

The Provision of Agricultural Extension Services to Rural Farmers as a Strategy to Improve Agricultural Practices in South Africa

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ABSTRACT

The government of South Africa has shown a commitment to providing extensive support to farmers by providing agricultural extension services. This qualitative study on providing agricultural extension services to rural farmers to improve agricultural productivity was conducted in Msinga Local Municipality. The data was collected through semi-structured interviews and focus group discussions. Participants were sampled purposively, and data was analysed using content analysis. The agricultural extension officers played an important role in helping farmers with the provision of extension services, including seeds, manure, and the implementation of irrigation schemes and farm fencing. The extension services also included training and assisting farmers with vaccinating crops and livestock to protect them from diseases. Rural farmers were unable to attend training sessions and meetings organised by extension officers, and this has turned out to be a problem since farmers lack knowledge of farming methods and available information on possible financial assistance. There is a need to establish agricultural cooperatives that will liaise with agricultural extension officers and be able to communicate with other farmers when the officials are planning to meet with them for the provision of extension services.

Keywords: Agricultural Cooperatives, Extension Officers, Rural Agriculture, Community Participation

1. INTRODUCTION

Rural agriculture has received the government's attention in terms of providing facilities to improve the level of community participation in agricultural activities. This can be attained through the assistance of extension officers who play an essential role in providing agricultural

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facilities to farmers. Koyenikan (2008) reveals that the role of extension officers is to assist farmers with technical methods and innovations in their agricultural activities to ensure productivity and improve their living standards. An existing assumption says local extension officers are struggling to provide proper resources and knowledge to rural farmers in South Africa. According to Makapela (2015), the management and extension departments are the primary stakeholders responsible for the underperformance of extension officers in South Africa. This is because they rely more on adopting modern methods when capacitating farmers and fail to link them with the traditional methods of farming used by farmers.

Vagnozzi (2009) clarifies that extension services establish a significant agent that seeks to bring change required in transforming rural farming to modern agricultural production, which is characterised by the motive to make a profit. This further contributes to improving livelihoods by ensuring food security at the household level. It can be recognised that there is a high population of people who make their living in rural areas (Siphesihle & Lelethu, 2020). As a result, the productivity of rural agriculture and the provision of related agricultural extension services are essential for the enhancement of their agricultural activities, which make up their livelihoods. Farmers must have access to agricultural production services, new technology, and knowledge of input supply, credits, competition, and market prices to fulfil their respective roles in rural agriculture. This is because reliance on agricultural extension services is acknowledged as a pillar for transforming the agricultural sector in most developing countries. In the context of South Africa, the farmers recognise the effectiveness of agricultural extension services as an ability to get technical information and advice related to nurturing crop and livestock production.

Through the Department of Agriculture, the South African government has committed to providing extension services to farmers by disseminating information and other agricultural facilities. However, the support services from these government departments as it currently stands are not geared to gratify the needs of the rural farmers through the provision of required resources. Some aspects of the findings show that agricultural extension has to deal with farmers who rely more on traditional farming methods. At the same time, the issue of being illiterate exists at the household level in rural areas. It, therefore, becomes very important to assess the provision of agricultural extension services to rural farmers to improve agricultural practices in South Africa. The study also involved agricultural cooperatives consisting of rural

farmers for data triangulation on providing agricultural extension services by extension officers within the study areas.

2. GENERAL BACKGROUND ON AGRICULTURAL PRACTICE IN SOUTH AFRICAN RURAL AREAS

In South Africa, most people live in rural areas (Gomala & Baluchamy, 2018). These people rely more on agricultural practices to improve their livelihood. Xing (2015) agrees that agriculture plays a vital role in rural areas by providing vast sources of employment and effective use of scarce natural resources. Rural agriculture has received the government's attention in providing facilities to improve community participation in agricultural activities (Hanf, 2014). Subsistence and small-scale farming are regarded as the most dominant agricultural practices in South African rural areas.

