# RISK MANAGEMENT STRATEGY

## FOR INFRASTRUCTURAL DEVELOPMENT IN SOMALIA

**Ministry of Labor and Social Affairs**
**Federal Goverment of Somalia**

by
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# EXECUTIVE SUMMARY

Somalia is gradually emerging from decades of conflict, insecurity, and political instability dating back to the collapse of its central government in 1991 (Menkhaus, 2014). This long-standing instability has resulted in weakened state institutions, entrenched regional divisions, and persistent insecurity (United Nations Development Programme, 2022). The country currently operates under a federal system, though relations between the Federal Government of Somalia (FGS) and its Federal Member States (FMS) remain a complex and ongoing challenge (International Crisis Group, 2023). The prolonged absence of an effective central government since 1991 has significantly impeded Somalia's development, particularly regarding the maintenance and expansion of public infrastructure (World Bank, 2022). Nevertheless, recent efforts by the FGS have placed the country on a path toward systematic recovery. One such initiative is the Somalia National Transformation Plan I (2025–2029), led by the Ministry of Planning, Investment, and Economic Development (MoPIED), which seeks to stimulate economic growth and enhance long-term stability (MoPIED, 2024). Infrastructure development in Somalia continues to face a range of risks that influence project implementation. These risks include political instability, uncertainty in policy and regulatory frameworks, economic and financial volatility, corruption, governance challenges, operational and logistical constraints, supply chain disruptions, environmental and social risks, security threats, technological limitations, judicial inefficiencies, reputational concerns, and credit risks (World Bank, 2022; African Development Bank, 2023). The proposed infrastructure risk management strategy for Somalia aims to identify sector-specific risks and design tailored mitigation approaches that address the country's unique context. The strategy's formulation followed a broad, participatory consultation process. Identified risks were assessed for likelihood and potential impact on infrastructure projects using a Likert scale ranging from 1 (very low) to 5 (very high). The analytical framework incorporated international best practices, including ISO 31000:2018 on Risk Management, the AfDB's Integrated Safeguards System (ISS) for environmental and social risk management, and the World Bank's Systematic Operations Risk-Rating Tool (SORT) (ISO, 2018; AfDB, 2023; World Bank, 2022). To address identified and potential risks, the strategy recommends key legal and institutional reforms, such as strengthening the institutional and legal framework, addressing infrastructure-related legal gaps, rebuilding institutional capacity and public trust, improving financial sector regulation, and enhancing debt management practices (International Crisis Group, 2023; UNDP, 2022). The risk management strategy will be implemented at multiple levels like macro-national, project-specific, and sectoral such as water infrastructure. Implementation will occur in two phases: Phase One will focus on learning and awareness-raising, while Phase Two will involve comprehensive data collection and risk management activities. The implementation process includes seven interactive steps: (1) formation of risk committees and standard operating procedures (SOPs), (2) strategic framework planning and brainstorming, (3) detailed risk identification through workshops and data collection, (4) risk analysis and assessment through likelihood/impact scoring, (5) risk evaluation and prioritization, (6) risk documentation (risk register), and (7) risk treatment, monitoring, and evaluation. The strategy also incorporates a monitoring, evaluation, and learning (MEL) framework and will follow a modular approach from 2025 to 2030. The Ministry of Public Works, Reconstruction, and Housing will lead the implementation, progressively coordinating with other relevant institutions (MoPIED, 2024).

## TERMS AND DEFINITIONS

| Term | Definition |
|---|---|
| Risk Event | An occurrence or change of a particular set of circumstances. An event can sometimes be referred to an "incident" or "accident". |
| Risk Event Timing | The stage of the project lifecycle in which the risk event would occur (e.g. the risk would eventuate in the planning / design / operations phase). |
| Risk Management | The coordinated activities to ensure that risk is identified and analysed to inform decision making. |
| Risk Management Framework | The set of components that provide the foundations and organisational arrangements for designing, implementing, monitoring, reviewing and continually improving risk management throughout the organization. |
| Risk Rating | The overall risk assessment status, determined through the likelihood and risk impact assessments. This is measured using the risk assessment matrix |
| Risk Root Cause | The element which alone, or in combination, has the intrinsic potential to give rise to risk |
| Risk Issue Impact | A detailed classification of the impact of a risk. |
| Risk Category | Risk categories should include financial, safety customer service, staffing and culture, compliance with legal provision |
| Sector Risk | The area of work that the risk relates to (i.e. transport, social infrastructure, energy, water, telecommunications project or other). |
| Stage in Project Lifecycle | The stage of the project lifecycle that the risk is relevant to (i.e. planning, design, engineering, construction, handover, operations, maintenance, or disposal). |
| Size of Project | The monetary size of the project. |

# ACKNOWLEDGEMENT

We extend our sincere gratitude to all individuals and institutions who contributed to the successful preparation of the Risk Management Strategy for Infrastructural Development in Somalia. This important work reflects a collective commitment to strengthening the foundations of infrastructure planning and implementation in the country. The strategy aims to support national development goals through a structured approach to identifying, assessing, and mitigating risks associated with infrastructural projects.

The preparation of this strategy was made possible through the leadership of Omar Abdi, who served as the Team Leader, and the dedicated efforts of the core development team: Prof. Thuita Thenya, Liban Mursal, Ahmed Nageye, Mohamed Abdirisak, Abdiaziz Roble and Salim Said. Their technical knowledge, strategic thinking, and collaborative spirit played a critical role in shaping a practical and forward-looking framework for risk management. Each member brought unique expertise that enriched the content and scope of the strategy.

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| | |
|---|---|
| AfDB | African Development Bank |
| CEPA | Committee of Experts on Public Administration |
| CSO | Civil Society Organisation |
| EHSG | Environmental, Health and Safety Guidelines |
| ESF | Environmental and Social Framework |
| ESMF | Environmental and Social Management Framework |
| ESRS | Environmental and Social Review Summary Concept Stage |
| ESS | Environmental and Social Standards |
| EU | European Union |
| GDP | Gross Domestic Product |
| ICT | Information and Communications Technology |
| IDP | Internally Displaced People |
| KII | Key Informant Interview |
| MoEWR | Ministry of Energy and Water Resources |
| MoICT | Ministry of Information, Culture and Tourism |
| MoLSA | Ministry of Labour and Social Affairs |
| MoPIED | Ministry of Planning, Investment and Economic Development |
| MoPWR | Ministry of Public Works, Housing and Reconstruction |
| MoTCA | Ministry of Transport and Civil Aviation |
| MTB | Money Transfer Businesses |
| NCA | National Communications Authority |
| NDP | National Development Plan |
| NGO | Non-Governmental Organisation |
| NTP | National Transformation Plan |
| ODA | Overseas Development Assistance |
| OHS | Occupation Health Safety |
| PPP | Public Private Partnership |
| SEA | Somaliland Electricity Agency |
| SEIP | Skills for Employability, Inclusion and Productivity Project |
| SFDRR | Sendai Framework for Disaster Risk Reduction |
| SIF | Somalia Infrastructure Fund |
| SOP | Standard Operating Procedure |
| UN | United Nations |
| UNDP | United Nations development Programme |
| UNEP | United Nations Environment Programme |
| UNDRR | United Nation Office for Disaster Risk Reduction (UNDRR) |

# CHAPTER ONE

## INTRODUCTION

## 1.1. COUNTRY OVERVIEW

Infrastructure development is a key driver of economic growth across Africa. However, Africa's logistics infrastructure, including railways, roads, and airports, has not kept pace with demand, resulting in a fragmented and underdeveloped network (African Union Commission, 2021). Experts widely acknowledge that increased investment in infrastructure can accelerate trade and economic growth across the continent (Economic Commission for Africa, 2021). Since the launch of the Programme for Infrastructure Development in Africa (PIDA) in 2012, research by the ECA has shown that Africa's infrastructure deficit reduces economic growth by an estimated 2% annually and reduces productivity by up to 40% (ECA, 2021). PIDA aims to transform Africa's infrastructure landscape by 2040 (AUC, 2021).

In Somalia, infrastructure, particularly roads and transport networks, remains in a severely deteriorated condition due to decades of conflict, instability, and chronic underinvestment (World Bank, 2022). While some paved roads exist, they are often in poor condition, and many rural areas lack reliable access routes (World Bank, 2022). Both public and private investments are urgently needed to address this infrastructure deficit and support sustainable development (Federal Government of Somalia, 2019). For example, most Somali ports require critical infrastructure upgrades, such as additional berths, improved logistics and cargo storage, cold chain capabilities, and modern management services (FGS, 2019).

These infrastructure challenges are not unique to Somalia. Neighboring countries, such as Kenya, face capacity constraints at major hubs like the Port of Mombasa, where enhancing road and rail linkages remains a priority to improve operational efficiency (African Development Bank [AfDB], 2023). Similarly, Kenya's infrastructure priorities include increasing power generation capacity to support economic growth (AfDB, 2023).

The outbreak of Somalia's civil war in the early 1990s devastated much of the country's infrastructure and halted both construction and maintenance efforts (Menkhaus, 2014). Today, many roads and bridges remain in a state of disrepair. The prolonged absence of an effective federal government has also hindered the development of regulatory and governance frameworks necessary for infrastructure development (FGS, 2019). Somalia thus faces complex and pressing state-building and reconstruction challenges, compounded by significant risks (International Crisis Group, 2023).

Ongoing armed conflict and weak political governance continue to pose substantial risks to infrastructure development in Somalia. Without improved security, both public and private infrastructure investments are unlikely to achieve meaningful progress (International Crisis Group, 2023). Other risks include weak institutional capacity, the absence of an integrated and sustainable national infrastructure plan, and challenges related to securing infrastructure assets—particularly energy facilities and large-scale immobile investments (World Bank, 2022). The lack of infrastructure professionals and skilled labor further hampers technical capacity in project implementation (World Bank, 2022).

Additional risks include land tenure disputes, dual land claims, and informal occupation of public lands, especially in urban centers, which obstruct both public and private infrastructure projects (UN-Habitat, 2021). Furthermore, coordination failures—such as unaligned donor-funded projects—can lead to duplication of efforts and wasted resources (World Bank, 2022). Somalia's limited deep-sea port capacity and its high dependence on imported construction materials result in elevated transportation and construction costs, creating bottlenecks for scaling up infrastructure investment (FGS, 2019).

Severe budgetary constraints and Somalia's limited access to international financing further impede large-scale infrastructure investment (World Bank, 2022). The lack of a centralized regulatory and coordination mechanism exacerbates fragmented sectoral development and undermines long-term national infrastructure planning (International Crisis Group, 2023).

Somalia has undertaken structured planning since the 1960s, evidenced by its nine National Development Plans (NDPs). Of these, seven were developed prior to the collapse of the central government in 1991, while two have been formulated since 2012 as part of post-conflict recovery and state-building efforts (FGS, 2019). However, lessons from past NDPs indicate that targeted development goals remain largely unmet. Given Somalia's post-conflict context, a paradigm shift is required to drive sector-wide

transformation—including in infrastructure—through robust risk assessment and strategic planning (UNDP, 2022).

The National Transformation Plan (NTP) 2025–2029 aligns with Somalia's Centennial Vision 2060, which envisions a prosperous, secure, democratic, inclusive, and competitive nation with a high quality of life (MoPIED, 2024). By emphasizing collaborative governance, equitable resource distribution, and evidence-based decision-making, Somalia aims to address enduring gaps in infrastructure, service delivery, and economic opportunity (MoPIED, 2024).

For example, NTP Initiative 9. Enhancing Governance for Sustainable Infrastructure Key Interventions: Strategic Infrastructure Planning: Prioritise projects based on affordability, cost-efficiency, and long-term sustainability, focusing on asset life cycles, maintenance, and climate resilience. Establish Clear Regulatory Frameworks: Ensure robust coordination across all government levels to streamline decision-making and resource allocation, promoting stability and inclusive development. In line with this vision, the goal of the NTP is to consolidate peace and create sustainable economic growth and improved social well-being by achieving the following core objectives:

a) Establish and strengthen institutions for transparent, accountable, and inclusive governance.

b) Foster macroeconomic stability and lay foundations for the diversification of the economy.

c) Build critical infrastructure for sustainable development, including roads, energy, public buildings, and broadband capability.

d) Increase support to the social sector for human capital development and protect the vulnerable population, particularly persons with disabilities.

e) Increase resilience to environmental and climate shocks.

f) Mainstream gender equity, human rights, and inclusivity in all development policies and programs by empowering women, youth, and People with Disability as drivers of growth and nation-building.

Thus, based on these objectives, NTP is well aligned to support low risk infrastructure development in Somalia and give strong support to the risk management strategy

## 1.2. PURPOSE AND OBJECTIVES OF THE STRATEGY

The risk management strategy is being developed to improve investors' understanding of Somalia-specific contextual risks, enhance informed decision-making, minimize potential threats, leverage emerging opportunities, and ultimately maximize the success of infrastructure investment projects. This strategy aims to systematically identify, analyze, and mitigate risks while proposing adaptive and tailored risk management approaches suitable for Somalia's infrastructure sector (World Bank, 2022; International Crisis Group, 2023). Effective risk management is integral to sound infrastructure investment, project management, and governance. Establishing a robust risk identification and management culture will enhance decision-making processes and foster progressive and sustainable infrastructure development (AfDB, 2023).

Furthermore, the strategy will provide insights into shifting growth dynamics as well as disruptive and emerging risks that may impact project outcomes. An integrated approach to risk identification, analysis, and intervention formulation will support the Federal Government of Somalia (FGS) in developing sustainable and resilient investments (UNDP, 2022).

For the purpose of this risk management strategy, physical infrastructure refers to the assembly of structural assets such as roads, bridges, tunnels, ports, and railways. Soft infrastructure encompasses the services required to support the economic, health, and social well-being of the population (UN-Habitat, 2021). Appendix 1 reflects the multi-dimensional nature of Somalia's infrastructure landscape. The World Bank defines infrastructure as the essential foundation for development, encompassing critical services such as water supply, sanitation, energy, transportation networks, and information and communication technology (ICT), which has been adopted as the working definition for this strategy (World Bank, 2022).

## 1.3. METHODOLOGY ADOPTED FOR THE STRATEGY FORMULATION

The formulation of this infrastructure risk management strategy undertook a wide consultation and participatory approach (Figure 1). Initially an inception report was drafted outlining the scope and methodology for undertaking the formulation of infrastructure risk strategy. This was followed by a comprehensive review of literature focusing on infrastructure development associated risks in Somali. The review informed development of data collection tools in readiness for questionnaire survey and stakeholders consultations. The administration of the questionnaire aimed to collect comprehensive data on existing and potential risks associated with infrastructure projects. The target of the questionnaire survey was government officials, technical experts, and planners involved in infrastructure development. By reaching out to stakeholders across different regions, the survey ensured that risk factors unique to each locality were captured that helped to formulate a more inclusive and evidence-based strategy. Data analysis highlighted common trends, challenges, and gaps in risk management across the country.

This was followed by Key Informant Interviews (KIIs) that was conducted with purposefully selected experts who possessed in-depth knowledge and experience in infrastructure development and risk management. These experts included engineers, policymakers, financial analysts, risk consultants and regulatory officials who had direct involvement in planning and implementing infrastructure projects. The interviews provided context-specific and deeper insights into the nature of risks, past mitigation efforts, political, financial, or environmental uncertainties and best practices that were not easily captured through questionnaire surveys that were incorporated into the strategy. The KIIs also helped validate the findings from the questionnaire survey.

The results of the literature review, stakeholders' consultation and questionnaire survey was validated through several meetings held in Mogadishu. The final phase of the fieldwork involved consultative workshops with key stakeholders, including private sector contractors, government agencies, civil society organizations, and development partners. These workshops served as platforms for dialogue, allowing participants to share their experiences, challenges, and recommendations for strengthening risk management in infrastructure development. The workshops facilitated collective problem-solving, fostered collaboration among different stakeholders, and helped build consensus on effective risk mitigation strategies. Additionally, they provided an opportunity to document and categorize risks systematically, ensuring that the final strategy was both comprehensive and practical. By engaging a diverse group of stakeholders, the workshops enhanced the strategy's relevance and increased the likelihood of successful implementation. This interactive consultative process is presented in Figure 1.

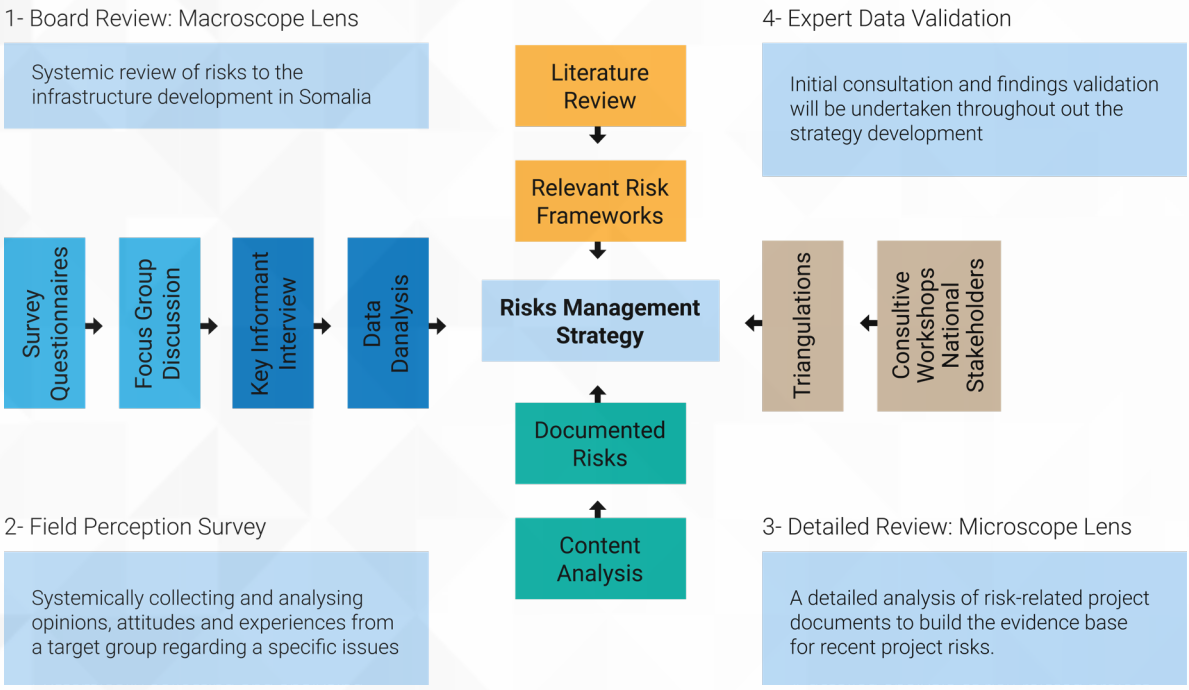



Figure 1: Methodological Framework for the Field

The draft and final strategy was further subjected to stakeholders' engagement to ensure that information captured, and strategy put in place would respond to the needs of the Somalia as country.

