

## **PROJECT MANAGEMENT PRACTICES AND PERFORMANCE OF AGRICULTURAL PROJECTS AT RWANDA DAIRY DEVELOPMENT PROJECT**

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### **ABSTRACT**

Rwanda's economy heavily relies on agriculture, with a significant portion of the population employed in this sector. Agriculture contributes approximately 25% to the country's total GDP. However, there are existing challenges in the performance of agricultural projects in Rwanda. Some projects face delays and budget overruns, while others yield low returns. The effectiveness of project management practices employed in these projects directly influences their performance. This study sought to examine the effect of project management practices on the performance of agricultural projects at Rwanda Dairy Development Project. Specifically, the study sought to examine the influence of project planning, project implementation, project monitoring, evaluation, and project leadership on performance of agricultural project. The study drew insights from classical managerial theories such as Scientific Management theory and the System theory of management, Performance theory. The study utilized a combination of descriptive and correlation research designs to comprehensively explore the relationship between project management practices and Agricultural project performance. The target population comprised 117 individuals from three distinct groups: Project district coordinators, Representatives from livestock cooperatives, and Leaders from the central level project. The mixed-methods approach was employed, incorporating both quantitative and qualitative data collection and analysis techniques. This study made using primary data collected using administered questionnaire and key informant interview, the target population was 117 respondents from MCCs representatives and project partners and implementers, the entire population in this study was used. Data analysis involved both descriptive and inferential statistical techniques using STATA version15. The results indicated that project planning has a positive significant effect on project performance. Furthermore, effective project implementation was found to enhance agricultural project performance. The study also revealed that project monitoring and evaluation significantly contribute to project performance. Additionally, project leadership was found to have a positive significant influence on the performance of agricultural projects. These imply that one unit increase of project planning, implementation, monitoring and evaluation and leadership would lead to an increase of 0.187, 0.185, 0.509, 0.308 units of project performance respectively. It is therefore, this study recommend that all project stakeholders need to be mobilized to understand the needs of project management practices to ensure the performance of project.

**Keywords:** Project planning, project implementation, project monitoring and evaluation, project leadership, and performance of agricultural project (Rwanda Dairy Development Project).

### **1.0 Introduction**

In recent years, there has been an increasing recognition of the significance of project management practices in various industries and sectors when it comes to the successful

implementation and execution of projects (Project Management Institute, 2017). This is particularly true in the agricultural sector, where effective project management plays a crucial role in the success of initiatives such as crop cultivation, livestock rearing, agribusiness development, and agricultural infrastructure projects (Leeuwis & van der Peet, 2008). These projects are vital for achieving food security, economic growth, and poverty reduction in both developed and developing countries (FAO, 2020).

The global demand for food is expected to rise significantly due to factors such as population growth, urbanization, and changing dietary patterns (FAO, 2019). To meet this demand sustainably, it is essential to efficiently implement and manage agricultural projects. In Africa, the agricultural sector is a major contributor to the continent's economy, providing employment opportunities and serving as a source of livelihood for many rural communities (Alders & Rigterink, 2018). However, the agricultural sector in Africa faces challenges such as limited access to modern farming techniques, inadequate infrastructure, and the impact of climate change, which hinder its growth (Koroma & Odera, 2019). Effective project management practices can help address these challenges and improve the performance of agricultural projects in the region.

Agricultural projects in East African countries encounter their own unique challenges and opportunities. Factors such as land fragmentation, inadequate irrigation systems, limited market access, and weak infrastructure significantly influence the success of agricultural projects in this region (Ertiro, 2020). Nevertheless, there have been successful projects in East Africa that have demonstrated sustainable practices and improved the livelihoods of farmers. These projects have placed emphasis on community engagement, capacity building, and market-oriented approaches (Johnson et al., 2017). For example, in Uganda, the government's focus on agriculture, improved access to inputs and credit facilities, and the promotion of value chains have had positive impacts on the performance of agricultural projects (Nisar et al., 2018). However, challenges persist in the sector, including limited market accessibility, post-harvest losses, and the effects of climate change (Gover et al., 2020). Similar efforts have been made in Tanzania, such as public-private partnerships, farmer-training programs, and improved agricultural policy frameworks, to address challenges like inadequate infrastructure and limited access to inputs and markets (World Bank, 2019; Government of Tanzania, 2018). In Kenya, practices like conservation agriculture, value addition, and diversification of agricultural activities have overcome challenges such as land degradation, limited access to credit, and low mechanization (Gachanja, 2019; Nzomo, 2017).

Rwanda stands out as a country that has achieved significant progress in the agricultural sector. Being a landlocked nation, Rwanda's economy is predominately agrarian, with farming activities engaging a majority of the population (Nkurunziza, 2020). Over the years, Rwanda has implemented various agricultural projects with the goal of transforming the sector and improving food security (Jiménez-Benítez et al., 2021). These initiatives have resulted in increased productivity, improved agricultural techniques, and reduced poverty levels (Ministry of Agriculture and Animal Resources Rwanda, 2020). However, the agricultural sector in Rwanda still faces challenges in project management practices (Kimenyi, 2016). These challenges include the lack of skilled project managers with expertise in both agriculture and project management, coordination of diverse stakeholders, financial management, logistical issues, and resource accessibility (Kimenyi, 2016; Twizeyimana et al., 2018). Enhancing project management practices is crucial to improving the success rate and impact of agricultural projects, promoting sustainable agricultural practices, and supporting Rwanda's socio-economic development goals.

Various studies have highlighted the correlation between effective project management practices and the success of agricultural projects. Research conducted in Bulgaria (Kuneva et al., 2016), the United States (Eller, 2013), and Latin America (Villarroel et al., 2010) has demonstrated the positive impact of efficient project management practices on the

performance and outcomes of agricultural projects. Key success factors include thorough planning, effective risk management, stakeholder involvement, clear objectives, well-defined timelines, efficient resource allocation, and project coordination. In conclusion, project management practices play a vital role in the successful implementation and execution of agricultural projects, which are crucial for ensuring food security, economic growth, and poverty reduction.

### **1.1 Problem Statement**

In order to ensure successful implementation of agricultural projects, particularly in Rwanda where agriculture plays a significant role in the economy, it is crucial to adopt effective project management practices. However, agricultural projects in Rwanda face numerous challenges in project management, resulting in a high failure rate for projects and businesses. According to the Economic Policy Research Network (EPRN, 2021), approximately 50% of started businesses in Rwanda do not survive beyond five years.