2.1. Subsistence Farming in Rural Areas

Lininger (2011) states that rural households mostly undertake subsistence farming to produce food for their own consumption to improve their livelihood. Subsistence farming can be undertaken in both rural and urban areas. However, in the rural context, subsistence farming is used more for household consumption (De Bon, Parrot & Moustier, 2010). In urban areas, Sarkar et al. (2015) state that subsistence farming has two benefits: selling the product to the market and household consumption. This statement has been supported by Tibesigwa and Visser (2015), who recognise that in most developing countries, such as South Africa, households consume almost 80% of products from rural base subsistence agricultural projects. At the same time, it is estimated that more than 40% of products from subsistence agricultural projects in urban areas are usually sold to the local market.

Rural communities, especially in Msinga Local Municipality, specialise in farming crops and livestock because these farming activities serve as a source of income and ensure food security at the household level (Lambertz et al., 2012). Thornton and Herrero (2014) add that there is also mixed farming (crop-livestock), but most farmers do not practice this type of farming. Lambertz et al. (2012) state that in the Msinga area, the crop system is dominated by the farming of yam (*amadumbe*), maize, potatoes, dry beans, and pumpkin. The livestock system is characterised by goats, sheep, domestic chickens, and cattle farming, which can play a pivotal role in improving the Msinga economy. Thornton and Herrero (2014) suggest that

expanding crops and livestock can be a coping strategy for poor households that engage in subsistence farming. Maratha and Badodiya (2018) state that most participants in the agricultural sector are women. Even though women are the key role players in the agricultural industry, men are still responsible for making farm decisions.

Chikazunga and Paradza (2012) perceive that subsistence farming has limited potential to contribute to the rural economy because of the limited support systems from the government. Ayinke (2011) explains that this has become a problem for rural farmers, who need to identify agricultural extension services and opportunities introduced by the government to improve rural livelihoods. This is because subsistence farmers do not receive adequate support from the government as compared to the commercial farming sector. Subsistence farming in rural areas is also experiencing the nonexistence of technological advancement and modernised farming tools. Elzubeir (2014) echoes that technology is nonexistent since most rural farmers still use traditional farming tools. These tools were improved and adapted in the past from one generation to another to address social, economic, and farming issues. Dercon and Christiaensen (2011) explain that rural areas experience the slow adoption of technology due to various socioeconomic factors, including the lack of education as the agricultural sector is dominated by old age people who have insufficient knowledge of how to use technological materials or machines.

2.2. Small-Scale Farming in Rural Areas

Small-scale farming is known as a transformation from subsistence farming to large-scale farming (Tagar & Shah, 2012). In small-scale farming, rural farmers do not engage in agriculture to produce for their household consumption only, but they also produce to sell the product to the market so that they will be able to get money for other expenditures and wealth accumulation. Simelane (2017) states that small-scale farming is where rural farmers utilise traditional knowledge for their farm projects. Tagar and Shah (2012) state that small-scale farming is engaging in mixed farming (crops and livestock) as a first step towards shifting from subsistence farming to large-scale farming.

Wiggins (2009) and Lininger (2011) stipulate that small-scale farming projects focus on crop and livestock production where farmers work in groups on a small portion of land. Mthembu (2008) agrees with the aforementioned statement that a group of farmers in the Msinga area engages in mixed farming, including crop and livestock systems, in very restricted land sizes

to produce sufficient products that can be sold in the market. Hence, Siegmund-Schultze et al. (2013) have a view that livestock farming is usually incorporated with crop farming; however, the integration of crop-livestock farming is too low in production. Siegmund-Schultze et al. (2013) identify the inadequacy of agricultural extension services, including fertilisers, feeding resources, and limited land, as problems that put the productivity of small-scale farming in rural areas in danger. For example, Modi (2003) found that some small-scale and subsistence farmers reject and burn the remainder of crops to fertilise the soil for the next crop planting. In addition, other farmers use manure from the kraal as fertiliser, but this is a disadvantage because, in the Msinga area, cows, goats, and sheep are not kept in kraals most of the time. Therefore, the indigenous manure from the kraal is also limited (Modi, 2003). Nevertheless, some farmers can produce sufficient food for their household's consumption and have little to sell in the market (Ortmann & King, 2006).