## 1.4. OUR APPROACH FOR ASSESSING THE RISKS

Based on the field engagement process various risks were identified for the development of a Risk Management Strategy for Infrastructural Development in Somalia. These risks were then evaluated in terms of probability of occurrence and likely impact on infrastructure risk development. This was done using Likert scale of 1-5 (1-very low to 5- very high). 1- very high – Critical, 2- high – Severe, 3-medium – Moderate, 4-low- Sustainable, 5-very low - Negligible

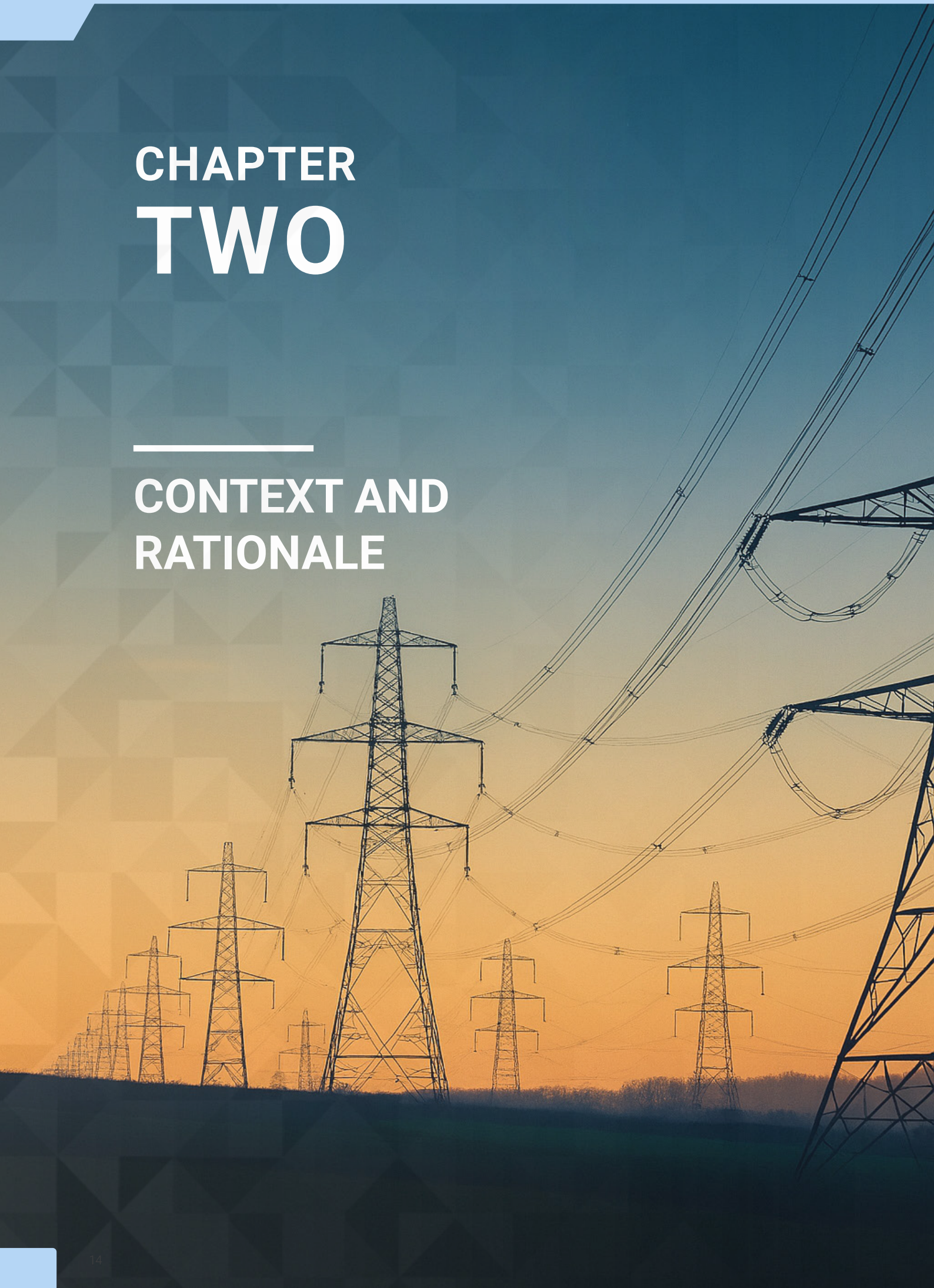
The different levels have different meaning as outlined below;

- Critical: This level indicates the highest severity and impact, potentially leading to complete system outages, major functionality failures, or catastrophic consequences.
- Severe: A high-impact level, suggesting significant degradation of key components, affecting a large number of users or operations, requiring immediate attention.
- Moderate: This level represents a partial loss of functionality, minor impact on a small group of users or operations, and a response time typically handled during business hours.
- Sustainable: This level, often used in a broader context, suggests a lower risk level, where the issue can be managed or mitigated without significant disruption.
- Negligible: This is the lowest severity level, indicating minor inconveniences, no user impact, or non-essential issues that can be logged for future resolution.

| Risk Matrix | | | | | | |
|---|---|---|---|---|---|---|
| Impact | | Very Low | Low | Medium | High | Very High |
| Probability | Very High | Moderate | Severe | Severe | Critical | Critical |
| | High | Sustainable | Moderate | Severe | Critical | Critical |
| | Medium | Sustainable | Moderate | Moderate | Severe | Critical |
| | Low | Sustainable | Sustainable | Moderate | Severe | Critical |
| | Very Low | Sustainable | Sustainable | Sustainable | Moderate | Severe |

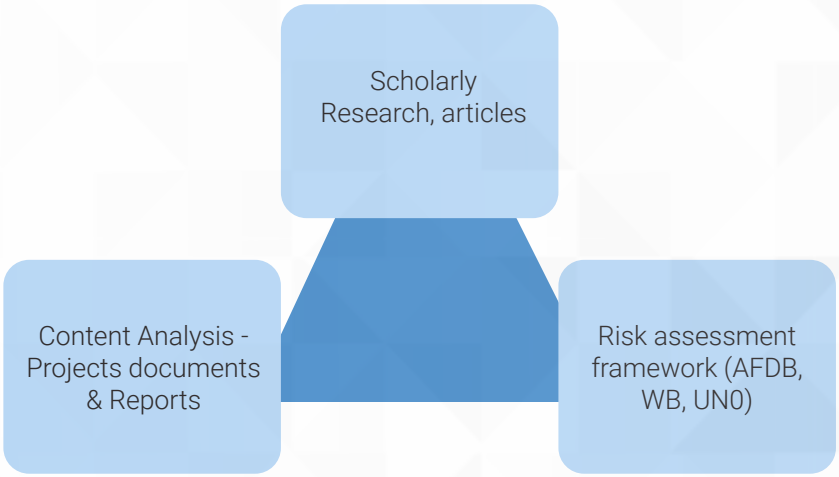
# CHAPTER TWO

## CONTEXT AND RATIONALE



## 2.1. INTRODUCTION

In context analysis of Somalia infrastructure development risks, this involved three interactive approaches that is information generated from research articles, which was informed by journal articles and other unpublished research output. This was complimented by analysis of report from development projects from Somalia like those generated from world bank, Africa development bank, United Nations development programme support projects. In addition, various risk associated framework were also analysed.




## 2.2. RISK LANDSCAPE - SOCIO-ECONOMIC AND POLITICAL ANALYSIS

The adoption of the 2012 Provisional Constitution introduced federalism as Somalia's governance model, establishing a framework for decentralization, state-building, and the formation of Federal Member States (FMSs). To build a robust and inclusive federal structure, the Federal Government of Somalia (FGS) has undertaken key reforms aimed at deepening and strengthening federal institutions. These efforts include unbundling government functions, finalizing the constitution, establishing local governance structures, and enhancing intergovernmental relations (IGR), among other initiatives.

The adoption of the Revised National Security Architecture (NSArch) was a major step taken in improving the security architecture of Somalia by The National Consultative Council (NCC) in 2023. This framework aligns the Federal Government of Somalia (FGS) and Federal Member States (FMS) on security goals, including militia integration and unified command structures. The National Security Architecture introduced protocols for militia integration and equitable security participation across FMS, fostering collaboration between federal and state security entities.

To enhance security, a multi-faceted counter-extremism strategy, including ideological, financial, and military operations, has been implemented to weaken Al-Shabaab. Territorial gains have been achieved, securing key agricultural regions and transport corridors. Reconciliation efforts in liberated areas have established interim local administrations to sustain peace and governance. However, in spite of FGS making great progress the country landscape still remains volatile with significant risk across the landscapes.

Based on the Somalia historical and current prevailing socio-political scenario, there are several risks that affects or have potential to affect infrastructure development. These risks are diverse and are accompanied by several dynamics. Some of the key risks affecting infrastructure projects include:

**Volatile Political Governance and Increasing Corruption**

While there is a central government, the sub-units that is federal status do not necessarily follow the central government agenda, resulting in conflict and misalignment. The system is still under development and thus still weak or not strong enough to guarantee investments. In addition, regional political system has huge influence on political governance of Somalia.

The system is characterized by endemic corruption and has been classified as fragile status. According to the Fragile States Index (FSI), Somalia consistently ranks as one of the most fragile states globally, facing ongoing conflict, weak governance, and humanitarian crises among other regional countries like Somalia, South Sudan, Sudan, and Democratic Republic of Congo. The FSI aims to identify countries that are at risk of instability or collapse, allowing for targeted interventions and support in areas like infrastructure, which has re-enforcing stability in a society.

**Legal Framework –Weak Judicial Processes Risk and Reputational Risk**

Somalia has a rich cultural heritage centred on oratory and the quest for justice and fairness. Words like xaq (justice) and dulmi or xaq darro (injustice) reflect society's profound respect for fairness. Despite this cultural and religious dedication to justice, equality, and impartiality, the rule of law remains difficult to achieve. Decades of fragility and a focus on stabilizing and reconstituting the fractured state over delivering justice have severely impeded these efforts Somalia's has historically been weak and politically influenced, limiting its ability to serve this crucial function. The judicial system faces significant risks due to political interference, corruption, weak capacity, and security concerns, leading to a lack of independence and effectiveness, and hindering the rule of law. This has a serious negative implication on investors' confidence infrastructure involvements. However, this varies across the federal status depending on political governance.

Businesses face a high corruption risk when dealing with the courts. The court institution is subject to political interference and suffers from high levels of corruption, rendering it ineffective (HRR 2015; FitW 2015). Civil courts in Somalia are practically non-functional; a combination of traditional and customary, sharia and formal law guide the institution and in some local courts depend on dominant local clans for establishing authority (BTI 2016). Court orders are not respected by Somalian authorities (HRR 2015). In addition, the judiciary's status as the third branch of government has been largely ignored in Somali political discourse. This has resulted in a judiciary that lacks its own budget and remains financially dependent on the executive branch, further undermining its independence.

**Economic and Financial Risks**

The Federal Government of Somalia (FGS) recognizes the urgency of strengthening its capacity to manage the financial and economic impact of climate shocks and disasters. The need for stronger fiscal resilience is included in the country's strategies, specifically the Somalia National Development Plan 2020-2024 (Ministry of Planning, Investment and Economic Development, n.d.), the Drought Impact & Needs Assessment (World Bank 2018b), and importantly the Recovery and Resilience Framework (FGS 2018) as well as the Somalia Public Financial Management Roadmap Action Plan (2021–2024) (Ministry of Finance 2021b). The establishment of formal government structures, improved fiscal management, and strengthened legislative frameworks has created a foundation for building financial resilience.

**Insecurity Risks**

Somalia has a history of political and clan-based violence, which has destroyed basic state institutions and infrastructure affecting economic development. Armed groups like Al-Shabaab, control portions of the country and routinely extorts businesses and extorts payments from businesses. Somalia faces persistent insecurity due to armed groups, primarily Al-Shabaab, and ongoing conflict, leading to displacement, humanitarian crises, and civilian casualties which also discourage infrastructure development.

**Social and Natural Disaster Risks**

Fragile states suffer more from floods, droughts, storms, and other climate-related shocks than other countries. Each year, three times more people are affected by natural disasters in fragile states than in other countries. Disasters in fragile states like Somalia displace more than twice the share of the population in other countries. Somalia ranks second globally in exposure to natural hazards and 14th in overall disaster risk. It has extremely low capability to cope with recurrent catastrophes, which has resulted in prolonged adverse impacts on lives, livelihoods, and the economy. The frequency of droughts, floods, and other climate-related disaster events in Somalia has tripled since 1980, and the impact of these events has intensified in recent year.

**Private Sector Financial Default Risk**

Private sector credit risk refers to the potential for losses due to a borrower's inability to repay loans or other credit obligations, impacting lenders and the overall financial system. In Somalia, private sector default risk is significant due to political instability, weak institutions, and a fragile financial sector, with high levels of informal finance and limited access to formal credit. Somalia's financial sector is still developing thus fragile, and challenges remain, including low credit to the private sector as a percentage of GDP. Ongoing political instability and conflict create a high-risk environment for businesses and financial institutions, making it difficult to attract investment and manage credit risk. In addition, the lack of a robust institutional, legal, and regulatory framework further exacerbates credit risk, as it makes it difficult to enforce contracts and protect investors. In terms of financial resources sources, a large portion of businesses rely on informal sources of finance (family, friends, and business acquaintances) due to the un-favorable terms and conditions of financial institutions as well as inability to provide large collaterals.

**Technological Capacity Risk**

Academic and technical training remains inadequate. According to Environmental and Social Impact Assessment and Resettlement Action Plan on Somalia Regional Corridors Infrastructure Programme, (Katala, et al. 2019), and Education sector analysis (IIEP-UNESCO, 2022) since the collapse of the state in 1991, only 30% of the children are in school and fewer than 50 % of girls attend primary school. By 2018, 86% of youth ages 15-24 in Somalia had not completed primary education. This has a strong implication on development of technical skills in the country, which undermines sustainable infrastructure development. Additionally, the lack of professional licensing systems allows unqualified individuals to occupy engineering roles, undermining the credibility of the profession, and compromising public trust in infrastructure projects.

**SWOT ANALYSIS**

A situational analysis of political, economic, social, technological, environmental, legal, strength, weakness, opportunities, and threats (SWOT) highlight notable threats in Somalia (Appendix 2). This status is linked to the continued effect of weak governance associated with collapse of the central government in 1990s and subsequent impact of armed groups and clannism. Some of the opportunities for addressing risks and threats identified include;

- Strengthening government institutions to enhance project implementation
- Increasing foreign direct investment (FDI) in infrastructure
- Expanding private sector involvement in infrastructure projects
- Training and capacity-building programs to develop a skilled workforce.
- Community engagement programs improving public support for projects Adoption of innovative and climate-resilient infrastructure technologies
- Expansion of digital infrastructure supporting smart cities and automation
- Collaboration with international firms for knowledge and skills transfer
- Use of Geographic Information Systems (GIS) and AI for better planning
- Investments in climate-resilient infrastructure reducing long-term risks
- Strengthening regulatory frameworks to attract investors
- Streamlining approval processes to facilitate faster project implementation

## 2.3. FRAMEWORKS FOR RISK MANAGEMENT IN INFRASTRUCTURAL PROJECTS

The ISO 31000 Risk Management is an international standard that provides organizations with guidelines and principles for risk management and is suited for risk management in infrastructural projects. The standard was developed by the International Organization for Standardization (ISO). ISO 31000 is Suitable for Infrastructural Projects as it can be adapted to the unique challenges of infrastructural projects, such as long timelines, high costs, and complex stakeholder environments. It considers both internal and external risks, including political instability, environmental factors, and community impacts, which are particularly relevant in fragile states like Somalia. It encourages integrating risk management into project planning and decision-making, ensuring risks are proactively managed throughout the project lifecycle.

The following eight core ISO 31000 principles are the foundation for establishing a risk management framework:

1. Inclusive. For efforts to be successful, key stakeholders must be involved and their knowledge and views considered. Risk management should also be transparent, easy to understand and not include confusing jargon.
2. Dynamic. Organizations change over time. As such, the risk sources that are relevant to an organization today might change tomorrow. Organizations must perform ongoing risk analysis if their risk mitigation efforts are to continue to work.
3. Best available information. Risk mitigation efforts must be based on the best and most current information available to stakeholders. However, organizations must also acknowledge that they will never have all of the information needed and that unanticipated risks will always exist.
4. Human and cultural factors. Human behavior and culture influence risk management. The list of identified risks should include those related to human error or to the organization's unique culture.
5. Continual improvement. Long-term adherence to ISO 31000 means adopting the principles of continuous improvement to ensure that the organization's risk mitigation efforts improve over time.
6. Integrated. The concepts of risk mitigation and identification should be integrated into all business processes.
7. Structured and comprehensive. Organizations should create a comprehensive risk mitigation strategy that addresses all known risks.
8. Customized. Because every organization is unique, the concepts of ISO 31000 should be custom-tailored to the organization to reach its objectives.

In undertaking the consultation process, the process will also borrow and ensure harmonization and synergy with other complementary frameworks. These include Sendai framework 2015, which aims at disaster risk reduction and The guiding principles under Yokohama Strategy for a Safer World. Other relevant ISO Standards: e.g. 1. ISO 9001:2015 (Quality Management Systems), ISO 14001 (Environmental Management Systems), ISO 45001 (Occupational Health and Safety Management Systems), ISO 55000 (Asset Management), ISO 21500 (Guidance on Project Management), ISO 37101 (Sustainable Development in Communities), ISO 26000 (Social Responsibility), ISO 50001 (Energy Management Systems), and ISO 19650 (Building Information Modelling – BIM).

## 2.4. EXISTING LAWS, POLICIES AND GAPS IN GOVERNING INFRASTRUCTURE DEVELOPMENT

The Somali legal system consists of civil, Sharia and customary law. Some Somalia national laws are under development and the following laws and policies are applicable to infrastructure development.

**National Laws and Policies**

1. The Provisional Constitution of 2012. It confers the right to own property and the right to compensation under Sections 1 and 2 of Article 26. Articles 24 and 25 of the Constitution guarantee fair labour relations and protection against environmental damage, while Article 45 affirm government's responsibility to conserve and protect the environment, including natural biodiversity.
2. The National Transformation Plan (NTP) 2025–2029 The plan lays out infrastructure needs, and the framework and establishes a Public Private Dialogue framework.
3. Environmental Protection and Management Act April 2024. The Act requires environmental and social impact assessments for infrastructure development projects; avoid or mitigate negative impacts, and consider economic, social, and environmental benefit.
4. Environmental and Social Impact Assessment and Audit Regulations (ESIA) 2024. Mandates that any infrastructure development project in the country must undergo a thorough assessment to identify potential negative environmental and social impacts before construction begins, requiring developers to implement mitigation measures to minimize harm and ensure sustainable development practices are followed throughout the project lifecycle.
5. Somalia National Climate Change Policy, 2023. State that infrastructure development must prioritize climate resilience by designing and building projects that can withstand extreme weather events, with a strong focus on incorporating adaptation measures into all new infrastructure projects to mitigate the impacts of climate change, such as drought and flooding.
6. Vision 2030. Envisage a country with a robust infrastructure system that includes modern telecommunications, accessible affordable energy, clean water, proper waste disposal, sustainable housing, and well-planned urban development, ultimately facilitating economic and social growth, connecting the nation and the wider Horn of Africa region by 2030;
7. Somalia National ICT Policy and Strategy 2019-2024. Focus on infrastructure development is to expand network infrastructure, particularly fibre optic cables, to improve internet connectivity across the country, with the goal of enabling broader economic growth and social development through the effective use of ICTs.
8. National Environmental Policy 2019. Infrastructure development must prioritize environmental protection and sustainable practices, aiming to integrate environmental considerations into all projects while ensuring the responsible management of natural resources to promote sustainable development and the well-being of the Somali people.
9. Strategic Plan of the Ministry of Agriculture 2016-2020. Key focus on infrastructure development is to "improve and rehabilitate productive agricultural infrastructure" by constructing viable infrastructure to promote water harvesting systems and protect water catchment areas, aiming to increase agricultural production and contribute to food security by creating an enabling environment for agricultural development in the country.
10. Environmental Management Act (2016). Every person living in Somalia shall have a right to clean, safe and healthy environment
11. Somali Fisheries and Blue Economy, 2024 Act. Prioritizes the development of infrastructure specifically for small-scale fishermen, including building jetties, landing bays, fish processing centers, cold storage facilities, and improved transportation networks to efficiently move fish products from coastal areas to markets.

