

Risk identification as a means of improving the performance of rural development projects in Cameroon

Identificación de riesgos como medio para mejorar el rendimiento de los proyectos de desarrollo rural en Camerún

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ABSTRACT

Rural development projects in Cameroon are central to national strategies, yet their performance remains persistently unsatisfactory, with many failing to meet deadlines, respect budgets, or deliver quality outcomes despite substantial donor investment. This underperformance raises the research problem: how do project risks hinder the performance of rural development initiatives in Cameroon? To address this, the study employed a qualitative approach combining literature review, semi-structured interviews, document analysis, and participatory observation across three donor-funded projects, with managers and coordinators selected as the sample. Risks were identified and classified according to Ray's typology and the PMBOK framework, while project performance was assessed through the "iron triangle". Twenty-two major risks were identified, with 68% exogenous and 32% endogenous, and short-term strategic risks proved most prevalent. Sixteen risks significantly affected deadlines, fourteen influenced budget execution, and eleven compromised deliverable quality, with insecurity in intervention areas, pandemic outbreaks, procurement dysfunctions, incompetence of team members, and inflation emerging as the most critical. Results reveal that risk management measures are largely reactive, applied only after risks materialize, undermining efficiency, sustainability, and stakeholder confidence. In line with recent international studies emphasizing governance, institutional resilience, climate and financial risks, adaptive management, and criticality models, this research proposes a risk criticality framework to guide proactive decision-making and highlights the need to strengthen project teams' risk management skills. Systematic risk identification and mitigation are essential to improve timeliness, budget compliance, and quality, thereby ensuring the sustainability of rural development projects in Cameroon.

RESUMEN

Palabras clave:

Proyecto de desarrollo rural, gestión de riesgos, desempeño del proyecto de desarrollo.

Los proyectos de desarrollo rural en Camerún son esenciales para las estrategias nacionales, pero su desempeño sigue siendo insatisfactorio, ya que muchos no cumplen plazos, exceden presupuestos o entregan resultados de baja calidad pese a la inversión de los donantes. Este bajo rendimiento plantea el problema de investigación: *¿cómo afectan los riesgos al desempeño de los proyectos de desarrollo rural en Camerún?* Para responder, el estudio adoptó un enfoque cualitativo que combinó revisión bibliográfica, entrevistas semiestructuradas, análisis documental y observación participativa en tres proyectos financiados por donantes. Los riesgos fueron identificados y clasificados según la tipología de Ray y el marco PMBOK, mientras que el desempeño se evaluó mediante el “triángulo de hierro”. Se identificaron veintidós riesgos, de los cuales el 68% fueron exógenos y el 32% endógenos, siendo los estratégicos de corto plazo los más frecuentes. Dieciséis afectaron significativamente los plazos, catorce influyeron en la ejecución presupuestaria y once comprometieron la calidad, destacando la inseguridad en las zonas de intervención, las pandemias, las disfunciones de adquisiciones, la incompetencia de miembros del equipo y la inflación. Los resultados muestran que la gestión de riesgos es mayormente reactiva, aplicada solo después de su materialización, lo que debilita la eficiencia y la sostenibilidad. El estudio propone un modelo de criticidad para orientar decisiones proactivas y subraya la necesidad de fortalecer las competencias de los equipos, destacando que la identificación y mitigación sistemáticas son esenciales para mejorar plazos, presupuestos y calidad, garantizando la sostenibilidad de los proyectos rurales en Camerún.

Introduction

To achieve its 2035 vision, the Cameroonian government established the National Development Strategy (NDS30) in 2020. NDS30 combines sectorial strategies, including rural development and the National Agricultural Investment Plan, to achieve the Millennium Development Goals. The government emphasized rural development as the essence of national development, thus promoting modernization while contributing to local development.

However, according to estimates by the International Finance Corporation (IFC), one in two projects fails. Another notable aspect of the current management of rural development projects in Cameroon is the tendency for extensions, illustrating the inability of the projects to achieve their objectives within the allotted time. The problems of managing development aid projects in developing countries are legion (Ika, 2011). Awe Baina et al. (2020) report a generally unsatisfactory performance of rural development projects in Cameroon.

Recent studies confirm that risk management remains a decisive factor in the performance of rural development projects worldwide. For instance, Rodríguez Rivero et al. (2020) highlight in Colombia that economic, cultural, and political risks are critical, with cultural differences directly linked to project success. Khan et al. (2021) emphasizes governance and institutional capacity risks as determinants of performance in international development projects. Mwangi & Otieno (2022) show that climate and financial risks are the most frequent in East African agricultural projects, recommending community resilience tools. Singh & Patel (2023) underline the importance of adaptive management and budget flexibility in rural projects in India. Garcia & Chen (2024) demonstrate that exogenous risks such as pandemics, inflation, and political instability are the most destructive, requiring criticality models. These findings reinforce the relevance of analysing risk identification as a means of improving rural development project performance in Cameroon.

