The Role of Resources Allocation on the Performance of Agricultural Projects in Rwanda; A Case of One Acre Fund Project

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Abstract: *This study intended to analyze the role of resource allocation on performance of One Acre Fund Project in Karongi District of Rwanda. The study used a descriptive research design. Data collection instruments for the purpose of this study were questionnaires. Data were analyzed using descriptive and inferential statistical. The researcher used the Statistical Package for Social Sciences (SPSS) version 23 in coming up with the statistical analysis for the study and allowed a researcher to summarize data. The researcher concluded a strong relationship between personnel allocation and increased maize production. The study concluded a high strong positive correlation between seeds allocation and increased maize production. The researcher concluded that there is a significant relationship between allocations of fertilizers and increased maize production. The researcher recommended the project managers and owners to effectively allocate their project team members by placing enough personnel with the right competence in the right position. The researcher recommends to the project team to maintain the quality of seeds allocated to farmers since the study findings revealed the farmers are satisfied with the quality of seeds given to them by the project because it enables them to increase their maize production. Last but not least the researcher recommends to the project managers and team to maintain the quality of fertilizers allocated to farmers since the study findings revealed the farmers are satisfied with the quality of fertilizers given to them by the project because it enables them to increase their maize production. The researcher also recommends to the project team to increase the quantity of fertilizers to be given to farmers since the results revealed that the farmers are not satisfied with the quantity given to them.*

Keywords: Resources, Resources allocation, Performance of agricultural project

1. Introduction

Worldwide resource allocation is considered as the process of assigning and managing assets in a manner that supports an organization's strategic goals. Resource allocation includes managing tangible resources such as hardware to make the best use of softer assets such as human capital. Resource allocation involves balancing competing needs and priorities and determining the most effective course of action in order to maximize the effective use of limited resources and gain the best return on investment. Resource allocation is one of the most popular topics that project management has always embraced. Since it is at the heart of project management, it forms the golden triangle of time, cost and quality. Soanes and Stevenson (2013) state, allocation is "the action or process of allocating or sharing something". In projects, allocation refers to the process of allocating or sharing needed resources among projects based on a work break down structure that shows the sequence and duration of each activity (Heerkens, 2012). The variation in utilization of these resources and often occurrence of low troughs and high peaks is not desired in any project. Since the process of managing such changes can distract the management greatly in way that may cause suffering to other aspects of the project (Hamilton, 2011).

2. Statement of the Problem

In Rwanda farming activities are the backbone of the development of rural citizens where more than 80% of the agricultural production comes from small farmers (Asthana, 2011). Farmers comprise the largest percentage of the workforce in the agricultural sector, but do not have access and control over all land and productive resources. During the last ten years, Rwanda has adopted new land laws in order to strengthen Farmers land ownership rights. This has helped improve the situation of rural small holder farmers. Farmers guarantee livelihoods, especially in rural areas. As a result of their great efforts in agricultural production, Small holder farmer's production helps to guarantee their self-sustenance (Godfray, 2010). This is still not enough, however, to cover other needs, such as health care, paying for the education of their children or the acquisition of other products and goods which are necessary on a day-to-day basis since they have a limited financial capacity caused by an inefficient supply chain and poor conservation of their surpluses. In many countries, the role of agricultural projects is considered just to be a "backbone" and not an important economic contribution to agricultural production and that's why Rwanda as a developing country has set a policy that encourage as many as possible agricultural projects but the government still claim the poor performance of agricultural projects (MINAGRI, 2016). Furthermore, the report of IFAD (2007) revealed that in developing countries; the majority of people living in rural areas are small holder farmers. In addition, they are faced with limited social services and infrastructure.

Despite the important roles One Acre Fund Project is playing in improving agricultural sector like increasing farmer's production and rising farmers standards of living across Africa, in Rwanda specifically in Karongi District, Maize production has remained low and this has affected Farmers' standards of living. Lower production of maize in Karongi district is attributed to a number of causes including lack of enough high yield seeds, limited use of fertilizers and lack of enough and competent personnel able to improve maize production. Therefore this study intended to analyze

the role of resource allocation on performance of One Acre Fund Project in Karongi District of Rwanda.

3. Objectives of the Study

The general objective of this study was to analyze the role of resource allocation on performance of agricultural projects in Rwanda.

The study was guided by three specific objectives:
1) To analyze the role of personnel allocation on performance of One Acre Fund Project in Karongi district.
2) To assess the role of seeds allocation on performance of One Acre Fund Project in Karongi district.
3) To examine the role of fertilizers allocation on performance of One Acre Fund Project in Karongi district.