12. Somali national Water Law of 11 November 2017. Emphasizes is on need for significant development of water infrastructure in Somalia, prioritizing the construction and rehabilitation of water supply systems, including dams, wells, and irrigation canals, to address the country's severe water scarcity, particularly in rural areas, while also mandating proper management and conservation practices to ensure sustainable water use.

13. Resettlement Policy Framework (RPF). outlines the procedures and considerations for managing displacement and resettlement of communities that may be impacted by infrastructure projects, ensuring that affected people are adequately compensated and provided for when new infrastructure is built, often including provisions for access to essential services like water, sanitation, and improved roads within their new settlements.

14. Somali Law No. 14 of 3 June 1962, titled "On the Organization of the Government," established the fundamental framework for the Somali government, including the responsibilities of various ministries, along with Decree-Law No. 1 of 7 February 1965, decree-law amended Law No. 14, strengthening the role and responsibilities of the Ministry of Public Works and Reconstruction, which amended it, are key documents outlining the responsibilities and structure of the Ministry of Public Works and Reconstruction.

15. Law No. 65, enacted on October 18, 1972, is the Somali Labour Code, establishing the framework for labour relations and worker rights in Somalia. Currently, while a revised labour code was finalized in February 2019, the 1972 Labour Code (Law No. 65) remains applicable until the revised code is enacted.

**International Laws**

Somalia has ratified and is signatory to the following selected conventions, which has bearing on infrastructure development risks and promotion of sustainable infrastructure development.

1. United Nations Framework Convention on Climate Change (UNFCCC)
2. Risk bearing: climate related risks like flooding and temperature variations especially increase
3. UN Convention on the Law of the Sea (UNCLOS)
4. Risk bearing: provides a comprehensive legal framework for all marine and maritime activities, including resource management, environmental protection, and dispute resolution. Conflict has strong bearing on infrastructure development risk management.

## 2.5. GAPS IN REGULATORY FRAMEWORKS AND ENFORCEMENT

**Gaps in Regulatory Frameworks and Enforcement**

A number of regulatory gaps were analysed in terms of facilitation for infrastructure investments and development. The following gaps were identified as follows;

i) The Provisional Constitution of 2012 though formulated, is not facilitative enough for accelerated infrastructure development as regulatory system is largely non-existent.

ii) The Somali National Development Plan exhibits significant gaps in its regulatory framework for infrastructure development. These include:

- Lack of comprehensive infrastructure laws and regulations -significant absence of detailed regulations governing planning, design, construction, maintenance, and operation of infrastructure projects,
- Inadequate capacity to monitor project compliance,
- Weak standards for procurement and contracting.

- Limited ability to address corruption, all hindering effective implementation and investment in critical infrastructure projects.
- Limited enforcement mechanisms exhibited through poor capacity to monitor project activities, identify violations, and impose appropriate sanctions for non-compliance, leading to weak accountability.

iii) Resettlement Policy Framework (RPF). Somalia does not have a national law governing land acquisition, and land ownership tends to be more collective than individual, especially in rural areas. In comparison to the requirements outlined in Environmental and Social Safeguard Standard 5 (ESS 5), the laws of the Federal Government of Somalia exhibit shortcomings in terms of consultation procedures, eligibility for compensation, valuation methods, grievance resolution mechanisms, information disclosure, and the timing of compensation payments.

iv) Environmental and Social Impact Assessment and Audit Regulations (ESIA) 2024 has significant gaps existing in the regulatory framework and enforcement mechanisms regarding infrastructure development, including: a lack of robust capacity to conduct thorough ESIA studies, weak public participation processes, limited enforcement power for environmental agencies, inadequate monitoring and reporting systems, and a potential for corruption and non-compliance due to limited oversight; particularly in areas with weak governance and ongoing conflict

v) Somalia National ICT Policy and Strategy suffers from lack of robust enforcement mechanisms for existing regulations, inadequate infrastructure sharing mandates between operators, limited capacity to monitor service quality, and a potential lack of clear guidelines for licensing and market entry, hindering the efficient development of ICT infrastructure in Somalia. There exists insufficient enforcement power, as the regulatory body may lack sufficient power to effectively enforce compliance with regulations regarding infrastructure sharing, quality of service standards, and market competition.

vi) Strategic Plan of the Ministry of Agriculture lacks clear standards for infrastructure quality, inadequate monitoring mechanisms to ensure compliance, limited capacity to enforce regulations, and a lack of robust mechanisms to address disputes related to infrastructure projects.

Most of the legislations for the infrastructure sector dates to a pre-war period and its status is either not clarified or not existing. National and federal governments lack guidance through policies, norms and standards to guide infrastructures including rehabilitation projects.

## 2.6. NECESSARY LEGAL AND POLICY REFORMS

According to AfDB, (2022), pathways to economic and institutional reforms, critical reforms to support infrastructure development and reduce risk of investments include:

Strengthening the institutional and legal framework. Somalia has yet to sign the United Nations Convention against Corruption, African Union Convention on Preventing and Combating Corruption, and Arab Convention against Corruption. The government needs to develop a Corrupt Practices Act, Leadership Code of Conduct Act, and Whistle-blowers Protection Act.

Closing Infrastructure Gaps: In infrastructure, institutional capacity, legal and regulatory frameworks, skills, and financing structures need to be developed.

Strengthening oversight institutions. The government needs support in its efforts to strengthen the capacity of Parliament to exercise scrutiny and budget oversight. In addition, the Office of the Auditor General needs stronger oversight to improve the quality, efficiency, and impact of audit work that promote increased accountability and transparency in public resource management.

Rebuilding Institutions and Citizens' Trust: Strong public institutions increase transparency and accountability and reduce perceptions of corruption, make the fiscal position more sustainable, advance financial sector development, and strengthen debt management. Needed reforms include enforcing procurement planning to make ministries' procurement more efficient and transparent, harmonizing state and federal systems to make public financial management reform efforts less complex, completing the constitutional review (including by establishing a credible framework for fiscal federalism), and ratifying the Audit.

Financial sector development: Emphasis should be placed on ratifying key financial sector and related laws such as the Financial Institutions Bill 2020, National Payments Bill 2020, and Insurance Bill 2020, completing implementation of anti-money laundering regulatory reforms and oversight procedures, expanding the legal framework to include laws that govern foreign exchange, the capital market, and pensions, completing the reorganization of the Central Bank of Somalia, implementing currency reform, and bringing microfinance, housing finance, and insurance under central bank control and supervision.

Debt management: the absence of a formal debt strategy is a risk to debt sustainability, given Somalia's ambition of reaching its HIPC completion point by 2024. Thus it is important that the country develops a debt strategy to ensure that it will not relapse into debt distress after securing full debt relief. The debt strategy will ensure effective management of the debt portfolio and minimize the cost of debt servicing.

# CHAPTER THREE

## FIELD SURVEY RISK IDENTIFICATION

| Impact | | Very Low | Low | Medium | High | Very High |
|---|---|---|---|---|---|---|
| Probability | Very High | Moderate | Severe | Severe | Critical | Critical |
| | High | Sustainable | Moderate | Severe | Critical | Critical |
| | Medium | Sustainable | Moderate | Moderate | Severe | Critical |
| | Low | Sustainable | Sustainable | Moderate | Severe | Critical |
| | Very Low | Sustainable | Sustainable | Sustainable | Moderate | Severe |

## 3.1. FIELD RISK ASSESSMENT

The fieldwork for the Risk Management Strategy for infrastructure development was conducted in a structured manner, among the five Federal Member States and Banadir Regional Administration. This involved administration of survey questionnaire, interviews with key subject experts, and stakeholders' consultation to triangulate the information on infrastructure development associated risks. The results of the stakeholders' consultation and questionnaire survey was validated through several meetings held in Mogadishu. These workshops not only provided triangulation but provided an opportunity to document and categorize risks systematically. The information below presents the results of the field assessment.

**Historical Experience**

An assessment of experience and familiarity with infrastructure across Somalia's federal member states indicates that the Banadir Regional Administration exhibits the highest level of familiarity with infrastructure development (World Bank, 2022). Banadir encompasses the capital city, Mogadishu, which serves as the country's primary urban center and administrative hub. As a result, the region hosts a higher concentration of literate and skilled workforce, along with relatively more developed infrastructure compared to other federal states (International Crisis Group, 2023). In contrast, Hirshabelle State, characterized by low levels of urbanization, demonstrates a lower level of infrastructure development (Federal Government of Somalia [FGS], 2019). The economy of Hirshabelle is largely agrarian, with agriculture and livestock farming serving as the primary sources of livelihood for the majority of the population (United Nations Development Programme [UNDP], 2022). Agricultural activities, particularly irrigated farming, are concentrated along the Shabelle River, which remains a critical natural resource for the region's economy and food security (World Bank, 2022).

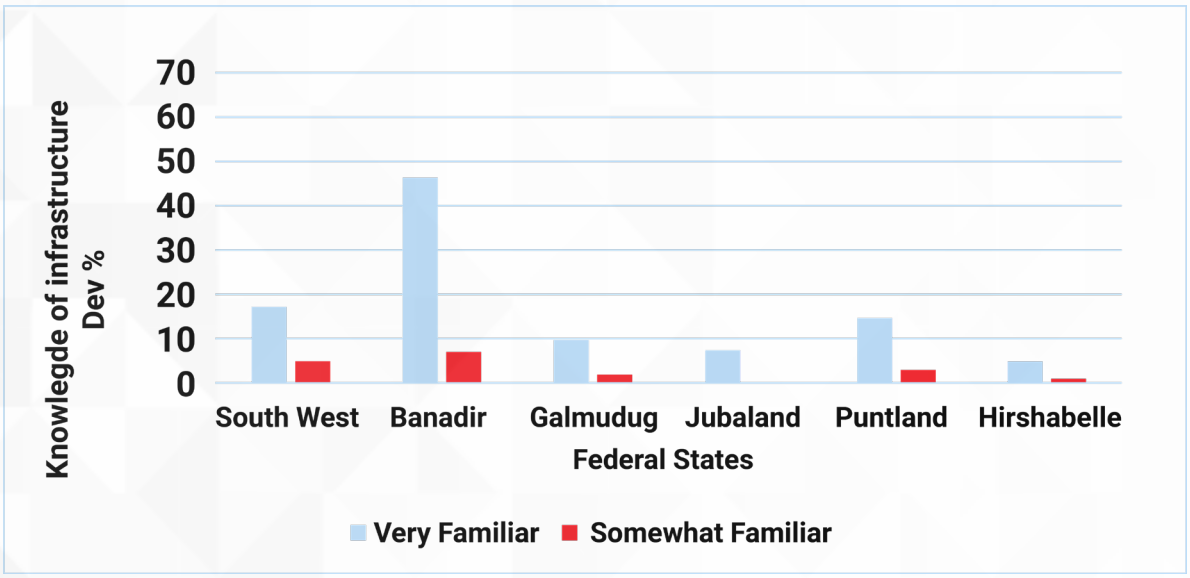



Figure 2: Familiarity with Infrastructure Across Federal State

Among the federal states and across various infrastructure development, experience with infrastructure development is higher in more urbanized areas. In this case Banadir and Puntland have higher experience with infrastructure as well as cities like Mogadishu and Bosasso respectively (Figure 3). This means that infrastructure risks will be higher in more urbanized areas, where roads, water, and energy system are very common. This means that mitigation measures for risks in development should be geared to a greater extent to these growth centres that are likely to influence economic development.

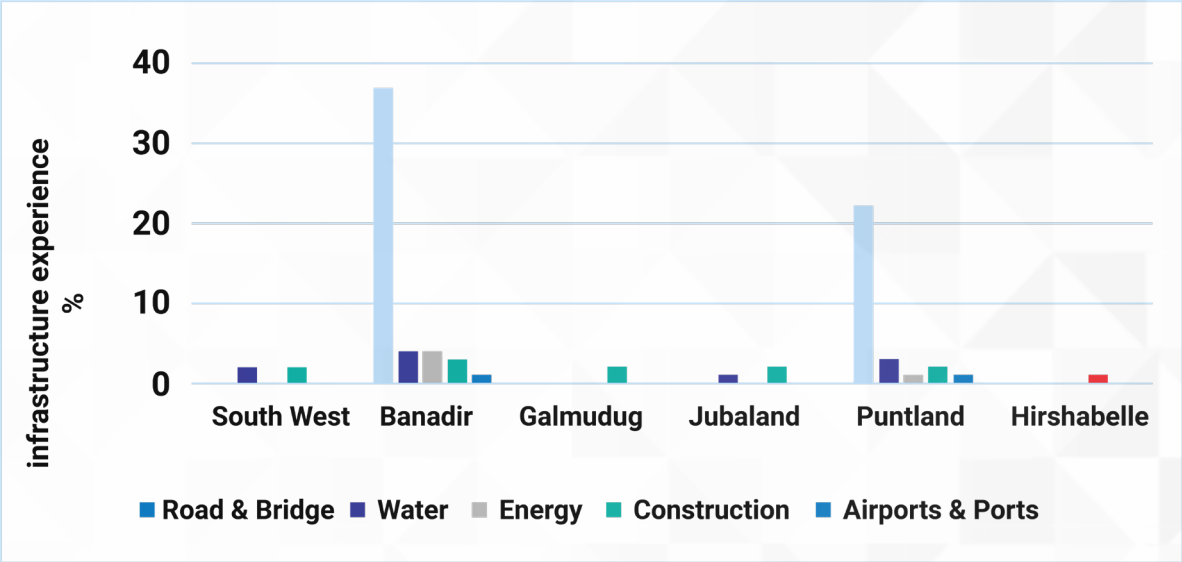



Figure 3: Infrastructure Experience and Risk prevalence Among Federal States

Assessment of development proxy parameters such as legal, land resources indicate that security, legal frameworks, environmental aspects and land resources in that order pose the highest potential risk to infrastructure development (Figure 4). This means that intervention or mitigation should be targeted at these parameters.

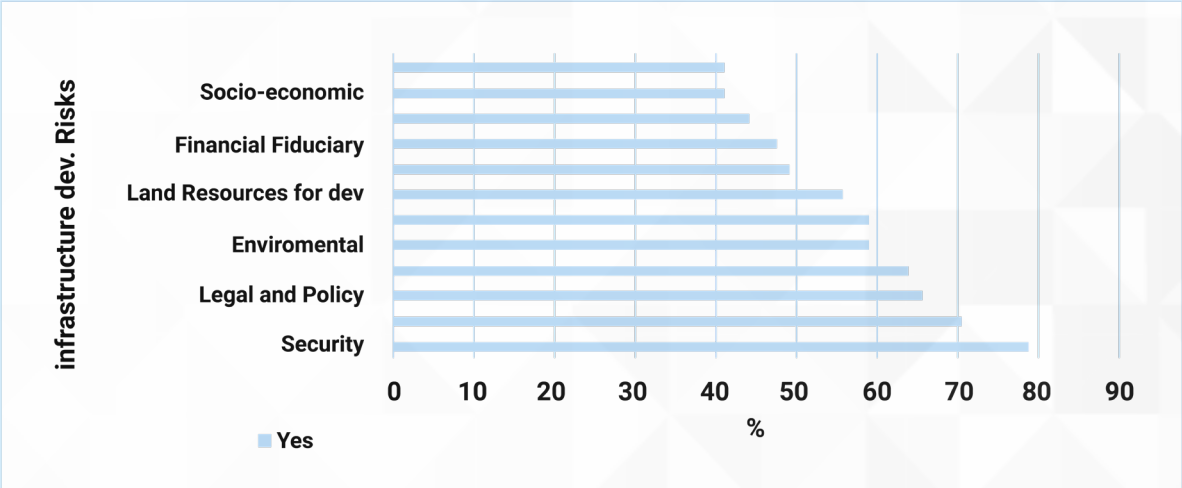



Figure 4: Potential Risk Across Development Parameters

Currently, the infrastructure development risks indicates that the highest risk is security, followed by politics, financial flows and legal framework in that order (Figure 5). This means that these four development parameters are critical areas of strategic intervention in ensuring a safe environmental for infrastructure investments . This points to the need to rank interventions to reduce risk in infrastructure development.

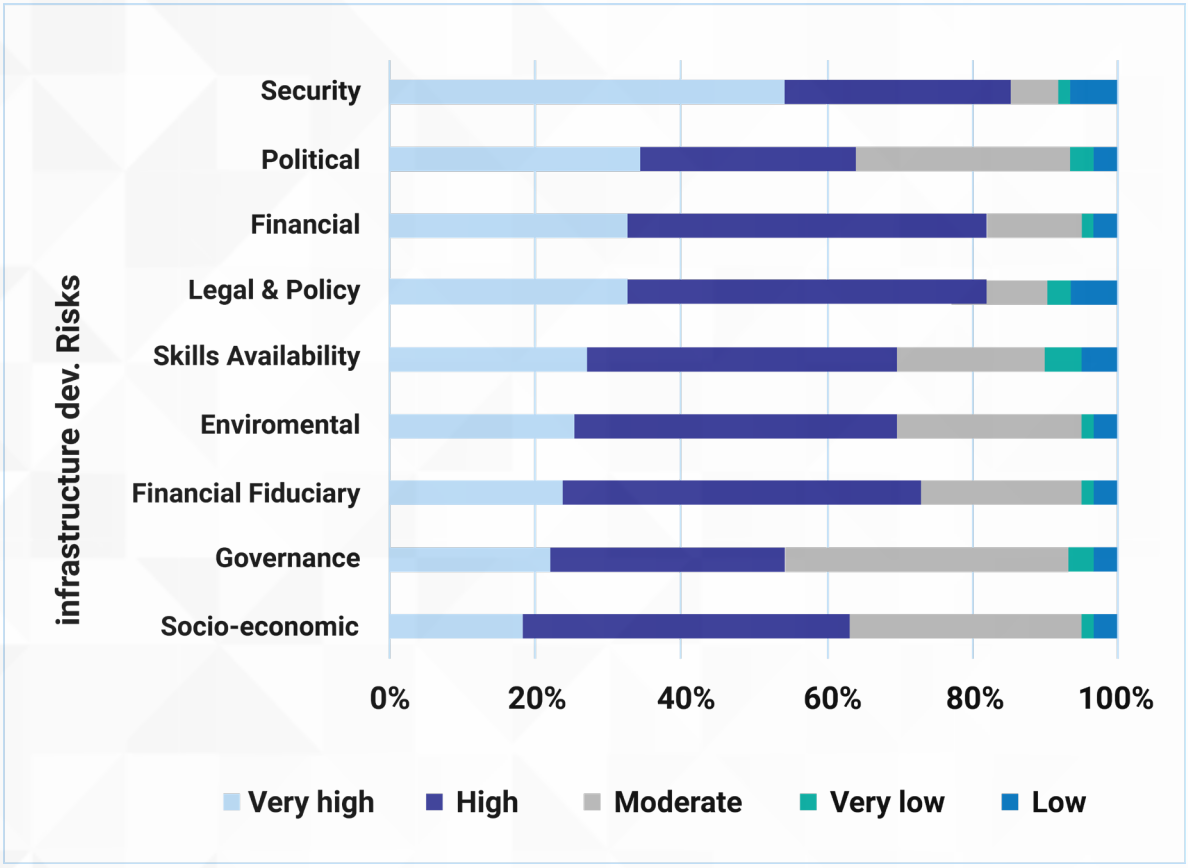



Figure 5: Current Infrastructure Development Risk

Other current risk includes shortage of skilled labour, access to modern technologies, and training institution for improvement of technical skills among aspects (Figure 6). These aspects points to areas that need to be considered as proxy areas that would help to reduce risks in infrastructure development. They could be used to formulate infrastructure risk mitigation strategy across the federal states and also specific to certain infrastructure sector.

