due to rapid commercialization of agriculture. Agriculture is no more just farming. It is a business. Today agriculture includes not only production but also post-harvest activities, processing, marketing, advertising and market promotions, information communication technology, etc. In commercialized farming, new and improved technology becomes an inevitable input which is a major factor in high productivity. From the recent trend of agricultural development and its implications for extension service delivery which include:

1. Agricultural information becomes excludable in the short term due to differences in speed of information dissemination.
2. Due to the nature of face-to-face contacts poor farmers will be eliminated from mainstream of extension delivery.
3. Farmers dependency on extension service would reduce the creativity of farmers.
4. Extension service in commercial agriculture is a business rather than a service.

A totally privatized extension service can hardly overcome these challenges. Nevertheless commercial agricultural extension service with public- private partnerships may be able to overcome some of these challenges.

Commercialized extension service clearly identify and differentiate between public and private goods and different principles with respect to dissemination of knowledge in relation to both public and private goods and different principles with respect to service has to disseminate both goods. Extension service disseminate both public and private goods to the farmers but one for a fee and other for free of charge to the farmers So, both cost effectiveness and efficiency of the service depend on the strategies used by the extension organization. For commercialized extension services to play a role in commercial agricultural development overall, it is necessary to consider how they can complement and improve existing efforts in the area of extension.

In addition, it is fundamental to recognize that the objectives of commercial extension activities are not the same as those of state owned public extension services. The combination of commercial and public extension (may be state owned or NGO operated) services can be a useful strategy. Public and private organizations provide different types of information. The public extension service can provide expertise on low input sustainable agriculture methods, and the other improved input sales representative will provide information on the use of them. However, both can make an influence on the farmer's decision-making process. With the development of the commercial extension sector, the role of public extension services may change. In many developed countries, public agricultural services focus on regulation, the environment, and continued provision of advisory services in collaboration with the commercial

Countries with large subsistence-farming sectors or resource-poor farmers may need to focus on alternative extension strategies. Extension services provided by the state sector and nonprofit oriented NGOs in these countries should organize programs to help resource-poor farmers. Again same problems arise in state owned extension services such as lack of funds, bureaucratic inefficiency, inappropriate strategy and lack of accountability. Extension services provided by NGOs have problems regarding their sustainability. Most of these services are short term and survive until funding agencies provide funds.

#### Historical measures to strengthen the white commercial farming sector

A range of measures benefited some 55,000 white commercial farmers until they started to be phased out in the late 1980s ahead of the deregulation of the agricultural sector. These included: Monopoly powers, direct controls over imports and exports, and guaranteed prices and guaranteed markets via the Marketing Acts of 1937 and 1968. The 1939 Agricultural Co-operatives Act A comprehensive system of support, which was implemented largely by the Department of Agriculture and comprised research and extension, subsidies for a wide range of functions such as soil conservation works, boreholes, housing for farm workers, farm schools, fencing, disaster assistance among others. The provision of infrastructure such as electricity, roads, railways, telecommunications and irrigation water through other state departments and agencies (Eskom, Roads Authorities, Spoornet, Telkom, Department of Water Affairs, and Irrigation Boards and Conservation Boards). Financial assistance through

the Agricultural Credit Board and the Land Bank, with credit provided at subsidized interest rates and on preferential terms to farmers who could not access credit from the commercial banks. (Sustainable Development Consortium, 2007)

Given this favorable environment agricultural production in South Africa exceeded both population increase and consumption requirements (although large numbers of black South Africans remained too poor to buy adequate food for their families) between 1980 – 1989 South Africa became self-sufficient in all major agricultural commodities. (Singini& van Rooyen, 1995)

Commercial farmers in South Africa need more sophisticated technology and information that is currently supplied by the public services and they will therefore seek their information elsewhere, even if they have to pay for it.

## **1.2 Problem statement**

The post 1994 periods in South Africa has witnessed the collapse of two agriculture thesis such that extension support services are now government driven to all categories of farmers. Given the scale of operations, degree of performance and the nature of market they serve, anecdotal evidences suggest that commercial farmers patronizes private extension services due to the technicality and specialization of services required. Moagi and Oladele (2012) found that information needs of Land Redistribution for Agricultural Development (LRAD) beneficiaries in Waterberg district, Limpopo were high in the areas of pesticides, agricultural equipment, disease management, market prices and collaterals. Oladele (2010) reported that farmers in significant determinants of information seeking by farmers in Lagos and Ogun States, Nigeria onseeds and planting materials were age, educational level, farming experience, family size, credibility of source of information, language of instruction, and organization membership. According to Oladele (2001),information is one of resources required for improvement of agricultural production that must acquire and used to make informed decisions. Considering the roles played by farmers, it is important to provide information to them as to boost their production and ensure their economic role in South African economy. Hence ,in order for these new agricultural entrants to succeed in production processes, they need information on operating capital, credit, marketing, training and skills acquisition, extension services and ICT`s.

Despite the unified extension services by the public sector to serve all farmers in South Africa, issues of extension services neglecting commercial farmers and focusing on subsistence and emerging farmers still prevails. This study attempts to examine the extension needs of commercial farmers and if such are met by the public extension services.

### **1.3 Objectives of the study**

The main objective of the study is to assess extension needs of commercial farmers.

The specific objectives were to:

1.3.1 Identify personal characteristics of commercial farmer

1.3.2 Evaluate agricultural enterprises of commercial farmers

1.3.3 Determine information needs of commercial farmers

1.3.4 Ascertain information sources used by commercial farmers

1.3.5 Determine the attitude of commercial farmers to public and private extension services

### **1.4 Hypothesis**

Ho: There is no significant relationship between socio-economic characteristics of commercial farmers and their extension needs

Ha: There is a significant difference in attitude of commercial farmers towards public and private extension services

### **1.5 Significance of the study**

This study revealed the extension needs of commercial farmers who received extension services through government support programme. Commercial farmers, Ngaka Modiri Molema District in North-West province, views about extension service and also reflect on the challenges they are facing. This would help in finding out why the progress of the extension agent is not as fruitful as it was expected to be and, it will also be of good use in determining and analyzing the factors that could be hindering the success of extension service to commercial farmers

The research came up with recommendations that can assist the government; private sectors, NGO's and/or other stakeholders, to formulate alternative solutions to the encountered problems and to also make good decisions that will rescue farmers. The knowledge of those who are interested in gaining an insight about commercial farming will be enhanced by this research.

## **CHAPTER TWO**

### **2.0**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The following issues are presented in the chapter: An information needs and information source offarmers. Also discussed in the chapter are extension methods for information dissemination, information needs of farmers, financial support services to farmers in South Africa credits and grant and extension methods for information dissemination.