4. Conceptual framework of the study
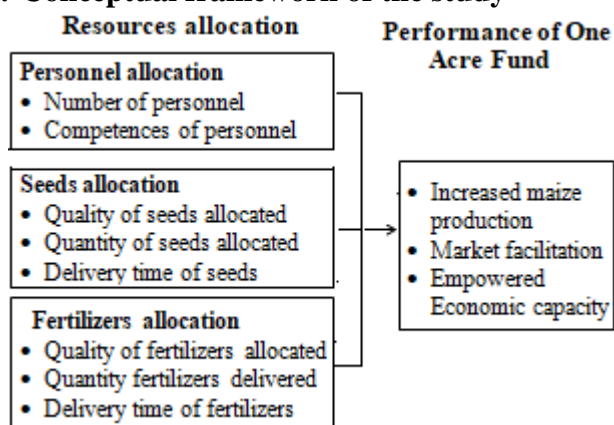
5. Methodology

- **Research Design**: The study used descriptive design
- **Target Population**: The population of the study equaled 88 representatives of beneficiaries of One Acre Fund Project from each cell in Karongi District
- **Sample size**: In this case the size of the population is not such big and census was used as sample design which means that all 88 elements in the population were part of the research.
- **Data Collection Instruments:** The quantitative data were collected using questionnaires and they were made of close ended questions.

6. Research findings

6.1 Analysis of the role of personnel allocation on performance of One Acre Fund Project

This section describes the correlation between personnel allocation and increased maize production

Table 1: Correlation between personnel allocation and increased maize production

		Personnel allocation	increased maize production
Personnel allocation	Pearson Correlation	1	.787**
	Sig. (2-tailed)		.006
	N	54	54
Increased maize production	Pearson Correlation	.733**	1
	Sig. (2-tailed)	.006	
	N	54	54

According to findings in Table1; the result of correlation between personnel allocation and increased maize production was at the rate of 0. 787 meaning that the act of personnel allocation influences the increase of maize production at the level of 78.7%. Therefore, the researcher concluded a strong relationship between personnel allocation and increased maize production. By considering the level of significance which is 0.05, there is a significant relationship between personnel allocation and increased maize production as their p-value (0.006) is statistically significant at 5% level of significance.

Table2: Correlation between personnel allocation and Market facilitation for farmers

		Personnel allocation	Market facilitation
Personnel allocation	Pearson Correlation	1	.685**
	Sig. (2-tailed)		.005
	N	54	54
Market facilitation	Pearson Correlation	. 685**	1
	Sig. (2-tailed)	.005	
	N	54	54

Findings in the Table 2 demonstrate that the Correlation between personnel allocation and market facilitation for farmers was at the rate of 0. 685 revealing that market facilitation for farmers is influenced by personnel allocation at the level of 68.5%. This proves the high correlation between personnel allocation and market facilitation for farmers. By considering the level of significance which is 0.05, there is a significant relationship between personnel allocation and market facilitation for farmers due to the fact that their p-value (0.005) is statistically significant at 5% level of significance.

Table 3: Correlation between personnel allocation and Empowered Economic capacity for farmers

		Personnel allocation	Empowered Economic capacity for farmers
Personnel allocation	Pearson Correlation	1	.858**
	Sig. (2-tailed)		.009
	N	54	54
Empowered Economic capacity for farmers	Pearson Correlation	.858**	1
	Sig. (2-tailed)	.009	
	N	54	54

The result of correlation between personnel allocation and Empowering Economic capacity for farmers as shown in Table 3 was at the rate of 0. 858. This reveals a strong correlation between personnel allocation and empowering

economic capacity for farmers. Therefore a change personnel allocation is highly correlated with change in empowering economic capacity for farmers. Hence the researcher concluded a strong and positive high correlation between personnel allocation and empowering economic capacity for farmers in Karongi district.

Table 4: Estimate parameters between personnel allocation and performance of One Acre Fund Project in Karongi District

Model	Unstandardized Coefficients		95% Confidence Interval for B	
	B	Sig.	Lower Bound	Upper Bound
Constant (β_0)	3.224	0	1.859	2.587
Personnel allocation (X)	0.112	0.017	-0.376	0.183

Dependent Variable (Y): Performance of One Acre Fund Project

Regarding to the information from Table 4 above, if: Y= Project performance and X= allocation of personnel, project performance will change in function of personnel allocation. Therefore, personnel allocation is equal to one unit and constant (β_0) is zero (0), project performance will increase 0.112 times. Hence, Y=3.224+0.112X. There is a significant relationship between personnel allocation and performance of One Acre Fund Project because their p-value (0.017) is statistically significant at 5% level of significance with lower bound of -3.76 and upper bound of .183.