Rural farmers are participating in unsustainable markets by selling their products to other community members where the products are in high demand, especially during pension grants payouts; however, farmers continue to identify opportunities in bigger markets. Beckford and Barker (2007) further point out that those small-scale farmers also have problems accessing extension services such as funds to extend their projects, and there is a shortage of infrastructural development in rural communities. Inadequate funding and infrastructure negatively impact small-scale farming because farmers cannot set up well-operating water schemes (Siegmund-Schultze et al., 2013). Thus, small-scale farmers are experiencing these problems because they do not receive sufficient support from the government.

3. THE ROLE OF EXTENSION OFFICERS IN RURAL AGRICULTURE

Agricultural extension is regarded as a chain of fixed communicative facilitations that are inevitable to improve and bring assistance to solve challenging circumstances among farmers (Rahman, 2017). In the context of South Africa, agricultural extension officers are referred to as government officials who directly work with farmers to assist them in gaining agricultural extension services, including related information and abilities towards increasing agricultural production (Makapela, 2015). The role of agricultural extension officers is to disseminate knowledge and agricultural information, provide technical skills, and assist farmers in connecting with other economic actors (Swanson, 2006). Unfortunately, these extension officers have limited access to the extension services. As a result, this harms the ability of

farmers to adjust to ever-changing technological advancements. It is, therefore, very important for extension officers to support rural farmers by providing training, resources, and information flow and ensuring proper networking between role players in rural agriculture (Makapela, 2015).

However, Buford, Bedeian and Lindner (1995) identify that agricultural extension officers face challenges in learning new skills to maintain their proficiency and become more qualified for advancements. Agricultural extension officers must be well-trained so that they can provide proper practical knowledge to farmers (Buford, Bedeian & Lindner, 1995). Nevertheless, it has been identified that some of the agricultural extension services, especially in South Africa, have a low level of extension personnel education compared with education from other sectors regarding research knowledge (Anaeto, 2012). It is also acknowledged that there is a high level of illiteracy and unstable agricultural projects in the South African rural agricultural sector. These results have been determined by Makapela (2015), as his study reveals that most adult farmers were not educated, making it difficult for agricultural extension to assist them effectively. This is because there were inclinations to destabilise and lessen traditional or old-fashioned agricultural practices, which are regarded as old or inappropriate.

4. METHODOLOGY

This paper is extracted from the Masters' study on the sustainability of agricultural projects in enhancing rural economic development in the Msinga local municipality (Mbatha, 2019). The Master' study relied on a mixture of qualitative and quantitative approaches. The current paper is only interested in the qualitative part used to collect information from the agricultural extension officers and agricultural cooperatives. Semi-structured interviews were adopted because they granted key informants (agricultural extension officials) the freedom to express their perceptions of the provision of agricultural extension services and the level of agricultural practice by using their terms. Semi-structured interviews with open-ended questions allowed the participants to provide more information without being limited, and the researcher could ask follow-up questions (Kallio, 2016). The focus group discussions were used to collect information from agricultural cooperatives for triangulation. Focus group discussion played an important role in obtaining information from the agricultural cooperatives sampled with specific purposes rather than from a statistically representative sample of a wider population. The specific purpose of sampling cooperatives is that they are the priority in receiving

government support, and they play a crucial role in promoting agricultural practice by ensuring productivity.

The paper used participants who were sampled through the purposive sampling method. The paper comprises six (6) extension officers from the Department of Agriculture and Rural Development. These extension officers were sampled based on their significant role in rendering agricultural extension services to rural farmers. Their availability and attitude are compatible with the provision of extension services to rural farmers to improve agricultural practice, and their value was highly considered since it is their role and responsibility to ensure improvement in rural agricultural development. The focus group discussion consisted of five (5) agricultural cooperatives. Each group consisted of five (5) participants, equivalent to the total number of twenty-five (25) participants. Considering that using only six extension officers to generalise in a study of this nature is insufficient, the study used data from agricultural cooperatives since they are the main target population to receive agricultural extension services from the extension officers. As a result, the purposive sample size for this paper is thirty-one (31) overall. This purposively sampled size granted the researcher the justification to generalise from the sample that is being studied (Maree, 2007). It further ensures that the information about providing agricultural extension services to rural farmers to improve agricultural practice is correct and accurate.

