



NKE13: PPP AND FINANCING EXPERT



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1 Analysis of the enabling environment and current situation in Ethiopia

1.1 Institutional and regulatory framework

The main regulatory framework for the development of road, railway and logistics infrastructure as well as for private investment in Ethiopia is presented in the following table:

Sector	Regulation
Executive Organs	Proclamation No. 1263/2021¹ - Definition of Powers and Duties of the Executive Organs Proclamation
Transport	Proclamation No. 486/2005 – Transport Proclamation. Establishes the Federal Transport Authority
Road transport	Proclamation No. 247/2011² – Ethiopian Roads Authority Re-establishment Council of Ministers Regulation
Road transport	Proclamation No. 66/1997³ - Road Fund Establishment Proclamation
Road transport	Proclamation No. 843/2014⁴ – Toll Roads Proclamation. Establishment of the Ethiopian Pay Toll Road Enterprise (EPTRE)
Road transport	Proclamation No. 1274/2022⁵ - Road Transport Proclamation
Railway transport	Proclamation No. 1048/2017⁶ - Railway Transport Administration (RTA) Proclamation
Railway transport	Proclamation No. 141/2007⁷ – Ethiopian Railway Corporation Establishment Council of Ministers Regulation. Establishes the Ethiopian Railway Corporation (ERC)
Railway transport	Proclamation No. 1014/2017⁸ – Bilateral Agreement between the Government of the Federal Democratic Republic of Ethiopia and the Government of the Republic of Djibouti for the Development, Operation and Management of Standard Gauge Railway Network Ratification Proclamation
Logistics	Proclamation No. 549/2007⁹ – Maritime Sector Administration Proclamation. Regulates and establish the Ethiopian Maritime Authority (EMA), including also dry ports and transport logistics infrastructures.
Logistics	Proclamation No. 255/2011 – Ethiopian Shipping and Logistics Services Enterprise Establishment Council of Ministers
PPP	Proclamation No. 1076/2018¹⁰ – Public Private Partnership Proclamation

Table 1. Regulatory Framework

¹ Proclamation No. 1263/2021 - Definition of Powers and Duties of the Executive Organs Proclamation ([link](#))

² Proclamation No. 247/2011 – Ethiopian Roads Authority Re-establishment Council of Ministers Regulation ([link](#))

³ Proclamation No. 66/1997 - Road Fund Establishment Proclamation ([link](#))

⁴ Proclamation No. 843/2014 – Toll Roads Proclamation ([link](#))

⁵ Proclamation No. 1274/2022 - Road Transport Proclamation ([link](#))

⁶ Proclamation No. 1048/2017 - Railway Transport Administration (RTA) Proclamation ([link](#))

⁷ Proclamation No. 141/2007 – Ethiopian Railway Corporation Establishment Council of Ministers Regulation ([link](#))

⁸ Proclamation No. 1014/2017 – Bilateral Agreement ([link](#))

⁹ Proclamation No. 549/2007 – Maritime Sector Administration Proclamation ([link](#))

¹⁰ Proclamation No. 1076/2018 – Public Private Partnership Proclamation ([link](#))

1.1.1 Framework for transport and logistics infrastructure development

The Ethiopian Institutional framework for the transport and logistics in Ethiopia is governed by the Ministry of Transport and Logistics (MoTL), directly depending on the President's Office. According to the Proclamation No. 1263/2021¹¹, the MoTL has, among others, the following main duties in relation to inland transport and infrastructure development in Ethiopia:

- initiate policies, strategies, programs and laws that ensure sustainable development and competitiveness of the transport and logistics sector; implement the same upon approval;
- ensure the integration, efficiency and accessibility of land, air and sea transportation services, and thereby realize the country's development strategies and meet the needs of transport and logistics of development hubs and corridors;
- in collaboration with Ministry of Urban and infrastructure and other concerned organs, prepare master plan of the country's transport and comprehensive logistics infrastructure; follow up its implementation;
- establish a system that promote the participation and role of the private sector in transport and logistics development; create conducive condition for implementation of the same;
- ensure that the national logistic system with respect to import and export is efficient and competitive;
- follow up the operations of the Ethio-Djibouti Railways in accordance with the agreement concluded between the two countries; monitor the same.

Furthermore, according to the Proclamation No. 1263/2021¹², the Ministry of Urban and Infrastructure Development (MUID) is the responsible authority for infrastructure development in Ethiopia. Its main duties in relation to transport and logistics infrastructure development are the following:

- prepare, in collaboration with the concerned organs, national integrated infrastructure master plan; follow up and monitor its implementation;
- ensure that national road infrastructure works are carried out on the basis of economic efficiency, importance and equitable access;
- prepare compensation formula and unit price for land and property expropriated for public interest;
- support and follow up urban development, construction and infrastructure activities of Addis Ababa and Dire Dawa city administrations.

In addition to planning and policy development, the ministries are accountable for coordinating all other planning and regulatory institutions and authorities. These institutions and authorities are responsible for developing, implementing, and regulating policies at their sectoral level in all aspects related to transport and logistics infrastructure. Proclamation No. 1263/2021 defines the relationship between a ministry and institutions accountable to it. The main institutions in relation to transport and logistics infrastructure are the following:

- Ethiopian Roads Administration (ERA): accountable to the MUID, was established by Proclamation No. 1263/2021 and absorbs all the responsibilities and duties from both, the Ethiopian Road Fund (ERF) and the Ethiopian Road Authority.

¹¹ Proclamation No. 1263/2021 Definition of Powers and Duties of the Executive Organs Proclamation – Government of Ethiopia – January, 2022 ([link](#))

¹² Proclamation No. 1263/2021 Definition of Powers and Duties of the Executive Organs Proclamation – Government of Ethiopia – January, 2022 ([link](#))

- Ethiopian Roads Authority, *former*. established by Proclamation No. 80/1997 The objective of the Authority is to develop and administer highways and to ensure the standard of road construction and to create a proper condition on which the road network is coordinately promoted. However, the reorganization of executive organs established in Proclamation No. 1263/2021 states that the Ethiopian Roads Administration affiliates all powers of this authority.
- Ethiopian Road Fund (ERF), *former*. established by Proclamation No. 66/1997 with the objectives of finance the maintenance of roads and road safety measures. However, the reorganization of executive organs established in Proclamation No. 1263/2021 states that the Ethiopian Roads Administration affiliates all powers of this authority.
- Federal Transport Authority (FTA), *former*. established by Proclamation No. 247/2011 with the objective of develop and administer roads; create conducive conditions for the coordinated development; and ensure the maintenance of standards in road construction. However, the reorganization of executive organs established in Proclamation No. 1263/2021 states that the Ministry of Transport and Logistics affiliates all powers of this authority.
- Ethiopian Maritime Authority (EMA): accountable to the MoTL, was established by proclamation No. 549/2007 with the purpose of ensure transport operation and movement of goods of the country are economical; plan, coordinate and enforce such operation; and seek ways and means for the promotion and development of multimodal, marine, in-land water transport and ensure the availability of uninterrupted resource of skilled manpower in the maritime sector for the country

In addition to the respective authorities, a public enterprise is established in Ethiopia for the operation of the specific case of Pay Toll Roads, some cases in collaboration with the private sector.

- Ethiopian Pay Toll Road Enterprise (EPTRE): established by Proclamation No. 843/2014 with the objective of enforce the penalties imposed under the proclamation and shall fix the toll tariff applicable for use of toll roads.
- Ethiopian Railway Corporation (ERC) was established by proclamation No. 141/2007 with the purpose of building railway infrastructure; operate the cargo and passenger railway; and to engage in other related activities necessary for the attainment of its purpose.
- Ethio-Djibouti Railway Company (EDR) was created after the bilateral agreement established in Proclamation No. 1014/2017. This company is tasked with operating on national territory along the available national routes on this connection
- Ethiopian Shipping and Logistics Services Enterprise (ESLSE) was established by proclamation No. 255/2011 with the purpose of provide services to stevedoring, shore-handling, dry port, warehousing and other logistics services for import and export of goods.

Furthermore, the Ministry of Transport and Logistics can delegate all its responsibilities to non-federal Government Institutions that will oversee all operations at city administrations: Addis Ababa Transport Bureau (AATB) and Dire Dawa Administration Transport Bureau (DDATB)

1.1.2 Framework for private investment in infrastructure

Ethiopia's regulatory environment for PPPs reflects a growing commitment to fostering collaboration between the public and private sectors for infrastructure development. The Ethiopian government has recognized the significant role that PPPs can play in addressing the country's infrastructure gaps and promoting economic growth. To this end, it has implemented a comprehensive legal framework, established dedicated institutions, and introduced transparent processes to facilitate PPP projects.

The recently enacted Public-Private Partnership Proclamation No. 1076/2018¹³ (the PPP proclamation) aims at facilitating and improving private sector participation in infrastructure financing by:

- Creating a favorable framework for promoting and facilitating the implementation of privately financed project to support Ethiopian economic growth;
- Enhancing transparency, fairness, Value for Money, efficiency, and long-term sustainability;
- Improving quality of Public Service Activity; and
- Maintaining macroeconomic stability by reducing growth in public debt.

The PPP proclamation defines the provisions for the establishment of the Public Private Partnership Board (the PPP Board), comprised by members of different ministries and chaired by the Minister of Finance. The PPP Board is responsible for the approval of PPP project structure, significant changes to the risk allocation or expected cash flow, significant amendments to the Project Agreement, tender or negotiation results; identify the appropriate Contracting Authority, recommend specific taxes or incentives and government support.

The PPP Directorate General (PPP-DG), established within the Ministry of Finance, shall act as secretariat to the Board. The objective of the PPP-DG is to achieve the country's development objectives by ensuring that the public private partnerships are carried out as per the provisions of the PPP proclamation.¹⁴ The PPP-DG is mainly responsible for promoting private participation in infrastructure development, provide technical assistance and support respective authorities, make recommendations, develop and implement guidance related to project preparation and procurement, identification and dissemination of information regarding projects contemplated as potential PPPs, among other duties defined in the PPP proclamation.

In March 2021, the PPP Board, following an initiative of the PPP Directorate General, granted approval for a total of twenty-three (23) projects in the PPP pipeline¹⁵. This portfolio encompasses a variety of sectors, comprising eight solar photovoltaic projects, six hydro-power projects, three toll road projects, five wind power projects, one Affordable Housing Development project, and one Petroleum Storage Depot project. The three projects identified in the transport sector are the Adama-Awash Expressway (125 km), the Awash-Mieso Expressway (72 km) and the Mieso-Dire Dawa Expressway (160 km), all of them consisting un upgrading the existing road (brownfield).

The PPP proclamation also establishes the provisions for project development and approval procurement (including open bidding, two-stage bidding, competitive dialogue, direct negotiations and unsolicited proposals) and implementation of the PPP agreement.

Overall, the PPP Proclamation presents the following key features:

- Applies to various infrastructure sectors, including the transport and logistics sector;
- establishes a PPP Unit (the PPP Directorate General), responsible for overall coordination and implementation of PPP projects;
- outlines procedures for identifying potential PPP projects and selecting private partners, emphasizing transparency, competition, and value for money considerations;
- specifies guidelines for the procurement and selection of private partners, promoting fair and competitive bidding processes to ensure transparency and equal opportunities for interested parties;

¹³ Proclamation No. 1076/2018 – Ethiopia's Ministry of Finance – February, 2018 ([link](#))

¹⁴ Proclamation No. 1076/2018 – Ethiopia's Ministry of Finance – February, 2018 ([link](#))

¹⁵ PPP Project Pipeline 2020/21 - Ethiopia's Ministry of Finance – March 2021 ([link](#))

- addresses risk allocation between public and private partners, emphasizing a fair distribution of risks and allowing for various financing models;
- highlights the importance of effective project management and monitoring, requiring regular reporting on project progress and performance, as well as adherence to environmental and social safeguards; and
- establishes an independent PPP Review Committee to evaluate project outcomes and recommend improvements.

1.2 Infrastructure financing in Ethiopia

In Ethiopia, transport infrastructure has been largely financed by the Government with the support of Development Finance Institutions (DFIs). Historically, private participation in infrastructure development is only proven in ICT and Energy infrastructure. According to the Private Participation in Infrastructure (PPI) database from the World Bank¹⁶, only five infrastructure projects have been implemented in the country with participation of the private sector and none of them in sectors related to transport and logistics infrastructure.

An overview of these projects is provided in the following table:

Sector	Sub-sector	Project	Investment (USD)	Year	Type
Energy	Diesel generation	Aggreko 30MW temporary power plant	2 Mn	2009	Greenfield
Energy	Wind generation	Daewoo Aysha Wind Farm	120 Mn	2014	Greenfield
Energy	Diesel generation	Encom 30MW Temporary power plant	2 Mn	2009	Greenfield
Energy	Geothermal generation	Tulu Moya Geothermal Power Plant Phase I	271 Mn	2021	Greenfield
ICT	-	Ethio Telecom	-	2010	Management

Table 2. Private investment in infrastructure in Ethiopia

On the other hand, the funding for transport infrastructure projects in Ethiopia has predominantly come from the government's contributions and the support of Development Financial Institutions (DFIs).

In terms of railway development, the primary infrastructure undertaking in recent years has been the establishment of a connection between Addis Ababa and Djibouti. This project involved a significant investment of USD 2.5 billion, which was provided by the China Export-Import Bank to the governments of Ethiopia and Djibouti. The railway line has been constructed by two Chinese state-owned enterprises, China Railway Engineering Corporation (CREC) and China Civil Engineering Construction Corporation (CCECC).¹⁷ Nevertheless, the Turkish company Yapi Merkezi successfully completed a secondary section of the railway network from Awash to Weldiya in 2020. This project obtained funding through a consortium

¹⁶ Private Participation in Infrastructure (PPI) database – World Bank – Accessed in May, 2023 ([link](#))

¹⁷ Financing Ethiopia's Railways with China and Turkey – Yunnan Chen – February, 2021 ([link](#))

of financiers, including Turkish Eximbank, Credit Suisse, and various European export credit agencies. Notably, the financing arrangement encompassed a commercial loan obtained from private banks.