#### **2.2 Information needs of farmers**

Information needs of farmers become critical as market conditions became increasingly affected by global factors and as technologies become more complex. As a results, public and private source providing farmers with information have increased, such sources particularly growing number of specialists, compete with educational programs offered by the co-operative extension service. This competition along with other factors such as lower funding cause many individuals to question the future role of extension(extension committee on organization and policy) (Jacobs et al,2003)

Agricultural extension, or agricultural advisory services, comprises the entire set of organizations that support people engaged in agricultural production and facilitate their efforts to solve problems; link to markets and other players in the agricultural value chain; and obtain information, skills, and technologies to improve their livelihoods (Birner et al. 2009; Davis 2009). This definition has evolved since the T&V program, where the focus of extension was transfer of technology to improve productivity, especially for staple food crops. While transfer of technology still has relevance, agricultural extension is now seen as playing a wider role by developing human and social capital, enhancing skills and knowledge for production and processing, facilitating access to markets and trade, organizing farmers and producer groups, and working with farmers toward sustainable natural resource management practices (Swanson 2008). Within this expanded role, the breadth of information that agricultural extension can support—through provision and facilitating access and sharing—is much larger. In addition, as the agriculture scenario has become more complex,

farmers' access to sources of reliable and relevant information has become increasingly important

### **2.3 Financial support services to farmers in South Africa**

Land Bank is the main source of finance for farmers in the province. However, access to finance remains a big problem particularly to emerging and small farmers as they do not often meet the required criteria. Land Bank is a statutory body with a mandate from Government to support the development of the agricultural sector. The Bank's key strategic intent is to achieve financial sustainability focused on social and development impact. Meeting client needs by means of cost-effective and competitive products and services, building a representative, committed and an efficient workforce and good relations with stakeholders are critical elements in this strategy. The Bank provides a comprehensive range of retail and wholesale financial products and services designed to meet the needs of commercial and developing farmers and agriculture-related businesses (Mokhatla et al 2000).

In South Africa, the Land and Agricultural Bank of South Africa (Land Bank) and the Agricultural Credit Board were established to serve commercial farmers with small-scale farmers served by parastatals in the former homelands. The collapse of such parastatals left small-scale farmers without access to credit services. While the Land Bank's mandate was broadened to accommodate those previously excluded from its services, the bank continues to concentrate on lending to established commercial farmers with fragile financial markets, agricultural producers have concerns about financing agricultural investments. Even though agricultural banks outperformed their banking peers during the recession, bank profits declined. Still, agricultural bankers report having ample funds for farm loans at historically low interest rates (Van zyl et al 1996)

Agricultural banks outperformed banks nationwide during the recent financial crisis but still saw profits fall sharply. In the third quarter of 2009, agricultural banks saw their rate of return to assets and equity drop to roughly half their pre-financial crisis levels. At agricultural banks, the average rate of return to assets and equity fell to 0.6 and 5.5, respectively. In contrast, other small commercial banks reported negative returns to assets and equity. During the entire year, less than ten agricultural banks failed, while closures of commercial banks soared to 140 (Jacobs et al 2003).

## **2.4 Credits or grants**

In South Africa, the Land and Agricultural Bank of South Africa(Land Bank) and the Agricultural Credit Board were established to serve commercial farmers with small-scale farmers served by parastatals in the former homelands. The collapse of such parastatals left small-scale farmers without access to credit services. While the Land Bank's mandate was broadened to accommodate those previously excluded from its services, the bank continues to

## **2.5 Extension methods for information dissemination**

### **2.5.1The Integrated (Project) Approach.**

Integrated approaches aim at influencing the entire rural development process. Extension is only one though often crucial element in this strategy which targets the entire population in a given area but emphasizes work with disadvantaged groups. Integrated approaches are generally implemented in the form of large-scale and foreign-funded projects aiming at alleviating mass poverty in rural areas on the basis of "a simultaneous improvement in the utilization of natural resources and of human potential" (Rauch, 1993, p. 6). Measures to promote production are coupled with a strong emphasis on self-help. The underlying concept is typically multispectral.

### **2.5.2 University-Based Extension.**

While the Cooperative Extension Service (CES) of the United States is still the only system in which the main extension function remains within the university, some developing countries, notably India, have integrated educational institutions into practical extension work. Within the United States of America, state universities have traditionally cooperated with local counties and the U.S. Department of Agriculture in doing extension besides education and research. Within the last 130 years, extension goals of the land-grant colleges have shifted from practical education to technology transfer and, more recently, to a much broader concept of human resource development.

With the emergence of strong private and other public sector research and development organizations and dramatic changes within the agricultural production sector, CES is facing new challenges with regard to coordination and cooperation. Apart from its traditional roles,

*networking* will become a primary role (Bennet, 1990, p. 16). In this model, industry as well as intermediate and end users of knowledge become part of the extension system

### **2.5.3 Animation Rurale.**

For a historically rather short period, the concept of Animation Rurale (AR) gained importance in francophone African countries such as Senegal, Ivory Coast, and Madagascar (de Wilde, 1967, p. 391-414; Joerges, 1967). Though the original approach is no longer pursued, some of its elements are now being reintroduced into rural development programmes. Animation Rurale was an answer to the authoritarian and often repressive nature of intervention before independence. Developed originally by the French Institute de Recherches et d'Application des Méthodes de Développement (IRAM), it shows many parallels to the Brazilian experiments of Paolo Freire.

Integration of rural areas into the national system was to be achieved by initiating a dialogue between rural communities (collectivities) and the state. In a dialectical way, increasing competence of villagers to express their own needs was to liberate them from colonial dependence. In order to initiate and perpetuate this process, AR relied on a large number of voluntary collaborators, so-called animateurs. Selected by the villagers themselves these animateurs had to be experienced and well-respected farmers but not traditional leaders. Training, supervision, and support of animateurs were organized by the Ministry of Rural Development. Their task was to initiate discussions within the community on local needs and objectives, thus empowering rural people for a dialogue with the state. At the same time they were to "interpret" government plans to the villagers and acquaint them with services available. The long-term perspective was a replacement of traditional institutions and the creation of "development cells" able to negotiate contracts with the state bureaucracy.

Sülzer and Payr (1990,) maintain that AR "did not fail as a philosophy of extension... [Although] it did not achieve a large-scale breakthrough on a national level." Lack of sustainable impact was due to internal as well as external factors. The objectives of AR were extremely difficult to operationalize and, as a result, the role of animateurs remained unclear. In addition, lack of rewards and selection mistakes contributed to the fact that many animateurs soon lost interest in their work. Farmers, as it turned out, were more interested in receiving qualified technical assistance, and even if animateurs had successfully initiated village projects, it was the "technicians" who reaped the benefits. Lastly, it is highly

questionable whether the administration was seriously committed to creating a system which would curtail its own power. What has remained is the philosophy of empowerment and many of the practical experiences. Many NGOs use the ideas of Animation Rurale often without realizing their roots. The present discussion on participatory extension shows its lasting influence.

