

THE IMPACT OF THE RECAPITALISATION AND DEVELOPMENT PROGRAMME ON AGRICULTURAL PRODUCTIVITY IN SOUTH AFRICA

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Abstract. Since the dawn of democracy in 1994, the South African government has had various farmer support programmes. This study investigated the impact of the Recapitalisation and Development Programme (RADP) on agricultural production in Gauteng province, South Africa. A survey was conducted involving all 51 beneficiaries of RADP in Gauteng province. Primary data were collected through face-to-face interviews using a semi-structured questionnaire. Descriptive statistics and two-tailed t-test analysis were performed on the data using the Statistical Package for the Social Sciences (SPSS) version 24. The results show that the overall impact of RADP on agricultural production (crops and livestock) was not statistically significant. However, the area cultivated with maize and spinach improved significantly, while potatoes, soya beans, cabbage, tomatoes and green peas showed an insignificant increase in their cultivated area. It is recommended that key production requirements be identified to assist RADP in providing support that improves the agricultural production of the beneficiaries.

Keywords: support programmes, agricultural production, beneficiaries, South Africa

INTRODUCTION

Farming has many challenges because it is highly dependent on natural resources such as soil, water and vegetation. In addition, natural disasters such as hail,

fire, hurricanes and floods negatively impact agricultural production (Zhang et al., 2015). Apart from natural conditions, farming also requires resources from other industries such as chemicals (pesticides, herbicides and fungicides), manufacturing (machinery and equipment) and others (Eaton et al., 2008; Alia, 2017). For most emerging farmers in South Africa who were previously disadvantaged, some of these challenges pose a bigger threat to the productivity of their enterprises. Globalisation and overly subsidised farms in developed countries present a competitive challenge for emerging farmers in developing countries (Sikwela, 2013; Scott, 2017). As a result, farmers in developed countries have access to better production technologies that enable them to produce on a larger scale and export their products to developing countries, thus creating unfair competition (Hopewell, 2019). Consequently, most emerging farmers in developing countries need support programmes to overcome these challenges. In addition, the growing global population and challenges of food security, particularly in developing countries, make it even more crucial to establish support programmes (Gautam, 2015). In South Africa, the dawn of democracy in 1994 led to the development of policies that gave some previously disadvantaged farmers access to farmlands and farmer support programmes that had only been accessible to the minority (white farmers) before this. The assistance offered by support programmes can be in various forms,

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such as financial grants, infrastructure development, production inputs, training, skills development and market access. Some of the factors that determine the type of farmer support to be offered include a business plan presenting the farm's needs, financial availability and the objectives of the programme (Xaba and Dlamini, 2015). In addition, the programme's criteria will also determine the type of support offered to the farmers (beneficiaries).

With South Africa currently going through a land reform process, previously disadvantaged groups of people have improved access to farming land (Ntlou, 2016). It is, therefore, necessary to establish agricultural support programmes to ensure food security and agricultural development (Gautam, 2015). Although access to land has improved among previously disadvantaged people in South Africa, access to resources is still a challenge. According to Binswanger-Mkhize (2014), the beneficiaries of land redistribution programmes in the country have inadequate post-settlement support. The intended beneficiaries of land reform do not always receive adequate post-settlement support; in some instances, there are delays, and, as a result, some of these farms have little to no production taking place (Prinsloo, 2008; Phatudi-Mphahlele, 2016; Shabangu et al., 2021). These delays can disturb land markets and business confidence in agriculture and result in major food insecurity (National Planning Commission, 2011). The provision of adequate resources to farmer support programmes is therefore necessary to improve food security and agricultural productivity. In developed countries, the focus of support programmes is to subsidise farmers in order to maintain a commercial standard, minimise costs associated with production and to give farmers a competitive edge, both locally and globally (Benin et al., 2013). The aim of South African farmer support programmes is to ensure sustainable agricultural production, food security and job creation in primary agriculture, as well as allowing farmers to graduate to a commercial level, ultimately transforming the agricultural sector (Cousins, 2013). Since democracy began in 1994, the South African government has introduced the following programmes: Settlement Land Acquisition Grant (SLAG), Comprehensive Agricultural Support Programme (CASP), Micro Agricultural Financial Institution of South Africa (MAFISA), Ilima Letsema, Recapitalisation and Development Programme (RADP) and Fetsa Tlala food production initiative. In a developing country such as South Africa, farmer support programmes are

