



Innovative Management of Agricultural Projects in South Africa: Issue for Consideration

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Abstract

Agriculture is the practice of cultivating natural resources to sustain human life and provide economic gain. It blends innovative production techniques and cutting-edge technologies with the creativity, inventiveness, and expertise required for raising animals and cultivating crops. Agriculture has long been regarded as a major source of employment and revenue in rural areas, as well as a contributor to the spread of rural agriculture. Unemployment is a major issue in the country, notably in the Polokwane Local Municipality. It is worth emphasising that the country's high levels of poverty and unemployment are getting worse every day. Agricultural farming is well-known for their contributions to job creation, increased farm revenue and poverty reduction. As a result, smallholder farmers can boost their production and revenue by forming cooperatives and jointly negotiating cheaper rates for inputs such as seeds, fertiliser and transportation. This paper sought to analyse innovative management of agricultural projects in South Africa. The study adopted a conceptual approach to analyse agricultural projects on sustainable community development. In the process, the literature has revealed that South Africa is facing a major challenge is the development of rural areas, many of which are seriously disadvantaged. Agricultural economists are well-placed to meet these challenges and to work with governments to develop agricultural policies to promote income growth in poor areas. The national and provincial departments of agriculture are both important employers of agricultural economists, who are involved with many varied tasks. Agricultural economists participate in the development of strategies designed to assist farmers who may previously have received little assistance from agricultural extension workers. Working on developing such strategies has many elements from promotion and market development through to pricing policies and agricultural finance. The study concludes with strategies for effective agricultural projects in South Africa.

Keywords: *Innovative Management; Project Management; Agricultural Farming; Rural Development*

1. Introduction

Agricultural projects significantly contribute to rural livelihood by boosting the economy and creating massive sources of employment through the efficient use of limited natural resources. Typically, these rural agricultural endeavours are characterized as combining crop and livestock farming. This type of farming is necessary since farmers must employ both strategies to boost the rural economy and way of life (Mbatha, Nojiyezaa and Mdiniso, 2021). The agricultural sector has the potential to contribute towards alleviation of poverty in rural areas.

Bellwood (2005) asserts that farming first appeared independently in West Africa around 3 000 BCE (some writers argue even earlier), most notably in the lush and hospitable savanna on the Nigerian-Cameroonian border. Rather than meeting the demand for food, farming in Africa began to assist the expansion of animal husbandry. West Africans domesticated wild cattle thousands of years before farming. Cattle herding has obvious benefits for a culture that was constantly on the move, foraging from one area to the next.

The Polokwane Local Municipality (2018) is emphatic that the strategic objectives of agricultural projects are to boost the productive capabilities of local farmers which remains the heartbeat of the Polokwane Agricultural Development Strategy (PADS). The PADS includes a component that assists local farmers in entering high-volume, high-value organised markets. Investing in smart technologies is the first critical step toward realising the full potential of the local sector and improving access to all factors of production for local farmers. Building a strong agro-processing focus can put local farmers on the path to profitability and wealth creation and improve Polokwane Local Municipality's food security status.

Bertelsmann-Scott and Markowitz (2018) highlight that the agricultural industry in the South African Development Community (SADC) region is of great social and economic importance, contributing between 4% and 27% of Gross Domestic Product (GDP) and roughly 13% of overall export revenues to the various member states. Agriculture provides food, money and employment to over 70% of the population in the region, therefore, its performance has a significant impact on food security, economic growth and social stability.

2. Methodology

The study adopted a conceptual framework to analyse the management of agricultural projects for sustainable community development and economic growth in South Africa. The article also used books, journals and materials pertaining to the study's research problem.

3. Challenges of Agricultural Projects in South Africa

3.1 Education

Agriculture is viewed as a vital means through which poverty and unemployment can be addressed (Department of Agriculture, Forestry and Fisheries (DAFF), 2011). However, the agricultural sector in South Africa is not only dualistic with a developed commercial farming sector which co-exists with as large number of subsistence (commercial owned farms) but in terms of actual size of production, education and technology know-how, it is still primarily in the hands of white commercial farmers (DAFF, 2011).

Consequently, the challenge is to bring the previously extended black farming community into mainstream agricultural economy through access to education and information. Capacitating black

farmers and agricultural skills to manage the natural resource base in a sustainable manner is one important avenue to redress past inequalities. Higher economic growth in South Africa will not be possible without addressing problems such as illiteracy and low educational levels which are most prevalent in rural areas, and where agriculture is most likely to play an important role in resolving both economic and human development challenges (Organization for Economic Co-operation and Development (OECD), 2006).

