



# CROSS-BORDER INFRASTRUCTURE

## TOOLKIT

### Infrastructure Working Group Priority 3:

Delivering cross-border infrastructure for regional development

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October 2025



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# Acknowledgement

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The Toolkit provides voluntary and non-binding guidance and recommendations to help countries and regional bodies among stakeholders overcome key barriers to cross-border infrastructure projects. The Toolkit has benefited from contributions by several multilateral development banks (MDBs), international organisations, G20 members and invited countries, who have all shared valuable case studies and insights.

The authors acknowledge the guidance and support provided by the South African G20 Presidency and the IWG Co-Chairs.

**This document, as well as any data and maps included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory or area.**

# Acronyms

|          |                                                    |
|----------|----------------------------------------------------|
| AfDB     | African Development Bank                           |
| AIIB     | Asian Infrastructure Investment Bank               |
| ASEAN    | Association of South-East Asian Nations            |
| CAPEX    | Capital Expenditure                                |
| CBA      | Cost Benefit Analysis                              |
| DFI      | Development Finance Institution                    |
| EAPP     | East Africa Power Pool                             |
| EBRD     | European Bank for Reconstruction and Development   |
| ECOWAS   | Economic Community of West African States          |
| ESIA     | Environmental and Social Impact Analysis           |
| EU       | European Union                                     |
| FCCL     | Fiscal Commitments and Contingent Liability        |
| FIFs     | Financial Intermediary Funds                       |
| GIS      | Geographic Information System                      |
| ICT      | Information and Communication Technology           |
| IDB      | Inter-American Development Bank                    |
| InfraSAP | Infrastructure Sector Assessment Program           |
| IWG      | Infrastructure Working Group                       |
| KPI      | Key Performance Indicator                          |
| MDB      | Multilateral Development Bank                      |
| MOU      | Memorandum of Understanding                        |
| O&M      | Operations and Maintenance                         |
| PIDA     | Programme for Infrastructure Development in Africa |
| PMU      | Project Management Unit                            |
| PPP      | Public Private Partnership                         |
| PSAT     | PPP Screening and Analytic Tool                    |
| REC      | Regional Economic Community                        |
| SADC     | South African Development Community                |
| SAPP     | South African Power Pool                           |
| SIEPAC   | Central American Electrical Interconnection System |
| TEN-T    | Trans European Transport Network                   |
| ToC      | Theory of Change                                   |
| WB       | World Bank                                         |

| ANNEXURE 1:<br>LIST OF TOOLS                                                                     | ANNEXURE 2:<br>LIST OF CASE STUDIES                                                          |
|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Infrastructure Sector Assessment Program (InfraSAP)                                              | Monsoon Cross-Border Wind Power Project                                                      |
| PPP Project Screening and Analytics Tool (PSAT)                                                  | Armenia Northern Corridor Modernisation / Sadakhlo-Bagratashen Bridge Project                |
| PPP Risk Allocation Tool                                                                         | Cross-Border Electrical Interconnection between Peru and Ecuador                             |
| FlowMax (Global Freight Flow Model and Exploration Tool)                                         | Blagoveshchensk-Heihe Bridge Project                                                         |
| Cost Benefit Analysis Tool                                                                       | ELMED Interconnector between Tunisia and Italy                                               |
| Cross-Border Governance Framework and Tool                                                       | Cote D'Ivoire, Liberia, Sierra Leone and Guinea Electricity Networks Interconnection Project |
| Technical Note on Informing Infrastructure Analysis with Geospatial Data                         | Kazungula Bridge Project                                                                     |
| Summary of AIIB's Environmental and Social Framework                                             | Nacala Road Corridor                                                                         |
| Screening and Ranking for Cross-Border Power Projects Tool                                       | Tanzania-Zambia Transmission Interconnector                                                  |
| Regional Operations Tool                                                                         | Case Study on Transport Infrastructure and Food Security in Africa                           |
| Application of the Resilience Cost Benefit Analysis Tool in Cross-Border Infrastructure Projects |                                                                                              |

# Chapter 1:

## Introduction to the Toolkit

This chapter highlights some of the opportunities and challenges associated with cross-border infrastructure projects. It then introduces the Toolkit that has been designed to be a concise and practical resource to help governments, regional bodies, implementing agencies and other relevant stakeholders identify and address key barriers to cross-border projects. The Toolkit provides key questions to consider at each stage of the project lifecycle and offers tools and case studies to guide decision-making. Its aim is to ensure that cross-border projects are prepared and delivered in a way that maximises economic and social benefits by, inter alia, improving market access and strengthening regional integration.

Cross-border infrastructure projects are pivotal in driving economic growth, poverty reduction, and regional prosperity. For instance, strategic investments in roads, bridges, rail networks, communication networks, and transmission lines that span national boundaries can facilitate trade and mobility, unlock market opportunities, enhance competitiveness, and reshape how people live, move, and work.

Countries with good border infrastructure are better integrated into regional and global value chains, enabling more effective participation in regional cooperation and economic integration initiatives with neighbouring countries. For land-locked countries, such connectivity is not merely beneficial – it is essential to support socio-economic development and long-term prosperity.

Beyond connectivity, cross-border infrastructure has a direct bearing on living costs and economic productivity. The availability and reliability of energy supply, digital networks, and multimodal transport systems affect production costs, which in turn affects household income and living standards. In essence, countries with well-developed cross-border infrastructure are typically more efficient and economically resilient due to their enhanced ability to interact with economic markets and economic agents.

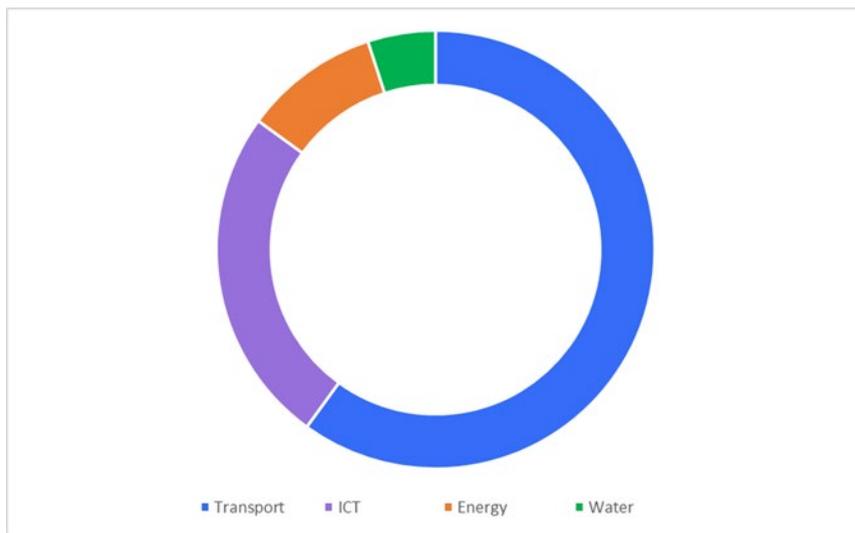
Despite its strategic importance, publicly available data on the global portfolio and pipeline of cross-border infrastructure projects remains limited. However, the global pipeline is likely to be significant in terms of both the number of projects and the capital values of the projects. In Africa, the Programme for Infrastructure Development in Africa (PIDA)<sup>1</sup> provides some insights: 39 cross-border projects have been completed across 29 countries, predominantly in the transport and information and communication technology (ICT) sectors. In terms of the pipeline, PIDA is currently tracking over 400 projects, with a persistent strong emphasis on the transport and ICT sectors (see Figure 1). While investment values are not comprehensively disclosed, 9 of these projects, being Presidential Infrastructure Champion Initiative projects, represent a combined investment value of over US\$50 billion<sup>2</sup>.

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<sup>1</sup> <https://www.au-pida.org/pida-geo-mapping-tool/>

<sup>2</sup> <https://www.au-pida.org/pici-project-portfolio/>

Figure 1: Pipeline of Cross-Border Infrastructure Projects in Africa (by sector)



Source: PIDA

While the transformative potential of cross-border infrastructure is clear, these projects face a more complex preparation and implementation environment than national projects. The projects require sustained coordination across stakeholders including two or more national governments and, for instance in Africa, the support of relevant Regional Economic Communities (RECs).

Cross-border infrastructure projects typically also struggle to gain initial recognition as national priorities by the relevant countries. Moreover, they tend to require longer preparation times than national projects. As such, cross-border segments are often the most critical missing links in transport projects. Similarly, delays in energy projects often occur due to permitting or licensing issues or uncertainties around levels of supply and demand.

The complexity of cross-border infrastructure delivery stems from several interrelated factors including: (i) the need for coordination across multiple institutions in two or more countries, (ii) the diverse incentives of different stakeholders, (iii) the asymmetry in costs and benefits between countries involved, (iv) the variations in state capacity to implement infrastructure projects, (v) the differences in legal and regulatory frameworks, and (vi) the complexities in coordinating funding and financing across countries with diverse financial markets and ability to borrow from international markets.

In addition, effective delivery requires more than physical infrastructure. “Soft infrastructure” such as complementary reforms and capacity building for institutions that support infrastructure development is often as critical in maximising the economic and social benefits of the project.<sup>3</sup> For instance, reducing travel time on a newly improved cross-border highway yields limited economic benefits if customs procedures remain inefficient at the border. Similarly, the success of cross-border electricity trading will depend on equitable access and affordable tariffs.

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<sup>3</sup> The importance of this is widely recognised across infrastructure frameworks such as the Quality Infrastructure Investment Principles.

To overcome these challenges, this Toolkit has been designed as a concise, practical, voluntary and non-binding resource for governments, implementing agencies, regional bodies and other relevant stakeholders in planning, developing and managing cross-border infrastructure projects.

The Toolkit builds on the conceptual framework outlined in the report: *Delivering Cross-Border Infrastructure: Conceptual Framework and Illustrative Case Studies (AIIB, EBRD, and IDB), October 2024*. It identifies key barriers to cross-border infrastructure and offers actionable recommendations to maximise the economic and social benefits of cross-border infrastructure. It does so by guiding practitioners through each stage of the project lifecycle posing critical questions, and referencing tools, good practices and lessons from successful case studies. A curated selection of tools is presented in the main text and elaborated in Annexure 1, with an emphasis on the tools' adaptability to cross-border infrastructure contexts. Annexure 2 provides case studies that illustrate the diverse challenges encountered and the strategies employed to overcome them.

While the Toolkit primarily focuses on the energy and transport sectors, the guidance provided herein is applicable to other infrastructure sectors.

For purposes of this Toolkit, cross-border infrastructure is defined as projects that (i) involve two or more countries, (ii) physically 'connect' at the border, and (iii) generate clear positive economic spillovers across participating countries. Projects that replicate infrastructure in multiple countries without physical or economic linkages, or those that terminate at borders without integration, are excluded from this definition.

The Toolkit is designed to be evolving and adaptable, with future updates to include additional tools and case studies. While the Toolkit refers to several case studies from the Africa region, its design is easily adaptable for application in any region of the world. The Toolkit is provided as non-binding, voluntary resource with its implementation left to the discretion of governments, implementing agencies, regional bodies and other relevant stakeholders.

# CHAPTER 2:

## Overview of the Cross-Border Infrastructure Project Lifecycle

This chapter highlights some of the unique challenges of cross-border infrastructure projects at each stage of the 'typical' project lifecycle and explains how these challenges can be addressed. Examples of tools that can support governments and implementing agencies at various stages of the project lifecycle are referenced, with further details on these tools being provided in Annexure 1.

### 2.1 Introduction

The project lifecycle for cross-border infrastructure is presented with an emphasis on differences with national projects. This is to account for several specific and unique aspects that need to be taken into consideration at each stage to maximise the benefits from the project and overcome the challenges that cross border projects typically pose.

The lifecycle is sequential, meaning that stages take place after each other, but the content of each stage includes elements specific to cross-border infrastructure projects.

Figure 2: Typical lifecycle of an infrastructure project



Source: Authors

#### 2.1.1 Identification and Prioritisation

The first phase of the cross-border project life cycle is concerned with identifying and prioritising those cross-border projects that (i) can potentially generate strong economic and social benefits, (ii) have been identified as priorities by key stakeholders across the relevant countries, (iii) similar projects that have been undertaken elsewhere, and (iv) have potential for financing.

The projects should be identified at national and/or regional level and be included in development plans or sectoral masterplans of participating countries or regional bodies.

The project identification should then include a high-level assessment of the scope of the project, as well as the identification of any policy or institutional reforms needed to achieve the project's objectives. The scope should be at the regional level and not national, especially if the benefits of the project are expected to outweigh the national section of the project or if a national section cannot exist without total investment. This step may help in identifying potential issues to be resolved during the preparation stage. For instance, the Kazungula Bridge project over the Zambezi River between Zambia and Botswana required a new law to establish a joint authority to manage operations.

Key stakeholders involved in the project including those at the sub-national level, should also be identified. This is the case particularly in countries with highly decentralised federal systems where states/sub-national actors have authority over project implementation in their jurisdiction, as well as ability to co-finance large-scale projects.

Regional strategies and institutions can help mobilise partner countries and seek agreement on the identification of a potential cross-border infrastructure project. However, it is essential that the project benefits from strong support and is identified as a national priority in each of the countries involved. Identification can start with an existing strategy – examples include the African Union’s PIDA and the Trans-European Transport Network (TEN-T) Corridors in the European Union (EU).

As for prioritisation, this should happen at two levels: (i) at the national level to confirm that the proposed project aligns with national priorities; and (ii) at the regional level to select a specific project from a broader list of priority projects. Given fiscal constraints and the limited availability of concessional financing, countries are strongly encouraged to identify those cross-border infrastructure projects that would support national priorities as well as specific agreed goals, such as support to regional trade or access to affordable electricity.

Specific tools, such as the (i) Infrastructure Sector Assessment Program (InfraSAP), (ii) Regional Operations Tool, (iii) the Public Private Partnership (PPP) Project Screening and Analytical Tool (PSAT), (iv) Flowmax (used to prioritise transport investment to support food security) and (v) Screening and Ranking for Cross-Border Power Projects Tool are examples of tools that can be used to help identify and prioritise projects (see Annexure 1 for further details).

Please note that the questions outlined in the rest of this chapter for each phase of the cross-border project lifecycle are indicative rather than exhaustive. They have been selected to highlight critical considerations that stakeholders should address at each stage of the lifecycle.

## KEY QUESTIONS TO CONSIDER AT THE IDENTIFICATION AND PRIORITISATION STAGE

### Identification:

- Has a pipeline of cross-border projects been identified and agreed at the national or regional level in development plans or sectoral masterplans?
- Has this pipeline adequately identified all the potential cross-border projects that may be of benefit to countries in the region?
- Has each country ratified the pipeline based on those cross-border projects that it may potentially be involved in?
- Do these cross-border projects align with each country’s national infrastructure plans and strategies?

- Have the relevant stakeholders including those at sub-national level that will be responsible for delivering the pipeline been identified in each country<sup>4</sup>?
- Is it likely that these projects will generate sufficient economic and social benefits (for all participating countries) to offset the costs of developing the project?

#### **Prioritisation:**

- Which projects have clearly been identified by all the countries involved in the projects as priority investments?
- Which projects have received strong high level political support in each of the countries involved?
- Which projects have already received indications of support from other stakeholders (regional institutions, MDBs, investors, lenders etc.)?
- Which projects enjoy wide-spread political and community support?
- Which projects have the potential to generate the highest economic and social returns?
- Which projects have the potential to attract private finance?

### **2.1.2 Appraisal**

A broad project appraisal should be carried out based on all components of the cross-border infrastructure project. Within that, individual appraisals for all the participating countries should also be developed so that, inter alia, there is transparency in terms of the costs and benefits for each of the countries involved in the cross-border project. The broad appraisal is best undertaken by a regional institution such as a REC or a joint implementation body that has been established by the participating countries to help implement the project. The scope of the project appraisal should include technical, economic, financial, legal, environmental and social factors and should not be limited to the physical infrastructure but also include soft infrastructure.

This section assumes knowledge of the appraisal framework for national infrastructure projects and, as such, focuses on the unique features of cross-border infrastructure projects.

The **technical** appraisal ensures that the various components of the cross-border project are soundly designed and appropriately engineered. For cross-border projects, an important element is to ensure consistency between the different national sections and specific review of the interface between them (for instance, border crossings for road corridors or interconnections for power pools). The section on economic rationale and planning has more details on this aspect.

