

# Effect of Project Risk Management Practices on the Performance of Farmer's Support Programs Implemented by Urugaga Imbaraga in Musanze District, Rwanda

Mukamusoni Chance<sup>1</sup>; Dr. Dushimimana Jean de Dieu<sup>2</sup>

<sup>2</sup>Co-Author

<sup>1</sup> The Award of Master of Business Administration in Project Management of the University of Kigali

<sup>1</sup>Reg. No: 2409001226

Publication Date: 2026/09/25

**Abstract:** Farmer support programmes play a significant role in advancing Rwanda's agricultural development, although their effectiveness is often affected by operational uncertainties, and limited empirical evidence exists on how such practices shape programme outcomes in Rwanda. This study examined the effect of project risk management practices on the performance of farmer support programmes implemented by Urugaga Imbaraga in Musanze District. Specifically, the study assessed the influence of risk identification, risk assessment, risk response planning, and risk monitoring on programme performance. The study was guided by Systems Theory, Contingency Theory, and Stakeholder Theory and adopted a mixed-methods approach using descriptive and correlational research designs. From a target population of 614 stakeholders, a sample of 242 respondents was selected using stratified and simple random sampling. Data were collected through questionnaires, interviews, and document reviews. A total of 237 questionnaires were successfully retrieved, representing a 97.9% response rate. Quantitative data were analysed using descriptive statistics, Pearson correlation, and multiple regression analysis, while qualitative data were analysed thematically. The findings revealed that project risk management practices were generally applied, with risk identification the most developed and risk assessment the least developed, owing to limited use of structured tools. Correlation results showed significant positive relationships between all risk management practices and programme performance ( $p < .01$ ). Regression analysis further indicated that risk management practices jointly explained 69.5% of the variation in programme performance ( $R^2 = .695$ ,  $p < .001$ ). The study concludes that effective risk management contributes significantly to improved performance of farmer support programmes. It recommends strengthening risk assessment, establishing risk registers, and enhancing continuous monitoring to support adaptive management.

**Keywords:** Project Risk Management, Risk Identification, Risk Assessment, Risk Response Planning, Risk Monitoring and Performance of Farmers' Support Programs.

**How to Cite:** Mukamusoni Chance; Dr. Dushimimana Jean de Dieu (2026), Effect of Project Risk Management Practices on the Performance of Farmer's Support Programs Implemented by Urugaga Imbaraga in Musanze District, Rwanda. *International Journal of Innovative Science and Research Technology* 11(9), 1268-1281. <https://doi.org/10.38124/ijisrt/26sep106>

## I. INTRODUCTION

Agriculture remains one of the most important sectors for economic development and food security across the world. However, agricultural projects operate in environments characterized by uncertainty, making effective project risk management essential for achieving sustainable outcomes. As a result, governments, development agencies, and agricultural organizations have increasingly integrated risk management practices into farmer support programmes to reduce

uncertainty and improve programme performance. In the United States, the United States Department of Agriculture (USDA) has established a comprehensive risk management system that helps farmers cope with production, market, and natural disaster risks.

Through insurance schemes, financial assistance, and advisory services, the system strengthens farmers' resilience and supports sustainable agricultural production (USDA, 2022). Similarly, countries within the European Union

implement risk management measures through the Common Agricultural Policy (CAP). This policy incorporates agricultural insurance, mutual support funds, and income support mechanisms to protect farmers against production and market uncertainties while maintaining agricultural productivity and rural livelihoods (European Commission, 2023).

Canada has also developed effective agricultural risk management programmes that emphasize the early identification, assessment, and management of potential risks. Through initiatives such as the Canadian Agricultural Partnership, farmers receive support to prepare for production and market uncertainties using integrated risk management approaches. These programmes have contributed to improved programme implementation, reduced vulnerability, and enhanced agricultural performance (Meuwissen et al., 2021; Agriculture and Agri-Food Canada, 2022). Across Africa, agricultural development projects continue to encounter numerous risks, including inadequate financial resources, weak infrastructure, climate change, and institutional limitations (African Development Bank, 2021).

Despite these challenges, several African countries have strengthened project risk management within agricultural support programmes. For example, Kenya has integrated risk management practices into agricultural development initiatives to improve productivity and enhance food security (Ministry of Agriculture, Kenya, 2023). Likewise, Ghana introduced the Ghana Agricultural Insurance Programme, which assists farmers in managing production-related risks and minimizing financial losses resulting from adverse climatic conditions and other uncertainties (Ghana Ministry of Food and Agriculture, 2022).

In Rwanda, agriculture remains a key contributor to employment, household income, and national economic development. The Government of Rwanda has introduced several initiatives aimed at improving agricultural productivity and supporting smallholder farmers through cooperatives, extension services, input subsidies, and market access programmes. Farmer organizations and cooperatives play an important role in implementing these initiatives by mobilizing farmers, providing technical support, facilitating access to agricultural inputs, and linking producers to markets.

Despite these efforts, farmer support programmes continue to face a wide range of risks that may affect their performance. Production risks include pest infestations, crop diseases, drought, and unpredictable weather conditions. Market-related risks arise from unstable prices, limited market opportunities, and inadequate market information. Financial risks involve insufficient funding, delayed disbursement of project resources, and loan repayment challenges, while operational risks are associated with inadequate planning, limited staff capacity, weak monitoring systems, and insufficient training of beneficiaries (Torkamani & Abdollahzadeh, 2021). If these risks are not managed effectively, they may reduce programme efficiency and limit the achievement of intended development outcomes. Previous studies have consistently shown that adopting systematic

project risk management practices enhances programme performance.

Identifying potential risks early, assessing their likely impact, developing appropriate response strategies, and continuously monitoring project implementation enable organizations to minimize uncertainties and improve decision-making (Hwang & Ng, 2021). Within agricultural development programmes, proactive risk management supports efficient resource allocation, strengthens programme implementation, and improves the ability of organizations to respond to emerging challenges before they significantly affect project outcomes.

One of the organizations actively involved in supporting smallholder farmers in Rwanda is Urugaga Imbaraga. Established in 2003, Urugaga Imbaraga is a national farmers' federation that represents thousands of farmers through numerous cooperatives and farmer associations across the country. The organization provides a wide range of services, including farmer training, capacity building, agricultural input distribution, market linkage, advocacy, and access to financial services (Bizimana & Mugabo, 2022).

By serving as an important link between farming communities and government agricultural programmes, the organization contributes significantly to rural development and agricultural transformation in Rwanda. Given the scale of its operations and the variety of risks associated with agricultural support programmes, Urugaga Imbaraga provides an appropriate context for examining how project risk management practices influence programme performance. Understanding the relationship between risk identification, risk assessment, risk response planning, risk monitoring, and programme performance can generate valuable evidence to strengthen project implementation and improve outcomes for farmer support programmes in Rwanda.

#### ➤ *Problem Statement*

Despite the recognized importance of risk management, many farmer support programmes in Rwanda continue to experience implementation challenges that suggest weaknesses in managing project-related risks. Organizations such as Urugaga Imbaraga operate in complex agricultural environments where farmers are exposed to unpredictable production conditions, changing market demands, limited access to financial resources, and institutional challenges. When such risks are not systematically identified, analysed, and managed, they may negatively affect programme outcomes through delayed activities, inefficient resource utilization, reduced farmer participation, and failure to achieve planned objectives.