Apart from problems associated with natural resources, there are huge challenges with human (skills, knowledge and health) capital in South Africa. Skills shortage is cited as a major obstacle to economic growth, social development and sustainable economic growth. Therefore, improving human capital in agriculture is especially important where the shortage of trained human resources is a major limiting factor to development. Education and training on sustainable use of agricultural natural resources can assist farmers to make productive contributions to the agricultural economy in South Africa (Organization for Economic Co-operation and Development (OECD), 2006).

3.2 Climate Change

Ojoyi, Mutanga, Kahinda, Odindi and Abdel-Rahman (2017) assert that most agricultural projects are impacted by climate change because their farming systems are typically dependent on the availability of rainfall per season. Climate change is viewed as a global problem that jeopardises agricultural projects, rural economies, water supply, food availability and people's health. Climate change is affecting countries in a variety of ways, with some being impacted by changes in rainfall and temperature (Ojoyi et al., 2017).

Climate change affects not only crop productivity and growth, but also crop quality and harvesting timing. This is due to the fact that perennial crops can produce products in the same location for long periods of time. As a result, climate change conditions are influencing crop productivity and quality. Climate change has had a variety of effects on livestock farming, including the death of livestock due to droughts and heat damage (Hristov et al., 2018).

3.3 Access to Land

Fynn and Van Schalkwyk (2022) highlight that South Africa's first democratic government published the White Paper on Land Reform in 1997, outlining a radical plan for eliminating racial imbalances in land ownership as well as significant differences in men's and women's access to property. The South African Constitution attempted to make this ideal a reality, with section 25(5) requiring the state to "take reasonable legislative and other measures, within its available resources, to foster conditions that enable citizens to gain equitable access to land".

In an effort to make this ideal a reality, section 25(5) of the South African Constitution mandates that the state "take reasonable legislative and other measures, within its available resources, to foster conditions that enable citizens to gain equitable access to land".

A land audit published in November 2017 by the Department of Rural Development and Land Reform showed how little progress had been achieved toward realising this aim. Whites still owned 72% of farm and agricultural land, while Blacks owned only 4%. According to the audit, women owned only 18% of private land, with farm and agricultural holdings accounting for 13%. The audit's conclusions supported the state's present land redistribution policy's failure. Women are particularly harmed by this shortcoming. Women in rural South Africa who rely on agriculture to support their families place a high value on the right to use and control their land. Land ownership leads to generational wealth, food security and self-determination, all of which contribute to economic development. Failure to change gendered land ownership patterns undermines women's equality and human dignity rights (Fynn & Van Schalkwyk, 2022).

3.4 Access to Markets and Credit

Improved access to input and output markets is a key precondition for the transformation of the agricultural sector from subsistence to commercial production. Smallholder farmers must be able to benefit from efficient markets and low-level value adding, and be more exposed to competition. However, markets are often constrained by inadequate property rights and high transaction costs (Hall & Aliber, 2010). Despite these problems, some small scale farmers have managed to produce food for their own consumption as well as for the market (Ortmann & King, 2006).

However, in most cases emerging farmers are unable (without significant assistance) to meet the requirements stipulated by the retailers. Requirements such as pack houses, cold rooms, full traceability and product, soil and water analysis come at a great expense that could scarcely be afforded by some commercial farmers let alone emerging. Poor education and high levels of illiteracy is also a contributing factor and would prevent these farmers from meeting the retailers' requirements in terms of record keeping and documentation. Credit is one of the significant bases of capital accumulation and may be viewed as a device for providing the basis for increased production efficiency and income. Unfortunately, small scale farmers in communal areas of South Africa have limited access to affordable credit (Okurut et al., 2005).

3.5 Environmental Factors

The Organisation for Economic Cooperation and Development (2022) is in favour of agriculture's ability to feed the world's expanding population while reducing its negative effects on the environment and protecting natural resources for future generations. Agriculture can have a significant environmental impact. Despite significant negative environmental consequences such as soil, water and air pollution, agriculture can have a positive impact on the environment by trapping greenhouse gases within crops and soil or reducing flood risks through the use of specific farming practices.

