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The impact of Rural Enterprise Development Hub (RED Hub) project on beneficiaries maize yield in Mqanduli, South Africa

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The study analysed the impact of Rural Enterprise Development Hub (RED Hub) Project on maize yield of beneficiaries. Out of a total of 398 beneficiaries, 200 maize farmers were sampled using the Cochran sample size formula followed by convenience sampling at the second stage. With the use of a 'before' and 'after' approach, a survey was conducted using structured questionnaires which were administered on the beneficiaries of the project in Mquanduli community within the 9 villages of the community. Descriptive and inferential statistics were used to analyze the data. It was established that, a P-value of less than 0.05 was statistically significant. The study revealed a significant average annual yield increase of maize farmers who benefitted in the project from 1,003 to 1,891 kg with an increase of 88.53% on hectare basis (t = 100.3 and p <0.05). Also, there was an average increase in annual yield from 1,976 to 4,351 kg which was significant with an increase of 120.19% per maize farm (t = 32.7 and p<0.05 p-value). Determinants of increase in maize productivity were identified using regression analytical technique; They were fertilizer (t = -4.46 and p <0.05), seedling (t = 4.47 and p<0.05) and capital (t = 4.35 and p<0.05). The study recommends sustained subsidy and direct delivery of productive inputs to beneficiary farmers and additional provision to accommodate more maize farmers in Mqanduli.

Key words: Rural, yield, beneficiaries, farmers, community.

INTRODUCTION

Maize production in South Africa mostly subsistence-oriented was carried out using several farming systems. Most of these maize farmers are emerging medium/large scale commercial farmers. One of the characteristics of maize farming in South Africa is low yields regardless of the size of the farm. These account for high unit costs which lead to low returns (Iortyom et al., 2019, 2018; Trefry et al., 2014).

According to Matlou et al. (2017), the largest locally produced field crop and the most important source of

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carbohydrates in the Southern African Community (SADC) region which is widely consumed by both animals and human beings is maize. It is also a major diet for both urban and rural areas in South Africa (ARC-LNR, 2016). Maize occupies a central position in the country's strategy for food security with other food options like potatoes and sugarcane. Commodity value chain agents earn income through maize; the chain includes farmers' households, produce buyers, processors, exporters and transporters. From the view point of food security and income generation, the importance of maize cannot be over emphasized (Smit, 2016).

Over the years, the South African Government has launched and implemented programs to boost agricultural productivity and to address the cycle of hunger and poverty. These programs were initiated by the national government and stepped down by provincial governments to suit the specific needs of the rural populace at the grass-root level (Obadire et al., 2014). One of these programs, the Comprehensive Rural Development Programme (CRDP) was launched in 2009 at Muyexe village, in Limpopo Province by the President of South Africa, Jacob Zuma.

In 2012, two years after the launch of CRDP the government of Eastern Cape Provincial in South Africa launched the Rural Enterprise Development Hub Project shortened as RED Hub Project aimed at increasing primary production activities, processing and marketing those products within the rural communities (Iortyom et al., 2019). The RED Hub project model makes it possible for rural economic activities to thrive through the facilitation of basic grains like maize, sorghum and soyabean resulting in increased rural incomes (Iortyom et al., 2019; Qongyo, 2015). The sum of R91 million over three years was allocated to ECRDA and ECDC for the implementation of the project by the Development Bank of Southern Africa (DBSA) (Inkqubela, 2015). The cost of the primary production is jointly funded with 75 and 25% from ECRDA and farmer contributions, respectively.

The Development Bank of Southern Africa (DBSA) through its Jobs Fund agro-processing initiative, the RED Hub Project supported the financing and implementation of maize production, processing and marketing all within a community to generate income for beneficiaries and improve their livelihood (ECRDA, 2013/2014). The project was initially to be implemented for three years, from 2013 to 2015 but the funding has been extended to 2016.

The strategy of the RED Hub project is hinged on Community-Driven Development (CDD) which gives ownership of the project and decision making to the beneficiaries. CDD alludes more to the way a strategy or an undertaking is planned and executed than to the substance of an approach or to the parts of a venture task or program (International Fund for Agricultural Development-IFAD, 2009). CDD took the stage as a response to the failures of earlier programs in South Africa which were aimed at alleviating poverty. These include lending to agricultural institutions and integrated development programs for a geographical area. CDD is a strategy that encourages community groups to be incharge of their development in terms of decisions making and implementation (Iortyom et al., 2019).