The specific problem motivating this study is that, although Urugaga Imbaraga has implemented various farmer support programmes aimed at improving the welfare and productivity of smallholder farmers, there is limited evidence showing whether its existing project risk management practices effectively contribute to programme performance. In practice, some risk management activities may be conducted informally through experience and routine decision-making

rather than through structured processes involving risk registers, systematic assessment tools, documented response strategies, and continuous monitoring. This situation creates uncertainty regarding the effectiveness of current approaches and limits the ability of programme managers to make evidence-based improvements. Furthermore, previous studies have mainly focused on project risk management in general development projects, construction, or large-scale agricultural interventions, with limited attention given to farmer support programmes implemented by farmer-based organizations in Rwanda.

Particularly, insufficient empirical evidence exists on the combined influence of risk identification, risk assessment, risk response planning, and risk monitoring on the performance of Urugaga Imbaraga's programmes in Musanze District. Specifically, it remains unclear which of these risk management practices, individually and collectively, most significantly influence programme performance within Urugaga Imbaraga. This gap is important because weaknesses in risk management reduce the sustainability and impact of programmes designed to support smallholder farmers. Without empirical evidence on which risk management practices contribute most to programme success, managers and policymakers may lack appropriate guidance for improving implementation strategies. Therefore, this study was conducted to examine the effect of project risk management practices on the performance of farmer support programmes implemented by Urugaga Imbaraga in Musanze District, Rwanda, with the aim of generating evidence-based recommendations for improving agricultural programme management.

#### ➤ *Objectives of the Study*

To examine effect of project risk management practices on the performance of farmer's support programs implemented by Urugaga Imbaraga in Musanze District, Rwanda. The specific objectives were formulated as follows:

- To assess the effect of risk identification practices on the performance of farmers' support program implemented by Urugaga Imbaraga, in Musanze District.
- To establish the effect of risk assessment practices on the performance of farmers' support program implemented by Urugaga Imbaraga, in Musanze District.
- To determine the effect of risk response planning on the performance of farmers' support program implemented by Urugaga Imbaraga, in Musanze District.
- To examine the effect of risk monitoring and evaluation practices on the performance of farmers' support program implemented by Urugaga Imbaraga, in Musanze District.

#### ➤ *Research Hypotheses*

The study is guided by the following null hypotheses:

- H0<sub>1</sub>: Risk identification practices have no significant effect on the performance of farmers' support program implemented by Urugaga Imbaraga, in Musanze District.
- H0<sub>2</sub>: Risk assessment practices have no significant effect on the performance of farmer's support program implemented by Urugaga Imbaraga, in Musanze District.

- H0<sub>3</sub>: Risk response planning has no significant effect on the performance of farmers' support program implemented by Urugaga Imbaraga, in Musanze District.
- H0<sub>4</sub>: Risk monitoring practices have no significant effect on the performance of farmers' support program implemented by Urugaga Imbaraga, in Musanze District.

## II. LITERATURE REVIEW

Project risk management refers to the systematic process of identifying, analyzing, responding to, and monitoring uncertainties that may affect the achievement of project objectives. It involves both proactive and reactive approaches aimed at minimizing potential threats while maximizing opportunities that may arise during project implementation. Effective risk management enables organizations to anticipate challenges related to project objectives, timelines, budgets, and quality, thereby improving overall project performance and stakeholder satisfaction (Hwang & Ng, 2021).

Unlike traditional approaches that mainly focus on avoiding negative events, modern project risk management recognizes that risks may also create opportunities for improvement and innovation. Therefore, organizations are expected to develop strategies that not only reduce potential losses but also take advantage of favourable conditions that contribute to project success. In agricultural development projects, this approach may involve identifying opportunities related to favourable climatic conditions, improved technologies, new market opportunities, and better farming practices that can enhance programme outcomes (Hillson & Murray-Webster, 2020).

#### ➤ *Risk Identification*

Risk identification refers to identifying, uncovering, and documenting potential risks that are likely to impact project goals through a systematic search of information from different sources, starting from project documents, among other sources (Chapman and Ward, 2019). In agricultural support projects, risk identification involves identifying risks related to production, market, finance, operation, and external sources.

These sources of risks in agricultural support projects include identification of production risks, market risks, finance risks, operation risks, as well as risks from environmental sources. These sources of risks in agricultural support projects cover risks related to production, such as pests, diseases, and drought.

#### ➤ *Risk Assessment*

Risk assessment entails evaluating risks that have been identified with a view to estimating their potential for occurrence and their significance in relation to project goals (ISO, 2018). Risk assessment is utilized for prioritizing risks in terms of their potential for enabling companies to focus their attention on risks that threaten their goals with a similar intensity. There are two approaches used in risk assessment. These are quantitative techniques, which are statistical, and qualitative techniques, which involve categorizing risks as high, medium, and low.

### ➤ Risk Response Planning

Risk response planning entails formulating strategies and courses of action that can be taken in relation to identified and evaluated risks (PMI, 2021). In relation to threats, strategies would entail risk avoidance, which involves eliminating the risk by modifying project plans, risk mitigation, which involves reducing risks by either reducing their probability of occurrence or their impact, risk transfer, that involves transferring risks of third-party actions to third-party insurers, and risk acceptance, which involves accepting a risk and preparing for contingency actions. On the other hand, for opportunities, strategies would involve exploitation, enhancement, sharing, and acceptance.

### ➤ Risk Monitoring

This risk involves monitoring identified risks, monitoring remaining risks, identifying new risks, as well as reviewing the implementation of risk response actions, as per Turner (2020) in relation to project management. This ensures that a project remains dynamic in relation to managing risks. The project management professional has to effectively monitor risks in order to make decisions that are in line with project realities.

### ➤ Performance of Farmers' Support Programs

The performance of farmer support programs can be defined as the degree to which farmer support programs are able to meet their set goals and objectives and provide a positive impact on beneficiaries and agricultural development objectives (FAO, 2022). Different variety dimension can be used to determine the farmer support program performance, such as production performance outcomes (yields, quality), economic performance outcomes (farmer income, markets), development of capacities (technical knowledge, organizational), sustainability, and satisfaction of various stakeholders, including farmers.

### ➤ System Theory

This theory conceptualized by Ludwig von Bertalanffy (1968) adapted for management practices in organizations by Katz & Kahn in 1978, argues that an organization is a complex system that has various components interacting with each other as well as with their surroundings. This model argues that an organization operates as an open system, where it has interactions in terms of inputs, processes, and output with their environment (Scott & Davis, 2020). System Theory is founded on several interrelated principles. The principle of holism suggests that organizational performance should be understood by considering the system as a whole rather than examining individual components separately (Scott & Davis, 2020; Daft, 2022).

Interdependence recognizes that changes occurring in one part of the system inevitably influence the functioning of other parts. Feedback enables organizations to learn from previous outcomes and make informed adjustments, while adaptation emphasizes the need for organizations to respond effectively to changing environmental conditions. Finally, system boundaries define the interactions between an organization and its external environment, ensuring that resources, information, and responsibilities are appropriately

managed. Collectively, these principles help organizations remain responsive, coordinated, and capable of sustaining performance despite environmental uncertainties (Flood & Carson, 2018; OECD, 2023).

This theoretical perspective is particularly appropriate for the present study because it recognizes that risks affecting farmers' support programmes emerge from interactions among multiple stakeholders and environmental factors rather than from single isolated events. Recent evidence from agricultural development programmes also demonstrates that adopting systems thinking improves programme coordination, adaptive management, and long-term sustainability (FAO, 2022; IFAD, 2024).

### ➤ Contingency Theory

Project management, Contingency Theory proposes that approaches to risk management should be adjusted in accordance with considerations of project complexity, environmental uncertainty, use of resources, project stakeholders, and organizational capabilities. Different approaches can be effective under different circumstances. In this respect, it means that practices of risk management should take into consideration agricultural circumstances, characteristics of farmers, market structures, institutions, and cultures in projects related to farmers' support systems in Rwanda (Scott, & Davis, 2020).