The Organisation for Economic Cooperation and Development (OECD) monitors how agriculture and the environment interact, identifies effective agricultural policies that increase positive environmental effects while reducing negative ones and makes policy recommendations to make government action more consistent with agricultural environmental performance. In recent years, there have been some encouraging signs that the agriculture sector in OECD countries is capable of dealing with environmental concerns. Farmers in particular have improved their use and management of fertilisers, pesticides, energy and water in several OECD countries. Farmers have made significant advances in environmentally friendly practices such as improved manure storage, conservation tillage and soil nutrient management.

Myburg (1994) adds that the difficulties faced by small Black and White farmers in the Eastern Cape are very different. Drought is one of the issues that White farmers face because it has an impact on their economic returns, stock numbers and employment. The time it takes for natural flora and grassland to recover after a drought is detrimental to Eastern Cape locations (Myburg, 1994; Raselabe, 2019).

4 Strategies for Effective Management of Agricultural Projects in South Africa

4.1 Food Security

The DAFF (2017/18) stated that there are various factors that pose a threat to South Africa's food security status, particularly climate change and increasing food prices. Although the country is food secure at national level, at household level more than 20% of the population is vulnerable to food insecurity. Two main factors contribute to food vulnerability, namely unavailability and unaffordability. While government has introduced a number of jobs creation programmes to address this, if there is not

enough food produced locally, communities would still suffer food insecurity. This is, in fact, the situation with many communities in South Africa at the moment.

The Food Security Production Programme is therefore aimed at ensuring food availability at local and household levels. The aim of government is to support farmers to ensure food production on the identified 1 million ha of underutilised land through mechanisation services, production inputs and marketing of produce. Maize and beans will be prioritised as most of our rural communities already produce these crops. As part of this programme, provinces will identify communities, smallholder farmers and businesses to participate. The involvement of private contractors will be beneficial in supporting communities to utilise the land, particularly underutilised high-potential production areas. Furthermore, the use of contractors will also speed up the creation and support of small, medium and micro enterprises (SMMEs) and in this way, contribute towards employment creation and economic growth (DAFF, 2017/18).

4.2 Environmental Sustainability

The World Bank (2012) states that sustainable agriculture and natural resource management activities aim to increase agricultural productivity by implementing practices that protect natural resources' long-term ecological and biological integrity. The activities of this subsector are focused on rural, social and environmental natural resource management issues with the goal of maintaining significant increases in farm productivity through efficient land and other resource use. The goal is to increase individual economic returns while improving the quality of life and economic development. Farmers' and communities' participation and empowerment, as well as the formation of partnerships among all stakeholders are prioritised in strategies for sustainable agriculture development and NRM (World Bank, 2012).

According to the AgriSeta (2020) the transition into a green economy requires changes within all the sectors of an economy. In the agricultural sector, this refers to the use of environmentally sustainable farming practices. Various sub-sectors within agriculture rely on industry specific training interventions to establish green knowledge. These interventions include the up skilling of farm workers in energy-efficient methods, resource sustainability, agro-processing and other green technologies.

To ensure successful planning for skills towards green economy, the SETA is currently undertaking research to study the skills needed by the sector to implement green economy practices. Changes in temperature, atmospheric carbon dioxide and the frequency and intensity of extreme weather could have a significant impact on crop yields, animal fertility, milk production and diseases. Agri- SA (2019/20) reported that drought conditions from the year 2013 to 2019 have left many farmers in challenging situations. Skills interventions to deal with the migration of workers, the incorporation of the latest innovations and technologies and natural disaster management should be offered to farmers as skill interventions.

4.3 Land Reform

The Department of Agriculture, Forestry and Fisheries (DAFF) (2019) supports effective agricultural projects which would increase desegregation of land and company ownership, equal access to and participation in agricultural possibilities and full use of the entrepreneurial potential of the agricultural sector are all objectives. Land reform, start-up assistance packages for new farmers and cooperation and sector development will be prioritised (DAFF, 2019).

The Land Reform programme in South Africa speaks to land restitution, land tenure reform and land redistribution for the main benefit of people who previously did not own the land. It has been reported widely in the media that the land reform farms are failing in the hands of the new owners. The

major factors affecting sustainability of land reform projects are lack of farming skills, lack of Government support, participants resorting to farming on a temporary basis and participants' inability to resolve farming challenges on their own (Manenzhe et al, 2016). The skills implication is that during skills planning, the skills needed by land reform beneficiaries need to be prioritised to ensure sustainable use of the farms so that they continue being productive as they did with the previous landholder.