In terms of road infrastructure, the Ministry of Transport and Logistics in Ethiopia has overseen the development of three toll road expressways that have been financed by various entities. In the case of the road project connecting Dire Dawa and Dewele completed in 2019, the majority of the financing, amounting to 85% of the total 179 million USD, was provided by the China Eximbank. The remaining portion of the funding was contributed by the Ethiopian government to facilitate the construction of the 220-kilometer highway¹⁸. The China Eximbank also allocated a financial investment of USD 350 million for the inaugural 80-kilometer connection between Addis Ababa and Adama, completed in 2014. This left the federal government with a remaining payment of USD 262 million to fulfill¹⁹. Lastly, the Korean Export and Import Bank provided a loan of USD 228 million for the construction of the 30-kilometer toll road segment between Meki and Ziway. Similarly, the World Bank extended a loan of USD 370 million for the development of the 57-kilometer section between Ziway and Arse Negele²⁰. In addition to funding new infrastructure projects, the World Bank approved in 2014 a loan of USD 320 million to the Ethiopian government for the maintenance of an existing road network spanning 200 kilometers²¹.

In addition to the toll road projects, there have been other investments in road infrastructure in Ethiopia. The Chinese Eximbank has been actively involved in major investments within the country. An example of this is the express road project between Arsi Negelle and Hawassa in 2018, where the bank provided a loan covering 85% of the total cost, amounting to USD 88 million, for the renovation of a 52-kilometer express road. The funding for the road construction project has been paused in 2023 due to the delay in Ethiopia's request for debt restructuring²².

In addition to the investments from the Chinese Eximbank and the World Bank, the African Development Bank has recently contributed (in 2019) USD 98 million towards the USD 225 million project aimed at constructing the road connection between the capital city of Ethiopia and the port of Djibouti. The Ethiopian government was left with a balance of USD 151 million to be paid, while the Djibouti government had a responsibility of USD 5.3 million²³.

The World Bank has not only invested in road infrastructure but also in logistics infrastructure. In 2021 they approved a loan of USD 150 million for the expansion of the dry port in the city of Modjo. However, the project has faced obstacles due to the deferred approval of a USD 25 million loan request by the World Bank.²⁴

1.3 Analysis of the enabling environment for private financing of transport and logistics infrastructure

According to the information available, there is no track-record of private sector involvement in financing the development and construction of transport and logistics infrastructure in Ethiopia, although some private companies may have been involved in the operation and maintenance of existing roads.

¹⁸ Ethiopia's new tolled highway opens – World highways – June, 2019 ([link](#))

¹⁹ Addis Adaba Adama (Nazareth) Expressway – Road traffic technology – April, 2014([link](#))

²⁰ \$700m Ethiopian highway gets started after four-year search for funding – GCR Staff – December, 2012 ([link](#))

²¹ Road Sector Support Project – The World Bank – Accessed May, 2023 ([link](#))

²² Chinese-funded road project in jeopardy, as debt restructuring delays – Eylob Tikuye – January , 2023 ([link](#))

²³ Ethiopia road project secures funding – World Highways – August, 2019 ([link](#))

²⁴ Modjo dry port expansion faces hiccup in \$25m World Bank Loan – Samuel Bogale – December, 2021 ([link](#))

Nonetheless, the country possesses the necessary attributes to enable effective participation of the private sector in financing projects in these sectors.

Ethiopia's PPP Proclamation provides a robust legal framework that aims to promote private sector involvement in infrastructure development. It emphasizes transparency, accountability, and sustainable practices, while ensuring a balanced allocation of risks and benefits between public and private partners.

The PPP Directorate General, within the Ministry of Finance, is the Ethiopian PPP Unit to coordinate the development, procurement, and management of PPP projects. This arrangement provides institutional support and capacity from the public sector to enhance PPP procurement processes. However, one potential limitation is that the PPP Directorate General reports to the Ministry of Finance rather than the President's Office. As a result, it may face challenges in effectively coordinating activities among various ministries and public institutions due to potential limitations in its authority and decision-making power.

Additionally, the PPP Directorate General may face challenges in terms of expertise and knowledge in the procurement, development, and management of PPP projects due to the limited implementation of such projects in Ethiopia, particularly in the transport and logistics sectors.

To address this expertise gap, a potential solution would involve engaging Advisory Services from reputable International Financing Institutions (IFIs) like the International Finance Corporation (IFC) or the African Development Bank (AfDB). These IFIs can provide valuable guidance and support to the PPP Directorate General in areas such as project selection, procurement, and contract management, enhancing their capabilities and knowledge base.

To demonstrate institutional support to structure each project as a PPP, it would be adequate to include it in the PPP Project Pipeline for the upcoming years, under the approval by the PPP Board. This step will guarantee that the allocated funds for project development are aimed at enhancing its financial viability and market feasibility from the initial preparation stages. Seeking the assistance of expert advisory services in this process is crucial to ensure the project's financial attractiveness to potential private investors.

In conclusion, Ethiopia has effectively implemented the necessary legal and regulatory framework for the preparation, procurement, and management of projects in the transport and logistics sector under a PPP scheme. However, two critical areas have been identified that need attention from the early stages to ensure the project's successful implementation. Firstly, enhancing the institutions' capabilities to effectively deliver infrastructure projects under PPP arrangements, by the involvement of experienced transaction advisors from IFIs or other organisms. Secondly, it is essential to foster institutional commitment and PPP advocacy from public institutions towards the implementation of each project, by incorporating them in the PPP Project Pipeline. By addressing these challenges, projects in the transport and logistics sectors can be executed smoothly and successfully under a PPP scheme.

2 Analysis of private financing options for trunk roads

2.1 Context overview of road transport in Ethiopia

Ethiopia has a road network spanning a total length of 155,830 km. Among these roads, 28,608 km (18.3%) fall under the category of federal roads, meaning they are managed by federal authorities rather than regional or local road authorities. Within this subgroup of federal roads, approximately 57% are covered with asphalt, while the remaining 43% remain unpaved gravel roads.

The Ethiopian Roads Administration (ERA) has established a classification known as the Road Functional System (RFS) to determine the priority and need for access or mobility within the federal network. The RFS categorizes roads based on their characteristics. High-mobility roads, such as expressways, have limited access and high speeds. High-accessibility roads have fewer restrictions on access and lower speeds. Within this classification, 8,838 km are designated as trunk roads, 11,801 km as link roads, 4,578 km as main access roads, 2,575 km as collector roads, 134 km as feeder roads, 399 km as expressways or motorways and 682 km remain unclassified.

The study conducted by ERA on the quality of both paved and unpaved roads, concluded that paved roads are in significantly better condition compared to unpaved roads. Among the total of 16,315 km of paved roads, 24% are assessed to be in good condition, 40% in fair condition, and 36% in bad condition. On the other hand, for the 12,401 km of unpaved roads, only 5% are considered to be in good condition, 20% in fair condition, and a substantial 75% are in bad condition. It's important to note that these evaluations were based on a visual survey of the road conditions²⁵.

In terms of implementation, the ERA is responsible for the overall management of the road sector. However, the administration of the toll roads, specifically the ones connecting Modjo and Batu, Addis Adebaba and Adama, and Dire Dawa and Dewele, falls under the jurisdiction of the Ethiopian Pay Toll Road Enterprise (EPTRE)²⁶.

In 2022, the Ethiopian government developed a comprehensive 30-year master plan aimed at improving various aspects of the transportation infrastructure. According to this plan, there are several key initiatives for federal roads. These include enhancing the capacity of 4,101 km of existing roads, upgrading the pavement on 5,714 km of roads, constructing 10,557 km of missing links, and building 392 km of city bypasses.

The plan includes significant expressway projects, including a 125 km connection between Adama and Awash estimated at USD 226 million, a 72 km connection between Awash and Mieso costing around USD 200 million, and a proposed 160 km connection between Mieso and Dire Dawa requiring an investment of approximately USD 445 million²⁷.

An overview of the Ethiopian road networks is presented in the following figure:

²⁵ Ethiopia's Federal road and bridges annual report – Ethiopian Road Administration – 2021/2022 ([link](#))

²⁶ Toll Road Enterprise Collects 147m Br – Fortune – December 2020 ([link](#))

²⁷ Public Private Partnership – Ministry of Finance – Accessed May 2023 ([link](#))

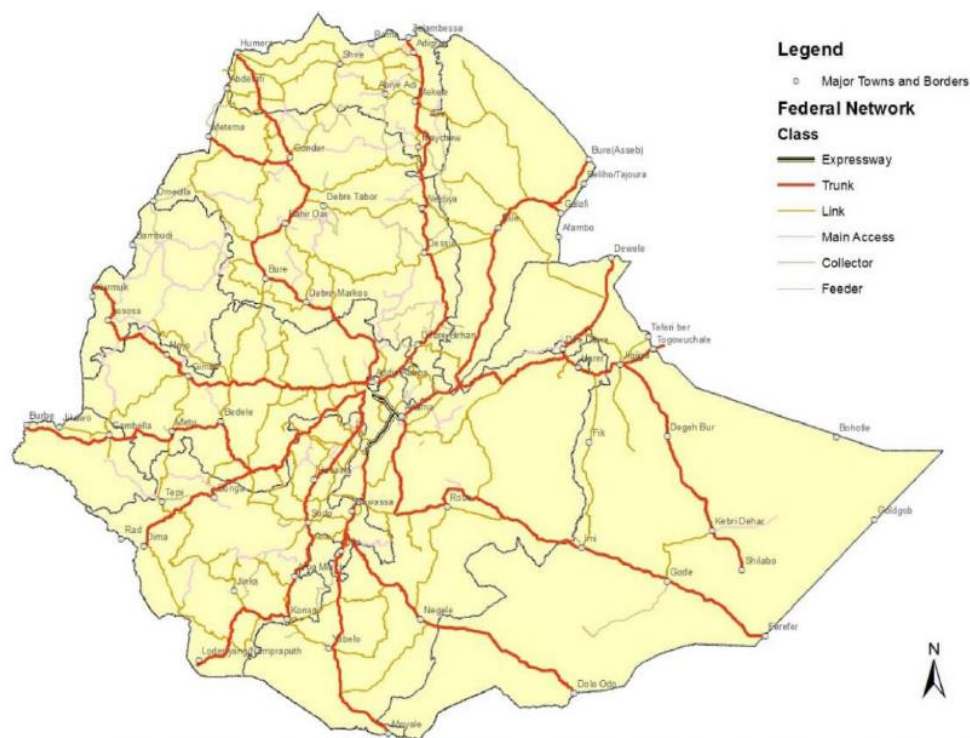


Figure 1. Ethiopia's road map

2.2 Background of road infrastructure financing in sub-Saharan Africa

Financing for road infrastructure can be divided into two primary areas: road development and maintenance. Road development encompasses the establishment of new road infrastructure or the rehabilitation of existing roads. On the other hand, road maintenance entails the necessary activities to ensure the road infrastructure remains in a satisfactory condition over time.

In many African countries, funding for road development projects is commonly provided by government budget allocations or through loans and grants obtained from International Finance Institutions (IFIs). Moreover, there is an increasing tendency towards private sector involvement in road financing through Public-Private Partnership (PPP) schemes.

The World Bank estimates that during the 1980s, around \$150 billion was dedicated to road development in sub-Saharan African countries. This investment led to the expansion of the transport system on the continent by over 2 million kilometers of roads. However, the focus on road construction in Africa did not account for the challenges faced by African governments in efficiently managing their road networks and allocating sufficient funds for regular maintenance. World Bank's calculations indicate that within a span of ten years, over 30% of the value of road infrastructure was lost due to the lack of routine and periodic maintenance.

Insufficient road maintenance frequently results in the quick degradation of road assets. In Africa, it is common for roads to require reconstruction well before reaching their intended lifespan, resulting in the loss of assets and requiring new capital expenditure (CapEx) projects for the reconstruction of existing roads. In the 1989, the Road Maintenance Initiative (RMI) was launched under the Sub-Saharan Africa Transport Policy Program (SSATP) by the UNECA and the World Bank focusing on finding ways and means to correct the chronic lack of road maintenance and to preserve road assets.

The RMI promoted institutional reforms that resulted in the creation of road maintenance funds and road agencies in numerous African nations. A significant aspect of the RMI program was the implementation of fees for service, known as Road User Charges (RUC), used to finance road maintenance activities. Additionally, the RMI introduced an efficient approach to road asset management, emphasizing the importance of effectively managing and maintaining road infrastructure.

The RMI proposed a solution for the challenge of securing long-term sustainable funding for road maintenance through the introduction of RUC and the establishment of a Road Maintenance Fund (RMF) to oversee the collection and allocation of generated revenues. A Road Maintenance Fund (RMF) serves as an organizational framework for managing these funds and is ideally an independent entity established by legislation, preferably through an act of parliament.

During the mid-1990s, Road Agencies were established as independent government entities to work alongside the newly created Road Funds. These agencies aimed to minimize government interference in decision-making processes related to road infrastructure, such as planning, prioritization, and execution of projects. Prior to their establishment, political decisions predominantly influenced road planning and investment prioritization. Often, designs were made without considering economic impact, traffic demand, resource availability, and future maintenance requirements.