Therefore, this study focuses on the influence of risks on the performance of rural development projects. Given this situation, it is appropriate to ask how project risks hinder the good performance of development projects in Cameroon. Two additional questions are added to this main question. What are the risks that could influence the management of development projects? What are their impacts on the expected outcomes of development projects? This article is structured around the following sections: introduction, methodology, results, discussion, and conclusion.

Method

The methodological approach of this study combined a literature review, semi-structured interviews, document analysis, and participatory observation, with a total of 24 interviews conducted among national coordinators, project managers, administrative and financial officers, component heads, and regional unit managers. Participants were selected through a purposive sampling process, targeting individuals directly responsible for planning, monitoring, and decision-making in rural development projects, thereby ensuring that the data collected reflected both strategic and operational perspectives.

The three projects analysed were chosen for their representativeness and diversity: PADFA, financed by IFAD, focused on strengthening agricultural value chains; PCP-ACEFA, supported by AFD, aimed at consolidating agropastoral advisory services for

family farms; and PD-COBIE, funded by the Islamic Development Bank, concentrated on livestock commercialization and infrastructure development.

The dependent variables (time, cost, and quality) were operationalized respectively as compliance with planned deadlines and milestones, budget execution rates and deviations from allocations, and conformity of deliverables to technical specifications combined with beneficiary satisfaction. The independent variables were risks identified and classified as endogenous or exogenous, then categorized according to Ray's typology and the PMBOK framework.

Data analysis involved thematic coding of interview transcripts and field notes, followed by the construction of risk criticality matrices in which each risk was assigned a criticality index calculated as the product of its probability of occurrence (rated on a 1–5 scale based on frequency) and its impact score (rated on a 1–5 scale according to effects on time, cost, and quality). This produced indices that allowed prioritization of risks into low, medium, and high criticality categories.

To ensure validity and reliability, triangulation was applied by cross-checking interviews, documents, and observations; preliminary findings were reviewed with project coordinators and donor representatives; and coding consistency was verified by two independent reviewers.

Results

Project Performance and the “Iron Triangle”

Early studies on project management emphasized the “iron triangle” of time, cost, and scope as the primary indicators of performance (Jugdev & Müller, 2005). Later refinements distinguished project performance from project success, with performance assessed progressively during the project cycle and success evaluated at completion in terms of sustainability, stakeholder acceptance, and long-term impact (Khang & Mae, 2008).

In the Cameroonian context, rural development projects often fail to meet these basic performance indicators, with 70% considered unsatisfactory (Awe Baina et al., 2020). A project's performance is measured using various indicators, including quantitative (cost, time, quality) and qualitative (beneficiary satisfaction, social impact, sustainable development), which make it possible to monitor progress towards the set objectives and to evaluate its impact based on the target values contained in the results measurement framework (RMF).

Rural development project is a temporary initiative that combines financial, human and material resources to improve the economic, social or environmental well-being of rural populations (Saidou, 2015). It has been the main means of disseminating ODA in Africa since 1960. However, despite the proliferation of rural development projects in Africa, particularly in Cameroon, their performance remains mixed (Assontia Djoudji et al., 2022).

Risks, Uncertainty, and Complexity in Development Projects

According to Khan & Zahid (2013), development projects are generally low-maturity organizations, as their relatively new management systems fail to manage risks due to various constraints. For this reason, outsourcing, also known as “make do” (contracting), is frequently used to execute most of the planned activities. This strategy aims to ensure institutional solidity and strengthen the skills of local actors in socio-economic development services. However, this approach creates uncertainty regarding

the variability in the quality of services provided, due to the absence or unavailability of local expertise.

According to PMI (2017), project risk is "an uncertain event or condition whose occurrence would have a positive or negative effect on one or more project objectives, such as scope, schedule, or quality." For Wysocki (2014), uncertainty and risk are two inseparable concepts. The more complex a project, the higher its degree of uncertainty. Kreye & Balangalibun (2015) specify that the uncertainty surrounding a project's objectives is mainly associated with performance indicators (cost, time, or quality) and the variability of projections. Complexity can be defined as a system composed of many parts interacting in complicated ways, with tasks and relationships being major sources of complexity (Simon, 1965).

International Perspectives

Recent scholarship reinforces these findings. Rodríguez-Rivero et al. (2020) highlighted economic, cultural, and political risks in Colombia, linking cultural differences to project success. Khan et al. (2021) emphasized governance and institutional capacity risks in international projects. Mwangi & Otieno (2022) identified climate and financial risks as dominant in East African agricultural projects, recommending resilience tools. Singh & Patel (2023) stressed adaptive management and budget flexibility in India, while Garcia & Chen (2024) confirmed that exogenous risks such as pandemics, inflation, and political instability are the most destructive, requiring criticality models.