4.4 Pest and Diseases

The prevention and control of new pests and diseases in the agriculture sector is a challenge. However, good biosecurity practices assist in recognising the emerging pest and disease threat, and they also minimise the occurrence of disease outbreaks making it easier and less costly to control new pests and diseases. For instance, in 2020, Foot-and-Mouth Disease (FMD) and African Swine Fever broke out in some areas of South Africa such as Limpopo and Eastern Cape (DAFF, 2020). In 2017 an unknown armyworm was identified as the force behind the damage of maize plants on farms in the Limpopo and North West provinces. The armyworm was later identified as Fall Armyworm *Spodoptera frugiperda* by ARC-PPRI, Biosystematics Division (DAFF, 2017). To ensure control of pest and diseases in South African agriculture, the sectors' skills planning needs to initiate training interventions on animal and plant health, animal handling skills, pest surveillance skills and pest quarantine skills.

5. Findings

On the concern of water challenges, the Organisation for Economic Co-operation Development (2022) states that agriculture relies heavily on water and is increasingly vulnerable to water scarcity. It is also the most polluting and consuming sector in terms of water. Improving agricultural water management is thus critical for a productive and long-term agro-food industry. Irrigated agriculture remains the world's largest water user, helped by the fact that farmers in the majority of countries do not pay the full cost of the water they use.

Agricultural irrigation consumes 70% of all water used globally, and in many OECD countries, it consumes more than 40%. Pumping groundwater for irrigation depletes aquifers and has negative environmental externalities, which can have significant economic consequences for the sector and beyond.

Hristov et al. (2018) point out that climate change affects crop productivity and growth, as well as crop quality and harvesting timing. Perennial crops, when properly planted, can produce products for an extended period of time in the same location. This suggests that crop productivity and quality are being impacted by climate change. Climate change has also had an impact on livestock farming in a variety of ways, including livestock deaths due to drought and heat damage. It was further reiterated by two participants that insects, pests and diseases are damaging the tomatoes on the farm and they need to remove them in time.

Marsh's (2022) points out that agriculture is an important part of human civilisation, but industrialisation has allowed pests to spread to unprecedented levels. Pests cause crop damage by eating crop plant leaves, sucking plant juices, boring into leaves, roots and stems, spreading plant pathogens and feeding on natural fibres. These actions put wood (our primary building material) at risk, contaminate stored crops, and hasten plant decay. As a result, pests and pest-caused diseases destroy approximately 40% of food crops each year. Humans are also harmed by pests through bites, stings, diseases, and general annoyance.

The DAFF (2019) stated that the country's land and water resources are deteriorating, creating a serious hazard. To combat the causes of degradation, strategies must be developed. Strong institutional

support mechanisms and minimum adjustments to current farming techniques are necessary to increase soil and water usage. Farming approaches based on well-coordinated rotation systems, for example, could contribute significantly to this direction. Soil, water and conservation projects should be concentrated in areas with high population density, low labour opportunity costs, high land security, readily available productive technologies and market input and service availability. As a result, good agricultural support services could have a significant impact on the long-term use and management of natural resources.

Fynn and Schalkwyk (2022) assert that rural poor people make their living through agriculture and related activities, but the majority lack access to land. As a result, agriculture is a difficult solution to poverty for people with few assets and few other options for earning a living. Land ownership results in generational wealth, food security and self-determination, all of which contribute to social and economic empowerment of women. In contrast, failure to change gendered land ownership patterns is a failure to realise women's rights to equality and human dignity.

Dlamini (2010) argues that resource restrictions such as a lack of access to land impedes the cooperatives' ability to produce. In the places where cooperatives are located, traditional authorities oversee land allotment. The common production restriction faced by these cooperatives seems to be a lack of land. Although there is a market for the produce, cooperatives are having difficulty keeping up with demand.

Organisation for Economic Co-operation and Development (2022) state that agriculture faces significant challenges in feeding the world's growing population while minimising environmental impact and preserving natural resources for future generations. Agriculture can also have a significant environmental impact. While the negative effects are severe, such as pollution and soil, water and air degradation, agriculture can also have a positive impact on the environment by trapping greenhouse gases in crops and soil or mitigating flood risks through the use of specific farming practices.

Conclusion

Agricultural projects and cooperatives play an important role in South African development practice. Given what has been said thus far, it is clear that South Africa is far from alone in its efforts to improve people's lives through agricultural cooperatives. Agricultural projects can help communities in more ways than just job possibilities. Once the members have been trained, they are able to access market opportunities and vital services. Farmers face a number of challenges that impede their ability to reduce poverty. Access to land, environmental factors such as water and electricity, as well as insects, pests and diseases, are all challenges.