Reviews of some extant aforementioned research studies (Baird et al., 2009; Binswanger et al., 2012; Dongier et al., 2003; Kwadwo and Peter, 2012; World Bank, 2013; Obadire et al., 2014; Iortyom et al., 2019) show that the evaluation of any Community-Driven Developmental (CDD) program is relevant, whether it is funded by internationally donor organizations, national or provincial governments. Similarly, the study fills a gap that is important in the body of existing literature by critically assessing the effectiveness of the government of the Eastern Cape Province designed Rural Enterprise Development Hub project in the attainment of improvement in maize production, processing and marketing. This study also provided understanding on how significant and impactful the project has affected maize production on the achievement of poverty reduction among subsistence farmers in the study area.

MATERIALS AND METHODS

This study was carried out in Mqanduli Community. The community is located 30 km South of Mthatha and 22 km North of Elliotadle with the Eastern Cape Province, South Africa (Iortyom et al., 2018; Iortyom et al., 2019). Mqanduli was created in 1876 and is located between latitudes 31°49'9'' South and longitude 28°46'42'' East (Figure 1). It is 752 m above sea level. The settlements in the area have large uneven and low levels of services. However, some settlements, especially in the heart of Mqanduli, along the major route from Vigesville to Coffee Bay, have rural service nodes with community facilities as a result of recent development within the area. The population density is 268.05/km^2 with a percentage increase of +1.15% per year (DRLR, 2015; StatsSA, 2017).

The data used to compare the economic status of beneficiaries before and after the intervention of Rural Enterprise Development Hub Project included; increase in income and profit of maize farmers. This was determined by the means, averages, and percentage changes before and after the project intervention. Comparison between yields of beneficiaries before and after the intervention of the RED Project was analysed using SPSS Version 21. Descriptive statistics, graphs, mean, standard deviation, confidence level, paired wise t-statistics and percentages were used to show the variance in farmers' income before and after the project intervention. All the beneficiaries of the Rural Enterprise Development Hub Project in the nine participating villages at Mqanduli were part of the survey. The economy of Mqanduli is driven by mainly agricultural enterprise comprising maize farming (Statistics South Africa, 2017).

Multistage sampling technique was used to select respondents used for the study. To statistically get the required sample, Cochran sample size formula (Cochran, 1977) was used to get the sample of 200 respondents from 398 farmers who benefitted from the project at a confidence level of 95% with 5% margin of error in the first stage (Iortyom et al., 2018). This sampling formula was used in corresponding studies by Assenga and Kayunze (2016), Pindiriri et al. (2016), Sharoni et al. (2016), Shoja and Choolandimi (2016), Tesfahunegn et al. (2016), Israr et al. (2017) and Iortyom et al. (2019). The Cochran sample size formula is shown below:

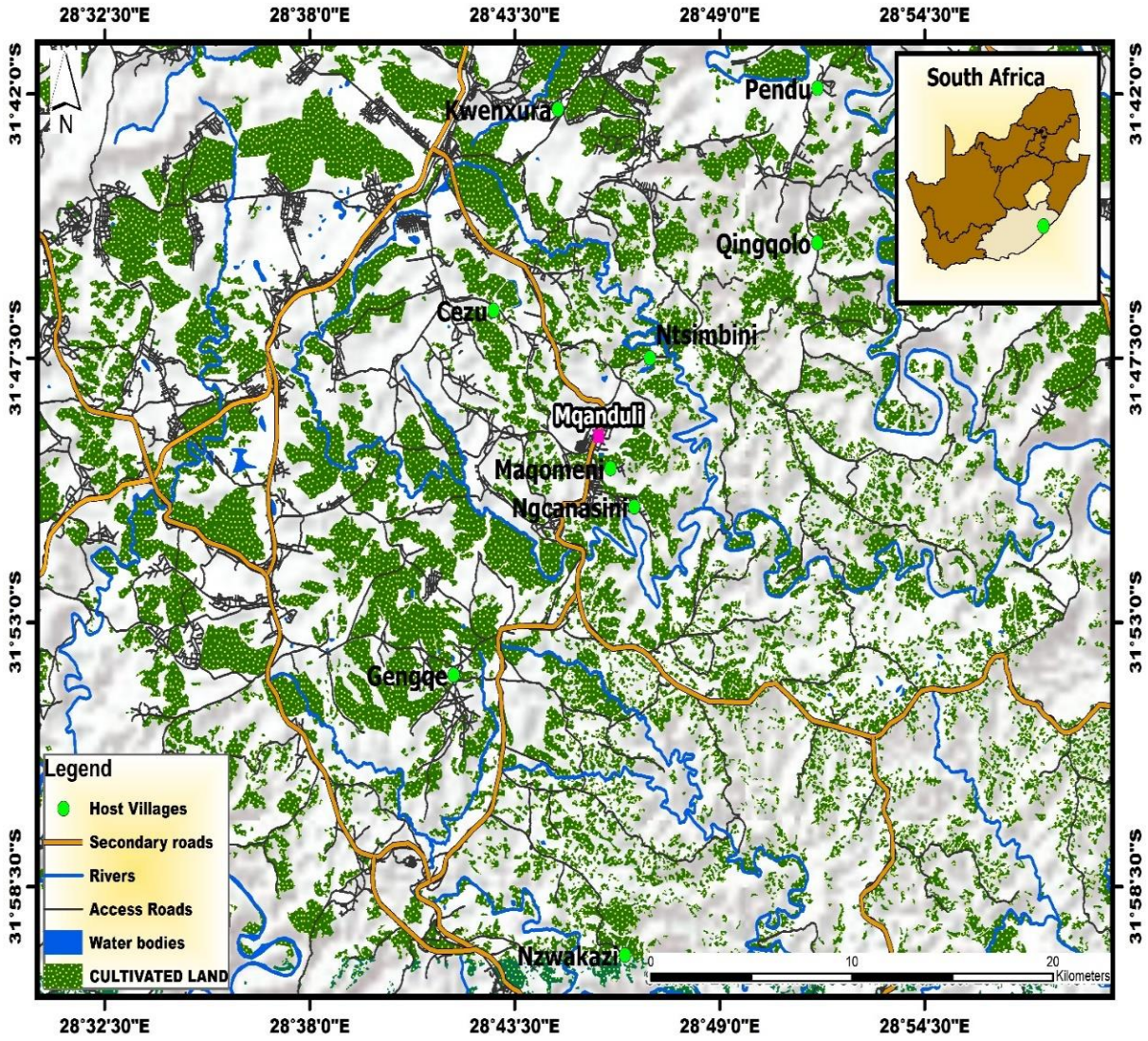

Figure 1. Map of Mqanduli showing RED Hub Project benefitting villages.

$$\text{Sample size} = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1 + \left(\frac{z^2 \times p(1-p)}{e^2 N}\right)}$$

Where Population = N; Q = the complement of p (proportion); Margin of error = e; Z-Score (Standard Score) = Z; Convenience sampling was done at the second stage to determine the number of maize farmers in various villages who benefitted from RED Hub Project (Iortyom et al., 2018; Iortyom et al., 2019). Convenience sampling is a type of non-probability or non-random sampling where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of a study (Etikan et al., 2016).

These villages and the number of respondents were; Ntsimbini-21; Khwenxura-26; Qhingqolo-21; Phendu-16; Cezu-21; Ngcanasini-36; Magomeni-16; Gengqe-22; and Nzwakazi-21. There is variance in the number of respondents as a result of more beneficiaries of RED Hub Project in some villages than others and also the number of participants was based on the response of beneficiaries to the invitation for the exercise. Correspondently, Oladoja and Adeokun (2009) used the same approach to get the required sample for their study on the performance of the National Fadama Development Project in Ogun State. A pre-tested structured interview questionnaire was tested for reliability, to ascertain if the content of the questionnaire is not above the level of the respondents before it was finally administered on the sampled population. Data collected were analysed with SPSS Statistics version 21. Mean ($\bar{x}$), Averages, Frequency Counts and Simple Percentages, Chi-square (x^2), p-value based on paired wise t-test, and regression statistics were used to discuss the results from the analysis. Based on the adopted impact evaluation model of the Before and After project intervention, the t-test was used to compare the levels of availability of benefits before and after the project. Where there was a significant difference in the p-value of less than 0.05 of the availability of benefits after the project, the benefits were interpreted as the positive impact of the project. Where there was a p-value greater than 0.05 of availability of benefit after the project, it was

interpreted as a negative impact.