Risk identification

Project risk identification involves identifying and documenting all potential risks that could impact project performance. Field analysis identified 22 major risks, classified according to Ray's typology and the PMBOK framework. Their impacts on the project were also determined.

Table 1
Risk classification according to Ray's typology

Endogenous Risks	Impact on the project
Conflict between project team members	- Decreased productivity; - Low morale; - Quality of work compromised; - Delays in execution; - Risk of departure of key members.
Unexpected resignations of project members	- Disruption of activities; - Loss of skills and knowledge; - Increased workload; - Additional recruitment costs; - Decreased team engagement.
Malfunction of procurement procedures	- Delays in the execution of activities; - Budget overrun; - Quality of supplies and services compromised; - Legal risks; - Loss of stakeholder confidence.
Fraud and corruption within the project	- Loss of financial resources; - Deterioration in the quality of deliverables; - Damage to reputation - Delays and legal complications; - Erosion of beneficiary confidence.
Incompetence of some members of the project team	- Decrease in the quality of deliverables; - Delays in execution; - increased workload;

Endogenous Risks	Impact on the project
	- Additional costs; - Deterioration of team cohesion.
Poor management of payments by the project's administrative and financial department	- Delays in the execution of activities; - Loss of confidence of suppliers; - Budget overrun; - Compliance issues; - Deterioration of team morale.
Obsolescence of technical skills of beneficiary management staff	- Decrease in the quality of supervision; - delays in carrying out activities; - Resistance to change; - Impact on the sustainability of results; - Additional training costs.
Exogenous Risk	
Lack of support from the guardianship	- Delays in execution; - Lack of resources; - Coordination difficulties; - Loss of credibility.
Addition of activities not provided for in the PTBA resulting from the ratification of new agreements with other projects or institutions	- Work overload; - Delays in execution; - Budget overrun; - Complexity of management; - Deterioration in the quality of results.
Outbreak of a pandemic (coronavirus)	- Delays in the execution of activities; - Logistical disruptions; - Increased costs; - Impact on team health; - Changes in beneficiary needs.
Misuse of the purpose of project support by beneficiaries	- Loss of resources; - Reduction of the impact of the project; - Conflicts with stakeholders; - Bad reputation; - Monitoring and evaluation difficulties.
Low capacity to mobilize personal contributions by beneficiaries	- Reduced efficiency; - Dependence on external resources; - Decrease in engagement; - Monitoring and evaluation difficulties; - Negative impact on sustainability.
Poor mastery of the technical, administrative and financial procedures of the project by the stakeholders	- Errors in the execution of activities; - Delays in deadlines; - Budget overruns; - Conflicts between stakeholders; - Impact on the sustainability of results.
Inflation or volatility of input prices in the market	- Budget overruns; - Delays in execution; - Reduction in quality; - Impact on sustainability.
Insecurity in the project intervention areas	- Delays in the execution of activities; - Team insecurity; - Decreased beneficiary engagement; - Logistical disruptions; - Degradation of the project's reputation.
Slowness in providing financial resources to the project	- Delays in the execution of activities; - Disruption of relationships with partners; - Budget overruns; - Impact on team morale; - Decreased quality of results.

Endogenous Risks	Impact on the project
Poor execution of activities entrusted to external technical service providers for the implementation of the project	- Decrease in the quality of deliverables; - Delays in project progress; - Budget overruns; - Impact on reputation; - Conflicts and tensions.
Poor relationship between the project coordinator and the funder	- Delays in funding; - Lack of support; - Communication difficulties; - Degradation of reputation; - Conflicts of priorities.
Failure to comply with commitments of strategic partners in the execution of planned activities	- Delays in the execution of activities; - Disruption of partnership relations; - Decreased quality of results - Budget overruns; - Sustainability of results.
Delay in obtaining no objection notices	- Delays in the execution of activities; - Budget overruns; - Decreased team motivation; - Damage to stakeholder relations; - Non-conformity of results or deliverables;
Delays or difficulties in mobilizing counterpart funds	- Delays in the execution of activities; - Budget overruns; - Decreased partner confidence; - Impact on the quality of results; - Increase in non-conformities.
Drought or flooding in the project intervention areas	- Disruption of agricultural activities; - Damage to infrastructure; - Food insecurity; - Delays in project execution.

Source: Authors.

This table identifies 22 risks, divided into 15 exogenous and 7 endogenous. Endogenous risks are mainly linked to human resources (conflicts, incompetence, corruption), while exogenous risks include insecurity, pandemics, inflation, and climate hazards. The key insight is that exogenous risks dominate and are largely unpredictable, while endogenous risks reveal structural weaknesses in project management.