#### **2.5.4 Information and Communication technology as a tool in South Africa**

Information communication Technologies (ICTs) are all technologies used for the widespread transfer and sharing of information. ICTs are rapidly consolidating global communication networks and international trade with implications for people in developing countries. ICTs can be used to enable, strengthen or replace existing information systems and networks. ICTs in agriculture promote and distribute new and existing farming information and knowledge which is communicated within the agricultural sector since information is essential for facilitating agricultural and rural development as well as bringing about social and economic changes (Swanson and Rajalahti, 2010). Agricultural extension, which depends to a large extent on information exchange between and among farmers on the one hand, and a broad range of other actors on the other, has been identified as one area in which ICTs can have a particularly significant impact. There is growing recognition that farmers and members of rural communities have needs for information and appropriate learning methods that are not being met (Greenridge, 2003; Lightfoot, 2003), and these have been lacking in South Africa.

In the midst of this change, extensionists are grappling with the question of how best to harness ICTs to improve rural livelihoods. Meera et al (2004) had noted that as a result of the emerging new paradigm of agricultural development, old ways of delivering important services to citizens are being challenged; traditional societies are also being transformed into knowledge societies all over the world. Agricultural improvement in South Africa, especially among small scale and resource-poor farmers, requires a major effort to improve the quality of extension services available to farmers. DAFF (2008) reported that currently, the Extension Recovery Plan (ERP) is being implemented in all nine provinces in the country. This is predicated on the fact that agricultural extension bridges the gap between available technology and farmers' practices through the provision of technical

advice, information and training. Without these, farmers' ability to adopt new technologies and plant varieties, which would benefit their production and incomes, would be limited. South African farmers receive much advice and information from other farmers and/or private input suppliers, and many also benefit from radio and television programmes, agricultural trade magazines, shows and demonstrations. Despite the different roles and functions that agricultural extension and advisory service should play, much remains to be desired for the use and integration of ICTs in the agricultural extension and advisory services in South Africa (DAFF, 2009)

## **2.6 An overview for information seeking behavior of farmers**

Kakai, et al., (2004) have defined information-seeking behavior as an individual's way and manner of gathering and sourcing for information for personal use, knowledge updating, and development. However in the study of Majid and Kassim (2000) Information seeking behavior is a broad term, which involves a set of actions that an individual takes to express information needs, seek information, evaluate and select information, and finally uses this information to satisfy his/her information needs.

According to Leckie, Pettigrew, and Sylvain (1996) Factors that affect information seeking behavior include personal reasons for seeking information, the kinds of information being sought, and the ways and sources with which needed information is being sought. This corroborates with the testimony of Macevieiute (2006) and Bigdeli (2007) in their findings that information needs vary according to area of specialization. Similarly, various other factors may determine the information seeking behavior of an individual or a group of individuals, such like; the purpose for which information is being required, the environment in which the user operates, users' skills in identifying the information, and sources preferred for acquiring the needed information

An investigation of 300 farmers was conducted by Khan, Morgan and Sofranko (1990) in order to explore their preferred sources of agricultural information. The extension agents, relatives, dealers, mass-media, better farmers, and neighbors were available information sources to these farmers. These farmers generally perceived the dealers as their preferred source of information. It was found that farmers differed in their preferred information sources which varied in their efficiency in disseminating information. Very little relationship between socioeconomic characteristics and utilization of information was discovered. The knowledge about improved inputs was available from a variety of information sources and

the utilization of these sources appeared to be a matter of personal preference rather than socioeconomic status, farm size, or any other structural characteristic.

Muhammad and Garforth (1999) surveyed farmers, selected randomly through multistage sampling technique, using an interview schedule from the district of Faisalabad to explore the effective sources of information as perceived by them. The results revealed that a majority of the respondents depended more upon neighbors / relatives / friends and mass media (radio and television) than other sources of information. Observations rather than interpersonal communication were found as the major mode of information dissemination among farmers. The role of the contact farmers, field assistants, agriculture officers, and extension field staff in information dissemination was far less than expected because there was less interaction between farmers, field staff, field assistants, and agriculture officers. These were perceived as the least effective sources of information. The printed materials, followed by the University of Agriculture, Faisalabad and Ayub Agricultural Research Institute were perceived as the most effective communication channels by the farmers. But they had very limited access to these information sources. The farmers' exposure to these information sources could yield better results in equipping them with the latest agricultural information.

A survey of farmers in the districts of Sheikhupura, Gujranwala, and Sialkot was conducted, using a questionnaire (Taj, Akmal, Sharif & Mahmood, 2009). The aim was to understand the ways by which end users were obtaining information regarding new agricultural developments. The results showed that irrespective of gender type, the relatives/friends, progressive farmers, and mass-media (T.V. and radio) were the major and most frequent used information sources. On the other hand, the farmers' interaction with fellow farmers and input dealer was relatively stronger than with the representatives of agricultural extension department, ZaraiTaraqiati Bank Limited (ZTBL), and livestock and dairy department indicating that the role of extension departments was lower than expected. The authors recommended agro-technology promotion campaign for farmers through mass-media and the integration of progressive farmers with institutions doing research and promotion to increase rapid adoption and diffusion of resource conservation technologies.

A holistic approach to agricultural extension today goes beyond technology transfer for major crop and livestock production systems. It also includes goals for human capital development, in terms of enhancing the management and technical skills of farm households relating to production and postharvest handling of high-value crops, livestock and fisheries, sustainable

natural resource management, family health and nutrition, and leadership and organizational skills, in addition to social capital development, that is, organizing producer groups (Swanson 2008). As already discussed, agricultural extension facilitates problem solving; creates links to markets and other players in the agricultural value chain; and provide access to information, skills, and technologies.

## **CHAPTER THREE**

### **3.0**

## **METHODOLOGY**

### **3.1 Introduction**

This chapter focuses on research methods which were used in conducting this research and, the specific research tools. The research design, type of study, study area, sampling frame, sampling size and analysis of data collection were described.

### **3.2 Study area**

The study was conducted in the NgakaModiriMolema District, North West Province is located in the far north of South Africa and on its Southern Flank from east to west, the province shares borders with Botswana, North West province also shares International Borders with three countries: Botswana, Zimbabwe and Mozambique.

NgakaModiriMolema district consists of five municipalities: Ratlou, RamotsheriMoilwa, Mafikeng, Tswaing and Ditsobotla, This research only focused only one municipality namely; Ratlou. The district is mostly inhabited by Blacks (Tswana, Sotho, Xhosa, Ndebele), Whites (Afrikaans) and Indian.

Being predominantly rural, most of the district is suited for livestock production but also with some major cropping taking place in cotton, maize sunflower, tobacco and soybean production. The area is characterized by dry and wet cycles, but a very dry year can be expected at least once every ten years. Its great diversity in agricultural potential is due to different soil types, access to water and grazing capacities. Soils are good red sandy loams and pH is slightly acidic to neutral, with most soils high in lime.

The climate is hot and dry, with annual rainfall of about 60mm and a high evaporation rate. Rainfall is predominantly in summer with an estimated average range of 20.8 to 123.3mm be September and April,)

### **3.3 Research design**

Quantitative research design was used because it is descriptive and provides hard data on the numbers of people exhibiting certain behaviors, attitudes, it provides information in breadth and allows one to sample large numbers of the population. Descriptive survey was also used because it observes the subject without intervening.