This theory to this research arises from the realization that optimal risk management entails more than just doing things by the book, but rather adopting approaches that are adaptable and responsive to what needs to be accomplished in a specific operating context such as that of Urugaga Imbaraga. Chen & Liu (2021) in their study of agricultural programs in China found that adopting approaches that were responsive to their operating contexts meant that risk management approaches in agriculture development resulted in far superior outcomes than standard approaches, as informed by Contingency Theory.

### ➤ Stakeholder Theory

This theory conceptualized by Freeman (1984) developed by a host of other scholars, argues that for organizations to flourish, it is important to manage relations with all those individuals and groups that have a stake in, or are impacted by, activities in an organization (Freeman et al., 2020). This means that projects need to manage different stake groups such as beneficiaries, implementers, sources of funds, government, and communities. With regards to risk management in support programs for farmers, Stakeholder Theory particularly underscores that various stakeholders may view and prioritize risks in different ways (PMI, 2021).

While farmers are most likely to perceive production, access, or other related risks, managers of support programs, donors, and local government officials, for instance, are likely to prioritize budget, timeline, accountability, impact, policy compliance, and other risks. All these different perspectives also need to be taken into consideration in risk management strategies in an inclusive manner, as suggested by Mitchell *et al.* (2019). This suggests that involving stakeholders in the risk

management process increase risk identification completeness, increase the relevance of risk management, increase stakeholder cooperation, and enhance program performance (FAO, 2022). Findings from a study by Osei-Kyei and Chan in 2021 on development projects in Ghana showed that projects that involved stakeholders in their risk

management activities recorded a significantly higher rate of project performance and stakeholder satisfaction than projects that used a top-down approach.

#### ➤ Conceptual Framework

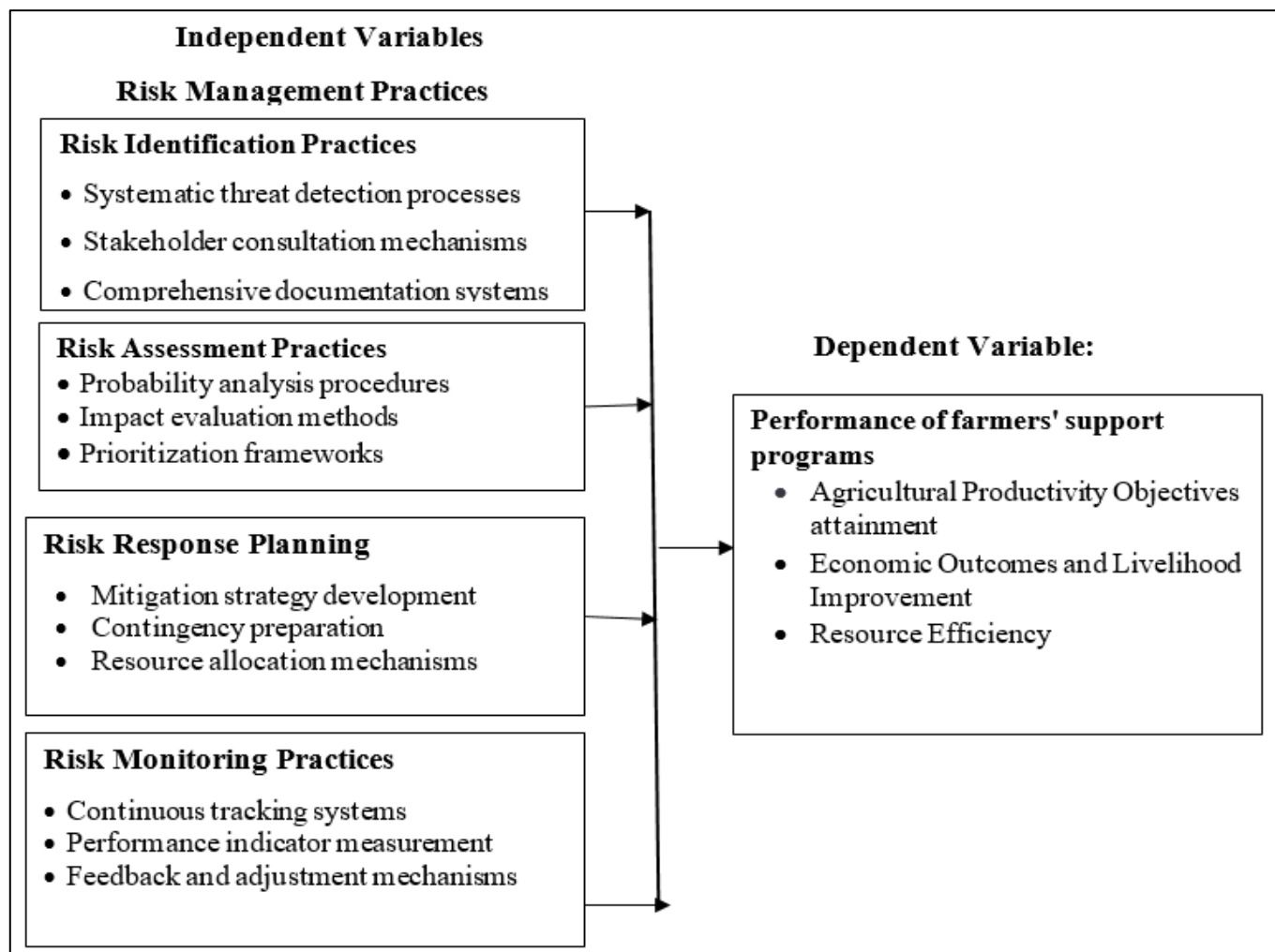


Fig 1 Conceptual Framework

The practices of identifying risks form the key starting point where threats are systematically identified through consultations with various stakeholders, which in turn feed into practices that involve analyzing risks, determining their potential for threats, and categorizing risks according to their potential for threats. The first objective addresses risk identification, the second focuses on risk assessment, the third examines risk response planning, and the fourth concerns risk monitoring and evaluation. Each objective is therefore embedded within the framework as an independent

#### ➤ Research Design

This study adopted a descriptive and correlational research design within a mixed-methods approach. The descriptive design enables the researcher to examine and describe the existing project risk management practices employed by Urugaga Imbaraga, while the correlational element establishes the strength and direction of the

variable whose influence on program performance is to be empirically tested. Program performance, which constitutes the dependent variable, is assessed through four key indicators: the level of satisfaction among program beneficiaries, how efficiently available resources are utilized, the long-term sustainability of the programs, and the degree to which agricultural productivity improves as a result of the support provided.

### III. RESEARCH METHODOLOGY

relationships between these practices and programme performance.

A mixed-methods approach was adopted because it combines the statistical generalizability of quantitative survey data with the contextual depth of qualitative interview and documentary evidence; this triangulation strengthens the validity of the findings and offsets the limitations inherent in relying on a single approach (Creswell & Creswell, 2018).

Both quantitative and qualitative data were therefore used to provide a comprehensive understanding of the characteristics of the study variables.