The identified risks were categorized according to the PMBOK classification: operational risks, short-term strategic risks and long-term strategic risks.

Table 2
PMBOK risk classification

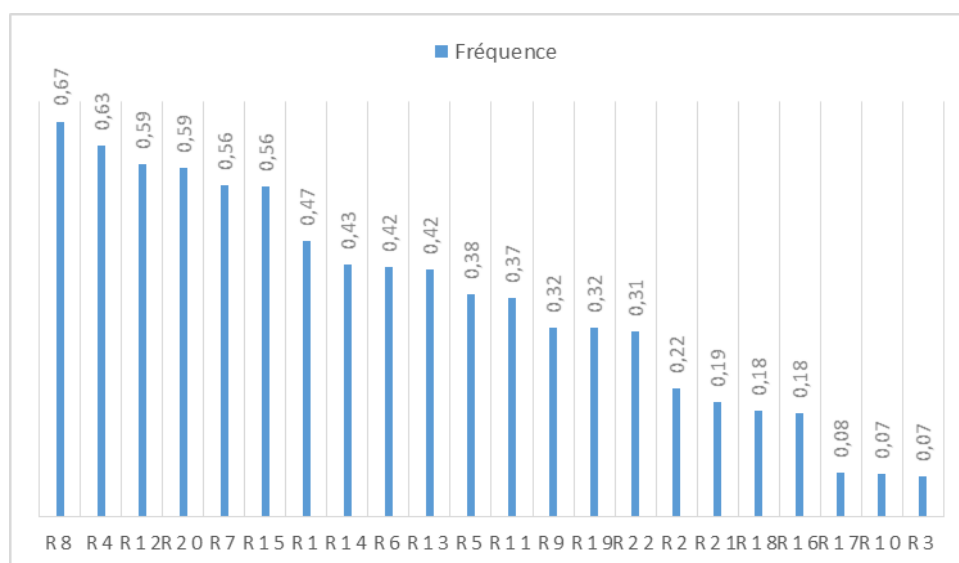
Category	Risk identified
Operational risks	Conflict between project team members
	Unexpected resignations of project members
	Fraud and corruption within the project
	Delay in obtaining no objection notices
	Obsolescence of technical capacities of the beneficiaries' supervisory staff
	Incompetence of some members of the project team
	Poor relationship between the Project Coordinator and the Funder
Short-term strategic risks	Malfunction of procurement procedures
	Poor management of payments by the project's administrative and financial department
	Poor mastery of the technical, administrative and financial procedures of the project by the stakeholders
	Slowness in providing financial resources to the project
	Poor execution of activities entrusted to external technical service providers for the implementation of the project
	Delays or difficulties in mobilizing counterpart funds
	Failure to comply with commitments of strategic partners in the execution of planned activities
Long-term strategic risks	Addition of activities not provided for in the PTBA resulting from the ratification of new agreements with other projects or institutions
	Lack of support from the guardianship
	Emergence of a pandemic
	Misuse of the purpose of project support by beneficiaries
	Drought or flooding in the project intervention areas
	Insecurity in the project intervention areas
	Low capacity to mobilize personal contributions by beneficiaries
	Inflation or volatility of input prices in the market

Source: Authors.

Risks are grouped into **operational, short-term strategic, and long-term strategic categories**. The analysis shows that **short-term strategic risks are the most prevalent**, such as procurement dysfunctions, poor financial management, and delays in mobilizing funds. This prevalence highlights the immediate threats to project continuity and the need for proactive monitoring and mitigation. This approach allows teams to effectively address existing challenges while remaining attentive to long-term issues, thus ensuring business continuity.

Figure 1 illustrates the average frequency with which each identified risk occurs during the implementation of a rural development project.