Content analysis was used to analyse and categorise qualitative data based on themes derived from the study's objectives. The content analysis allowed the researcher to read the interviews carefully; afterwards, the researcher identified and formulated several topics. Hence, the researcher could identify specific notions and trends of ideas within a particular interview. In addition, it allowed for objective analysis of transcriptions and identify meaning from text data (Nkuna, 2017).

5. FINDINGS AND DISCUSSION

The study commenced by allowing agricultural extension officers and cooperatives to discuss the nature of agricultural practice in the Msinga area. The extension officers shared a high level of agricultural practice within the study areas. This can be observed through the availability of land for agricultural practice, which allows community members to engage in well-functioning community gardens and agricultural schemes. The availability of these agricultural schemes

and community gardens were used as important indicators of a high level of agricultural practice.

5.1. Availability of Arable Land and Agricultural Schemes

The extension officers brought forward a reason that the availability of arable land for agricultural practice dominates the Msinga area. The Integrated Development Plan of Msinga Local Municipality (2017) agrees that the available arable land is used for small-scale farming and subsistence agricultural practice at the household level, which is why the level of agricultural practice is very high. The findings of Myeni et al. (2019) concur that there is a high level of subsistence farming in South Africa since farmers rely more on it to ensure household food access. Despite the availability of arable land, the findings further reveal that farmers within the study area are still facing challenges of land (especially poor management of soil and land ownership) that have limited capacity for the productivity of rural agriculture, which results in poor agricultural practice. Therefore, these issues have turned out to be an obstacle to the sustainability of rural agriculture while also constraining the ability of this sector to contribute to the improvement of rural livelihoods.

The availability of agricultural schemes in the Msinga area was mentioned as a supporting reason for the high level of agricultural practice. The majority of agricultural extension officials mentioned this, and one official said:

"The availability of two well-operating and sustainable irrigation schemes (namely, Tugela Ferry and Muden irrigation scheme) serves as proof that there is a high level of agricultural practice in Msinga area".

This also appears in the findings of Whelan (2019), who concurs that the Muden and Tugela Ferry irrigation schemes are initiated as a long-term investment to enhance food security through diversification of potential crop production. The agricultural cooperatives have also revealed that these agricultural schemes are integral to their livelihood strategy. These irrigation schemes provide food and serve as a source of income at the household level. The extension officials added that some of the agricultural cooperatives and farmers are engaging in agricultural activities with the motive of farming to sell their crop products to the market. In Nyiraneza's (2014) study, the available irrigation schemes in the Msinga area are considered small-scale agricultural sectors that significantly improved agricultural practice. These

irrigation schemes have attracted the intervention of the government to assist small-scale farmers and encourage them to cooperate in agricultural activities towards improving rural livelihoods (2014).

5.2. Availability of Community Gardens in the Msinga Area

The findings reveal that the Msinga area is regarded as one of those rural municipalities that depend more on agriculture as an instrument to enhance livelihood standards and the economy. The extension officers emphasised that there is a high level of agricultural practice in this area because almost all households are engaging in different types of farming. The Department of Agriculture introduced community gardens to ensure household farmers participate in agricultural activities to address food and nutrition security. The extension officer made an example,

"There are two community gardens located at Mahlaba and Mthaleni areas; both these projects are functioning effectively with farmers showing significant commitment to keep these gardens sustainable". (Extension officer 2)

During a focus group discussion with agricultural cooperatives, it was confirmed that those community gardens remain their primary food source. The findings of Shisanya and Hendriks (2011) maintain that the role of community gardens is highly important in South Africa, as farmers and rural people rely on them to address food insecurity issues. To ensure that the level of agricultural practice remains high in the Msinga area, the extension officers explain that they have provided some agricultural extension services, including small irrigations, where they assisted farmers with fencing and provision of irrigation systems referred to as the cropping project implemented in Ward 14 (Qedusizi cooperation). Hence, farmers who engage in these projects are active and able to produce food that their households can sell and consume regularly, except in winter. The introduction of such irrigation systems by extension officers was based on the fact that the Msinga area is suffering from water scarcity, especially in winter, when there is no rainfall.

