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EFFECT OF PROJECT RESOURCES PLANNING ON SUSTAINABILITY OF RURAL DEVELOPMENT PROJECTS IN RWANDA: A CASE OF KIREHE COMMUNITY BASED WATERSHED MANAGEMENT PROJECT

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Abstract: **The main objective of this research was to assess the effect of resource planning on sustainability of Kirehe Community Based Watershed Management Project. This study adopted descriptive research design. For this study the target population was 43 former employees of Kirehe Community Watershed Management Project. During this research, as the target population is quite small in numbers, the researcher decided to adopt a census where all population was considered as sample size which means that all 43 employees of KWAMP Project was considered as respondents in this study. The researcher relied on primary data and questionnaires were used to collect them. The questionnaires that are intended to be used in this study were made of both closed-ended and open-ended questions. The data that were collected was firstly captured in Microsoft Excel, checked for completion and coded. The data for this study were analyzed quantitatively using percentages, frequencies and using multiple linear regressions. As the findings revealed that the results of correlation between human resources planning and sustainability of KWAMP were at 0. 609 meaning that human resources planning affect sustainability on level of 60.9% which proves a significant relationship between human resources planning and sustainability of KWAMP. The researcher concludes a significant relationship between human resources planning and sustainability of KWAMP. The researcher also concluded a positive and significant relationship between financial resources management and sustainability of KWAMP since their results of correlation between them were at 0.567 meaning that financial resources planning at the level of 56.7% which prove a significant relationship between financial resources management and sustainability of KWAMP. Last but not least; the researcher concluded a positive and significant relationship between material resource and sustainability of KWAMP because the results of correlation between them were at 0. 951 mean that material resource planning affects sustainability of KWAMP at the level of 95.1% which prove a significant relationship between material resource and sustainability of KWAMP. The project owners should effectively put much emphasis in planning human resources especially in planning for effective recruitment and placement. They should also make sure that the recruited employees are well inducted in the working team so as to ensure the project is working in a favorable environment. The project managers and funders should always ensure that they have mobilize and raised enough financial resources in order to avoid the lack of financial means which in turns may lead to delay of project activities and finally, the researcher recommends to the project managers and their procurement staff to plan for effective and timely procurement, they should always make sure that the supplies are supplied within the right quantity, quality and time so as to ensure the smooth running of the project activities.**

Keywords: **Project Planning, Resources planning, Sustainability, rural development projects.**

1. INTRODUCTION

Sustainability is one of the most challenges of our time. Recently, the concept of sustainability has been linked to projects. Many researchers have been worked on the sustainability of projects as the sustainability is increasingly taken as a tool for understanding the social, economic, and environmental consequences associated with projects specifically and project management in general. However, there is not a common form and tool to be used for analyzing sustainability in project in projects. According to McKinley, the further development of the project management profession, project managers are required to take responsibility for sustainability (MCKINLEY, 2008). In the report written by the World Commission on Development and Environment, the commission defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This strategy aims to promote harmony among human beings and between humanity and nature. The report emphasizes that sustainability needs a social and environmental perspective, besides to the economical perspective, on development and performance (WCED, 1987).

By defining the project, Kerzner stated that the project consumes human and non human resources such as money and equipment. In project planning, the project management team should define the resources needed which its utilization is one factor to be considered in measuring the success of projects. Main resources of a project have been provided by the author as; money, manpower, equipment, facilities, material, information or technology. Actually, the project manager does not control any of these resources directly, except perhaps money (i.e., the project budget). Resources are controlled by the line managers, functional managers, or, as they are often called, resources managers. (Kerzner, 2009)The responsibility of the project manager is to coordinate and to integrate across multiple, functional lines. Project managers must pay attention that the resources are adequate and scheduled to satisfy the needs for the project, not vice versa. The approach of strategic planning has been introduced by different researchers in project management. According to Kerzner, strategic planning in project management can include for provisions in the methodology for appropriate techniques for estimation, the creation of lessons learned in previous costing and perhaps the purchasing of historical databases of cost estimating. (Kerzner, 2002) In the research of Balducci et al., they stated that the members of the team from the Politecnico di Milano, who already had developed and understated strategic planning, recognized that "strategic project" could have an impact if it helped to get stakeholders and to re-think about the established agenda of project and investments.