RESULTS AND DISCUSSION

Socio-demographic and economic characteristics of respondents

The socio-economic and demographic variables for this study are presented in Table 1. In all, the majority of the beneficiaries out of 200 respondents are females (67%), while 33% are males. Gender analysis and its importance in this study have been classified by Oladoja and Adeokun (2009). It was also observed that beneficiaries between 36-60 years dominate the project as they constitute 83% of the entire respondents. The implication of this finding is in agreement with Osondu et al. (2015) who reported that most of the respondents are judged to be responsible and in their active and productive ages characterized with strength and commitment. The low number of those below 35 years (7%) indicates that the young adults are not intensively involved in the project; this also includes those who are 60 years (10%) and above. This is also observed in a study carried out by Olaolu et al. (2015).

The marital status of the sampled respondents indicates that about 134 (67%) of them are married and living together as a family. This result validates the view which upholds that marriage institution is still appreciated and an indication of financial responsibility of caring for dependent relatives by the respondents (Oladoja and Adeokun, 2009). This is contrary to the claim by Babatope (2016) that adults in the Eastern Cape Province avoid marriage to avoid marital responsibilities. Forty-eight (24%) are widowed and separated, while 18 (9%) are single with an insignificant number of respondents participating in the project. This implies that, apart from the large number of adults benefitting from the project, the youths are not well represented in RED Hub project.

Majority of the beneficiaries (96) representing 48% had no formal education. This has great implications on the implementation of the RED Hub project in the area as most of the illiterates perceived the project as being more of an embodiment of paperwork. According to Ogwumike (2000), and Iortyom et al. (2020), lower levels of education are associated with higher rates of poverty. The study also revealed that most of the households are headed by women and 159 (79.5%) households' family size range between 4-6 persons. Household income of beneficiaries is also derived from other sources. The average income of the beneficiaries before the project intervention is R1, 411.9.

These additional incomes are from other sources like social grants, loans and dividends from other investments. This implies that the beneficiary maize farmers are not depending on RED Hub project to meet their daily needs. This finding supports the claim by Ahmad and Abubakar (2016), Olaolu et al. (2015) and Oladoja and Adeokun (2009) that most farmers engage in other farm and non-farm enterprises to supplement incomes they get from their primary farm enterprises. Although the average household income for Eastern Cape is R6, 400 as reported in Statistics South Africa 2012, it is believed that this figure is a true estimate of the household monthly income when interpreted alongside the major sources of income where a substantial percentage of the population live on social grants which fall within the income range.

On farming experience, a good number of farmers have more than 15 years of farming experience. This implies that most of the maize farmers have been into farming long before the intervention of RED Hub project. Nwalieji (2016) stated that seasoned experience in farming is very important and essential in farm productivity because it is a factor for fast adaptability of farm innovations. The number of years a farmer has spent in farming is a pointer to the fact that he/she has gained practical knowledge on how to manage their production activities since well-experienced farmers are better risk managers than the inexperienced ones (Onyekuru, 2008). When properly channelled, the experience can lead to higher efficiency, higher productivity, higher incomes and a higher standard of living for the farmer, her family, community and the nation. Adebayo (2014) also observed that the longer a person stays on a particular job, the better the job performance tends to be. However, the experience can sometimes become a limiting factor to production improvement as farmers become set in their ways and refuse to change and take advantage of new ideas on production. In conclusion, while the experience is a necessary condition for productivity improvement, it is however not a sufficient condition. Farmers with years of experience in farming should also watch out for innovations that can improve their productivity (Atagher, 2013).

Impact of RED Hub project on maize yield per hectare and farm

The study revealed that the project had impacted positively on the yield of the maize farmers beneficiaries as shown in Tables 2 and 3, respectively. This further explains that the intervention of the project has resulted in an increase in yield of maize farmers per hectare, per farm (Tables 2 and 3).