References

- African Smallholder Farmers Group (ASFG). 2019. *Supporting smallholder farmers in Africa: A framework for an enabling environment*. London: African Smallholder Farmers Group.
- AgriSA. 2017. *Addressing land redistribution through the One Household One Hectare Policy*. Pretoria.
- Bellwood, F. 2005. *First Farmers: The Origins of Agricultural Societies*. Oxford: Blackwell.
- Bertelsmann-Scott, T. & Markowitz, C. 2018. *The Impact of the SADC EPA on South Africa's Agriculture and Agro-processing Sectors*. South African Institute of International Affairs.
- Department of Agriculture, Forestry and Fisheries (DAFF), 2011. *Agricultural Education and Access Barriers Report*, Department of Agriculture Forestry and Fisheries, Pretoria, South Africa.

- Department of Agriculture, Forestry and Fisheries (DAFF). 2017/2018. *A Framework for the Development of Smallholder Farmers Through Cooperative Development*. Pretoria: Government Printers.
- Department of Agriculture, Forestry and Fisheries (DAFF). 2019. *The Strategic Plan for South African Agriculture*. Pretoria: Government Printers.
- Dlamini T.R. 2010. Collective farming: Elements constituting an effective agricultural cooperative, the case of three cooperatives in the UMgungundlovu. Unpublished master's thesis. Pietermaritzburg: University of KwaZulu-Natal.
- Fynn, M. & Van Schalkwyk, C. 2022. Redistribution of land remains a man's world in South Africa. *Mail & Guardian*, 6 February.
- Hall, R. and Aliber, M., 2010. The case for re-strategising spending priorities to support small-scale farmers in South Africa.
- Hristov, A.N., Degaetano, A.T., Rotz, C.A., Hoberg, E., Skinner, R.H., Felix, T., Li, H., Patterson, P.H., Roth, G., Hall, M. & Ott, T.L. 2018. Climate change effects on livestock in the Northeast US and strategies for adaptation. *Climatic Change*, 146(1-2): 33-45.
- Manenzhe, T.D., Zwane, E.M. and Van Niekerk, J.A., 2016. Factors affecting sustainability of land reform projects in Ehlanzeni District Mpumalanga Province, South Africa. *South African Journal of Agricultural Extension*, 44(2), pp.30-41.
- Marsh, J. 2022. *Reducing Health Risks from Pests in Agriculture*. USA: Agri Links.
- Mbatha, M.W, Nojiyeza, I.S & Mdiniso, J.M., 2021. Assessing Sustainability of Agricultural Projects towards Improving Rural Livelihoods in South Africa. University of Zululand.
- Myburg, D.W. 1994. The response to farmers drought hazard in the Karoo Environment', *Geo Journal*, 334: 401-410.
- Organisation for Economic Cooperation and Development (OECD), 2006. Agricultural Policy Reform in South Africa. Policy Briefs, Organization for Economic Co-operation and Development. Available at www.oecd.org/publication/policy-briefs.
- Organisation for Economic Cooperation and Development (OECD). 2022. Agri-environmental indicators database. <http://www.oecd.org/agriculture/topics/agriculture-and-the-environment/> (accessed 15 March 2023).
- Ojoyi, M., Mutanga, O., Kahinda, J.M., Odindi, J. & Abdel-Rahman, E.M. 2017. Scenario-based approach in dealing with climate change impacts in Central Tanzania. *Futures*, 85: 30-41.
- Okurut, F.N., Schoombee, A. and Van der Berg, S., 2005. Credit Demand and Credit Rationing in the Informal Financial Sector in Uganda 1. *South African journal of economics*, 73(3), pp.482-497.
- Ortman, G.F & King, R.P, 2006. Small scale farmers in South Africa: Can agricultural cooperatives facilities access to inputs and product market? Staff paper series. University of Minnesota. USA.
- Polokwane Local Municipality. 2018. Agricultural Development Strategy 2019–2025.
- Raselabe, T.V.L. 2019. Farmer's attitudes towards the formation of cooperatives in rural areas: A study of irrigation schemes in Makhado Local Municipality. Unpublished PhD dissertation. Venda: University of Venda.



World Bank. 2012. *Local Economic Development Quick Reference Guide, Urban Development Unit*. Washington, DC: The World Bank.

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