### **3.4 Population of study**

The population consisted of all crops and livestock farmers in the NgakaModiriMolemaDistrict, North-West. According to the Department of Rural Development and Land Reform (DRDLR), (2012) the North West province 88 Commercial farmers

### **3.5 Sampling procedure and sample size**

NgakaModiriMolema District has five municipalities from which one municipality was randomly selected. The list of commercial farmers serves as the sampling frame for the study. A sample of 32 farmers was selected using simple random

### **3.6 Data collection**

Data was collected through a structured questionnaire (annexure 1) developed based on the objectives of the study. Interview schedule was based on the structured questionnaire. The reason for the use of interview schedule is that this method of data collection is relatively easy to arrange and, the opinions and views expressed throughout the interview stem from one source, the interviewee. Another advantage of interview schedule is that it is relatively easy to control. The researcher only has one person's idea to grasp and interrogate, and only one person to guide through the interview agenda. The structured questionnaire had four sections namely: demographic characteristics, information sources, information needs and types of information needed. The questionnaire is divided into the following sub headings

Section A-Identify the personal characteristics of the respondents.

Section B-Investigate the agricultural enterprise of commercial farmers. The respondents indicated the type of farm enterprise they are involved in.

Section C-Evaluate information needs of commercial farmers. Respondents indicated high (3), moderate (2) and low (1)

Section D-Ascertain the information source of commercial farmers. Respondents indicated yes (2) and No (1)

Section E-Determine the attitude of commercial farmers to public and private extension services. Respondent indicated strongly agree (5), Agree (4), Undecided (3), Disagree (2) and strongly disagree (1)

### **3.7 Data analysis**

Data was sorted, coded and analyzed and the SPSS version 18 was used. Frequency count percentages mean, and standard deviation was used to describe the data, while multiple regressions were used to identify the determinants of information needs among farmers. Tables and graphs will be also used in the discussions.

## **CHAPTER FOUR**

### **4.0**

## **RESULTS AND DISCUSSION**

### **4.1 Introduction**

This chapter presents the results, of data analysis and research findings. Descriptive statistics were used to analyzed farmers personal and farm characteristics. Regression analysis was used to determine the relationship between farmer's knowledge of commercial farming and other variables.

### **4.2 Demographic characteristics**

Table 1 indicates that 85% of the respondents were males while few 8.8% were females. This implies that there are more male commercial farmers in the study area. This may be due to the fact that management practices of livestock and farming may be to tedious for females than their male counterpart. This agrees with the findings of Moloi (2008) who reported that despite the gains that have been made with respect to gender equality, the redistribution of resources and power has not shifted the gender disaggregation in farming.

Table 1 show that 62.2% of farmers fall within the age of 46-55 years, while 14.7% of the farmers are within the age range of 56-60. Six percent of the farmers were above 60 years. The age distribution of respondent revealed that older people are involved are in the management of commercial farmers in the study area. This may be as a result of experiences and skills needed in the management of commercial farmers which the young people lacked. This is supported by Moloi (2008) that farming is mostly considered as an alternative job for people who are retiring from their lucrative job and, the educated, young and active people migrate to the urban areas to seek better employment and they do not consider farming as a potential business.

Table 1 also revealed that 65% of the farmers are married. These suggest that there may be high demand for food and additional income as the family size increases. About 6% of the farmers are single, which indicates that they are youth and they still have strength to work. Table 1 also show that 5.9% of respondents were widows, animals kept by these widows

must have been inherited from their husbands .This implies that these women must have been actively involved in the raising of these livestock while their husband were still alive and could sustain that because of their experience gathered over years .This is also made possible because of the support probably given by children. About 18% of the respondents were divorced.

It is also revealed in table 1 that 76.4% of respondents have 1-5 people in their households while 23.6% indicate that their household consists of 6-10 people. Families with small households are richer and have enough resources. Table 1 indicates that 35% of the respondents had high school education, 24% have diploma while 24% were university graduates. It is interesting to note that majority of the respondents are educated which implies that these commercial farmers had one form of tertiary education or the other. The ability of farmers to read and write may contribute to their information seeking behavior.

**Table .1: personal characteristics of livestock farmers**

<b>VARIABLES</b>	<b>FREQUENCY</b>	<b>PERCENT</b>
<b>Sex</b>		
Female	3	8.8
Male	29	85.3
<b>Age</b>		
35-45	5	20.5
46-55	20	62.2
56-60	5	14.7
> 61	2	5.9
<b>Marital status</b>		
Single	2	5.9
Married	22	64.7
Widowed	2	5.9
Divorced	6	17.6
<b>Religion</b>		
Christianity	31	91.2
Other	1	2.9
<b>Household</b>		
1-5	26	76.4
6-10	6	23.6
<b>Educational level</b>		
Primary	1	2.9
Secondary	3	8.8
High school	12	35.3
College	8	23.5
University	8	23.5

### 4.3 Farm characteristics of commercial farmers

Table 2 indicate that 47% of respondents' farming experience range between 11-20 years and 41.1% of farmers have 6-10 years of experience while 2.9% of the farmers have between 1-5 years of farming experience and 21 years and above respectively. Majority of the farmers have more than ten years of experience in livestock farming, this implies that the entrance rate of people into commercial farming from subsistence farming is rapid in the recent past. This may be due to the potential of farming as a profitable venture and source of income. This years of experience also accounts for the good management practices which evolves over many years of livestock farming, particularly as it affects record keeping, financial management and knowledge of commonly persisting livestock diseases. This is in line with the submission of Sebopetizi (2009) which reported that farmers experience counts in the management of credit in technology adoption, and to ensure economic efficiency.

Findings of this study also reveals that 50% of farmers owned the land they use for keeping their livestock and for cropping purpose, 26.7% of rented their land while 14.7% have their land allocated to them. This is good for rapid livestock growth and development because farmers management decisions will not be subjected to the whims and caprices of the land owners, since majority have secured access to the land they use. This may be as a result of the land reform policy in implementation in South Africa which makes land available to farmers. This finding disagrees with the submission of Asadu et al. (2004) which reported that most of the tenure and allocation system restrict ownership to clan and community members in Nigeria. This situation affects agricultural land uses because excess land fragmentation. Table 2 shows that 20.5% of the respondents have above 400ha, displays the differences in the results .

The farms showed a wide lucrative in size with the smallest farm consisting of 325 and the largest being >400 ha with the smallest size of farm may have a negative influence on the representativeness of the results. This large areas of land revealed that most of the animals keep large stock; it also typifies the large land area requirement for livestock production particularly large area for pasture which animals can graze interchangeably to avoid overgrazing. Among commercial farms in general there are discrepancies in farm size, making it difficult to generalize about commercial farms in South Africa.