Table 2 shows that the mean yield/ha for Ntsimbini village before the project was 951 and 1,883.5kg after RED hub project intervention with a percentage of 98.05%. Khwenxura village was 1,023.5 and 1,933.5 per hectare before and after the project respectively with 85.83% percent change. Qhingqolo village was 1,018.5 and 1,902.5 kg before and after the project having 86.79% change. Phendu village was 969 and 1,863 kg before and after the project with 92.78% change. For Cezu village, it was 966 and 1,885 kg before and after

Table 1. Socio-demographic characteristics of respondents.

Variables	All beneficiaries (n=200)	Male (n=66)	Female (n=134)
Age (Years)			
35 and below	14 (7.0)	12 (85.7)	2 (14.3)
36-60	166 (83.0)	43 (25.9)	123 (74.1)
Above 60	20 (10.0)	11 (55.0)	9 (45.0)
Education			
No formal education	96 (48.0)	26 (39.4)	70 (52.2)
Primary	101(50.5)	37 (56.1)	64 (47.8)
Matric	2 (1.0)	2 (3.0)	0 (0.0)
Higher education	1 (0.5)	1 (1.5)	0 (0.0)
Village			
Ntsimbini	21(10.5)	6 (9.1)	15 (11.2)
Khwenxura	26 (13.0)	8 (12.1)	18 (13.4)
Qhingqolo	21 (10.5)	7 (10.6)	14 (10.4)
Phendu	16 (8.0)	6 (9.1)	10 (7.5)
Cezu	21 (10.5)	7 (10.6)	14 (10.4)
Ngcanasini	36 (18.0)	14 (21.2)	22 (16.4)
Maqomeni	16 (8.0)	6 (9.1)	10 (7.5)
Gengqe	22 (11.0)	6 (9.1)	16 (11.9)
Nzwakazi	21 (9.1)	6 (9.1)	15 (11.2)
Marital status			
Single	18 (9.0)	12 (18.2)	6 (4.5)
Married	134 (67.0)	53 (80.3)	81 (60.4)
Widowed/separated	48 (24.0)	1 (1.5)	47 (35.1)
Household head	200 (100)	66 (33.0)	134 (67.0)
Number of dependents			
0-2	12 (6.0)	4 (6.0)	8 (6.0)
3-5	159 (79.5)	55 (83.4)	104 (77.7)
6-10	29 (14.5)	7 (10.6)	22 (16.3)
Family size			
0-3	11 (5.5)	4 (6.0)	7 (5.2)
4-6	159 (79.5)	55 (83.4)	104 (77.7)
7-10	30 (15)	7 (10.6)	23 (17.1)
Household income (R)			
1000 and below	24 (12.0)	11 (45.8)	13 (54.2)
1001-2000	173 (86.5)	54 (31.2)	119 (68.8)
2001-3000	3 (1.5)	1 (33.3)	2 (66.7)
Housing type			
Owned	200	66 (33.0)	134 (67.0)
Years of farming			
15 years and below	24 (12.0)	17 (70.8)	7 (29.2)
16-35	135 (72.5)	33 (24.4)	102 (75.6)
36-55	41 (20.5)	16 (39.0)	25 (61.0)

Source: Field survey.

Table 2. Changes in annual yield/Ha (kg).

Village	Annual yield (kg/ha) before $\bar{x}$ (SD)	Annual yield (kg/ha) after $\bar{x}$ (SD)	Mean difference (CI)	T statistics	P-value	Percentage change in yield/ha (kg)
Ntsimbini	951(2.39)	1,833.5 (0.83)	882.5(17.53-19.77)	34.85	0.000	98.05
Khwenxura	1,023.5 (1.95)	1,902(0.20)	878.5 (16.76-18.37)	44.81	0.000	85.83
Qhingqolo	1,018.5 (3.18)	1,902.5 (0.22)	134.5 (16.23-19.13)	25.48	0.000	86.79
Phendu	969 (1.30)	1,868(0.45)	899(17.3-18.6)	58.1	0.000	92.78
Cezu	966 (1.67)	1,885 (0.74)	919(17.6-19.2)	49.1	0.000	95.13
Ngcanasini	975.5 (1.56)	1863(0.22)	905 (17.2-18.2)	72.0	0.000	90.98
Maqomeni	908.5 (0.43)	1,910 (0.68)	1,001.5(19.6-20.6)	88.2	0.000	110.46
Gengqe	1,116 (3.44)	1,916.5(0.62)	800(14.4-17.6)	21.0	0.000	71.73
Nzwakazi	1,078.5 (2.89)	1,900 (0.60)	820 (15.1-17.7)	26.0	0.000	76.17
All Villages	1,003 (2.53)	1,891(0.61)	890(17.4-18.1)	100.3	0.000	88.53