#### ➤ *Population, Sample Size and Sampling Techniques*

Target population for this particular research comprise all 614 stakeholders in farmers' support programs that have been initiated by Urugaga Imbaraga. The groups of people were categorized in different parts such as; Local Leadership, Community Development Officers, Urugaga Imbaraga Staff members, as well as Farmers with requisite knowledge and experience in relation to the management of risk practices. Sample size was calculated using Solvin's formula.

$$n = \frac{N}{1 + N(e)^2}$$

The above formula  $n$  represents sample size,  $N$  population size and  $e$  represents marginal error (5%).

$$n = \frac{614}{1 + 614(0.05)^2} = \frac{614}{1 + 1.535} = \frac{614}{2.535} = 242.20 \cong 242$$

For this study  $n$  equal 242,  $N = 614$  and  $e = 0.05$

In this study, both stratified and simple random sampling techniques were employed. This is because this technique ensured that all categories of stakeholders are covered by this study. The strategy of achieving this is done through three steps, whereby the population is stratified into four categories, with each stratum being given a name depending on the classification as stakeholders. They include Local Leadership, Community Development Officers, Urugaga Staff members, and Farmers Beneficiaries.

#### ➤ *Data Collection Instruments and Collection Procedures*

In this research, the structured questionnaire is a used tool for data collection, which is conducted on all stakeholder groups, including 242 participants. The structured questionnaire uses a set of closed-ended questions, which are categorized into six groups. These groups include demographic data of participants (age, sex, education level, experience, position), risk identification practices (frequency, means, stakeholders' involvement, record keeping), risk assessment practices/risk evaluation practices (methods of assessment, criteria of prioritizing, used tools, how often it is done), risk response preparation and actions and risk monitoring practices/monitoring actions and performance of farmers support programs.

The survey was administered to 242 farmers and 20 staff members in person by the researcher and research assistants to enhance response accuracy. The survey has five sections: risk identification, risk assessment, risk response planning, risk monitoring, and program performance, which were measured using a five-point Likert scale. Respondents were given adequate time to respond to the questionnaire, typically two to three days. The analysis was done using SPSS. Descriptive and inferential statistical analysis methods are employed to achieve research objectives and test research hypotheses.

#### ➤ *Analysis methods*

Descriptive statistical analysis was employed to summarize and present the characteristics of the collected data using frequencies, percentages, means, and standard deviations. Inferential analysis tests hypotheses about the associations between variables. The analysis of the nature and degree of association between each independent variable and the dependent variable, i.e., programme performance, is done using Pearson correlation coefficient analysis. The statistical significance has been established at  $p < 0.05$ , i.e., if the chance of occurrence is less than 5%, then it is considered significant. Simple Linear Regression also examines the individual predictive capability of each independent variable regarding performance, testing hypotheses  $H_{01}$ ,  $H_{02}$ ,  $H_{03}$ , and  $H_{04}$ . The regression analysis aims to determine: Whether each independent variable is a significant predictor of performance, the strength of the prediction ( $R^2$ ), and The relationship between performance and each independent variable, as measured by the  $\beta$  coefficient. Multiple linear regression examines the combined effect of all independent variables on program performance. The multiple regression model is:  $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$

Where:

- $Y$  = Performance of farmers' support programs
- $\alpha$  = Constant term
- $X_1$  = Risk identification practices
- $X_2$  = Risk assessment practices
- $X_3$  = Risk response planning
- $X_4$  = Risk monitoring practices
- $\beta_1, \beta_2, \beta_3, \beta_4$  = Regression coefficients
- $\varepsilon$  = Error term

### IV. RESULTS AND DISCUSSIONS ON THE FINDINGS

The data was collected from 242 respondents, classified in four categories such as; local leaders, community development officers, Urugaga Imbaraga staff, and farmer beneficiaries in Musanze District. SPSS was used to analyse the data. Out of the 242 questionnaires distributed to the selected respondents, 237 were successfully completed and returned, representing a response rate of 97.9%, while only 5 questionnaires (2.1%) were not returned. The high response rate suggests that respondents were willing to provide information regarding project risk management practices and the performance of farmer support programmes, resulting in a reliable dataset for subsequent statistical analysis.

#### ➤ *Demographic Characteristics of Respondents*

The demographic section discusses the profiles of participants across three dimensions: stakeholder category, duration of involvement with Urugaga Imbaraga programs, and age group. These characteristics contextualize respondents' familiarity with organizational practices and their capacity to evaluate program performance.

Table 1 Demographic Characteristics of Respondents

| Demographic             | Category                       | Frequency (n) | Percent (%)  | Cumulative % |
|-------------------------|--------------------------------|---------------|--------------|--------------|
| Stakeholder Category    | Local leaders                  | 31            | 13.1         | 13.1         |
|                         | Community Development Officers | 4             | 1.7          | 14.8         |
|                         | Urugaga Staff Members          | 20            | 8.4          | 23.2         |
|                         | Farmer Beneficiaries           | 182           | 76.8         | 100.0        |
|                         | <b>Total</b>                   | <b>237</b>    | <b>100.0</b> |              |
| Duration of Involvement | Less than 1 year               | 18            | 7.6          | 7.6          |
|                         | 1-3 years                      | 42            | 17.7         | 25.3         |
|                         | 4-6 years                      | 101           | 42.6         | 67.9         |
|                         | More than 6 years              | 76            | 32.1         | 100.0        |
|                         | <b>Total</b>                   | <b>237</b>    | <b>100.0</b> |              |
| Age Group               | 18-30 years                    | 40            | 16.9         | 16.9         |
|                         | 31-45 years                    | 108           | 45.6         | 62.4         |
|                         | 46-60 years                    | 71            | 30.0         | 92.4         |
|                         | Above 60 years                 | 18            | 7.6          | 100.0        |
|                         | <b>Total</b>                   | <b>237</b>    | <b>100.0</b> |              |

Source: Primary Data (2025/2026)

The demographic findings indicate that the study respondents were predominantly farmer beneficiaries (76.8%), while local leaders accounted for 13.1%, Urugaga staff members for 8.4%, and Community Development Officers for 1.7%. Regarding duration of involvement, the majority had substantial experience with Urugaga Imbaraga programs, with 42.6% having participated for 4–6 years and 32.1% for more than six years, meaning that 74.7% had at least four years of involvement. In terms of age, respondents were mainly aged 31–45 years (45.6%), followed by those aged 46–60 years (30.0%). Overall, the respondents were

largely experienced program participants and mature stakeholders, suggesting that they were well positioned to provide informed assessments of risk management practices and program performance.

#### ➤ Descriptive Statistics findings on the Study Variables

The findings show that all five major study variables were rated within the High/Agree range, while the individual indicators of farmers' support program performance and risk management practices also generally recorded positive mean scores.

Table 2 Descriptive Statistics for Study Variables

| Variable /          | Indicator / Statement                                                        | N   | SA % | A %  | N %  | D %  | Mean        | Std.Dev.     |
|---------------------|------------------------------------------------------------------------------|-----|------|------|------|------|-------------|--------------|
| Program Performance | Programs consistently achieve intended goals and target beneficiaries        | 237 | 25.3 | 39.2 | 18.6 | 16.9 | 3.73        | 0.882        |
|                     | Programs implemented within approved budgets and financial plans             | 237 | 22.8 | 38.1 | 20.7 | 18.4 | 3.65        | 0.901        |
|                     | Beneficiaries demonstrate strong satisfaction with quality and effectiveness | 237 | 21.1 | 37.6 | 22.4 | 18.9 | 3.61        | 0.906        |
|                     | Programs demonstrate efficient use of resources in delivery                  | 237 | 19.4 | 36.3 | 24.1 | 20.2 | 3.55        | 0.921        |
|                     | Programs deliver service quality matching beneficiary needs                  | 237 | 20.2 | 37.0 | 23.6 | 19.2 | 3.58        | 0.912        |
|                     | Scope of activities adequately covers diverse beneficiary needs              | 237 | 18.6 | 35.8 | 25.7 | 19.9 | 3.53        | 0.919        |
|                     | Program activities and services delivered within planned timelines           | 237 | 17.3 | 34.6 | 26.6 | 21.5 | 3.47        | 0.934        |
|                     | <b>Composite mean</b>                                                        |     |      |      |      |      | <b>3.59</b> | <b>0.910</b> |
| Risk Identification | Systematic threat detection processes at program initiation                  | 237 | 31.2 | 42.6 | 14.8 | 11.4 | 3.93        | 0.812        |
|                     | Stakeholder consultation to gather risk perspectives                         | 237 | 22.8 | 38.4 | 20.3 | 18.5 | 3.65        | 0.899        |
|                     | Comprehensive documentation systems for identified risks                     | 237 | 19.4 | 41.8 | 23.2 | 15.6 | 3.65        | 0.867        |
|                     | <b>Composite mean</b>                                                        |     |      |      |      |      | <b>3.74</b> | <b>0.859</b> |