Historically, the focus on constructing new roads, driven by political advantages, resulted in insufficient resources being allocated for proper maintenance and the deterioration of existing roads until they failed. Road Agencies were established to break this cycle and reverse the trend. Although significant improvements have been made, these agencies continue to face challenges in addressing the substantial backlog of road maintenance inherited from the past. An overview of the Road Funds and Agencies implemented in sub-Saharan African countries is provided in the following table:

Country	Road Fund	Mandate Road Fund	Road Agency	Mandate Road Agency	PB contracts	Toll roads	Road PPP projects
Nigeria	---	---	FERMA	Monitoring and maintaining	No	Yes	Yes
Kenya	KRB	Coordinate and finance the development, rehabilitation and maintenance	KeNHA, KURA, KeRRA	Maintenance, management and monitoring	Yes	Yes	Yes
Ethiopia	RF	Finance the maintenance of roads and road safety measures.	ERA	Development, management and optimization of resources	Incipient	Yes	No
Ghana	GRF	Finance the maintenance of roads	GHA, DFR, DUR	Maintenance, management and monitoring	No	Yes	No
Ivory Coast	FER	Finance the maintenance of roads	AGEROUTE	Maintenance, management and monitoring	No	Yes	Yes
Cameroon	FR	Finance the maintenance of roads	---	---	No	Yes	Yes
Zambia	NRFA	Finance the maintenance of roads	RDA	Maintenance, management and monitoring	Yes	Yes	Yes

Country	Road Fund	Mandate Road Fund	Road Agency	Mandate Road Agency	PB contracts	Toll roads	Road PPP projects
Senegal	FERA	Finance the maintenance and operations of roads	AGEROUTE	Maintenance, management and monitoring	No	Yes	Yes
Namibia	RFA	Managing the road user charging system for maintenance of roads	RA	Manage a safe and efficient national road network	No	No	No
Rwanda	RMF	Finance the maintenance of roads	RTDA	Formulated in strategic policy guidance	No	No	Yes
Sierra Leone	RMFA	Secure and management of the funds for maintenance of roads	SLRA	Maintenance, management and monitoring	Yes	Yes	Yes
South Africa	N/A	-	SANRAL	Maintenance, management and monitoring	Yes	Yes	Yes

Table 3. Overview of Road Funds and Road Agencies in sub-Saharan countries

Road funds are generally categorized under three generations:

- First Generation: The first generation of road funds focused primarily on revenue collection and funding allocation to finance road maintenance and construction. These funds were often managed by the central government and relied on fuel taxes, vehicle registration fees, or tolls as revenue sources.
- Second Generation: The second generation of road funds aimed to enhance efficiency and effectiveness in fund management. This generation introduced reforms such as decentralization, establishing semi-autonomous road agencies or funds at the regional or local level, and implementing performance-based funding mechanisms.
- Third Generation: The third generation of road funds shifted focus towards sustainable financing and long-term planning. This generation sought to diversify funding sources by exploring options such as public-private partnerships (PPPs), innovative financing mechanisms, and user charges. It also emphasized the importance of strategic planning, asset management, and performance monitoring.

Case Study: The framework for road funding in South Africa

Prior to 1935²⁸, the construction and maintenance of roads in South Africa were entrusted to provincial and local authorities, who financed these infrastructure projects through revenue generated from local taxes. After 1935, the national government took on the responsibility of funding and financing roads of national importance. The necessary funds for this activity were obtained from an import tax imposed on each liter of imported fuel. These tax revenues were then directed into the recently established National Road Fund. The National Road Fund was not ring-fenced and allowed for additional state contributions.

From 1974, the decline in fuel consumption and the rise in construction expenses imposed an adjustment in the fuel tax. However, the central government and other beneficiaries of the tax were unwilling to sacrifice any of their earnings for this purpose, and the government was also hesitant to increase the fuel tax due to concerns about its potential impact on the already high inflation rate. To tackle these financing challenges, in 1983, the authority to charge tolls was granted to fund the construction of new roads or the enhancement of existing ones, particularly on those where alternative routes were available. Since 1983, the National Road Fund was funded through a dedicated fuel levy, set aside exclusively for road-related purposes, in addition to the revenue generated from tolls.

In 1988, the practice of earmarking funds was eliminated as it diminished transparency, accountability, and the ability to access additional funds. Furthermore, it was deemed essential to allocate funds to other government expenditure programs as deemed suitable. From 1988, the revenue generated from the fuel levy was allocated to the National Revenue Fund, managed by the National Treasury. These funds can be utilized for various purposes, including the construction and maintenance of roads, support for public transportation, and general government expenditures. From 1998, the South African national road system is managed by the South African National Roads Agency Limited (SANRAL).

Since the late 1990s, South Africa has employed public-private partnerships (PPPs) to procure public infrastructure and meet government and parastatal service obligations. From the late 1990s until 2010, the PPP model was consistently utilized at the national, provincial, and municipal levels of government for the development of capital-intensive infrastructure. This included projects such as national and provincial toll roads, hospital facilities, prisons, government office accommodations, and rapid rail transit systems. Notable examples during this period include the national road PPPs like the Bakwena Platinum Corridor Toll Road, the provincial road PPP project of the Chapman's Peak Toll Road, the cross border N4 Toll Road - Mozambique-South Africa and other toll roads.

Currently, the fuel levy remains the primary method of collecting revenue from road users in South Africa. It is complemented by additional charges such as vehicle-related fees, user-based charges, license fees, and toll fees. Taxes and tolls collected are directed to the National Treasury and road-based state-owned enterprises (SOEs), except for the Road Accident Fund (RAF) levy, which is specifically earmarked for its intended purpose.

Afterward, the National Treasury distributes the general revenue to provinces, municipalities, and SOEs in accordance with input received from the National Department of Transport (NDoT). The National Treasury responds to the recommendations provided by the NDoT in making these allocations. As a result, the amount of the fuel levies and other charges is determined based on various factors such as the funding needs for infrastructure, social policies, the attraction of investment, the overall tax burden, and other relevant considerations.

²⁸ Journal of Transport and Supply Chain Management - : Understanding the South African road funding framework – September 2019 ([link](#))

Income source	%	Collected by
Fuel levy	29%	National Government
VAT on vehicle sales	23%	National Government
VAT on vehicle parts	14%	National Government
Road Accident Fund	13%	State Owned Enterprise (SOE)
Fines, fees and permits	6%	Provincial Governments
License fees	4%	SOE and Local Governments
Toll fees: concessions	3%	State Owned Enterprise (SOE)
Toll fees: SANRAL	3%	State Owned Enterprise (SOE)
Vehicle import duties	3%	National Government
Other	<1%	-

Table 4. Funding sources for South African road network (2014)

Overall, investments in road infrastructure in South Africa is provided by SANRAL, provincial governments, and municipal governments. The NDoT supports provincial and municipal governments, as well as certain state-owned enterprises (SOEs), through grants for road infrastructure and operations. These entities also allocate a portion of their equitable share income from the National Treasury or utilize their own collected revenue (from vehicle ownership or road use activities) for investing in road infrastructure.

2.3 Benchmark of private sector participation in the road sector

Private Sector Participation (PSP) in road financing is becoming an increasingly popular option for financing and managing road infrastructure projects in Africa and globally. These models involve collaboration between the government and private sector, with the private sector often responsible for the development, operation, and maintenance of the infrastructure in exchange for revenue streams.

An overview of the private sector participation in the development and construction of road projects in the sub-Saharan Africa is provided in the following table:

Country	Project name	Total investment	Year	Contract type	Project type
Cameroon	Cameroon road toll plazas	52,500 Mn	2022	Not Available	Brownfield
Ghana	Accra-Kumasi Toll Road	400,000 Mn	2013	Not Available	Brownfield
Kenya	Modogashe-Habaswein-Samatar and Rhamu-Mandera roads	147,920 Mn	2018	Build, operate, and transfer	Greenfield
Kenya	Nairobi expressway	575,970 Mn	2020	Build, operate, and transfer	Greenfield
Kenya	Ilasit-Njukini-Taveta Road	66,000 Mn	2018	Build, operate, and transfer	Greenfield
Mozambique	N4 Toll Road - Mozambique-South Africa	426,000 Mn	1997	Build, rehabilitate,	Brownfield

Country	Project name	Total investment	Year	Contract type	Project type
				operate, and transfer	
Nigeria	Lekki-Epe Expressway	382,000 Mn	2008	Build, rehabilitate, operate, and transfer	Brownfield
Senegal	Dakar Diamniadio Toll Road	264,000 Mn	2009	Build, rehabilitate, operate, and transfer	Brownfield
Senegal	Dakar-Diamniadio Toll Road Extension	173,000 Mn	2015	Build, operate, and transfer	Greenfield
South Africa	Bakwena Platinum Toll Highway	450,000 Mn	2001	Build, operate, and transfer	Greenfield
South Africa, Zimbabwe	Beitbridge Border Post	97,000Mn	2011	Build, rehabilitate, operate, and transfer	Brownfield
South Africa	N3 Toll Road	794,700Mn	1999	Build, rehabilitate, operate, and transfer	Brownfield
Mozambique, South Africa	N4 Toll Road - Mozambique-South Africa	426,000 Mn	1997	Build, rehabilitate, operate, and transfer	Brownfield
Uganda	Kampala-Jinja Expressway Phase I	229,500 Mn	2021	Build, lease, and transfer	Greenfield
South Africa, Zimbabwe	Beitbridge Border Post	97,000 Mn	2011	Build, rehabilitate, operate, and transfer	Brownfield
Zimbabwe	Limpopo Toll Bridge	18,000 Mn	1994	Build, operate, and transfer	Greenfield

Table 5. Overview of PPP projects in the road sector in sub-Saharan Africa

Four road projects in sub-Saharan Africa that were implemented under public-private partnership (PPP) schemes have been examined to identify the best practices for successful implementation. Additionally, two cases from other regions were included for a comprehensive analysis of PPP models. The benchmark explores the institutional framework, financing options, best and worst practices from these projects, to provide insights for the Ethiopian government and potential future investors.

By analyzing these PPP road projects in Africa and other regions, insights are gathered for the development, execution, and management of future PPP initiatives. The benchmark highlights successful practices and strategies that have contributed to the effective delivery of road infrastructure, optimal risk allocation, stakeholder engagement, financial viability, and overall project performance. Based on the

experiences of these projects, policymakers, government agencies, and private investors can enhance their understanding of best practices and leverage this knowledge to foster successful outcomes in future PPP road projects.

Best practices observed in the implementation of road infrastructure projects through PPP schemes comprise:

- Consistent and solid dedication of the Head of State and other public authorities to support PPP initiatives for road infrastructure development
- Thorough preparation of legislation, institutions, industry experts, and necessary documentation before launching the procurement process
- Establish a comprehensive legislative framework that governs the procurement and management processes of PPPs, ensuring consistency and clarity
- Incorporate provisions within the legislative framework to allow the procurement of unsolicited bids through a transparent and fair procedure
- Establish, resource, and empower a PPP unit with exclusive dedication to support the procurement, execution and management process for PPP projects
- Timely engagement with development partners and advisors to enhance the capabilities of the PPP Unit, the Contracting Authority and other relevant institutions
- Consider realistic timescales and cost for the procurement process, particularly for the public sector
- Ensure the robustness and reliability of project sponsors and equity partners to facilitate access to financing
- Consider sovereign guarantees and risk mitigation measures for political and monetary risks to attract foreign private investment
- Guarantee a strong political commitment to tolling to improve the perception of road users regarding toll payments
- Ensure that the project brings substantial improvements for road users and prioritize the availability of untolled alternatives to mitigate public opposition to tolling
- Develop a Concession Agreement that prioritizes performance specifications and clearly outlines the specific responsibilities of each party involved
- Implement appropriate legislation that guarantees the timely and efficient management of land acquisition processes
- Promote/advertise procurement processes to attract enough bidders, allowing the Contracting Authority to engage in negotiations with potential bidders and select the most favorable offer
- Brownfield road projects typically carry lower demand risk for the private party in user-pays models, given the existing traffic demand on the road
- Lastly, ensuring the availability of updated traffic data and projections for the road network guarantees the reliability and suitability of the planned infrastructure to be developed

The following table presents a summary of the main information and characteristics of the selected road projects in Africa and other regions. A detailed case study for each road project is also provided in the following subsections.

Location	Senegal	Ghana	Nigeria	SA & Mozambique	Costa Rica	India
Project name:	Dakar-Diamniadio Toll Highway	Accra-Kumasi Toll Road	Eti-Osa Lekki-Epe Expressway	N4 Toll Route	San Jose-Caldera Toll Road	Delhi Gurgaon Expressway
Length:	32 km	240 km	49.4 km	630 km	78.6 km	27.7 km
Construction type:	Greenfield	Brownfield	Greenfield	Brownfield	Greenfield	Brownfield
Capital cost:	USD 264.6 million	USD 400 million	USD 450 million	USD 660 million	USD 280 million	USD 160 million
Concession period:	30 years	30 years	30 years	30 years	25 years and 6 months	20 years
Revenue sources:	Toll fees	Toll fees and ancillary services	Initially toll fees, later shadow tolls		Toll fees and ancillary services	Toll fees
Grantor:	Investment Promotion and Major Projects Agency (APIX S.A.)	Ministry of Roads and Highways	Lagos State Government	SANRAL in South Africa and ANE in Mozambique	Consejo Nacional de Concesiones (CNC)	National Highways Authority of India (NHAI)
Concessionaire:	Société Eiffage de la Nouvelle Autoroute Concédée (SENAC)	Arterial Toll Roads Company Limited (ATRCL)	Lekki Concession Company Limited (LCC)	Trans African Concessions (TRAC)	Concesiones Viales (COVISA), S.A.	Delhi Gurgaon Super Connectivity Ltd.
Equity partners:	Eiffage Concession (13%)	Wellington Trust, Savarino Ghana LLC and DSC Infrastructure LLC	African Infrastructure Investment Managers (17%)	Boyugues, Basil Read, South African Infrastructure Fund and other South African banks	José Cartellone Construcciones Civiles S.A., SNC-Lavalin de Costa Rica S.A. and Industrias Acosol S.A.	Jaiprakash Industries and DS Constructions
Private financing:	16%	Unknown	68%	100%	Unknown	87%
DFI contribution:	IFC (10%), AfDB (28%), WADB (10%) and AFD (11%)	World Bank/IDA, AfDB and Chinese, Danish and Brazilian governments	AfDB (21%)	Development Bank of Southern Africa (DBSA)	IDB and BCIE	Not applicable
Private investors:	Compagnie Bancaire de l'Afrique Occidentale (3%)	Unknown	Five Nigerian banks (28%) and Standard Bank (24%)	Primarily South African banks	Dresdner Bank	Housing and Urban Development Corporation Limited
Government contribution:	Government of Senegal (25%)	Unknown	Lagos State Government (11%)	Not applicable	Unknown	NHAI

Table 6. Benchmark of road PPP projects

2.3.1 Dakar-Diamniadio Toll Highway in Senegal

The Dakar-Diamniadio Toll Highway (DDTH) in Senegal²⁹ connects the capital city of Dakar to the International Blaise Diagne airport (AIBD), the Dakar Integrated Special Economic Zone (DISEZ), and local traffic for Pikine and Thies. The greenfield project comprised the development of 32 km road infrastructure, of which 20.5 km forms the PPP concession, with three lanes in each direction and a dual carriageway. The capital cost of the project was estimated at USD 264.6 million, and the project was fully operational in 2013.