t-test statistics. P value <0.05; 0.000 = Significant.
Source: Field survey.

Table 3. Changes in annual yield per farm (kg).

Village	Annual yield per farm in kg before $\bar{x}$ (SD)	Annual yield per farm in kg after $\bar{x}$ (SD)	Mean difference (CI)	T statistics	p-value	Percentage change of yield per farm in kg
Ntsimbini	2,252.5(10.12)	5,335.5(23.55)	3,083(52.7-70.6)	14.3	0.000	136.87
Khwenxura	2,213.5 (5.70)	5,923 (12.11)	3,709.5 (68.6-79.8)	27.3	0.000	167.45
Qhingqolo	1,274(9.82)	2,357 (11.67)	1,083(19.3-24.1)	18.8	0.000	85.01
Phendu	2,225 (2.00)	4,703 (5.56)	2,478(46.8-52.4)	37.6	0.000	111.37
Cezu	2,445.5 (7.96)	5,474 (16.50)	3,028.5(53.9-67.3)	18.9	0.000	123.80
Ngcanasini	2,197(2.60)	4,708.5 (2.89)	2,511.5(48.8-51.6)	72.8	0.000	114.31
Maqomeni	2,056.5 (5.24)	4,669(8.18)	2,612.5 (48.0-56.5)	25.9	0.000	127.04
Gengqe	1,580(9.81)	3,047.5 (9.29)	1,467.5(24.5-34.2)	12.6	0.000	92.88
Nzwakazi	1,421.5 (8.96)	2,533.5(9.18)	1,112(19.8-24.7)	18.7	0.000	78.23
All Villages	1,976(10.68)	4,351 (27.64)	2,375(44.6-50.4)	32.7	0.000	120.19

t-test statistics. P value <0.05; 0.000 = Significant.
Source: Field survey.

the project with 95.13% change; for Ngcanasini village, it was 975.5 and 1,863 kg before and after the project intervention, respectively with 90.98% change. Maqomeni village had 908.5 kg before and 1,910 kg after the project with 110.46% change. Gengqe village had 1,116 kg and 1,916.5 kg before and after the project with 71.73% change, while Nzwakazi village had 1, 7078.5 and 1,900 kg before and after the project intervention, respectively with a percentage change of 76.17%. The mean for all the villages shows that 1,003 and 1,891 kg are for before and after the project intervention with a percentage change of 88.53% per hectare. All the villages had a statistical $p<0.05$ which indicates that the change in annual yield of maize yield per hectare was significant.

It was observed that the level of farm yield of maize farmers before the project intervention was low. After the project intervention, their farm yield on maize production was high. The mean annual yield per farm from Table 3 indicates that Ntsimbini village was 2,252.5 and 5,335.5 kg with 136.87% change before and after RED hub project intervention. Khwenxura village was 2,213.5 and 5,923 kg before and after the project with a percentage change of 167.45%. Qhingqolo village was 1,274 and 2,357 kg with 85.01% change before and after the project intervention. Phendu village was 2,225 and 4,703 kg respectively with 111.37% before and after the project intervention. Ngcanasini and Maqomeni villages had 2,197, 4,708.5, 2,056.5 and 4,669kg with percentage changes of 114.31 and 127.04%, respectively. Gengqe village was 1,580and 3,047.5 kg before and after the project with 92.88% change and Nzwakazi was 1,421.5 and 2,533.5 kg with 78.23% change, while the percentage change of annual yield in the entire study area is 120.19% with the mean annual yield of 1,976 and 4,351

Table 4. Determinants of maize yield.