Figure 1
Frequency of occurrence of risks

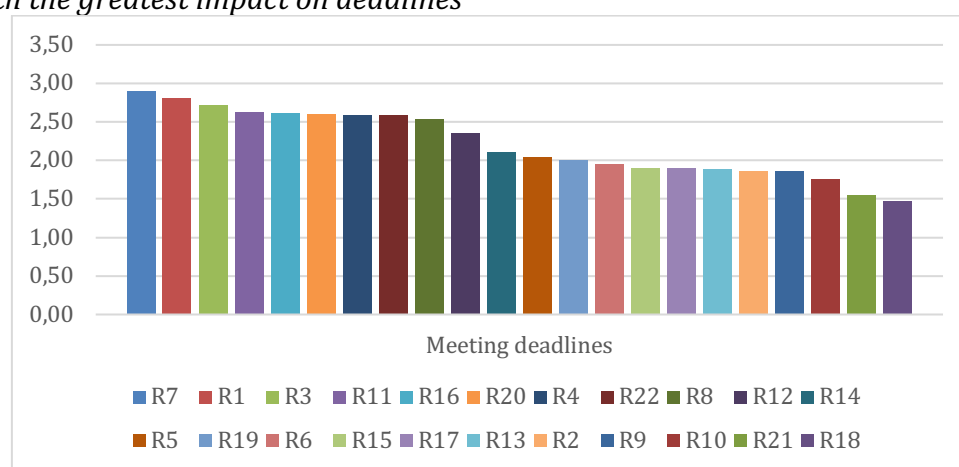


This figure shows that the most recurrent risks are team incompetence, inflation, market fluctuations, corruption, low beneficiary contributions, and ineffective payment management. These risks appear frequently and compromise deadlines, budgets, and quality simultaneously, demonstrating their systemic nature. The identification of risks, their classification and the determination of their frequency of occurrence in the cases studied allowed us to analyse their influences on the performance of rural development projects.

Influence of identified risks on the performance of development projects

The assessment of the impact of the identified risks on the three performance variables (time, cost and quality) was carried out by determining the average of the scores awarded by each interviewee.

Figure 2
Risks with the greatest impact on deadlines



Sixteen risks significantly affect project timelines, with the most critical being low beneficiary contributions (R7), insecurity in intervention areas (R1), pandemic outbreaks (R3), and procurement dysfunctions (R11). These risks often trigger cascading delays

across annual work plans and budgets, leading to disputes and reputational damage. Their systemic nature shows that deadlines are highly vulnerable to both external shocks and internal management weaknesses.

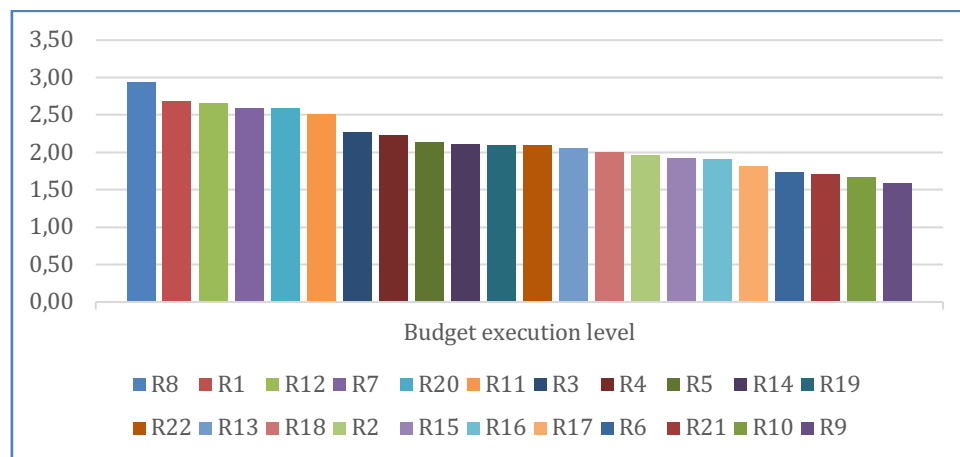
As a preventive measure, it is necessary to act quickly and proactively, by determining risks affecting deadlines, assessing potential delays and tasks using Gantt charts or critical analyses, and implementing preventive measures.

If the risk has already occurred the following corrective actions can be taken:

- Determine specific actions to reduce the delay, adjusting planning if necessary;
- If possible, allocate additional resources to the most critical activities to catch up the delay;
- Inform the parties involved of the situation and the actions taken to resolve the problem;
- In case of potential risk, the following preventive measures are recommended;
- Establish actions to reduce the likelihood of the risk occurring or to minimize the consequences if it ever materializes;
- Establish response plans for each identified risk;
- Frequently monitor risk developments and establish key performance indicators (KPIs) to measure the effectiveness of preventive measures.

Figure 3

Risks that most influence the budget



Fourteen risks have a strong impact on budget execution. The most recurrent are team incompetence (R8), insecurity (R1), inadequate mastery of procedures (R12), and poor execution by external providers (R20). These risks manifest through cost overruns, rigid budgets unable to absorb shocks, and financial resource delays. They highlight the fragility of financial planning in rural development projects and the need for contingency budgeting and proactive monitoring.