In July 2000, a significant aspect of this initiative involved establishing APIX S.A., an exclusive investment entity known as the Investment Promotion and Major Projects Agency, designed to provide comprehensive services and serve as a centralized hub for major projects. In May 2009, the PPP law underwent revisions to address the deficiencies identified during the implementation of the DDTH concession and in April 2010, the decree No. 2010-489 was introduced to streamline two-stage procurement process for PPP concessions valued at less than CFA 15 billion (approximately \$30 million) for local authorities.

The establishment of a Project Steering Committee, led by the Director-General of APIX, ensured regular reporting to the President on project advancements on a quarterly basis. Additionally, an Inter-ministerial Coordination Committee, presided over by the Prime Minister, convenes on a monthly basis. Furthermore, the Presidential Investment Council (CPI), chaired by the President, holds quarterly meetings.

During the initial phase, APIX actively sought guidance and financial assistance from development partners. APIX acknowledged the crucial role of this support in effectively designing and executing the PPP procurement process. Notably, the African Development Bank (AfDB), World Bank, Public-Private Infrastructure Advisory Facility (PPIAF), and the West African Development Bank (WADB) extended their support to APIX throughout the development and implementation stages of the procurement process.

Under the terms of the PPP agreement, the private consortium financed the construction of the highway and is responsible for its operation and maintenance over a period of 30 years. In exchange, the consortium receives toll revenue from the highway. At the end of the 30-year period, ownership of the highway will revert back to the Senegalese government.

The project was financed through a public-private partnership (PPP) with Groupement Eiffage, who formed a Special Purpose Vehicle (PV), SENAC S.A., to be the concessionaire. The financing structure of the project involved a combination of public and private sources, mainly comprised of loans from several international financial institutions. These institutions included the African Development Bank (AfDB), the International Finance Corporation (IFC), and the West African Development Bank (WADB). The Senegalese government contributed to the financing of the project through a combination of public funds and a loan from the Islamic Development Bank.

The financing structure resulted in a relatively low proportion of sponsor's equity (debt/equity ratio of the project is 87:13), reflecting the higher risk associated with the first major PPP transaction in Senegal.

Other than Eiffage's equity share, a loan from the Compagnie Bancaire de l'Afrique Occidentale (CBAO) is the only source of private funding for the project. CBAO is the biggest bank in Senegal, and a majority of it is owned by the biggest bank in Morocco, Attijariwafa Bank. The loan from the CBAO only makes up 2.7% of the DDTH budget. Overall, 16.1% of the project's funding, including Eiffage's equity contribution, came from private investors.

²⁹ Private Sector Involvement in road Financing – SSATP – December 2014 ([link](#))

According to the CBAO, the only reason for their loan to be feasible was because of the government guarantee to repay the debt. They pointed out that large-scale PPP transactions and investments were outside the expertise of local banks. The Senegalese government, which owns 9% of the CBAO, and Eiffage enjoyed a good working relationship before.

The project did not receive any financing from an international commercial bank. The World Bank and the Multilateral Investment Guarantee Agency (MIGA), which can aid private funding by offering insurance against various project-financing risks, were not compelled to provide risk assurances as a result.

The DDTH is notable as one of the few highways to be procured and implemented successfully through a PPP in the Sub-Saharan Africa, and this is mainly due to the following key aspects:

- Since his election in 2000, President Wade has been a major advocate for PPP procurement. After his election in 2012, President Sall remained committed to this goal. APIX S.A. was established by President Wade as a 'one-stop' investment organization for major projects, reporting directly to the President's office and providing it with the vast authority and funding needed to plan and carry out complex PPP procurements. This ongoing dedication facilitated the project to be successfully procured and launched.
- Early engagement with advisory support from development partners ensured the establishment of the adequate legal and institutional framework in advance of commencing with the procurement process. Together with APIX, the advisors also established the procurement process and monitored its development. APIX now has the know-how to implement a steady stream of PPP projects thanks to the information gained by working with the advisers.
- Early development of an appropriate institutional and legal framework before commencing with the procurement process was essential for the successful completion of this first PPP procurement.
- A key element in the successful procurement of DDTH was the early establishment of APIX as a "PPP Unit" with the resources and authority to cooperate across ministries, departments, or agencies (MDAs). With the assistance of advisors, APIX was able to plan and carry out the DDTH procurement while serving as a focal point for all parties involved in the deal.
- Stakeholders acknowledged the importance of adequate preparation in terms of laws, institutions, experts, and documentation prior to commencing the procurement process. These elements were vital in facilitating the bidding process and negotiations until reaching Financial Close. External advisors played a crucial role, particularly for the initial transaction, in guiding the design and implementation of the procurement process. Furthermore, their involvement was necessary to prepare essential tender documents such as environmental, technical, and traffic reports, leveraging their specialized knowledge and expertise.
- The DDTH project marked Senegal's initial venture into PPP procurement, successfully meeting financial and time constraints. Consequently, additional resources were allocated to fine-tune and improve the framework and procedures. However, the selection of PPP projects generally entails a lengthy, costly, and intricate procedure. To ensure continued dedication to the process, it is essential for public sector stakeholders to be well-informed about this reality from the beginning and to have realistic expectations regarding project completion deadlines.

2.3.2 Accra-Kumasi Toll Road in Ghana

The Accra-Kumasi Toll Road (AKTR)³⁰ is a major highway in Ghana that connects the capital city of Accra to the city of Kumasi. The toll road is part of the National Route 6 (N6), which is one of the main transportation corridors in Ghana, linking Accra with Kumasi and northern Ghana and serving transit traffic to/from Burkina Faso and Niger.

The AKTR project involved the rehabilitation and widening of 141 km of dual carriageway along with five toll plazas, rest spaces, grade-separated junctions, and integration for intercity buses. The project had an estimated cost of USD 400 million in 2011.

The project has significantly improved travel times between Accra and Kumasi, reducing the travel time from about six hours to approximately three hours. The highway has also improved road safety and reduced traffic congestion along the route, contributing to economic development in the region.

However, there have been concerns raised about the toll fees charged on the road, which are relatively high compared to other toll roads in the country. Despite this, the Accra-Kumasi Toll Road remains an important and well-utilized transport link in Ghana.

The toll road was built through a public-private partnership (PPP) between the government of Ghana and a consortium of private companies to finance, design, build, operate, and maintain the toll road, as well as collect toll revenues. Arterial Toll Roads Company Limited (ATRCL), a Ghanaian registered joint venture created by the investment company Wellington Trust (Canada), construction and project development company Savarino (U.S.) and design and project management company DSC International (Egypt), was the awarded consortium after submitting an unsolicited proposal.

In November 2005, the Ghanaian government granted ATRCL its first PPP highway project in Ghana under a concession scheme. Due to political and administrative procedures, administrative concerns, a lack of institutional and legal frameworks, and a scarcity of public sector talent and competence, the concession's completion was postponed until its final approval by the Parliament in December 2012.

The financing structure for the project involved a mix of debt and equity financing. The consortium of private companies contributed equity financing for the project, while debt financing was secured from a range of sources, including international development banks and local commercial banks. Among the major donors for these improvements are the IDA, AfDB, and the Chinese, Danish and Brazilian governments.

Although the AKTR has finally been developed and operational under a concession scheme, the project has suffered from several concerns that have delayed and threatened its implementation:

- The establishment of enabling legislation in Ghana was accomplished in 2020 with the introduction of the Public Private Partnership Act, 2020 ("PPP Act"). The development of a legal and institutional framework for PPP procurement has been a decade-long process, starting with the National Policy on PPPs in 2011 and the passage of the PPP bill in 2013. The absence of a suitable framework for PPP development has resulted in significant delays in the procurement of the Accra-Kumasi and other road projects.
- The private sector has expressed strong interest in engaging in PPP arrangements for the construction of the Accra-Kumasi and other road projects. Despite the absence of a formal PPP procurement procedure, this interest has been conveyed through various unsolicited proposals. However, procuring administrations face unique challenges when dealing with such unsolicited bids in the absence of

³⁰ Private Sector Involvement in road Financing – SSATP – December 2014 ([link](#))

enabling legislation or policy guidance. These challenges include significant administrative resource requirements and the need to ensure fair and transparent treatment of all parties involved.

- In Ghana, the Public Investment Division (PID), responsible for overseeing PPP initiatives, reports to the Minister of Finance instead of the Presidency. This reporting structure may present a challenge due to the absence of direct Presidential authority to coordinate inputs from different ministries. The lack of such authority could potentially impede the efficiency and effectiveness of the PID's work.
- Deficiencies in procurement practices pertaining to the management of the Road Fund and the procurement of a section of the AKTR have been pointed out. Despite the GHA's³¹ denial of critiques concerning its procurement practices, both the Ministry of Finance and the Public Investment Division (PID) may still raise concerns regarding the GHA's ability to ensure fair and efficient procurement. Additionally, international financial institutions (IFIs) and business sector bidders will expect an impartial and transparent procurement process.
- The AKTR is the only viable route connecting the two cities. In South Africa and other locations, toll roads are typically permitted only when there is an available untolled alternative. However, when an untolled option is absent, careful attention should be given to the choice and affordability of the road users.

2.3.3 Lekki-Epe Expressway in Nigeria

The Lekki-Epe Expressway (LEE)³² is a major road project in Lagos, Nigeria, which was built to ease the traffic congestion in the rapidly growing Lekki Peninsula area. The project was initiated in the early 2000s and was completed in phases over several years, with the final phase being completed in 2014.

The expressway is a 49.4-kilometer, six-lane highway single carriageway that stretches from the Victoria Island area in Lagos to the Lekki Peninsula area, which includes the Lekki Free Trade Zone and the new Lagos International Airport. The project required the upgrading and expansion of the previous highway with construction costs to be recovered largely through tolling. The project had an estimated total cost of USD 450 million.

The Lekki-Epe Expressway project was implemented through a public-private partnership (PPP) between the Lagos State Government (LSG) and Lekki Concession Company (LCC), a private sector consortium led by Asset and Resource Management Company (ARM). Under the terms of the PPP, the LCC was responsible for the finance, design, build, operation, and maintenance of the expressway for a period of 30 years, as well as collecting toll revenues. LSG provided support in terms of land acquisition, permits, and other regulatory approvals while LCC had full construction, traffic and operations risk.

After LCC was given the concession, negotiations started in 2005, and in April 2006, the concession agreement was signed and the Financial Close was achieved in November 2008. Toll collection was supposed to start in December 2012, but this did not happen in two of the three toll plazas as LSG announced an indefinite suspension of tolling. LSG compensated LCC for lost revenues by paying shadow tolls. On August 2013, LSG announced that it would buy-back the Lekki-Epe Expressway concession rights by purchasing all LCC's shares due to LCC's intention to raise tolls at the only operating plaza.

The financing for the LEE project involved a mix of private sector investment and bank loans, with a debt-to-equity ratio of 83:17 and a 68% of funding from private sector sources, which was made possible by

³¹ In 1985, the Government of Ghana (GOG) established a Road Fund with the aim of enhancing the maintenance and capacity of the country's highways. Currently, the Road Fund operates under the provisions of the Road Fund Act 536 (1997), which also establishes the Ghana Highways Authority (GHA) responsible for collecting tolls on trunk roads.

³² Private Sector Involvement in road Financing – SSATP – December 2014 ([link](#))

public sector guarantees at the federal and state levels. Equity was provided by African Infrastructure Investment Managers (AIIM), debt from private sources was provided by local and international banks and the remaining financing was provided by the LSG and the AfDB.

The main outcomes from the development and implementation of the Lekki-Epe Expressway are the following:

- The complete definition of the applicable PPP regulatory framework was lacking during the project development phase. The absence of a dedicated PPP unit with essential expertise resulted in delays in the procurement process and placed the public sector partner at a disadvantage during negotiations, despite the commitment of Ministry Roads Agency staff. As a consequence, the financial value of the procurement might have been diminished, potentially leading to the subsequent buy-back arrangement.
- The concession had a clear positive impact on road users by enhancing capacity and preparing for anticipated future traffic growth. However, the implementation of tolling has resulted in significant costs for users and increased travel times due to long queues at the toll plaza. This stands in contrast to typical greenfield road projects, where travel time reductions are often notable.
- The LEE project serves as evidence that toll roads under PPP models in Sub-Saharan Africa have the capacity to attract substantial private funding. The project's success was attributed to several key factors, including the presence of robust sponsors and equity partners, the provision of sovereign guarantees, and effective mitigation of political and monetary risks. These elements played a pivotal role in ensuring the viability and success of the LEE initiative.
- The introduction of tolls on a previously untolled route triggered substantial local protests. Initially, the Grantor (LSG), was hesitant to support the tolling plan proposed by the Concessionaire (LCC). While tolling often faces public opposition, the Grantor's endorsement is crucial. The opposition to tolling is likely to have a significant impact on LSG's ability to secure private financing in future endeavors.