Rwanda has had a decade of rapid growth, development and institutional transformation but poverty reduction remains a huge challenge. Despite high economic growth rates poverty has declined by only four percentage points for the rural population, from 60.4% in 2000 to 56.9% (the last recorded value) in 2006 whilst extreme poverty fell from 41.3% to 36.9% in the same period. Women, for reasons that will be explored in Section III, have a higher than average level of poverty and are particularly vulnerable to extreme poverty. Regarding socio-economic categories small-holders and agricultural laborers are most likely to suffer from food insecurity, and amongst them, households headed by women, illiterate, and households with will less than 0.3 ha are particularly vulnerable.

Kirehe Community Based Watershed Management Project (KWAMP) is a project owned by the Government of Rwanda and it has been co- financed by IFAD, WFP, DED and the Government of Rwanda. The overall objective of the project was the development of sustainable profitable small-scale commercial agriculture in Kirehe District. It aims to empower farming communities to become local planning and implementation partners, and to create a strong district administration providing key public services required for local economic development process. The total cost of the project was estimated at USD 55,973,020. It became effective on 30 April 2009, and is due for completion in June 2016. KWAMP has reached 71,472 households receiving project services of which 40,264 are direct beneficiaries via sustainable incremental income from farming and related economic activities in 18 watersheds.

2. STATEMENT OF THE PROBLEM

Over the last few decades, the uncertainty of the sustainability of projects has been significantly raised. A few decades ago the lack of well prepared project was considered as a serious problem in developing countries. In these countries, the emphasis of project preparation seems to be on assessing the financial and/ or economic viability of project rather than on assessing the project in its entirely. In many cases, the reasons of failure in development of projects seem to be related frequently on the planning aspects of projects (Noorbakhsh, 2004). The research study was used to assess the effect of project resource planning on sustainability of rural development projects in Rwanda and the case study is the Kirehe Community Based Watershed Management Project (KWAMP).

3. OBJECTIVES OF THE STUDY

The general objective of this research was to assess the effect of resource planning on sustainability of Kirehe Community Based Watershed Management Project.

3.1 Specific objectives:

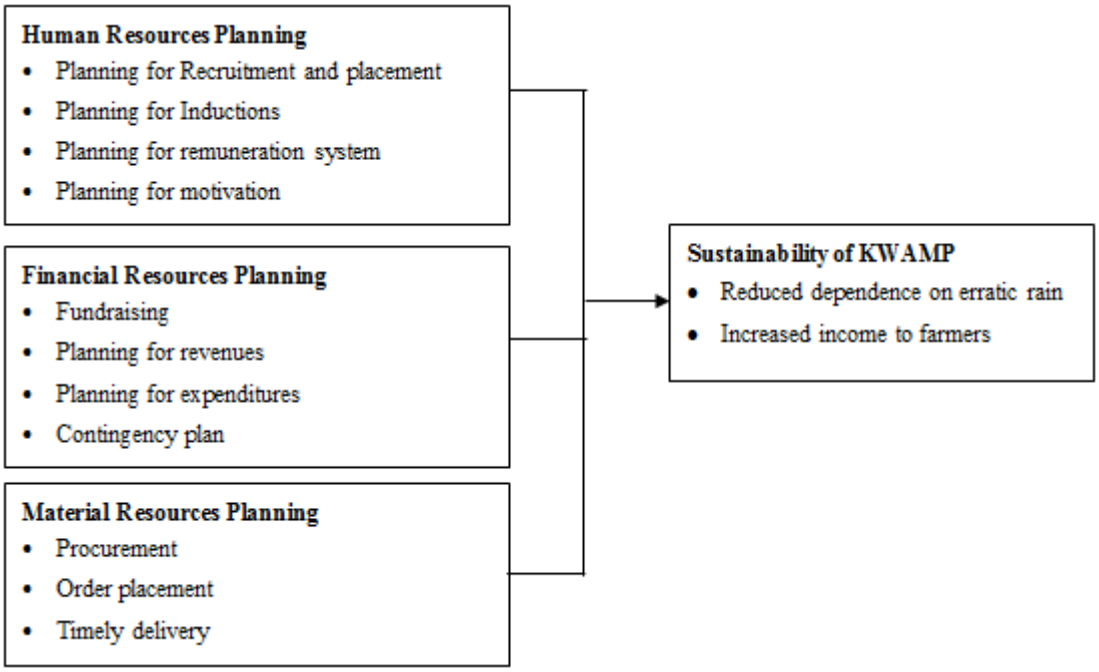
a) To determine the effects of human resource planning on the sustainability of Kirehe Community Based Watershed Management Project,
b) To assess the effects of financial resource planning on sustainability of Kirehe Community Based Watershed Management Project.
c) To identify the effects of material resource on sustainability of Kirehe Community Based Watershed Management Project.