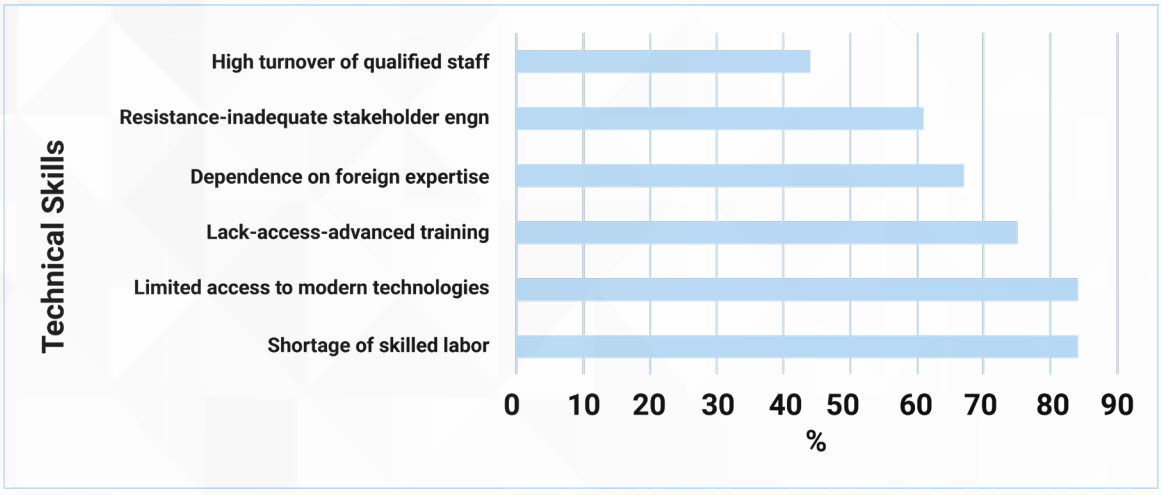



Figure 6: Technical Skills

Somalia is characterized by several types of conflict that pose serious threats to development projects including infrastructures across federal states. The risk that was highly rated was clannism, which means that approach in infrastructure development must consider community engagement to reduce cost of projects (Figure 7). This is closely associated with armed group threats. Other sources of conflict and threats include unsecure land system that results in multiple claims, which is a major risk in infrastructure development. Development in this digital era heavily depends on information technology and cybersecurity was noted as one of the threats in infrastructure development meaning that mitigation measures are necessary.


Figure 7: Conflicts and Threats

The success of development projects in Somalia is heavily dependent on the strength and clarity of the existing legal framework, which provides the foundation for structured stakeholder engagement (International Crisis Group, 2023). Some of the risks that were identified in the field survey include prolonged approval process due to legal arrangement and weak institutional capacity (Figure 8). This is compounded by lack of clear guidelines which precipitate poor coordination among federal states complicating inter-state project implementation. The state of the legal framework creates poor environment for accountability creating a big appetite for risk taking. A well-defined legal framework regulates interactions between stakeholders, facilitates transparent processes, and enhances accountability (WorldBank, 2022). However, field assessments indicate that several risks impede infrastructure project implementation. These include prolonged approval processes linked to fragmented legal arrangements and limited institutional capacity at both federal and state levels (Federal Government of Somalia, 2019).

The lack of clear, standardized guidelines for intergovernmental coordination exacerbates poor alignment among federal member states, thereby complicating multi-state infrastructure project implementation (UNDP, 2022). Furthermore, gaps in the legal and regulatory environment foster weak accountability mechanisms, which in turn encourage excessive risk-taking behavior during project planning and execution (International Crisis Group, 2023). Addressing these legal and institutional weaknesses is therefore critical for fostering a more predictable and enabling environment for infrastructure investment.

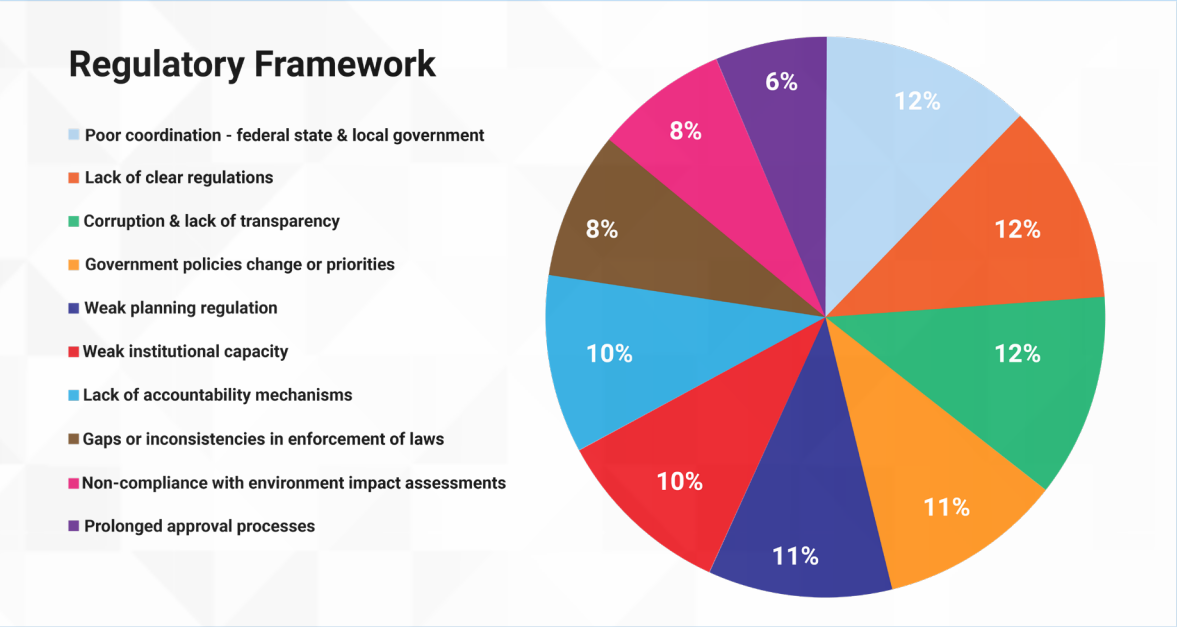



Figure 8: Regulatory Framework

In terms of risks related to financial aspects, one of the most highly rated risk is limited access to financing mechanisms, which could be related to high risk of implementing projects in Somalia (Figure 9). This confirmed by the fact that mismanagement of funds including misallocation of project funds means that probability of low project success is quite high. Figure 9 provide a proxy of the rationale why financial management is quite expensive due to poor or inadequate legal framework.

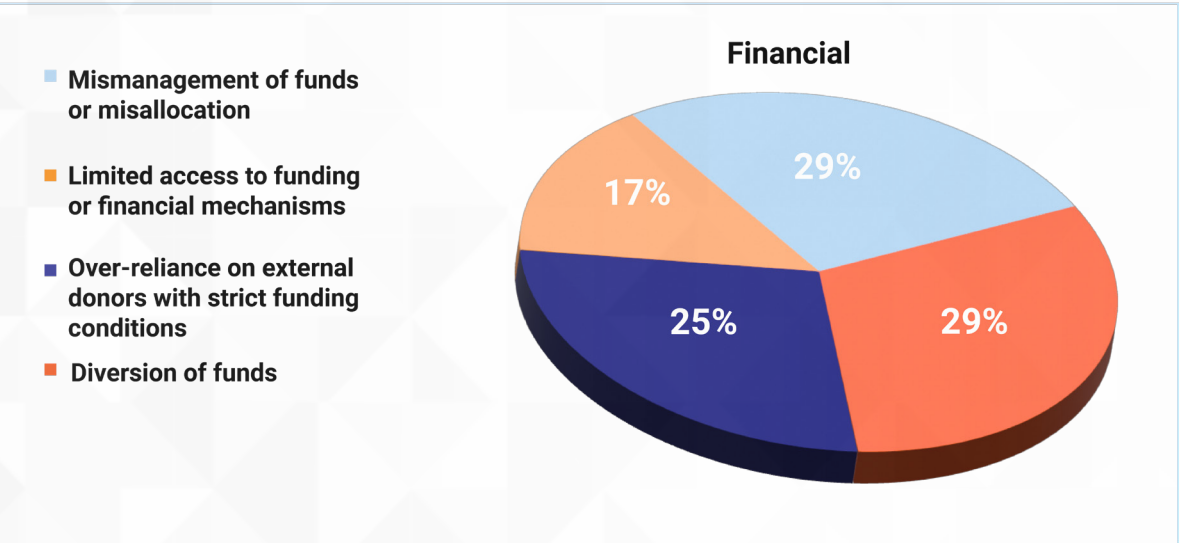



Figure 9: Financial Management Dynamics

On rating selected financial risks, operation cost is quite high due to poor or inadequate regulation of the sector coupled with high incidences of corruption (Figure 10). In addition, there are several incidences of delay in fund processing or funding of projects due to security issues at project level. Incidences of armed groups that creates complication in project implementations are common.

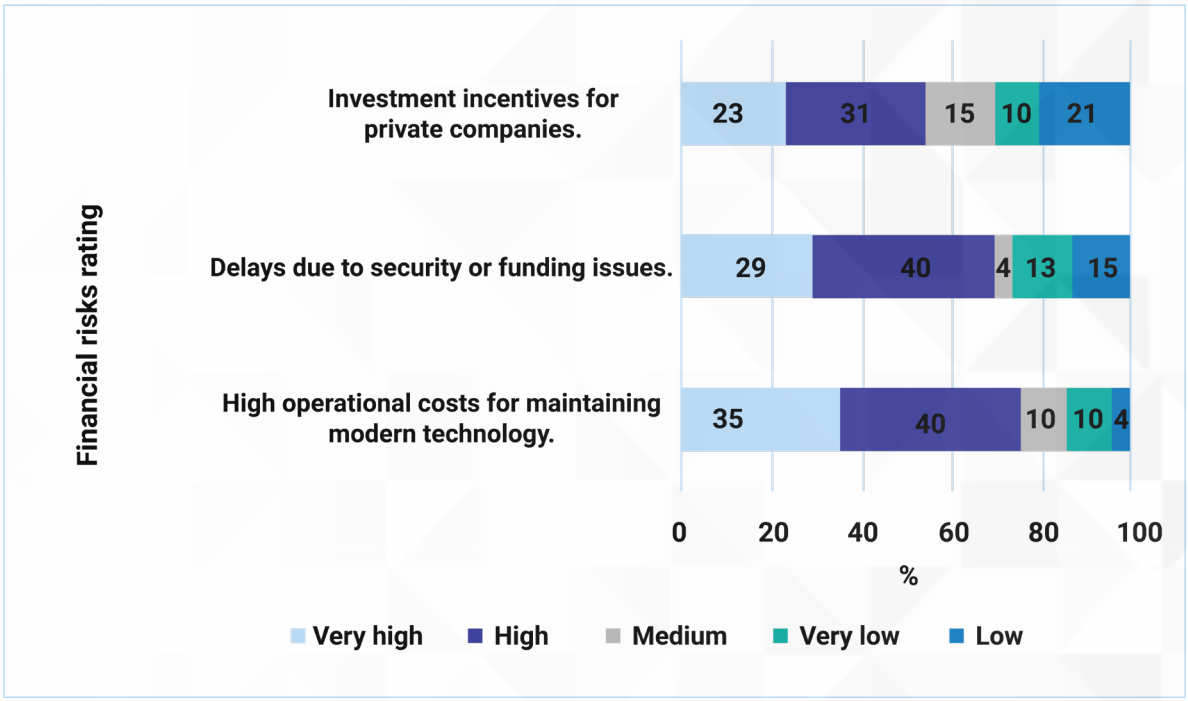



Figure 10: Financial Risk Rating

Somalia being in horn of Africa, an area characterized by fragile natural ecosystem, pose a serious risk to infrastructure development. One of the major factor that pose high risks to infrastructure is climate change as this not only affect natural environment but complicate social order by causing forced migration, which could affect infrastructure investments including collapsing of projects (Figure 11). Climate change was rated highly by the respondents. This will be complicated by unchecked environmental degradation, which could escalate risks associated with infrastructure development in Somalia.

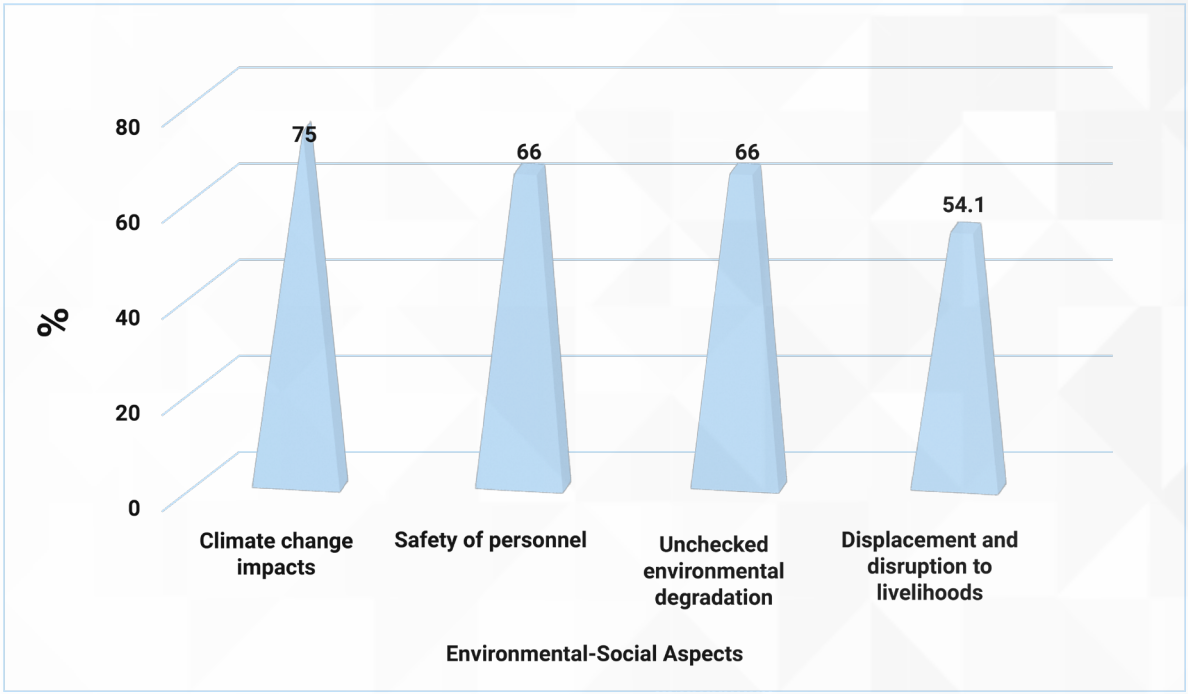



Figure 11: Environmental and Social Aspects

## 3.2. SECTOR-SPECIFIC RISKS, MITIGATION AND RESPONSE STRATEGIES

In terms of sectoral likelihood of risks occurrence and impacts, there is significant overlap. In water sector there is high likelihood of risks with severe impact including limited technical skills, legal framework gaps, community water-related conflicts, poor infrastructure for water distribution, security risks in water projects. While in energy high likelihood risks with severe impact emanates from, legal framework gaps, absence of national grid, security risks in energy projects. In the transport sector (road, bridges, airports, and ports) risks sources include lack of clear policies and standards, lack of accreditation for engineers and contractors, no vetting for licensing and permits. While in ICT and digital infrastructure sector high likelihood risks with severe impacts emanates from inadequate legal framework, low capacity, lack of professional body to enhance industry standards, cybersecurity threats. In social infrastructure sector risks sources include security risks financial & economic risks legal & multiple land claims, issues (Appendix 1). While in environmental matters climate change extremes events, and weak enforcing mechanism pose high likelihood risks.

These mitigation considerations should be included in the infrastructure risks analysis to improve success of projects. To ensure reduction of infrastructure investment risk, some of the mitigation strategies will include developing a clear public private partnership regulation framework and provide investor protection assurances. This should be accompanied by strengthening institutional frameworks that ensure functional units, which in turn promote institutional frameworks and promote inclusive governance. Implementing coordination mechanisms for stakeholders ensure that there is clarity of engagement and helps in smooth implementation of projects. These could be inter-state stakeholders or state stakeholders including those involved in approval and supervision. A clear legal framework is important in realization of the proposed strategies.

# CHAPTER FOUR

## RISK MANAGEMENT STRATEGY IMPLEMENTATION FRAMEWORK

## 4.1. RATIONALE FOR RISK MANAGEMENT STRATEGY

This risk management strategy will help to identify risks, mitigation, and adaptation approaches for investment in Somalia's infrastructure sector and propose adoption of an enhanced and tailor-made risk management approaches. Effective risk management is critical to sound infrastructural investment, project management and governance. Building a consistent appetite for, and robust culture in risk identification and management, improving decision-making and enhancing outcomes and accountability.

The rationale for Somalia's infrastructure risk management strategy is grounded in the need to address the country's unique challenges as a post-conflict state, while ensuring alignment with internationally recognized risk management principles. This strategy is designed to also support Somalia's National Transformation Plan I: 2025–2029 by mitigating risks that could hinder infrastructure development and ensuring sustainable growth and stability. This Risk Management Strategy provides the essential rationale and framework for proactively identifying, analysing, evaluating, treating, monitoring, and communicating risks associated with infrastructure investments in Somalia. It provides enhanced and tailor-made risk management approaches specifically adapted to Somalia's unique context, thereby safeguarding investments, and maximizing the success rate of critical infrastructure projects.

**Contribution to Somalia National Transformation Plan I: 2025–2029**

The infrastructure risk management strategy directly supports the objectives of Somalia's National Transformation Plan I: 2025–2029 by promoting sustainable development through resilient infrastructure systems and facilitating economic recovery by reducing project delays and cost overruns caused by unmanaged risks.

## 4.2. INFRASTRUCTURE RISK IDENTIFICATION ENGAGEMENT PROCESS

The process of infrastructure risk identification will involve a multi-stakeholder's engagement process dealing with project from conceptualization to completion and operation. This analysis will pay attention to both historical, current, and potential future scenarios. It will also consider geographical areas as there is wide socio-economic scenarios and political governance arrangement across Somalia's Federal States that affects development including infrastructure.

Risk identification will be systematically guided by:

• ISO 31000 principles: Ensuring the process is integrated, structured, customized, inclusive, dynamic, based on best available information, considers human/cultural factors, and allows for continuous improvement. as outlined in section 2.3

To enhance the comprehensiveness of the risk identification process, the World Bank's SORT methodology is integrated and the categories include:

- Political and Governance
- Macroeconomic
- Sector Strategies and Policies
- Technical Design of Project or Program
- Institutional Capacity for Implementation and Sustainability
- Fiduciary (Financial Management and Procurement)
- Environment and Social
- Stakeholders

• PESTEL/SWOT Analysis: Incorporating findings from Chapter 2 regarding broader environmental factors and internal strengths/weaknesses.

• Somalia-Specific Challenges: Directly addressing the key infrastructure challenges and opportunities identified in Section 2.3 and the specific risks highlighted by the field surveys in Chapter 3 (e.g., security, clannism, land tenure, skills gaps, climate vulnerability).

• Stakeholder Consultations: Leveraging the engagement mechanisms outlined in Section 4.2 to gather diverse inputs.