The agricultural cooperatives have shown appreciation for the effort brought forward by the Department of Agriculture to help them with agricultural extension services. However, these farmers mentioned that the issue of water scarcity remains a problem for the sustainability of their community gardens. In one of the agricultural cooperatives, it has been revealed that

farmers have to travel kilometres to fetch water from rivers. Water scarcity is the only thing that results in many farmers abandoning their participation in community gardens. In their study, Wheeler, Zuo, and Loch (2018) agree that water scarcity has caused psychological stress to farmers, which pushes some of them out of the agricultural sector. The findings of the current study concur with Kalaba (2015), which says that the potential of the South African agricultural sector to contribute to improving rural livelihood is being compromised by the low rate of rainfall. This is because such a situation forces the agricultural sector to produce at a comparatively towering cost to achieve a similar output unit compared to other countries worldwide (Kalaba, 2015).

5.3. The Provision of Agricultural Extension Service to Farmers

5.3.1. The Provision of Financial Support to Farmers

The extension officers stated that the Department of Agriculture supports agricultural projects requested by local farmers by providing agricultural budgets that can be used for extensional services. One of the officials stated:

"The department is using this budget to buy farming resources to assist rural farmers in keeping their agricultural projects stable".

The department uses that budget to buy agricultural inputs, including seeds scopes, manure, and so forth, to help rural farmers keep their farms more productive. Some agricultural cooperatives have supported this during focus group discussions, the One Home One Garden programme, which the government established through the Department of Agriculture. This programme was intended to ensure access to food at the household level to address poverty issues. This concurs with the findings of Ngema, Sibanda and Musemwa (2018), as they reveal that One Home One Garden was introduced as a food security intervention aiming to ensure the stability of food security at the household level through food production for consumption purposes. Some agricultural cooperatives have applauded the role of extension officers who helped distribute free seeds and packs of manure to some farmers within the study areas. According to De Klerk, Fraser and Fullerton (2013), rural farmers have a wide range of financial support from the local government institutions, which different financial institutions offer, but it seems that farmers cannot make considerable use of these financial services. However, the current study identified that such services are available in favour of small-scale farmers, while the Msinga area is mainly dominated by subsistence agricultural practice. The

findings of Khapayi and Celliers (2016) reveal that subsistence farmers lack information about the availability of funds from these institutions, which makes it harder for them to request funding from relevant stakeholders in keenness to sustain their agricultural projects.

It has been further revealed that the extension officer plays an important role in motivating farmers to register their projects in the database, making it easy to apply for financial assistance. The extension officer added:

"The department is committed to helping farmers with the drafting of agri-business plans. The aim is to make sure that their ideas are existing in the database, which will be advantageous to them towards commercialising their products and contribute to rural economic growth".

The extension officer also helps rural farmers with the drafting, application, and submission processes of business proposals for funding support. Afterwards, the rural farmers will present their project business proposals to the Local Project Steering Committee to be rewarded with the funding. The intensive role of the Local Project Steering Committee is to check the feasibility of every proposed agricultural project and ensure the successful conveyance of that project, which includes increasing the benefits and ensuring that the project contributes to economic growth.

The registration of agricultural projects within the Department of Agriculture database assists farmers in securing funding and plays a significant role in ensuring that those particular projects contribute to rural livelihood and economic growth. In their findings, Asare-Nuamah, Botchway and Onumah (2019) are of the similar view that extension officers play an essential role in helping smallholder farmers understand the process of farming, application of farming techniques, and securing financial assistance. The agricultural extension officers reveal that the Department of Agriculture usually supports those agricultural projects that the steering committee approves and provides infrastructural and ploughing materials. Furthermore, government officials, even at the national level, prioritise assisting people who work as cooperatives with feasible agricultural proposals to improve rural livelihoods and the economy. Ortmann and King (2007) support the idea that the South African government is motivating farmers to undertake agricultural activities in cooperatives since this can help to enhance the development of small-scale farming and rural agriculture.