2.3.4 N4 Toll Route in South Africa and Mozambique

The N4 Toll Route³³ is a toll road concession spanning 630 km that extends from Pretoria, the administrative capital of South Africa, to Maputo, the capital city of Mozambique and a significant seaport on the Indian Ocean. The initiative was designed as a 30-year Public-Private Partnership (PPP) between a private consortium and the governments of South Africa and Mozambique. It is noteworthy as the first cross-border transport PPP project in Sub-Saharan Africa and the first brownfield PPP of this magnitude in South Africa.

The N4 is a significant trade route that traverses South Africa from Botswana to Mozambique, passing through highly industrialized regions such as Johannesburg and Pretoria that are home to processing, mining, and smelting industries.

Trans African Concessions (TRAC) was awarded the contract for the N4 Toll Route under a Build-Operate-Transfer (BOT) model with a capital value of ZAR 3 billion (equivalent to USD 660 million in 1997). The project was financed with 20% equity and 80% debt finance, which was negotiated by the concessionaire. TRAC took on the responsibility of managing traffic and demand risk. The revenue generated by toll collection must cover the project's operational expenditure and debt obligations.

³³ N4 Toll Route (South Africa – Mozambique) Case Study Report – GIHub – [\(link\)](#)

The project was executed without any financial assistance from the government, but the two governments agreed to support the project by jointly guaranteeing the debt in case the concessionaire is unable to pay back the loan. This approach was facilitated by a fair distribution of risk.

- Accurately assessing and quantifying the benefits of a PPP project is crucial for all stakeholders. The N4 Toll Route has not only provided advantages to South Africa and Mozambique but has also promoted trade among neighboring countries, like Namibia and Botswana. Furthermore, the road has facilitated further private sector investments in transportation infrastructure.
- Effective stakeholder participation is crucial in toll road projects, particularly when the concessionaire directly collects revenues from road users. The N4 Toll Route project faced challenges in convincing local residents to pay tolls for an existing road. The fast-track approach adopted through the Spatial Development Initiative (SDI) between South Africa and Mozambique expedited the project's progression without comprehensive engagement with stakeholders beyond the financial sector. As a result, public opposition to the toll road increased. Successful PPPs require effective stakeholder management and targeted communication efforts to enhance project visibility and community awareness.
- A comprehensive agreement that prioritizes performance specifications over design and outlines specific responsibilities can facilitate preventing conflicts among the parties involved.
- An early identification of risks and fair allocation of those risks ensures the project's sustainability. In the case of the N4 Toll Route, both the financial and demand risks were completely assigned to the concessionaire. However, as the South African section of the road constituted over 80% of the entire project length and was already an existing road, allowed for a prompt generation of revenues.
- The successful implementation of the N4 Toll Route project, a cross-border initiative, can be largely attributed to its development and management as a unified national project under the influence of the South African Department of Transport. Despite this centralization, the project is widely recognized as a significant achievement, showcasing the potential of political collaboration between neighboring countries and the benefits of a PPP. Remarkably, the N4 Toll Route stands as the only completed cross-border toll concession in Sub-Saharan Africa to date.

2.3.5 San Jose-Caldera Toll Road in Costa Rica

The San José-Caldera Toll Road³⁴ is a road infrastructure project in Costa Rica that was completed in 2010. The project involved the construction of a new highway between the capital city of San José and the port town of Caldera, which is an important gateway for international trade in the region.

The San José-Caldera Road Project was designed to reduce travel time and improve the efficiency of transportation between San José and Caldera. The new highway is 77 kilometers long, with four lanes and a total of 26 bridges and viaducts and had an estimated cost of USD 280 million.

The project was implemented as a public-private partnership (PPP) between the Costa Rican government and a private consortium known as Autopistas del Sol, after the resignation of the concessionaire initially awarded Concesiones Viales (COVISA). The consortium included several companies from Spain, Costa Rica, and Mexico with expertise in engineering, construction, and infrastructure development. The toll road is managed by the private consortium, which is responsible for its maintenance and operation in exchange for the collection of tolls from road users.

For more than seven years there were multiple delays in the expropriations processes.

³⁴ Asociación Público Privada en América Latina. Aprendiendo de la experiencia. – CAF – July 2015 ([link](#))

The financing for the project was obtained through a combination of public and private sources under a debt-to-equity ratio of 75:25 and 43% of financing from private sources. The Central American Bank for Economic Integration (CABEL) provided a 57% of the funds required, while the private consortium provided a 25% of the funds from and other international financial institutions provided the remaining 18%.

- Effective management of expropriation risks supposed a significant challenge for the success of the road concession in Costa Rica. In recent years, there have been discussions about reforming the existing legislation and implementing measures to address this issue. However, these reform efforts have been temporarily paused and are unlikely to be approved in the short term. It is crucial for the Contracting Authority to prevent expropriations from obstructing the country's overall progress.
- Insufficient promotion of this project has resulted in decreased competition during the bidding processes. The Grantor received only one offer in response to the tender. This situation puts significant pressure on the government as they are compelled to accept the conditions presented by the sole company or consortium participating in the process. Moreover, the lack of promotion for this concession has also impacted on the ability to reach the financial closure for this contract. Banking entities have requested increased guarantees from the government or changes in certain conditions to consider participating in the project.
- The project faced a delay of more than 30 years due to the lack of experience in concessions. Challenges related to legislation, the availability of expert teams, operational efficiency, and the expropriation process contributed to this delay. The contract underwent multiple stages of negotiation, including five addendums and a complementary agreement, further postponing the project's commencement by eight years.

2.3.6 Delhi-Gurgaon Expressway in India

The Delhi-Gurgaon Expressway³⁵ is a six-lane, 27.7 km long expressway that connects the national capital of Delhi with the city of Gurgaon in Haryana state, India. It is also known as the National Highway 8 (NH 8) and is a part of the Golden Quadrilateral project, which aims to connect India's four major metropolitan cities.

The Delhi-Gurgaon Expressway was financed through a mix of debt and equity, with the majority ownership held by the private company Delhi Gurgaon Super Connectivity Limited (DGSCCL). The project was developed under a public-private partnership (PPP) model, with the Indian government providing support through land acquisition and regulatory approvals.

The total cost of the project was around INR 1,200 crores (approximately USD 160 million) at the time of its construction. The debt component of the financing was initially estimated to be around 70% of the total project cost.

- Prior to land acquisition, the government made a commitment to allocate a significant land area to the concessionaire. However, acquiring land in certain densely populated areas surrounding the expressway proved to be a challenge. This posed a potential risk to the project's timeline if the necessary land was not provided promptly. It would have been advantageous if such issues were addressed proactively before project procurement to ensure a seamless implementation of the project.
- Securing public support and maintaining communication with stakeholders are crucial for the successful implementation of a large-scale project. This includes ensuring support for land acquisition and construction initiatives by prompt engagement with those impacted. Additionally, when a project involves multiple states, addressing requests for changes from different government entities is essential

³⁵ Public Private Partnership Projects in India. Compendium of Case Studies. – PPIAF – December 2010 ([link](#))

to minimize impacts on scope, cost, and timeline. Proactive dialogue during the planning phase helps address potential challenges and foster a sense of ownership among stakeholders.

- The construction of this project required approvals from various government agencies, civic organizations, and other affected groups. This resulted in a complex and time-consuming process during the development and construction phases. Simplifying the approval process by implementing a one-stop process could have expedited the project, considering its significant scale.
- When it comes to conventional toll road projects, traffic risk poses the most significant threat to their financial viability. However, this risk is considerably diminished when the project involves the rehabilitation and toll implementation on an existing road, as the traffic flow is already established. The NH-8 segment between Delhi and Gurgaon, being one of the busiest in the country, presented the advantage of having bankable traffic and clear potential revenues.
- During the procurement of the project in 1998, NHAI made use of a traffic study to inform their decision-making. However, once the expressway began its commercial operations, the actual traffic volume exceeded the initial forecasts by a significant margin. This unexpected surge in vehicles resulted in long queues at toll booths and delays in traveling through the section. As a result, the expressway seemed to be failing in its primary objectives of reducing congestion, fuel costs, and travel times, making the project socially unviable. Fortunately, the situation improved when the authorities and the concessionaire took prompt and appropriate measures to address the issues.

2.4 Analysis of financing options for the development and operation of Ethiopian trunk roads, with focus on Addis Ababa to Galafi Road

2.4.1 PPP framework definition for trunk roads

Based on the analysis of PPP for road projects implemented in other countries, the following table presents a framework for the definition of PPPs arrangements for the development and operation of road infrastructure in Ethiopia. It aims to establish a standardized definition and facilitate effective collaboration between the public and private sectors in order to successfully deliver road infrastructure projects in the country.

Dimension	Overview
Payment mechanism	Defines the sources of revenues for the private party, which mainly generate from two different sources: road users and government subsidies. - User-pays: revenues provided by road users through toll payments - Government-pays: revenues provided by direct payments from the public authority to the SPV ▪ Availability payment: fixed payments in exchange for the availability and performance of the infrastructure asset ▪ Shadow toll: variable payment based on the traffic volume These payment mechanisms may be modulated through the implementation of minimum revenue guarantees (MRG) and maximum revenue provisions. - Minimum Revenue Guaranteed (MRG): sets a minimum toll revenue threshold below which the SPV is compensated by the public authority, reducing the demand risk for the SPV

- Revenue Cap: revenue sharing mechanism to mitigate risk of excessive value being captured by the private party, often through the establishment of a concession fee

Other sources of revenue in road projects may be provided by revenue stations, advertisements, utilities networks or land leases.

Contract scope	Defines the main functions for which the private party (or the SPV) is responsible for: - Design and build/rehabilitate: involves project development and the construction or rehabilitation of the road infrastructure assets - Operate: includes the operation of toll plazas, vehicle assistance, traffic management, network control or information services. - Maintain: involves various activities focused on keeping the functional and structural integrity of road infrastructure, extending its lifespan, and ensuring safe and efficient transportation for users In most cases, PPPs are described by the functions transferred to the private party whereas other nomenclatures focus instead on the legal ownership and control of the assets.
SPV ownership	Refers to the composition of the Special Purpose Vehicle (SPV), a legal entity created for the specific and limited purposes defined in the contract scope. Based on the ownerships of the SPV, it can be defined as follows: - Conventional PPP: SPV fully owned by the private sector - Joint Venture PPP: owned by a combination of private sector and public authorities
Financing	Refers to the sources of financing provided for the construction, operation, and maintenance of the road asset. According to the source of funds, these may be: - Private financed: projects fully financed by the private sector - Public financed: projects public financed by the public authorities - Co-financed: Projects financed by a mix of public and private finance Public financing is often required in road projects in sub-Saharan Africa to cover the viability gap. Viability Gap Finance (VGF) refers to public funds invested in infrastructure projects that have economic justification but lack financial viability. This public support, provided as a capital subsidy, is intended to incentivize private sector participation in PPP projects that would otherwise be considered financially unfeasible.

Table 7. Proposed PPP framework for trunk roads

As a general approach, the following considerations may be applicable for trunk roads in Ethiopia:

- DBO (Design-Build-Operate): To mitigate financial risk for investors and create a favorable business environment for future private financing, DBO is adequate for the initial road projects procured through PPP schemes.

- Design-Build-Finance-Operate (DBFO): adequate scheme after the successful implementation of other PPP schemes in the country. This is because the private sector may be motivated by the positive outcomes of previous PPP contracts, thus providing the necessary incentives for their involvement in DBFO arrangements, with the greater financial risks associated.
- Operational and Maintenance (O&M): suitable for implementation on recently upgraded roads like the Addis Ababa-Adama Expressway or the Dire Dawa-Dewele Expressway. The recent upgrades on these roads assure private operators that the road assets are in satisfactory condition, thereby reducing operational risks. On the other hand, roads that have not undergone recent upgrades are unlikely to attract the interest of private operators due to the larger investments required for rehabilitation and higher maintenance costs.
- Regarding payment mechanisms, roads with substantial traffic demand can effectively implement user-pays mechanisms, such as tolls, to generate the necessary revenues for the concessionaire to cover their costs. However, roads with lower traffic volumes may be more suitable for incorporating availability-based mechanisms, which consider the availability and condition of the road infrastructure rather than relying solely on user fees.

2.4.2 Overview of the Addis Ababa to Galafi Road project

The current analysis of financing options for road projects focuses on the Addis Ababa to Galafi road. However, the recommendations and findings presented in this study are also applicable and relevant to other trunk roads in Ethiopia. The insights and lessons learned can be extrapolated to similar projects in the country, ensuring the broader applicability of the recommendations beyond the specific case study.

