

Farmer's Perception on Asset-Based Approach in Agriculture: A Case Study of Smallholder Wool Farming in Thaba Nchu and Botshabelo, Free State Province, South Africa.

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ABSTRACT

The Department of Agriculture, Land Reform and Rural Development has allocated a budget for projects such as the Blended Finance Scheme to assist in improving the livelihoods of smallholder farmers. However, previous research has shown that many projects have failed for several reasons, mostly linked to project management. There is a high probability that many will fail if these challenges are not addressed. The purpose of this study is to incorporate the assets-based approach in farming, which will enable farmers to help themselves. The study was conducted in Thaba Nchu and Botshabelo, Free State province of South Africa. A simple random sampling technique was used to identify the sample size of 351 participants. In conducting this study, a questionnaire was designed to include both open and closed-ended questions and was administered through personal interviews by well-trained enumerators. The data was captured through the EvaSys scanner and was analysed using Statistical Package for the Social Sciences (SPSS) version 24. The R software was utilised for descriptive statistics in analysing the quantitative data. The results show that a lack of skills and resources has resulted in inefficiencies in sustainable food production, leading to project failures. These findings support the notion that implementing the asset-based approach in farming could improve the efficiency and sustainability of the state's projects and enable farmers to produce more

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effectively. Therefore, the study recommends that the asset-based approach should be used to improve the state's projects.

Keywords: Wool Farming, South Africa, Small-Scale Farmers, Extension Officers, Government

1. INTRODUCTION

In South Africa, the government has committed itself to helping farmers with the challenges that they are facing (Official Guide to South Africa 2018/19, 2019). The Department of Agriculture, Land Reform and Rural Development (DALRRD) has allocated R1.2 billion in 2020 to address the effects of the Coronavirus and improve sustainable food production post-pandemic, with the main focus on financially distressed small-scale farmers (DALRRD, 2020). In March 2021, DALRRD relaunched the Blended Finance Scheme (BFS) to leverage private funding to support investments that would unlock and enhance agricultural production, agro-processing and comprehensive land acquisition by black producers through deliberate, targeted and well-defined financial and non-financial interventions (GCIS, 2019). The government has previously implemented projects/schemes to allocate funds to farmers (DALRRD, 2020).

The government's project approach focuses on the needs of farmers and the challenges they face. According to Mathie and Cunningham (2005), this approach may devastate the farmers and leave them helpless, waiting for external providers to address their challenges. The study of Matta and Ashkenas (2003) reveals that big and small projects fail at an alarming rate due to the implementation strategy used on state projects.

Despite challenges and lack of resources, there are other assets in the form of people's capacities, skills, physical resources and other forms of capital available in the farmer's communities (Ebersöhn & Mbetse, 2003; Witte & Sheridan, 2011; Hlalele, 2012; Green & Haines, 2012). Past researchers such as Mpandeli and Maponya(2014) and Aliber and Hall(2012) focused on constraints and challenges facing small-scale farmers and government support for smallholder farmers in South Africa. Furthermore, the study of Pretty (1999) sets out an assets-based model of African agricultural systems. However, the study did not focus on the South African government and the agricultural industry. Therefore, there is a gap in how the South African government can utilise the farmer's assets to help improve the efficiency and sustainability of the state's projects while improving the farmer's livelihoods. This study

incorporates the asset-based approach, which entails identifying farmers' assets and strengths and using them to resolve farmers' challenges in South Africa.