The **economic** appraisal will look at the economic benefits and costs of the cross-border project, as well as the spillover effects on other sectors of the economy. These impacts may affect the implementation of the project or may be caused by implementation of the project. For instance, in a cross-border transport project, economic benefits such as: (i) employment opportunities; (ii) economic benefits from transit traffic; and (iii) increased regional and territorial economic

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<sup>4</sup> This is particularly relevant for countries that have highly decentralised federal systems.

development that accrue as a result of greater efficiency and reliability of the border crossing should be considered in the appraisal.

The **financial** appraisal will look at the financing needs of the project (informed by the results of the technical analysis) and how these financing needs can be met. For cross-border infrastructure, issues to consider will include (i) ensuring that all sections can be financed, and (ii) assessing the potential for private sector investment. The appraisal needs to cover all the individual national sections as well as the overall infrastructure project, as the intended benefits are unlikely to materialise if all the sections are not financed and built within a similar timeframe.

A **legal** appraisal is undertaken to ensure that the existing legal and regulatory regimes in each country support and allow the development of the proposed cross-border project. Sometimes, existing laws and regulations may need to be amended, or new laws or regulations passed to ensure that the relevant provisions of the laws and regulations in each country are aligned in support of the cross-border project.

Finally, an **environmental and social** appraisal that covers institutional structures will also need to be undertaken to assess the sustainability of the cross-border project and ensure that it addresses the needs of future generations. Policies and practices to promote sustainable development and climate change adaptation and mitigation should also be appraised to build resilience into infrastructure projects, particularly in regions vulnerable to environmental hazards such as flooding, drought, etc. This should consider the specific national and sectoral circumstances, institutional capacities, and environmental priorities of the relevant stakeholders.

The initial project appraisal should be high-level designed to determine whether the project ‘makes sense’ from different perspectives and is likely to receive the necessary support from key stakeholders. This validation is important as the participating countries will not want to waste their scarce resources on preparing a project that may not be economically viable in the long run. Once the initial appraisal has been completed and supports the viability of the cross-border project, a more detailed appraisal can be undertaken.

Tools that can be used to support the appraisal process include: (i) Cost-Benefit Analysis (CBA), (ii) and Geospatial Analysis, and (iii) Environmental and Social Frameworks (see Annex 1 for further details). Various sector/mode specific financial models and toolkits are also available <sup>5</sup>

## KEY QUESTIONS TO CONSIDER AT THE APPRAISAL STAGE

- Who will provide the funds for the preparation of the appraisal studies?
- Who will be appointing the consultants and overseeing/ensuring the quality of the outputs?
- Rather than each country hiring its own consultants, would it be more efficient for the countries involved to agree to appoint a single “lead” consultant that will manage the various aspects of the appraisal and provide coordination at both the overall project level as well as the sub-project component level in each of the countries involved?

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<sup>5</sup> <https://ppp.worldbank.org/public-private-partnership/sector>

- Has there been an agreement between the various implementing agencies on the scope of the appraisal studies?
- Is there any unique aspect of the project that requires particular attention during the appraisal process?
- Has there been an agreement on the terms of reference to appoint experienced consultants?
- Are the outputs of the various studies sufficient to identify any gaps and constraints that need to be addressed?
- Do the studies provide actionable and practical recommendations to address the gaps and constraints identified?
- Are any further studies required?
- Do the results of the study confirm both the need and benefits of the cross-border project?
- What is the process that has been agreed for each country to (i) ratify the outputs of the appraisal studies; (ii) address the identified gaps and constraints; and (iii) confirm that the project is able to proceed to the planning and preparation stage?

### 2.1.3 Planning and Preparation

The rationale for the cross-border project needs to be clearly articulated during the project planning and preparation phase. This is particularly important when the financing requirements for project planning and preparation are large and there are multiple countries involved. When it comes to cross-border infrastructure, the central challenge is coordination among countries and alignment of key decisions. Cross-border projects typically require enhanced coordination compared to national projects. Countries usually face the challenge of aligning project aspects and parameters with their national priorities and circumstances, as they agree on (i) the project scope, (ii) individual financial or in-kind contributions such as technical support or establishing a managing and operating institution, (iii) share of revenues (if any), (iv) policies and reforms to complement the infrastructure, (v) institutional arrangements during preparation/procurement, and (vi) how to attract financing beyond public budget resources.

One aspect of cross-border infrastructure projects that is often overlooked is the opportunity for maximising ‘domestic’ benefits. The development of cross-border infrastructure projects can help improve access to infrastructure to communities along the border areas that are underserved and less-developed, ensuring greater integration into the national economy and infrastructure network. Improved access to infrastructure can lead to improved economic opportunities and social gains for communities in the areas surrounding cross-border infrastructure.

The chapters on “Economic Rationale and Planning”, “Political Support and Governance” and “Finance and Management” have more details about mechanisms to ensure efficient coordination and collaboration.

The PPP Risk Allocation Tool provides a set of 18 risk allocation matrices, showing the optimum allocation of risks between the Contracting Authority/Implementing Agency and the private partner in various types of PPP transactions, along with related annotations on the rationale for the allocations, as well as potential mitigation measures and government support arrangements. The sample risk matrices cover projects in both the energy and transport sectors and are relevant to the cross-border context (see Annexure 1 for further details).

## KEY QUESTIONS TO CONSIDER AT THE PLANNING AND PREPARATION STAGE

### Planning

- Is there a strong economic and social rationale for the project?
- Is there still strong political support for the project?
- Has there been an official agreement signed between the countries involved to jointly move ahead with implementing the project?
- Have the countries involved agreed on an institutional framework and process to prepare the project for procurement?
- Have each of the countries involved established a stakeholder consultation process with a feedback mechanism?
- Have the countries involved (and the regional body if relevant) reached out to various stakeholders including MDBs and Development Finance Institutions (DFIs) to ascertain the level of interest in providing grants/loans to help prepare and finance the project?
- Are sufficient resources available at the country level to ensure that the project is properly prepared – particularly if private sector financing is to be raised?
- Have the countries agreed on a timetable for project preparation, procurement and implementation to ensure that all components of the overall project are completed on time?

### Preparation

- Have the technical components of the overall project and the sub-project components to be built in each country been agreed?
- Has there been an agreement on the allocation/sharing of the costs and revenues of the project? Has this agreement been formalised and ratified by the respective governments?
- Have the sources for the ongoing funding of the operation and maintenance costs of the project once completed been identified and agreed? Are these sources (e.g. tolls, tariffs, government payments) sufficient to ensure the long-term sustainability of the project?
- Did the appraisal studies identify any imbalance in the distribution of economic and social benefits of the project between the countries involved? If so, has this been addressed to the satisfaction of all parties and reflected in the form of a ‘compensation’ agreement?
- Have all sources of financing been assessed?
- Is there potential for private sector investment in any components of the project?
- Has an overall financing plan (including sources) been agreed?
- Has the allocation of the financing responsibilities between the countries involved been agreed?
- Have all the risks been clearly identified, allocated and mitigated to the extent possible?
- Will any form of government support be needed (e.g., payments, guarantees) to ensure the economic and financial viability of the project? If so, is such government support sustainable from an affordability perspective?
- Based on the gaps and constraints identified at the appraisal stage, is each country in the process of addressing its own gaps and constraints – particularly with respect to any changes in laws and regulations needed?
- Is the land needed for the cross-border project already in the hands of the government? If not, will the relevant government be able to secure ‘ownership’ of the land needed by the time

construction starts in accordance with the applicable laws on land acquisition and the requirements of the MDBs/DFIs supporting the project?

- Has there been a clear agreement between the countries involved as to the approach to ensuring the physical ‘connection’ of the separate sections of the project at the border?
- Has there been a clear agreement between the countries involved to ensure that the soft infrastructure (e.g. on-line customs clearance, tariff harmonisation) is also put in place to ensure that the economic and social benefits identified during the appraisal stage will materialise once the project is completed and in operation?
- Have each of the countries also identified how they can potentially maximise the domestic benefits of the cross-border project?

#### 2.1.4 Procurement

This phase involves tendering processes, selecting contractors, allocating resources and executing contracts. In addition to the lack of harmonisation of legal and regulatory frameworks, the complexity of cross-border procurement creates a barrier, as the different governance structures of the public and private entities concerned can exacerbate problems caused by the lack of common procurement rules for cross-border activities.

Given the size and geographical scope of cross-border projects, rather than awarding a single contract covering the whole project, a series of contracts will likely be signed. This means that each country will sign a contract linked to the section of the project that is being built within its borders. This may also happen in the case of private operation of the infrastructure. Joint procurement can be used to ensure better coordination of construction and detailed technical design choices. This is particularly important for regional transmission projects. Having a single “supervision consultant” to oversee contractors on either side, is strongly recommended if the assets are being procured and built at the same time.

A common mistake in cross-border projects is to carve out the revenue generating component of the project and then procure this separately from other “supporting” components such as feeder roads and one stop border facilities. Such an approach will typically give rise to project management problems as there will be limited mechanisms to ensure the alignment of project milestones for each component resulting in the risk that one component of the project is completed ahead of the other components.

For projects seeking private sector investment, the procurement approach is more complex. Assuming each country procures its own section of the cross-border project, each of the sections must be financially attractive for a private consortium. In this case, the guidelines for procuring cross-border infrastructure projects follow those for national projects. Some projects may be able to procure cross-border infrastructure (e.g. a hydro power plant) in a single bid and, as such, a more complex institutional arrangement will need to be put in place. More information can be found in the chapter on “Finance and Management”.

## KEY QUESTIONS TO CONSIDER AT THE PROCUREMENT STAGE

- Before formal procurement begins, has each country received the relevant approvals to proceed to procure their section of the project?
- Does the project still have high-level political support and commitment in each country?
- Has this political support and commitment been embedded in formal legal agreements or other mechanisms that will ensure that the project continues to receive support even if there is a change in a country's political environment?
- Has each country secured the financing needed for their section of the project?
- Are there any aspects of each country's procurement rules that may complicate the overall procurement process for the project?
- What would be the most efficient and effective way to procure the project? Should each country procure its own 'section' of the project or is it possible to undertake a procurement under which a single lead contractor is jointly appointed to construct the overall project?
- If each country procures its own section, have the individual requests for proposals been aligned in terms of technical specifications and timelines for delivery?
- Has there been an agreement to share information on the bids received and apply a similar bid-appraisal process to ensure alignment between the bid appraisal and awards process in each country (subject to confidentiality and each country's respective procurement rules)?
- Does there need to be a special agreement under which one country is assigned the responsibility for delivering a key component of a cross-border project? For instance, river boundaries between countries often have a boundary line down the middle of a river. However, in the case of a bridge, it would not make sense for each country to build half a bridge and connect it at the boundary. In such cases, it would make more sense to allocate the responsibility of building the bridge to one country with oversight rights being given to the other country.

### 2.1.5 Implementation and Management

In managing a cross-border project, governments should establish and maintain an effective mechanism to identify and deal with risks and disputes related to the project. Such risks include (i) geopolitical disputes, (ii) delays in construction in one or more countries, (iii) insolvency of the company implementing the project, (iv) contractual disputes between equity holders, and (v) ambiguity over risk allocation in a force majeure event. Identifying these risks proactively is the best approach on cross-border projects, as finding a resolution ex-post can be a lengthier and more difficult process than for national projects.

As cross-border projects span two or more jurisdictions, they often involve two or more regulatory regimes and communities. Affected communities in each country can hold different views on a project and its environmental and social impacts. Therefore, it is essential for the project to mitigate and adapt to the concerns and needs of all the communities it affects in each of the countries involved in the project.

Finally, the project’s stakeholders should agree an evaluation framework that enables them to access objective and reliable data on the project’s costs, implementation progress and performance. The framework should allow for monitoring at both the regional and national levels. Key performance indicators can be identified to develop scorecards and project dashboards. Joint monitoring of actions and commitments for infrastructure projects should be adopted to establish processes for reviewing the progress of the multiple partnerships and associated commitments in relation to project implementation and impacts. For projects seeking private sector participation and investment, an additional complexity involves the regulation and monitoring of the private operator and its agreed performance levels. More information can be found in the “Finance and Management” chapter.

The Cross-Border Governance and Framework Tool can help national and sub-national governments establish or reinforce their cross-border governance architecture (see Annexure 1 for further details).

## KEY QUESTIONS TO CONSIDER AT THE IMPLEMENTATION AND MANAGEMENT STAGE

- Has a Project Management Unit (PMU) been established in each country that has sufficient resources (human and financial) to ensure that its section of the project is built (i) in line with the technical specifications of the contract; (ii) on-time; and (iii) within budget?
- Has a broader project level joint PMU been established with representatives from the implementing agencies of each of the countries involved, as such an organisation has proved to be critical in ensuring alignment of construction milestones and addressing any issues that may have the potential to delay the overall project?
- Has a dispute resolution mechanism been established to deal with risks and disputes between the countries involved in the project?
- Has a robust grievance redress mechanism been established in each country to address any issues that are raised by non-government stakeholders?
- Has each country developed a stakeholder engagement plan to ensure that all stakeholders are regularly updated on the implementation of the project?
- Has a framework been put in place to monitor the construction milestones of each section of the project at both the country, as well as at the joint PMU level?
- Have Key Performance Indicators (KPIs) been agreed to ensure that after construction the project is operated and maintained in line with the expectations of the implementing agencies? Has a system been developed to collect data and track the KPIs e.g. a project dashboard?
- Is there an agreed framework and process in place to regulate increases in fares/tolls/tariffs in each of the countries to ensure affordability and collectability?

# CHAPTER 3:

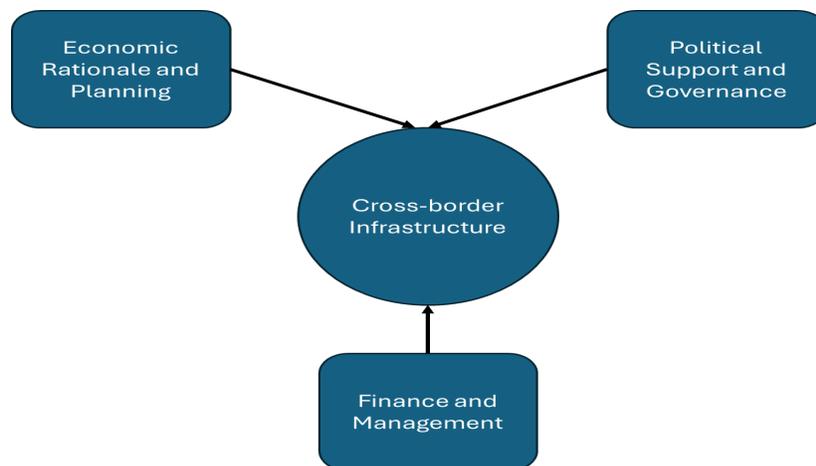
## Overview of the Cross-Border Infrastructure Conceptual Framework<sup>6</sup>

This chapter provides an overview of the conceptual framework that has been designed to assess some of the specific challenges of cross-border infrastructure projects by focusing on three dimensions that have been identified as being critical to the successful implementation of cross-border infrastructure projects: (i) Economic Rationale and Planning; (ii) Political Support and Governance; and (iii) Finance and Management. Subsequent chapters will expand on these dimensions and explain how to apply the underlying concepts to cross-border infrastructure projects.

### 3.1 Introduction

This Toolkit is based on the conceptual framework set out in the report: *Delivering Cross-border Infrastructure: Conceptual Framework and Illustrative Case Studies (AIIB, EBRD, and IDB), October 2024*. The conceptual framework has been designed to provide an analytical frame to analyse the complexities of cross-border infrastructure projects and is based on three critical dimensions (see Figure 3), which have been used to inform key lessons and considerations for policymakers when assessing the case for a cross-border project. It is important to note that given that these lessons and considerations are broad in nature, they will need to be adapted and applied to reflect the specific context of each country that is involved in supporting a cross-border project.