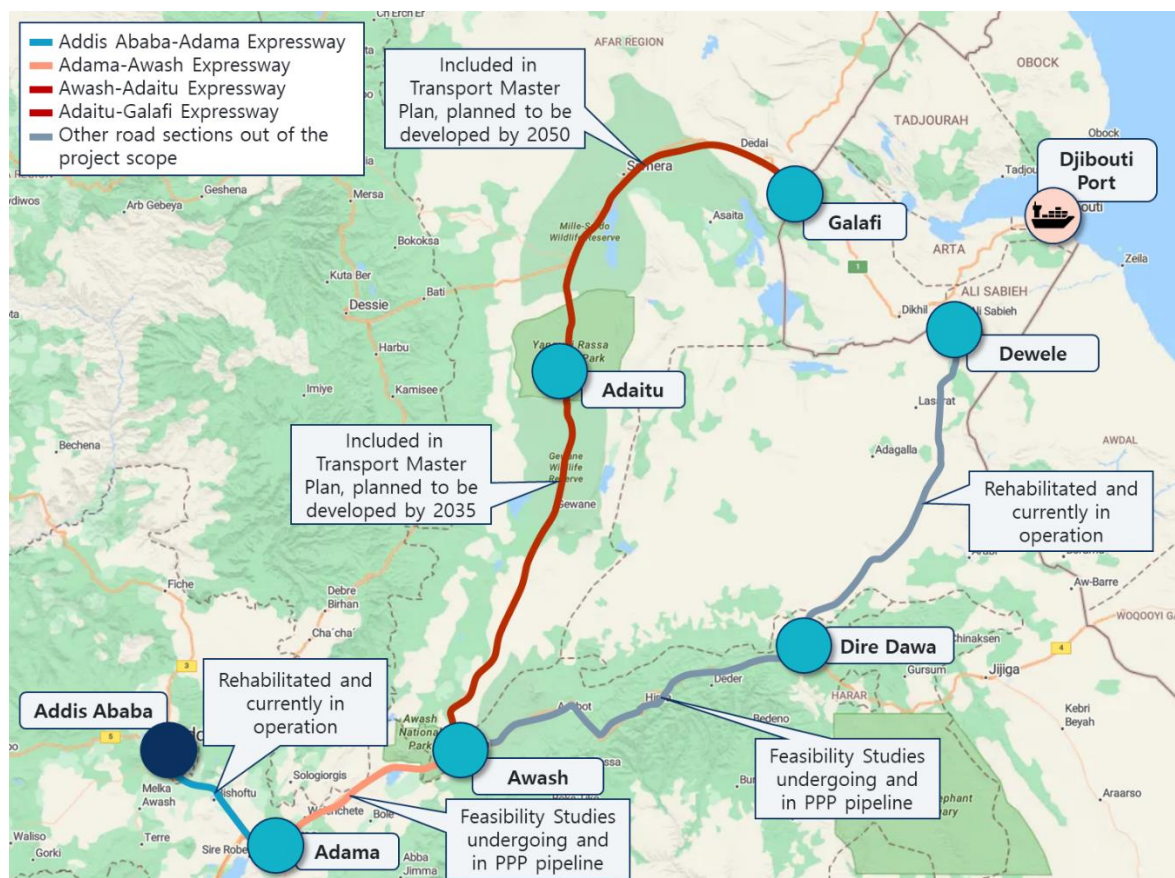


Figure 2. Overview of Addis Ababa to Galafi road

The road corridor spanning from Addis Ababa to Galafi serves as a vital link connecting Ethiopia's capital city to the border with Djibouti, which acts as the country's primary gateway for international trade.

The road corridor is structured into four main segments:

- Addis Ababa-Adama Expressway (85 km): the upgrading works for this stretch have been concluded at a total cost USD 612 million, financed by China and the Ethiopian government and inaugurated in 2014.
- Adama-Awash Expressway (125 km): the feasibility study is currently undergoing for the upgrading works. These works are anticipated to require a total investment of USD 226 million, with funding expected to come from the African Development Bank (AfDB) and the private sector through a PPP arrangement. The project has been identified as a priority investment in the short term (by 2025) according to the Transport Masterplan and has been included in the PPP Project Pipeline 2020/21.
- Awash-Adaitu Expressway (275 km): this project is currently in early development stages and no feasibility studies are being conducted at this time. The project is expected to focus on the rehabilitation and upgrading of the existing road and has an estimated cost of USD 657 million. It has been identified as a priority investment in the mid-term (by 2035) according to the Transport Masterplan³⁶, and it is eligible for a PPP arrangement.
- Adaitu-Galafi Expressway (177 km): this project is currently in early development stages and no feasibility studies are being conducted at this time. The project is expected to focus on the rehabilitation and upgrading of the existing road and has an estimated cost of USD 423 million. It has been identified as a priority investment in the long-term (by 2050) according to the Transport Masterplan³⁷, and it is eligible for a PPP arrangement.

The National Transport Master Plan: Road network 2022-2052 provides a preliminary assessment of the Financial Internal Rate of Return estimated for each road project, which are summarized in the following table:

Road project	FIRR
Adama-Awash Expressway	3.2%
Awash-Adaitu Expressway	-2.2%
Adaitu-Galafi Expressway	4.2%

Table 8. FIRR of each road project, according to the Transport Master Plan

However, the toll tariffs considered for the estimation of the FIRR in are based on the set tariffs for Addis Ababa-Adama Expressway, which are among the lowest in the African continent for both light and heavy vehicles (0.77 BIR/0.014 USD for light vehicles and 1.05 BIR/0.019 USD for heavy vehicles), as shown in the following figure:

³⁶ Ethiopian Transport Masterplan 2022-2052 – Ministry of Transport and Logistics – 2022 ([link](#))

³⁷ Ethiopian Transport Masterplan 2022-2052 – Ministry of Transport and Logistics – 2022 ([link](#))

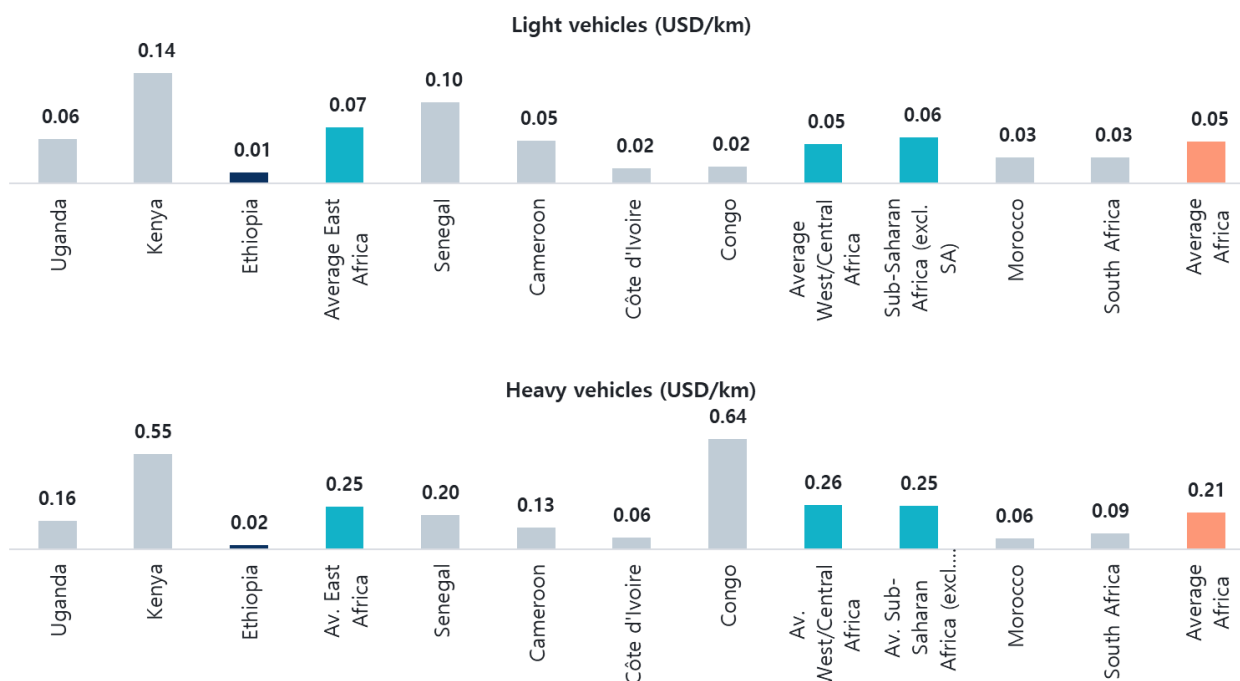


Figure 3. Benchmark of toll tariffs in Africa

2.4.3 Private sector interest in road financing

Despite the absence of a previous track record of private investment in road infrastructure in Ethiopia, there are several factors within the road sector that could potentially stimulate the interest and willingness of private investors to invest in this sector.

- Adequate institutional and regulatory framework: as discussed in previous sections, the institutional and regulatory framework in Ethiopia adequately establishes the necessary legal foundations and institutional support for the private sector to consider engaging with a public authority in the implementation of road projects under a PPP scheme.
- Positive perception of toll payment among road users: The Addis Abeba-Adama Expressway and the Dire Dawa-Dewele Highway are under the management of the Ethiopian Toll Road Enterprise (ETRE). As reported by ETRE in October 2019, the Addis Abeba-Adama Expressway recorded approximately 33 million car users over the preceding five years, resulting in a revenue of approximately USD 34 million for the country³⁸. Furthermore, in the fiscal year 2020/2021, the combined revenue from both highways amounted to USD 8.13 million, generated by over 9.3 million vehicles that utilized these toll roads³⁹. Moreover, there is reduced resistance to the introduction of tolls, as there have been no significant protests against their implementation. This is particularly relevant for the Dire Dawa-Dewele Highway, as the project comprised the upgrading of an existing road (brownfield project) with a lack of viable alternative routes which did not present significant tolling opposition from road users.

³⁸ AidData – China Eximbank provides \$349 million preferential buyer's credit for Addis Ababa-Adama Expressway Project – Accessed in May 2023 ([link](#))

³⁹ 2Merkato - Ethiopia's Transport Ministry Pockets Over 375 Mn Birr from Toll Roads in a Year – Accessed in May 2023 ([link](#))

- Lower demand risk: the road rehabilitation project (brownfield) presents a lower revenue risk in comparison to the construction of new road infrastructure (greenfield). This is due to the availability of information regarding the existing road infrastructure and the current traffic volumes. This information plays a vital role in estimating future traffic volumes along the tolled road, which shall be adjusted considering the impact of the road rehabilitation project, the implementation of tolls, and other singularities.
- Low expropriation risk: As the road project primarily involves the rehabilitation and upgrading of the existing road, the risk of expropriation is reduced since the road alignment already includes the necessary land allocated for most of the upgrading activities.

Nevertheless, the lack of experience in PPP procurement processes in Ethiopia may raise concerns and uncertainties among potential private investors. To stimulate the interest of the private sector in financing the Addis Ababa to Galafi Road project, it is crucial to demonstrate institutional commitment. The incorporation of all road sections into both the short-term perspective of the Transport Masterplan and the PPP Project Pipeline would support in this regard. Furthermore, ensuring appropriate project structuring from the early stages with a focus on the PPP perspective, as well as carefully considering suitable financing and de-risking mechanisms, can significantly enhance the interest of the project for the private sector.

2.4.4 Financing for project preparation

Funding for project preparation and development is required to conduct the pre-feasibility and feasibility studies and to structure the project in a way that improves its financial feasibility, enhancing its attractiveness for private investors. However, during this stage, the involvement of the private sector is unlikely due to limited information regarding the project's financial viability. This lack of information may result in a perceived higher risk for the private sector, leading to their reluctance to provide financial support.

During the initial stages of project preparation, the necessary financing will mainly come from the government or International Financial Institutions (IFIs). Seeking support from an IFI would not only provide the funding required for conducting the necessary studies but also offer technical assistance and advisory services to the PPP Directorate General. This assistance would support in structuring the project, improving its financial viability, and building capacity within the PPP Directorate General for future stages of the procurement process. The involvement of IFIs in the project development phases would also encourage greater confidence and reliability among the private sector regarding the outcomes of the feasibility study and the financial viability of the project.

Additionally, the assistance offered by Project Preparation Facilities (PPFs), such as the AfDB's NEPAD-IPPF Special Fund or the AUDA-NEPAD's Service Delivery Mechanism (SDM), plays a crucial role in facilitating the smooth progress of projects towards their implementation phases. PPFs play a vital role in assisting project sponsors with the preparation and development of their infrastructure projects. These facilities offer a variety of tools, including financial support for project preparation activities (through grants, concessional and commercial loans, and various repayment mechanisms), as well as technical assistance and advisory services to project sponsors. In Africa, the most significant PPFs are organized within the Project Preparation Facilities Network (PPFN), which categorizes them based on their sector and regional focus through the Fund Finder Database⁴⁰.

In those cases where support from IFIs or PPFs is provided in the form of a loan, incurring additional costs for the government budget, the repayment of these expenses can be incorporated into the PPP contract and recovered through toll fees collected during the operation of the project. Securing a grace period for

⁴⁰ Fund Finder database – ICA ([link](#))

loan repayment during the construction period would mitigate the financial burden of project financing on the government budget. Moreover, engaging IFIs for project preparation may also open doors for additional financial support during the implementation and operation phases of the project from the same institution.

2.4.5 Financing options for project implementation, operation, and maintenance

This case study examines various financing options for the development, operation, and maintenance of the trunk road spanning from Addis Ababa to Galafi.

Funds needed for project implementation and operation are considerably higher than those required for project development. It is during this stage that involving a private party to invest becomes a significant advantage in raising the necessary funds for successful project implementation.

To achieve this objective, three different project development options with private sector participation are proposed:

- Option 1: Development of the Adama-Awash Expressway under a PPP scheme. Under this option, the concessionaire will have full responsibility for this specific road segment, while being exempt from any obligations related to other road segments. The operation of the road stretch from Addis Ababa to Adama, as well as the rehabilitation and operation of road segments from Awash to Galafi, is not included within the scope of this option.
- Option 2: Development of the road segments from Awash to Galafi under a PPP scheme. This option specifically targets the rehabilitation, operation, and maintenance of the Awash-Adaitu and Adaitu-Galafi expressways. However, it does not include the operation of the road stretch from Addis Ababa to Adama, nor does it encompass the rehabilitation and operation of road segments from Adama to Awash within its scope.