2. OBJECTIVES AND PURPOSE OF THE STUDY

The asset-based approach has been used by researchers such as Vatsa (2004), Whiting *et al.* (2012), Carter and Barrett (2006), and Garoutte and McCarthy-Gilmore (2014) to analyse the role of the asset-based approach on disaster risk management, to investigate the economics of poverty traps and persistent poverty, as an alternative health promotion strategy and to prepare students for community-based learning. However, it has never been used in agricultural state projects in South Africa (Pretty, 1999). The main objective of the study is to incorporate the asset-based approach in agricultural projects in South Africa to improve the sustainability and efficiency of the state's projects. This incorporation could help to achieve the Sustainable Development Goal set out by the United Nations (UN) (2015) to serve as a blueprint for all nations to achieve a more sustainable future for all: 1 (No poverty), 2 (Zero hunger), 8 (Decent work and economic growth), 11 (Sustainable cities and communities) and 12 (Responsible consumption and production). In addition, it will help to improve the farming production and livelihoods of smallholder farmers. The study aims to develop the assets-based approach in the South African agricultural industry, enabling farmers to help themselves. This approach could facilitate the use of the government's limited resources optimally and increase the success of government projects.

3. LITERATURE REVIEW

According to the research done by Mathie and Cunningham (2005) and Kretzmann and McKnight (1993), the needs-based approach presents half-truths; farmers have insufficient resources and, therefore, cannot address all the challenges they are facing. Not recognising the assets, as this approach does, creates communities which cannot take pride or ownership of solutions to their problems (Ebersöhn & Mbetse, 2003). Myende (2014) argues that the lack of ownership may result in unsustainable initiatives and solutions. To resolve issues introduced by the needs-based approach, the study presents the asset-based approach as one that will help improve the farmer's livelihoods (Myende, 2014).

The asset-based approach is a process whereby solutions are developed from the inside out, from what farmers have to what external farmers can provide (Kretzmann & McKnight, 1993).

This is done by finding ways of identifying and mobilising community assets. According to Green and Haines (2012), community assets may be defined as the gifts, skills and capacities of individuals, associations and institutions within a community. These may be of utmost importance to the community as they can be used to reduce or prevent poverty and injustice. The asset-based approach is a bottom-up way of working with and for communities, identifying and harnessing the assets and strengths of the community rather than the deficits and problems (Myende, 2014).

According to Myende (2014), the approach entails the identification of voluntary community organisations and networks and what they offer, the investigation of institutions that are already connected to the community, looking at the physical environment (both natural and built) and the appreciation of the stories, culture and heritage of the community.

From such a perspective, the government should work with farmers as partners to improve the efficiency and sustainability of the state's programmes. According to Myende (2014), a partnership is a cooperative relationship between two or more people who have similar goals and work together to devise and carry out a plan of action while preserving their individual identities and goals.

Successful partnerships are often identified by a shared philosophy, vision and values, a high priority on trust, mutual accountability and responsibility, communication, evaluation and feedback, reciprocity, equality and equity and sustainability indicators (Myende, 2014).

Research shows that projects may be heavily affected by a lack of community involvement (Kakaza, 2009; Pandey & Okazaki, 2005; Rowley & Berman, 2000). Community involvement is crucial to identify local knowledge (Cook & Weber, 2010). The community members might provide critical site information that might reduce project failure. For example, the community members may provide important information about past land issues and associated constraints (Namakhoma, 2015). The involvement of community members in a project promotes ownership of the community members involved, which could increase the probability of project success.

In South Africa, agricultural extension offers important channels for facilitating, coordinating and linking agricultural innovation systems directly to farmers (Sulaiman & Davis, 2012). According to Saleh *et al.* (2016), the Extension officers agreed that they needed training in

their job descriptions. The extension officers' competency impacts the success of government projects (Saleh *et al.*, 2016).

4. METHODOLOGY

4.1. Study Area

The study was conducted in the Mangaung Metro Municipality, east of Bloemfontein, in the central Free State province. Mangaung district consists of four wards: Thaba Nchu, Botshabelo, Bloemfontein and Naledi. Figure 1 shows a map of the Mangaung Metro Municipality, where the study was conducted.



FIGURE 1: Mangaung Metropolitan Municipality Map (Source: Municipalities of South Africa, 2020).