Figure 3: Analytical Framework Dimensions for Cross-Border Infrastructure

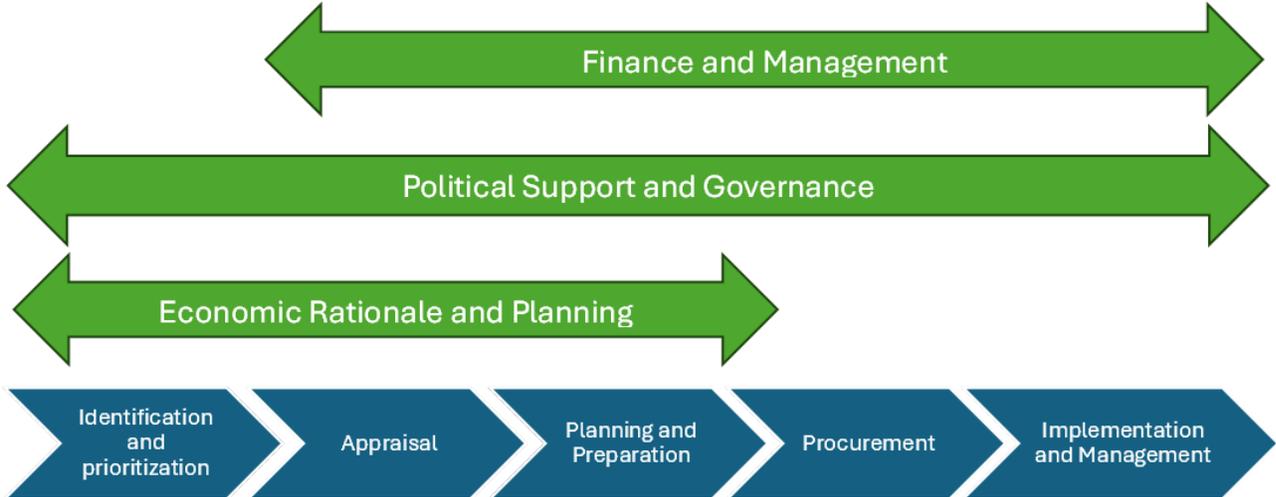


Source: Authors

<sup>6</sup> This section is based on the report: *Delivering Cross-border Infrastructure: Conceptual Framework and Illustrative Case Studies (AIIB, EBRD, and IDB), October 2024*

The three dimensions focus on certain aspects of the project lifecycle from a cross-border infrastructure perspective and should be considered at each stage of the lifecycle. For instance, financing issues should be discussed as soon as the project is identified and not only during the appraisal and planning and procurement stages (see Figure 4).

Figure 4: The Three Dimensions and Project Lifecycle



Source: Authors

### 3.2 Economic Rationale and Planning

A successful cross-border project needs to be rooted in a compelling economic rationale for the countries and region involved and sound planning requires an assessment of the aggregate economic and social returns, as well as their distributional impacts. A successful cross-border infrastructure project requires the buy-in of all countries involved and the support of all stakeholders. Unfortunately, countries often have asymmetric endowment structures which result in the costs and benefits being distributed unevenly across countries and among stakeholders. In this context, undertaking robust distributional analysis will be essential to inform the planning and design of the project based on the level of complementarity or competition between the countries involved. Distributional analysis in infrastructure development examines how the costs and benefits of a project are spread across different groups within a population. It goes beyond simply assessing the overall economic impact by investigating how specific segments of society (e.g., different income groups, geographic areas, or demographics) are affected. This analysis helps decision-makers understand the equity implications of infrastructure investments and ensures that benefits are distributed fairly and efficiently. For complex projects, distributional analysis can be informed by advanced economic tools such as spatial computable general equilibrium models and energy market behaviour models, to enhance the spatial granularity and quality of the CBA.

From a planning perspective, the alignment of the project with the respective national development goals of all the countries involved is critical, such as those related to, among others, growth, job creation, poverty reduction, connectivity, trade and supply chains. To generate such alignment, the

establishment of a high-level cross-border infrastructure commission with representatives from the countries involved in the cross-border project and empowered with resources and decision-making authority has proved to be a useful mechanism. Regional organisations, such as the African Union Commission or RECs, can play an important role in convening countries and helping them address constraints to collaboration. In addition, to help maximise the project's economic and social benefits, it is important for the planning process to include regular and thorough consultations with all stakeholders, including the private sector and civil society, from the very beginning of the project's development process.

### **3.3 Political Support and Governance**

The successful implementation of a cross-border project requires strong and consistent high-level political will and support. On governance, success hinges on policy alignment and cross-border institutional arrangements that can bridge differences in laws and regulations, and act as a coordinating mechanism.

An inter-government agreement can help to mitigate those heightened political risks often associated with cross-border projects, by aligning policy, planning and legal frameworks between countries. Such agreements can take various forms, have varying degrees of binding powers, and can evolve over time. They can range from simple Memorandum of Understandings (MOUs) to a bilateral (or multilateral) treaty embodying a more formal legal framework that defines the various roles and actions of the countries involved and establish implementation and monitoring mechanisms. Inter-governmental institutional arrangements are also needed to coordinate implementation and decision-making, as well as to mitigate the asymmetry in government capacity across countries.

Cross-border projects require strong governance capacity as reflected in policy certainty and predictability, good management of contracts and sound monitoring and enforcement ability. Again, the form of these arrangements varies and often evolves over time. However, the more formalised the coordination mechanism, the greater the enforcement capacity. This can be especially important for more complex cross-border projects. However, establishing a sound governance framework alone is not sufficient, as it will also be important that countries and stakeholders actually use the framework to engage effectively.

### **3.4 Finance and Management**

The financial structure of a cross-border project is vital to its viability and success. While the exact financial structure will need to be tailored to the project, it should aim to (i) respect the respective national policy parameters, (ii) provide value for money, (iii) allocate risk to the party best able to manage the risk, (iv) competitively determine financing requirements, and (v) minimise direct and contingent public sector liabilities. Given the size of the financing requirements and limited fiscal space at the country level, attracting private sector investment, where feasible, should be a critical goal during the preparation and procurement of cross-border infrastructure. The use of PPP models can also help in the management of the infrastructure post-construction, potentially increasing efficiency in operations and ensuring proper maintenance of the assets.

The risks that cross-border projects face are complex, spanning from geopolitical to counterparty to demand and currency risks. Therefore, support from governments and MDBs, are important to make projects 'bankable' and crowd-in the private sector. Government support can take many forms,

including the direct participation of state companies, the setting up of dedicated public project companies, and providing financing and other support to the project (including guarantees<sup>7</sup>). However, countries with high public debt and/or poor sovereign credit ratings often find it difficult to provide such support. In this context, MDBs may help governments mobilise financing through acting as conveners and mediators for inter-government project agreements, strengthening institutional frameworks and improving the bankability of cross-border projects through the provision of guarantees and/or other credit enhancement instruments.

The following is a broad set of questions along with associated recommendations and good practices aimed at optimising the project’s conceptual framework. These are not exhaustive and can be supplemented by partnering countries during the early planning phase.

## **GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS**

- What financing options have been considered in advance of the planning and appraisal processes?
- To what extent have all key stakeholders bought into the project and by what means?
- What methods are to be used to disaggregate economic impacts between countries, geographic areas and demographic groups?
- What national regional plans and policy documents identify the project as a priority?
- What arrangements need to be established for regular and thorough consultation with all stakeholders?
- Have participating governments signed MoUs or treaties with regard to the project?
- To what extent are participating governments prepared to provide any guarantees to the project?
- Have MDB’s guarantee or credit enhancement instruments been examined for potential deployment on the project?
- What are the differences in regulatory regimes between participating countries and what are the potential arrangements for their alignment?

## **SELECTED TOOLS AND GOOD PRACTICES**

- Establishment of an inter-government committee to oversee project development and implementation.
- Establishment of any necessary implementation and operating entities, back by laws in participating countries.
- Formation of a technical team from participating countries and RECs capable of project development and appraisal.

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<sup>7</sup> Guarantees could include providing a minimum traffic guarantee on a cross-border road project.

- Use MDBs for technical assistance as well as financial support.
- Ensure that the project is potentially bankable at an early stage by developing risk-sharing protocols between partners.
- Leverage MDBs for guarantee and risk mitigation instruments.
- Use a Theory of Change (ToC) method to ensure that the proposed project interventions lead to the desired outcomes.

# CHAPTER 4:

## Economic Rationale and Planning

This chapter applies the cross-border conceptual framework to discuss ways to ensure that cross-border infrastructure projects are underpinned by strong economic rationale and robust planning.

### 4.1 Introduction

Cross-border infrastructure projects are central to the realisation of regional objectives as they enhance connectivity and reinforce economic, social and cultural cohesion. These objectives are the focus of regional strategies such as the European Union Green Deal, the African Union’s Agenda 2063, and the Association of South-East Asian Nations (ASEAN) Economic Community Strategic Plan 2026-2030.

Clearly articulating the economic justification of a cross-border infrastructure project helps to (i) demonstrate the overall impact of the proposed investment, (ii) optimise the project design to maximise the return on the investment, and (iii) prioritise limited resources. The importance of demonstrating the economic justification is particularly relevant for cross-border infrastructure given their large cost and the limited fiscal space often prevalent at the country level. Even a project with the potential for earning revenues and private sector investment should be economically justified, as a large cross-border infrastructure PPP project will very likely need substantial budget contributions and guarantees from the countries involved.

### 4.2 Economic Rationale and Planning

Cross-border infrastructure projects are typically identified in regional documents based on consultations and broad economic analysis. Yet, these projects are often not prioritised at this stage as there is usually insufficient information for a more detailed economic analysis. Therefore, a prioritisation exercise should be undertaken to identify the most impactful priority investments.

A large investment program can be prioritised based on specific goals, such as support to trade or connectivity (particularly important for land-locked countries), or supporting food security.

#### EXAMPLE OF A PRIORITISATION TOOL BASED ON FOOD SECURITY

The integration of FlowMax into the World Bank’s transport and food security work in Africa exemplifies the power of advanced modelling tools to enhance economic rationale and planning. By providing a robust, evidence-based framework for analysing trade and transport connectivity, FlowMax enables policymakers to prioritise transport sector investments, coordinate regionally, and build resilient supply chains that are critical for food security and sustainable development across the continent. The Flowmax tool is presented in Annexure 1 and a case study based on the prioritisation framework is presented in Annexure 2.

Cross-border infrastructure projects should be compatible with national political policies, economic priorities and strategies, if they are to be prioritised in national long-term infrastructure development plans and funded with national budgets.

Strong coordination between the relevant central ministries of governments involved in cross-border projects is critical and should start as early as possible given that cross-border investments must be justified at both the national and regional level. Those countries involved in cross-border projects need to demonstrate an early commitment to achieving the overall objective of regional coordination. This requires investing time at the preliminary stage to establish a relationship with the various key government representatives and forming a consensus-building dialogue. Regional organisations and MDBs can help bring all key decision makers to the discussion table. Institutional structures to ensure proper coordination and commitment are presented in chapter 5.

A project rationale identifying the scale of cross-border positive and negative externalities should be developed. The larger these cross-border externalities, the stronger the case is for regional public goods, and therefore, the stronger the economic rationale for regional cooperation and support.

Some countries and regions have a Taxonomy for green and adaptation projects, a classification system that defines and categorises sustainable economic activities to guide finance and investments. These taxonomies, like in the EU, China or Russia, identify activities related to mitigation (reducing greenhouse gases) and adaptation (preparing for climate shocks). Green taxonomies are used by some investors to identify economic activities considered environmentally sustainable, and therefore investment in these activities is eligible for a label of “sustainable.”<sup>8</sup>

A ToC framework (see Figure 5) can be very helpful to focus on the outcomes and identify the necessary activities (investment, policies, reforms) that should be implemented to achieve the desired outcomes. The ToC is a description of how and why a desired change is expected to happen in a particular context. It focuses on mapping out the area between what a programme or change initiative is trying to achieve and the activities or interventions that need to take place to ensure that the desired impact is achieved. It does this by first identifying the desired long-term goals and then works back from these to identify all the conditions (outcomes) that must be in place (and how these relate to one another causally) for the goals to occur. The ToC framework is used extensively by some MDBs, e.g. both the AfDB and the WB require a ToC to be developed for all its investment projects.

Figure 5: Outline of the Theory of Change Framework



Source: Authors

<sup>8</sup> <https://xn--90ab5f.xn--p1ai/en/sustainable-development/green-finance/national-competence-center/?tabs=methodology> and <https://xn--90ab5f.xn--p1ai/files/?file=b5409866c0b23504e0b497ea37cb4c3d.pdf>

Robust economic appraisal and risk analyses are essential for sound decision-making. There will be a need to develop joint analyses and models to estimate demand, evaluate risks and calculate the costs and benefits across the whole of the cross-border project, as well as its sub-components in each of the countries involved.

#### 4.2.1 Economic and Financial Analysis

The economic analysis of a cross-border project should estimate the return on total investment at the country and regional levels and estimate the distribution of net benefits between participating countries. A useful tool for assessing the social/public value produced by the use of public resources has been prepared by the United Kingdom government<sup>9</sup>.

The financial analysis complements the economic analysis for those projects that have revenue potential. The financial analysis is also central to establishing the attractiveness of a cross-border infrastructure project to private sector investors.

The method and scope of the economic analysis vary by sector. Although cross-border infrastructure may bring additional benefits in comparison with national projects, it is important to take a conservative approach in assessing them. A practical approach could be to focus more on quantifying the direct benefits and relying on a combination of quantitative and qualitative analysis for the indirect benefits (such as increase in trade or job creation) resulting from the investment. The analysis should be carried out based on data and empirical research and aim to first identify the direct impacts of the proposed investment, followed by the more indirect impacts. In this context, the CBA, commonly used for national infrastructure projects, is still relevant for cross-border infrastructure.

In a cross-border project, the economic costs and benefits are often unequally distributed. A distribution analysis can be carried out to estimate the distribution of the impact (both positive and negative) across countries and stakeholders within countries and help countries find equitable solutions to share the costs and benefits among participating countries.

The economic benefits or gains of a cross-border project would typically include the following:

- **Efficiency gains** (through cost saving) such as reduction in time and vehicle operating costs, reduction in physical barriers to trade (e.g., better roads, railways); lower cost of energy (in the case of power pools and interconnection projects); and
- **Market gains** (due to market access or economies of scale) such as improved access to regional markets via cross-border transport and digital infrastructure projects and better leveraging the economies of scale in terms of an integrated power market.

#### 4.2.2 Regional Integration Benefits

Regional integration is indispensable for connectivity, investment flows and value creation, as it helps to (i) improve connectivity of markets, (ii) mobilise larger-scale investment flows, (iii) foster value creation by overcoming the limitations of fragmented national markets, (iv) optimise trade and transport costs, and (v) unlock economies of scale to support sustainable development and

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<sup>9</sup> HM Treasury, The Green Book, Central Government Guidance on Appraisal and Evaluation, UK, 2022.

competitiveness across the continent. This underscores the importance of a CBA to assess the economic benefits of cross-border infrastructure.

There are five main dimensions of regional integration which, when disaggregated, can be estimated but not always quantified. These are: (i) trade integration, (ii) productive integration, (iii) macro-economic integration, (iv) infrastructure integration and (v) free movement of people.

CBA is a systematic tool that evaluates the total costs and benefits of an investment, providing a robust economic rationale for project planning and prioritisation. It is especially valuable for cross-border projects, as it allows costs and benefits to be disaggregated by country, ensuring fair allocation and maximising economic priorities for all participants (see Annexure 1 for further details).

A *distributional* analysis can be used to assess how the economic costs and benefits are distributed among the stakeholders. This analysis expands the CBA tool to calculate the net present value of each cost and benefit to each stakeholder. Thus, for an electricity project, the stakeholders in each country could be the government, consumers, the power utility/pools etc. Table 1 shows the general layout of the analysis, where the columns represent stakeholders and the rows represent the individual (usually cross-border) transactions. The cell values are the net present values of the transactions.

Table 1: Format for Distributional Analysis

|           | COUNTRY A  |           |         | COUNTRY B  |           |         | TOTAL |
|-----------|------------|-----------|---------|------------|-----------|---------|-------|
|           | Government | Consumers | Utility | Government | Consumers | Utility |       |
| Country A |            |           |         |            |           |         |       |
| Benefit 1 |            |           |         |            |           |         |       |
| Benefit 2 |            |           |         |            |           |         |       |
| Country B |            |           |         |            |           |         |       |
| Benefit 1 |            |           |         |            |           |         |       |
| Benefit 2 |            |           |         |            |           |         |       |
| Total     |            |           |         |            |           |         |       |

Source: Authors

### 4.3 Economic Analysis of Cross Border Transport Projects

The recommended approach to the economic appraisal of cross border transport projects has four main components as shown in Table 2 below:

Table 2: Main components of the economic appraisal of transport projects

| COMPONENT              | CONTENTS                                                                                                |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Direct Benefits        | Time savings<br>Vehicle operating costs reduction<br>Safety                                             |
| Network Effects        | Reliability<br>Induced travel                                                                           |
| Wider Economic Effects | Trade and market integration<br>Mobility and job creation<br>Access to services                         |
| Environmental          | Greenhouse gas emission reduction<br>Environment protection<br>Biodiversity and environment degradation |

Source: Authors

**Direct benefits:** These are a feature of both conventional and national project cost-benefit analyses and, as such, are not considered in detail here, except to say that they are the key generators for other benefits. The direct benefits are linked to the new infrastructure being built and are included in all economic appraisals. A wider economic benefits analysis includes additional benefits, such as economic activity, wages, and prices of intermediate and final goods that would result from the development of the corridor. Some indirect benefits are difficult to assess but can be mentioned in a qualitative form. Although tools are available to calculate indirect benefits, they are more difficult to evaluate with a high level of confidence. Therefore, a balanced approach between focusing on direct benefits and capturing the broader economic benefits is recommended.