6.2 Assessment of the role of seeds allocation on performance of One Acre Fund Project

Table 5: Correlation between seeds allocation and increased maize production

		Seeds allocation	Increased maize production
Seeds allocation	Pearson Correlation	1	.859[**]
	Sig. (2-tailed)		0.007
	N	54	54
Increased maize production	Pearson Correlation	.859[**]	1
	Sig. (2-tailed)	0.007	
	N	54	54

The findings in Table5 above revealed that the results of Correlation between seeds allocation and increased maize production was at the rate of 0.859 meaning that increase of maize production is influenced by seeds allocation at the level of 85.9%. Therefore there is a significant positive relationship seeds allocation and increased maize production. By considering the level of significance which is 0.05, hence there is a significant relationship between seeds allocation and increased maize production because their p-value (0.007) is statistically significant at 5% level of significance hence a high strong positive correlation between seeds allocation and increased maize production

Table 6: Correlation between seeds allocation and market facilitation for farmers

		Seeds allocation	Market facilitation for farmers
Seeds allocation	Pearson Correlation	1	.963[**]
	Sig. (2-tailed)		.014
	N	54	54
Market facilitation for farmers	Pearson Correlation	.963[**]	1
	Sig. (2-tailed)	.014	
	N	54	54

According to the findings in Table 6 above, the result of Correlation between seeds allocation and market facilitation for farmers was at the rate of 0. 963 meaning that seeds allocation are significant to market facilitation for farmers at the level of 96.3% hence a significant between seeds allocation and market facilitation for farmers. On the other hand, by considering the level of significance which is 0.05, therefore the researcher concluded a significant positive relationship between seeds allocation and market facilitation for farmers because their p-value (0.014) is statistically significant at 5% level of significance.

Table 7: Correlation between seeds allocation and Empowered Economic capacity

		Seeds allocation	Empowered Economic capacity
Seeds allocation	Pearson Correlation	1	.788[**]
	Sig. (2-tailed)		.026
	N	54	54
Empowered Economic capacity	Pearson Correlation	.788[**]	1
	Sig. (2-tailed)	.026	
	N	54	54

The findings in Table7 demonstrate that the result of correlation between seeds allocation and Empowered Economic capacity is at t the rate of 0.788 meaning that Seeds allocation affect empowerment of economic capacity for farmers at the level of 78.8%. Basing to this Pearson's correlation rate there is a significant relationship between seeds allocation and Empowered Economic capacity to farmers

Table 8: Estimate parameters between seeds allocation and performance of One Acre Fund Project

Model	Unstandardized Coefficients		95% Confidence Interval for B	
	B	Sig.	Lower Bound	Upper Bound
Constant (β_0)	2.209	0	1.784	2.711
Seeds allocation (X)	0.095	0.009	-0.512	0.274

a. Dependent Variable (Y): Performance of One Acre Fund Project

According to the information from table above, if: Y= Performance of One Acre Fund Project and X= seeds allocation, project performance will change in function of seeds allocation, Thus, if seeds allocation is equal to one unit and constant (β_0) is zero (0), project performance will increase 0.095 time in variation of seeds allocation. Hence, Y=2.209+0.095X. There is a significant relationship between seeds allocation and performance of One Acre Fund

Project. Because their p-value (0.009) is statistically significant at 5% level of significance with lower bound of -.512 and upper bound of 0.274.

6.3 Examining the role of fertilizers allocation on performance of One Acre Fund Project

Table 9: Correlation between allocations of fertilizers and increased maize production

		Allocation of fertilizers	Increased maize production
Allocation of fertilizers	Pearson Correlation	1	.791**
	Sig. (2-tailed)		0.016
	N	54	54
Increased maize production	Pearson Correlation	.791**	1
	Sig. (2-tailed)	0.016	
	N	54	54

The significance relationship between allocation of fertilizers and increased maize production was proven by the results in Table 9 where the correlation between the two was at the rate of 0.791 meaning that effective allocation of fertilizers influences an increase in maize production at the level of 79.1%. By also considering the level of significance which is 0.05, the researcher can conclude that there is a significant relationship between allocations of fertilizers and increased maize production because their p-value (0.016) is statistically significant at 5% level of significance.

Table 10: Correlation between allocation of fertilizers and market facilitation

		Allocation of fertilizers	Market facilitation for farmers
allocation of fertilizers	Pearson Correlation	1	.817**
	Sig. (2-tailed)		.008
	N	54	54
Market Facilitation for farmers	Pearson Correlation	.817**	1
	Sig. (2-tailed)	.008	
	N	54	54

Findings in Table 10 revealed that the result of correlation between allocation of fertilizers and market facilitation was at the rate of 0.817 meaning that effective allocation of fertilizers influence market facilitation for farmers due to their good quality and sufficient quantity produced. Basing on the level of significance which is 0.05, hence the researcher concluded a significant relationship between allocation of fertilizers and market facilitation because their p-value equal to (0.08) which is statistically significant at 5% level of significance.