The Thaba Nchu and Botshabelo rural areas comprise mostly state-owned land, which the Barolong Traditional Council keeps in trust and manages. Many DALRRD projects and existing restitution cases exist in Botshabelo and Thaba Nchu, which serve as a basis for land reform implementation (Mangaung Metropolitan Municipality, 2020). Some of the smallholder farmers in the study area have benefited from government agricultural development projects

that provided them with production inputs and farming infrastructure such as boreholes, water tanks, and shearing sheds (A. Phalole, personal communication, 18 March 2020).

4.2. Research Design

A multistage sampling technique was employed to select the respondents. The first stage involved a purposive selection of Mangaung District based on the predominance of wool or sheep farmers. In the second stage, Thaba Nchu and Botshabelo wards were purposively selected based on the preponderance of wool farmers. The third stage involved a simple random sampling of wool farmers. This sampling technique entails that each respondent of the sampling frame has an equal probability of being selected (Etikan & Bala, 2017). In the third stage, the respondents were randomly selected based on being smallholder wool farmers (decision makers) in Thaba Nchu and Botshabelo.

The minimum sample size to be analysed was 319 small-scale farmers, 17.2% of the population (1847) of small-scale farmers in Mangaung. A sample size calculator from the Raosoft website was used to determine the sample size and generalise the population. A total of 351 smallholder wool farmers were interviewed.

The response rate achieved was 100%. According to Lindner *et al.* (2001), non-response error control procedures are not necessary when a response rate beyond 85% is achieved. Data were collected from November 2021 to February 2022. The study used a quantitative research design. The exploratory survey applied both questionnaires and interviews. Primary data was collected using semi-structured questionnaires. All 351 respondents were interviewed, and the enumerators recorded their answers on the questionnaire. The questionnaire was 40 minutes long but not limited to that time.

The data was captured through the EvaSys scanner and was analysed using Statistical Package for the Social Sciences (SPSS) version 24. The statistics were created, and R software was utilised for descriptive statistics in analysing the quantitative data.

5. RESULTS AND DISCUSSION

5.1. Demographic and Educational Profile of Smallholder Wool Farmers

The results show that most of the smallholder wool farmers in Bloemfontein are based in Woodbridge and Yorksford communal area in Thaba Nchu. About 80.7% of smallholder wool

farmers reside on communal/ tribal land. The most significant number (40%) of these farmers are in the 36–59 age group, followed by those in the 60 years and older group, which accounts for 31.7% of total farmers in the study area. There is reluctance from communal youth to engage in agriculture. The age of the farmers in this study agrees with that of Mthi *et al.* (2017), Mahashi *et al.* (2019) and Gwiriri *et al.* (2021). There is thus clear evidence that more youth need to be recruited into farming. The evidence shows that increased youth recruitment into agriculture is required to support the agricultural sector. According to a table in a paper by Tshivhase and Ogundele (2019), most smallholder wool farmers had inadequate education, with just 42% finishing some high school education but not matriculating. This underscores the need to attract younger generations into farming and provide them with agricultural education and training opportunities. Furthermore, the paper states that farmers' literacy levels are typically adequate, implying that education and training programs might be beneficial in improving their abilities and productivity (Tshivhase & Ogundele, 2019).

The table below shows that about 42.2% of smallholder wool farmers completed some high school education between Grades 8–12. Still, they did not matriculate and, consequently, have no tertiary education. However, it was observed that the literacy level of farmers was standard, and most could read and write. According to the asset-based approach, a farmer's education is an asset that can help improve the sustainability and efficiency of government projects. When educated, farmers can easily access government services and funds to help improve the efficiency and sustainability of their farming productions.

TABLE 1: Highest Level of Formal Education of Smallholder Wool Farmers

		Frequency	Percent
Valid	Never been to school	10	2.8
	Completed some primary school (between Grades 1-7)	99	28.2
	Completed some high school (between Grades 8-12) but did not matriculate	148	42.2
	Completed matric	61	17.4
	Completed a certificate/ diploma/ degree	23	6.5
	Completed a postgraduate degree (Masters/ PhD)	3	0.9
	Total	344	98.0

Missing	System	7	2.0
Total		351	100.0

5.2. Technology and Communication Tools for Sustainable Wool Production

Thaba Nchu wool production structure was observed to be more sustainable than that of Botshabelo. The smallholder farmers in Thaba Nchu have better ways of communication, such as WhatsApp groups, which also play a vital role in accessing market information.