**This National Risk Assessment Framework will consider risks at National-macro-level, project level and sector level (Figure 12).**

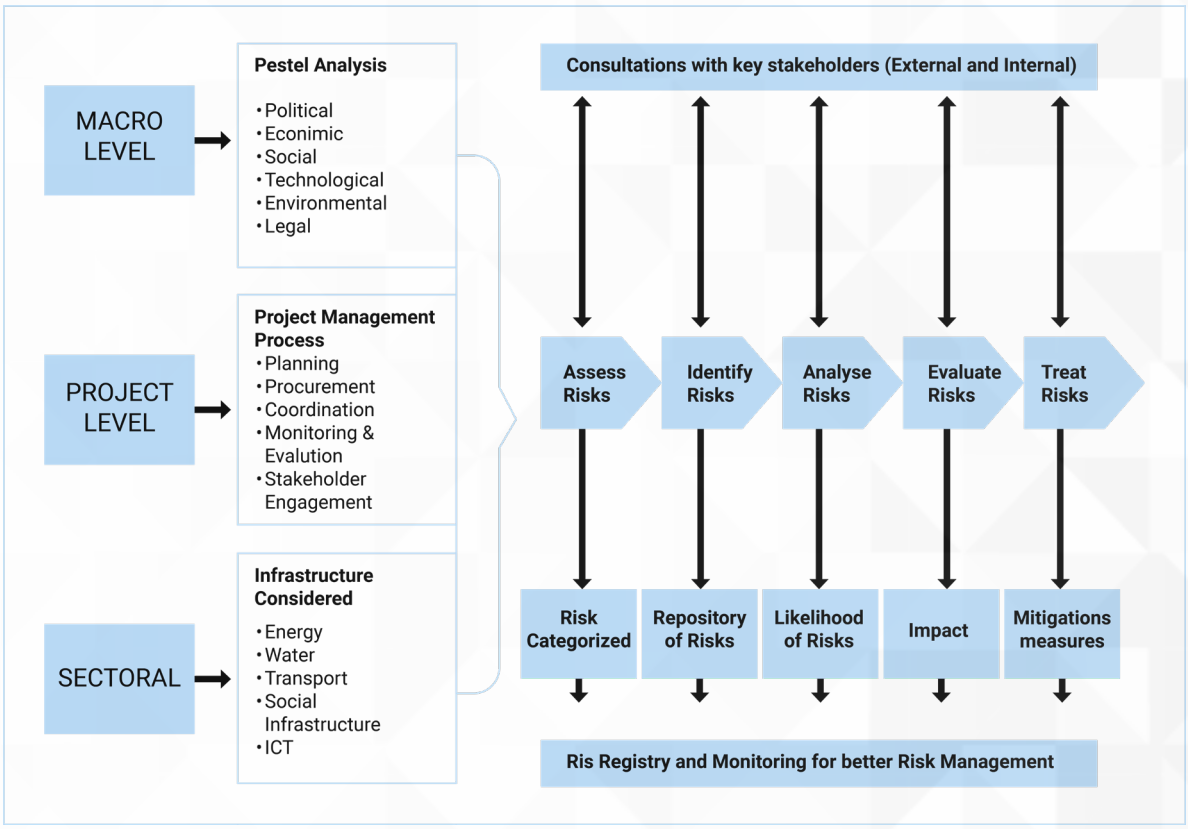



Figure 12: Risk Parity Guiding Strategy Framework

Based on the above framework Figure 12, the following steps will be important in handling infrastructure risks considerations both at project and sector level. Project level involves mainly feasibility studies for project, while the sectoral level is implementation level at specific sector such as water, energy among others. The Guiding Strategy Framework will explicitly connect stakeholders with their roles in the seven interactive steps of implementation.

## 4.3. INTERACTIVE STEPS IN THE RISK PROCESSING

**Step 1 — Formation of Risk Committees & SOP Development**

Establishing the National and FMS Risk Committees (as per Section 4.2) and agreeing on Standard Operating Procedures (SOPs) that detail how the risk management process, including identification and assessment, will be conducted.

**Table 1. Activities to be Undertaken**

| Activity | How to Do it | Responsibility | Notes/Suggested Tools |
|---|---|---|---|
| Initiate development of SOP | Identify stakeholder for involvement in development of SOP among risk assessment committee<br><br>Establish modalities of developing SOP such as notice for meeting, venues, and inclusivity | Ministry public works, reconstruction, and housing | Involve all stakeholders as widely as possible |
| Develop procedure for assessing risk and handling risk | Convene meeting and discuss how to go about risk documentation such as meetings procedures, field visit, document review, clan leader's consultation | Ministry public works, reconstruction, and housing | Use of technical persons will help in adoption of standard procedure |
| Train on the SOP | Identity participants for training in SOP<br>organize training session on SOP<br>Under training on SOP | Ministry public works, reconstruction, and housing | Ensure that all leaders and committee understands what need to be done |

**Step 2 — Framework Strategy Planning & Brainstorming:**

Initial committee meetings to define the specific scope, objectives, and context for the risk assessment. High-level brainstorming using SORT, PESTEL, SWOT, and known challenges (Chapters 2 & 3) to identify broad risk areas.

**Table 2. Activities to be Undertaken by RMS Sub-Committee**

| Activity | What need to be done including theme Strategy | Action Needed | Responsibility | Notes/ Suggested Tools |
|---|---|---|---|---|
| Convene a meeting on risk assessment in the project areas | Agree who to invite as stakeholder. Consult and give a notice for a meeting. Set up clear and relevant agenda. | Through ministry convened meeting generate a list of stakeholders to invite. Pay attention to<br>• National government<br>• Federal government<br>• Private sector<br>• Civil society organisation | Ministry public works, reconstruction, and housing | Letters of invitation of email Follow up telephone for reminder. |
| Political, | Assess the status of political governance that need to be taken care off | Meeting with,<br>- government<br>- political parties<br>- private sector<br>• Analyse Likely disruptive component<br>• Analyse Likely supportive action<br>• Review past risks | Risk management committee | |
| Economic, | evaluate the supportive or facilitative economic status | • Consumer<br>• Trade zone<br>• FDI status<br>• Available infrastructure<br>• Private sector role<br>• Complimentary funding | Risk management committee | |
| Social, | Assess the status of community likely acceptance of the project initiative | • Community organisation<br>• Conflicts status<br>• Clannism status<br>• Armed groups in area<br>• Consultation needs like project acceptance<br>• Approvals necessary<br>• Inclusive stakeholders<br>• Review past risks | Risk management committee | All members need to participate and free discuss Members will be a different level of understanding and thus it could take time |
| Technological, | Evaluate the technological skills and technology available in the area | • Status of technical skills available<br>• Technology available<br>• Training facility<br>• Limitation and external skills required<br>• Gaps in skills | Risk management committee | |

| | | | | |
|---|---|---|---|---|
| Environmental | Examine how the environmental will be affected by the initiative | • Consider adoption of ESIA<br>• Re-settlement action plan | Risk management committee | |
| | | • Alternative to reduce and mitigate impacts<br>• Adverse effect from environment like flooding<br>• Review past risks | | |
| Legal | Evaluate legal framework that would facilitate the projects and gaps therein | • Available legal instruments<br>• Gaps likely to contribute to failure<br>• Areas of conflict<br>• Review past risks<br>• Past court cases | Risk management committee | Involve legal expert and explore alternative locally based approach to addressing the gaps and conflict management |

**Step 3 — Detailed Risk Identification (Workshops & Data Gathering):**

Initial committee meetings to define the specific scope, objectives, and context for the risk assessment. High-level brainstorming using SORT, PESTEL, SWOT, and known challenges (Chapters 2 & 3) to identify broad risk areas.

The main purpose of this step is to conduct structured workshops involving relevant committee members, technical experts, and key stakeholders (as identified in 4.2). Workshops should include:

- Review of project/program context and objectives.
- Systematic brainstorming of risks guided by SORT categories and Somalia-specific challenges (Chapters 2 & 3).
- Review of past project lessons learned, incident reports, and existing data.
- Use of techniques like checklists, 'what-if' analysis, and expert interviews.
- Field visits and community consultations where appropriate and feasible, using conflict-sensitive approaches.

Data gathering of relevant supporting information will require ensuring integration with existing data collection systems where possible.

**Step 4 — Risk Analysis & Assessment (Likelihood/Impact Scoring):**

Systematic analysis of identified risks to understand their causes and potential consequences. The 1-5 Likert scales for Likelihood and Impact will be applied, justifying scores with evidence and rationale. This may be undertaken during workshops or as a follow-up activity by designated experts/sub-groups, ensuring consistency in applying the scale definitions.

**Risk Assessment Methodology**

Consistent with international practice, identified risks will be assessed based on two dimensions: Probability of Occurrence (Likelihood) and Likely Impact on project objectives (e.g., cost, schedule, quality, safety, reputation, environmental/social outcomes) (Table 3). A Likert scale of 1 to 5 will be used for both Likelihood and Impact, as detailed below. Assessors must provide justification for assigned scores based on evidence, expert judgment, and contextual understanding.

**Table 3. Likelihood Scale and Impact Scale**

| Likelihood | | | Impact Scale | |
|---|---|---|---|---|
| **Rank** | **Descriptor** | **Description** | **Descriptor** | **Description** |
| 5 | Very High / Almost Certain | Expected to occur in most circumstances; happens regularly or is already occurring.<br>• Ongoing security incidents<br>• Established patterns of political interference<br>• Chronic capacity gaps | Very High / Catastrophic | • Threatens project viability;<br>• massive cost/schedule overruns;<br>• severe irreversible environmental/social damage;<br>• national-level reputational damage;<br>• widespread fatalities/ injuries.<br>• Impacts leading to:<br>• complete project cancellation,<br>• major diplomatic incidents,<br>• large-scale displacement without remedy. |
| 4 | High / Likely | Will probably occur in most circumstances; happens from time to time<br>• Known seasonal flooding risks<br>• Documented delays in similar past projects<br>• High potential for specific disputes based on current tensions | High / Major | • Significant threat to project objectives;<br>• major cost/schedule overruns (>20%);<br>• significant, long-term environmental/social impacts; significant stakeholder dissatisfaction;<br>• serious injuries/some fatalities.<br>**Impacts requiring:**<br>• major project redesign,<br>• significant budget reallocation,<br>• widespread community protests, major security interventions. |

| | | | | |
|---|---|---|---|---|
| 3 | Medium / Possible | Might occur at some time; has happened previously.<br>• Moderate potential for policy shifts<br>• Known but inconsistent resource constraints<br>• Potential for moderate community resistance | Medium / Moderate | • Moderate impact on objectives;<br>• noticeable cost/schedule overruns (10-20%);<br>• moderate, potentially reversible environmental/ social impacts;<br>• some key stakeholder concerns;<br>• minor injuries.<br>**Impacts requiring:**<br>• significant mitigation effort<br>• moderate delays<br>• localized environmental clean-up<br>• formal grievance processes invoke. |
| 2 | Low / Unlikely | Could occur at some time but not expected; rarely happens<br>• Low probability of major macroeconomic shocks based on current forecasts<br>• Low historical precedent for specific technical failures | Low / Minor | • Minor impact on objectives;<br>• Minor cost/schedule overruns (<10%);<br>• Minor, easily reversible environmental/social impacts;<br>• Few stakeholder concerns;<br>• First-aid level injuries.<br>**Impacts requiring:**<br>• Management through routine project adjustments<br>• Minimal disruption<br>• Localized and temporary effects |
| 1 | Very Low / Rare | May occur only in exceptional circumstances; never happened before but possibility cannot be discounted.<br>• Highly unlikely 'black swan' events<br>• Risks with strong preventative controls already demonstrably effective | Insignificant | • Negligible impact on objectives<br>• minimal deviation from budget/schedule;<br>• negligible environmental/ social impacts;<br>• minimal stakeholder awareness/concern;<br>• no injuries;<br>• barely noticeable effects.<br>**Impacts requiring:**<br>• Absorption within existing project contingencies |

The assessed Likelihood and Impact scores are plotted on the Risk Matrix (Table 4) to determine the overall Risk Rating.

**Table 4. Risk Rating Thresholds**

| Rating | Description |
|---|---|
| Critical | • Risks requiring immediate, high-priority attention and treatment.<br>• Project continuation may depend on effective mitigation.<br>• Senior leadership oversight is mandatory. |
| Severe | • Risks requiring significant attention and dedicated treatment plans.<br>• Requires senior leadership awareness and regular monitoring. |
| Moderate | • Risks manageable through routine procedures and corrective actions.<br>• Requires monitoring and periodic review. |
| Sustainable | • Risks acceptable with minimal further treatment beyond existing controls. Monitor periodically. |

**Step 5 — Risk Evaluation & Prioritization:**

Assessed risks will be plotted onto the Risk Matrix (Table 5) to determine the Risk Rating (Critical, Severe, Moderate, Sustainable). Ratings will be compared against defined thresholds to prioritize risks requiring treatment.

**Table 5. Risk Matrix Rating**

| Impact | | Very Low | Low | Medium | High | Very High |
|---|---|---|---|---|---|---|
| Probability | Very High | Moderate | Severe | Severe | Critical | Critical |
| | High | Sustainable | Moderate | Severe | Critical | Critical |
| | Medium | Sustainable | Moderate | Moderate | Severe | Critical |
| | Low | Sustainable | Sustainable | Moderate | Severe | Critical |
| | Very Low | Sustainable | Sustainable | Sustainable | Moderate | Severe |

**Step 6 — Risk Documentation (Risk Register):**

All identified and assessed risks will be documented in a standardized Risk Register. Templates will align with international best practices and include fields such as:

| | |
|---|---|
| Unique Risk ID | Overall Risk Rating (Critical, Severe, Moderate, Sustainable) |
| Risk Description (Cause, Event, Consequence) | Proposed Treatment/Mitigation Measures |
| Risk Category (e.g., SORT category) | Risk Owner (Responsible person/unit) |
| Date Identified | Treatment Timeline |
| Potential Impacts (on objectives) | Residual Risk Rating (Post-treatment assessment) |
| Existing Controls | Monitoring Requirements & Frequency |
| Likelihood Score (1-5) & Justification | Status (Open, Closed, Monitored) |
| Impact Score (1-5) & Justification | |

Documentation of risk workshops, assessment justifications, data sources, and version control for the Risk Register will be maintained.

**Step 7 — Risk Treatment, Monitoring & Evaluation**

Subsequent steps involve developing and implementing mitigation strategies and establishing monitoring and review cycles. These are detailed further in the subsection 4.4 and M&E framework (Chapter 6).

**Risk Treatment and Response Planning**

Risk treatment and response planning are essential components of Somalia's infrastructure risk management strategy. This subsection outlines the methodologies, frameworks, and protocols necessary to address identified risks effectively, allocate resources for mitigation, and ensure contingency measures are in place to safeguard infrastructure projects.

**Methodologies for Developing Risk Treatment Options**

Once risks are prioritized, the Risk Committee (national or FMS level) and designated Risk Owners must systematically develop potential treatment options (Table 6). The objective is to find ways to modify the risk by changing its likelihood, impact, or both.

**Table 6. Risk Treatment Approaches**

| Methodology | Description |
|---|---|
| Avoidance | Deciding not to start or continue with the activity that gives rise to the risk:<br>• Modifying project plans, designs, or processes to eliminate risks entirely.<br>• Cancelling a project component if risks are unmanageable.<br>• Eliminating the hazard or factor causing the risk.<br>Considered for Critical risks with limited effective treatment options. |
| Reduction | Implementing measures to reduce the likelihood (probability of the risk event occurring) or severity of the impact of risks.<br>Examples of measures to reduce likelihood:<br>• Enhanced security protocols<br>• Preventative maintenance schedules<br>• Improved stakeholder consultation to prevent disputes<br>**Examples of measures to reduce impacts:**<br>• Emergency response plans<br>• Structural reinforcements<br>• Insurance policies<br>• Community resettlement plans |
| Sharing/Transfer | Allocating risk to third parties:<br>• Insurance<br>• Contractual agreements with private sector partnerships, including PPPs.<br>This requires careful consideration of counterparty risk. |
| Acceptance | Acknowledging residual risks and preparing contingency measures where mitigation is impractical.<br>Applied to Low-rated risks or where treatment cost outweighs the benefit. |
| Enhancement / Increasing | Leveraging opportunities within risks to improve project outcomes.<br>This requires careful analysis and explicit decision-making.<br>Considered for Strategic risks. |

Determining appropriate risk treatment options should involve brainstorming sessions with relevant technical experts, project teams, and stakeholders; and should consider Somalia's specific context, available resources, and potential unintended consequences of each option.

### Decision-Making Frameworks for Selecting Appropriate Treatments

The selection of risk treatment options will follow a systematic decision-making framework. Decisions on treatment selection should be made by the designated Risk Owner in consultation with the relevant Risk Committee and all risks category documented clearly. The choice should be based on evaluating the potential options against defined criteria (Table 7).

**Table 7. Risk Treatment Consideration and Decision Making**

| Criteria | Description |
|---|---|
| Risk Evaluation Matrix | Prioritize risks based on their likelihood and impact ratings (Section 4.3). High-priority risks will require immediate action. |
| Effectiveness | How well does the option reduce the likelihood and/or impact of the risk? |
| Cost-Benefit Analysis | Assess the feasibility of treatment options by weighing costs against potential benefits. Resources are scarce, demanding efficient allocation. Do the costs of implementing the treatment outweigh the potential benefits (i.e., the reduction in risk exposure)? |
| Feasibility | Acknowledging residual risks and preparing contingency measures where mitigation is impractical.<br>Applied to Low-rated risks or where treatment cost outweighs the benefit. |
| Enhancement / Increasing | Is the option technically, financially, operationally, and politically feasible within Somalia's context? Are the required resources and capacity available? |
| Stakeholder Consultation | Engage relevant stakeholders to ensure alignment with project objectives and local needs. Is the option acceptable to key stakeholders, including affected communities and government bodies? Does it align with cultural norms? |
| Compliance | Does the option comply with legal, regulatory, and safeguard requirements? |
| Scenario Analysis | Evaluate the effectiveness of treatment options under various scenarios, considering Somalia's dynamic socio-economic and political environment. |
| Secondary Risks | Does the treatment option introduce new risks that need to be managed? |
| Alignment | Does the option support overall project and National Transformation Plan objectives? |

### Protocols for Documenting Risk Treatment Plans

Once treatment options are selected, detailed Risk Treatment Plans must be documented. This ensures clarity on actions, responsibilities, timelines, and resource needs, facilitating implementation and monitoring. These plans may be integrated into or directly linked with the Risk Register. To maintain transparency and accountability, risk treatment plans will be documented using standardized protocols (Table 8).

**Table 8: Risk Treatment Protocols**

| Protocols | Description |
|---|---|
| Risk Treatment Plan Template | Key elements to document for each treated risk include:<br>• Reference to the specific Risk ID from the register.<br>• Chosen treatment option(s) and rationale for selection.<br>• Specific, measurable, achievable, relevant, and time-bound (SMART) actions required to implement the treatment.<br>• Designated responsible person or unit (Risk Owner) for implementing the actions.<br>• Required resources (personnel, budget, equipment).<br>• Implementation timeline with key milestones and deadlines.<br>• Performance measures or indicators to track the effectiveness of the treatment.<br>• Monitoring and reporting requirements (frequency, format).<br>• Assessment of the expected residual risk level after treatment implementation. |
| Approval Process | This will ensure all treatment plans are reviewed and approved by the infrastructure risk analysis and monitoring committee at both national and federal state levels. |
| Monitoring Updates | A lot of progress updates, challenges encountered, and adjustments made during implementation will be maintained. |

**Resource Allocation Models for Risk Treatment**

Effective risk treatment requires dedicated resources. These include allocation of budget, personnel time, and technical capacity. Effective resource allocation is critical for implementing risk treatment measures. The following model will be adopted (Table 9).