**Network Effects:** They can also be part of the national project’s CBA, but in a cross-border project higher- level impacts can be expected, and these will need careful evaluation:

- **Reliability:** A cross-border bridge that replaces a pontoon ferry is more reliable in that pontoons are often out of service. The improved reliability can be measured by an examination of the historical records of the availability of the ferry service and calculating the additional time savings to vehicles crossing. This will have a further positive impact on induced travel.
- **Induced travel:** Additional traffic can only be induced or generated by a cross-border project if new or enhanced activities take place as a result of the cost savings arising from the cross-border infrastructure. Therefore, it is better to examine and appraise potential new activities themselves rather than take the benefits of the traffic, as these are of more value and more understandable by decision-makers. This is possible if the analysis can isolate the induced travel from the infrastructure investment and directly associated reforms.

**Wider-Economic Effects:** Increased trade between nations is a key objective of cross-border infrastructure. Trade is viewed as a driver of growth and jobs. The potential of greater trade integration to create more and better jobs in today's global environment should be fundamental to economic appraisal, and this needs to be assessed in the context of the benefits of openness to trade against the costs to individual workers, individuals, and communities.

Cross-border transport projects may have wider economic impact. For instance, the value of increased trade may be included in the economic appraisal if (i) the increase measured is directly associated with the proposed investment (a new trade agreement is an example of an unrelated measure that can significantly affect trade), and (ii) the benefits can be measured/estimated with a high level of confidence. Specific research on trade and investment in built cross border projects should be carried out, and where this is not possible some higher-level estimate may be used. For instance, the elasticity of trade to developments in cross-border road infrastructure was estimated to be in the range of 0.6-1.4 in the Greater Mekong Subregion<sup>10</sup>. In addition, a 10 per cent increase in exports has been found to result in 3.1 per cent [higher employment levels](#), a 3.9 per cent increase in [earnings](#) and a 0.95 per cent increase in [productivity levels](#) (0.95 per cent)<sup>11</sup>.

Finally, it is important to note that reforms can significantly improve the benefits of cross-border transportation projects. For instance, trade facilitation reforms can yield enormous benefits in terms of time savings at the border.

#### 4.4 Economic Analysis of Cross Border Energy Projects

Cross-border energy projects typically take two main forms:

- **Generation**, for instance where two countries collaborate on a hydro project on a river that forms the countries' boundary and where the power is shared between the two countries; and
- **Transmission**, where power is transmitted at high voltage from one country's grid to another via interconnectors.

The benefits of generation projects can be assessed as a combination of the single country benefits. Transmission projects have specific cross border benefits. The potential for cross border energy is enhanced where a power pool has been established. There are usually specialised agencies within RECs set up with the objective of integrating national power systems into a unified regional electricity market with the goal of providing a regular and reliable energy at competitive cost, along with the development of power generation and transmission infrastructures to coordinate power exchange among member states. In this context, it is important to note that power pools are now moving to promote renewable energy generation, which brings its own economic benefits.

The appraisal of electricity generation projects is generally dominated by financial considerations, the most fundamental being the cost of generation versus the price that countries' electricity supply companies are prepared to pay, given their own constraints on tariffs. Benefit categories are summarised in Table 3.

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<sup>10</sup> Impact of cross-border road infrastructure on trade and investment in the Greater Mekong Subregion Christopher Edmonds and Manuba Fujimura, LAEBA, 2016

<sup>11</sup> World Bank, Maryla Maliszewska and Deborah Winkler, Leveraging Trade for More and Better Jobs, 2024

Table 3: Main components of the economic appraisal of Electricity Transmission projects

| Component              | Contents                                                                                                                                 |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Direct Benefits        | Cost savings in power generation<br>Avoided capital expenditure (capex)<br>Additional power<br>Increased Government and Utility Revenues |
| Network Effects        | Reliability, grid efficiency and loss reduction                                                                                          |
| Wider Economic Effects | Improved Industrial Competitiveness and Economic Output<br>Job creation and local economic activity<br>Human Development Index increase  |
| Environmental          | Greenhouse gas emission reduction<br>Avoided health care costs from improved air quality                                                 |

**Direct Benefits:** Loss reduction can be quantified in terms of the avoided cost of generation, valued at an economic price, as a result of transfer of electricity from one country to another. The benefit of additional power to an importing country can be quantified as the kilowatt hour supplied to consumers, valued through Willingness-to-Pay surveys. There are also direct benefits from the reduction in the cost of transmission to consumers by lowering their cost of electricity.

**Network Effects:** reliability to consumers resulting from an interconnector is measured as the avoided cost of supply interruptions to consumers valued at the value of lost load.<sup>12</sup>

**Wider Economic Benefits:** There is a direct positive relationship between access to electricity and improved welfare, increased productivity and income. A study<sup>13</sup> of a cross-border power project between Nepal and Bhutan has shown that increased access to electricity has predominantly improved the quality of lives of students, women and rural households. In Sub-Saharan Africa, improved grid connections resulted in employment growth of two per cent<sup>14</sup>. Research<sup>15</sup> by the French Development Agency showed that in two examples of cross-border projects, the contribution to gross domestic product of a 1mega-watt increase in electricity generation was in the range of US\$0.13 to US\$0.16 million. A formula developed by the United States Department of Energy<sup>16</sup> indicates that an increase in consumption from 150 kilo-watt hour to 200 kilo-watt hour per person

<sup>12</sup> London Economics. 2013. The Value of Lost Load for Electricity in Great Britain. Report to Ofgem, July 2013.

<sup>13</sup> Attigah, Benjamin, and Lucius Mayer-Tasch. "The Impact of Electricity Access on Economic Development: A Literature Review." In Productive Use of Energy (PRODUSE): Measuring Impacts of Electrification on Micro-Enterprises in Sub-Saharan Africa, by L. and Mukherjee, M. and Reiche, K. (eds.) Mayer-Tasch. Eschborn: GIZ, 2013.

<sup>14</sup> Goedhuys, M. and Sleuwaegen, L. "High-Growth Entrepreneurial Firms in Africa: A Quantile Regression." Small Business Economics Vol. 34, 2010: 31-51.

<sup>15</sup> PROPARCO, The Link between Renewable Energy and Jobs, French Development Agency, October 2016

<sup>16</sup> Pasternak A.D., Global Energy Futures and Human Development, A Framework for Analysis, Lawrence Livermore National Laboratory, United States Department of Energy, 2000

per year could lead to an increase in human development index of three basis points (from 0.52 to 0.55).

#### 4.5 Indirect Benefits: Impact Analysis of Cross Border Projects

There is no one method for measuring the broader impact of cross-border infrastructure development on trade, foreign direct investment, and regional development.

In the case of trade, for instance, the value of increased trade may be included in the economic appraisal if (i) the increase measured is directly associated with the proposed investment (a new trade agreement is an example of an unrelated measure that can significantly affect trade), and (ii) the benefits can be measured/estimated with a solid level of confidence. Specific research on trade and investment in built cross border projects should be carried out, and where this is not possible some higher-level estimate may be used. For instance, the elasticity of trade to developments in cross-border road infrastructure was estimated to be in the range of 0.6-1.4 in the Greater Mekong Subregion<sup>17</sup>. A 10 per cent increase in exports has been found to result in 3.1 per cent [higher employment levels](#), a 3.9 per cent increasing in [earnings](#) and a 0.95 per cent increase in [productivity levels](#) (0.95 per cent)<sup>18</sup>.

It is important to note that reforms can significantly improve the benefits of cross-border transportation projects. For instance, trade facilitation reforms can yield enormous benefits in terms of time savings at the border.

Cross-border surveys can be used to assess the economic effects of cross-border infrastructure at a regional scale. Such surveys should collect data on the flow of goods and services between the different countries, including information on inputs, outputs, and final demands. A Leontief model<sup>19</sup> can be used to map the interdependencies between the different sectors of an economy. This can then be used to estimate the direct and indirect impacts of the cross-border infrastructure project on the overall economy.

A case study on The Armenia Northern Corridor Modernisation / Sadakhlo-Bagratashen Bridge Project is provided in Annexure 2. The project was strategically prioritised to address outdated infrastructure and improve cross-border efficiency between Armenia and Georgia. The case study highlights the application of CBA to demonstrate the economic viability of the project to modernise the Sadakhlo-Bagratashen border crossing facility by providing improved infrastructure and processing facilities for people and vehicles. The CBA formed the basis of the various institutional and governance steps to advance project development.

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<sup>17</sup> Impact of cross-border road infrastructure on trade and investment in the Greater Mekong Subregion Christopher Edmonds and Manuba Fujimura, LAEBA, 2016

<sup>18</sup> World Bank, Maryla Maliszewska and Deborah Winkler, Leveraging Trade for More and Better Jobs, 2024

<sup>19</sup> <https://www.adb.org/sites/default/files/linked-documents/51192-001-sd-08.pdf>

## 4.6 Economic Analysis of Cross Border Water Projects

Successful cross-boundary water infrastructure projects rely on the development of water management agreements that recognise economic benefits and transfers, and RECs should play a leading role in this. The Continental Africa Water Investment Program, as part of the second phase of the PIDA Priority Action Plan has a pledge to ensure water security planning in member states as a crucial measure for operationalising cross-border water management. The Southern African Development Community (SADC) recognises without transfers between SADC countries the economic growth region of the region as a whole will be constrained.

Water resource management can play an important role in regional integration. The potential for shared benefits can be achieved by a Parallel National Action approach, in which institutional strengthening is encouraged, and is designed not to supersede state sovereignty. It involves creation of a large number of institutional contact points between countries so that benefit sharing can be seen to be a positive outcome rather than a threat.

The equitable sharing of economic benefits from cross-border projects may need some form of redistribution or compensation. Compensation could involve monetary transfers, granting of rights to use water, financing of investments, or the provision of non-related goods and services. For instance, the cooperation between Lesotho and South Africa in the construction of infrastructure on the Orange River will provide affordable water for South Africa and royalties to Lesotho of 5 per cent of gross domestic product.

The economic benefits from a cross-border river project can be manifested in enhanced food and energy production and trade. The Water Evaluation and Planning tool can be used for integrated water resources planning<sup>20</sup>.

The United States-Mexico Border Water Infrastructure Program implements cross border water projects that stimulate local economies through public health-related economic gains, job creation and increased demand for goods and services. The economic return of cross-border water infrastructure is estimated to be between eight to twelve<sup>21</sup>. Safe drinking water and sanitary sewer services have reduced the risk of water-borne illnesses. Gains in productivity from improved health, reduced health care costs, and convenience time savings to individuals provide additional economic benefits. A Clean Water Council study in the border region concluded that a US\$2.6 million investment in infrastructure in Doña Ana County, New Mexico, created a demand for products and services of approximately US\$4 million and more than 40 jobs.

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<sup>20</sup> Water Evaluation and Planning, Stockholm Environment Center, [weap21.org](http://weap21.org)

<sup>21</sup> ANNUAL REPORT 2011 U.S.-Mexico Border Water Infrastructure Program, March 2012

## KEY TAKEAWAYS

- **Importance of Articulating Economic Rationale:** Clearly articulating the economic rationale helps to demonstrate project impact, optimise design, and prioritise limited resources, especially given the high costs of cross-border projects.
- **Importance of Economic Appraisal:** Joint economic and financial analyses must assess returns and risks at both the national and regional levels, focusing on direct benefits and qualitatively addressing indirect benefits.
- **Importance of Ensuring an Equitable Distribution of Benefits:** Economic benefits such as market expansion, efficiency gains, and welfare improvements may be unevenly distributed, necessitating cost-sharing mechanisms among countries.
- **Importance of Prioritisation and Planning:** Projects should be prioritised through detailed economic analysis and aligned with national policies, supported by tools like FlowMax for evidence-based decision-making.
- **Importance of Coordination and Commitment:** Early and strong coordination among the central ministries of the participating countries is essential, with regional organisations and multilateral development banks being able to facilitate consensus and commitment.

The following is a broad set of questions along with associated recommendations and good practices aimed at addressing Economic Rationale and Planning challenges. These are not exhaustive and can be supplemented by partnering countries during the early planning phase.

## GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS

- To what extent will the project achieve regional objectives?
- Have long-term development plans been reviewed to assess the priority of the project?
- What regional organisations have been approached to assist in cross-country coordination?
- To what extent has a project rationale been developed that maximises positive externalities?
- How does a ToC clearly identify how project inputs can lead to desired impacts/outcomes?
- To what extent can project benefits be quantified and assigned monetary values?
- What are the arrangements for ensuring that a CBA is carried out for the project and agreed by participating countries?

- What are the arrangements for ensuring that all the discounted costs and benefits are assigned to various stakeholders so that the distributional effects of the project are understood and agreed?
- Has and how the project been able to identify elasticities derived from observations elsewhere to assess the impact of the cross-border project on trade and other economic indicators?
- Has a distribution analysis to estimate the distribution of the impact (both positive and negative) across countries and stakeholders within countries and help countries find equitable solutions to share the costs and benefits among participating countries been used?
- How technical experts from all participating countries have been involved in the preparation of a CBA and have all parameters been agreed?
- Has a formal technical team been established for the above tasks?
- Has and how the CBA model been used to vary the costs assigned to each participating country with a view to equalising net benefits across countries?

# CHAPTER 5:

## Political Support and Governance

This chapter focuses on the importance of ensuring that cross-border infrastructure projects benefit from strong and sustained political support, as well as robust institutional, legal and regulatory frameworks to underpin the long term political and institutional sustainability of the project.

### 5.1 Introduction

Unlike national infrastructure projects, cross-border infrastructure projects traverse sovereign boundaries, with each country having its own policy priorities, legal systems, institutional capacities, and political dynamics.

Multiple economic, legal, institutional and social challenges can potentially impact the level of political support for cross-border infrastructure projects, notably because countries involved may have conflicting economic interests, making it difficult to reach a political consensus. In addition, as highlighted earlier, the costs and benefits of cross-border projects tend to be distributed unevenly across countries and among stakeholders. As a result, ensuring the equitable sharing of financing, funding and benefits across borders can be challenging because of variations in legal and regulatory frameworks between countries can complicate project planning and execution. Harmonising these frameworks will often require extensive and time-consuming negotiations which will heavily depend on continuing strong cross-border political support<sup>22</sup>; changes in government or political instability in one or more participating countries can disrupt project continuity and lead to delays or cancellations; and local communities may oppose cross-border infrastructure projects due to various concerns, land resettlement issues, lack of perceived benefits, or disruptions to their daily lives and this opposition may have an adverse impact on the ongoing political support for a cross-border project.

To ensure successful implementation, cross-border projects should remain consistent with national priorities of each country and be underpinned by sound economic and financial feasibility and sustained economic political commitment. Durable political will, institutional resilience, and stakeholder consensus are important enablers for success. Such support should be sustained and structured, not limited to episodic initiatives or individual leadership. Cross-border project implementation is best enforced through institutionalised arrangements such as treaties, joint commissions, and multilateral agreements that transcend electoral cycles.

However, strong political support is insufficient without sound governance. Cross-border infrastructure projects require clear institutional mandates, harmonised regulations, equitable risk allocation, and robust conflict-resolution mechanisms. In some cases, new institutions may also need to be established to support the successful implementation of the project. Examples such as the Mekong River Commission and the Central American Electrical Interconnection System (SIEPAC) illustrate how robust legal frameworks and structured coordination bodies can create operational certainty across borders. In many cases, a more holistic approach through REC or

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<sup>22</sup> [Cross-border infrastructure projects - European Investment Bank](#)

regional platform can be useful governance devices for facilitating cross-border investments and connectivity.