Cell phone apps were the most popular tool for assisting farmers in making decisions. In the age of the Fourth Industrial Revolution, farmers must be technologically literate. About 43.8% of participants indicated that they used cellular applications daily. They use it to communicate and to find information that might help improve their lives. About half of the farmers do not have cell phones, and almost half (46.4%) indicated they had no access to data/Wifi. Recent studies also see farmers relying more on smartphones (Xaba, Kritzinger & Van Rooyen, 2020). According to this research, the wool production system in Thaba Nchu is more sustainable than that in Botshabelo. Smallholder farmers in Thaba Nchu have improved communication methods, including WhatsApp groups, which are crucial for receiving market information (Xaba, Kritzinger & Van Rooyen, 2020). Cell phone applications were the most common tool farmers used to make decisions, yet nearly half of the farmers did not have access to data or wifi. As a result, farmers must be technologically educated, have access to dependable networks, and have the skills and expertise to use technology to increase their wool output (Xaba, Kritzinger & Van Rooyen, 2020). In addition to cellular applications, various media platforms and software programs such as phone calls, Instagram, internet access, newspapers, YouTube, and Google help farmers obtain industry-related information. Furthermore, publications on farm management were regarded as critical in offering insights into wool production, and participants said that extension training, a Diploma in agriculture, reading management books, and watching agricultural films on YouTube were significant sources of information (Xaba, Kritzinger & Van Rooyen, 2020).

The other media platforms and software programmes that assist in farm management are phone calls, Instagram, internet access, newspaper, YouTube and Google, which assists farmers in getting industry-related information.

Books on farm management were viewed as pivotal in giving the participants insights into farm management and production. Extension training, a qualification in Diploma in agriculture, reading from management books, and watching Agricultural videos and YouTube were reported by participants as other sources of knowledge on wool production. Therefore, the participants saw access to a stable network, data and websites and the skills and knowledge to use technology as necessary.

5.3. Working Conditions of Farming Infrastructure and Household Items

Farming infrastructure with the highest working condition (working/working well) was farm fencing (36.8%) and toilet/ablutions (36.3%). Almost half (48.7%) of the farmers use blade shearing scissors and are in good working condition. About half (52.7%) of the farmers indicated kraals to work well. In addition, approximately 57.6% indicated that they have tap water even in the house. Household electricity was in the best condition (82.4%). Television and radio were also household items in good working condition (72.9% and 71.8%, respectively).

5.4. Income Streams of Smallholder Wool Farmers

The participants indicated they also made money from shearing sheep and selling mutton, chickens and cows. Renting out their assets, such as tractors in the community for cultivation, carrying out voluntary work in their communities, which gave them some stipend, training horses and assisting with brand marking, were also mentioned as additional sources of income for the participants. Concurrently, other smallholder wool farmers indicated they also receive money from family members such as their children and parents.

In accordance with the available literature, smallholder wool producers rely on a diversified set of revenue sources in addition to their agricultural operations (Demissie & Legesse, 2013; Ton *et al.*, 2017; Meemken & Bellemare, 2020; Ceballos *et al.*, 2020). These may include renting out their possessions, doing community service for a stipend, and obtaining financial assistance from family members. It is crucial to emphasise, however, that these additional sources of revenue are not necessarily stable or sustainable for farmers.