The two options present important variations in their development stages. Feasibility studies for the Adama-Awash Expressway are currently undergoing and the project is included in the PPP pipeline to be developed in the short term. On the other hand, no feasibility studies have been conducted for the road sections from Awash to Galafi, and these projects are not included in the PPP pipeline. Moreover, the Adama-Awash section is expected to have higher traffic demand when compared to the road sections from Awash to Galafi, this is further analyzed in subsequent sub-sections.

Beyond those two options, a third option is proposed which suggests a combination of both options into a unified package, leveraging the complementary aspects of each option.

- Option 3: Bundling all road stretches from Addis Ababa to Galafi under a single package. This option proposes a unified concession agreement that encompasses the operation and maintenance of the existing Addis Ababa-Adama Expressway with the development of the other road stretches from Adama to Galafi by the same concessionaire.

Each of the options offers the possibility of being concessioned, enabling the rehabilitation and operation of the entire Addis Ababa to Galafi road. This can be accomplished either through the implementation of a single agreement encompassing all stretches (Option 3), or by implementing separate contracts for different sections of the road (options 1 and 2).

Various options have been identified to finance the development, upgrading and maintenance of existing trunk roads in Ethiopia. However, it is crucial to assess each road project on a case-by-case basis, as the suitability of each option largely depends on the specific infrastructure asset and the interests of the private sector. Based on the PPP framework for trunk roads in Ethiopia proposed previously, the following arrangements are proposed for each of the options identified.

Option 1: Adama-Awash Expressway

The project scope for this option entails the rehabilitation and upgrading (brownfield project) of the existing Adama to Awash road (including project design), along with its subsequent operation and maintenance for a specified duration. This road segment serves as the primary route connecting Addis Ababa with Djibouti and Dire Dawa, the second most populous city in Ethiopia. As a result, this road segment is expected to have an important traffic demand due to its strategic position, allowing to generate sufficient revenues for the concessionaire. However, a detailed financial assessment shall be carried out to validate this assumption.

According to the consolidated National Transport Master Plan: Road network 2022-2052, the project is expected to yield a Financial Internal Rate of Return (FIRR) of 3.2%. The low FIRR indicates that the project is likely to not generate the required funds to distribute dividends among shareholders and repay debt raised for the road upgrading works.

Toll fees to road users are suggested as the main payment mechanism for the concessionaire, transferring the demand risk to the private party. However, to ensure that toll revenues are sufficient for the concessionaire to operate and maintain the infrastructure, a thorough financial analysis will be conducted. The financial analysis shall determine the magnitude of public funds required to cover the project's viability gap, which is envisaged to be required due to the low FIRR (3.2%). Additionally, a toll acceptance and willingness-to-pay assessment is recommended to be carried out to determine whether road users would accept an increase in toll tariffs, which would enhance the financial viability of the project. It is important to note that the current toll fees are one of the lowest in Sub-Saharan Africa, as shown in figure 3.

This analysis will also determine if Minimum Revenue Guarantee (MRG) mechanisms should be implemented to mitigate the demand risk for the private party, with the added provision of a Revenue Cap to allow for the sharing of significant profits with the contracting authority. However, regardless of the outcome of the financial analysis, it is recommended that MRG mechanisms be introduced in the initial road projects procured under PPP schemes. This is done to incentivize private sector involvement and enhance the interest from potential investors.

To perform the financial analysis effectively, it will be crucial to examine financial information from the Addis Ababa-Adama Expressway, currently under operation adjacent to the Adama-Awash Expressway. This analysis will provide valuable insights and contribute to informed decision-making.

Considering the Adama-Awash Expressway's strategic significance in facilitating overseas trade to and from Addis Ababa via Djibouti, the special purpose vehicle (SPV) responsible for the project shall comprise a combination of private and public entities. Ethiopian Toll Roads Enterprise (ETRE) is suggested to comprise the public counterpart of the SPV, due to its experience in other Ethiopian tolled roads. This composition would enable the public sector to maintain a certain level of control over the road assets.

Additionally, this approach would contribute to improving public perception, as it would not be perceived as a complete privatization but rather as a collaborative effort between public and private entities. This arrangement also fosters transparency and communication between the public and private parties involved in the project.

The contracting authority for this project is proposed to be the Ethiopian Roads Administration (ERA) due to its extensive track record in the management and development of road infrastructure across the country. The ownership of the road asset will be transferred to ERA at the completion of the concession period.

The procurement of the **Adama-Awash Expressway** can be implemented under a PPP arrangement through a **joint venture between a private party and ETRE**, reducing the government's spending on

road infrastructure, while still **maintaining control over the road asset and improving public perception** of private participation in the provision of public services.

Option 2: Awash to Galafi road segments (Awash-Adaitu Expressway and Adaitu-Galafi Expressway)

The integrated brownfield project will involve the rehabilitation, upgrade, operation, and maintenance of the road infrastructure spanning from Awash to Galafi, which is located at the Djibouti border. This stretch of road is one of the two available options for road transportation between Addis Ababa and Djibouti. The alternative route is the recently inaugurated tolled expressway from Dire Dawa to Dewele, which has been rehabilitated recently and is currently in operation (see figure 2).

Due to the limited presence of major urban centers along the Awash to Galafi road, it is expected that traffic volumes will be lower in comparison to Option 1. As a result, it is assumed that the toll revenues generated from this road will not be enough to meet the financial needs for the operation and maintenance of the road.

According to the consolidated National Transport Master Plan: Road network 2022-2052, the Awash-Adaitu Expressway project shows a financial internal rate of return (FIRR) of -2.2%, while the same for the Adaitu-Galafi Expressway is set at 4.2%. The low FIRR, especially for the initial section, indicates that the project will not generate sufficient revenues to cover operational and financial costs. However, as mentioned before, these FIRRs have been estimated based on the toll fees for Addis Ababa-Adama Expressway, which are among the lowest in the African continent. As a result, a thorough financial analysis and willingness to pay assessment shall be conducted to refine the FIRR figures and assess the project's financial viability gap.

Considering the lower levels of traffic, higher demand risk (due to the presence of an alternative route), and reduced financial feasibility of these road sections, it is recommended to implement an availability-based payment mechanism for the concessionaire. In this arrangement, the concessionaire would receive a fixed remuneration for ensuring the availability of the road asset, adhering to specific quality standards. The concessionaire will collect toll fees from road users on behalf of the contracting authority, which will fund part of the availability fees payable to the concessionaire. Under this approach, there is no demand risk incurred by the concessionaire.

The concessionaire will assume responsibility for the complete expressway project from Awash to Galafi, encompassing the design, construction, operation, and maintenance, for a specified duration. This approach assures that the concessionaire will prioritize sufficient quality standards in the design and construction of the infrastructure to minimize maintenance expenses throughout the operational phase.

While the private party might contribute to financing a portion of the investment in road rehabilitation and upgrading, the low FIRR suggests that the majority of the required financing will need to be provided by the public party.

In order to facilitate trade between Ethiopia and Djibouti, the rehabilitation of the Galafi border post can be included within the responsibilities of the concessionaire. This project has already received funds from the Trade Facilitation Programme (TFP)⁴¹, funded by the European Union. Additionally, the rehabilitation of the road stretch from Galafi to Djibouti Port can also be considered as part of the concession scope. Other sources of revenue for the concessionaire may be obtained from the operation of petrol stations, securised parking areas and rest areas or the deployment of utilities (i.e., energy, telecom, water) along the road.

⁴¹ COMESA - Djibouti Signs €2.5m Sub-delegation Agreement to Upgrade Galafi Border Post – 2021 ([link](#))

By incorporating these incentives, the route becomes more appealing to road users as it ensures efficient and seamless customs procedures for both cargo and passengers, reducing transit times and costs. This, in turn, contributes to sustaining traffic demand. This alternative can be considered in the financial analysis of the project to evaluate its potential in generating sufficient demand that could potentially lead to a shift from an availability-based payment mechanism to toll fees.

Like Option 1, the Special Purpose Vehicle (SPV) can be established through a collaboration between public and private entities, ensuring public control over the asset and assuring public acceptability. Specifically, if the project includes the rehabilitation of the border post and the road segment in Djibouti, the involvement of public authorities from both countries would guarantee regional-level political commitment, thereby increasing private sector interest.

However, if a previous road project has already been procured through a public-private partnership (PPP) and considering that the road section from Awash to Galafi is not the sole available route, the SPV can be entirely composed of a private party. This is primarily because public acceptance might be favorable based on prior experiences with PPPs in road projects and the relatively lower strategic importance of the road link, given the presence of alternative routes.

The Ethiopian Roads Administration (ERA) will assume the role of the contracting authority and project owner on the Ethiopian side, while the Djibouti Road Agency (DRA) will fulfill the same responsibilities on the Djiboutian side.

As the road section from **Awash to Galafi road** sections link to Djibouti, the project has strong **potential to leverage on synergies with other projects**, such as the rehabilitation of the Galafi Border Port or the road section from Galafi to Djibouti Port, **enhancing the commercial attractiveness** of the project.

Option 3: Addis Ababa to Galafi road segments (bundling of all four expressway projects)

The bundling option offers a holistic approach for the complete development of the entire road corridor stretching from Addis Ababa to Galafi, combining the Addis Ababa-Adama, Adama-Awash, Awash-Adaitu, and Adaitu-Galafi Expressways under a single concession agreement.

Road bundling concessions refer to a procurement and management approach where multiple road projects or segments are combined under a single concession agreement. Instead of treating each road project or segment as separate entities, they are bundled together to form a larger project with unified management and financing. Under the bundling concession, the concessionaire is granted the rights to design, construct, operate, and maintain the four expressway projects from Addis Ababa to Galafi. This approach aims to achieve synergies and efficiencies by consolidating resources, streamlining project management, and optimizing financial arrangements.

The concessionaire will face lower demand risk since the first section is currently operational. The recent rehabilitation of this road segment also reduces the risks associated with construction and financing for project development, while also stimulating induced demand due to the rehabilitation works. The inclusion of already operational road sections, along with the subsequent sections to be developed, typically enhances the commercial attractiveness of Addis Ababa-Galafi road project. This can be accomplished by implementing a phased approach for the development of each road section, capitalizing on the financial advantages of bundling them with other sections that are already in operation.

This approach can encourage private sector participation by creating a larger-scale and more financially attractive project. It enables better coordination and integration of infrastructure development, resulting in improved connectivity and transportation efficiency. Bundling can also facilitate the implementation of comprehensive planning and maintenance strategies across multiple road segments.

However, road bundling requires careful consideration and planning. The complexity of managing multiple projects within a single concession agreement imposes robust contract management, financial analysis, and risk assessment. Proper coordination between the public authorities, concessionaire, and stakeholders is crucial to ensure effective implementation and successful outcomes.

A phased development of the road section from Adama to Galafi is suggested to be developed. The concessionaire will be granted the responsibility of operating and maintaining the Addis Ababa-Adama Expressway, which has recently been rehabilitated and is currently operational. The toll fees collected from this road section will serve as a revenue source for the concessionaire from the beginning of its operations. In return, the concessionaire will undertake the task of rehabilitating and upgrading the Adama-Awash Expressway in the short-term.

Once the Adama-Awash Expressway is under operation, the toll revenues generated by both the Adama-Awash and Addis Ababa-Adama Expressways will be utilized to finance the investment for the rehabilitation and upgrade of the Awash-Adaitu Expressway in the mid-term. Subsequently, a similar approach will be adopted for the development of the Adaitu-Galafi Expressway in the long-term, with toll revenues from the entire road corridor contributing to its funding.

By adopting this approach, the concessionaire will have access to a broader revenue stream. The toll revenues generated from the initial two road sections, which experience higher traffic demand, will be used to finance the development of the latter two road sections that have lower traffic demand. This strategy mitigates demand risk for the concessionaire by diversifying revenue sources. It also reduces their financial risk due to the phased investment in infrastructure development, facilitating a more sustainable and manageable approach.

Similar to Option 1, it may be necessary to implement Minimum Revenue Guarantee (MRG) mechanisms or availability-based provisions to incentivize private sector involvement. However, the inclusion of Revenue Cap mechanisms can be omitted since the revenues generated will finance the phased development of the road infrastructure. Although a comprehensive analysis will be conducted to assess the project's financial feasibility, the blended approach is anticipated to reduce the financial burden on the government. Moreover, the bundling alternative enables the public sector to streamline the operation and maintenance of all expressways within the road corridor, as they are managed under a single contract.

The blended option may also incorporate additional provisions mentioned in Options 1 and 2, such as the rehabilitation and operation of the Galafi Border Post or the road section from Galafi to Djibouti Port. These possibilities will be subjected to thorough analysis during feasibility studies to evaluate their potential advantages for the project.

Due to the larger scale of this project and the strategic interest, it is recommended to involve the Ethiopian Toll Roads Enterprise (ETRE) in the SPV, forming a joint venture with a private party, enhancing public perception of the project. However, a SPV fully formed by the private sector may be also a suitable option if well overseen by the contracting authority.

Given the larger scope and strategic importance of this project, it is advisable to include the Ethiopian Toll Roads Enterprise (ETRE) as a partner in the SPV, which would enhance public perception and support for the project. However, if properly supervised by the contracting authority, a fully private sector SPV can also be a viable option. The Ethiopian Roads Administration (ERA) will act as the contracting authority

responsible for overseeing the project's development, and subsequently become the owner of the road asset once the concession period concludes.

The rehabilitation of the entire **Addis Ababa-Galafi road corridor** suggests adopting a **blended approach** where all road sections within the corridor are blended under a **single PPP arrangement**. This approach **simplifies the procurement and management processes for the government**, while minimizing the impact of the project on the government budget.