**Table 9. Risk treatment Resources Allocation**

| Model Attribute | Description |
|---|---|
| Resource Identification | Treatment plans must clearly identify the types and quantities of resources needed. |
| Priority-based Allocation | Direct resources toward high-priority risks with significant potential impact on infrastructure projects. Resource allocation must be prioritized based on the risk rating (Critical and Severe risks first) and the cost-effectiveness of the proposed treatments. |
| Funding Sources | Identify potential funding sources, including project budgets, government allocations, contingency funds, or support from development partners specifically targeted at risk management or capacity building. |
| Integration with Sector-specific Budgeting | Costs associated with implementing risk treatment plans must be integrated into project budgets and financial planning cycles. Allocate funds based on the unique needs of each infrastructure sector. |
| Public-Private Partnerships (PPPs) | Leverage private sector investments to supplement government funding for risk mitigation efforts. |
| Capacity considerations | Allocate personnel with the necessary skills and authority, or plan for capacity building/external support where needed. |
| Capacity-building Investments | Allocate resources for training programs to enhance institutional capacity in risk management. |

### Contingency Planning Requirements

Contingency plans are pre-defined actions designed to be implemented if a specific risk event occurs or if the primary treatment plan proves ineffective. Contingency planning ensures preparedness for residual risks or unforeseen events (Table 10). Developing robust risk treatment and contingency plans, supported by adequate resource allocation and clear documentation, is essential for proactively managing risks and increasing the probability of successful infrastructure project delivery in Somalia. For risks that remain significant even after treatment (i.e., high residual risks rated Moderate or above), or for risks being retained/accepted, formal Contingency Planning is required. Requirements include:

**Table 10: Contingency Plan Requirements**

| Requirement | Description |
|---|---|
| Trigger Identification | Clearly defining the specific conditions or events that would trigger the activation of the contingency plan. |
| Pre-defined Actions | Outlining the specific steps to be taken once the plan is triggered. |
| Roles and Responsibilities | Defining who is responsible for monitoring triggers, activating the plan, and executing the contingency actions. |
| Resource Allocation | Identifying and potentially setting aside resources required to execute the contingency plan. This includes establishing dedicated reserves within project budgets to address emergencies or unexpected costs. |
| Emergency Response Protocols | Develop action plans for responding to crises such as natural disasters or security threats. |
| Scenario Testing | Conducting simulations to assess the effectiveness of contingency plans under various conditions. |
| Communication Plans | Ensure clear communication channels are established for rapid dissemination of information during emergencies. |
| Review and Updates | Regularly reviewing and updating contingency plans alongside the overall risk register and treatment plans to ensure they remain relevant and feasible. |

### Integration with Project Lifecycle Management

A critical element for effective risk management is its integration throughout the entire infrastructure project lifecycle. This ensures that risks are identified, assessed, treated, and monitored proactively and dynamically as projects evolve. This section defines the risk management requirements, documentation processes, and change management procedures needed at each phase, ensuring a comprehensive approach from project inception to disposal (Table 11). Specific risk management activities and focus areas are required at each distinct phase of an infrastructure project. The following outlines the risk management activities required at each phase of the infrastructure project lifecycle:

**Table 11. Risks and Projects Lifecycle**

| Phase | Risk Management Requirements |
|---|---|
| Concept and Planning Phase | • Conduct a preliminary risk assessment to identify high-level risks and opportunities. |
| Design & Engineering Phase | • Perform detailed risk assessments to identify technical, environmental, and social risks.<br>• Develop treatment measures and contingency plans.<br>• Incorporate risk management considerations into design specifications.<br>• Review design specifications to ensure compliance with risk management requirements. |
| Procurement & Contracting Phase | • Identifying and assessing risks associated with contractor selection, capacity, and performance. |
| Construction Phase | • Monitor construction activities to identify new or emerging risks. |
| Handover & Commissioning Phase | • Review risk management documentation to ensure completeness and accuracy.<br>• Transfer risk management responsibilities to the operations and maintenance teams. |
| Operations & Maintenance Phase | • Continuously monitor infrastructure assets to identify potential risks.<br>• Conduct regular risk assessments to identify new or emerging risks. |
| Disposal/ Decommissioning Phase (if applicable) | • Develop decommissioning plans that minimize environmental and social impacts. |

**Documentation and Approval Processes**

To ensure transparency, accountability and consistency, the following documentation and approval processes will be implemented, in planning and updated throughout all phases (Table 12).

**Table 12. Risk Documentation**

| Documentation / Approval Process | Description |
|---|---|
| Risk Management Plan (RMP) | A comprehensive document outlining the project-specific risk management approach, roles, responsibilities, methodologies and procedures for each project phase, and reporting requirements.<br>Approval: project leadership / steering committee. |
| Risk Register | A live centralized database / document for tracking identified risks, their likelihood and impact, mitigation measures, and responsible parties.<br>Approval: regular review and sign-off by the designated Risk Owner and Project Manager / Committee at defined intervals or upon significant risk changes. |
| Phase Gate Reviews | Risk status, including the effectiveness of treatment plans for major risks, is a mandatory component of formal phase gate reviews<br>Approval: project leadership / steering committee - procession to the next phase is contingent on demonstrating adequate management of critical risks. |
| Change Request Forms | Standardized forms for documenting proposed changes to project plans or specifications that may impact risk levels.<br>Approval: project leadership / steering committee. |
| Specific Thresholds Approvals | Specific thresholds may require higher-level approval for accepting high residual risks or approving costly treatment measures, particularly those with national strategic implications.<br>Approval: Ministerial / IMPWCM. |

**Communication and Reporting Protocols**

Clear, timely, and accurate communication and reporting are fundamental pillars supporting the entire Risk Management Strategy (RMS), ensuring that stakeholders are informed, decisions are evidence-based, and accountability is maintained. Effective communication and reporting are vital for ensuring that risk information is disseminated appropriately, decisions are made transparently, and lessons learned are integrated into future projects.

**Internal Communication Flows for Risk Information**

Risk information must flow effectively within the project and governance structures below:

**Table 13. Risk Internal Communication Flows**

| Project / Governance Structure | Risk Information |
|---|---|
| Project Team Level | Regular communication regarding operational risks, safety incidents, emerging issues, and status of risk treatment actions.<br>Risk information should be a standard agenda item. |
| Risk Owner to Project Manager / Committee | Risk Owners are responsible for promptly communicating significant changes in risk status, effectiveness of treatments, or emergence of new risks within their purview to the Project Manager and/or the relevant Risk Committee (FMS or National). |
| Risk Committee Level | The national and FMS Risk Committees are central hubs for consolidating, discussing, and reviewing risk information within their respective jurisdictions. |

| | |
|---|---|
| Upward Communication | Project Managers and Committee Chairs are responsible for communicating summarized risk information, particularly concerning Critical and Severe risks and those requiring higher-level decisions, to senior management within their respective ministries and coordinating bodies (e.g., IMPWCM). |
| Cross-Agency/ Departmental | Defined channels (e.g., through IMPWCM, formal liaisons) for sharing risk information relevant across different ministries or between FGS and FMS entities, especially for risks with cross-cutting impacts (e.g., security, macroeconomic). |

To facilitate the effective flow of internal risk-related information within the project and governance structures above, the following communication channels will be established, Regular Project Meetings, Risk Management Dashboards, digital Notifications.

**External Reporting Requirements**

Reporting tailored to the needs of external stakeholders is essential.

**Table 14. Risk External Communication Flows**

| External Stakeholder | Risk Information |
|---|---|
| Development Partners | Risk reporting requirements will be stipulated in funding agreements aligned with partner frameworks (e.g., AfDB ISS, World Bank SORT). |
| Oversight Bodies (Parliament, Auditor General) | Formal reporting on risk management performance, particularly concerning the use of public funds and management of high-impact risks, is required as part of regular oversight processes. |
| Public/Community Reporting | Summarized, non-sensitive information on project risks and mitigation measures will be communicated to affected communities |
| Contractors / Suppliers | Clear risk reporting requirements will be defined in contracts,. |

To ensure compliance with regulatory requirements and provide transparency to external stakeholders, the following risk communication protocols will be implemented, Periodic Progress Reports, Incident Reports, Annual Risk Assessments and stakeholder's consultation:

**Escalation Protocols for High-Priority Risks**

A clear escalation pathway is needed for risks that require urgent attention or decisions beyond the authority of the immediate Risk Owner or Project Manager. To ensure that high-priority risks receive timely attention and appropriate action, the following escalation protocols will be followed:

**Table 15. High Risks Escalation Protocols**

| Protocol | Description |
|---|---|
| Risk Thresholds / Escalation Triggers | Clear thresholds will be established for escalating risks based on their potential impact and likelihood of occurrence (Section 4.3).<br>Triggers for Escalation:<br>• Risks newly assessed or reassessed as "Critical."<br>• Significant failure of a treatment plan for a "Severe" or "Critical" risk.<br>• Emergence of a risk with potentially catastrophic impact requiring immediate high-level intervention.<br>• Need for resources or decisions exceeding the delegated authority level.<br>• Significant cross-jurisdictional risks requiring FGS-FMS or inter-ministerial coordination at a senior level. |

| Protocol | Description |
|---|---|
| Escalation Reports | Standardized reports will be used to document escalated risks.<br>Documentation:<br>• the nature of the risks<br>• their potential impact<br>• reasons or escalation<br>• recommended actions / actions taken<br>• decisions made at higher levels<br>• responsible parties. |
| Designated Escalation Paths | Defined channels will be used for escalating risks to higher levels of management, ensuring that critical issues are promptly addressed by decision-makers.<br>Escalation Path:<br>• Risk Owner will immediately inform the Project Manager / Committee Chair.<br>• Project Manager/Committee Chair will assess the situation and escalate promptly to the relevant Director General/Minister and/or the IMPWCM Chair (MPWR&H).<br>• For issues with national strategic importance, further escalation to the Office of the Prime Minister or relevant cabinet sub-committee may be necessary via the lead ministry. |
| Designated Oversight authority | Will provide oversight and guidance on the management of escalated risks, ensuring that resources are allocated effectively, and mitigation measures are implemented promptly. |

**Transparency and Accountability Mechanisms**

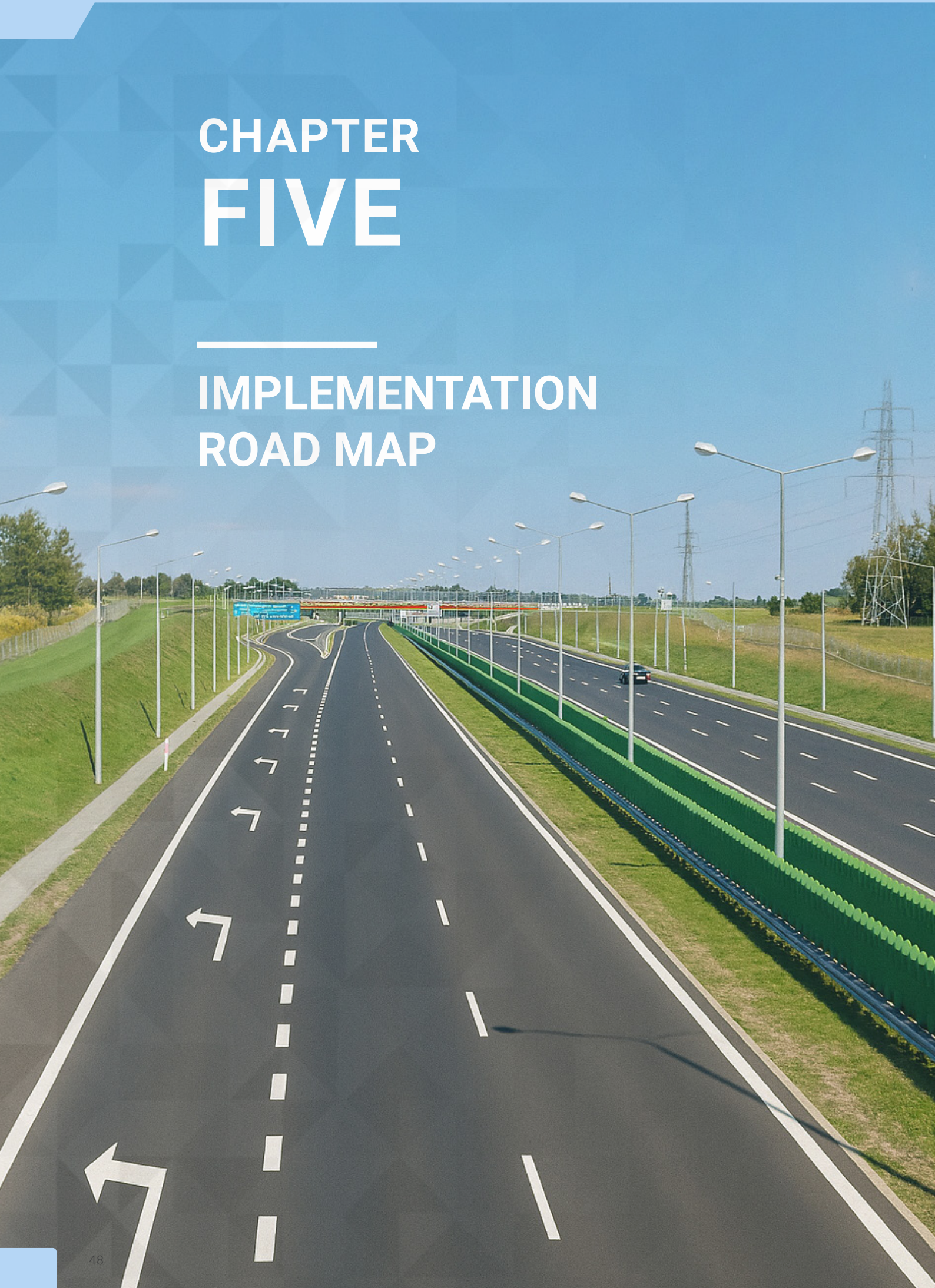
Communication and reporting protocols are integral to ensuring transparency and accountability. To promote transparency and accountability in risk management, the following mechanisms will be implemented:

**Table 16. Risk Transparency and Accountability System**

| Transparency and Accountability Mechanism | Description |
|---|---|
| Public Disclosure | Appropriate public disclosure of non-sensitive risk information and GRM performance will enhance transparency to affected communities and the wider public. |
| Grievance Mechanisms | Channels will be established for addressing grievances or complaints related to project risks, |
| Whistle-blower Protection | A system will be established to protect individuals who report potential wrongdoing or violations of risk management policies. |
| Independent Audits | Periodic audits will be conducted by independent third parties to assess the effectiveness of risk management processes |

# CHAPTER FIVE

## IMPLEMENTATION ROAD MAP



## 5.1. RISK STRATEGY IMPLEMENTATION ROAD MAP

This implementation matrix is a strategic tool developed to operationalize this strategy. It translates the high-level vision of the strategy into actionable steps, providing a structured, time-bound, and accountable framework for implementation. The matrix communicates the "who, what, how, and when" of the strategy's execution, ensuring alignment across all relevant actors and phases of implementation for the strategy.

At its core, the matrix serves as an integrated coordination and accountability mechanism. It identifies the key strategic pillars of the risk strategy and matches them with clear activities, timelines, institutional leads, and expected deliverables.

## 5.2. TIMELINE AND PHASES OF IMPLEMENTATION

The implementation of the infrastructure risk management strategy will be implemented in two phases to allow knowledge growth (Figure 13).

- Phase I (2025–2026) focuses on institutional setup, policy development, training, and risk diagnostics.
- Phase II (2027–2030) entails the operational rollout of risk tools, digital systems, and community-level engagement.

Through this structured roadmap, the matrix ensures that implementation is not only well-orchestrated but also adaptable to Somalia's dynamic political, economic, and environmental context.

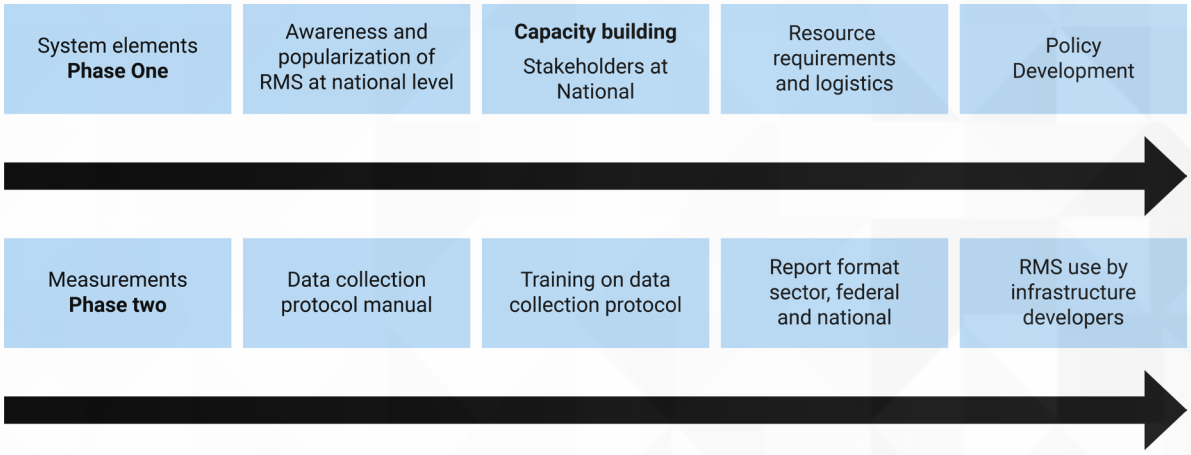



Figure 13: Risk Management Strategy Implementation by Phases

This phase one which runs between 2025 and 2026 will involve setting up of institution to handle risk assessment and processing. As part of this initial phase legal framework assessment and filling the gaps will be important. This will also involve training on various stakeholders and creation of awareness across the various sector and ensuring streamlining within the sector.

**Table 17. Modular Risk Strategy Setting up Phase One 2025–2026**

| Strategic/Pillar | Key Activities | Implementation Approach | Notes/ Suggested Tools | Timeline | Expected/ Deliverables |
|---|---|---|---|---|---|
| 1. Governance and Coordination | Establish Inter-Ministerial Infrastructure Coordination Mechanism (IMPWCM) | Cabinet directive; Terms of Reference Operational secretariat | MoPIED, OPM, MoF, FMS | Q3–Q4 2025 | Functional multi-agency platform with dedicated secretariat |
| | Risk committees at federal & state levels | Stakeholder engagement, nominations | FMS, Civil Society | Q1 2026 | Risk governance structure at national & subnational levels |
| 2. Legal and Policy Reform | Develop SOPs for infrastructure risk management | TWG-led drafting and national validation | Legal experts, CSOs | Q2–Q3 2026 | National SOP on infrastructure risk practices |
| | Conduct legal & regulatory audit | Harmonization study and reform proposal | Parliament, regulators | Q2- Q3 2026 | Updated legal framework aligned to RMS principles |
| 3.Capacity Building and Awareness | Develop RMS training manual | Curriculum design with academia | Universities, Training Institutes | Q3 2026 | Risk-informed training modules |
| | Federal & FMS RMS capacity workshops | ToT, cascade training | Sector ministries | Q3–Q4 2026 | Trained focal points in infrastructure institutions |
| | National media & awareness campaign | IEC materials, media broadcasts | MoICT, FMS | Q1–Q4 2026 | Public sensitization on RMS framework |
| 4.Community Engagement and Equity | Implement community stakeholder mapping | Conflict analysis, community liaison | FMS, CSOs, elders | Q1-Q4 2025-2026 | Localized conflict-sensitive project design |

The phase two, which runs between 2027-2030 with MoPWRH as lead institution will involve rollout of the risk strategy with implementation involving stakeholder's engagement, risk assessment, development of risk register and prioritisation of identified risks in terms of processing.