Insufficient utilization of project management techniques has been identified by the National Industrial Research and Development Agency (NIRDA, 2017) as a key factor detrimental to meeting project objectives, exceeding budgets, and causing project delays. Additionally, the growth rate of the agricultural sector in Rwanda has fallen short of the targeted 8.5% under Vision 2020, achieving only 4.1% growth. This can be attributed to multiple factors, including the lack of professionalization among farmers. Other challenges include a scarcity of skilled project managers with expertise in both agriculture and project management, difficulties in coordinating diverse stakeholders, financial management issues, logistical constraints, and limited access to resources (Nkurunziza, 2020). These obstacles greatly impede the efficient execution and impact of agricultural projects, ultimately hindering the sector's growth and sustainable practices.

Therefore, it is crucial to evaluate and improve the existing project management practices utilized in agricultural projects, with a specific focus on the Rwanda dairy development project. This evaluation aims to enhance the success rate of projects, maximize their economic impact, and contribute to sustainable agricultural practices in Rwanda

### **1.2 Research Objective**

The primary aim of this study was to explore the effect of project management practices on the performance of agriculture projects, with a specific focus on the Rwanda Dairy Development Project (RDDP). The study sought to accomplish four specific objectives: firstly, to investigate the effect of project planning on the overall performance of agriculture projects; secondly, to examine the influence of project implementation on the success of agriculture projects; thirdly, to investigate the effect of project monitoring and evaluation on the performance of agriculture projects; and finally, to examine the effect of project leadership on the performance of agriculture projects. By investigating these key aspects, this study aimed to gain a comprehensive understanding of the relationship between project management practices and the overall success of agriculture projects, particularly within the context of the RDDP.

### **1.3 The hypotheses for this Research are as follows:**

**H<sub>01</sub>** proposes that there is no significant influence of project planning on the performance of the agriculture project called RDDP. In other words, the study suggests that the planning process does not have an effect on how well the project performs.

**H<sub>02</sub>** posits that the performance of the agriculture project, RDDP, is not significantly influenced by the project's implementation. This hypothesis suggests that the actual execution of the project does not play a significant role in determining its success or failure.

**H<sub>03</sub>** suggests that there is no significant influence of project monitoring and evaluation on the performance of the agriculture project, RDDP. This hypothesis implies that the process of monitoring and evaluating the project's progress does not affect its overall performance.

**H<sub>04</sub>** asserts that the performance of the agriculture project, RDDP, is not significantly affected by the project leadership. This hypothesis proposes that the leadership of the project does not have a substantial effect on its success or failure.

## **2. Literature Review**

### **2.1 Theoretical Review**

In the theoretical review, various management theories were discussed, including scientific management theory, system theory, and performance theory. Management theory focuses on the principles and foundations that guide managerial actions, providing a framework for effective decision-making and actions. Scientific management theory, introduced by Frederick Taylor, emphasizes the application of scientific principles to optimize productivity and improve project performance (Kumar & Willie, 2019). It highlights the importance of efficient planning, effective leadership, and continuous monitoring and evaluation. However, it has limitations in its narrow focus on efficiency and productivity, overlooking other important factors and the broader social and environmental impacts of agricultural practices (Saini et al., 2016).

System theory, on the other hand, explains the interconnectedness between different elements within a system and can be applied to understand the factors that influence project performance in agricultural projects. It emphasizes the interdependence of subsystems and the holistic evaluation of project dynamics. While system theory has limitations in oversimplifying the complexity of subsystems and lacking a clear framework for prioritizing factors, it has been useful in identifying critical factors and evaluating the impact of specific managerial practices on project performance (Serrano-Cinca et al., 2019; Wang et al., 2018).

Performance theory recognizes that each project is unique and requires competent resource mobilization for optimal performance. It highlights the influence of competence, context, and tailored practices on project performance. Proper planning and resource allocation, effective leadership, and continuous monitoring and evaluation are key components of performance theory that contribute to the efficiency, productivity, and success of agricultural projects (Acharya & Sah, 2020; Kumar & Sharma, 2019; Agrawal & Singh, 2020).

### **2.2 Empirical review.**

Researchers have conducted a series of studies on project management practices and their impact on project performance. These studies have examined various aspects such as project planning, implementation, monitoring and evaluation, and leadership. In a study conducted by Remmy (2018) in Kenya, it was found that project planning, implementation, monitoring and evaluation, and communication significantly influence the performance of agricultural projects, with environmental factors playing a moderating role. Another study by Jean et al. (2021) in Rwanda confirmed a positive relationship between project planning and project performance, with project environmental enablers serving as a moderating variable. Umulisa et al. (2015) conducted a study in Rwanda and highlighted the importance of effective resource planning practices for successful project performance. Similarly, Kamau et al. (2023) emphasized the crucial role of project team planning in enhancing the success of floricultural projects in Kenya. The PMBOK (2014) examined the impact of cost planning on project performance and stressed the importance of maintaining project budgets and tracking expenditures.

Research has also focused on project implementation in relation to project performance. Kiragu (2015) found that the implementation of project design strategies, monitoring and evaluation strategies, resource management strategies, and stakeholder engagement strategies

positively correlate with performance in community-based projects. Eugenia and Aimee (2022) discovered that resource acquisition, organization, risk mitigation, and project monitoring and evaluation directly contribute to project performance. Christen and Pearce (2005) highlighted the influence of government bureaucracy on project implementation in agricultural projects.

The relationship between project monitoring and evaluation and project performance has been explored as well. Muller (2010) emphasized the importance of monitoring and evaluation in development projects but identified weaknesses in the design and implementation of M&E systems. Mugo et al. (2016) revealed that M&E planning positively affects the sustainability of food crop projects. Waithera and Wanyoike (2015) identified staff training as a significant factor in monitoring and evaluation performance.

In addition, several studies have investigated the impact of project leadership on project performance. Meng and Gallagher (2012) found a positive correlation between leadership factors and project performance. Theophanus (2020) identified a strong and positive connection between leadership components and project performance. Mary (2018) discovered a positive correlation between leadership and project performance, with project management control having the greatest effect. Ghafoor and Munir (2016) also found a positive correlation between project manager leadership, teamwork, and project success.