General risk management provisions to avoid or reduce the negative impact of risks on planned budgets require the implementation of the following successive steps:

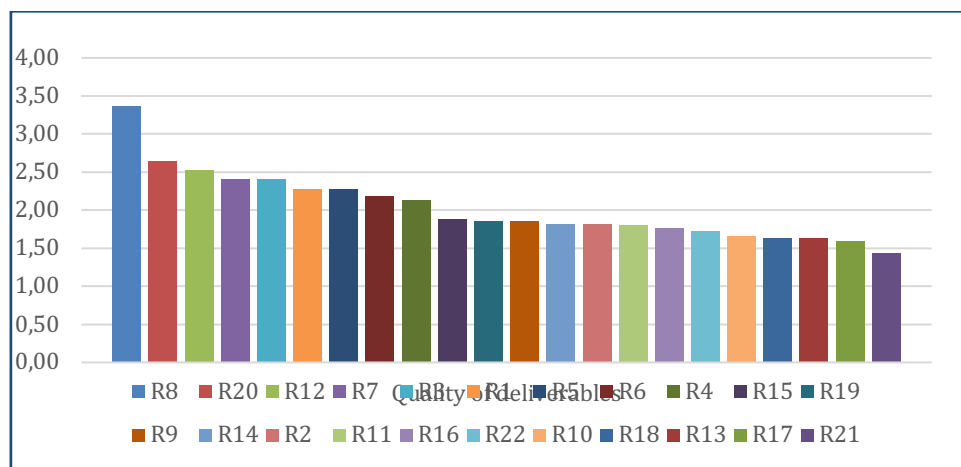
- Risk identification and analysis. Here, we seek to identify the reasons for the budget overrun (such as a delay in delivery by a service provider, an unexpected increase in the cost of inputs or equipment, etc.). Subsequently, it is necessary to examine the extent of the budget overrun and its impact on other dimensions of performance (deadlines and quality);

- Implement mitigation plans. This involves first identifying possible actions to reduce the impact of the risk (e.g., negotiating with the supplier, optimizing resources, etc.). Then, choosing the most effective measures to reduce the risk. Finally, ensuring that the required resources (financial, time, human) are available for implementing the mitigation plans;
- Monitor and adjust plans. This involves implementing planned actions to reduce risk, monitoring changes in circumstances and determining whether the measures taken are effective, and, if necessary, adjusting mitigation strategies to better address risks.

During the planning and project maturation phases, a contingency budget can be introduced into the overall budget to provide a safety margin to deal with this type of risk or unforeseen expenses.

Figure 4

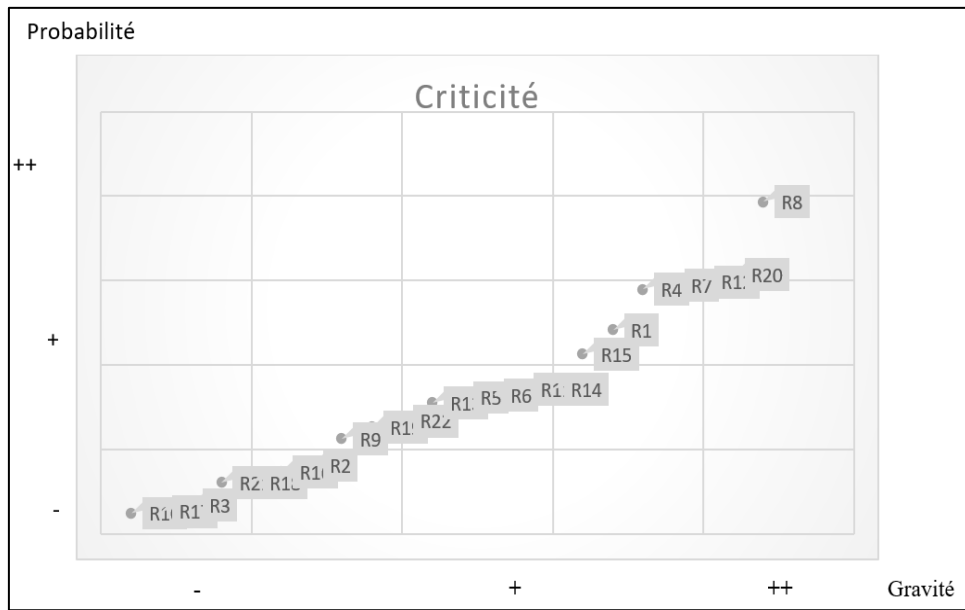
Risks influencing the quality of PDR deliverables



Twelve risks compromise deliverable quality, with team incompetence (R8), poor execution by external providers (R20), and inadequate mastery of procedures (R12) emerging as the most critical. These risks lead to non-conformities, rework, increased costs, and stakeholder dissatisfaction. Their recurrence demonstrates that quality is not only affected by technical capacity but also by governance and accountability mechanisms.

The cases studied led us to establish a risk criticality matrix on which the project team can base to control risks.

Figure 5
Risk criticality matrix



The criticality matrix confirms that team incompetence (R8) and poor execution by external service providers (R20) are the most severe risks, requiring immediate attention. These findings demonstrate that risk management practices are often reactive, applied only after problems occur, which undermines efficiency and sustainability.

The proposed management decisions are contained in Table 3.