3.2 Research questions:

a) What are the effects of human resource planning on the sustainability of Kirehe Community Based Watershed Management Project?
b) What is the effect of financial resource planning on sustainability of Kirehe Community Based Watershed Management Project?
c) What is the effect of material resource on sustainability of Kirehe Community Based Watershed Management Project?

4. CONCEPTUAL FRAMEWORK

Resource Planning:



5. RESEARCH METHODOLOGY

- **Research Design**: This study adopted a descriptive research design.

- **Target Population**: The geographic and temporal characteristics of the target population need to be delineated, as well as types of units being included. For this study the target population was 43 former employees of Kirehe Community Watershed Management Project.

- **Sample size:** During this research, as the target population is quite small in numbers, the researcher decided to adopt a census where all population was considered as sample size which means that all 43 employees of KWAMP Project were considered as respondents in this study.

- **Data processing and analysis**: In this study, the researcher relied on primary data and questionnaires were used to collect them. The questionnaires that are intended to be used in this study were made of both closed-ended and open-ended questions. During data collection; respondents read the questions, interpret what is expected and then write down the answers. Questionnaires were developed and distributed to 43 employees of KWAMP Project who were involved in the execution of this project. This was suitable because it was easier to collect the information required from the respondents. Questionnaires are very cost effective to other types of data collection instruments. Indeed, the answers from questionnaires are easy to analyze. The questionnaires were distributed to respondents by the researcher himself and then returned after being answered by respondents.

6. SUMMARY OF RESEARCH FINDINGS

Table 1: Descriptive Statistics on determination of the effects of human resource planning on the sustainability of Kirehe Community Based Watershed Management Project

Indicators	N	Mean	Std. Deviation
Recruitment and placement	43	1.60	.583
New recruited employees	43	1.63	.926
Remuneration system	43	1.98	.859
Effective employee motivation package	43	1.72	.591
Valid N (listwise)	43		

Source: Field Data (2018)

From the table 1, all statements are approximately equal to 2 the code of agree. This means that in general respondent agree on the effects of human resource planning, the standard deviation of all statements is above 0.5 meaning that respondents' answers on these statements were far different from the mean, in other words, their answers to the statement were heterogeneous. This means that respondents' views on the above statements were varied.