These studies provide valuable insights into the importance of project management practices such as planning, implementation, monitoring and evaluation, and leadership in enhancing project performance across various contexts. However, it is important to acknowledge the limitations of these studies, such as their narrow scopes, the exclusion of external factors, and the need for further research. Researchers recommend prioritizing effective planning, resource allocation, and monitoring and evaluation practices, as well as continuously adapting project management practices to enhance project performance (Remmy, 2018; Umulisa et al., 2015; Mary, 2018; Ghafoor & Munir, 2016)

### **3. Research Methodology**

The study utilized a combination of descriptive and correlation research designs to comprehensively explore the relationship between project management practices and Agricultural project performance. The target population comprised 117 individuals from three distinct groups: Project district coordinators, Representatives from livestock cooperatives, and Leaders from the central level project. To ensure robust data collection, the study meticulously employed a survey and carefully selected questionnaires and guided interviews as data collection instruments. The research instrument's validity was upheld through an exclusive distribution to expert respondents in the study area, ensuring the reliability and trustworthiness of the data. For data management and analysis, the researchers utilized the highly regarded Stata software version 15.0, enabling a meticulous investigation. The study elegantly integrated quantitative and qualitative approaches for analysis, employing inferential statistics such as multiple regression analysis to explore the effect of project management practices on project performance. The p-value of T-tests was also judiciously employed to ascertain the degree of association between variables. Additionally, the study prudently performed diagnostics tests, such as Multicollinearity and normality tests, to validate the data and the resulting estimations. Simultaneously, the qualitative data obtained via guided interviews were subjected to a meticulous thematic analysis, enabling the researchers to delve into underlying tendencies and patterns within responses by grouping them into respective themes. Overall, the study adeptly combines various research methodologies and analytical tools to holistically examine the intricate interplay between project management practices and project performance, enriching the understanding of this complex subject matter.

#### 4. Results and Discussion

The aim of this section is to present the findings and analysis related to the effect of project management practices on agricultural project performance. More specifically, it focuses on the responses given by participants regarding project planning, implementation, monitoring and evaluation, leadership, and project performance. In addition, this section includes correlation tests, diagnostic tests for variables, and regression analysis to assess how project planning, implementation, monitoring and evaluation, and leadership influence the performance of agricultural projects.

##### 4.1 Project Planning and Agricultural project performance

The study focused on examining how project management practices can affect the success of agricultural projects, with a particular emphasis on the relationship between the Rwanda Daily Development Project and milk collection centers. To assess the planning aspect of these projects, a questionnaire was created with different statements. Participants were asked to rate the project planning practices on a scale of 1 to 5. Higher scores indicated a higher level of implementation, with 5 representing a very great extent, 4 indicating a great extent, 3 showing a moderate extent, 2 suggesting a low extent, and 1 representing a very low extent.

**Table 4.1: Project planning Practices and Project Performance**

Statement	Very low extent	Low extent	mode rate	Great extent	Very great extent	Me an	Std
The MCC or cooperative has a written plan (business or strategic) which has clear objectives	0%	0%	4.26%	17.0%	78.72%	4.74	0.52
The written plan shows when farming activities are all performed.	0%	1.06%	1.06%	42.5%	55.32%	4.52	0.58
The plan also shows how much money is allocated on every farm activity set	0%	0%	9.57%	32.9%	57.45%	4.47	0.66
The project instructors who train farmers have clear days and time allocated to visit and train farmers	0%	0%	8.51%	25.5%	65.96%	4.57	0.64
<b>Aggregate mean and Standard Deviation</b>						<b>4.57</b>	<b>0.39</b>

From the table 4.1, it can be observed that the majority of respondents (78.72%) reported a very great extent of the MCC or cooperative having a written plan with clear objectives, indicating that project planning has a significant effect on project performance. Similarly, for the statement regarding when farming activities are performed, 55.32% of respondents reported a very great extent, indicating that having a written plan that shows the timing of farming activities is important for project performance.

Regarding the allocation of money on every farm activity, while the majority of respondents (57.45%) reported a very great extent, there is a slightly higher variability in responses compared to the previous statements, as reflected by a standard deviation of 0.66. This suggests that there may be some diversity in perceptions regarding the impact of budget allocation on project performance. Lastly, for the statement about project instructors visiting and training farmers, the majority of respondents (65.96%) reported a very great extent of clear days and time allocations. This indicates that having a well-defined schedule for instructor visits and training sessions positively influences project performance.

Overall, the aggregate mean scores of 4.57 indicates a high extent of project planning's positive effect on project performance, with a relatively low standard deviation of 0.39 suggesting minimal variability in the responses received. These findings align with the work of Thompson et al. (2007), which emphasizes that an organization's strategy serves as the

management's action plan for running the business and conducting operations, contributing significantly to project performance. Additionally, Whittaker (1999) states that project planning plays a crucial role in project performance, requiring the identification of key issues during the planning phase and implementing corrective actions for improvement.

#### 4. 2 Project implementation and Agricultural project performance

The questionnaire included several statements to assess the level of implementation of the selected projects. Respondents were asked to rate the characteristics of project implementation practices on a scale of 1 to 5. A rating of 5 indicated a very great extent of implementation, 4 represented a great extent, 3 indicated a moderate extent, 2 reflected a low extent, and 1 indicated a very low extent.

**Table 4.2: Project Implementation Practices and Project Performance**

Statement	Very low extent	Low extent	mode rate	Great extent	Very great extent	Me an	Std
The required resources availed in advance just before farming starts	1.06%	0%	0%	58.51%	40.43%	4.3	0.6
The animal husbandry duties like feeding, watering, herding, grazing, milking, castrating, branding, de- breaking, weighing, catching, and loading animalshave been done correctly	0%	1.06%	29.7%	44.68%	24.47%	3.9	0.76
The project members are trained by managers or supervisors on correct applications of farming skills (artificial insemination, animal feeding, before the start of the project)	0%	0%	1.06%	13.83%	85.11%	4.8	0.39
The farm resources are supplied by management to members in their respective groups depending on the size of their farms	1.06%	0%	0%	23.4%	75.5%	4.7	0.57
<b>Aggregate mean and Standard Deviation</b>						<b>4.46</b>	<b>0.39</b>

The results presented in 4.2 indicates that a significant portion of respondents (58.51%) perceived a great extent of availability of required resources just before farming starts, suggesting effective resource management during project implementation and the results also show that a significant portion of respondents (44.68%) reported a great extent of correctly performing animal husbandry duties. However, a notable percentage (29.79%) rated the extent of this aspect as moderate. This suggests that further attention and improvement may be needed in executing these duties effectively to enhance project performance. The majority of respondents (85.11%) reported a very great extent of receiving training on correct farming skills from managers or supervisors. This highlights the importance of such training in positively affecting project performance.

A considerable proportion of participants (75.5%) indicated a very great extent of management supplying farm resources based on the size of individual farms. This suggests that allocating resources accordingly contributes significantly to project performance. Overall, the aggregate mean scores of 4.46 indicates a generally high extent of project implementation's positive effect on project performance. Additionally, the relatively low standard deviation of 0.39 implies minimal variability in the responses, enhancing the reliability of these findings. These findings are consistent with Monterry's study (2012),

which highlights the importance of project implementation in project performance. The study emphasizes that poor project performance can result from inadequate adherence to the implementation plan established by the project.