5.5. Challenges Faced by Communal Wool Farmers

On the other hand, communal farmers face several wool production challenges, as shown below. Similar constraints have been reported in the Eastern Cape province of South Africa (Coetzee *et al.*, 2005; Bath *et al.*, 2016; Mthi & Nyangiwe, 2018). Extreme weather conditions were believed to affect sheep production. These included snow, heavy rains, lightning strikes, severe cold and too much heat and sun degrading the quality of sheep's wool. According to Sehlapelo and Jooste (2016), extreme weather conditions such as snow, heavy rains, lightning strikes, severe cold, too much heat, and too much sun may all have a detrimental influence on sheep productivity and damage the quality of their wool. In this study, about 78% of farmers were affected by predators/dogs, and 88% by theft. Similarly, Sehlapelo and Jooste (2016) highlighted predators and theft as significant difficulties. A scientific assessment by Kerley *et al.* (2018) has demonstrated the intensity of the predation problem communal farmers face.

Most (732.%) small-scale wool farmers did not have shearing machines, and about 56.8% did not have storeroom facilities. Therefore, they have challenges when they have to sell their wool. They have to rent out some machines if they are not using blade-shearing scissors. This also led farmers to sell their wool to local traders, known as dictators, since they did not have storage facilities. In addition, half of the participants (48.1%) have no woolshed where they can shear their sheep and class wool. Hence, their wool has such poor quality, which results in inefficiencies in their wool production. De Beer and Terblanche (2015) indicate that communal farmers in the Eastern Cape province sell their wool in a formal market and have resources.