targeted towards land reform beneficiaries and assisting struggling emerging and subsistence farmers. Several studies have been conducted in South Africa to evaluate the impact of farmer support programmes on agricultural production. Mabuza (2016) and Phatudi-Mphahlele (2016) found that South African farmer support programmes have a positive and significant impact on crop yields. In addition, the impact on livestock production was found to be positive and statistically significant (Mabuza, 2016). A study conducted by the University of Pretoria (2015) found that crop yield and number of livestock kept by CASP beneficiaries increased in the post-support period. Nonetheless, statistically significant impacts of the programme were not determined, even though agricultural production improved.

RADP is one of the farmer support programmes introduced by the South African government in the 21st century (year 2010) to provide financial support to the beneficiaries of land reform programmes, who had little or no support after accessing land through the government (McLaren et al., 2015; DAFF, 2017a). Thus, RADP intends to support emerging and subsistence farmers in the country (DRDLR, 2013). The programme is aimed at improving the productivity of agricultural enterprises and food security, growing smallholder farmers to a commercial standard, creating job opportunities in the agricultural industry and ensuring that development in rural areas is monitored. It offers interventions such as mentorship, strategic partnerships and funding, which is required by farmers to develop their enterprises. As a result, participation in RADP is significantly influenced by strategic partnership, tax compliance, farm potential income from land acquisition and affiliation to farmers' organizations/associations (Shabangu et al., 2021). In addition, working with partners (strategic partnership) and receiving third party assistance has the likelihood to significantly increase the farm income of RADP beneficiaries. From a production perspective, the programme has significantly improved the number of livestock kept by the beneficiaries and the area under agricultural production (Mabuza, 2016). The aforementioned study that evaluated the impact of RADP on agriculture focused on areas under production and the number of livestock kept by the beneficiaries. The findings were generic because the types of crops cultivated and livestock kept were not evaluated separately. Therefore, it is difficult to ascertain the impact of RADP on each type of crop cultivated and livestock kept by the farmers. The purpose of the study

was to determine the impact of RADP on agricultural production in Gauteng province between 2010 and 2016.

MATERIALS AND METHODS

Study area

The study was conducted in Gauteng, South Africa and involved RADP beneficiaries (farmers who received support from RADP). The map of Gauteng province is depicted in Fig. 1. The province covers 1.5% of the surface area of South Africa, covering 18,178km² (South Africa Government..., 2018). Gauteng has three metropolitan municipalities (City of Tshwane, City of Johannesburg and Ekurhuleni Metropolitan municipality) and two district municipalities (Sedibeng and West Rand). According to Stats SA (2018), the province has the highest population in South Africa, with 14.7 million residents. Gauteng is situated in the economic hub of South Africa (Alexander et al., 2013) and contributes towards a third of the country's Gross Domestic Product (Stats SA, 2018). According to the Gauteng Province Treasury (2019), agriculture was the highest-growing sector in the first quarter of the 2018/2019 financial year, with a Gross Domestic Product (GDP) of 24.8%. Agricultural

production in the province includes grains, livestock and vegetable production (Kok, 1998; Dlodla, 2014). The major crops produced in Gauteng are maize, dry beans and soybeans, which make up 6%, 7% and 7% of the country's total output, respectively (DAFF, 2017b). In 2016, the province had about 24.2% of the country's layer chickens and 10.1% of broilers (SAPO, 2016).

Research approach and sampling

A quantitative research approach and a survey research design were employed in the study. The survey design has benefits in that geographical dependence is reduced when a survey design is conducted remotely; extensive flexibility in data analysis can be achieved as a result of asking many questions; the data to be collected can be of a large range; and the design is easy to administer (Wyse, 2012). The study population included all beneficiaries of RADP in Gauteng, South Africa, which included crop farmers, livestock farmers and those practising mixed farming. The initial population size from the information obtained at the Department of Rural Development and Land Reform was 124 beneficiaries. However, there were duplications on the list, and, after corrections, 70 beneficiaries were identified. It was also discovered that some of the beneficiaries on the list were not yet funded. As a result, 51 farmers benefitted from RADP before the study was conducted. Considering that the population size was 51, a census was conducted whereby all beneficiaries of the programme were selected to participate in the study.