5.3.2. Provision of Training Sessions and Prioritising Agricultural Cooperatives

The extension officers highlighted that farmers in the Msinga area are complaining that their crops and livestock farms are affected by diseases. These farmers are also struggling to adjust to climate change conditions. This includes crops being affected by diseases such as early blight, which negatively affects *tomatoes, potatoes, and sweet potatoes*. In his main results, Mphahlele (2017) also mentioned that the farms in South Africa are negatively affected by various diseases, and the impact of early blight is mostly experienced in *tomatoes*. This results in the low productivity of rural agriculture and destabilises the ability of rural agriculture to contribute to food security. It has also been identified that livestock (*cattle, goats, and sheep*) are dying because of diseases (including Foot-and-mouth and contagious ecthyma), usually affecting cattle. The agricultural extension officer stated:

"The department assists farmers by giving them advice and assistance about how to protect their crops and livestock from these diseases. We also provide these farmers with vaccinations to ensure that they protect their livestock and crops from disease."

(Extension officer 2)

Abou (2015) highlights the importance of regular interactions between farmers and agricultural extension officers through information-sharing meetings. This includes critically discussing production problems and how agricultural practice can be enhanced. Extension officers have confirmed in Msinga that they are promoting the culture of community engagement. Some of the benefits of having regular meetings with farmers include the fact that the department provides knowledgeable staff to train farmers regarding the application of those vaccinations. In their study, Kunene and Fossey (2006) agree that extension officials play an important role in helping farmers with dosing and vaccinating livestock to improve their health conditions. However, the assistance of extension officials has been limited to cows, while there was no help regarding the vaccination and dosing of goats and sheep; this was revealed during a focus group discussion with some of the agricultural cooperatives.

The agricultural extension officers complained that some of the farmers do not understand the farming processes, making it hard for them to adapt to the changing climate conditions. Other studies have identified that farmers know the weather and climate change conditions that compel them to change their farming practices. Nevertheless, these farmers lack knowledge and information on adapting to changes they face in their farms (Tripathi & Mishra, 2017). The

agricultural extension officers stated that they always try to train farmers who experience challenges with the maintenance of their farms. The main aim is to ensure that these farmers understand the types of crops that can be farmed from one particular season to another. The farmers sometimes fail to attend meetings organised by extension officers, which is not good because they struggle to practice the knowledge that extension officers render.

The extension officers have stated that the government struggles to provide financial services to farmers who work as individuals because the government department has a limited budget. Therefore, the agricultural extension officers stated that they always motivate local farmers to work in cooperatives, making it easier to receive financial assistance from government departments. The findings of Bijman et al. (2012) supported this by stating that the government motivates people to engage and stimulate the agricultural sector as groups to ensure that the sector is sustainable and contributes to sustainable livelihoods and economic development. Some of the agricultural cooperatives reveal that local municipal officials have been motivating them to work as cooperatives so that they can support them with some agricultural inputs. Hazell, Poulton, Wiggins, and Dorward (2010) agree that farmers who engage in agricultural activities for subsistence purposes hardly receive support from the government, while a group of small-scale farmers who engage in agricultural activities for commercial purposes remains a priority to receive the support from the government.

6. CONCLUSION AND RECOMMENDATIONS

This study assessed the provision of agricultural extension services to rural farmers to improve agricultural practices in South Africa, particularly in Msinga Local Municipality. The findings reveal a high level of agricultural practices within the study area. However, farmers are mostly engaged in subsistence farming to ensure food availability at the household level. The high level of agricultural practice was also determined by the availability of arable land for agricultural practice, agricultural schemes, and properly functioning community gardens. The extension officials also play a crucial role in rendering agricultural extension services to rural farmers. The extension services include helping farmers provide seeds and manure, implementing irrigation schemes to keep water running in rural farms, and fencing some community gardens. Most notably, the extension officials played an important role in helping farmers with the dosing and vaccination of crops and livestock to protect them from any insects and diseases that may lead to low productivity in rural agriculture. The concern of agricultural

extension was the inability of farmers to attend vital meetings and training sessions related to knowledge sharing about farming strategies, including ways to adapt to climate change. This negatively impacts rural agriculture because farmers still lack knowledge of farming methods and the available information for possible financial assistance. There is a need to establish agricultural cooperatives with team leaders who will liaise with agricultural extension officers and be able to communicate with other farmers when the officials are planning to meet with them for the provision of agricultural extension services. This will help to maintain communication for the benefit of developing sustainable rural agriculture.

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