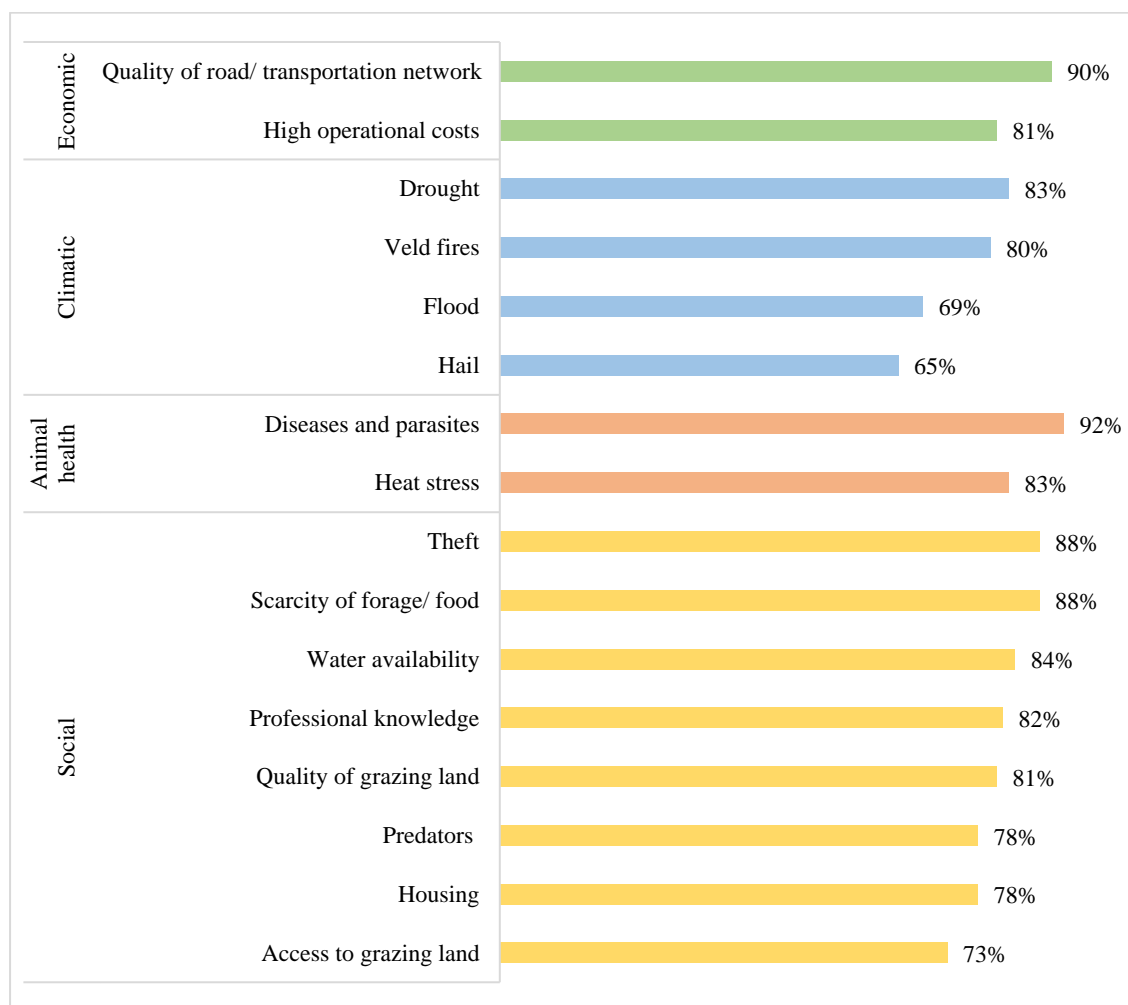


FIGURE 2: Challenges Faced by Smallholder Wool Farmers

5.6. Access to Producer Organisations and Wool Training

According to the data presented, there are few producer organisations/associations/brokers that farmers belong to or work with. About 40% of farmers received extension training on wool production, while 23% received wool production knowledge from brokers such as BKB and OVK. Therefore, some farmers have good knowledge of how to shear wool and classify it, as shown in the table below.

TABLE 2: Classing Fleece Wool According to Length, Quality and Fineness

		Frequency	Percent
Valid	Never	133	37.9
	Seldom	21	6.0
	Often	20	5.7

	Most of the time	36	10.2
	Always	126	35.9
	Total	336	95.8
Missing	System	15	4.3
Total		351	100.0

5.7. Incorporation of Asset-Based Approach in Agriculture: Improving Efficiency and Sustainability of Government Projects to Assist Smallholder Farmers in South Africa

The results show that smallholder farmers need assistance to make their production more efficient and sustainable. These results are in agreement with Kabubo-Mariara & Mutua (2019). Even though the government contributes towards improving farmers' livelihoods, it is very challenging to assist every farmer since the state's resources are limited. Therefore, incorporating an asset-based approach in agriculture is the solution that could help resolve the challenges farmers face and assist with the optimal allocation of limited government resources.

Figure 3 (below) shows a conceptual model of the asset-based project approach in agriculture. The process starts with the farmers' needs. These can be needs such as funds or the building of infrastructure on the farm.