A large number of farmers 73.7% indicated that they use hired labor, 17.6% comes from their family. And only 2.9% shows that farmers themselves provide labor requirements. Most of these farmers have 1-6 workers. One of the reasons for having few workers is that farmers cannot afford to hire more people or the ha cultivated is just not too big. 79.4% of farmers reported that they are members of farmer group whereas 14.6% said they are not. A large percentage of the respondents 78.2% indicated that they fall under the income bracket of R5000000 per annum whereas 21.9% falls under the income bracket of above R5000000 per annum. Schwalbach et al 2001 revealed that farmers earn income of R1000 or less per year from their farming activities.

Table 2 reveals that 47.1% of the farmers have livestock based farming system, 23.5% practiced crop farming based whereas another (23.5%) of the respondents practiced mixed farming system. These reveal that livestock farming is the culture in the study area. The low percentage recorded by crop based and mixed farming among the respondents may be as a result of the poor rainfall because of the arid nature of the area and the vast area of savanna which support livestock farming, especially ruminants. Also farmers poor awareness and knowledge of the benefits inherent in these practices, specifically as it affects mixed farming in which animal waste, dung's and dropping serves as manure and the remains of harvested crops serve as fodders.

A large percentage of the respondents (91.1%) reported to have access to the market while (2.9%) of the respondents do not have access to market (28%) of farmers have access to credit whereas (82.4%) farmers have no access to market. This low percentage of farmers having access may be as results of stringent conditions attached to accessing credits by lending institutions which farmers find difficult to meet up with. The larger percent (41.2%) reported to have kept 251-350 livestock, 20.4% of respondents reported to have kept 351-400 and 400 and above only few 14.6% farmers reported to have kept between 100-250 livestock.

**Table 2: Farm characteristics among commercial farmers**

<b>Years of farming experience</b>	<b>FREQUENCY</b>	<b>PERCENT</b>
1-5	1	2.9
6-10	14	41.1
11-20	16	47
21<	1	2.9
<b>Sources of land</b>		
Personal	17	50.0
Rented	9	26.5
Allocated	2	14.7
<b>Farm size</b>		
300-325	15	55.7
326-350	8	23.4
351-400	6	17.6
>400	7	20.5
<b>Farmer group member</b>		
Yes	27	79.4
No	5	14.6
<b>Labor source</b>		
Self	1	2.9
Family	6	17.6
Hired	25	73.7
<b>Income per year</b>		
Less than R5000000	25	78.13
R5000000 and above	7	21.87
<b>Farming system</b>		
Livestock	16	47.1
Crop	8	23.5
Mixed	8	23.5
<b>Access to market</b>		
No	1	2.9
Yes	31	91.1
<b>Access to credit</b>		
Yes	28	82.4
NO	4	11.8
<b>No of animals kept</b>		
100-250	5	14.6
251-300	12	41.2
351-400	7	20.4
> 400	7	20.4

#### 4.4 Information sources used by farmers

Table 3 shows the sources of information used by farmers. Majority 100% Of farmers indicated that computers, mobile phone and internets as their most common source of information The second most used source is other farmer/association 97.1% newspapers 94.1%, radios 91.2% friends and relative 91.2% which was utilized 29- 31 farmers, followed by .libraries, personal email, extensiontelevision 88.2% agents and other friends and relative which is utilized by from 11-24 farmers world wide web, library ,organizational email, overhead projector electronic mail and flash drive were found to be the least used channels as they were only assessed by 47.1%,26.5%,38.2%,26.5%, and29.4%. farmers respectively The results of this study disagrees with Ozowa (2011) that majority of the farmers use radio as the most common information channel but agrees that the second most used channel is television. Multiple responses were recorded in terms of information sources used by farmers as shown in the table 3.

**Table 3: Information sources used by commercial farmers**

Information sources	Yes	No
Mobile phones	32(100)	0(0)
Computer	32(100)	0(0)
Internet	32(100)	0(0)
Fax machines	17(55.9)	15(44.1)
Organization e mail	7(26.5)	25(73.5)
Overhead projector	11(38.2)	21(61.8)
Organization website	8(29.4))	24(70.6)
Personal email	28(88.2)	4(11.8)
Radio	29(91.2)	3(8.8)
Electronic mail	14(47.1)	18(52.9)
World wide web	8(29.4)	24(70.6)
Flash drive	16(52.9)	16(47.1)
Extension agents	26(76.5)	8(23.5)
Television	30(88.2)	2(11.8)
Newspapers	30(94.1)	2(5.9)
Library	24(76.5)	8(23.5)

Other farmers/association	31(97.1)	1(2.9)
Friends/relatives	29(91.2)	3(8.8)

#### **4.5 Information needs of farmers**

The information needs of farmers are presented in table 4. This was categorized into three agricultural inputs, production and market and supply chain. Most farmers 80.6% and 83.9% indicated high information need on pesticides, fertilizers and seeds respectively whereas low information was needed include seeds 12.9% and fertilizers 12.9, agricequipments 3.2% and agric input companies 6.5%. According to Okwu and Umoru (2009), the areas in agriculture where majority of Nigerian farmers needed on, included pesticides, fertilizers and improved farm implements. A high proportion of farmers, 74.2%, 90.3%, 74.2% and 83.9% revealed that information needs on diseases management, pests management, technical knowledge and available agric markets respectively, of great importance that ..

The table further reveals that 67.7%, 64.5% and 61.3% of the respondents only need less information on climate & weather, soil fertility, sowing and land preparation respectively. The findings contradict Narula (2010) who observed that information on weather and climate, and sowing practices was the most important amongst farmers. Majority of farmers 83.9% highlighted that their information needs on procurement (supply) companies 87.1%, product's demand 87.1%, available agric markets 83.9% and market price 77.4% is high. They also reported a high information need on grading 80.6%, processing 77.7% and transportation 74.2%. The table shows that storage method 67.7%, export procedures 67.7% and market companies 61.3% scores lowest as areas in which is needed by commercial farmers. Respondents commented that their marketing opportunities are limited. A study by Narla (2010) correlates that information on commodity prices and an agricultural market is extremely important.