Data gathering

Data were collected between August and December 2017, using a semi-structured survey questionnaire. The respondents who could read and write did this through face-to-face interviews and completion of the questionnaire. The research was carried out at the respective beneficiaries' farms. Beneficiaries were contacted by telephone to make appointments before being visited to conduct the interviews. The respondents who participated in this survey were required to sign a consent form before partaking in the study to indicate that their participation was voluntary and, therefore, they could withdraw at any time without penalty. The purpose of the study was explained to the respondents and sufficient opportunity was given for them to ask questions and prepare for the interview. The beneficiaries were assured that their names would not appear on the questionnaire or be mentioned in the publications resulting from this study.



Fig. 1. Map of Gauteng province
Source: Mkhize and Kanyile, 2020.

Data analysis

Quantitative data was captured in Microsoft Excel 2016 and transferred into SPSS version 24.0 for analysis. Descriptive statistics and a two-tailed t-test were used to analyse the data. A t-test was chosen because it can determine significant differences between the means of two groups (Jackson, 2009; Berenson et al., 2012). To determine whether RADP significantly influences agricultural production (crop yield and number of live-stock), a two-tailed test was used to analyse output “before” and “after”. This included the area cultivated in hectares, yield in tons and the number of animals kept. Significant differences were determined at 5% alpha level ($p \leq 0.05$).

RESULTS AND DISCUSSION

Socio-economic and demographic characteristics of the participants

The results presented in Table 1 show that the majority (51%) of the respondents were female, of which 46–55 years was the dominant age group for RADP beneficiaries in the study area. A larger proportion (98.0%) of the respondents were black Africans and married (78.4%). Thus, the programme provided support to previously disadvantaged groups of people in South Africa and promoted gender equity. The highest educational level of most respondents was university education, with more than one third (39.2%). Therefore, most recipients of RADP could read and write because they had basic (primary and secondary) and tertiary education (university and college). Regarding acquisition of agricultural land, more than three quarters were farming on government land attained through Proactive Land Acquisition Strategy (PLAS). The findings implied that RADP was highly accessible to the beneficiaries of land reform in South Africa, especially land redistribution. On average, the farm size of the respondents was 195.4ha, with a minimum and maximum of 2.2 and 891ha, respectively. This meant that the beneficiaries of RADP were smallholder and large-scale farmers. Again, the beneficiaries of the programme were experienced farmers ($\bar{X} = 12.5$ years) who received support about three years prior to data collection. The average family size was less than ten ($\bar{X} = 6$ years).

Area under cultivation

According to Table 2, the number of hectares (area) on which spinach, maize, soya beans, tomatoes and green

Table 1. Respondents’ socio-economic and demographic information ($n = 51$)

Variable	Frequency	Percent
Age		
<35	0	0.0
36–45	7	13.7
46–55	21	41.2
55–65	14	27.5
>65	9	17.6
Gender		
Female	26	51.0
Male	25	49.0
Race		
Black Africans	50	98.0
Coloured	1	2.0
Marital status		
Married	40	78.4
Single	5	9.8
Widowed	4	7.9
Divorced	2	3.9
Level of education		
University education	20	39.2
Secondary education	19	37.3
Primary education	9	17.6
College education	3	5.9
Type of land acquisition method		
PLAS	40	78.4
Private	5	9.8
Old state land	5	9.8
Restitution	1	2
Variable	(Min-Max)	Mean
Farm size (ha)	2.2-891	195.4
Family (number)	2-26	6.0
Year received RADP (years)	0-7	3.4
Farming experience (years)	2-32	12.5

Source: field data (2017).