|                               |                                                                        |     |      |      |      |      |             |              |
|-------------------------------|------------------------------------------------------------------------|-----|------|------|------|------|-------------|--------------|
| <b>Risk Assessment</b>        | Probability analysis to evaluate likelihood of identified risks        | 237 | 21.1 | 39.7 | 21.5 | 17.7 | 3.64        | 0.884        |
|                               | Impact evaluation methods to assess potential consequences             | 237 | 18.6 | 37.1 | 24.9 | 19.4 | 3.55        | 0.912        |
|                               | Prioritization frameworks to rank risks by likelihood and consequences | 237 | 17.3 | 36.3 | 26.6 | 19.8 | 3.51        | 0.921        |
|                               | <b>Composite mean</b>                                                  |     |      |      |      |      | <b>3.56</b> | <b>0.905</b> |
| <b>Risk Response Planning</b> | Mitigation strategy plans to reduce or eliminate high-priority risks   | 237 | 28.7 | 41.4 | 16.9 | 13.0 | 3.86        | 0.844        |
|                               | Contingency preparation plans for risks that cannot be avoided         | 237 | 23.6 | 38.8 | 20.3 | 17.3 | 3.69        | 0.898        |
|                               | Resource allocation mechanisms for implementing risk response          | 237 | 19.8 | 36.7 | 24.5 | 19.0 | 3.57        | 0.917        |
|                               | Varied mitigation approaches based on risk characteristics             | 237 | 20.2 | 37.5 | 22.8 | 19.5 | 3.58        | 0.910        |
|                               | <b>Composite mean</b>                                                  |     |      |      |      |      | <b>3.66</b> | <b>0.892</b> |
| <b>Risk Monitoring</b>        | Systematic processes for tracking risks during implementation          | 237 | 28.3 | 40.5 | 17.7 | 13.5 | 3.84        | 0.857        |
|                               | Monitoring data shared with decision-makers for timely response        | 237 | 23.2 | 39.7 | 19.4 | 17.7 | 3.69        | 0.898        |
|                               | Risk registers reviewed and updated throughout program lifecycle       | 237 | 21.5 | 37.6 | 21.9 | 19.0 | 3.62        | 0.913        |
|                               | <b>Composite mean</b>                                                  |     |      |      |      |      | <b>3.71</b> | <b>0.889</b> |

Source: Primary Data Analyzed in SPSS (2026)

The consolidated findings indicate that risk identification practices had the strongest overall rating, with a mean of 3.72, followed by risk monitoring practices ( $M = 3.69$ ), risk response planning ( $M = 3.64$ ), and risk assessment practices ( $M = 3.58$ ). Program performance recorded an overall mean of 3.61, indicating generally positive perceptions of farmers' support program performance.

At the indicator level, the systematic threat detection process at program initiation recorded the highest mean ( $M = 3.93$ ,  $SD = 0.812$ ), while mitigation strategy planning followed closely ( $M = 3.86$ ,  $SD = 0.844$ ) and systematic risk tracking during implementation recorded  $M = 3.84$  ( $SD = 0.857$ ). Conversely, timely delivery of program activities recorded the lowest performance indicator mean ( $M = 3.47$ ,  $SD = 0.934$ ), suggesting that timeliness remained an area requiring improvement.

Overall, the results suggest that Urugaga Imbaraga had relatively strong risk identification and monitoring mechanisms, but comparatively weaker areas included risk prioritization, resource allocation for risk responses, regular updating of risk registers, and timely program implementation. These findings are consistent with the reported composite scores for the respective constructs.

#### ➤ Inferential Statistics Analysis

##### ➤ Normality Test

Normality was assessed to determine whether the study variables approximated a normal distribution before conducting Pearson correlation and multiple regression analyses. The assessment was based on skewness and kurtosis statistics generated from SPSS. According to Hair et al. (2019), skewness values between  $\pm 2$  and kurtosis values between  $\pm 7$  indicate that the assumption of normality is satisfied for parametric statistical analysis.

Table 3 Normality Test

| Variable                      | N   | Skewness | Kurtosis | Interpretation       |
|-------------------------------|-----|----------|----------|----------------------|
| Risk Identification Practices | 237 | -0.421   | 0.312    | Normally distributed |
| Risk Assessment Practices     | 237 | -0.398   | 0.289    | Normally distributed |
| Risk Response Planning        | 237 | -0.441   | 0.354    | Normally distributed |
| Risk Monitoring Practices     | 237 | -0.412   | 0.308    | Normally distributed |
| Program Performance           | 237 | -0.387   | 0.277    | Normally distributed |

Source: Primary data analysed in SPSS (2026).

The results indicate that all variables satisfied the normality assumption. The skewness values ranged from  $-0.441$  to  $-0.387$ , indicating only slight negative skewness and suggesting that the distributions were approximately symmetrical. Likewise, the kurtosis values ranged from 0.277

to 0.354, indicating that the distributions were close to the normal distribution without excessive peakedness or flatness. According to Hair et al. (2019), skewness values within  $\pm 2$  and kurtosis values within  $\pm 7$  are considered acceptable for assuming normality in multivariate analyses.

Similarly, Kline (2023) notes that variables falling within these thresholds can be treated as approximately normally distributed for parametric statistical procedures. Since all variables met these recommended criteria, the assumption of normality was satisfied. The findings therefore justified the use of Pearson correlation analysis and multiple linear regression to examine the relationship between project risk management practices and the performance of farmer support programmes. The approximate normal distribution of the variables enhances the reliability and validity of the

inferential statistical results reported in the subsequent sections of this chapter.

#### ➤ *Pearson Correlation Analysis*

Pearson correlation analysis examined relationships between each risk management practice and program performance, as well as inter-correlations among predictors assessed for potential multicollinearity. Results are interpreted using Cohen's (1988) conventions:  $r=.10-.29$  (small),  $r=.30-.49$  (medium),  $r \geq .50$  (large).