**Table 18. Modular Risk Strategy Implementation Phase Two 2027-2030**

| Strategic/Pillar | Key Activities | Implementation Approach | Key Partners | Timeline | Expected/ Deliverables |
|---|---|---|---|---|---|
| 5. Risk Assessment Systems | Develop infrastructure risk registry and GIS dashboard | Web development, risk taxonomy creation | MoPIED, IT providers | Q1–Q3 2027 | Digital risk monitoring portal operational |
| | Customize risk rating and categorization tools | Sector adaptation of assessment matrix | Sector ministries | Q3 2027 | Harmonized tools adopted across ministries |
| 6. Project-Level Risk Integration | Integrate risk in project appraisals | Revise PIM guidelines, rollout training | MoF, MoPIED | Q2–Q3 2027 | Risk screening embedded in infrastructure lifecycle |
| | Rollout sector-specific risk mitigation plans | Develop templates, train technical staff | Transport, Energy, Water, ICT | Q4 2027–2028 | Functional sector risk mitigation plans in place |
| 7. Community Engagement and Equity | Facilitate community-led project risk analysis | Participatory risk assessments and forums | NGOs, FMS | Q1 –Q4 2027 -2028 | Strengthened local ownership and legitimacy |
| 8. Knowledge and Learning | Convene annual infrastructure risk conferences | Knowledge exchange, best practices | Development partners, academia | 2026–2030 | Annual review forums and learning briefs |

**Risk Implementation Institutions**

For the strategy to get fully implemented under phase one and phase two, a clear institution arrangement is necessary. The Lead ministry, Ministry of Public Works, Reconstruction & Housing will coordinate the implantation of the RMS, leading a multi-agency team of both government, civil society, community groups and development partners (Figure 14).

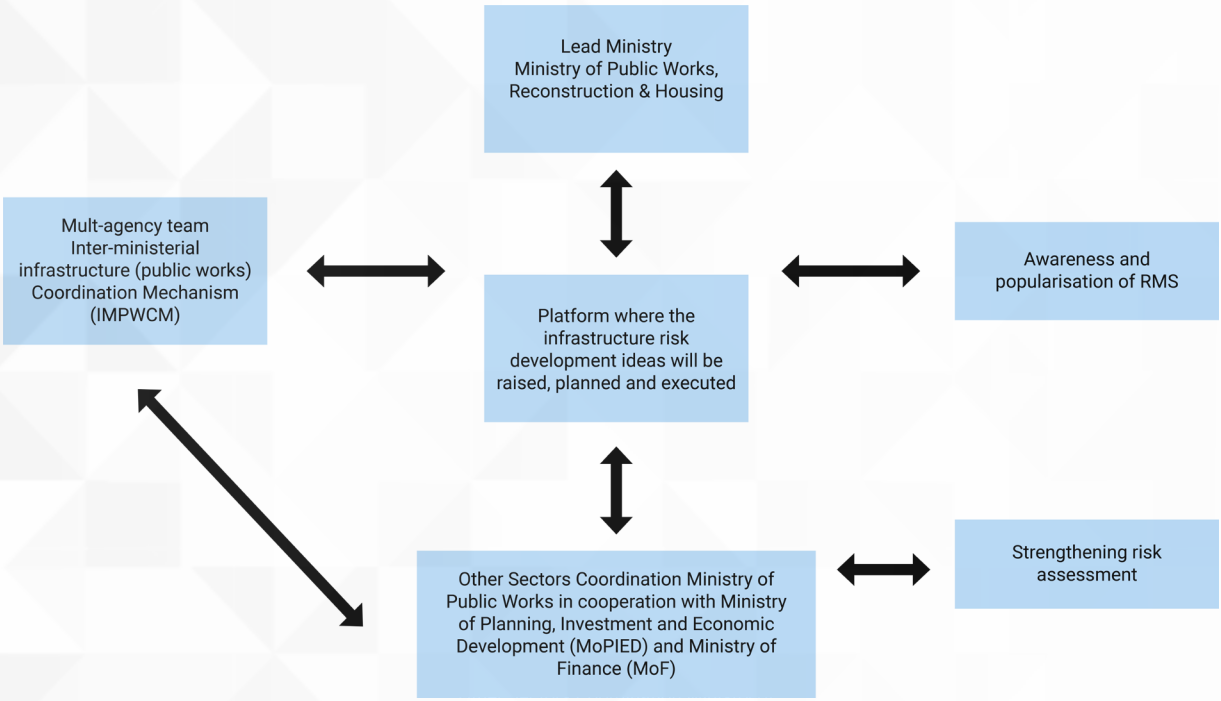



Figure 14: Institutional Arrangement in RMS Implementation

**Implementation Governance Structure**

To ensure effective implementation of the Risk Management Strategy (RMS), a robust governance structure is essential across Somalia's complex institutional landscape, at both the national and Federal Member State (FMS) levels. This section details the governance bodies, decision-making authorities, oversight mechanisms, integration with existing structures, and resource requirements for RMS implementation. This structure leverages existing mechanisms where possible and establishes necessary bodies to ensure coordinated action as outlined in Table 19 and Section 4.2.

**Table 19: Existing and New Governance Bodies- National and Federal state**

| Governance Body | Role |
|---|---|
| **National Level:** | |
| Lead Ministry of Public Works, Reconstruction & Housing (MPWR&H) | Overall coordination function, technical guidance, supports the National Risk Committee, and overall RMS implementation. Will establish National Steering Committee (NSC) for overall strategic direction and oversight for RMS implementation. |
| Inter-Ministerial Infrastructure (Public Works) (IMPWCM) | Coordination body for infrastructure-related risks-policy alignment, stakeholders and handle major cross-cutting risk issues, |
| National Risk Analysis and Monitoring Committee | Co-chaired and supported by MPWR&H, representatives from key FGS ministries), observer status for key development partners and civil society/private sector representatives as appropriate. Overseeing the implementation of the RMS framework. Will establish Technical Working Group (TWG) |

| Federal Member State Level: | |
|---|---|
| Lead Federal Member State (FMS) Ministry | Each FMS designate a lead ministry (the counterpart to MPWR&H or the Ministry of Planning) for coordinating RMS implementation within the state. Will establish FMS Steering Committee (NSC) for overall strategic direction and oversight for RMS implementation. |
| FMS Risk Analysis and Monitoring Committee | At FMS, mirroring the national committee's function, but focused on risks within the state's jurisdiction. Will establish FMS Technical Working Group (TWG) |

Risk emergence and escalation is strongly related to governance system. Thus, governance escalation matrix has been proposed involving the risk strategy implementation stakeholders (Table 20).

**Table 20. Risk Governance Escalation Matrix**

| Body | Authority |
|---|---|
| Risk Owners (Project Level | Authorized to accept Low risks and implement approved risk treatment plans for Moderate risks within project budget |
| Project Managers / FMS Risk Committees | Authorized to approve risk treatment plans for Moderate risks, monitor Severe risks, and recommend actions for Critical risks or those requiring significant resource allocation beyond project budgets.. |
| National Risk Committee / Lead Ministry (DG / Minister) | Authorized to approve risk treatment plans for Severe risks, endorse recommendations for Critical risks, approve significant resource allocations for risk treatment from contingency funds, and accept residual Moderate/Severe risks based on documented justification. |
| IMPWCM / Cabinet Level | Required for decisions involving major policy changes, significant national resource implications, acceptance of Critical residual risks with strategic consequences, or resolving major inter-jurisdictional risk management disputes escalated from lower levels. |

## 5.3. STAKEHOLDERS ENGAGEMENT IN RISK MANAGEMENT

In order to address governance challenges between the Federal Government of Somalia (FGS) and FMS, there is need for:

- Regular joint consultation forums will be established to ensure alignment on risk management priorities.
- A national infrastructure risk analysis and monitoring committee will include representatives from both FGS and FMS to foster collaboration.
- Formal mechanisms will be needed to clarify specific responsibilities and resource sharing.

**Private Sector and Civil Society Engagement Strategies**

Recognizing the importance of non-state actors:

- The private sector will be engaged through structured dialogues focused on PPP opportunities in infrastructure projects.
- CSOs will be included in risk identification workshops to incorporate community perspectives into decision-making processes.

**Conflict-Sensitive Stakeholder Engagement**

In line with AfDB's ISS framework recommendations:

- Stakeholder engagement processes will integrate conflict-sensitive approaches to minimize tensions, particularly in regions with ongoing disputes.
- Engagement protocols will prioritize inclusivity to ensure marginalized groups are represented.

**Capacity Development Needs**

Capacity-building initiatives will be implemented to enable stakeholders to effectively participate in risk management:

- Training programs for FMS officials on risk assessment methodologies.
- Workshops for CSOs on monitoring tools for infrastructure projects.
- Technical assistance for private sector actors on integrating risk management into project planning.

# CHAPTER SIX

# MONITORING, EVALUATION AND LEARNING FRAMEWORK

## 6.1. INTRODUCTION

The effective and sustainable implementation of the Infrastructure Risk Management Strategy (IRMS) in Somalia is critically dependent on the establishment of a rigorous, systemically embedded Monitoring, Evaluation, and Learning (MEL) framework. The MEL framework will ensure that all planned activities under the IRMS are executed with efficiency, transparency, and alignment with Somalia's national development goals. A robust MEL framework will enable stakeholders to systematically track the rollout of coordination platforms, legal instruments, digital tools, and capacity development initiatives as outlined in the implementation roadmap.

Inspired by the World Bank's Results-Based Management (RBM) approach and tailored to Somalia's governance and institutional context, the MEL framework presented here is grounded in the principles of inclusivity, evidence-informed decision-making, transparency, and continuous learning. It links the various pillar in the implementation roadmap (Chapter Five) with key performance indicators, baseline and target values, timelines, and verification methods. This results-oriented approach ensures that Somalia's risk management objectives are not only aspirational but actionable, measurable, and continuously improved throughout the life of the strategy.

## 6.2. MEL FRAMEWORK OBJECTIVES

The MEL objectives provide the foundation for tracking measurable results, strengthening adaptive capacity, and reinforcing trust among stakeholders. These objectives are;

- Monitor Implementation: Track the execution of IRMS activities, milestones, and institutional responsibilities against the strategic implementation roadmap, ensuring alignment with timelines and resource allocation.
- Evaluate Performance and Impact: Systematically assess the effectiveness, efficiency, sustainability, and inclusiveness of outputs and outcomes, enabling the identification of what works, why, and under what conditions.
- Generate Real-Time Evidence: Provide timely insights for decision-makers to adjust planning, respond to emerging risks, and reallocate resources as needed, based on continuous monitoring and diagnostic reviews.
- Support Adaptive Learning and Innovation: Facilitate knowledge exchange, experimentation, and feedback loops that allow implementing entities to refine interventions and scale promising practices across sectors and regions.
- Promote Inclusive Accountability: Ensure transparent reporting and participatory monitoring by engaging civil society, communities, private sector actors, and development partners at both federal and state levels throughout the MEL lifecycle.

## 6.3. MONITORING AND EVALUATION FRAMEWORK (2025–2030)

Risk management strategy monitoring and evaluation framework take into cognizance the various parameters that will need to be tracked to ensure effective implementation of the strategy. This will involve correction of various date as outlined in Table 21.

**Table 21. Monitoring and Evaluation Framework**

| S. N | Output / Deliverable (from Implementation Roadmap) | Indicator | Baseline (2025) | Target | Means of Verification | Frequency | Lead / Support Institution |
|---|---|---|---|---|---|---|---|
| 1 | Functional risk governance architecture established | No. of operational coordination platforms (federal/state) | 0 | | Meeting records, TORs, performance reviews | Biannual | MoPWRH / IMPWCM, FMS |
| 2 | National SOPs for infrastructure risk management adopted | No. of validated SOPs endorsed by government | 0 | | Government gazettes, validation reports | Annual | MoPWRH / MoJ, CSOs |
| 3 | Harmonized legal and regulatory environment for risk management | No. of laws reviewed or updated | 0 | | Legal audit reports, gazette notices | Annual | MoJ / Parliament, MoPIED |
| 4 | Institutional capacity for IRMS implementation enhanced | No. of staff trained across infrastructure sectors | 0 | | Training attendance, training feedback, capacity reports | Quarterly | MoPWRH / CSC, FMS |
| 5 | Infrastructure Risk Registry and Dashboard operational | % of infrastructure projects mapped in dashboard | 0 | | GIS dashboard, data reports | Quarterly | MoPWRH / MoPIED, IT providers |
| 6 | Risk-based infrastructure project planning mainstreamed | % of new infrastructure projects risk-appraised | 0 | | Project appraisal forms, MEL reviews | Quarterly | MoPWRH / MoF, sector ministries |
| 7 | Local risk mapping and community feedback systems integrated | % of risk projects with participatory community sessions | 0 | | Meeting minutes, photo evidence, local action plans | Biannual | MoPWRH / FMS, CSOs, NGOs |
| 8 | Digital MEL platform and tools fully deployed | % of activities tracked using MEL dashboard | 0 | | Dashboard analytics, MEL logs | Quarterly | MoPWRH / MoPIED, MEL consultants |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 9 | National knowledge sharing and peer learning events held | No. of annual risk learning events convened | 0 | | Event reports, policy briefs, videos | Annual | MoPWRH / Academia, Development Partners |
| 10 | Mid-term and end line evaluations completed and disseminated | No. of completed and published evaluation reports | 0 | | Independent evaluator reports | 2027 & 2030 | MoPWRH / Independent evaluators, MoPIED |

## 6.4. LEARNING AND KNOWLEDGE MANAGEMENT

In a strategy as complex and multi-sectoral as Somalia's Infrastructure Risk Management Strategy (IRMS), the ability to learn, adapt, and evolve is not optional—it is essential. The Monitoring, Evaluation, and Learning (MEL) framework recognizes learning as both a strategic asset and a governance function. This component of the MEL framework transforms data into knowledge, and knowledge into strategic action. It ensures that stakeholders—across ministries, sectors, federal member states, communities, and development partners—engage in reflection, knowledge sharing, and co-creation of new approaches that can drive real-time improvements. It is designed to move institutions away from static compliance-based reporting toward dynamic, proactive risk management learning systems.

Strategic Learning Mechanisms under the MEL Framework shall include:

- Digital Knowledge Hub Integration: A centralized, searchable repository will be embedded into the national MEL dashboard. This platform will host policy briefs, evaluation findings, research, case studies, technical manuals, and performance trends, ensuring that institutional memory is protected, and knowledge is accessible to all tiers of government and partners.
- Evaluation-to-Action Workshops: Following each mid-term and end line evaluation, learning labs will be convened with sectoral stakeholders to interpret findings, identify institutional bottlenecks, and co-develop action plans for policy and operational adjustments.
- Field-Based Learning through Case Documentation: In-depth case studies from urban and rural regions will capture context-specific implementation experiences including community engagement strategies, adaptation to local risks, and innovations in infrastructure delivery.
- Peer Learning Exchanges: A national learning agenda will include cross-state exchange visits, inter-ministerial learning roundtables, and virtual learning clinics with development partners. These engagements will allow Somalia to compare, replicate, and scale successful models across federal and regional lines.
- Mainstreaming in Civil Service Development: MEL content and IRMS-specific case examples will be embedded into the core curriculum of public administration training institutes. This will professionalize evidence-based practice and cultivate a next generation of results-oriented public servants.

## 6.5. MEL RISKS AND MITIGATION MEASURES

As with any complex national strategy, the implementation of the MEL framework for the IRMS is subject to a number of strategic, institutional, technical, and operational risks. These risks if not anticipated and mitigated could undermine data quality, stakeholder trust, institutional accountability, and ultimately the achievement of long-term risk resilience. Below is an enhanced and expanded risk matrix, grounded in a broader understanding of Somalia's risk environment and implementation constraints.

**Table 22: MEL Risks and Mitigation Measures**

| Risk | Impact | Mitigation Strategy |
|---|---|---|
| Weak institutional M&E capacity | Delays in data reporting, poor data quality, misalignment between implementers | Deploy MEL focal points at national and sub-national levels; implement structured MEL training and mentoring programs; embed MEL officers in sector ministries |
| Poor data quality and fragmentation | Inconsistent and non-verifiable performance results, compromised evaluations | Standardize data collection tools; deploy digital MEL systems integrated with GIS and mobile-enabled surveys; introduce independent verification and data audits |
| Inadequate funding for MEL operations | Gaps in monitoring coverage, cancelled evaluations, incomplete learning loops | Mandate MEL line items in all IRMS project budgets; mobilize donor and partner co-financing for MEL components |
| Resistance to data sharing or transparency | Undermined accountability and stakeholder engagement | Legislate open data policies; strengthen grievance redress and community scorecard mechanisms; create a public-facing MEL dashboard |
| Political interference in MEL processes | Biased reporting, constrained access to data, reputation risk | Enshrine MEL independence in oversight protocols; ensure multi-stakeholder governance of MEL data validation; conduct third-party evaluations |
| Insecurity in target regions | Inability to collect data in high-risk areas; reduced community feedback | Use remote monitoring tools (satellite/GIS); train local enumerators; partner with trusted local CSOs for data collection |
| Low stakeholder participation | Limited local ownership, poor data uptake, missed opportunities for course correction | Institutionalize participatory MEL; involve communities in indicator design and data validation; host periodic reflection sessions with civil society and the private sector |
| Technology and connectivity gaps | Interruptions in digital MEL operations, data loss, inaccessible platforms | Deploy offline-capable mobile data apps; maintain hybrid paper-digital systems; ensure MEL servers are redundantly hosted |
| Capacity attrition and staff turnover | Loss of MEL expertise, discontinuity in systems | Create institutional memory tools (manuals, SOPs); establish mentorship pipelines and performance contracts for MEL roles |

## 6.6. CONCLUSION

This Monitoring, Evaluation, and Learning (MEL) Framework is not just a supportive component of the Infrastructure Risk Management Strategy (IRMS) it is its central nervous system. In a country like Somalia, where infrastructure risk intersects with political fragility, environmental volatility, and institutional decentralization, the MEL system provides the structure for accountability, coordination, and course correction.

Through clear, results-based performance indicators, rigorous evaluation methodologies, and integrated digital tracking tools, the MEL Framework enables Somalia to not only monitor activities but to learn from them ensuring that policies evolve with realities on the ground. It converts strategic ambition into measurable progress.

More than a reporting mechanism, this MEL Framework ensures the IRMS remains a living strategy—capable of responding dynamically to emerging risks, evolving community needs, and institutional priorities. From the establishment of coordination bodies and the rollout of Standard Operating Procedures (SOPs) to the creation of a national digital risk registry and the institutionalization of learning events, each phase of the implementation roadmap is measured, validated, and continuously improved.

By embedding MEL into the heart of infrastructure development, Somalia reinforces its commitment to transparency, stakeholder participation, and sustainable progress. The MEL Framework transforms the IRMS into a system of action, evidence, and accountability ensuring that resilience is not just built, but sustained across generations.