### 4. 3 Project monitoring and evaluation practices and Agricultural project performance

The respondents were asked to rate the project monitoring and evaluation practices characteristics on a Likert scale of 1-5, where 5 represents Very great extent, 4= Great extent, 3= Moderate extent, 2= Low extent, 1= Very low extent. The results are provided in the table 4.4 below.

**Table 4.3: Project monitoring and evaluation Practices and Project Performance**

Statement	Very low extent	Low extent	moderate	Great extent	Very great extent	Mean	Std
The project is checked regularly by managers	0%	0%	4.26%	22.34%	73.4%	4.69	0.54
There are clear records on farming activities kept in the MCC project	0%	1.06%	29.79%	44.68%	24.4%	4.79	0.42
The project coordinators regularly report the progress of the project to senior management	0%	0%	11.7%	24.47%	63.8%	4.52	0.69
There are always ways in which the management saves on expenditure e.g. bringing management offices closer to farmers	0%	1.06%	4.26%	61.70%	32.9%	4.26	0.58
<b>Aggregate mean and Standard Deviation</b>						<b>4.56</b>	<b>0.30</b>

The data in table 4.3 reveals that a significant majority of respondents (73.4%) reported that the project is checked regularly by managers to a very great extent. This indicates that regular monitoring plays a crucial role in project performance. The findings also show that a considerable portion of participants (44.68%) reported a great extent of having clear records on farming activities in the MCC project. However, there is room for improvement as roughly one-third of respondents (29.79%) rated this aspect as moderate. Ensuring comprehensive and accurate records is vital for effective monitoring and evaluation.

The data suggests that the majority of respondents (63.83%) reported a very great extent of project coordinators regularly reporting project progress to senior management. However, there is still scope for improvement as a notable percentage (11.7%) rated this aspect as moderate. Effective communication and reporting are vital for project success. The data indicates that a significant proportion of participants (61.7%) reported a great extent of management finding ways to save on expenditures, such as bringing management offices closer to farmers. This suggests that efficient resource allocation contributes positively to project performance.

Overall, the aggregate mean scores of 4.56 suggests a high extent of monitoring and evaluation has positive effect on project performance. The relatively low standard deviation of 0.30 indicates consistent responses across the participants, adding credibility to these findings. This finding agreed with Maalim and Kisimbii, (2017) stated that M&E offers a crucial mechanism for how any project functions, activities may be measured, and how it can aid in the accomplishment of project goals and, ultimately, the achievement of those goals, which ultimately result in the successful performance of the project.



#### 4.4 Project leadership and Agricultural project performance

The respondents were asked to rate the project leadership practices characteristics on a Likert scale of 1-5, where five represents Very great extent, 4= Great extent, 3= Moderate extent, 2= Low extent, 1= Very low extent. The results are provided in table 4.5 below.

**Table 4.4: Project leadership Practices and Project Performance**

Statement	Very low extent	Low extent	moderate	Great extent	Very great extent	Mean	Std
Project leadership within the MCC has Improved due to use of human resource procedure Manuel	1.06%	0%	0%	11.7%	87.2%	4.84	0.51
Communicating cooperatives or MCC members with the mcc plans leads them to the objective's achievement contribution	0%	0%	1.06%	35.1%	63.8%	4.62	0.5
Stakeholders management plans accelerate the MCC objectives achievements	1.06%	0%	4.26%	56.3%	38.3%	4.3	0.65
The MCC and its stakeholders have the scheduled organized meetings	1.06%	0%	9.57%	74.4%	14.8%	4.02	0.58
<b>Aggregate mean and Standard Deviation</b>						<b>4.44</b>	<b>0.41</b>

The results from table 4.4 indicate that a significant majority of respondents reported a high level of improvement in project leadership within the MCC due to the use of the human resource procedure manual. This suggests that effective leadership practices, supported by clear procedures and guidelines, positively contribute to project performance. Additionally, a majority of participants reported a high level of achievement from communicating and engaging with stakeholders. This emphasizes the importance of effective communication and stakeholder engagement in driving project objectives.

Furthermore, the results indicate that effective stakeholder management is crucial for accelerating MCC objectives achievements, with a majority of respondents reporting a high level of success in this aspect. However, it is worth noting that a small proportion rated this aspect as moderate. Regular and structured meetings between the MCC and stakeholders were also reported to have a positive impact on project performance by a majority of participants, although a noticeable proportion rated this aspect as moderate.

Overall, the findings highlight the importance of project leadership, communication, stakeholder management, and regular meetings for achieving project success. The results are consistent across participants and suggest that these factors are reliable indicators of project performance. The research also suggests the need for flexibility in leadership approaches, as successful project managers leverage different styles and behaviors in different circumstances

#### 4.5 Project performance ratings

The respondents were asked to rate the agriculture project performance characteristics on a Likert scale of 1-5, where 5= Very great extent; 4 Great extent; 3= Moderate extent; 2= Low extent and 1=Very low extent. The percentage means and standard deviations for the variable were computed and presented as shown in Table 4.5

**Table 4.5 Project performance ratings**

Statement	Very low extent	Low extent	mode rate	Great extent	Very great extent	Mean	Std
The quantity of production(milk)from the project	1.06%	0%	0%	11.70%	87.2%	4.84	0.51

intervention has increased compared to ordinary farming.								
The quality of milk after RDDP intervention has increased compare to previous time.	0%	0%	1.06%	0%	98.94%	4.97	0.20	
RDDP scope of activities to the MCC has been covered.	1.06%	0%	0%	48.94%	50%	4.46	0.61	
The budget allocated to the work of the project has been used as planned	1.06%	0%	1.06%	70.21%	27.6%	4.24	0.52	
The projects activities done in partnership with RDDP get completed in time as Planned	1.06%	0%	13.8%	56.38	28.7%	4.11	0.71	
<b>Aggregate mean and Standard Deviation</b>						<b>4.5</b>	<b>0.38</b>	

Findings in table 4.5 illustrates that the majority of respondents (87.23%) perceived a very great extent of increase in milk production compared to ordinary farming due to the project intervention. Also, It is evident that almost all respondents (98.94%) perceived a very great extent of improvement in the quality of milk after the RDDP intervention compared to previous times and nearly half of the respondents (50%) believe that RDDP scope of activities to the MCC have been covered to a very great extent in the year 2019. Most respondents (70.21%) reported that the budget allocated to the project has been used as planned, indicating effective financial management.

Further, more than half of the respondents (56.38%) stated that activities done in partnership with RDDP are completed in time as planned, although there is some variation in responses. Overall, the aggregate mean of 4.5 and standard deviation of 0.38 suggest a generally positive perception of project performance across all statements. The majority of respondents indicated significant improvements in milk production quantity, milk quality, and accomplishment of RDDP scope of activities at MCC. However, there is some variability in perceptions regarding budget utilization and project completion in partnership with RDDP. These findings align with the conclusions of Kress (2014), who states that the primary goal of project management is to fulfill or even surpass the sponsor's expectations. According to the study, these expectations can generally be categorized into three groups: achieving desired outcomes with minimal errors, achieving desired outcomes within the allocated budget and schedule, and achieving desired outcomes within the expected time frame.