Model parameter	Unstandardized coefficients		Standard coefficient	t Statistics	P-value
	B	Standard error	Beta		
Fertilizer X_1	-1.41	0.32	-11.80	-4.46	0.000
Pesticide X^2	-	-	-	-	-
Herbicide X^3	-	-	-	-	-
Insecticide X^4	-	-	-	-	-
Labour X^5	-	-	-	-	-
Capital X_6	0.02	0.005	11.52	4.35	0.000
Seedling X^7	9.516	2.18	11.56	4.47	0.000
Constant	38.63	0.14		269.10	0.000

t-test statistics. P value <0.05; 0.000 = Significant.
Source: Field survey (2017).

kg, respectively. The change in annual yield per farm for all the villages is statistically significant at $p<0.05$.

Determinants of maize farmers' productivity in the study area

Multiple regression analysis was used to ascertain the efficient use of inputs provided by beneficiaries. Regression analysis is a statistical technique for estimating the relationship among variables which have reason and result relation. The main focus of univariate regression is to analyze the relationship between a dependent variable/s and one independent variable and formulate the linear relation equation between dependent and independent variable/s (Uyanik and Guler, 2013). A P-value of less than 0.05 was considered to be statistically significant. Tables were used to present the results. The productivity of maize farming by beneficiaries of RED Hub Project in the study area is determined using a regression analytical technique.
The standard formula for multiple regression analysis is stated thus;

$$Y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + b_6 x_6 + e$$

Where: Y = Dependent variable (Yield); a = constant; b = constant coefficient for X; X_1 = Fertilizer (Kg); X_2 = Pesticide (Litre); X_3 = Herbicide (Litre); X_4 = Insecticide (Litre); X_5 = Labour (hours/ha); X_6 = Capital (Rand); X_7 = Seeds (kg); e = Standard error of coefficient

The centrality of efficiency in agricultural input/output has been widely recognised by researchers and policymakers alike (Shabu, 2013). It is established by the reports of Awoyemi et al. (2003) and Shabu (2013) that when farmers and agricultural processors do not make use of existing technology, their efforts at improving efficiency would be more cost-effective as compared to introducing technology as a means of ensuring production efficiency. On the other hand, Shehu and Mshella (2007)'s findings indicated that, since an increase in productivity is directly linked to production efficiency, it becomes necessary to raise the productivity of the farmers by supporting them to reduce inefficiencies in technology. According to the authors, such support could be rendered by investigating the farmers' status of resource productivity and efficiency.

Table 4 shows the factors that determine the productivity level achieved by the benefitting maize farmers in the study area after RED Hub intervention. Seven independent variables were entered into a regression model namely; fertilizer, the quantity of herbicides and pesticides, seeds, labour, and capital against the dependent variable (Maize yield). However, the result of this study as presented in Table 4 indicates that the major determinants that significantly contributed to the increase in maize yield are fertilizer seedling and capital with t-statistics and p-values of -4.46 and <0.05 for fertilizer, 4.47 and <0.05 for seedling and 4.35 and <0.05 for capital. This agrees with the postulation of Okechukwu (2015), Shabu (2013) and Awoyemi et al. (2003) that improved technologies have been central in raising yields. Such technologies could be high varieties of seed, chemical fertilizers, and modern farming techniques. These variables can therefore be exploited to improve the productivity level of beneficiaries of the project to further boost their economic status in the area. There is a need to encourage maize farmers to adopt the use of fertilizer, improved seedling and also make capital accessible to farmers which have the tendency of propelling maize production in the study area.

Conclusion

Rural Enterprise Development Hub is an applaudable intervention project which has adopted the direct input delivery to the beneficiaries to improve on their maize

production in Mqanduli as evidenced by the significant increase in maize yield. This has satisfied an aspect of the project of ensuring a sustainable increase of maize yield through the provision of productive inputs to the beneficiary maize farmers to boost maize production. This also reflects the ability of the project to encourage the communities to participate in the project for sustainable maize production. The study recommends sustained subsidy and direct delivery of productive inputs to beneficiary farmers and additional provision to accommodate more maize farmers in Mqanduli.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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