The Kazungula Bridge Project (see Annexure 2) is a good illustration of a multi-national project on the North-South Corridor and part of a corridor-long infrastructure improvement program promoted by countries, RECs, and financiers. Another example of strong governance in developing a cross-border infrastructure project is the Tanzania-Zambia Transmission Interconnector Project (see Annexure 2), which connects the Eastern Africa Power Pool (EAPP) and Southern African Power Pool (SAPP) and is a key project under the Mission 300 program led by the WB and AfDB. The project highlights the importance of establishing strong regional institutions and donor coordination and exemplifies collaborative decision-making for harmonisation of regulatory frameworks and project implementation.

## 5.2 Political and Institutional Risks affecting cross-border projects

Cross-border projects are exposed to several key political and institutional risks including:

- **Political and Sovereign Risk:**<sup>23</sup> This includes changes in government, policy reversals, or instability that may disrupt project continuity. Limited state capacity, inability to deliver basic services, and conflict with neighbouring countries can also pose significant risks to project implementation and sustainability. In cross-border settings, this risk is multiplied across jurisdictions, with the added challenge of coordinating differing political priorities.
- **Regulatory and Institutional Risk:** Diverging regulatory frameworks, licensing regimes, and oversight capacities across countries can delay approvals and increase transaction costs. These risks are particularly acute in sectors like energy and transport where pricing, competition, and relevant rules vary.
- **Land, Licensing, and Environmental Risk:** Delays in acquiring rights-of-way or environmental clearances in one country can affect the viability of the entire project corridor. As cross-border infrastructure typically relies on synchronised implementation, delays in one segment may render others unviable.

Given these risks, it is important that political commitments to a cross-border project are formalised through binding legal instruments and long-term policy alignment between the countries supporting the project. These instruments should establish a framework that clarifies the roles and responsibilities of each party, including provisions for cost allocation, regulatory obligations, and dispute resolution. Formalisation ensures that political will is institutionalised and not dependent on a single administration.

To address legal and institutional risks, it will also be important to establish a robust governance framework for the cross-border project which should include:

- **Inter-Governmental Agreements** that define responsibilities and provide enforceable commitments across jurisdictions.
- **Harmonised Procurement Processes** to reduce fragmentation and ensure fair competition.

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<sup>23</sup> (1) [Navigating Geopolitical Risks in Infrastructure Development](#); (2) [Political Risk in Infrastructure Projects - Marsh](#); (3) [Barriers to Cross-Border Infrastructure Development](#)

- **Dedicated PMU** with cross-border mandates and cross-border staff participation to manage construction, risk monitoring, and stakeholder engagement.

These aspects are covered in more detail below and in the next chapter.

### 5.3 How to Insulate Cross-Border Infrastructure Projects from Political Cycles

While national infrastructure projects are also susceptible to political cycles, cross-border projects are even more susceptible, given that they have the potential to be impacted by multiple political cycles, especially changes in leadership, electoral shifts, or geopolitical realignments. These changes can derail long-term projects by altering policy priorities, disrupting institutional memory, or weakening previous commitments. To ensure continuity and resilience, cross-border infrastructure must be designed to outlast political fluctuations.

#### 5.3.1 The first line of defence is institutionalisation

Projects should be enshrined in clear language and articles for agreement within binding legal frameworks such as ratified treaties or intergovernmental protocols, rather than politically dependent agreements like joint press statements or informal MoUs. Ratified treaties signal bipartisan or multiparty consensus, reducing the likelihood that leadership changes will result in project termination. Legal codification also provides recourse in case of unilateral withdrawal or delay by one party. In some cases, the treaties and protocols can also be at a regional or continental level (see section 5.4 below).

#### 5.3.2 Project governance should include technocratic bodies with operational autonomy

These bodies should be staffed by civil servants and technical experts, not political appointees, and embedded within permanent government structures (e.g., ministries, regulatory agencies, independent commissions). Examples such as the EU’s TEN-T coordination bodies<sup>24</sup> and the Mekong River Commission show how technocratic continuity enables consistent long-term infrastructure planning across electoral cycles.

#### 5.3.3 Projects must be embedded within broader regional or multilateral frameworks

Alignment with initiatives such as the PIDA, the EU’s TEN-T, ASEAN’s Master Plan on ASEAN Connectivity or the comprehensive plan for developing the Eurasian transport corridors of the Eurasian Economic Union, ensures multilateral political backing and collective engagement. Regional organisations also act as custodians of project continuity, especially when national politics become volatile.<sup>25</sup>

#### 5.3.4 Robust stakeholder coalitions can safeguard projects from political reversals

By involving local communities, private sector investors, and MDBs, project sponsors create a “political firewall” of interested parties who advocate for continuity.

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<sup>24</sup> [TEN-T governance - European Commission](#)

<sup>25</sup> For more regional planning approaches, please refer to the case of *Cross-border Electrical Interconnection between Peru and Ecuador* in *Annex of Case Studies*.

### **5.3.5 Financing mechanisms should be designed for longevity**

Long-term concessional loans from MDBs, sovereign wealth funds, or blended finance instruments tie project lifecycles to institutional timelines, not election calendars. MDBs in particular can play an anchoring role by conditioning disbursements on sustained legal and institutional commitments, particularly joint ‘cross-border’ commitments.

### **5.3.6 An independent project ombudsperson or accountability mechanism mandated across jurisdictions should be set up**

Such a mechanism helps monitor compliance, report violations, and elevate issues to neutral third parties. This ensures an ongoing channel for dispute resolution outside of partisan influence.

To ensure sustainability, political risk mitigation efforts need to be transparent and auditable. Clear grievance redress mechanisms, public disclosure policies, and independent oversight bodies must be built into the governance structure of cross-border projects. Only through institutionalised, accountable engagement and risk planning can cross-border infrastructure withstand the unpredictable tides of politics.

## **5.4 How to Institutionalise Inter-Governmental Arrangements to Bridge Legal and Regulatory Divergences**

Robust inter-governmental arrangements are essential for the success of cross-border infrastructure projects. These projects span multiple jurisdictions, each with different legal systems, institutional capacities, and policy priorities. As such, they require structured cooperation frameworks that formalise responsibilities and create channels for continuous dialogue and decision-making.

### **5.4.1 Effective inter-governmental arrangements institutionalise trust**

They ensure continuity across political administrations, reduce transaction costs in decision-making, and enable structured, rule-based collaboration, thereby transforming political alignment into durable regional partnerships.<sup>26</sup>

### **5.4.2 The foundation of such arrangements lies in binding legal instruments**

These include bilateral treaties, regional protocols, or memoranda of understanding that clearly define the institutional, technical, and financial obligations and expected financial revenues, if any, of each participating country.

These agreements should extend beyond declarations of intent to include all commitments on key aspects such as cost-sharing, construction milestones, operational standards, and asset management responsibilities. In some regions, inter-governmental agreements have also been used to designate lead agencies and create shared governance bodies.

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<sup>26</sup> [Achieving cross-border government innovation: Governing cross-border ...](#)

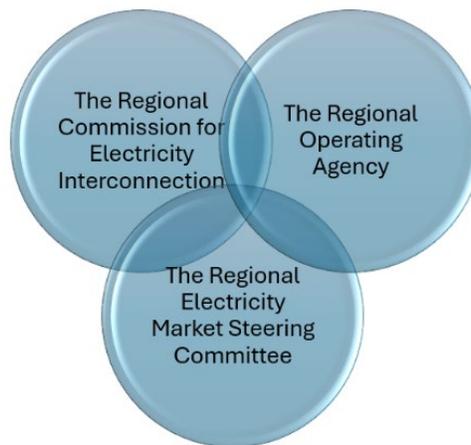
The Monsoon Cross-border Wind Power Project between Lao PDR and Vietnam illustrates this approach (see Annexure 2). The Government of Viet Nam and the Government of Lao PDR signed an MOU for the supply of 5GW of renewable power from Lao PDR to Viet Nam in 2016. The project was then officially nominated by the Lao PDR to the Ministry of Industry and Trade of Viet Nam in 2017 under a collaboration agreement in the energy sector between the two countries. Finally, the Government of Lao PDR and the Viet Nam Electricity Group, the state-owned power monopoly of Viet Nam, signed a 25-year Power purchase Agreement. <sup>27</sup>

**Box 1: Examples of Inter-governmental Institutional Arrangements for Cross-border Energy Infrastructure**

**The Central American Electrical Interconnection System .**

If designed and implemented properly, cross-border projects can address coordination failures and provide much needed regional public goods. Regional energy markets are among the most salient cases, including SIEPAC. The project extends across six countries, with a capital value of US\$505 million and physical assets cover a transmission system, a fibre optic cable, and 15 substations.

*Box 1 Figure 1: The Regional Institutional Structure Governing SIEPAC*



*Source: 2024 G20 Report on Cross-border Infrastructure, Document No. 4, IWG*

A regional market as complex as SIEPAC was underpinned by forums for dialogue that promoted improvements to national systems and electricity sector agencies. The first phase of SIEPAC intended to take advantage of large hydroelectric project surpluses in the region (more than 1,500 mega-watt between 1972-1983) and was developed in two blocks (the North Block, between Guatemala and El Salvador, and the South Block, between Honduras, Nicaragua, Costa Rica, and Panama) and resulted in the first binational interconnection between Honduras and Nicaragua in 1976.

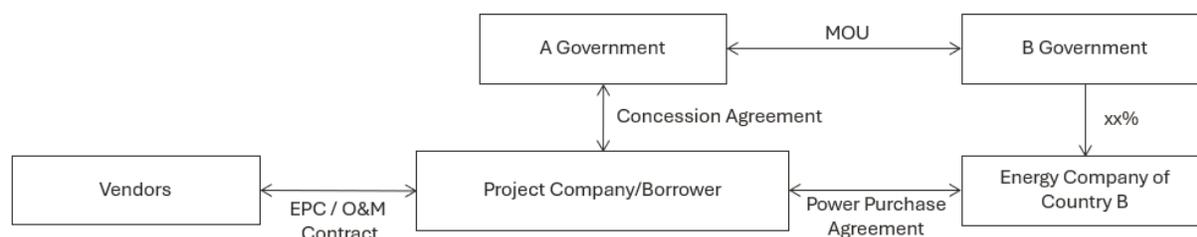
<sup>27</sup> [Our Story - Monsoon Wind](#)\*\*\*

The more formalised the coordination mechanism is, the more enforcement capacity the institution can have. As projects mature, the importance of formal inter-governmental institutions also grows. For the second phase of SIEPAC, the regional governing institutional structure includes: (i) the Regional Commission for Electricity Interconnection, which is comprised of regulators from the six countries and regulates the commercial relations between the agents that connect to the regional electricity system and sets energy exchange and transport payment and price mechanisms; (ii) the Regional Operating Agency, which is comprised of the operators of the six electricity systems and responsible for coordinating the technical and commercial operation of the energy exchanges between the agents as operator and administrator of the electricity system and regional market; and (iii) the Regional Electricity Market Steering Committee, which is the political body responsible for promoting the development of the regional market and facilitating compliance with the objectives of the Framework Treaty and its Protocols as well as coordinating the interrelationship with and among the rest of the regional organisations (see Figure 1).

### Monsoon Wind Power

In comparison, similar to a bilateral cross-border energy infrastructure project such as the Monsoon Cross-border Wind Power project, a template inter-governmental institutional arrangement could be established as set out in Figure 2. Under such an arrangement, the two governments involved would first sign an MOU for the supply of power from country A to country B. Then country A signs a concession agreement with a project company, which also enters into an operations and maintenance (O&M) contract with local vendors, while country B signs an agreement with a local energy company. Finally, the two countries then sign a long-term Power purchase Agreement.

*Box 1 Figure 2: Inter-governmental Institutional Arrangement for Cross-border Energy Infrastructure*



Source: Authors

### 5.4.3 Countries should establish joint institutions or coordination mechanisms that have a clear mandate and operate independently of national political cycles

These can include cross-border regulatory authorities, project steering committees, or implementation secretariats. Their mandate should cover oversight of procurement, dispute resolution, harmonisation of standards, and reporting requirements. These bodies require not only political backing, but also statutory authority, dedicated budgets, and technical expertise. In some cases, this can be best achieved by establishing a regional regulatory authority, bestowed with regulatory dispute resolution powers and responsibility. In the case of Africa, most regional infrastructure projects involve a REC, which plays a critical role in bringing countries together and are often part of the implementation arrangements. This is also relevant for other regions, such as the role of the European Commission for the TEN-T corridors.

The West African Power Pool under the Economic Community of West African States (ECOWAS), the SAPP (see Annexure 2 for a case study on Mission 300) under the SADC and Mekong River Commission in Asia are other notable examples of institutional models that have sustained multi-decade cross-border cooperation.

#### **5.4.4 Regional platforms can also be a useful governance device for coordinating cross-border investments and connectivity**

A regional approach can help overcome coordination failures, as well as constraints of individual countries arising from poor port access, lack of connectivity and deficiencies in energy and water endowments. In addition to the RECs, regional platforms, structured in the same way as individual country platforms, offer a useful device for policy coordination, assembling multiple countries and investors, and resolving economic, financial, resilience and social issues.<sup>28</sup> They can be especially useful for small countries where individual country platforms lack the requisite scale and can help increase collaboration and allow for better division of labour among development partners operating in the region. Examples of such platforms include the *Africa Investment Forum* and the *Western Balkans Investment Framework*.

#### **5.4.5 Clear mechanisms for conflict resolution are also crucial**

Inter-governmental agreements should include clauses that provide for mediation, arbitration, or third-party adjudication under international norms. The early establishment of these mechanisms helps avoid costly and time-consuming legal disputes that can undermine political trust and stall implementation. Options include arbitration under international rules (e.g., ICC, ICSID), mediation through neutral MDBs, or hybrid Med-Arb models. A dispute board, formed at project inception and comprising independent experts, can provide continuous conflict monitoring and early intervention capabilities.

#### **5.4.6 MDBs, including regional ones, can act as a convener and mediator to support the delivery of viable cross-border projects**

MDBs can convene and mediate on inter-government project agreements and institutional setup, given that the countries benefiting from the investment are members of the same institution. MDBs can also provide technical assistance on regulatory harmonisation and institutional building. Such technical assistance, capacity building, facilitation of cooperation, and policy and regulatory support can be essential in overcoming the political complexities and governance challenges associated with cross-border infrastructure projects.<sup>29</sup>

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<sup>28</sup> See 2018 Report of the [G20 Eminent Persons Group on Global Financial Governance - Making the Global Financial System Work for All](#).

<sup>29</sup> (1) [Borrowing Costs and The Role of Multilateral Development Banks ... - IMF](#); (2) [International Organizations and Political Risk – The case of ...](#); (3) [The mobilisation effects of multilateral development banks](#).

#### 5.4.7 Digital coordination tools, such as shared project dashboards and cloud-based documentation systems can further strengthen inter-governmental coordination

These platforms improve transparency, facilitate joint monitoring, and allow for real-time issue escalation and tracking. This is particularly useful where project timelines are long and multiple agencies are involved.

#### KEY TAKEAWAYS

**Cross-border projects face complex political and institutional challenges:** Cross-border projects encounter economic, legal, institutional, and social obstacles, including uneven cost-benefit distribution, regulatory divergence, political instability, and local opposition.

**Political and institutional risks must be proactively addressed:** These risks include political and sovereign risks including government changes and regulatory and institutional risks arising from differing frameworks.

**Political support must be institutionalised:** Durable political backing must be formalised through treaties, joint commissions, and multilateral agreements that transcend electoral cycles to avoid disruptions.

**Robust governance frameworks must go hand in hand with political support:** Clear mandates, harmonised regulations, equitable risk allocation, conflict-resolution mechanisms, and sometimes new institutions are essential.

**Strategies are needed to protect projects from political cycles:** Institutionalisation of the project through ratified treaties, governance bodies, embedding in regional frameworks, stakeholder coalitions, long-term financing, and independent accountability mechanisms can help maintain project continuity despite political changes

**Formal agreements are needed to define roles and responsibilities:** Binding legal instruments, inter-governmental agreements, harmonised procurement, and dedicated cross-border project units are critical to managing risks and ensuring accountability.

The following is a broad set of questions along with associated recommendations and good practices aimed at addressing Political and Governance challenges. These are not exhaustive and can be supplemented by partnering countries during the early planning phase.

#### a) Political Support and Stakeholder Alignment

#### GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS

- What are the potential political risks, and how can they be mitigated to ensure the project's success?
- Is there high-level political backing (Presidents, Prime Ministers, Ministries) to fast-track approvals?