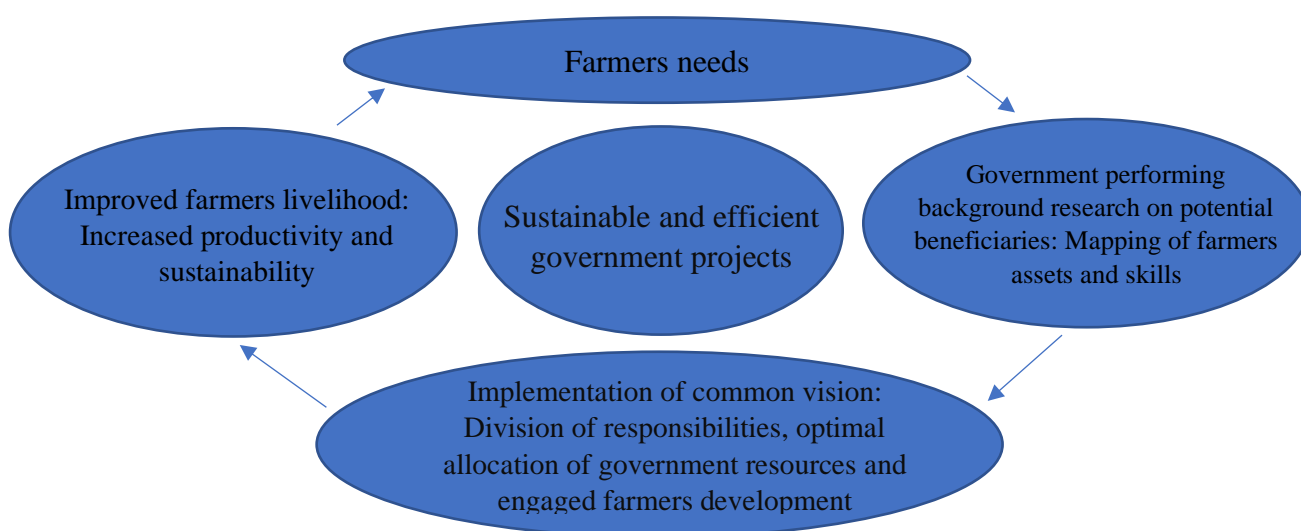


FIGURE 3: A Conceptual Model of the Asset-Based Project Approach in Agriculture

The extension officer is supposed to perform background research on potential beneficiaries or applicants and identify what assets and skills farmers have that can be used to assist the farmer. Community involvement in state projects is crucial as it helps to identify local knowledge (Cook & Weber 2010). At this stage, the extension officer will talk to community leaders or the farmer. The farmer might share valuable information with the extension officer, such as the site's history, past land issues and associated constraints that could guide where to build the storage. This information could reduce the probability of project failure.

At the implementation of the common vision stage, the extension officer would divide the responsibilities, optimally allocate the government resources and engage farmers in the project. For example, the farmer might need a storage facility on the farm, and they could have construction/building skills. Therefore, if the farmer becomes the beneficiary, it is unnecessary to hire builders because the farmer can build the storage themselves. The state should only hire a registered civil engineer to ensure the work quality and materials used. However, the farmer could still build the storage with the supervision of a civil engineer. The state could accordingly save their limited resources and assist more farmers. Government projects are highly affected by a lack of community involvement (Kakaza, 2009; Pandey & Okazaki, 2005; Rowley & Berman, 2000). The participation of the farmers in government projects promotes empowerment and ownership by local people and farmers.

The last stage entails an increase in production after the needs of farmers have been met. Increased production could improve farmers' livelihood and demonstrate that farmers do not have to rely 100% on the government. However, farmers have to work hand in hand with the government to increase farming productivity and sustainability.

The incorporation of the asset-based approach in farming will contribute to the sustainability and effectiveness of government projects

6. ETHICAL CONSIDERATIONS

The research was carried out most harmlessly. Issues of confidentiality were handled with the utmost respect. The identity of participants remained anonymous. Ethical clearance had been approved by the General/Human Research Ethics Committee (GHREC) of the University of the Free State (UFS) before the study commenced.

7. LIMITATIONS OF THE STUDY

A possible limitation could be the respondents' capacity to remember precise information. It was assumed that the farmers understood the questions asked and responded honestly regarding their lives, experiences and attitudes.

8. CONCLUSION AND RECOMMENDATIONS

The government plays an important role in assisting farmers through projects and schemes. However, most of the government projects are not sustainable and efficient. The study results show that farmers are experiencing many challenges, such as poor infrastructure, lack of skills and stock theft. Although the government is assisting in improving farmers' livelihoods, it is very demanding to assist all farmers with a limited state budget (DALRRD, 2020). Furthermore, the results also show that farmers also have skills and resources such as education, cell phone, shearing shed, shearing and wool classing skills that can help improve government projects' efficiency and sustainability.

To enable farmers to help themselves and improve their livelihoods, the study recommended incorporating the asset-based approach, which entails working with and for farmers, identifying farmer's assets and strengths and using them to resolve farmer's challenges. This incorporation could help farmers be more productive and profitable while assisting government projects to be more efficient and sustainable. Therefore, extension officers should be encouraged to incorporate the asset-based approach in their projects.

Extension practitioners need to be trained in assimilating the asset-based approach in agricultural projects. Finally, potential future studies should be conducted to assess the efficiency of the asset-based approach in agriculture-related projects.

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