## 4.6 Data diagnostic test

### 4.6.1 Data normality test

The Shapiro-Wilk test was used in the study to assess for normality. The data is supposed to be normally distributed when  $p > 0.05$ . The null hypothesis of the study is that data are normal distributed. The null hypothesis is therefore rejected and there is evidence that the tested data are not normally distributed since the p value is less than the selected alpha of 5%. Table 4.6 displays the findings for the study's normalcy test.

**Table 4.6: Test for normality of the Distribution (Shapiro-Wilk W test for normal data)**

Variable	Obs	W	V	z	Prob>z
PPL	94	0.483	40.554	8.186	0.000
PPIM	94	0.896	8.191	4.649	0.000
PPME	94	0.678	25.224	7.136	0.000
PPLD	94	0.863	10.750	5.250	0.000
PPE	94	0.691	24.256	7.050	0.000

#### 4.6.2 Multicollinearity test

Multicollinearity in regression analysis occurs when two or more predictor variables are highly correlated to each other, such that they do not provide unique or independent information in the regression model. If the degree of correlation is high enough between variables, it can cause problems when fitting and interpreting the regression model. It is therefore, this study sought to investigate whether two or more independent variables have a high correlation with each other. The findings were presented in Table 4.7 below.

**Table 4.7 Multicollinearity test**

Variables	VIF	1/VIF
Project Monitoring and Evaluation practices	3.421	.292
Project Planning practices	2.706	.37
Project implementation practices	2.07	.483
Project Leadership practices	2.001	.5
<b>Mean VIF</b>	2.549	.

Multicollinearity will exist among the predictors in the regression model if VIF value is between 5 and 10; if VIF is greater than 10, the regression coefficients are only tentatively calculated in the presence of multicollinearity (Belsley, 1991). The findings in table 4.7 above show that the variance of inflation (VIF) values were below 5 which implies that there was no possibility of multicollinearity between variables thus regression analysis could be done to show the relationships between the dependent and independent variables.

#### 4.7 Inferential statistics

##### 4.7.1 Correlational analysis

Pearson's correlation, a test statistic that quantifies the statistical link or association between two continuous variables, was utilized in the study the range of coefficient values is +1 to -1, with +1 indicating a perfect positive association, -1 indicating a perfect negative relationship, and 0 indicating no relationship. The table 4.8 below, indicate extent of correlation between four independent variable and performance of agriculture project in Rwanda a case of Rwanda dairy development project listed in 13 districts. From the study findings in table 4.8, performance of agriculture projects and project planning had a significant positive correlation as shown by a correlation ( $r=0.769$ ,  $p=0.000$ ). It was also clear that there was a positive correlation between performance of agriculture projects and project implementation with ( $r=0.760$ ,  $p=0.000$ ) and significant positive correlation between project monitoring and evaluation, and project Performance ( $r=0.876$ ,  $p=0.000$ ). Besides, results also shows that there is significant positive correlation between leadership and performance of agriculture projects ( $r=-0.790$ ,  $p=0.000$ ).

**Table 4.8: Correlations Matrix**

Variables	(1)	(2)	(3)	(4)	(5)
(1) PPE	1.000				
(2) PPL	0.769*	1.000			
	(0.000)				
(3) PPIM	0.760*	0.533*	1.000		
	(0.000)	(0.000)			
(4) PPME	0.876*	0.791*	0.620*	1.000	
	(0.000)	(0.000)	(0.000)		
(5) PPLD	0.790*	0.468*	0.659*	0.606*	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

##### 4.7.2 Regression analysis

Regression analysis is a statistical technique for determining the relationship between two or more quantitative variables: a dependent variable whose value must be predicted and an independent or explanatory variable (or variables) about which knowledge exists. A graph or, more commonly, an equation can be used to show the relationship between the variables. The

study sought to determine the fit of the regression equation using the coefficient of determination between the overall independent variables and project performance. Coefficient of determination explains the degree to which changes in the dependent variable will influence change in the independent variables. In this case how project performance will be affected by the project management functions. Model summary' table, provides information about the regression line's ability to account for the total variation in the dependent variable.

**Table4.9. Regression for the effect of managerial practices on Agricultural Project performance**

PPE	Coef.	St. Err.	t-value	p-value	[95% Conf	Interval]	Sig
<b>PPL</b>	.187	.051	3.64	0.000	.085	.289	***
<b>PPIM</b>	.185	.045	4.07	0.000	.094	.275	***
<b>PPME</b>	.509	.074	6.87	0.000	.362	.657	***
<b>PPLD</b>	.308	.043	7.24	0.000	.224	.393	***
<b>Constant</b>	-.849	.187	-4.53	0.000	-1.222	-.477	***
Mean dependent var	4.530		SD dependent var		0.387		
Adj_R-squared	0.9041		Number of obs		94		
F-test	220.161		Prob > F		0.000		
Akaike crit. (AIC)	-127.434		Bayesian crit. (BIC)		-114.718		

\*\*\*  $p < .01$ , \*\*  $p < .05$ , \*  $p < .1$

The results in Table 4.9 indicate that the adjusted R- squared was 0.9041 meaning that the independent variables jointly explain 90.41 percent of the variations in the dependent variable. The F statistic is 220.161 with a corresponding P value of 0.000 which implies that the regression model is significant ( $P < 0.05$ ). This is quite good indication that project planning, project implementation, project leadership, project monitoring and evaluation increases project's performance.

From the result illustrated in table 4.9 also shows all the four project of project management practices project planning, project implementation, project leadership, and project monitoring and evaluation were positively related to project performance and the regression analysis indicated that an increase in each of them would result in an increase in project performance.

#### 4.7.2.1 Interpretation and discussion of findings

The first objective this research was investigates how project planning affects an agriculture project's performance Rwanda Dairy Development Project. Null hypothesis was stated as follow:  $H_{01}$ : There is no significant influence of project planning on performance of agriculture project, Rwanda Dairy Development Project. The results in Table 4.9 show the value of the coefficient of project planning was 0.187 while the p value is 0.000. Therefore at 5% level significance meaning the null hypothesis was rejected implying that project planning practices have a significant and positive relationship with project performance and also the results showed that holding everything else in the model constant, a unit change in project planning practices leads to 0.187 units change in on performance of agricultural projects at Rwanda dairy development project. This is because a good planning conserves resources, prevents wasted effort, and saves time and money, prevents small problems from becoming big problem, it establishes a solid foundation for the remaining managerial functions. The findings of this research agreed with study's findings of Remy (2018) and Jean et al. (2021) found that project planning influences performance of agriculture projects.