Table 4 Correlations

|                        |                     | <b>Program Performance</b> | <b>Risk Identification</b> | <b>Risk Assessment</b> | <b>Risk Response Planning</b> | <b>Risk Monitoring</b> |
|------------------------|---------------------|----------------------------|----------------------------|------------------------|-------------------------------|------------------------|
| Program Performance    | Pearson Correlation | 1                          | .712**                     | .698**                 | .741**                        | .729**                 |
|                        | Sig. (2-tailed)     |                            | .000                       | .000                   | .000                          | .000                   |
|                        | N                   | 237                        | 237                        | 237                    | 237                           | 237                    |
| Risk Identification    | Pearson Correlation | .712**                     | 1                          | .654**                 | .623**                        | .598**                 |
|                        | Sig. (2-tailed)     | .000                       |                            | .000                   | .000                          | .000                   |
|                        | N                   | 237                        | 237                        | 237                    | 237                           | 237                    |
| Risk Assessment        | Pearson Correlation | .698**                     | .654**                     | 1                      | .641**                        | .611**                 |
|                        | Sig. (2-tailed)     | .000                       | .000                       |                        | .000                          | .000                   |
|                        | N                   | 237                        | 237                        | 237                    | 237                           | 237                    |
| Risk Response Planning | Pearson Correlation | .741**                     | .623**                     | .641**                 | 1                             | .667**                 |
|                        | Sig. (2-tailed)     | .000                       | .000                       | .000                   |                               | .000                   |
|                        | N                   | 237                        | 237                        | 237                    | 237                           | 237                    |
| Risk Monitoring        | Pearson Correlation | .729                       | .598                       | .611                   | .667                          | 1                      |
|                        | Sig. (2-tailed)     | .000                       | .000                       | .000                   | .000                          |                        |
|                        | N                   | 237                        | 237                        | 237                    | 237                           | 237                    |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data analysed in SPSS (2026)

All four predictors returned strong, statistically significant positive correlations with program performance ( $p < .01$ ). Risk response planning displayed the highest association ( $r=.741$ ), followed by risk monitoring ( $r=.729$ ), risk identification ( $r=.712$ ), and risk assessment ( $r=.698$ ). Inter-predictor correlations ranged from  $r=.598$  to  $r=.667$ , well below the  $r=.80$  threshold that Field (2018) identifies as indicative of problematic multicollinearity, confirming the predictors retain sufficient distinctness for simultaneous inclusion in a regression model.

Expressed as shared variance ( $r^2$ ), risk response planning accounts for approximately 54.9% of the variation it shares with program performance, followed by risk monitoring at 53.1%, risk identification at 50.7%, and risk assessment at 48.7%. This percentage-based view reinforces the earlier correlation strengths: each predictor is meaningfully associated with performance, yet none overlaps with it so heavily as to make the others redundant.

#### ➤ *Multiple Regression Analysis*

Multiple linear regression was conducted to assess both the collective and individual contributions of the four risk management dimensions to program performance, and to test the study's null hypotheses. The model takes the following form:  $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$

Where  $Y$  denotes program performance;  $X_1$ ,  $X_2$ ,  $X_3$ , and  $X_4$  represent risk identification, risk assessment, risk response planning, and risk monitoring respectively;  $\alpha$  is the regression constant;  $\beta_1$ – $\beta_4$  are the unstandardized coefficients; and  $\varepsilon$  is the error term.

#### ➤ *Model Summary*

The table below summarizes the overall explanatory power of the regression model. It shows the extent to which the combined risk management practices account for variation in program performance.

Table 5 Model Summary<sup>b</sup>

| Model | R                 | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1     | .834 <sup>a</sup> | .695     | .690              | .35812                     | 1.987         |

<sup>a</sup> Predictors: (Constant), Risk Monitoring Practices, Risk Assessment Practices, Risk Identification Practices, Risk Response Planning

<sup>b</sup> Dependent Variable: Program Performance

Source: Primary data analysed in SPSS (2026)

The combined model accounted for 69.5% of the variance in program performance ( $R^2 = .695$ , Adjusted  $R^2 = .690$ ), with a multiple correlation coefficient of  $R = .834$  confirming a strong overall association. The adjusted figure corrects for model complexity, confirming that explanatory power is substantive rather than inflated by the number of predictors. The Durbin-Watson statistic of 1.987 falls within the accepted range of 1.5-2.5, indicating that the independence-of-residuals assumption is satisfied.

#### ➤ Anova

This subsection reports the analysis of variance used to determine whether the regression model is statistically significant as a whole. It shows whether the four predictors collectively explain a meaningful proportion of the variation in program performance.

Table 6 Anova<sup>a</sup>

| Model |            | Sum of Squares | df  | Mean Square | F       | Sig.              |
|-------|------------|----------------|-----|-------------|---------|-------------------|
| 1     | Regression | 67.834         | 4   | 16.959      | 132.214 | .000 <sup>b</sup> |
|       | Residual   | 29.812         | 232 | .128        |         |                   |
|       | Total      | 97.646         | 236 |             |         |                   |

<sup>a</sup> Dependent Variable: Program Performance

<sup>b</sup> Predictors: (Constant), Risk Monitoring Practices, Risk Assessment Practices, Risk Identification Practices, Risk Response Planning

Source: Primary data analysed in SPSS (2026)

The ANOVA result confirms overall model significance  $F(4, 232) = 132.214$ ,  $p < .001$ , establishing that the four predictors collectively account for a statistically significant portion of the variation in program performance. The overarching null hypothesis that risk management practices exercise no combined effect on program performance is accordingly rejected.

#### ➤ Regression Coefficients and Hypothesis Testing

The table below presents the regression coefficients and corresponding significance tests for each predictor. It shows the unique contribution of each risk management practice to program performance while controlling for the others.

Table 7 Coefficients<sup>a</sup>

| Model                  | Unstandardized Coefficients |            | Standardized Coefficients | t     | Sig. | VIF   |
|------------------------|-----------------------------|------------|---------------------------|-------|------|-------|
|                        | B                           | Std. Error | Beta                      |       |      |       |
| (Constant)             | .412                        | .089       |                           | 4.629 | .000 |       |
| Risk Identification    | .218                        | .047       | .241                      | 4.638 | .000 | 1.621 |
| Risk Assessment        | .196                        | .051       | .208                      | 3.843 | .000 | 1.578 |
| Risk Response Planning | .247                        | .053       | .274                      | 4.660 | .001 | 1.694 |
| Risk Monitoring        | .231                        | .049       | .257                      | 4.714 | .000 | 1.653 |

<sup>a</sup> Dependent Variable: Program Performance

Source: Primary data analysed in SPSS (2026)

All four predictors achieved statistical significance ( $p < .05$ ). VIF values ranged from 1.578 to 1.694, well below the threshold of 10 specified by Hair et al. (2019), ruling out multicollinearity. In terms of relative influence, risk response planning carried the largest standardized beta coefficient ( $\beta = .274$ ), identifying it as the strongest individual predictor. It was followed by risk monitoring ( $\beta = .257$ ), risk identification ( $\beta = .241$ ), and risk assessment ( $\beta = .208$ ). The full regression equation derived from the analysis is:

*Program Performance*

$= 0.412$

$+ 0.218(\text{Risk Identification})$

$+ 0.196(\text{Risk Assessment})$

$+ 0.247(\text{Risk Response Planning})$

$+ 0.231(\text{Risk Monitoring}) + \varepsilon$

This implies that, all other variables held constant, each unit improvement in risk response planning is associated with a 0.247-unit gain in program performance, while a unit increase in risk identification yields a 0.218-unit improvement.

### ➤ Summary of Hypothesis Testing

This section provides a concise summary of the hypothesis testing results. It indicates whether each null

hypothesis was accepted or rejected based on the statistical evidence obtained from the regression analysis.

Table 8 Summary of Hypothesis Testing Results

| Hypothesis      | Statement                                                                | $\beta$ | t-value | p-value | R <sup>2</sup> | Decision |
|-----------------|--------------------------------------------------------------------------|---------|---------|---------|----------------|----------|
| H0 <sub>1</sub> | Risk identification has no significant effect on program performance.    | .241    | 4.638   | .000    | .507           | Rejected |
| H0 <sub>2</sub> | Risk assessment has no significant effect on program performance.        | .208    | 3.843   | .000    | .487           | Rejected |
| H0 <sub>3</sub> | Risk response planning has no significant effect on program performance. | .274    | 4.660   | .001    | .549           | Rejected |
| H0 <sub>4</sub> | Risk monitoring has no significant effect on program performance.        | .257    | 4.714   | .000    | .531           | Rejected |

Source: Primary data analysed in SPSS (2026)

All four null hypotheses are rejected at the 5% significance level, providing empirical support for the conclusion that each risk management dimension independently and significantly predicts the performance of farmers' support programs.