**Table 4: Information needs of farmers on agricultural inputs, production and market and supply chain**

<b>Agricultural Inputs</b>	<b>High</b>	<b>Moderate</b>	<b>Low</b>
Seeds	25(80.6)	2(6.5)	4(12.9)
Fertilizers	25(80.6)	2(6.5)	4(12.9)
Pesticides	25(80.6)	4(12.9)	1(3.2)
Agricequipments	26(83.9)	4(12.9)	1(3.2)
Agric-input companies	25(80.6)	4(12.9)	2(6.5)
<b>Production</b>			
Weather & climate	21(67.7)	7(22.6)	3(9.7)
Soil fertility	21(67.7)	6(19.4)	4(12.9)
Land preparation	19(61.3)	8(25.8)	4(12.9)
Sowing	20(64.5)	7(22.6)	4(12.9)
Fertilizer application	19(61.3)	7(22.6)	5(16.1)
Irrigation methods	21(67.7)	6(19.4)	4(12.9)
Disease management	28(90.3)	2(6.5)	1(3.2)
Insects/pests management	23(74.2)	6(19.4)	2(6.5)
Weeding	21(67.7)	5(16.1)	5(16.1)
Time & techniques of harvesting	20(64.5)	6(19.4)	5(16.1)
Post-harvest techniques (handling)	20(64.5)	8(25.8)	3(9.7)
Technical knowledge	23(74.2)	5(16.1)	3(9.7)
<b>Market &amp; supply chain</b>			
Available agric markets	26(83.9)	3(9.7)	2(6.5)
Market prices	24(77.4)	5(16.1)	2(6.5)
Procurement (supply) companies	27(87.1)	4(12.9)	
Products' demand	27(87.1)	4(12.9)	
Products' supply	24(77.4)	5(16.1)	2(6.5)
Grading	25(80.6)	6(19.4)	
Processing	24(77.4)	6(19.4)	1(3.2)
Transportation	23(74.2)	8(25.8)	
Storage methods	21(67.7)	8(25.8)	2(6.5)
Export procedures	21(67.7)	7(22.6)	3(9.7)
Marketing companies	19(61.3)	11(35.5)	1(3.2)

#### 4.6 Attitude of commercial farmers towards public extension

The respondents were asked to rate statement using 5points scale as follows,1=(strongly agree),2= (agree),3=(undecided),4= (disagree) and 5=(strongly disagree. The results show that most farmers had a negative attitude towards public extension services same. The results revealed an overwhelming negative attitude by farmer towards public extension. The prominent attitudinal statement as ranked by farmers were services lacks working tools and equipment's(3.67)system has persistent funding difficulties(2.58),the system require high level of training(2.42),system is non-excludableit,(2,4),public service are merit good that is services which may be under provided by market. the least were(1.97)the services are of low quality, service possess staff incompetency(1.78),no creative and innovation throughout the service(1.97),followed by service rendered by untrained personnel, service possess staff incompetency.

**Table 5 Attitude of commercial farmers to public extension services**

Attitudes	Mean	SD
System has persistent funding difficulties	2.58	0.88
System has weak accountability	2.12	0.76
Public service are merit good (i.e. services which may be Under-provided by market)	2.29	0.82
Service require high level of training	2.42	0.81
Service is non-excludable(you cannot exclude anyone from consuming it)	2.42	0.76
Service is non-revival(its consumption by one person does not diminish its availability to others)	2.26	0.73
Service is continuous to public	2.19	0.83
Service perceive poor administration	2.09	0.59
Lacks co-ordination	1.97	0.75
Staff not having the right training and not being supervised	2.26	0.68
No creative and innovation throughout the service	1.97	0.98
The service delivered free of charge	1.93	0.73
Service are easily accessible	1.93	0.35
Service affects a lot of people	2.03	0.48
service rendered by untrained personnel	1.90	0.54
Service possess staff incompetency	1.78	0.72
Service has inefficient appointment system	1.67	0.65
Service is not good in doing their job	1.81	0.60
Service lacks working tools and equipment	3.67	21.4
Service perceive poor management system	2.29	0.78
Service lack subject matter specialists	2.16	0.78
Service rendered by government and public servants	1.94	0.57
Service are of low quality	1.87	0.62

Staff being not responsive to service users	2.48	1.03
Lack of competition	2.29	0.82

#### 4.7 Attitude of commercial farmers towards private extension

Table 6 shows the attitude of commercial farmers towards private extension. 3.55% for service is cost recovery. The highest statement ranked by commercial farmers were service affects solely the person who is consuming it (2.13), followed by the service is continuous to those who needs it (2.06) the least is the service has efficient appointment system (1.52) The results reveals that private extension is not substitute of public extension, the findings tallies with (Rajendranagar, 2001) who reported that Public extension is the only set up in the country, which is capable of serving 200 million farmers and farming families But for public extension also, it is impossible to meet all the farmers, all the time. This gap created is filled, but not fully by private extension but differs with Bloome (1993) indicated that, private extension involves personnel in the private sector that delivers advisory services in the area of agriculture and is seen as an alternative to public extension. Whereas, Van den Ban and Hawkins (1996) stated that, farmers are expected to share the responsibility for this service and pay all or part of the cost.

**Table 6 Attitude of commercial farmers to private extension services**

	Mean	SD
Service affects solely the person who is consuming it	2.13	0.43
Service rendered by well trained personnel	1.71	0.53
Services possess staff competency	1.77	0.50
Service is good in doing work	1.68	0.50
Service has efficient appointment system	1.52	0.63
There is creativity and innovation throughout the service	1.68	0.70
Service is cost recovery system	3.55	6.50
Service perceive good management system	1.61	0.67
Services possess sufficient working tools and equipment	1.68	0.50
Staff having the relevant training and well supervised	1.94	0.63
Service has good co-ordination	1.84	0.45
Service possess good administration	1.90	0.70
Service is continuous those in need of it	2.06	1.97
Service does not require high level of training	1.81	0.60
Service is excludable	1.71	0.46
Service are not merit good	1.74	0.58
Service have good accountability	1.74	0.69
Service do not perceive funding difficulties	1.84	0.64
Service affects certain group of farmers	1.78	0.56
Service possess enough extension specialists	1.81	0.54
Service rendered by private companies, NGO's etc	1.68	0.79
Being responsive to service users	1.84	0.82
Service possess good competition	1.55	0.81

Service are of high quality	1.74	1.58
Service are private utility	1.58	0.72

#### 4.8 Results of multiple regression analysis

Table 7 shows the multiple regression analysis of the relationship between commercial farmers' socio-economic characteristics and information needs. The independent variables were significantly related to the farmers information needs. The R value of 2.28 shows a strong relationship between the independent variable and farmers' information needs. The significant determinants of commercial farmers' information needs are attitude to public extension ( $t = 2.84$ ,  $p < 0.05$ ); Marital status ( $t = -4.00$ ,  $p < 0.05$ ); Educational level ( $t = 2.107$ ,  $p < 0.05$ ) membership of farmers groups ( $t = 2.168$ ,  $p < 0.05$ ) and Extension contacts ( $t = 1.78$ ,  $p = 0.09$ ). Therefore the null hypothesis is rejected and we accept the alternative hypothesis. Only marital status shows an inverse relationship with commercial farmers' information needs. This implies that contacts with extension agent, educational level, membership of farmers group and marital status affect commercial farmer's information needs. This also implies that the more the attitude to public extension remain the same, higher education level, membership of farmers group and contact with extension the higher the information needs of commercial farmers.