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# APPENDICES

**Appendix 1. Sectoral Risks Analysis- Likelihood and Impact**

| Risk Factor | Risk Description | Likelihood of Occurrence | Impact | Risk Mitigation Measures |
|---|---|---|---|---|
| **Water** | | | | |
| Limited Technical Skills | • Lack of trained personnel in water and energy sectors<br>• Limited access to vocational and technical education<br>• Dependence on foreign experts Weak institutional capacity<br>• Limited research and innovation in energy and water solutions<br>• Limited capacity on part of contractors | High | Severe | • Invest in technical training programs and capacity building in water and energy sectors. |
| Legal Framework Gaps | • Outdated or Limited regulatory policies<br>• Lack of enforcement mechanisms<br>• Overlapping jurisdiction among institutions<br>• Corruption and policy implementation delays<br>• Lack of a clear legal framework for private sector involvement | High | Severe | • Develop and implement comprehensive water policies with regulatory oversight. |
| Lack of Spacing for Drilling Boreholes | • Urban expansion limiting borehole drilling areas<br>• Environmental degradation reducing viable sites.<br>• Land tenure conflicts affecting water access.<br>• Poor planning and site selection for drilling projects<br>• Overlapping claims between communities and local authorities | Medium | Moderate | • Implement proper land-use planning and incentivize alternative water sources.<br>• Formulation of regulation for borehole sinking<br>• Establish database for boreholes |

| | | | | |
|---|---|---|---|---|
| Community Water-Related Conflicts | • Conflicts over shared water resources<br>• Inequitable access to water sources<br>• Inter-clan and inter-community disputes<br>• Weak governance and dispute resolution mechanisms<br>• Political interference exacerbating water conflicts | High | Severe | • Enhance community engagement, mediation, and dispute resolution mechanisms.<br>• On site community water users resources management |
| Water Contamination | • Contamination from industrial and domestic waste<br>• Poor sanitation infrastructure<br>• Inadequate water treatment facilities<br>• Overuse of pesticides and fertilizers affecting water sources<br>• Poor waste management leading to water pollution | Medium | High | • Implement strict water quality monitoring and enhance public awareness on water safety.<br>• Water quality standard implementation<br>• Enforcement of buffer |
| Climate Change and Drought | • Frequent and prolonged droughts<br>• Reduced groundwater recharge rates<br>• Increased desertification.<br>• Rising water scarcity affecting livelihoods<br>• Loss of biodiversity and natural water reservoirs | High | Severe | • Develop climate-resilient water infrastructure and implement water conservation measures. |
| Poor Infrastructure for Water Distribution | • Aging and poorly maintained water pipes<br>• Limited investment in water distribution networks<br>• High non-revenue water losses due to leaks and theft<br>• Poor integration of modern water supply technologies<br>• Inconsistent water supply affecting urban and rural areas | High | Severe | • Improve water infrastructure and ensure equitable water distribution systems. |

| | | | | |
|---|---|---|---|---|
| Security Risks in Water Projects | • Attacks on water infrastructure by armed groups<br>• Vandalism and theft of equipment<br>• Lack of security for water personnel<br>• Weak coordination between security | High | Severe | • Strengthen security measures and coordinate with local authorities to ensure project safety. |
| Over-extraction of Groundwater | • Unregulated extraction by private entities<br>• Declining water table levels<br>• Lack of monitoring and enforcement<br>• Salinization of freshwater sources<br>• Poor coordination in groundwater management | High | Severe | • Implement groundwater management policies and promote sustainable water extraction practices.<br>• Increased monitoring on sinking of borehole |
| Lack of Data on Water Resources | • Lack of national water database<br>• Inconsistent and unreliable data collection<br>• Poor coordination between agencies<br>• Limited use of technology in resource monitoring<br>• Absence of real-time monitoring systems for resource management | High | Severe | • Enhance data collection and establish a central repository for water information. |
| Inadequate Maintenance of Water Facilities | • Insufficient budget allocation for maintenance<br>• Limited skilled workforce for infrastructure upkeep<br>• Lack of spare parts and necessary tools<br>• Delayed response to infrastructure failures<br>• Weak enforcement of maintenance schedules and policies | High | Severe | • Implement regular maintenance schedules and allocate budgets for infrastructure upkeep. |

| Risk Factor | Risk Description | Likelihood of Occurrence | Impact | Risk Mitigation Measures |
|---|---|---|---|---|
| **Energy** | | | | |
| Legal Framework Gaps | • Outdated or Limited regulatory policies<br>• Lack of enforcement mechanisms<br>• Overlapping jurisdiction among institutions<br>• Corruption and policy implementation delays<br>• Lack of a clear legal framework for private sector involvement | High | Severe | • Develop and implement comprehensive energy policies with regulatory oversight. |
| Absence of National Grid | • Heavy reliance on diesel generators<br>• High cost of electricity production<br>• Lack of national energy transmission infrastructure<br>• Fragmented and unregulated private energy providers<br>• Limited government investment in large-scale energy projects | High | Severe | • Promote decentralized renewable energy solutions such as solar and wind power. |
| Security Risks in Energy Projects | • Attacks on energy infrastructure by armed groups<br>• Vandalism and theft of equipment<br>• Lack of security for energy personnel<br>• Weak coordination between security | High | Severe | • Strengthen security measures and coordinate with local authorities to ensure project safety. |
| High Energy Costs | • High dependency on imported fossil fuels<br>• Lack of subsidies for renewable energy<br>• Inefficient energy production and distribution<br>• High tariffs limiting energy accessibility.<br>• Lack of competition leading to monopolized energy markets | High | Severe | • Encourage investment in alternative, cost-effective renewable energy sources. |

| | | | | |
|---|---|---|---|---|
| Limited Investment in Renewable Energy | • Limited financing options for renewable energy projects<br>• High initial costs of solar and wind energy systems<br>• Lack of incentives for private sector investment<br>• Absence of clear renewable energy policy frameworks<br>• Limited capacity for large-scale renewable energy deployment | Medium | Severe | • Provide incentives for private and public investment in renewable energy projects. |
| Lack of Data on Energy Resources | • Lack of national energy database<br>• Inconsistent and unreliable data collection<br>• Poor coordination between agencies<br>• Limited use of technology in resource monitoring<br>• Absence of real-time monitoring systems for resource management | High | Severe | • Enhance data collection and establish a central repository for energy information. |
| Inadequate Maintenance of Energy Facilities | • Insufficient budget allocation for maintenance<br>• Limited skilled workforce for infrastructure upkeep<br>• Lack of spare parts and necessary tools<br>• Delayed response to infrastructure failures<br>• Weak enforcement of maintenance schedules and policies | High | Severe | • Develop and implement national building codes and standards.<br>• Establish regulatory bodies to enforce construction laws.<br>• Strengthen quality assurance mechanisms.<br>• Train government inspectors on compliance<br>• Align local standards with international best practices |

| Construction Risks Associated with Road, Bridges, Airports, and ports Construction | | | | |
|---|---|---|---|---|
| Lack of Clear Policies and Standards | • Absence of standardized building codes<br>• Lack of material testing and quality assurance<br>• No enforced regulations on construction methodologies<br>• Weak monitoring and compliance enforcement and Inconsistencies in international standards | High | Severe | • Develop and implement national building codes and standards.<br>• Establish regulatory bodies to enforce construction laws.<br>• Strengthen quality assurance mechanisms.<br>• Train government inspectors on compliance<br>• Align local standards with international best practices |
| Lack of Accreditation for Engineers and Contractors | • No formal certification process for engineers and contractors<br>• Unqualified personnel executing complex projects.<br>• Poor construction practices due to lack of oversight<br>• Limited trust in local expertise<br>• Weak institutional capacity to enforce accreditation | High | Severe | • Set up an accreditation board for engineers and contractors.<br>• Develop professional certification programs.<br>• Strengthen government oversight of engineering qualifications.<br>• Promote international partnerships for skills transfer |
| Skills and Knowledge Gap for Engineers and Contractors | • Lack of technical training institutions<br>• Limited exposure to modern engineering practices<br>• Inadequate knowledge of new construction technologies<br>• Absence of continuous professional development programs<br>• Poor quality project execution due to skill deficiencies | High | Severe | • Increase investment in technical training institutions.<br>• Encourage partnerships with global engineering firms.<br>• Provide scholarships for specialized engineering studies.<br>• Develop continuous learning programs for construction workers.<br>• Establish mentorship programs linking experts with trainees |

| | | | | |
|---|---|---|---|---|
| No Vetting for Licensing and Permits | • No background verification of contractors<br>• Unqualified firms obtaining construction permits.<br>• Corruption in permit issuance<br>• No standardized procurement procedures<br>• Projects awarded based on personal affiliations rather than merit | High | Severe | • Introduce vetting mechanisms for licensing<br>• Establish independent oversight bodies for permits.<br>• Strengthen anti-corruption measures in procurement.<br>• Implement digital tracking of issued permits.<br>• Create transparency in contractor selection processes |
| Lack of Environmental Considerations | • Destruction of natural ecosystems<br>• No environmental impact assessments before projects<br>• Soil degradation due to unregulated excavation<br>• Pollution of water bodies from construction waste | Medium | Moderate | • Enforce environmental impact assessments for all projects<br>• Introduce policies on sustainable construction<br>• Implement waste management regulations<br>• Promote green construction practices<br>• Strengthen government oversight on environmental compliance |
| No Occupational Health and Safety Standards | • Frequent construction-related accidents<br>• No mandatory safety training for workers<br>• No personal protective equipment (PPE) enforcement<br>• Poor working conditions at construction sites.<br>• Lack of legal framework for workers' compensation | High | Severe | • Develop and enforce national safety regulations.<br>• Conduct regular safety inspections.<br>• Mandate PPE use at construction sites<br>• Establish a safety training framework.<br>• Implement workers' insurance and compensation policies |
| Limited Heavy Construction Equipment | • Poor road networks limiting access to remote areas.<br>• High fuel and logistics costs<br>• Limited availability of transport services<br>• Risk of damage to machinery during transit<br>• Bureaucratic challenges in moving heavy equipment | High | Severe | • Improve road infrastructure to enable equipment transport.<br>• Provide subsidies for transporting heavy machinery.<br>• Streamline logistics and permit processes.<br>• Encourage local production of smaller, adaptable equipment.<br>• Establish regional maintenance hubs for construction machinery |

| | | | | |
|---|---|---|---|---|
| Lack of Professional Body to Enhance Industry Standards | • No professional association for engineers and contractors<br>• No centralized database for construction professionals<br>• Lack of standardization in engineering qualifications<br>• No peer review mechanism for construction projects<br>• Weak collaboration between government and industry stakeholders | High | Severe | • Form an independent professional engineering association.<br>• Develop industry-wide certification and registration systems.<br>• Promote collaboration between government and private sector.<br>• Establish a peer review system for major projects.<br>• Create a national database for engineers and contractors |
| **ICT and Digital Infrastructure** | | | | |
| Legal framework | | High | High | • Enhance implementation of national cybersecurity strategy |
| Lack of Professional Body to Enhance Industry Standards | • No professional association for ICT<br>• Lack of centralized database for ICT based services<br>• Weak collaboration between government and industry stakeholders<br>• Weak legal system for enforcement | High | High | • Form a professional ICT association.<br>• Develop industry-wide certification and registration systems.<br>• Formulate legal framework to facilitate collaboration between government and private sector.<br>• Create a national database for various services |
| Cybersecurity Threats | Increased cyberattacks targeting government and private ICT infrastructure | High | Severe | Implement robust cybersecurity frameworks, data encryption, and continuous monitoring |
| Inadequate ICT Infrastructure | Limited broadband penetration, outdated networks, and unreliable connectivity | High | High | Invest in fibre-optic networks, expand mobile broadband, and enhance regulatory policies |
| Regulatory and Policy Gaps | Weak ICT governance, lack of comprehensive policies for data protection | Medium | High | Develop and enforce ICT regulations, data protection laws, and national cybersecurity strategies |
| Power Supply Instability | Frequent power outages affecting data centers and telecommunications | High | High | Promote renewable energy solutions, invest in backup power infrastructure |

| | | | | |
|---|---|---|---|---|
| Limited Skilled Workforce | Shortage of ICT professionals and technical experts | High | High | Strengthen ICT education programs, provide professional training, and establish incentives for skilled professionals |
| **ICT and Digital Infrastructure** | | | | |
| High Cost of ICT Equipment | Expensive hardware and software due to import dependencies | Medium | Medium | Support local tech start-ups, reduce import taxes, and promote ICT manufacturing |
| Data Privacy and Protection Issues | Weak enforcement of data protection laws, risks of data breaches | High | High | Implement and enforce data privacy laws, enhance digital rights awareness |
| Digital Divide | Unequal access to ICT services, particularly in rural and remote areas | High | High | Expand infrastructure in underserved areas, promote affordable internet access |
| Dependence on Foreign Technology | Overreliance on external vendors for ICT solutions | Medium | Medium | Encourage local software and hardware development, enhance ICT R&D investments |
| **SOCIAL INFRASTRUCTURE** | | | | |
| Security Risks | • Ongoing conflicts, terrorism, and political instability pose threats to construction sites, workers, and materials. | High | High | Engage security forces to protect sites.<br>• Implement remote monitoring and early warning systems. Work with local communities for security cooperation |
| Financial & Economic Risks | • Limited government revenue, dependency on foreign aid, and difficulties in attracting private investment can hinder project financing. | High | High | • Develop sustainable public-private partnerships (PPPs). Diversify funding sources. Improve financial planning and budget management. |
| Legal & Land Ownership Issues | • Unclear land tenure, disputes, and lack of a strong legal framework can cause conflicts and delays. | High | Medium-High | Conduct early land assessments.<br>Strengthen land registry systems.<br>• Engage local authorities and communities in transparent land acquisition processes. |

| | | | | |
|---|---|---|---|---|
| Environmental & Climate Risks | • Droughts, floods, and other climate-related events can damage infrastructure and increase long-term costs. | High | High | • Implement climate-resilient infrastructure designs.<br>Conduct environmental impact assessments.<br>Use green building materials and technology. |
| Social & Community Resistance | • Communities may resist projects due to displacement concerns, lack of consultation, or cultural conflicts. | Medium-High | High | • Conduct extensive community engagement. Ensure fair compensation for displaced individuals. Align projects with community needs and priorities. |
| Operational & Maintenance Challenges | • Long-term sustainability issues arise due to weak institutional capacity and lack of maintenance funding. | High | High | • Develop clear operation and maintenance plans.Train local personnel for infrastructure upkeep. Establish dedicated maintenance funds and revenue models. |

**Appendix 2: Political, Economic, Social, Technological, Legal and Environmental Factors Affecting Infrastructure**

| Factor | Key Considerations | Risks Identified | Mitigation Strategies |
|---|---|---|---|
| Political | • Stability of the Federal Government and regional administrations<br>• Influence of clan-based politics on project approvals and implementation<br>• Effect of international relations and foreign aid on infrastructure financing<br>• Presence of insurgent groups and their impact on project security<br>• Corruption and governance challenges in public procurement<br>• Policy and regulatory frameworks for infrastructure development | • Political instability leading to project delays or cancellations.<br>• Corruption and mismanagement in awarding contracts and resource allocation<br>• Policy inconsistencies affecting long-term infrastructure plans.<br>• Security threats from insurgent groups targeting projects.<br>• Political interference leading to inefficiencies in project implementation | • Strengthen governance structures and enhance transparency in project management.<br>• Improve coordination between federal and regional governments for infrastructure planning.<br>• Establish anti-corruption mechanisms in procurement and contract awarding.<br>• Implement security measures, including engagement with local security forces.<br>• Develop long-term national policies for infrastructure development to ensure continuity |
| Economic | • National GDP growth and its effect on infrastructure investment<br>• Availability of government funding and external financing options (e.g., loans, grants, Public-Private Partnerships (PPPs))<br>• Inflation rates and exchange rate fluctuations affecting project costs<br>• Level of foreign direct investment (FDI) in infrastructure<br>• Employment generation and economic benefits of infrastructure projects<br>• Impact of trade restrictions and taxation on construction materials | • Limited national budget for infrastructure due to competing priorities<br>• High dependence on donor funding and international loans<br>• Inflation and currency depreciation increasing project costs.<br>• Inadequate financial planning leading to cost overruns.<br>• Limited local private sector participation in large-scale infrastructure projects | • Diversify sources of financing by promoting PPPs and attracting foreign investors<br>• Improve financial planning and cost management strategies to handle inflation risks<br>• Develop policies to incentivize local businesses and contractors to participate in infrastructure projects.<br>• Ensure macroeconomic stability to create a conducive environment for investment.<br>• Strengthen financial regulations to reduce misallocation of resources |

| | | | |
|---|---|---|---|
| Social | • Population growth and urbanization trends affecting infrastructure demand.<br>• Societal acceptance of large-scale projects and their impact on communities<br>• Availability of skilled and semi-skilled labour for infrastructure development<br>• Land tenure and ownership disputes affecting project sites.<br>• Role of infrastructure in poverty reduction and improving livelihoods<br>• Socio-cultural resistance to modernization and large-scale urban projects | • Displacement of local communities without adequate resettlement plans<br>• Social resistance and protests infrastructure projects.<br>• Land ownership conflicts delaying project implementation.<br>• Lack of a skilled workforce to handle complex infrastructure projects.<br>• Limited public awareness and stakeholder engagement in infrastructure planning | • Conduct comprehensive social impact assessments before project initiation!<br>• Implement community engagement programs to involve locals in decision-making.<br>• Develop policies for fair compensation and resettlement of displaced communities.<br>• Invest in vocational training and skills development programs to create a qualified workforce.<br>• Strengthen legal frameworks to address land tenure issues and prevent disputes |
| Technological | • Availability of modern construction technologies and materials<br>• Level of digital infrastructure and ICT adoption in project management<br>• Research and innovation in infrastructure development.<br>• Use of Geographic Information Systems (GIS) and remote sensing in planning<br>• Adoption of smart infrastructure solutions (e.g., smart roads, digital monitoring systems)<br>• Access to technical expertise and skilled professionals | • Limited access to advanced construction materials and technologies<br>• Poor digital infrastructure for managing large-scale infrastructure projects.<br>• Lack of investment in research and development (R&D) for innovative infrastructure solutions<br>• Low capacity of local construction firms to adopt modern project management tools.<br>• Reliance on foreign technical expertise, leading to high costs | • Promote technology transfer initiatives by partnering with international engineering firms.<br>• Develop ICT infrastructure to support digital project management and monitoring.<br>• Invest in R&D for sustainable and innovative infrastructure solutions.<br>• Encourage local firms to adopt modern construction technologies through incentives and training.<br>• Strengthen STEM (Science, Technology, Engineering, and Mathematics) education and vocational training programs to build local expertise |

| | | | |
|---|---|---|---|
| Environmental | • Impact of climate change on infrastructure resilience (e.g., flooding, droughts, extreme temperatures)<br>• Environmental sustainability regulations and compliance requirements<br>• Effects of infrastructure projects on biodiversity and ecosystems<br>• Waste management and pollution control during construction.<br>• Sustainable energy sources for infrastructure projects<br>• Water resource management for long-term infrastructure sustainability | • Increased vulnerability of infrastructure to climate-related disasters (e.g., floods damaging roads and bridges)<br>• Environmental degradation due to unregulated construction activities<br>• Non-compliance with environmental impact assessment (EIA) regulations<br>• Poor waste management leading to pollution and long-term environmental damage.<br>• Over-extraction of natural resources for construction materials | • Implement climate-resilient infrastructure designs, such as flood-resistant roads and buildings.<br>• Enforce strict environmental regulations and conduct EIAs before project approval.<br>• Promote the use of eco-friendly construction materials and energy-efficient designs.<br>• Develop sustainable waste management strategies for construction sites.<br>• Invest in water conservation and green energy infrastructure to ensure long-term environmental sustainability |
| Legal | • Land acquisition and property rights laws affecting project approvals.<br>• Regulatory framework governing infrastructure development<br>• Contract enforcement and legal dispute resolution mechanisms.<br>• Compliance with national and international construction standards<br>• Procurement laws and transparency in tendering processes<br>• Labor laws and safety regulations for construction workers | • Land disputes leading to prolonged project delays or cancellations.<br>• Weak enforcement of construction laws, leading to poor-quality infrastructure<br>• Bureaucratic red tape slowing down project approvals and implementation.<br>• Legal disputes between contractors and government agencies delaying project completion.<br>• Inadequate occupational health and safety regulations, leading to worker injuries and legal liabilities | • Strengthen land tenure policies and implement land registration systems to reduce disputes.<br>• Ensure strict adherence to national and international construction standards.<br>• Streamline regulatory approval processes to reduce bureaucracy and delays.<br>• Develop efficient dispute resolution mechanisms to handle contract-related conflicts.<br>• Strengthen labour laws and enforce workplace safety regulations to protect workers and minimize legal risks |

MCG is a premier management consulting firm headquartered in Mogadishu, Somalia, with operations spanning across the East African region. Established with a vision to drive sustainable development and institutional excellence, MCG provides innovative and contextually grounded solutions to complex national and regional challenges.

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