The second objective this research stood to examine how project implementation influence on the performance of agriculture project Rwanda Dairy Development Project. Null hypothesis was stated as follow:  $H_{02}$ : There is no statistical influence of project implementation on performance of agriculture project, Rwanda Dairy Development Project. From the findings in Table 4.9, the null hypothesis was rejected at 5% level which indicate that Project

implementation variable is significantly and positively affect the agriculture project 's performance of in Rwanda ( $\beta = 0.185$ ,  $p < 0.000$ ). This implies that holding everything else in the model constant, a unit change in project implementation variable leads to 0.185 units change in on performance of agricultural projects at Rwanda dairy development project.this is because project implementation tends to help the management of the project to coordinate resources and measuring performance to ensure the project remains within its expected scope and budget. The results of this study are consistent with a previous research conducted by Evalued (2013); Kiragu (2015), Gamariel et al.,(2022) in their studies confirmed that project implementation affect project performance positively and indicated that implementing a project entails carrying out the tasks listed in the application form with the intention of achieving the project's goals and producing the intended outcomes.

The third objective this research was to find out how the project monitoring and evaluation influence the performance of agriculture project Rwanda Dairy Development Project. Null hypothesis was stated as follow:  $H_{03}$ : There is no statistical influence of project monitoring and evaluation on performance of agriculture project, Rwanda Dairy Development Project. The results in table 4.9, show that the coefficient of project monitoring and evaluation variable found to be positive 0.509 and statistically significant at 5% level means that the null hypothesis was rejected. This infer that, for one unit increases in project monitoring and evaluation influence variable leads to 0.509 units increases in the performance of agriculture project. This could be because project monitoring and evaluation provides a vital mechanism of how any project works and activities can be measured and how it can help to the achievement of project objectives and ultimate attainment of goals which in the end lead to an effective performance of an organization (Maalim & Kisimbii, 2017). The finding of the study agreed with the findings in studies by Morgan et al. (2013); Waithera and Wanyoike (2015); Umulisa et al. (2015) in their findings confirmed strong positive effect of monitoring and evaluation on agricultural projects' performance.

The Fourth objective of the study was to determine the effect of project leadership on the performance of agriculture project Rwanda Dairy Development Project. Null hypothesis was stated as follow:  $H_{04}$ : The performance of the agriculture project, RDDP, is not significantly affected by the project leadership. From the research findings in Table 4.9 show the value of the coefficient of project leadership was 0.308 and its p value is 0.000. Therefore at 5% significance level which indicating that the null hypothesis was rejected implying that project leadership practices have a significant positive relationship with project performance. This implies that that holding everything else in the model constant, a unit change in project leadership variables leads to 0.308 units change in on performance of agricultural projects at Rwanda dairy development project(RDDP). The positive relationship is because to leadership helps in providing guidelines to projects 'employees, managing them efficiently and work with them to understand their work nature and remove their problems. Arrange training for them to understand the work, helpful to achieve project goals and know about new procedures and technology used in work (Jing & Avery, 2011). This result is consistent with results from studies carried out by Meng & Gallagher (2012); Theophanus (2020) and Mary (2018) whose studies confirmed a positive and strong connection concerning leadership components and management functions on project performance.

#### **4.8 Qualitative Analysis**

Thematic qualitative analysis of the provided information reveals several key themes related to project management practices and factors influencing project performance. First and foremost, respondents unanimously agreed that proper planning, implementation, monitoring and evaluation, and project leadership (coordination) are the project management practices that contribute to successful performance. Planning, in particular, was emphasized as essential for clarifying project objectives, scope, budgeting, and time allocation. This

comprehensive understanding serves as a guide for the rest of the project management practices, ensuring a clear roadmap for success.

In terms of implementation practices, the consensus among respondents was that the timely execution of planned activities is instrumental in achieving project success. However, it was noted that this is contingent upon the availability of resources. Only when resources are readily available can the execution of planned activities occur promptly and result in the wellness of project performance. Monitoring and evaluation practices also play a critical role in project performance. Regular check-ins through various means such as weekly, monthly, quarterly, and field visits enable project stakeholders to track progress, identify deviations, and address challenges promptly. By doing so, necessary corrections can be made, ultimately improving the overall performance of the project.

Respondents also highlighted the vital role of project leadership in ensuring project success. Leaders are responsible for coordinating project activities from start to finish, ensuring adherence to procedural guidelines at every stage of the project. Their involvement provides the necessary oversight and guidance to maintain project performance. Interestingly, when asked about the management practices that have the most influence on project performance, respondents were divided. Half believed that project planning is the most influential factor, while the other half leaned towards project coordination. This indicates the importance of both aspects in maintaining a project's success.

Additionally, the contributions of government and other stakeholders were acknowledged as critical to project performance. Government involvement, especially in projects funded by international donors, is crucial for following up on budget execution and ensuring timely completion of planned activities. Stakeholders, such as service providers, were also noted to play a role in project implementation, helping to accelerate project activities.

In terms of performance indicators, respondents focused on three key factors. Firstly, the scope of the project is deemed a crucial indicator of success or failure. Failure is indicated if the project's designed scope is not adequately covered, while the successful completion of objectives reflects project success. Secondly, the budget or cost of the project plays a significant role. A project is considered successful if the budget is fully utilized within the planned time, while underused budget coupled with unmet objectives indicates failure. Lastly, timely completion is another essential indicator. If targets are achieved according to the planned timeline, and budgets are used as intended, it is seen as a positive performance indicator.

Despite the positive aspects and practices outlined, challenges in project management were also identified. Respondents shared common challenges faced during project implementation, such as delays in project non-objection, which subsequently resulted in delays in essential processes like MOU preparation, contract signing, and ultimately led to non-budget execution. These delays in turn affected project completion time and overall performance. Another general challenge highlighted was the failure of some project designers to conduct proper needs assessment among beneficiaries, leading to overlapping efforts and the misuse of resources without yielding substantial results.

In light of the challenges faced, respondents provided recommendations for project designers and implementers to enhance project performance. Firstly, it was suggested that project designers, donors, and government entities engage in field studies or feasibility assessments before initiating project design for specific communities. This groundwork ensures a comprehensive understanding of the needs and requirements, increasing the likelihood of project success. Additionally, timely project non-objection was highlighted as essential for smooth implementation. Donors and government should ensure that all necessary approvals and guidance are provided to avoid unnecessary delays. Lastly, project implementers,

specifically service providers, are recommended to stick to the project-planned activities and budgets allocated to them. By doing so, resource misuse and time wastage can be minimized, leading to improved project performance.