**Table 7: Multiple regression analysis of information needs and commercial farmers' socio-economic characteristics**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.025	34.082		2.206	0.01
Attitude to public extension	.308	.108	.640	2.836	.011
Attitude to private extension	.096	.156	.103	.618	.545
Sex	5.258	7.108	.127	.740	.470
Age	.022	.449	.011	.049	.961
Marital status	-10.623	2.656	-.903	-4.000	.001
Race	2.081	4.100	.101	.508	.618
Household no	.338	.816	.076	.414	.684
Educational level	4.383	2.080	.450	2.107	.050
Farm size	-.004	.029	-.027	-.138	.892
Farmer group	6.303	2.907	.404	2.168	.045
Extension contact	11.573	6.506	.403	1.779	.093

Market access	12.000	7.092	.290	1.692	.109
Credit access	-1.938	3.645	-.098	-.532	.602
R	.797				
R Square	.635				
F	2.28				
P	.05				

#### **4.14. t-test analysis showing difference in farmer's attitude towards public and private extension**

Table 8 shows the t-test analysis of differences in attitude of commercial farmers towards public and private extension services. There is a significant difference ( $t = 2.95$ ,  $p < 0.05$ ) in attitude of commercial farmers towards public and private extension services. The mean score for the attitude towards public extension services (45.87) attitude towards private extension services is lower than attitude towards private extension. This may be due to the fact that the information needs of commercial farmers are not often met by the extension services. Duvel, (2003) reported that given the low qualification and competence of extension workers, commercial farmers had opted for privatized extension services.

**Table 8: t-test statistics showing differences in attitude of commercial farmers towards public and private extension services**

Attitude	N	Mean	Std. Deviation	Std. Error Mean	T	DF	P
Private Extension	31	53.13	8.13	1.46	2.95	60	0.004
Public Extension	31	45.87	11.01	1.98			

## CHAPTER FIVE

## 5.0 FINDINGS, CONCLUSION AND RECOMMENDATIONS

## 5.0 FINDINGS, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

The study designed to determine the analysis of assessment of commercial farmer's household and welfare. Thirty two farmers were selected to present all the farmers participating on commercial farming. Data was collected using a structured questionnaire requesting information on demographics. Data collected was coded and subjected to analysis using frequency counts and percentages to describe demographics. Regression analysis was used to analyze the determinants of commercial farmers.

## 5.2 Findings of the study

The findings from the study show that 94% of farmers are males while 8% are females and farmer's age ranges from 35-60 years. The results also shows that 44% have tertiary education, 35% have high school education, 8% have secondary and only 3% of farmers have primary education, sixty five percent of farmers are married while 18% are divorced and 6% are single and widowed respectively. The results show that 78% of farmer's income is less than R5000000 while 22% of farmer's income is above 5000000 respectively. The finding shows that 47% of farmers. 11-20 years of farming experience, 41% have 6-10 years of experience, 3% have 1-5 years while another 3% goes to farmers who have greater than 21% of farming experience. With regard to sources of land 50% of farmers own land while 27% reported to have rented land and the least 15% reported that the land they use was allocated to them.

The findings on farm size shows that 56% of There is a significant difference ( $t = 2.95$ ,  $p < 0.05$ ) in attitude of commercial farmers towards public and private extension services There is a significant difference ( $t = 2.95$ ,  $p < 0.05$ ) in attitude of commercial farmers towards public and private extension services There is a significant difference ( $t = 2.95$ ,  $p < 0.05$ ) in attitude of commercial farmers towards public and private extension services There is a significant difference ( $t = 2.95$ ,  $p < 0.05$ ) in attitude of commercial farmers towards public and private extension servicesarmers have farm size of about 300-325 where as 23% of farmers have farm size of 326-350 , 350-400 have 18% of farm size and 20% farmers who have 400 and

above. With regard to farmer group 79% joined farmer group while 15% did not join. The results also indicate 73% of farmers come from hired labor, 17% source labor from family and 3% farmer provide labor themselves. The results 47% of respondents use livestock based farming system while 24% practiced crop farming and 24% with regard to practiced mixed farming respectively. With regard to market and access 91% have access to market while 3% do not have access to market. The results also show that 82% of farmers have credit access while 12% have no access to credit. The results also show that 41% of farmers kept 251-300 animals, 24% kept greater than 400 animals' whereas another 24% kept 351-400 animals and 100-250 animals were kept by 15% respectively.

The results of multiple regression analysis show that the significant determinants of commercial farmers' information needs were attitude to public extension ( $t = 2.84$ ); Marital status ( $t = -4.00$ ); Educational level ( $t = 2.107$ ) membership of farmers groups ( $t = 2.168$ ), and Extension contacts ( $t = 1.78$ ).

### **5.3 Conclusion**

This study concludes majority of farmers are males, their age range from 46-55, they are mostly married and Christian in religion. Most of farmers' poses household of 1-5 members their level of education is mainly high school. It also reveals that they have between 11-20 years farming experience, occupy land with 300-325 farm size and use hired labor. Their income is less than R500000 mainly practicing livestock farming system and majority of them have access to market and credit, they also kept 251- 300 animals.

The study also conclude that information sources used by farmers e mobile phones, computer, internet, personal email, newspapers and other farmers or farmer association. There is a high need of agricultural inputs, production and market and supply chain on diseases and management, seeds, fertilizers, pesticides, agricultural equipments available markets and product's demand.

## **5.4 Recommendations**

Since results revealed that majority of farmers were males participation or involvement should increase amongst women and youth to join farming, there is also a need to encourage farmers to study further to increase their knowledge. Farmers must be encouraged to use their families as labors to save costs. My experience is that farmers are keen to learn and to know a lot more on farming practices and disease management despite problems they face on a daily basis. According to my observation farmers are expected to share the responsibility for this service and pay all or part of the cost. The result also reveals that extension is not a substitute of public extension. My experience is that majority of farmers use radio as the most information channels as it is affordable and easy to operate. My experience regarding attitude towards public extension is that the services are of low quality, possess staff incompetency, no creative and innovation throughout the service, the service rendered by untrained personnel.

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## APPENDIX 1

### QUESTIONNAIRE ON ANALYSIS OF EXTENSION NEEDS OF COMMERCIAL FARMERS IN SOUTH AFRICA AROUND NORTH-WEST PROVINCE

#### IDENTIFICATION

Questionnaire Identification number	
Study area	
Respondents name	
Interviewers name and date	

#### SECTION A: SOCIO-ECONOMIC AND DEMOGRAPHIC BACKGROUND

NO	Questions	Coding Categories	Codes
1.	Gender	Female	1
		Male	2
2.	Age of respondents		
3.	marital status	Single	1
		Married	2
		Widowed	3
		Divorced	4
4.	Race	African	1
.		White	2
		Colored	3
		Indian	4
5.	Religion	Christianity	1
		Baha'i	2
		Hinduism	3
		Islam	4
6.	Number of dependents		
7.	Number of household		
8.	Total nu of people in Household	Male	1
9.		Female	2
10.	Highest educational level	Primary	
		Secondary	
		High school	
		College	
		University	
11.	Number of years in farming		