## V. CONCLUSIONS AND RECOMMENDATIONS

### ➤ Conclusions

This study set out to examine the effect of project risk management practices on the performance of farmer support programmes implemented by Urugaga Imbaraga in Musanze District, Rwanda. The findings directly answer that objective: the study concludes that project risk management practices, taken individually and collectively, have a significant and positive influence on the performance of farmers' support programs implemented by Urugaga Imbaraga in Musanze District.

The four practices examined together account for a substantial proportion of the variation observed in program performance, an outcome which confirms that performance in this setting is not primarily a matter of chance or of factors external to the organization, but is, to a considerable degree, a function of how deliberately and systematically risk is managed.

The finding that risk response planning carries the greatest weight among the four practices lend support to the view, drawn from Systems Theory, that a support programme functions as an interconnected whole in which the way an organization responds to a threat, and not merely whether the threat was noticed, determines the eventual outcome for beneficiaries. At the same time, the comparatively modest contribution of risk assessment, alongside qualitative evidence that assessment in the organization rests more on informal judgment than on structured tools, is in line with contingency theory's proposition that practices which are not adapted to the specific operating environment of an organization will tend to underperform relative to their full potential.

The consistent involvement of farmers, local leaders and staff across all stages of the risk management process, and the differing risk priorities expressed by these groups during interviews, further affirm the relevance of Stakeholder theory

to this context, in that a support programme which fails to accommodate the varied perspectives of its stakeholders is less likely to identify, and subsequently manage, the risks that matter most to the people it serves.

In brief, the study concludes that Urugaga Imbaraga's farmer support programs currently operate with a risk management culture that is present but only partially formalized. The practices exist and are, to a fair degree, followed, yet they lean heavily on informal, experience-based routines rather than on documented systems, standardized tools and adaptive monitoring loops. This half-formalized state appears to explain both the above-average performance recorded in the study and the persistent gaps, most notably in timeliness of program delivery that respondents identified as areas still requiring attention.

### ➤ Recommendations

The recommendations below are deliberately organized to respond to the specific weaknesses and gaps identified in Chapter Four: risk assessment as the least developed practice, risk response planning as the strongest performance predictor, timeliness of programme delivery as the weakest performance indicator, and the comparatively informal, experience-based nature of current practice. Each recommendation is therefore tied to a specific finding rather than proposed as a generic intervention.

The organization should move from informal, verbally-transmitted risk identification toward a standardized risk register that is completed at the start of every program and updated as new risks emerge, so that institutional memory of past risks is not lost when staff or seasons change. Given that risk assessment emerged as the weakest practice, management should introduce simple, low-cost prioritization tools, such as a probability-impact matrix, that field staff and cooperative leaders can apply without requiring advanced statistical training.

Since risk response planning was found to be the strongest predictor of performance, the organization should back its mitigation plans with dedicated contingency budgets and clearly assigned responsibilities, rather than leaving response largely to ad hoc decision-making once a risk has already occurred.

Monitoring should be reoriented away from a purely compliance and reporting function toward a genuinely adaptive one, for instance by holding periodic risk review meetings where updated risk registers directly inform adjustments to program activities. Because timeliness of program delivery was the weakest-performing indicator overall, particular attention should be paid to how delays in input distribution, funding disbursement and decision-making are linked to unmanaged operational risks.

The Ministry of Agriculture and Animal Resources and the Rwanda Agriculture and Animal Resources Development Board should consider developing minimum risk management standards or guidelines for farmer organizations and cooperatives that receive public or donor support, given the demonstrated link between risk management maturity and program outcomes.

Capacity-building support, including training in basic risk assessment and contingency planning, should be extended to farmer federations such as Urugaga Imbaraga, particularly targeting the local leadership and community development officer cadres who sit closest to farmers. Policy frameworks governing agricultural support programs should build in explicit requirements for documented risk registers and periodic risk reviews as a condition of continued funding or partnership.

Farmers and their cooperative structures are encouraged to participate actively in risk identification and monitoring activities, since the study found that stakeholder involvement strengthens the relevance and completeness of the risks identified. Beneficiaries should make use of existing feedback channels to flag emerging risks, such as pest outbreaks or market price shifts, promptly, so that response measures can be initiated before losses accumulate.

## REFERENCES

- [1]. African Development Bank. (2021). *African economic outlook 2021: From debt resolution to growth the road ahead for Africa*. African Development Bank.
- [2]. Agriculture and Agri-Food Canada. (2022). *Risk management programs for Canadian farmers*. Government of Canada.
- [3]. Aven, T. (2020). *Risk assessment and risk management: Review of recent advances on their foundation*. European Journal of Operational Research, 286(1), 1–13.
- [4]. Bizimana, J., & Mugabo, P. (2022). Risk management practices and performance of agricultural cooperatives in Rwanda. *Rwanda Journal of Agricultural Sciences*, 8(2), 65–82.
- [5]. Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40.
- [6]. Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide*. SAGE Publications.
- [7]. Brown, L., & Patel, K. (2020). Effectiveness measurement in education projects: A systematic review. *Educational Evaluation and Policy Analysis*, 42(2), 189–210.
- [8]. Chapman, C., & Ward, S. (2019). *How to manage project opportunity and risk: Why uncertainty management can be a much better approach than risk management* (3rd ed.). Wiley.
- [9]. Chen, H., & Liu, Y. (2021). Monitoring and evaluation impact on curriculum development. *International Journal of Curriculum Studies*, 35(4), 445–462.
- [10]. Chen, L., & Liu, Y. (2021). Contingency approaches to agricultural project management and performance in rural China. *Journal of Rural Studies*, 85, 45–56.
- [11]. Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- [12]. Corbin, J., & Strauss, A. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). SAGE Publications.
- [13]. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- [14]. Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.
- [15]. Daft, R. L. (2022). *Organization theory and design* (14th ed.). Cengage Learning.
- [16]. Dmytriiev, S. D., & Phillips, P. (2021). Risk management practices and project performance in agricultural cooperatives. *International Journal of Project Management*, 39(7), 713–726.
- [17]. European Commission. (2023). *Common Agricultural Policy: Risk management tools*. EU Publications Office.
- [18]. Flood, R. L., & Carson, E. R. (2018). *Dealing with complexity: An introduction to the theory and application of systems science* (2nd ed.). Springer.
- [19]. Food and Agriculture Organization of the United Nations. (2022). *The state of food and agriculture 2022: Leveraging automation in agriculture for transforming agrifood systems*. FAO.
- [20]. Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
- [21]. Freeman, R. E., Phillips, R., & Sisodia, R. (2020). *The Cambridge handbook of stakeholder theory*. Cambridge University Press.
- [22]. Ghana Ministry of Food and Agriculture. (2022). *Ghana agricultural insurance programme annual report 2022*. Ministry of Food and Agriculture.
- [23]. Habyarimana, E., & Nsabimana, J. (2023). Risk response planning and agricultural input support programme performance in Rwanda. *Rwanda Journal of Agricultural Development*, 11(1), 55–71.
- [24]. Hair et al. (2019). Accountability and transparency in development projects. *Public Administration Review*, 80(4), 567–583.
- [25]. Hillson, D., & Murray-Webster, R. (2020). *Understanding and managing risk attitude* (3rd ed.). Routledge.
- [26]. Hopkin, P. (2018). *Fundamentals of risk management: Understanding, evaluating and implementing effective risk management* (5th ed.). Kogan Page.