Table 11 Correlation between allocation of fertilizers and Empowered Economic capacity

		Allocation of fertilizers	Empowered economic capacity for farmers
Allocation of fertilizers	Pearson Correlation	1	.619**
	Sig. (2-tailed)		.015
	N	54	54
Empowered economic capacity for farmers	Pearson Correlation	.619**	1
	Sig. (2-tailed)	.015	
	N	54	54

The results in Table11 revealed that results of correlation between allocation of fertilizers and Empowered Economic capacity for farmers were at the rate of 0. 619 which means that effective allocation of fertilizers contribute highly to the empowerment of economic capacity for farmers at the level of 61.9% hence the researcher concluded a significant relationship between allocation of fertilizers and empowered economic capacity for farmers. Given the level of significance which is 0.05, there is a significant relationship allocation of fertilizers and empowered economic capacity for farmers because their p-value (0.015) is statistically significant at 5% level of significance.

Table 12: Estimate parameters between allocation of fertilizers and performance of One Acre Fund Project

Model		Unstandardized Coefficients		95% Confidence Interval for B	
		B	Sig.	Lower Bound	Upper Bound
1	(Constant)	2.649	0	1.591	2.395
2	Allocation of fertilizers	0.105	0.009	-0.394	0.571

Dependent Variable (Y): Performance of One Acre Fund Project

According to the information from Table12 above, if: Y= Project performance and X= allocation of funds, project performance will change in function of allocation of fertilizers, Thus, if allocation of fertilizers is equal to one unit and constant (β_0) is zero (0), project performance will increase 0.105 time in relation to allocation of fertilizers. Hence, Y=2.649+0.105X. There is a significant relationship between allocation of fertilizers and performance of One Acre Fund Project because their p-value (0.009) is statistically significant at 5% level of significance with lower bound of -394 and upper bound of 0.571.

7. Conclusions and Recommendations of the study

7.1 Conclusions

According to the interpretation of collected and analyzed data during the course of this study the researcher came up with the following conclusions:
1) The researcher concluded a strong relationship between personnel allocation and increased maize production.
2) The researcher further concluded the positive and significant relationship between personnel allocation and market facilitation for farmers due to the fact that their p-value (0.005) is statistically significant at 5% level of significance.
3) The researcher also concluded a strong and positive high correlation between personnel allocation and empowering economic capacity for farmers in Karongi district.
4) There researcher concluded a significant positive relationship between personnel allocation and performance of One Acre Fund Project because their p-value (0.017) is statistically significant at 5% level of significance with lower bound of -3.76 and upper bound of .183.

5) The study concluded a high strong positive correlation between seeds allocation and increased maize production; the researcher further concluded a significant positive relationship between seeds allocation and market facilitation for farmers because their p-value (0.014) is statistically significant at 5% level of significance.

6) The researcher can conclude that there is a significant relationship between allocations of fertilizers and increased maize production; the researcher also concluded a significant relationship between effective allocation of fertilizers and market facilitation.

7) The researcher concluded a significant relationship between effective allocation of fertilizers and empowering economic capacity for farmers. Finally; the researcher concluded a significant relationship between allocation of fertilizers and performance of One Acre Fund

7.2 Recommendations

As the findings show a positive and a very high strong relationship between personnel allocation and performance of One Acre Fund Project in Karongi District;

1) The researcher recommends the project managers and owners to effectively allocate their project team members by placing enough personnel with the right competence in the right position.

2) The researcher further recommends the project managers and funders to adopt effective personnel motivation package since the findings have shown a very high positive relationship between personnel motivation and performance of One Acre Fund Project.

3) Furthermore the researcher recommends to the project team to maintain the quality of seeds allocated to farmers since the study findings revealed the farmers are satisfied with the quality of seeds given to them by the project because it enables them to increase their maize production.

4) The researcher also recommends to the project team to increase the quantity of the maize seeds to be given to farmers since the results revealed that the farmers are not satisfied with the quantity of the seeds given to them. The researcher also recommends the project owners to continue to give to farmers the maize seeds on time based on agricultural seasons because it enables the farmers to meet the effective cultivating timings.

5) Last but not least the researcher recommends to the project managers and team to maintain the quality of fertilizers allocated to farmers since the study findings revealed the farmers are satisfied with the quality of fertilizers given to them by the project because it enables them to increase their maize production.

6) The researcher also recommends to the project team to increase the quantity of fertilizers to be given to farmers since the results revealed that the farmers are not satisfied with the quantity given to them.

7.3 Suggested areas for further research

After a thorough analysis of the study findings the researcher suggests future studies to be carried out on the following topics:

1) Analysis of the effect of resource allocation on performance of government funded projects and

2) Effect of resource management on sustainability of Basic Infrastructure project in Rwanda

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