- Are opposition parties and subnational governments aligned with the project?<sup>30</sup>
- What incentives (economic, diplomatic) exist to sustain political will across the political cycle?
- What are the effective coordination and communication mechanisms available, or do they need to be established between the governments of the countries involved?<sup>31</sup>

## SELECTED TOOLS AND GOOD PRACTICES

- Establish a high-level task force (e.g., Ministerial Council) for oversight.
- Prepare Stakeholder Mapping and Engagement Plans to identify supporters/opponents.<sup>32</sup>
- Launch public awareness campaigns (roadshows, media briefings) to build support.<sup>33</sup>
- Use diplomatic channels (joint statements, state visits) to reinforce commitment.
- Develop comprehensive risk management plans to identify, assess, and mitigate political risks.
- Organise ongoing workshops with stakeholders from all countries involved to keep the public informed about the project's benefits and progress, thereby maintaining political support.

### b) Governance and Institutional Framework

## GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS

- What legal/institutional frameworks govern cross-border cooperation between the countries involved?
- What type of inter-government project agreements are signed between the different countries involved?
- Is there a joint governance body (e.g., bilateral commission, steering committee) with clear decision-making authority?
- How are dispute resolution mechanisms structured?
- Are roles and responsibilities (financing, construction, operations) clearly defined in an MoU?
- What role can MDBs, IOs or external institutions play in the arrangement (if any)?
- Is there flexibility for any governance/institutional adjustment along the project cycle?

## SELECTED TOOLS AND GOOD PRACTICES

- Sign bilateral/multilateral agreements, e.g. treaties and MOUs to formalise commitments.
- Establish a Joint Project Management Office with representatives from all governments.
- Include an independent arbitration clause in contracts to resolve disputes.

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<sup>30</sup> [Building More Resilient Cross-border Regions - OECD](#)

<sup>31</sup> [Financing Cross-Border Infrastructure - Political Cooperation and ...](#)

<sup>32</sup> (1) [STAKEHOLDERS ENGAGEMENT PLAN \(SEP\) – Updated - World Bank](#); (2) [Engaging stakeholders in areas of cross-border infrastructure investment](#); (3) [STAKEHOLDERS' MAPPING AND ANALYSIS, CAPACITY GAPS IN NEEDS ... - IGAD](#).

<sup>33</sup> [Learning Materials on Cross-border Infrastructure Financing - ESCAP](#)

- Institute transparency mechanisms (e.g. public portals, stakeholder dashboards) to track progress.
- Embed cross-border infrastructure in regional development strategies and national infrastructure plans<sup>34</sup>
- Leverage the cross-border governance framework and tool (see Annexure 1), which is designed for use by national and subnational governments that are interested in establishing or reinforcing their cross-border governance architecture

### c) Regulatory Harmonisation and Legal Compliance

#### GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS

- How are customs, tariffs, and cross-border logistics streamlined?
- Are there mutual recognition agreements for standards (e.g., engineering, procurement)?
- What fast-track permitting mechanisms exist to avoid delays?
- How do the partnering countries plan to harmonise policy/legal/regulatory differences?
- Do environmental, labour, and safety laws conflict between jurisdictions?

#### SELECTED TOOLS AND GOOD PRACTICES

- Organise regulatory alignment workshops between agencies.
- Use unified Environmental and Social Impact Assessments (ESIAs) to meet all jurisdictions' laws.
- Establish single-window clearance systems for permits (e.g., ASEAN Single Window).
- Adopt model laws (e.g., UNCITRAL for procurement harmonisation).
- Leverage multilateral platforms or regional organisations (e.g., African Union's PIDA) to coordinate policy and funding.

### d) Coordination and Monitoring

#### GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS

- Is there a real-time data-sharing platform for all stakeholders?
- How frequently do joint technical committees meet?
- Are language/translation barriers addressed in documentation?
- What early warning systems exist for delays or conflicts?
- What KPIs track project success (timeliness, cost, socio-economic impact)?
- Are independent auditors reviewing compliance with agreements?
- How are corruption risks mitigated in procurement and contracting?

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<sup>34</sup> [Connectivity Across Borders: Global practices for cross-border ...](#)

- Is there a post-completion evaluation framework?

## SELECTED TOOLS AND GOOD PRACTICES

- Leverage integrated project management software.<sup>35</sup>
- Appoint dedicated liaison officers in each country's relevant ministry.
- Use standardised reporting templates (monthly progress dashboards).
- Establish crisis communication protocols (rapid response teams for disputes).<sup>36</sup>
- Rely on third-party monitoring and auditing.
- Use AI-based anomaly detection for procurement fraud.
- Encourage beneficiary feedback mechanisms (e.g., World Bank's Grievance Redress Mechanism).<sup>37</sup>
- Establish a Lessons-Learnt Repository for future projects

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<sup>35</sup> [Open-Source CORE-MIS Improving Social Protection Program Management and Delivery](#)

<sup>36</sup> [Crisis Preparedness and Response Toolkit](#)

<sup>37</sup> <https://documents1.worldbank.org/curated/en/897741550119344278/pdf/grievance-redress-mechanism-grm-30-january-2019-eng-ecreeee.pdf>

# CHAPTER 6:

## Finance and Management

This chapter focuses on the importance of ensuring that the relevant implementing agencies in each country are not only able to raise the necessary financing and funding for their section of the project but also put in place a strong project management framework to ensure that the project generates the expected economic and social benefits over its lifecycle.

### 6.1 Introduction

Accessing sufficient and affordable financing to develop a project is often a significant hurdle faced by infrastructure projects. However, it is a particular challenge in the context of cross-border projects given (i) the scale of the financing that is required; (ii) the risks associated with cross-border projects; and (iii) the fact that financing will need to be raised by governments across several countries that may vary significantly in their capacity to raise the amount of financing needed at a cost that supports the viability of the project under consideration.

The complexity of implementing cross-border projects includes that many of these projects typically need to rely on financing provided by those governments that are supporting and benefiting from the project. However, many governments particularly those in emerging markets and developing countries are currently facing severe budget constraints, most do not have sufficient fiscal headroom to support cross-border projects, preferring instead to focus their limited resources on those national projects that have clear direct benefits to the country.

Irrespective of the process for identifying and prioritising a project, it is important that the costs and associated financing needs are identified as soon as possible, so a financing structure can start to be developed. Given that cross-border infrastructure projects typically have high capital costs, government financing alone will be insufficient and, as such, the relevant governments will need to seek additional sources of financing, including financing from the private sector.

### 6.2 Cross-Border Financing Considerations

There are several factors that implementing agencies need to take into consideration when assessing the financing needs of a project and many implementing agencies will be familiar with them from assessing the financing needs of national projects. However, as highlighted above, the fact that cross-border projects require financing to be raised by two or more countries increases the complexity of the financing and, as such, it is important that the considerations set out below are looked at from the perspective of a cross-border project rather than a national project.

#### 6.2.1 Understanding and addressing the financing and funding needs over the whole of the project's lifecycle is critical

Financing refers to the money raised to finance the capital costs of a project, while funding refers to the long-term source of money such as user fees, tariffs, or government budgets that ultimately pays back the investment and covers the ongoing operations and maintenance costs over the life of the project. When considering financing, governments often focus on securing the upfront capital investment needed to construct the project, as this is often the most immediate challenge in many

countries. However, it is important to note that any infrastructure project will require sufficient financial resources to not only cover the construction costs, but also to fund the costs for operating, maintaining and rehabilitating the assets. Neglecting the financial needs of the project across the life of the assets will likely result in rapid asset deterioration and failures in delivering the intended outcomes. This is particularly relevant to cross-border infrastructure, with the added complication that sufficient financing and funding needs to be available to cover all sections of the cross-border infrastructure project over its lifecycle. For instance, the success of a power pool regional trading initiative will very much depend on the ability of the relevant national public utilities to not only finance the construction of the generating and transmission assets, but also to fund the payments for electricity imports.

### **6.2.2 Financing and funding will need to be raised by more than one country**

Financing will need to be secured for all sections of the infrastructure by all countries involved. This requires careful coordination and planning to ensure that each country is able to mobilise the financing required to construct, operate and maintain its section of the infrastructure. For instance, if road construction or maintenance in one country is delayed or compromised, the expected benefits of the whole infrastructure may be substantially reduced. Therefore, it is critical that those institutions that are responsible for providing the infrastructure services have access to the financing and funding necessary to construct, operate and maintain the infrastructure.

### **6.2.3 Governments, based on their fiscal circumstances, may choose to support certain projects to ensure the financial viability of projects**

Cross-border infrastructure tends to be larger than most national infrastructure projects and, in many situations, they are unlikely to be financially viable based on user charges alone. In cases where projects demonstrate strong economic benefits, but weak financial viability, governments may choose to provide support (e.g. Viability Gap Funding) to either reduce the upfront costs of the project and/or subsidise the ongoing operation and maintenance costs. However, it is important to note that any government support will give rise to fiscal commitments and contingent liabilities (FCCLs) and, as such, it is important that each government carefully examines the need for such support and assesses how to manage the project-related FCCLs over the life of the project before committing to the project. It is also important for projects to incorporate foreign exchange risk mitigation measures and consider compensation mechanisms for asymmetric benefits, as illustrated in Annexure 1 under the CBA section.

### **6.2.4 Financing for cross-border projects is typically shared between participating countries**

It is important that the financing needs of the project are fairly allocated to all the countries that are benefiting from the project. Apportioning the financing costs not only helps to reduce the financing burden on individual countries but also ensures “buy in” for the project. There are various ways to allocate the financing costs, but perhaps the most straightforward way is to allocate the responsibility for financing based on a country’s share of the total infrastructure investment cost. However, in some cases, the physical footprint alone may not be the most appropriate approach as land costs in each country may vary depending on density and income levels, and capex will also depend on the quality and complexity of the facilities being built in each country. Therefore, alternative approaches may need to be considered, such as sharing costs based on the land

assembling costs<sup>38</sup> and capex of the facilities, or by apportioning costs based on the benefits being earned by each country from the project.

### **6.2.5 Revenues from the cross-border infrastructure will need to be shared between countries**

Revenues can be raised through various channels, including through user charges (e.g. tolls on roads), provision of services (e.g. fares and freight charges on railways) or payments from one country to another (e.g. in the case of a power pool). While countries have the flexibility to define and structure the charges, there needs to be strong coordination between the countries on the level of charges, including adjustments to the charges, and they need to be set at a level in each country that is not only affordable given the country context, but also ensures that the anticipated benefits materialise. To ensure effective coordination and transparency in the setting and increasing of fees, it would be important for countries supporting the cross-border project to consider agreeing that the charges be regulated by a regional institution without ceding tariff sovereignty. The ECOWAS Regional Electricity Regulatory Authority is an example of such a regional regulator for regional cross-border trade of electricity in West Africa.

### **6.2.6 Given the high capital costs of most cross-border projects, multiple sources of financing will need to be explored**

Given the large capital investment needs for cross-border infrastructure, public sector budgets and concessional loans from MDBs/DFIs have typically been the main sources of financing. However, given the increasing fiscal constraints faced by many governments, these sources of financing are often not sufficient, even when several MDBs/DFIs have been mobilised. In this context, there is a consensus that private sector capital, even if it is more expensive than MDB/DFI financing, will likely need to play a greater role in the overall financing package. In addition, financing from various funds that have a focus on supporting projects by addressing specific issues such as mitigation and / or adaptation may also be available to complement the financing of capital expenditure.

The following table highlights some of the key questions that should be addressed as part of the financing decision of a cross-border infrastructure project. While many of these questions are relevant for national infrastructure projects as well, the approach to addressing them for cross border infrastructure projects will be different, given the need to take into consideration both national and regional perspectives.

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<sup>38</sup> This method aligns with the principle of proportional burden-sharing, where countries shoulder costs based on the direct contribution required within their territory.

Table 4: Key Infrastructure Finance Questions

| QUESTIONS                                                                                                                                                                  | STAGE IN PROJECT LIFECYCLE        | ANALYSIS REQUIRED TO RESPOND TO THE QUESTION |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------|
| Which cross-border infrastructure projects are likely to generate sufficient economic and social benefits to justify being identified as a priority project for financing? | Identification and Prioritisation | Project Screening                            |
| How much are the capital, operating, and maintenance costs of the project?                                                                                                 | Appraisal Stage                   | Feasibility Study                            |
| How should the costs and revenues be shared fairly among participating countries?                                                                                          | Planning and Preparation Stage    | Feasibility Study                            |
| Are the forecast revenues sufficient to ensure proper operations and maintenance or does there need to be ongoing support to ensure financial sustainability?              | Planning and Preparation Stage    | Feasibility Study                            |
| Are revenues sufficient to mobilise private sector financing and, if so, what amounts of private sector financing can be raised?                                           | Planning and Preparation Stage    | Feasibility Study /Financial Model           |
| What reforms (e.g. institutional, legal, regulatory, tariff) will be required to mobilise private sector participation?                                                    | Planning and Preparation Stage    | Feasibility Study                            |
| What are the potential sources of financing for capital investment and operations (public, private, concessional, hybrid,)?                                                | Planning and Preparation Stage    | Feasibility Study                            |
| Is there a financing gap and how can it be bridged?                                                                                                                        | Planning and Preparation Stage    | Feasibility Study / Financial Model          |

| QUESTIONS                                                                                                                                                | STAGE IN PROJECT LIFECYCLE     | ANALYSIS REQUIRED TO RESPOND TO THE QUESTION |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------|
| Is the project affordable and financially sustainable at the project, country and regional levels?                                                       | Planning and Preparation Stage | Feasibility Study / Financial Model          |
| What risk mitigation instruments need to be considered to secure private sector participation?                                                           | Planning and Preparation Stage | Feasibility Study / Risk Assessment          |
| Are bids consistent with the financial resources needed or are additional resources required to conclude procurement and/or reach financial close?       | Procurement                    | Assessment of Bids / Financial Model         |
| Are ongoing revenues sufficient to ensure proper operations and maintenance or does there need to be ongoing support to ensure financial sustainability? | Implementation and Management  | Feasibility Study / Financial Model          |

Source: authors

### 6.3 Sources of Financing for Cross-Border Projects

The main sources of financing for cross-border projects are as follows:

#### 6.3.1 Public Financing and National Development Banks

Public funds come from government budgets and are typically assigned through the budget process or sometimes through a dedicated fund. As there are usually no or minimal requirements for repayment and a good certainty of receiving the funds once they are committed, public funding is often the preferred source of infrastructure financing for governments. National Development Banks, largely considered part of public financing, are typically government-owned or controlled institutions with explicit mandates to support national development objectives, often by providing medium- and long-term financing for sectors and projects that are underserved by private financial markets due to perceived risks or lower initial returns, such as for large-scale infrastructure projects.

#### 6.3.2 Multilateral Development Banks

MDBs can play a critical role in the financing of cross-border infrastructure in developing countries by supporting the financing needs of both the public and private sector sponsors of the project. MDBs can provide direct financing as well as guarantees to help mobilise financing from the private sector. MDBs are increasingly collaborating to ensure that large cross-border infrastructure projects are successfully developed and implemented. Therefore, on large cross-border infrastructure projects, it would make sense to seek support from several MDBs as early as possible in the project development stage. Each of the MDBs may be able to provide project preparation support and each

can finance (parallel financing) or co-finance a portion or section of the infrastructure. In some cases, MDBs can bundle funds and follow one MDB's rules for procurement, environmental and social safeguards, or financial management. The Global Infrastructure Facility<sup>39</sup> managed by the World Bank is an example of a facility that can help governments identify and prepare infrastructure projects including cross-border projects. The Multilateral Cooperation Center for Development Finance<sup>40</sup> administered by AIIB is focused on supporting the preparation of cross-border infrastructure projects as well as associated capacity building and currently has eight International Financial Institutions that can receive its funds.

### **6.3.3 Development Finance Institutions**

DFIs offer specialised products such as export credit insurance and loan guarantees. These products can help mitigate political, credit, and currency risks during the early stages of a project, thereby encouraging private sector participation. DFIs can also provide technical assistance to support the preparation of cross-border infrastructure projects. This assistance often comes through multi-donor special funds, which offer grants to developing countries for regional or cross-border projects in sectors such as energy, transport, trans-boundary water, and digital-ICT. These grants are used to conduct pre-feasibility and feasibility studies, develop technical and engineering designs, and secure transaction advisory services, helping to make the projects more bankable and ready for investment.