Table 2. The impact of RADP on the area cultivated by the respondents ($n = 51$)

Type of crop	Average area cultivated (ha)		T-test	Significance (2-tailed)
	before	after		
Spinach	0.12	0.35	-1.439	0.156
Potatoes	0.59	0.00	1.000	0.322
Maize	25.22	64.52	-2.917	0.005
Soya beans	0.29	2.43	-1.429	0.159
Cabbage	0.02	0.00	1.000	0.322
Tomatoes	0.04	0.09	-0.988	0.328
Green peas	0.00	0.20	-1.030	0.308
Average	3.75	9.66	-0.829	0.229

Source: field data (2017).

peas were cultivated increased due to the support received from RADP, but not for potatoes and cabbage. The decrease in the cultivation area of potatoes and cabbage occurred because farmers preferred crops that are easier to cultivate and highly profitable, such as spinach. This might also be because farmers find it easier to access the market for crops such as spinach. Regarding statistical significance, the results show a significant impact on the area cultivated for maize. However, the overall impact of RADP on the area cultivated by the beneficiaries in Gauteng was insignificant ($p = 0.229$). In contrast, the results of a study conducted by Mabuza (2016) found a significant increase in the area cultivated by farmers in Gauteng after receiving RADP funds. Furthermore, Antwi and Nkwe (2013) reported a significant increase in land cultivated by farmers after they received government support through CASP. These results show that farmer support programmes have the potential to significantly increase cultivation areas amongst the beneficiaries. The insignificant results in the study could be a result of the number of years since RADP was received. On average, farmers received support from RADP about three years before the data were collected. The other reason could be that farming enterprises can take longer to yield a positive result and only show a significant impact in later years (Anseeuw, 2014).

Crop yields (outputs)

Table 3 shows that there was an increase in the crop yield of the beneficiaries since they received support from RADP. However, the overall impact was not statistically significant ($p = 0.246$). The yield of maize and spinach increased significantly at a 1% ($p = 0.005$) and 5% ($p = 0.017$) level of significance, respectively. On the other hand, the yield of soya beans, tomatoes, potatoes and green peas increased insignificantly ($p > 0.05$). Furthermore, the findings show an insignificant decrease in the yield of cabbage. This is consistent with the results of a study by Andani et al. (2020), where maize yield increased significantly because of farmer support programmes. In addition, Mabuza (2016) reported a statistically significant increase in the yield of maize for RADP farmers compared to the yield of other crops cultivated across six South African provinces (Free State, Eastern Cape, Gauteng, KwaZulu-Natal, Limpopo and North West). Phatudi-Mphahlele (2016) also found a statistically significant increase in the yield of cereal crops after farmers had received CASP. Regarding potato production, the results are in contrast to Cavatassi et al. (2010), who revealed a significant increase in the yield of potatoes for producers who received support in Ecuador. Chibbomba (2018) and Uddin and Dhar (2018) also reported increases in yield for farmers who received support in Zambia and Bangladesh. However, it was not indicated whether the increase in yield was statistically significant. This implies that support programmes do not always improve farmer’s agricultural

Table 3. The impact of RADP on yield of crops cultivated by the respondents ($n = 51$)

Type of crop	Average yield (t)		T-test	Significance (2-tailed)
	before	after		
Spinach	0.07	0.16	-2.469	0.017
Potatoes	0.07	0.10	0.930	0.357
Maize	93.27	253.77	-2.877	0.006
Soya beans	0.88	5.51	-1.361	0.180
Cabbage	0.07	0.00	1.000	0.322
Tomatoes	0.01	0.02	-0.586	0.561
Green peas	0.01	0.07	-1.099	0.277
Average	13.48	37.09	-0.923	0.246

Source: field data (2017).

productivity. Even though the current findings show that the overall impact of RADP on agricultural productivity in Gauteng was positive and insignificant, there is a potential that yield will increase significantly in the future if they continue farming because the outputs of all crops improve.