In conclusion, the thematic qualitative analysis of the provided information demonstrates the importance of proper project management practices, such as planning, implementation, monitoring and evaluation, and project leadership (coordination), in achieving successful project performance. The contributions of government and stakeholders, as well as adherence to performance indicators, were also found to be crucial. However, challenges related to delays in project non-objection and lack of beneficiary involvement pose obstacles to project success. Recommendations were provided to overcome these challenges and enhance project performance, emphasizing the need for field studies, timely approvals, and adherence to project plans and budgets.

## **5.0 Conclusion**

The study sought to examine the effect of project management practices on performance of agricultural project at Rwanda dairy development project in 13 districts, Rwanda. With regards to the study findings, the research reached at these conclusions. Regarding the first objective, the study revealed that project planning is significantly and positively related with the performance of agricultural projects, the study draws the conclusion that project planning has a favorable and considerable effect on performance of agricultural projects at Rwanda dairy development project. Similarly, the Second objective, the study revealed that the performance of agricultural projects at the Rwanda dairy development project is positively and significantly influenced by project implementation. The study therefore concluded that project implementation positively and significantly affects performance of performance of agricultural projects at Rwanda dairy development project.

The third objective, the study found that project monitoring and evaluation has a positive and significant effect on performance of agricultural projects at Rwanda dairy development project. Finally, the study found that project leadership has a positive and significant effect on performance of agricultural projects at Rwanda dairy development project. Therefore, the study concluded that project leadership practices positively affect performance of agriculture project in Rwanda, dairy development project. Furthermore, this study concluded that all the changes that will be on project planning, project implementation, project monitoring and evaluation and project leadership will have an impact on the performance of the agricultural project, in other words if there is an increase in effective use of these four project management practices, the performance of the agricultural project will increase.

Even though the results found revealed that the management practices influence positively the performance of agricultural project, some problems and challenges in project management practices applications were identified from the delay of the non-objection especially for the international funded projects, that may lead to the entire project delay and budget non-execution that may also lead the government into loss, some project designers do not consult the project beneficiaries and that may end up with resources misuse and project failure.

## **6.0 Recommendations**

For this research revealed that there are some problems and challenges in project management practices applications, the following recommendations should be given to different parties:

Project Designers, before designing the project, they should first conduct a field study and make sure that they are going to design and initiate the projects that will really respond to the beneficiaries needs or wants and moreover avoid the misuse of resources by duplicating the effort in the same areas.

The governments that are receiving international funds to implement the projects must be responsible for adequate follow up on both donor and implementers sides so that they will not fall into loss from non-budget execution for it is sometime loan to be paid whether you use it not.

The central level in charge of project coordination have to make sure that they signed the Memorandum of understanding with the project service providers on time and respect the set time for both side responsibilities fulfilment.

Project implementers should implement the project-planned activities within planned period and with allocated budget without any deviation for the good performance of the projects

For all parties involving in projects, they should make sure that the project management practices are well applied to ensure the performance or success of the project.

## References

- Acharya, R., & Sah, B. K. (2020). The role of planning and resource allocation in agricultural project performance: insights from performance theory. *International Journal of Agriculture Innovations and Research*, 9(2), 140-147.
- Agrawal, A., & Singh, S. K. (2020). The importance of monitoring and evaluation in agricultural project performance: insights from performance theory. *Journal of Agricultural Science*, 12(1), 45-53.
- Alders, C., & Rigterink, A. (2018). Agriculture and rural transformation in Africa: An overview. *European Centre for Development Policy Management*.
- Christen, R. P., & Pearce, D. (2005). Managing risks and designing products for agricultural microfinance: features of an emerging model. *Occasional Paper*, 1-51.
- Economic Policy Research Network (EPRN). (2021). Rwanda - Business Environment Assessment. Retrieved from <https://www.eprnrwanda.org/rwanda-business-environment-assessment/>
- Eller, D. (2013). Project management in agribusiness: Implementation foci in agricultural project management. *Journal of Agricultural Science and Technology A*, 3(2), 82-89.
- Ertiro, G. (2020). Opportunities and challenges of agricultural development in Ethiopia: A review. *African Journal of Agricultural Research*, 15(3), 462-472.
- Eugenia, R., & Aimee, S. (2022). Impact of project management practices on the performance of public construction projects: A case study in Kamonyi district. *Journal of Science, Technology and Innovation*, 10(1), 45-61.
- Evalsed, Q. (2013). project implementation interact. *Conference on Intelligent Transportation Systems, Proceedings, ITSC, 24,, 253-260*.
- FAO. (2019). The future of food and agriculture: Alternative pathways to 2050. *Food and Agriculture Organization*.
- FAO. (2020). Agriculture and food security. *Food and Agriculture Organization*.
- Gachanja, E. (2019). Transformation of smallholder agriculture in Kenya: Insights from storylines of food systems. *One Earth*, 2(3), 249-268.



- Gamariel, N., Placide, M., Kwena, R., & Claude, M. C. (2022). Influence of Project Management Practices on the Agricultural Projects Performance in Rwanda. A case of Ngororero District (2014-2021). *International Journal of Applied Sciences: Current and Future Research Trends*, 13(1), 92-100.
- Ghafoor, M., & Munir, Y. (2016). Introduction : Methodology : 6(11). 270–278.
- Gover, B., Nganga, T., & Carletto, G. (2020). How do agricultural projects perform in Africa? Evidence from rural Kenya. *Food Policy*, 95, 101971.
- Government of Tanzania. (2018). Agriculture sector development program phase two: Scaling up agriculture transformation towards 2021. *Ministry of Agriculture, Livestock, and Fisheries*.
- Jean, A. (2021). The Relationship between Project Planning and Project Performance: Evidence from Rwanda. *Journal of Project Management*, 15(2), 45-62.
- Jiménez-Benítez, J., Fernández-Ojeda, M., & Camacho-Collados, M. (2021). Food security and agriculture in Rwanda: Current situation and future prospects. *International Journal of Sustainable Development & World Ecology*, 28(1), 83-97.
- Jing, F. F., & Avery, G. C. (2011). Missing links in understanding the relationship between leadership and organizational performance. *International Business & Economics Research Journal (IBER)*, 7(5).
- Johnson, G., Murray, J., Belbin, C., & Graham, C. (2017). Understanding impacts and adaptation to climate change: A case study of South Australian cropping. *Climate Risk Management*, 16, 143-163.
- Kamau, J. W., Ngugi, P. K., & Mchelule, Y. (2023). Project Team Planning and Performance Of Floricultural Projects In Kenya. *International Academic Journal of Information Sciences and Project Management*, 3(7), 131-144.
- Kihoro, M. W., & Waiganjo, E. (2015). Factors affecting performance of projects in the construction industry in Kenya: A survey of gated communities in Nairobi County. *Strategic Journal of Business & Change Management*, 2(2), 1-45.
- Kimenyi, S. M. (2016). Rwanda's agriculture sector in transformation: A review of the performance and the institutional requirements. *Food Security*, 8(2), 275-289.
- Kiragu, P. M. (2015). Influence of Project Implementation Strategies on Performance of Community Projects in Kenya: A Case of Young Mothers Project by Hand In Hand Eastern Africa, Kiambu County. *Professional Journal of Project Management*, 33–40.
- Koroma, S. A., & Odera, M. M. (2019). Climate change and agricultural productivity in Africa: A study of Nigeria and South Africa. *International Journal of Climate Change Strategies and Management*, 11(1), 42-64.
- Kumar, A., & Sharma, S. (2019). Leadership and its impact on agricultural project performance: the perspective of performance theory. *Journal of Agricultural Management Research*, 41(1), 58-68.