Table 2: Correlation between human resources planning and sustainability of KWAMP

Variable		HRP	Sustainability of KWAMP
HRP	Pearson Correlation	1	.609**
	Sig. (2-tailed)		.000
	N	43	43
Sustainability of KWAMP	Pearson Correlation	.609**	1
	Sig. (2-tailed)	.000	
	N	43	43

Source: Field Data (2018)

The findings in Table 2 revealed that the results of correlation between human resources planning and sustainability of KWAMP were at 0. 609 meaning that human resources planning affect sustainability on level of 60.9% which proves a significant relationship between human resources planning and sustainability of KWAMP. If the researcher considers the level of significance which is 0.05, there is therefore a significant relationship between them because their p-value (0.000) is statistically significant at 5% level of significance.

Table 3: Descriptive Statistics on assessment of the effects of financial resource planning on sustainability of Kirehe Community Based Watershed Management Project

Indicators	N	Mean	Std. Deviation
Mobilize and raise Funds accordingly	43	1.91	.750
Planned for revenues	43	1.74	.581
Planned for expenditures	43	1.81	.500
A contingency plan putted in place	43	1.58	.499
Valid N (listwise)	43		

Source: Field Data (2018)

From the table 3, all statements are approximately equal to 2 the code of agree. This means that in general respondent were agree on the effects of financial resource planning, the standard deviation of all statements is above 0.5 meaning that respondents' answers on these statements were far different from the mean, in other words, their answers to the statement were heterogeneous. This means that respondents' views on the above statements were varied.

Table 4: Correlation between financial resource planning and sustainability of KWAMP

Variable		FRM	Sustainability of KWAMP
FRM	Pearson Correlation	1	.567**
	Sig. (2-tailed)		.000
	N	43	43
Sustainability of KWAMP	Pearson Correlation	.567**	1
	Sig. (2-tailed)	.000	
	N	43	43

Source: Field Data (2018)

The findings in Table 4 revealed that the results of correlation between financial resources management and sustainability of KWAMP were at 0.567 meaning that financial resources planning at the level of 56.7% which prove a significant relationship between financial resources management and sustainability of KWAMP. If the researcher considers the level of significance which is 0.05, there is therefore a significant relationship between them because their p-value (0.000) is statistically significant at 5% level of significance.

Table 5: Descriptive Statistics on identification of the effects of material resource planning on sustainability of Kirehe Community Based Watershed Management Project

Indicators	N	Mean	Std. Deviation
Effective and timely procurement	43	1.53	.505
Timely and effective order placement	43	1.56	.502
Timely delivery of supplies	43	1.23	.480
Valid N (listwise)	43		

Source: Field Data (2018)

From Table 5, the mean values for effective and timely procurement and timely and effective order placement are respectively rounded off to 2 the code for agree and timely delivery of supplier mean value is respectively rounded off to 1 the code for strongly agree for the effect of material resource. The standard deviation of all statements is less than 0.5 meaning that respondents' answers on these statements were not far different from the mean; in other words, their answers to the statement were homogeneous.

Table 6: Correlation between material resource planning and sustainability of KWAMP

Variable		MRP	Sustainability of KWAMP
MRP	Pearson Correlation	1	.951**
	Sig. (2-tailed)		.000
	N	43	43
Sustainability of KWAMP	Pearson Correlation	.951**	1
	Sig. (2-tailed)	.000	
	N	43	43

Source: Field Data (2018)

The findings in Table 6 revealed that, the results of correlation between material resource planning and sustainability of KWAMP was at 0. 951 mean that material resource planning affects sustainability of KWAMP at the level of 95.1% which prove a significant relationship between material resource and sustainability of KWAMP. If the researcher considers the level of significance which is 0.05, there is therefore a significant relationship between them because their p-value (0.000) is statistically significant at 5% level of significance.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.953[a]	.908	.901	.155

Source: Field Data (2018)

a. Predictors: (Constant), Human resources planning, financial resources planning and Material resources planning

From the table 7 An $R^2 = 0.908$, indicates that 90.8% of Human resources planning,Financial resources planning and material resources planning can be explained by the sustainability of KWAMP leaving only 9.2% of the variation in the dependent variable being explained by the error-term or other variables other than project management.