- [27]. Hox, J. J., & Boeije, H. R. (2005). Data collection, primary versus secondary. In K. Kempf-Leonard (Ed.), *Encyclopedia of social measurement* (Vol. 1, pp. 593–599). Elsevier.
- [28]. Hwang, B. G., & Ng, W. J. (2021). Project risk management and project success: A systematic review and future research directions. *International Journal of Project Management*, 39(5), 525–541.
- [29]. Hwang, B. G., & Ng, W. J. (2021). Project risk management and project success: A systematic review and future research directions. *International Journal of Project Management*, 39(5), 525–541.
- [30]. International Fund for Agricultural Development. (2024). *Rural development report 2024*. IFAD.
- [31]. International Organization for Standardization. (2018). *ISO 31000:2018 Risk management Guidelines*. ISO.
- [32]. ISO (2018). *Monitoring and evaluation: A handbook for development practitioners*. Practical Action Publishing.
- [33]. Kamara, A., & Bangura, M. (2021). Risk assessment practices and agricultural development project performance in Sierra Leone. *African Journal of Project Management*, 9(2), 81–95.
- [34]. Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations* (2nd ed.). Wiley.
- [35]. Kline (2023). Human capital theory and education policy in South Africa. *Journal of Education and Work*, 26(5), 521–539.
- [36]. Kumar, R. (2019). *Research methodology: A step-by-step guide for beginners* (5th ed.). SAGE Publications.
- [37]. Kvale, S., & Brinkmann, S. (2009). *InterViews: Learning the craft of qualitative research interviewing* (2nd ed.). SAGE Publications.
- [38]. Kvale, S., & Brinkmann, S. (2019). *InterViews: Learning the craft of qualitative research interviewing* (3rd ed.). SAGE Publications.
- [39]. Marchesi, M., & Ferreira, M. (2021). Risk monitoring practices and project performance in agricultural development programmes. *International Journal of Project Organisation and Management*, 13(3), 245–262.
- [40]. Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). Jossey-Bass.
- [41]. Meuwissen, M. P. M., Feindt, P. H., Spiegel, A., Termeer, C. J. A. M., Mathijs, E., de Mey, Y., Finger, R., Balman, A., Wauters, E., Urquhart, J., Vigani, M., Zawalińska, K., Herrera, H., Nicholas-Davies, P., Hansson, H., Paas, W., Slijper, T., Coopmans, I., Vroege, W., ... Reidsma, P. (2021). A framework to assess the resilience of farming systems. *Agricultural Systems*, 176, 102656.
- [42]. Ministry of Agriculture, Livestock, Fisheries and Cooperatives. (2023). *Agricultural sector transformation and growth strategy progress report*. Government of Kenya.
- [43]. Mitchell, R. K., Agle, B. R., & Wood, D. J. (2019). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review*, 22(4), 853–886.
- [44]. Mugenda, O. M., & Mugenda, A. G. (2003). *Research methods: Quantitative and qualitative approaches*. ACTS Press.
- [45]. Mugisha, P., & Najjumba, S. (2023). Integrated risk management and the performance of agricultural cooperatives in Rwanda. *East African Journal of Agriculture and Rural Development*, 7(2), 102–118.
- [46]. Munyandamutsa, A., & Uwizeye, P. (2023). Risk assessment techniques and agricultural transformation programmes in Rwanda. *Rwanda Journal of Development Studies*, 10(1), 66–82.
- [47]. Mutabazi, J., Niyigena, P., & Uwizeyimana, D. (2021). Risk management practices and agricultural project performance in East Africa. *African Journal of Agricultural Research*, 17(6), 845–857.
- [48]. Mutabazi, J., Niyigena, P., & Uwizeyimana, D. (2021). Risk management practices and agricultural project performance in East Africa. *African Journal of Agricultural Research*, 17(6), 845–857.
- [49]. Mwangi, P., & Kariuki, J. (2022). Project risk management and agricultural programme implementation in East Africa. *African Journal of Project Management*, 10(1), 41–58.
- [50]. Ngwenya, T., & Moyo, S. (2022). Risk response planning and programme performance in agricultural cooperatives in Zimbabwe. *Journal of Agricultural Extension and Rural Development*, 14(3), 177–189.
- [51]. Nkuranga, E., & Habimana, J. (2021). Risk identification practices and performance of agricultural value chain projects in Rwanda. *Rwanda Journal of Agricultural Sciences*, 9(1), 34–48.
- [52]. OECD. (2023). *Systems approaches to public sector challenges*. Organisation for Economic Co-operation and Development.
- [53]. Okello, P., & Musinguzi, A. (2022). Risk assessment approaches and agricultural extension project performance in Uganda. *Journal of Agricultural Extension and Rural Development*, 14(2), 98–112.
- [54]. O'Leary, Z. (2014). *The essential guide to doing your research project* (2nd ed.). SAGE Publications.
- [55]. Olsson, R. (2019). *Risk management in projects: A practical guide*. Routledge.
- [56]. Oppenheim, A. N. (1992). *Questionnaire design, interviewing and attitude measurement*. Continuum.
- [57]. Osei-Kyei, R., & Chan, A. P. C. (2021). Stakeholder management and project success: A systematic review. *International Journal of Managing Projects in Business*, 14(5), 1203–1228.
- [58]. Ouma, J., & Otieno, P. (2023). Risk monitoring practices and performance of agricultural development projects in Kenya. *African Journal of Project Management*, 11(1), 77–93.
- [59]. Polit, D. F., & Beck, C. T. (2020). *Nursing research: Generating and assessing evidence for nursing practice* (11th ed.). Wolters Kluwer.
- [60]. Project Management Institute. (2021). *A guide to the project management body of knowledge (PMBOK® guide)* (7th ed.). Project Management Institute.
- [61]. Rubin, H. J., & Rubin, I. S. (2012). *Qualitative interviewing: The art of hearing data* (3rd ed.). SAGE Publications.

- [62]. Saunders, M., Lewis, P., & Thornhill, A. (2023). *Research methods for business students* (9th ed.). Pearson Education.
- [63]. Scott, W. R., & Davis, G. F. (2020). *Organizations and organizing: Rational, natural, and open systems perspectives* (2nd ed.). Routledge.
- [64]. Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika*, 52(3–4), 591–611.
- [65]. Tadesse, B., & Bekele, A. (2023). Project risk management practices and agricultural development programme performance in Ethiopia. *Journal of Development and Agricultural Economics*, 15(2), 48–61.
- [66]. Tadesse, B., & Bekele, A. (2023). Project risk management practices and agricultural development programme performance in Ethiopia. *Journal of Development and Agricultural Economics*, 15(2), 48–61.
- [67]. Tembo, C., & Phiri, M. (2021). Financial risk monitoring and sustainability of agricultural financing programmes in Zambia. *African Journal of Agricultural Economics*, 16(2), 119–132.
- [68]. Torkamani, J., & Abdollahzadeh, G. (2021). Agricultural risk management strategies and sustainable rural development: Evidence from developing countries. *Journal of Rural Studies*, 82, 345–356.
- [69]. Turner, J. R. (2020). *The handbook of project-based management: Leading strategic change in organizations* (5th ed.). McGraw-Hill.
- [70]. United States Department of Agriculture. (2022). *Risk management agency annual performance report 2022*. U.S. Department of Agriculture.
- [71]. Urugaga Imbaraga. (2024). *Organizational records on farmer support programmes and stakeholder database*. Urugaga Imbaraga.
- [72]. Von Bertalanffy, L. (1968). *General system theory: Foundations, development, applications*. George Braziller.