Table 3
Risk control decision

Code	Probability	Gravity	Criticality	Decision
R10	0.07	1.70	0.12	Negligible risk
R17	0.08	1.77	0.13	Risk to follow
R3	0.07	2.47	0.17	Risk to follow
R21	0.19	1.56	0.30	Risk to follow
R18	0.18	1.70	0.30	Risk to follow
R16	0.18	2.09	0.37	Risk to follow
R2	0.22	1.88	0.41	Risk to follow
R9	0.32	1.76	0.56	Risk to follow
R19	0.32	1.99	0.63	Risk to follow
R22	0.31	2.14	0.67	Risk to follow
R13	0.42	1.86	0.77	Risk to follow
R5	0.38	2.15	0.81	Risk to follow
R6	0.42	1.96	0.82	Risk to follow
R11	0.37	2.32	0.85	Risk to follow
R14	0.43	2.01	0.85	Risk to follow
R15	0.56	1.90	1.06	Risk to be treated
R1	0.47	2.59	1.21	Risk to be treated
R4	0.63	2.32	1.45	Risk to be treated
R7	0.56	2.63	1.47	Risk to be treated
R12	0.59	2.51	1.49	Risk to be treated

Code	Probability	Gravity	Criticality	Decision
R20	0.59	2.61	1.54	Risk to be treated
R8	0.67	2.95	1.97	Risk to be treated

The criticality matrix provides a clear prioritization of risks based on their probability and severity. It distinguishes between negligible risks (e.g., R10), risks to follow (moderate probability and impact, such as R17, R3, R9, R19, R22), and risks to be treated (high probability and impact, such as R8, R20, R12, R7, R4, R1, R15).

The most critical risks identified are:

- Team incompetence (R8, criticality 1.97) – the highest priority, directly affecting deadlines, budgets, and quality;
- Poor execution by external service providers (R20, 1.54) – a recurrent issue undermining deliverable quality and project credibility;
- Inadequate mastery of procedures (R12, 1.49) and low beneficiary contributions (R7, 1.47) – both systemic risks that weaken project sustainability;
- Inflation (R4, 1.45) and insecurity (R1, 1.21) – exogenous shocks that destabilize financial and operational planning.

This classification shows that human resource weaknesses and procurement issues are the most pressing endogenous risks, while economic volatility and insecurity dominate among exogenous risks. The matrix thus serves as a decision-making tool, guiding project managers to allocate resources and design mitigation strategies where they are most needed.

The analysis of the information gathered from our interlocutors and our findings in the project development sector highlight the fact that risk management approaches are only implemented once the risks have already caused damage to the expected results or hindered the execution of the planned tasks, thus confirming our research hypotheses. It is therefore essential that key project stakeholders have risk management skills in order to avoid negative impacts and ensure the desired improvements following a development action.

The results presented above provide a detailed mapping of the risks affecting rural development projects in Cameroon, highlighting their prevalence, typology, and measurable impacts on deadlines, budgets, and quality. While these findings offer a comprehensive empirical picture, their full significance emerges only when interpreted through broader conceptual frameworks and international perspectives. The predominance of exogenous risks, the recurrent influence of short-term strategic threats, and the reactive nature of current risk management practices call for deeper reflection on how these dynamics interact with national development strategies, institutional capacities, and global debates on project governance. Moving from description to analysis, the following section discusses these results in light of theoretical models and recent studies, drawing out both academic implications and practical lessons for improving the sustainability and performance of rural development initiatives.

Discussion and conclusions

Rural development and national strategies

Rural development projects in Cameroon are central to the National Development Strategy (NDS30) and remain a cornerstone of the country's vision for 2035. Despite their strategic importance, evidence shows that nearly half of donor-funded projects fail to

meet their objectives within the allotted timeframe (IFC estimates; Awe Baina et al., 2020). This persistent underperformance undermines modernization efforts and weakens local development outcomes. The Cameroonian case reflects broader challenges in Africa, where rural projects have historically been the main vehicle for Official Development Assistance (Saidou, 2015), yet their sustainability and impact remain mixed (Assontia Djoudji et al., 2022). The findings of this study highlight that rural development initiatives cannot achieve their transformative potential without embedding systematic risk identification and proactive management into their design and execution.

Risk management in development projects

The identification of twenty-two risks (68% exogenous and 32% endogenous) demonstrates the multidimensional vulnerability of rural development projects. Endogenous risks are largely human-resource related (conflicts, incompetence, and corruption), while exogenous risks include insecurity, pandemics, inflation, and climate hazards. Short-term strategic risks emerged as the most prevalent, directly affecting project continuity. These findings confirm that risk management in Cameroon remains reactive, applied only after risks materialize, which erodes efficiency and stakeholder confidence. International studies reinforce this conclusion: Rodríguez-Rivero et al. (2020) emphasized cultural and political risks in Colombia; Khan et al. (2021) highlighted governance and institutional capacity risks; Mwangi & Otieno (2022) identified climate and financial risks in East Africa; Singh & Patel (2023) stressed adaptive management and budget flexibility in India; and Garcia & Chen (2024) demonstrated that exogenous shocks such as pandemics and inflation are the most destructive. Together, these perspectives underscore the need for a risk criticality framework that prioritizes risks and guides proactive decision-making.