### **6.3.4 Regional Development Banks**

Regional Development Banks can also play an important role in financing the capital investment of cross-border infrastructure projects by providing long-term financing and technical expertise tailored to the specific needs of their regions. They can leverage their local knowledge and relationships to mobilise resources, facilitate partnerships, and ensure that projects align with regional development goals, thereby contributing to economic growth and social development.

### **6.3.5 Private Financing**

In situations where governments are not able to fully finance large-scale cross-border infrastructure projects themselves, private sector financing can help bridge the gap. Private finance can sometimes be secured even if the sovereign risks are perceived as high. Indeed, many low-income countries are unlikely to obtain the affordable financing terms that will be needed to finance infrastructure projects from the market due to their debt situation and high sovereign risk. However, bringing in concessional financing from the MDBs and DFIs can help reduce the private sector's perception of risk even without the use of guarantees. However, given the risks associated with cross-border projects (including political risks and demand and revenue risks), it is likely that some form of support (including through the use of insurance and guarantees) will need to be provided to private sector investors by the relevant governments and MDBs/DFIs supporting the project.

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<sup>39</sup> <https://www.globalinfrafacility.org/>

<sup>40</sup> <https://www.themcdf.org/en/index.html>

A case study on the Monsoon Wind power project is presented in Annexure 2. The project is a 600-Megawatt cross-border project and is an example of how strategic financing partnerships can unlock large-scale renewable energy infrastructure across borders.

### 6.3.6 Financial Intermediary Funds

Financial Intermediary Funds (FIFs) are financial arrangements that typically leverage a variety of public and private resources in support of international initiatives, enabling the international community to provide a direct and coordinated response to global priorities. Most FIFs support global programs that are often focused on the provision of global public goods, preventing communicable diseases, responding to climate change, and improving food security. FIFs often involve innovative financing and governance arrangements as well as flexible designs which enable funds to be raised from multiple sources, both sovereign and private. Climate funds such as the Climate Investment Fund and the Green Climate Fund are examples of financial intermediaries that can support cross-border infrastructure projects. These funds are aimed at supporting climate change mitigation and adaptation efforts, particularly in developing countries. While climate funds alone will not be able to provide all the financing needed for a cross-border project, they are worth considering as an additional source of financing to complement public/MDB/DFI financing for cross border projects. These funds can be mobilised to facilitate the construction of resilient and low-carbon infrastructure, which is essential for mitigating climate change impacts and ensuring the resilience of regional connectivity.

## 6.4 Cross-border Infrastructure PPP Project Structuring

Depending on the type of cross-border project that is being built and its associated risks and revenues, there is a possibility that some components of the project may be able to raise financing from the private sector. For instance, in a cross-border energy trading project, the private sector may be willing to invest in the generation assets but require the relevant public sector authorities to build the transmission line. In a cross-border road project, the private sector may be willing to finance certain sections based on demand forecasts and toll revenues.

When deciding whether to support a cross-border infrastructure project, the private sector will heavily focus on the project related risks and financial returns of the project. The risks of an infrastructure project (e.g. construction risk, land risk, revenue risk, political risk) will vary from country to country, sector to sector and project to project. However, given that a cross-border project involves two or more countries, the project related risks are often amplified compared to a project in a single country.

In this context, PPP project structuring is particularly complex given the number of stakeholders involved (both within and across countries) and the perceived level of risks associated with the project. Project structuring involves, inter alia, (i) determining the optimal procurement mechanism for delivering the project that maximises value for money, (ii) identifying the most cost-efficient financing structure (including sources of financing and payment mechanisms), and (iii) allocating risks and responsibilities.

The case of the Blagoveshchensk - Heihe Bridge, presented in Annexure 2, highlights a PPP structure through a concession agreement. A key feature of this project is the differentiated approach of the countries towards public and private parties' involvement, with the private sector playing a prevailing role in both project delivery and financing. This minimises the use of public budgetary funds and ensures effective risk allocation and resource distribution through a mixed financing model that combines private capital with moderate public support.

The concessionaire retains the right to select engineering and project preparation contractors, including both Russian and Chinese firms. This underscores the private partner's leading role in technical and managerial decisions. This PPP structure demonstrates how large-scale infrastructure projects can be developed primarily through private funding, with the public sector playing a supportive and regulatory role.

#### 6.4.1 Key risks to financing cross-border infrastructure projects

It is of critical importance to undertake a thorough risk assessment and develop robust risk mitigation strategies when planning and implementing cross-border infrastructure projects as the type and level of risk and the allocation of such risks will have a direct impact on the ability and willingness of the private sector to invest in the project and the risk 'premium' that the governments will have to pay if the risk is not properly shared or mitigated. Therefore, an essential part of project structuring is the identification and allocation of risks between the contracting authority and the private partner. However, this risk allocation can only occur once all the project risks have been properly identified and assessed.

Examples of cross-border risks that affect financing decisions include:

**Geopolitical Risks:** Developing cross-border infrastructure projects involves several geopolitical risks. Some of the key risks relevant to the African context are:

- **Political violence, conflict and associated security concerns:** Limited state presence, inability to deliver basic services, and conflict with neighbouring countries can pose significant risks to project implementation and sustainability.
- **Sovereign risks:** In low-income countries, sovereign risks are a major impediment to mobilising the required financing on reasonable terms. This includes risks related to government actions or inactions that could affect the project's viability.
- **Regulatory and contractual risks:** These are perceived as significant barriers to investment in infrastructure. Uncertainty in regulatory frameworks and the enforcement of contracts can deter private investment.

**Construction Risks:** Construction risk is a key risk for most infrastructure projects. However, construction risks are typically magnified on cross border projects as the responsibilities for constructing the different components of the infrastructure will lie with different agencies across the countries involved in building the project. As a result, there will likely be an increased risk of cost overruns and construction delays.

**Revenue / Demand Risk:** The development of cross-border infrastructure projects often faces fiscal uncertainty and demand risk due to overly optimistic demand forecasts, leading to inaccurate predictions about future usage and revenues. External project events like economic downturns, political instability, or regulatory changes can also impact demand, reducing anticipated benefits and financial returns. Consequently, the project may face financial constraints, struggle to meet obligations, or face insolvency. In the worst-case scenario, insufficient revenue to cover loan repayments can lead to defaults, jeopardising the project's overall viability and causing financial losses for investors and stakeholders.

**Foreign Exchange / Currency Risk:** Managing currency risk is a complex financial challenge in cross-border projects that involve different currencies. The project's financial structure must be able to handle multiple currency fluctuations and risks related to currency convertibility and transferability. Currency fluctuation risks are influenced by the type of asset, project costs, and revenues. If project revenues and debt financing are in the same currency, it creates a natural hedge against exchange rate and convertibility risks. Conversely, if revenues are in local currency while debt financing is in a foreign currency, this mismatch can introduce significant exchange rate risk. While hedging instruments can be used to mitigate currency risks in emerging markets and developing countries, they are often not cost-effective due to their high costs and there is also usually very limited availability of long-term currency risk mitigation options for many local currencies.

#### 6.4.2 Risk Mitigation

The standard approach to risk allocation is that risk is allocated to the party best able to manage it. Some of these risks can be partially managed and mitigated through the use of guarantees and other derisking instruments that can be provided by governments and MDBs/DFIs. Guarantees can play a crucial role in mobilising private sector financing for cross-border energy and transport projects by mitigating various risks and enhancing the creditworthiness of these projects:

- **Guarantees can help mitigate political and regulatory risks:** Guarantees and political risk insurance instruments can help mitigate political and regulatory risks, which are often significant barriers to private investment in developing countries. These risks include changes in laws, expropriation, and breach of contract by the government.
- **Guarantees can help mitigate demand/revenue risk:** Guarantees help mobilise private sector financing by providing credit enhancement instruments e.g. by guaranteeing the payments due from public sector off takers or from a large private user / consumer.
- **Guarantees can mobilise new sources of financing:** Guarantees can be structured in various ways to mobilise new sources of financing, such as local currency private financing and financing from sovereign wealth funds and pension funds.

However, the provision of guarantees and other derisking instruments to support private sector mobilisation will give risk to FCCLs for the governments involved in the cross-border project and, as such, it is important that each government carefully assesses, approves and manages these FCCLs.

#### 6.5 Importance of Robust Project Management

Aside from financing, another critical aspect of successful project implementation is the management of the cross-border project post award to ensure that the project is being implemented on time and within budget and that the intended benefits from the project materialise. Project management is more complex for a cross-border project compared with a national project as these projects typically span multiple sectors and jurisdictions, requiring robust coordination across

several PMUs, sustained capacity, and clarity of roles throughout the entire lifecycle from planning through to implementation, operation, and maintenance.

### **6.5.1 Institutional Fragmentation and Capacity Constraints**

One of the most common challenges in cross-border infrastructure management is institutional fragmentation. Ministries or agencies responsible for planning, finance, transport, energy, and environment often operate in silos within countries and across borders. This fragmentation can undermine the alignment of priorities, lead to the duplication of efforts, and give rise to inconsistent timelines.

To overcome fragmentation, countries must establish or strengthen regional coordination bodies that can provide a strong platform for joint planning and operational oversight. These may take the form of regional secretariats, task forces, joint committees or inter-ministerial working groups.<sup>41</sup> Examples include the Eastern Africa Power Pool (EAPP) Coordination Centre and the ECOWAS Centre for Renewable Energy and Energy Efficiency, both of which have helped coordinate policy, planning, and implementation.

Another common challenge arises from the fact that institutional capacity can typically vary significantly across participating countries. In some cases, there may be weak regulatory bodies, limited technical expertise, or under-resourced implementing agencies. These constraints make it difficult to adhere to international standards, manage complex procurement, or effectively monitor project delivery.

Long-term success therefore requires investment in institutional capacity, not just in technical skills, but also in systems, procedures, and human capital. MDBs and regional organisations can play a critical role by providing technical assistance, training, and peer learning platforms. Capacity-building efforts should target both national and regional institutions, focusing on areas such as project appraisal, financial modelling, contract management, and regulatory reform.

### **6.5.2 Lifecycle Management**

Lifecycle management of infrastructure, including asset maintenance, rehabilitation, and performance monitoring, should be embedded in the institutional framework from the outset. Budget allocations, contractual obligations, and institutional responsibilities must be clearly delineated and enforced. For instance, in regional road corridors, performance-based contracts have emerged as a valuable tool. Under these contracts, payments are tied to maintenance outcomes rather than input costs, incentivising long-term quality and durability. Implementing such mechanisms requires both government capacity and flexibility in budgeting and contract enforcement. Joint institutions for operations and maintenance should also be established under law.

### **6.5.3 Managing Change and Adaptive Governance**

Cross-border projects span multiple political cycles and are often affected by shifting development priorities, fiscal constraints, or leadership changes. As such, project management must be adaptive. This means designing institutions that are capable of managing change through scenario planning, periodic review mechanisms, and flexibility in contractual arrangements.

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<sup>41</sup> [Framework for the Resolution of Disputes Under the Belt and Road ...](#)

When institutional frameworks are too rigid or overly centralised, they struggle to respond to unforeseen risks or stakeholder concerns. Conversely, adaptive governance, where decision-making authority is shared, feedback is institutionalised, and performance is reviewed regularly can often help sustain momentum and legitimacy.

#### KEY TAKEAWAYS

- **Financing and Management Challenges:** Cross-border infrastructure projects face unique challenges due to their scale, complexity, and involvement of multiple countries.
- **Importance of Lifecycle Financing and Funding:** It is crucial to consider not only the upfront capital costs of the projects but also the long-term funding needs and sources to sustain operations and maintenance over the life of the project.
- **Importance of Multi-Country Financing Coordination:** Each participating country must secure financing for its segment of the project to ensure that the intended overall project benefits materialise.
- **Importance of Fair Cost and Revenue Sharing:** Costs should fairly reflect each country's benefit from the project and revenue mechanisms will require coordinated regulations to ensure revenue sharing based on cost and investment value.
- **Importance of Assessing all Potential Sources of Financing:** Financing can come from several sources including public financing, national development banks, multilateral development banks, development finance institutions, regional development banks, financial intermediaries and the private sector.
- **Importance of Government Support to Ensure Financial Viability:** Government should carefully assess and plan how to manage future FCCL before choosing to support the project to improve its financial viability for private sector investors.
- **Importance of Project Structuring to Mobilise Private sector Capital:** Private sector participation will very much depend on risk-return profiles and cross-border projects typically have an amplified risk profile due to the involvement of multiple countries and stakeholders. Key risks that need to be mitigated include geopolitical risks, construction risks, revenue/demand risks, and foreign exchange risks.
- **Importance of Robust Project Management Units:** Strengthening regional coordination bodies and investing in institutional capacity-building are essential for success.
- **Importance of Lifecycle Management:** Transparent, and efficient lifecycle management should be institutionalised with clear budget and contractual frameworks.
- **Importance of Managing Change and Adaptive Governance:** Adaptive governance with shared decision-making, institutionalised feedback, and flexibility in contracts supports resilience and sustains project momentum.

The following is a broad set of questions along with associated recommendations and good practices aimed at addressing Finance and Management challenges. These are not exhaustive and can be supplemented by partnering countries during the early planning phase.

#### **a) Financing Needs and Financial Viability**

##### **GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS**

- What are the upfront capex costs of the project?
- What are the ongoing O&M costs for the project over its expected life?
- Have these costs been confirmed by independent technical experts and engineers?
- Have sensitivity scenarios been run on these costings to reflect future potential changes in material costs, labour costs, construction timetables etc.?
- Do the upfront capex costs have contingencies built in to deal with potential cost overruns?
- Is the project sustainable from a financing and funding perspective for each of the countries involved?
- Have all the potential revenue raising options been assessed, including the use of tolls, tariffs, land-value capture mechanisms?
- Has an agreement been reached to share the costs and the financing?
- In situations where there is an imbalance in the economic benefits derived by each country from the project, has there been an agreement to redistribute the benefits?

##### **SELECTED TOOLS AND GOOD PRACTICES**

- Undertake robust financial analysis as part of the project appraisal process.
- Ensure that the capex and O&M costs are signed off by independent engineers and experienced cost consultants.
- Develop a comprehensive financial model with sources and uses of funds.
- Ensure various sensitivities are run to reflect changes in underlying assumptions.
- Regularly update the financial model to reflect any changes in project and/or financing costs.
- Enter into a formal agreement between countries to allocate financing costs and responsibilities for raising the financing.

- Engage with all sources of financing as early as possible to assess the level of interest and respond to any questions or concerns.

## b) **Financing Sources**

### **GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS**

- What are the potential sources of financing?
- Have all the potential sources of financing been considered?
- Are there any specific conditions or requirements to access financing from these sources?
- Has there been any interest shown in financing the project from MDBs, DFIs, private sector investors/lenders etc?
- Is there the potential for private sector investment in any component of the cross-border project?
- Can the project be structured to help increase the ‘bankability’ of the project from a private sector financing perspective e.g. the use of full cost recovery tolls on a cross-border road project?
- Is government support needed to ensure the financial viability of the project from a private sector perspective?
- Have the countries individually or jointly approached MDBs/DFIs to discuss financing support (including direct loans and the provision of guarantees and other forms of support to help mobilise private sector financing)?
- Have the countries agreed to coordinate the financing of their respective sections?
- Is it possible to raise the financing through the respective countries establishing a single institution that has the responsibility for building, operating and maintaining the overall project?

### **SELECTED TOOLS AND GOOD PRACTICES**

- Undertake a ‘sources of financing’ mapping exercise to identify all the potential sources of finance for the cross-border project.
- Jointly prepare and deliver presentations to potential sources of financing.
- Enter into formal agreements to allocate responsibilities for financing to each of the countries.

### c) Funding Sources

#### GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS

- What are the funding sources for each country to ensure that they are able to operate and maintain their section of the cross-border project over its lifecycle e.g. tolls, tariffs, public budget?
- Have all potential sources of funding been explored?
- Is the project sustainable (i.e. affordable) from each government's perspective based on the sources of funding?
- Is there an agreement in place on the level of tolls and tariffs and how increases should be regulated?
- Has an agreement been reached on revenue sharing (if needed)?

#### SELECTED TOOLS AND GOOD PRACTICES

- Map out all potential sources of revenue that can be used to help fund the project.
- Assess whether there needs to be a revenue sharing mechanism to ensure that the economic benefits of the project are shared between the participating countries.
- Develop a governance framework to regulate the toll and tariff regime that will be applied to the cross-border project.