12.	Sources of land	Personal	1
		Rented	2
		Allocated	3
13.	Farm size		
14.	member of farmer group	Yes	1
		No	2
15.	Contact with extension	Yes	1
		No	2
16.	If yes how often	Regularly	
		Occasionally	
		Rarely	
17.	Is the extension officer from	Government	1
		NGO	2
		Parasternal	3
18.	Number of workers		
19.	Labor sources	Self	1
		Family	2
		hired	3
20.	Income per year		
21.	Years in farming		
22.	Engage in non-farming activities	Yes	1
		No	2
23.	If yes name them	24.....	2
			1
25.	Irrigation facilities	Yes	2
		No	1
26.	If yes which type	Drip	1
		Overhead	2
		Central pivot	3
27.	Farming system	Livestock based	1
		Crop based	2
		Mixed	3
28.	Access to market	Yes	2
		No	1
29.	Access to credit	Yes	2
		No	1
<b>Agric enterprise(cattle)</b>			
30	Feeding cost		
31.	Labor cost		
32.	Vaccination cost		
33.	Other cost		
34.	Number of animals		
35.	Income per year		
36.	Selling price		
<b>Agric enterprise(sheep)</b>			

37.	Feeding cost		
38.	Labor cost		
39.Vaccination cost			
40.Other cost			
41.Number of animals			
42.Income per year			
43.Selling price			
<b>Agric enterprise( goats)</b>			
44.Feeding cost			
45.Labor cost			
46Vaccination cost			
47Other cost			
48.Number of animals			
49.Income per year			
50.Selling price			
<b>Agric enterprise(poultry)</b>			
51.Feeding cost			
52.Labor cost			
53.Vaccination cost			
54.Other cost			
55.Number of animals			
56.Income per year			
57.Selling price			
<b>Agric enterprise (fish)</b>			
58.Feeding cost			
59.Labor cost			
60.Vaccination cost			
61.Other cost			
62.Number of animals			
63.Income per year			
64.Selling price			
<b>Agric enterprise (pigs)</b>			
65.Feeding cost			
66Labor cost			
67.Vaccination cost			
68.Other cost			
69.Number of animals			
70.Income per year			
71Selling price			
<b>Farming enterprise engaged on</b>			
Maize		Yes	2
		No	1
72.maize			
73.sunflower			
74.Potatoes			
75.Cabbage			
76.Spinach			
<b>Hectors planted</b>			

77.Pumpkin			
78.Tomatoes		Ha	
79.Cabbages		Ha	
80.Spinach		Ha	
81.Maize		Ha	
82.Sorghum		Ha	
83.Potatoes		Ha	
<b>Income generated</b>			
84.Tomatoes		Income	
85.Cabbages		Income	
86.Spinash		Income	
87.Maize		Income	
89.Sorghum		Income	
90.Potatoes		Income	
<b>Information source used by farmers</b>			
91.Mobile phone		Yes	2
		No	1
92.Computers		Yes	2
		No	1
93.Internet		Yes	2
		No	1
94.Fax machine		Yes	2
		No	1
95.Organizational e mail		Yes	2
		No	1
96.Fixed telephone		Yes	2
		No	1
97.Overheard projector		Yes	2
		No	1
98.Organization website		Yes	2
		No	1
99.Personal email		Yes	2
		No	1
100.Radio		Yes	2
		No	1
101.Word processing		Yes	2
		No	1
102.Electronic mail		Yes	2
		No	1
103.World wide web		Yes	
		No	
104.Flash drive		Yes	2
		No	1

105.Extension gent	Yes	2
	No	1
106.Television	Yes	2
	No	1
107.Radio	Yes	2
	No	1
108.Newspapers	Yes	2
	No	1
109.Pamphlets	Yes	2
	No	1
110.Library	Yes	2
	No	1
111.Internet	Yes	2
	No	1
112.Other farmer/association	Yes	2
	No	1
113.Friends/relative	Yes	2
	No	1
<b>Information needs on agric inputs,production&amp;market supply</b>		
<b>Agricultural inputs</b>		
114.Seeds	High	3
	Moderate	2
	Low	1
117.Fertilizer		
118.Pesticides		
119.Agric equipment's		
120.Agric-input companies		
<b>Production</b>		
121.Weather climate	High	3
	Moderate	2
	Low	1
122.Soil fertility		
123Land preparation		
124.Sowing		
125.Fertilizer application		
124.Irrigation methods		
125.Disease management		
126.Insects/pests management		
127.Weeding		
128.Time techniques of harvesting		
129.Post-harvest technique(handling)		
<b>Market &amp; supply chain</b>		
130.Technical knowledge		
131.Available agric markets	High	3
132.Markets prices	Moderate	2
133.Procurement(supply)companies	Low	1

134 product's demand			
135 product's supply			
136.Grading			
137.Processing			
138.Transportation			
139.Storage method			
140. Export procedures			
141.Marketing companies			
		Strongly Agree(SA)	1
		Agree(A)	2
		Undecided(U)	3
		Disagree(d)	4
<b>Determine attitude of commercial farmers to public extension service</b>			
		Strongly Disagree(SD)	5
142.	System has persistent funding difficulties		
143.	System has weak accountability		
144.	Public service are merit good (i.e. services which may be under-provided by market)		
145.	Service require high level of training		
146.	Service is non-excludable(you cannot exclude anyone from consuming it)		
147.	Service is non-revival(its consumption by one person does not diminish its Availability to others)		
148.	Service is continuous to public		
149.	Service perceive poor administration		
150.	Lacks co-ordination		
151.	Staff not having the right training and not being supervised		
152.	No creative and innovation throughout the service		
153.	The service delivered free of charge		

154.	Service are easily accessible		
155.	Service affects a lot of people		
156.	Service rendered by untrained personnel		
157.	Service possess staff incompetency		
158.	Service has inefficient appointment system		
159.	Service is not good in doing their job		
160.	Service lacks working tools and equipment's		
161.	Service perceive poor management system		
162.	Service lack subject matter specialists		
163.	Service rendered by government and public servants		
164.	Service are of low quality		
165.	staff being not responsive to service users		
166.	Lack of competition		
<b>Determine attitude of commercial farmers to private extension service</b>		Strongly agree	1
		Agree	2
		Undecided	3
		Disagree	4
		Strongly Disagree	5
167.	Service affects solely the person who is consuming it		
168.	Service rendered by well trained personnel		
169.	Services possess staff competency		
170.	Service is good in doing work		
171.	Service has efficient appointment system		
172.	There is creativity and innovation throughout the service		
173.	Service is cost recovery		

	system		
174.	Service perceive good management system		
175.	Services possess sufficient working tools and equipment's		
176.	Staff having the relevant training and well supervised		
177.	Service has good co-ordination		
178.	Service possess good administration		
179.	Service is continuous those in need of it		
180.	Service does not require high level of training		
181.	Service is excludable		
182.	Service are not merit good		
183.	Service have good accountability		
184.	Service do not perceive funding difficulties		
185.	service affects certain group of farmers		
186.	Service possess enough extension specialists		
187.	Service rendered by private companies, NGO'S etc.		
188.	Being responsive to service users		
189.	Service possess good competition		
190.	Service are of high quality		
191.	Service are private utility		