Project performance and sustainability

The study confirms that risks directly compromise the three pillars of project performance: deadlines, budgets, and quality. Sixteen risks significantly delayed project activities, fourteen caused budget overruns, and eleven reduced deliverable quality. Insecurity in intervention areas, pandemic outbreaks, procurement dysfunctions, and inflation were among the most critical. These risks manifest in delays, cost escalations, disputes, and reputational damage, ultimately undermining sustainability. The Cameroonian evidence aligns with global debates on project performance, where success is increasingly defined not only by outputs but also by resilience, stakeholder acceptance, and long-term impact (Khang & Mae, 2008). By situating Cameroon's experience within international scholarship, this study strengthens both its academic relevance and practical implications: systematic risk identification and mitigation are indispensable to improve timeliness, budget compliance, and quality, thereby ensuring the sustainability of rural development projects.

Theoretical and practical implications

Theoretically, this study contributes to the literature by situating the Cameroonian case within broader debates on project governance, adaptive management, and institutional resilience. These converging results demonstrate that the Cameroonian case is part of a broader international trend where proactive risk identification and management are essential to improve timeliness, budget compliance, and quality. They consolidate the distinction between project performance and project success by showing that risks compromise deadlines, budgets, and quality simultaneously, thus validating integrated frameworks that link operational efficiency with long-term sustainability.

They also confirm the relevance of Ray's typology and the PMBOK framework in development contexts while highlighting the predominance of short-term strategic risks that demand refinement of existing models to better capture immediate threats in fragile environments. Moreover, the findings extend international perspectives by situating Cameroon within global debates on governance, institutional resilience, and adaptive management, and the introduction of a risk criticality matrix operationalizes theoretical concepts of probability and impact, bridging abstract definitions with practical prioritization tools.

Practically, the study underscores the urgent need to strengthen team capacity through targeted training and recruitment; improve procurement and financial processes to reduce dysfunctions and delays; and prepare for exogenous shocks such as insecurity, pandemics, and inflation through contingency budgeting and resilience strategies. The Cameroonian evidence underscores the urgent need for proactive and systematic risk identification. The proposed risk criticality model offers a framework for prioritizing risks and guiding decision-making before they materialize. Strengthening project teams' risk management skills, embedding adaptive governance structures, and integrating resilience strategies into donor-funded projects are essential steps to improve timeliness, budget compliance, and quality. It further demonstrates that current practices are reactive, applied only after risks materialize, and therefore calls for systematic identification, prioritization, and monitoring using KPIs and criticality matrices to transform risk management into a proactive process.

Finally, the results highlight policy and governance implications, stressing the importance of institutional support, donor coordination, and timely resource allocation to ensure project sustainability. Together, these implications enrich project management theory and provide a roadmap for managers and policymakers to enhance the credibility and long-term impact of rural development projects in Cameroon.

Study's limitations

The study's limitations must be acknowledged to properly frame the interpretation of results. First, the research relied on a qualitative approach with 24 interviews across three donor-funded projects, which, while rich in detail, limits the generalizability of findings to the broader landscape of rural development projects in Cameroon. The purposive sampling of managers and coordinators ensured strategic insights but may have excluded perspectives from beneficiaries or lower-level staff, potentially biasing the identification of risks toward managerial concerns. Second, the focus on three projects (PADFA, PCP-ACEFA, PD-COBIE), although representative, does not capture the full diversity of rural development initiatives, especially community-driven or smaller-scale projects, which may face different risk profiles. Third, the risk criticality matrix was based on subjective scoring of probability and impact, which, despite triangulation and peer review, introduces a margin of interpretation that could vary across evaluators. Fourth, the study emphasized short-term strategic risks, but long-term structural risks such as climate change or institutional fragility may have been underexplored due to the time frame of data collection. Finally, the reliance on documentary sources and participatory observation may have been constrained by access to complete and unbiased records, limiting the depth of analysis in certain areas.

These limitations imply that while the results provide a robust mapping of risks and their impacts on deadlines, budgets, and quality, they should be interpreted as indicative rather than exhaustive. The findings highlight critical vulnerabilities but must be complemented by further research involving larger samples, quantitative validation, and inclusion of beneficiary perspectives. Recognizing these boundaries ensures that the

study contributes meaningfully to both theory and practice, while avoiding overgeneralization of its conclusions.

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