Table 8: ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.249	3	3.083	128.385	.000[b]
Residual	.937	39	.024		
Total	10.186	42			

Predictors: (Constant), Human resources planning,financial resources management and Material resources planning

b. Dependent Variable: Sustainability of KWAMP

Source: Field Data (2018)

The table 8 shows that these predictors human resources planning, financial resources planning and material resources planning have an an effect on dependent variable which is ssustainability of KWAMP. This is statistically significant with a p-value (.000).

Table 9: Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.005	.081		.066	.948
Human resources planning	.055	.065	.065	.842	.405
financial resources management	.009	.064	.011	.142	.888
Material resources planning	.930	.063	.907	14.691	.000

a. Dependent Variable: Sustainability of KWAMP

Source: Field Data (2018)

The results indicate that Human resources planning, financial resources planning and material resources planning have statistically significant effect on sustainability of KWAMP with a positive coefficient of determination of 0. 953 (table) indicates that there is a strong positive correlation between human resources planning, financial resources planning and material resources planning with sustainability of KWAMP project. The coefficients of independent variables (HRP, FRM and MRP) β_1, β_2 *and* $\beta_3$are respectively 0. 055; 0. 009 and 0.930 with a statistically significant ($p = 0.00$). Therefore, the model equation derived is: $y = 0.005 + 0.055x_1 + 0.009x_2 + 0.930x_2 + e$. The positive coefficient further demonstrates that a 1% increase in the human resources planning attributed to 0.055% improvement in sustainability of KWAMP project the t-statistic value (0.842) indicates the effect is statistically significant at 95% confidence level. An increase of 1% financial resources management will increase sustainability of KWAMP project given by 0.009 % at the t-statistic value (0.142) indicates the effect is statistically significant at 95% confidence level while a coefficient demonstrates that a 1% increase material resources planning of 0.930 on sustainability of KWAMP project with a high t-statistic value (14.691) indicates the confidence level of 95% the effect is statistically significant. This demonstrates that sustainability of KWAMP project management exhibited in terms of Human resources planning, financial resources planning and material resources planning.

7. CONCLUSIONS AND RECOMMENDATIONS

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:

i. As the findings in revealed that the results of correlation between human resources planning and sustainability of KWAMP were at 0. 609 meaning that human resources planning affect sustainability on level of 60.9% which proves a significant relationship between human resources planning and sustainability of KWAMP. The researcher concludes a significant relationship between human resources planning and sustainability of KWAMP

ii. The researcher also concluded a positive and significant relationship between financial resources management and sustainability of KWAMP since the their results of correlation between them were at 0.567 meaning that financial resources planning at the level of 56.7% which prove a significant relationship between financial resources management and sustainability of KWAMP.

iii. Last but not least; the researcher concluded a positive and significant relationship between material resource and sustainability of KWAMP because the results of correlation between them were at 0. 951 mean that material resource planning affects sustainability of KWAMP at the level of 95.1% which prove a significant relationship between material resource and sustainability of KWAMP.

7.2 Recommendations:

After analysis and interpretation of data, the researcher came up with the following recommendations:

i. The project owners should effectively put much emphasis in planning human resources especially in planning for effective recruitment and placement. They should also make sure that the recruited employees are well inducted in the working team so as to ensure the project is working in a conducive environment

ii. The project managers and funders should always ensure that they have mobilize and raised enough financial resources in order to avoid the lack of financial means which in turns may lead to delay of project activities

iii. Finally, the researcher recommends to the project managers and their procurement staff to plan for effective and timely procurement, they should always make sure that the supplies are supplied within the right quantity, quality and time so as to ensure the smooth running of the project activities.

7.3 Areas for future studies:

Based on the findings of this study, the researcher suggests that future studies to be carried out in the following areas:

i. Factors affecting success of projects in Rwanda

ii. Effect of monitoring and evaluation practices on performance of projects and

iii. Effect of project team participation in elaboration of project charter on success of diverse projects.

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