### d) PPP Structuring

#### GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS

- Would the project be able to generate sufficient revenues to cover debt servicing and equity returns to a concessionaire?
- Should the project be structured for one concessionaire or procured individually by each country? How to ensure coordination and consistency between the different concessions if procured individually?
- Have all project risks been identified, allocated and mitigated?
- Will any government support be needed to improve the 'bankability' of the project?
- What support can be provided by MDBs/DFIs to help mobilise private sector financing through the derisking of the project structure (e.g. direct loans, partial payment guarantees, political risk insurance)?

#### SELECTED TOOLS AND GOOD PRACTICES



- Hiring experienced PPP transaction consultants and lawyers will be essential to help identify opportunities for private sector investment and optimise the transaction structure.
- The PPP Risk Allocation Tool can help governments identify and allocate risks.
- The PPP Fiscal Risk Assessment Model<sup>42</sup> jointly developed by the IMF and WB can help governments assess and manage fiscal risks associated with infrastructure PPPs.

#### e) Project Management

#### GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS

- Are there sufficient resources at the country level to properly manage the project over its lifecycle?
- If not, what resources are needed and how can these resources be mobilised?
- Has each country established a Project Management Unit to manage the construction and operation of its component of the cross-border project?
- Has a Joint PMU been established with representatives from each of the countries to oversee the successful implementation of the project?
- Has a dispute resolution framework and process been agreed to deal with any disputes between countries?
- Has a framework been agreed to monitor the performance of the project based on pre-agreed KPIs?
- Has a process been agreed to address issues (and allocate any associated costs) identified during the implementation process?
- Has a stakeholder consultation strategy been developed and deployed to address any issues and concerns raised by stakeholders during the implementation of the project?

#### SELECTED TOOLS AND GOOD PRACTICES

- Establish country level PMUs and a Joint PMU.
- Develop a Stakeholder Engagement Plan.
- Use project management software to feed into a project dashboard to monitor progress.
- Develop a standardised reporting template.
- Ensure KPIs are set and agreed.
- Develop a robust dispute resolution mechanism.
- Cross-Border Governance and Framework Tool.

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<sup>42</sup> <https://ppp.worldbank.org/public-private-partnership/library/public-private-partnerships-fiscal-risk-assessment-model-pfram-2019-version-2-0>



# Chapter 7:

## Stakeholder Consultation

In addition to aspects covered by the conceptual framework outlined in Chapter 3, it is important to ensure that cross-border infrastructure projects benefit from a broad-based stakeholder consultation process including on environmental and social impacts. Stakeholder consultations should apply to all infrastructure investments, especially with the private sector, since this can help improve the design of the project and put in place mechanisms to support private sector investments. Nevertheless, cross-border infrastructure projects entail more complex environmental and social issues. In this context, the adoption of MDB's policy requirements would add value by providing a mechanism for public engagement with stakeholders and support integration of associated measures. This chapter discusses some key environmental and social considerations that are important to bear in mind to ensure viability of projects.

### 7.1 Introduction

Effective cross-border infrastructure development hinges on robust stakeholder consultations, to analyse and identify actions to account for the environmental and social impacts of projects, in line with policies in each of the countries involved. Coordination among national and regional authorities can help to promote integration and functionality of infrastructure projects, reducing delays and enhancing efficiency. Engaging all relevant stakeholders from the outset of the project, including local communities and non-governmental organisations, fosters transparency and builds trust, which is crucial for the successful implementation and sustainability of such projects.<sup>43</sup>

Additionally, accounting for environmental and social impacts is vital to obtaining approvals thereby enabling the timely delivery of projects. These elements collectively contribute to the resilience and success of cross-border infrastructure initiatives.

### 7.2 Importance of Stakeholder Consultations

Experience from regional development projects highlights the importance of having a structured and meaningful approach to stakeholder engagement.<sup>44</sup> For instance, the EAPP has engaged utilities, regulatory authorities, civil society, and investors throughout its planning and implementation phases. Structured and meaningful engagement builds trust, generates social license, and increases the political resilience of projects by embedding them within domestic constituencies. In addition, consultations can be used to enhance the broader spillover effects of the cross-border infrastructure. For instance, in the case of a road corridor connecting a port and a landlocked country, consultations can help identify the needs of people along the corridor and create links (i.e. national and regional roads) to connect local markets to the corridor.

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<sup>43</sup> See [IMPROVING CROSS BORDER MOBILITY AND TRADE - Department of Transportation and Engaging stakeholders in areas of cross-border infrastructure investment](#)

<sup>44</sup> [Delivering and Enabling Impactful Cross-Border Solutions](#)

**7.2.1 A structured approach should begin at the project identification stage and evolve through the planning, financing, and implementation phases**

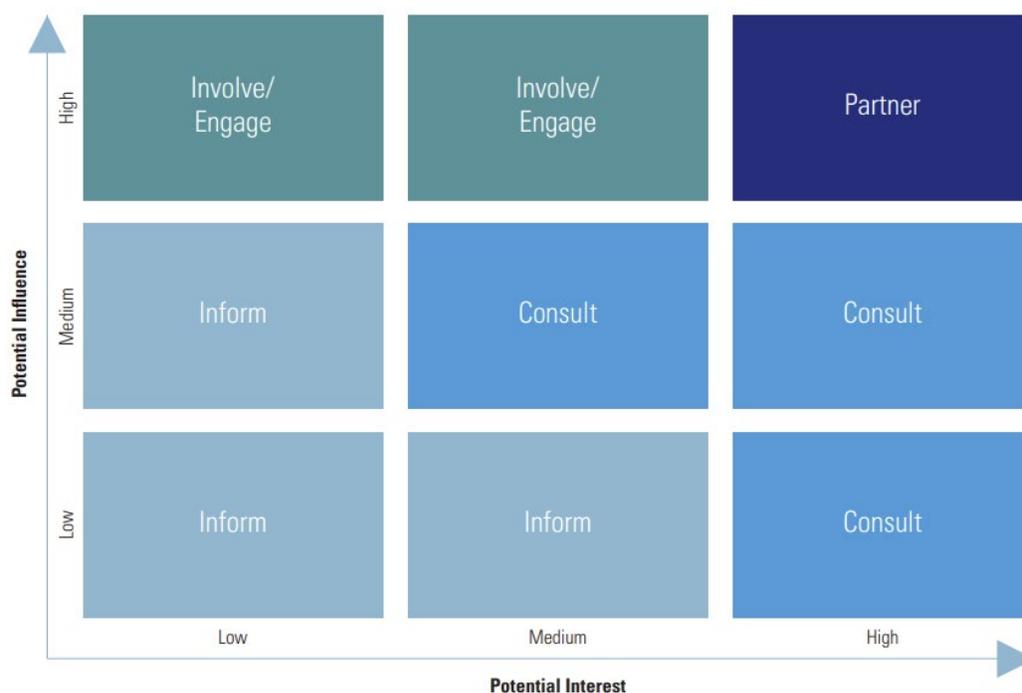
It should include consultations with national and sub-national government agencies, affected people, vulnerable groups, project workers, civil society organisations, businesses, , utilities, and community representatives.<sup>45</sup> One practice worth highlighting is to encourage public participation in the planning and implementation of cross-border infrastructure projects, which can also help maximise the benefits of the project. This can be achieved through public consultations, information campaigns, and participatory decision-making and monitoring processes.

**7.2.2 Undertaking stakeholder consultations by meeting or engaging relevant stakeholders using multiple channels in inclusive and culturally appropriate ways that enable a clear and understandable disclosure of project scope and its impacts.**

Given the cross-border nature of the projects, it is essential that public consultations and participation recognise cultural and language differences, and resources deployed to mitigate these. Some examples of mechanisms for engagement include bilateral consultations, regional fora, joint working groups, and adaptive consultation platforms, and digital platforms for public input. Moreover, these mechanisms need to be appropriate and accessible to project affected people.

**7.2.3 Conducting effective stakeholder consultations involves seven key steps**

Figure 6: Stakeholder Mapping Matrix



Source: [https://infrastructurecommission.scot/storage/224/Appendix\\_B.pdf](https://infrastructurecommission.scot/storage/224/Appendix_B.pdf)

<sup>45</sup> Surveys can be a powerful tool to collect necessary information for further analysis, [State of Infrastructure and Engagement Annual Survey – NextGen Engagement](#)

## THESE HELP TO ENSURE INCLUSIVENESS, TRANSPARENCY, AND MEANINGFUL ENGAGEMENT:

- Identifying Stakeholders
- Planning the Consultation
- Engaging Early and Often
- Facilitating Inclusive Participation
- Gathering and Incorporating Feedback
- Communicating Outcomes
- Monitoring and Evaluation<sup>46</sup>

The Stakeholder Mapping Matrix (see Figure 6) is a valuable tool to help identify and analyse stakeholders based on their influence and interest in a project. This matrix helps project managers better understand the dynamics between different stakeholders and tailor their engagement strategies / levels accordingly.

### 7.2.4 Stakeholder engagement should be an iterative process

Stakeholder engagement for cross-border projects is inherently more complex than for national ones. While each party to cross-border projects is free to set its own economic, social, and environmental objectives, it is essential to take prior commitments of all project parties and partners into account. Integrating these considerations ensures alignment with all relevant policies and plans – including nationally determined climate policies and long-term resilience requirements for infrastructure assets. These considerations can also be an important investment decision factor for private investors and DFIs – a key potential source of finance for cross-border projects. Finally, consultations with local stakeholders are essential to gather broad project support and address concerns such as perceived unfair benefit sharing. To manage this stakeholder complexity, governments and regional institutions should create feedback loops and adaptive consultation platforms that map key stakeholders and allow them to shape project design and operations over time. In complex cross-border settings, this requires culturally sensitive and linguistically inclusive approaches that accommodate differing social norms and levels of institutional capacity.

As an example, the *Integral Sanitation Program for the Cities of the Uruguay River Basin* project (involving Argentina, Brazil and Uruguay) is a cross-border program that helped address the river's contamination caused by untreated wastewater discharges from the towns within the Uruguay River Basin. The stakeholder consultation helped shape several beneficial project components such as the formation of the Uruguay River Administrative Commission and the identification of local economic development opportunities.<sup>47</sup>

Other cross-border infrastructure projects provide strong examples of how stakeholder support can be strengthened through (i) local jobs provision, (ii) skills training, (iii) connecting isolated communities and (iv) consideration of environmental impacts. The Monsoon Cross-border Wind Power Project (see Annexure 2) is having a positive impact on the local community in Lao PDR

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<sup>46</sup> For more guidance on how to implement these steps, please see (1) [WHOLE-OF-SOCIETY APPROACHES TO INCLUSIVE STAKEHOLDER ENGAGEMENT](#); (2) [17. Conducting stakeholder consultations | Capacity4dev](#); (3) [Guidance on engagement with Indigenous Peoples, Local Communities and ...](#)

<sup>47</sup> 2024 G20 Report on Cross-border Infrastructure, Document No. 4, [Infrastructure \(IWG\)](#)

through community development programs such as supply of medical equipment and the renovation of school facilities. The Armenia Northern Corridor Modernisation / Sadakhlo-Bagrashen Bridge Project (see Annexure 2) developed an Environment and Social Action Plan that included the preparation of a Stakeholder Engagement Plan, Health and Safety and Human Resources Plans and the implementation of a Waste Management Plan which includes adequate disposal of demolition waste.

To ensure all stakeholders are considered at the onset of project development, geospatial data analysis can be used as a powerful tool to map and visualise the impact of various events on different communities. For instance, using a transport assessment framework together with geospatial data on population and road networks, Asian Infrastructure Investment Bank has conducted a study on the environmental impact of road investment projects, including the Gujarat Rural Roads project.<sup>48</sup> A technical note in Annexure 1 explores the role of Geographic Information Systems (GIS) in enhancing infrastructure planning, monitoring, and evaluation. It highlights how GIS supports MDBs in making informed decisions, especially for cross-border projects. Examples from AIIB and other development initiatives illustrate GIS applications in real-world contexts. It is intended for project financiers, government agencies, regional bodies, and other stakeholders involved in the design, implementation, and evaluation of cross-border infrastructure projects.

#### KEY TAKEAWAYS

**Stakeholder consultations are vital to success:** It is critical to engage stakeholders early and continuously, including governments, civil society, and local communities.

**Environmental considerations could be integrated:** Accounting for environmental impacts, such as complying with requirements in the Uruguay River Basin sanitation project, is critical to ensure compliance with relevant policies.

The following is a broad set of questions along with associated recommendations and good practices aimed at addressing Stakeholder Consultation challenges. These are not exhaustive and can be supplemented by partnering countries during the early planning phase.

#### a) Stakeholder Identification and Consultations

##### GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS

- Has each of the countries undertaken a stakeholder mapping exercise at the country level and jointly at the overall project level?
- Has a stakeholder engagement plan been developed at the country level and overall project level?

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<sup>48</sup> [AIIB Working Paper 13 Road Transport Performance in India - July 2023](#)

- Have efforts been made to try and identify and mitigate the issues that will be of particular concern/importance to?
- Have country level and project level grievance redress mechanisms been established and functioning?

## **SELECTED TOOLS AND GOOD PRACTICES**

- Using a Stakeholder Mapping Matrix<sup>49</sup>
- Establishing a Project-affected People's Mechanism<sup>50</sup>
- Developing a Stakeholder Management Plan
- Instituting a robust grievance redress mechanism

### **b) Sustainability**

## **GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS**

- Has a comprehensive ESIA been undertaken as part of the project appraisal?
- Based on the ESIA's, has each country developed and put in place a Social and Environmental Management?

## **SELECTED TOOLS AND GOOD PRACTICES<sup>51</sup>**

- Undertaking an integrated ESIA<sup>52</sup>
- Developing a Social and Environmental Management Plan<sup>53</sup>
- Implementing systems to monitor environmental impacts and adapt strategies depending on requirements
- Utilising geospatial data to map out affected areas and visualise the impact on different communities (see Annexure 1)
- Adapting AIIB Environmental and Social Framework (see Annexure 1)

### **c) Social Considerations**

## **GUIDING QUESTIONS/IMPORTANT CONSIDERATIONS**

- Have social considerations been included as part of the design and implementation process?

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<sup>49</sup> [StakeholderEngagement\\_5.qxp\\_Layout 1](#)

<sup>50</sup> [How We Assist You - Project-Affected People's Mechanism](#)

<sup>51</sup> The listed tools and practices are not exclusive, and their applicability should be assessed case by case.

<sup>52</sup> (1) [Environmental and Social Framework - Framework Agreements - AIIB](#) ; (2) [Environmental and social impact assessments](#)

<sup>53</sup> [ESSFEN.pdf](#)

- Has the project been designed to help connect isolated communities and vulnerable groups to improve access to essential services such as healthcare and education?
- Can some of the project contracts be set aside for disadvantaged groups?

### **SELECTED TOOLS AND GOOD PRACTICES**

- Developing Set Aside Programs that allocated a specific percentage of procurement contracts to women owned and small businesses

## Chapter 8:

# Conclusions and Way Forward

While cross-border infrastructure projects offer substantial benefits including economic growth, enhanced regional connectivity, and improved social outcomes, they also present unique and complex challenges compared to national projects. These challenges stem from the involvement of multiple countries and stakeholders, each with distinct priorities, institutional capacities, and regulatory environments. In addition to coordination challenges, such projects often face financing constraints, institutional and legal hurdles, and resilience and sustainability concerns that can delay or derail implementation.

To support stakeholders in navigating these challenges, the Cross-Border Infrastructure Toolkit provides a concise framework for identifying and addressing the key challenges associated with cross-border infrastructure projects. The Toolkit is grounded in the conceptual framework outlined in the report: *Delivering Cross-border Infrastructure: Conceptual Framework and Illustrative Case Studies (AIIB, EBRD, and IDB)*, October 2024. The Toolkit represents an analytical framework and does not provide any binding principles or guidance.

The Toolkit's recommendations and tools offer practical guidance for policymakers, implementing agencies, RECs and other stakeholders. By adopting best practices, fostering strategic partnerships, and leveraging innovative technologies, stakeholders can more effectively plan, finance, and execute cross-border infrastructure projects. The case studies included in the annexure serve as illustrative examples, highlighting successful approaches and lessons learned from real-world projects.

This initial version of the Toolkit has been designed as a 'dynamic' resource, with the intention of expanding over time to include additional tools and case studies.

To enhance the utility and impact of the Toolkit, stakeholders may consider supplementing this Toolkit by (i) identifying a pipeline of prioritised cross-border projects on a regional basis; (ii) providing more detailed guidance on each dimension of the framework; and (iii) developing sector specific cross-border toolkits.