Livestock production

Table 4 depicts that the number of broilers, layers, cattle, goats, pigs and sheep did not change significantly after the farmers had received support from RADP. On average, the significant value of the number of livestock kept (all animals) was 0.524, which shows that production did not improve significantly after support was received, though the average livestock number did increase from 326 to 814 before and after support, respectively. The low growth in small and large stock was largely because the sizes of the farms did not increase and because farmers keep livestock as a secondary enterprise. In contrast, Mabuza (2016) reported a significant increase in livestock kept by RADP beneficiaries in a study across six South African provinces (Limpopo, Eastern Cape, Free State, Gauteng, North West and KwaZulu-Natal). However, the results of these studies reflect what is happening across the six provinces, hence, in Gauteng, the findings are different. Because Gauteng is a small province, some of the factors that affect herd size include lack of camps and land degradation due to overstocking (Mapholi et al., 2014). The results from Gauteng could also be due to farm sizes not increasing when farmers

receive support as Gauteng consists mostly of small farms (Prinsloo, 2008). Although the beneficiaries in Gauteng did not experience significant increases in the number of livestock kept after receiving farmer support grants, there have been improvements in animal production. This is because the number of animals such as layers, pigs and broilers increased by 148%, 88% and 29%, respectively. Nonetheless, the average number of cattle, sheep and goats did not change in the post-support period.

CONCLUSION AND RECOMMENDATIONS

The study found that the size of land on which the majority of the crops (spinach, maize, soya beans, tomatoes and green peas) were cultivated increased after the farmers had received the RADP funding. However, the increase was only significant for the area in which maize was cultivated ($p = 0.005$). Most of the crops in the study were vegetables, which explains the insignificance of the impact as these producers opted to improve production systems (e.g., acquisition of tunnels) as opposed to increasing the area cultivated. While maize farmers used RADP funds to increase the size of the land cultivated, vegetable farmers opted to build various production structures with mechanised irrigation. This in return improved the quality of their products, even though production did not significantly increase. With regard to yield, the study discovered that only the yield of maize ($p = 0.006$) and spinach ($p = 0.017$) improved significantly. This correlates with the results of the area cultivated in this study, which showed that the area cultivated with maize increased significantly. Other crops that increased in yield were soya beans, tomatoes and green peas. However, this increase was statistically insignificant. Vegetable farmers select crops to be cultivated based on season and demand, which explains the decrease in the cultivation and yield of certain crops, such as cabbage and potatoes. The beneficiaries also have limited access to reliable high-value markets, hence their inability to expand the size of the land cultivated for quite a number of enterprises. It can be concluded that RADP had an insignificant impact on livestock production because overall, the number of livestock kept by the farmers did not increase significantly, even though there was an increase after the farmers received support from the programme. Although poultry (broilers and layers) and piggery production had the highest increase

Table 4. Average number of animals of the respondents before and after receiving RADP ($n = 51$)

Type of animals	Average number of animals		T-test	Significance (2-tailed)
	before	after		
Broilers	1 922	2 551	-0.738	0.464
Layers	245	608	-01.603	0.115
Cattle	21	21	-0.028	0.978
Sheep	4	4	-0.345	0.731
Pigs	9	17	-1.180	0.244
Goats	2	2	-0.504	0.617
Average	367	534	-0.733	0.524

Source: field data (2017).

compared to other livestock types, it was not statistically significant ($p \geq 0.05$). Other livestock enterprises (sheep, cattle and goats) barely increased. In general, it is concluded that RADP did not have a significant impact on agricultural production (crop yield and numbers of livestock) in Gauteng. It is recommended that DRDLR should identify key production requirements to enable RADP to provide the type of support that will significantly improve the agricultural production of beneficiaries. Furthermore, the government should establish effective communication with beneficiaries, especially in matters related to the allocation (budgeting) of funds, to ensure that all their needs are taken into consideration during the distribution of funds, production inputs and infrastructure. In addition to the support provided to farmers through RADP, the government should consider creating a loan scheme, such as the one offered by Grain SA, to assist farmers annually with production since most do not have a title deed or, therefore, the necessary collateral to apply for loans from commercial financial institutions. This will assist farmers as receiving a one-off support package from RADP may not be sufficient to improve their production significantly.

ACKNOWLEDGEMENT

We would like to express our sincere gratitude to the University of South Africa's Postgraduate Bursaries Programme for funding this study.

SOURCE OF FINANCE

The writing of this paper was made possible through a Masters project funded by the University of South Africa's Post Graduate Bursary Programme.

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