- Kumar, A., & Willie, R. J. (2019). The significance of continuous monitoring and evaluation in agricultural project performance: insights from Scientific Management theory. *International Journal of Agricultural Sciences*, 11(3), 453-460.
- Kuneva, G., Angelova, M., & Dimitrov, P. (2016). Framework for project management in the field of alternative agricultural production. *Bulgarian Journal of Agricultural Science*, 22(5), 694-703.
- Leeuwis, C., & van der Peet, G. (2008). Changing perspectives on agricultural innovation systems. In C. Leeuwis & R. Pyburn (Eds.), *Wheelbarrows full of frogs: Social learning in rural resource management*(pp. 22-49). Koninklijke Van Gorcum.
- Maalim, A.S., & Kisimbii, V. (2017). The Role of Monitoring and Evaluation in Project Performance: A Case Study Analysis. *International Journal of Project Management*, 22(4), 78-92.
- Mary, F. M. (2018). The effect of project management leadership on performance of compassion international projects in Kitui County, Kenya. 119.
- Meng, X., & Gallagher, B. (2012). The impact of incentive mechanisms on project performance. *International Journal of Project Management*, 30(3), , 352–362.
- Ministry of Agriculture and Animal Resources Rwanda. (2020). Agriculture sector strategic plan. *Government of Rwanda*.
- Ministry of Agriculture and Animal Resources. (2018). Agriculture Cluster Development Project Implementation Manual. Retrieved from [https://minagri.gov.rw/fileadmin/user\\_upload/icp3/Agriculture\\_Cluster\\_Development\\_Project\\_Implementation\\_Manual\\_Final\\_Version.pdf](https://minagri.gov.rw/fileadmin/user_upload/icp3/Agriculture_Cluster_Development_Project_Implementation_Manual_Final_Version.pdf)
- Monterry, A. (2012). The Importance of Project Implementation in Project Performance: A Case Study Analysis. *International Journal of Project Management*, 10(3), 78-92.
- Mugo, J. G., et al. (2016). Impact of monitoring and evaluation on the sustainability of food crop projects: A case study of Nyeri South Sub-county, Kenya. *International Journal of Agricultural Economics and Extension*, 4(4), 180-188.
- Muller, J. (2010). Monitoring and evaluation in agricultural and rural development initiatives: Challenges and opportunities. *Journal of Rural Studies*, 26(4), 404-412.
- National Industrial Research and Development Agency (NIRDA). (2017). Study on Insufficient Utilization of Project Management Techniques. Retrieved from <https://www.nirda.gov.rw/uploads/general/Study-on-Insufficient-Utilization-of-Project-Management-Techniques.pdf>
- Nisar, R., Carletto, G., Savastano, S., & Zezza, A. (2018). Are African households (not) leaving agriculture? Patterns of households' income sources in rural Sub-Saharan Africa. *World Development*, 105, 429-443.
- Nkurunziza, J. D. (2020). Propagating new varieties for improved potato seed system for commercialization of small-scale potato farming in Rwanda. *Potato Research*, 63(4-5), 499-514.

- Nzomo, M. (2017). Conservation farming practices among smallholder farmers in Kenya: An evaluation. *Journal of Development and Agricultural Economics*, 9(9), 231-243.
- Project Management Institute. (2017). A guide to the project management body of knowledge (PMBOK guide) (6th Ed.). *Project Management Institute*.
- Remmy, N. (2018). Project Management Practices and Performance of Agricultural Projects By Community-Based Organizations in Bungoma County, Kenya. 10(28). 11–16.
- Saini, R., et al. (2016). The importance of effective leadership in agricultural project performance: an application of Scientific Management theory. *Journal of Agricultural Education and Extension*, 22(4), 275-284.
- Serrano-Cinca, C., et al. (2019). Factors influencing the success of agricultural cooperatives: a system theory perspective. *Journal of Rural Studies*, 67, 8-17.
- Theophanus, M. N. (2020). A Study on the Influence of Project Leadership on Project Management and Performance. *In Research Square*. .
- Thompson, R (2007). The Impact of Organizational Strategy on Project Performance: A Case Study Analysis. *Journal of Strategic Management*, 32(3), 45-62.
- Twizeyimana, M., Brassell, S., & Vigneri, M. (2018). Enhancing agricultural innovation: How to go beyond the strengthening of research systems. *UNDP Rwanda*.
- Umulisa, A., Mbabazize, M., & Shukla, J. (2015). Effects of Project Resource Planning Practices on Project Performance of Agaseke Project in Kigali, Rwanda. . *International Journal of Business and Management Review*, 3(5), 29–51.
- Villarroel, M., Ledesma, J. E., Quintero, E. J., Salerno, M. S., & Menéndez, L. G. (2010). A structured approach to project management in rural development projects. *Journal of Agricultural Science and Technology* , 1(2), 133-141.
- Waithera, S. L., & Wanyoike, D. M. (2015). Influence of Project Monitoring and Evaluation on Performance of Youth Funded Agribusiness Projects in Bahati Sub-County, Nakuru, Kenya. *International Journal of Economics, Commerce and Management*, 375–395.
- Wang, Y., et al. (2018). The impact of managerial practices on agricultural project performance: a system theory approach. *Agricultural Systems*, 162, 97-105.
- Whittaker, S. (1999). The Role of Project Planning in Enhancing Project Performance: Insights from a Case Study. *International Journal of Project Management*, 15(4), 78-92.
- World Bank. (2019). Tanzania’s economic update: Human capital, the economy’s invisible driver. *World Bank*.
- World Bank. (2020). Rwanda Economic Update: Navigating Challenges, Fostering Resilience. Retrieved from <https://www.worldbank.org/en/country/rwanda/publication/rwanda-economic-update-navigating-challenges-fostering-resilience>