2.4.6 De-risking mechanisms to incentivize private financing

Alongside the diverse financing options applicable to road infrastructure development and maintenance in Ethiopia, there are suggested de-risking mechanisms aimed at encouraging private sector involvement in financing road infrastructure.

Although guarantees should not be considered as a stand-alone financing mechanism for infrastructure projects, they are presented in this section for their ability to reduce the cost of financing while increasing the investment appetite from the private sector.

As per the OECD⁴², a financial guarantee refers to a legally binding agreement in which the guarantor commits to paying a portion or the entire amount of a specific financial obligation associated with a loan, equity, or other instrument if the obligor fails to make payment (or in the case of investment, if there is a loss in value). The primary aim of a guarantee is to enhance the financing conditions of a debt instrument. While a guarantee does not necessarily result in an improved credit rating for a bond, it can reduce the cost of capital by transferring certain types of risks. This, in turn, can lead to longer repayment periods and lower interest rates for the borrower, resulting in substantial cost savings for additional infrastructure funding.

The absence of guarantees for payments is viewed as a major hindrance to attracting institutional investment in African infrastructure. Consequently, institutional and long-term private investors would gain increased confidence if they were provided with "payment guarantees" or "sovereign guarantees" to mitigate risks.

A diverse range of sources exist for guarantees and other risk mitigation mechanisms in infrastructure development. The CSIS⁴³ research has identified the following sources: (i) bilateral Development Finance Institutions (DFIs), (ii) Multilateral Development Banks (MDBs), (iii) specialized guarantee agencies such as World Bank-MIGA or PIDG-GuarantCo, (iv) national governments, and (v) the private sector, including banks and monoline insurers. Standard guarantee products do not typically cover certain risks, such as devaluation risk and macroeconomic volatility. However, dedicated agencies like MIGA are specifically designed to offer specialized guarantees to address these specific risks.

Moreover, in BOT contracts, it may be necessary to have minimum revenues guarantee in place, where the Contracting Authority assures the concessionaire a certain level of revenue and profitability by sharing a portion of the traffic risk. This mechanism allows investors to have a guaranteed minimum level of revenue and profitability.

⁴² OECD – Glossary of Statistical Terms ([link](#))

⁴³ CSIS – Innovations in Guarantees for Development 2019 ([link](#))

2.5 Conclusions and recommendations

Road financing in Ethiopia involves a combination of public and private funding sources. The Ethiopian government plays a significant role in providing financial support for road infrastructure development through its annual budgets and various development programs.

Public financing for road development projects in Ethiopia typically comes from government allocations, loans and grants from international financial institutions. In addition to traditional financing methods, Ethiopia has also established a road fund to generate revenue specifically for road infrastructure. These funds are typically funded through fuel levies or road user charges (toll fees), with the collected funds dedicated to road maintenance, rehabilitation, and construction.

Public-private partnerships (PPPs) for road projects in other countries have demonstrated favorable outcomes for both the public and private sectors through various arrangements and models. In recent years, Ethiopia has explored PPPs as a means of road financing. Three road projects have been included in the Ethiopian PPP pipeline for the upcoming years, among which the Adama-Awash Expressway is included.

The framework defined for the analysis of PPP options for the development of the road corridor from Addis Ababa to Adama allows for various procurement alternatives based on multiple dimensions, including payment mechanism, contract scope, SPV ownership, and financing. Three procurement options have been analyzed, comprising different sections of the road corridor. Out of the three options assessed, the blended option, which involves consolidating all road sections from Addis Ababa to Galafi under a single concession agreement, seems the most favorable option for structuring the project.

The blended option reduces demand and financial risk for the private party while facilitating the procurement, development, and operation processes of the road project for the public party. However, a detailed study shall be carried out to assess the financial viability of the project and determine the most suitable procurement option for project development and implementation.

Additionally, synergies have been identified to enhance the financial attractiveness of the project for the private sector, such as the incorporation of the rehabilitation of the Galafi Border Post and the rehabilitation of the road section from Galafi to Djibouti Port as part of the project scope. These alternatives shall also be assessed in the feasibility study to determine their adequacy.

Finally, the following roadmap provides an overview of the essential stages and tasks necessary for the effective development of the Awash-Galafi Expressway PPP project:

- Ethiopian Roads Administration (ERA) to incorporate the Addis Ababa-Galafi Expressway PPP project in the PPP Project Pipeline for the upcoming years, under approval of the PPP Board.
- PPP Directorate General to seek transaction advisory support from an IFI or a reputable consulting/engineering firm,
- Carry out a thorough feasibility study of the Addis Ababa to Galafi road project with a focus on improving its financial viability and structuring it as a PPP, and draft the Terms of Reference (ToR) for the procurement process.
- Circulate a Project Information Memorandum (PIM) among prospective project developers and investors, and organize a project roadshow to generate interest in the project.
- Issue an Expression of Interest (EoI) to invite interested parties to express their interest in participating in the procurement process, allowing the Contracting Authority to shortlist suitable candidates.
- Issue a Request for Proposals (RfP) to identify the preferred bidder to fulfill the project's objectives and deliver the desired outcomes.

- Engage in negotiations with the preferred bidder and potential investors until reaching the Financial Close of the project, commencing with the design, construction, and operation phases of the project.

3 Assessment of private financing options for railways

3.1 Context overview of railway transport in Ethiopia

In Ethiopia, the Ministry of Transport has complete responsibility for the development and management of railways. No other state organization or agency has been granted the authority to handle regulatory or service-related functions within the railway transportation sector. Additionally, two public companies have been established to undertake tasks related to the construction, maintenance, and/or provision of rail transportation services. Although private sector involvement in rail transport is legally permitted, currently there are no private companies operating in this sector.

The Ethiopian railway network is composed by the Ethio-Djibouti Railway Line and the Addis Ababa Light Rail Transit Service, which construction have been recently completed and are currently under operation. Additionally, the railway line from Awash to Mekele is currently under construction

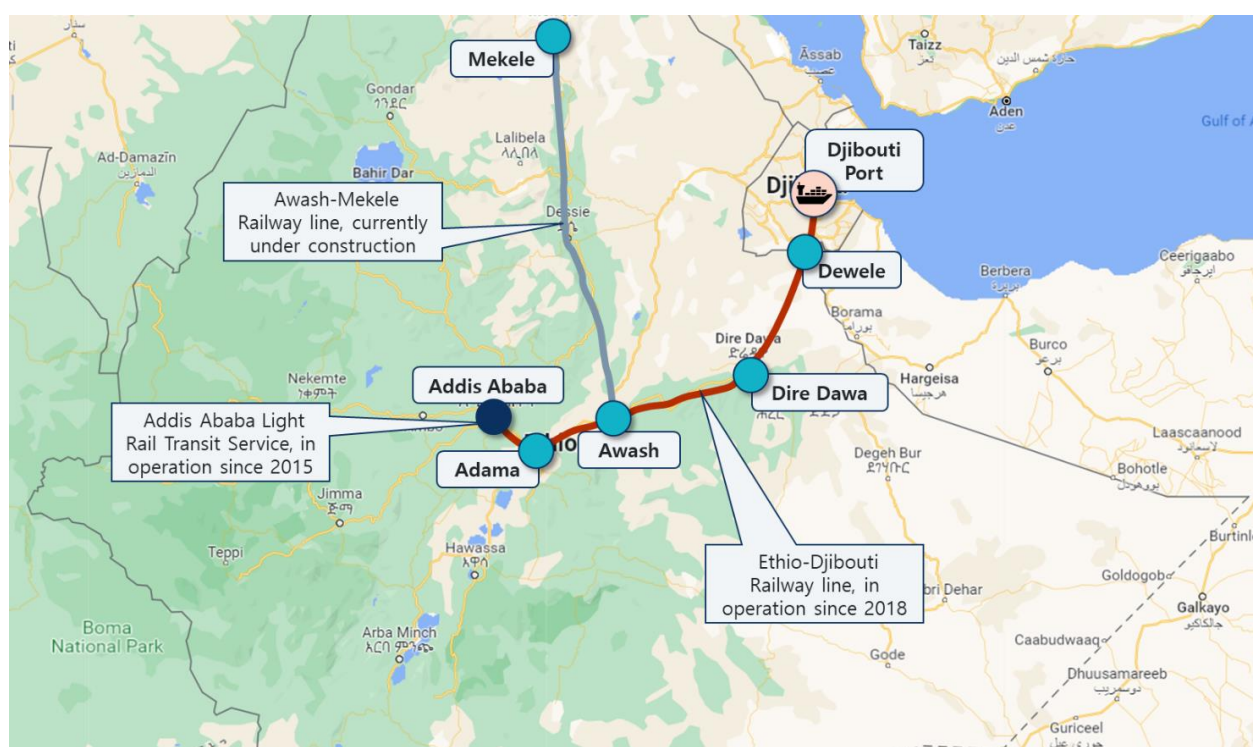


Figure 4. Overview of Ethiopia's railway network

The key players in the railway sector are the Ministry of Transport (MoT), Ethiopian Railway Corporation (ERC), and Ethio-Djibouti Standard Gauge Railway Share Company (EDR), are all controlled by public authorities. The Chemin de Fer Djibouto-Éthiopien (CDE), the old metric gauge railway, is barely functional.

The Ethiopian Railway Corporation (ERC) was established in 2007 as a government-owned entity with the responsibility of developing railway infrastructure and offering railway transportation services. ERC currently owns and operates Addis Ababa Light Rail, for which a dedicated department was created specifically for its operation. Moreover, ERC is currently developing the railway line extending from Awash to Mekele via Hara-Gebeya, which has not commenced passenger or cargo transportation services yet, and has identified

railway projects on eight corridors in the country as necessary to enhance both social and economic needs.⁴⁴

The Standard Gauge Railway (SGR) developed by ERC is the only operational railway line connecting the 759 km between Addis Ababa and Djibouti, initially intended for the ERC to operate the line once it became operational.

The Addis Ababa-Djibouti railway line implies a linkage between two nations, making it a cross-border railway line. Such international connection gave rise to the necessity for cooperative relations between the two countries, which led to the establishment of the Ethio-Djibouti Standard Gauge Rail Transport Share Company (EDR) in 2017 through a bilateral agreement between the Federal Democratic Republic of Ethiopia and the Republic of Djibouti. This company is tasked with operating on national territory along the available national routes on this connection.⁴⁵ Prior to the commencement of operations of the Addis Ababa railway, ERC transferred its authority to the Ethio-Djibouti Standard Gauge Railway Transport Services Share Company (EDR).

EDR is responsible for the operation and maintenance of the standard gauge railway line between Ethiopia and Djibouti and for the provision of freight and passenger services along the line. Currently, a Chinese company has signed a 6-year management contract with EDR to operate and maintain the railway line. However, there are plans for EDR to assume full responsibility for operation and maintenance within the next 2 to 3 years, ending the involvement of the management contractor.

In addition to ERC and EDR, the old Narrow Gauge Railway (Chemin de Fer Djibouto-Éthiopien (C.D.E.) operates the basic service related livelihoods and social services in 18 small stations from Dire Dawa to Gilile. The organization provides infrastructure management and transportation services in Ethiopia and Djibouti but the agreement between the two countries will end in 2023.

3.2 Background of railway financing in sub-Saharan Africa

Worldwide, the railway sector has seen the emergence of diverse business models, influenced by factors such as historical context, regulatory frameworks, and market characteristics such as size and density. Distinctions can be observed between vertically integrated and vertically segregated models, as well as the involvement of both private and public sectors in infrastructure investments and operations, as shown in the following figure. It is worth noting that all these models have the potential for success when developed in an appropriate environment, highlighting the absence of a universally perfect railway business model.

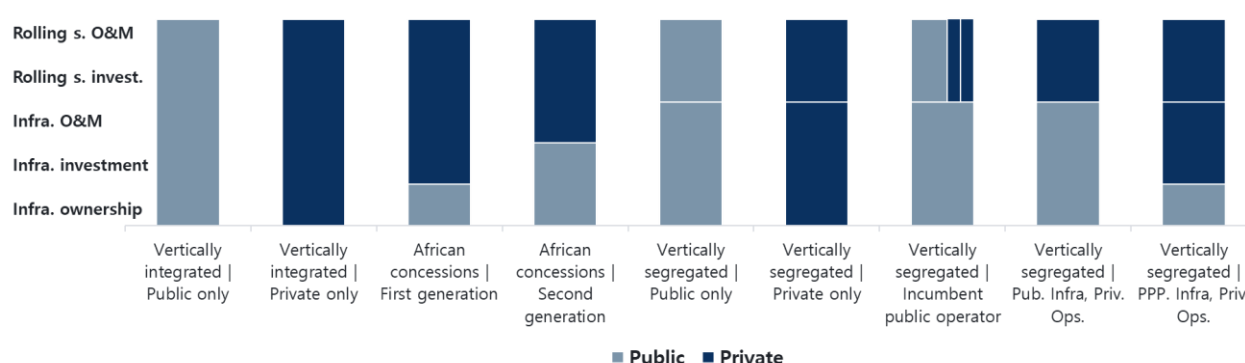


Figure 5. Illustrative examples of railways business models

⁴⁴ Ethiopian Railways Corporation Official website – Accessed in May, 2023 ([link](#))

⁴⁵ Ethio-Djibouti Railway Official website – Accessed in May, 2023 ([link](#))

A vertically integrated railway system has the benefit of having a single company overseeing the entire railway, from operations to infrastructure. This ensures optimal coordination between different aspects of the business. However, the downside of this approach is that it tends to create a monopoly, preventing the entry of additional operators, even if the current one is underperforming.

In several countries, the segregation between infrastructure and operations has been adopted as a means of managing railways. This separation recognizes that infrastructure tends to be a natural monopoly, while competition can be introduced in the operations sector. As a result, railway operators primarily focus on providing transportation services and are not involved in civil works activities. The infrastructure manager is responsible for investing in and maintaining the infrastructure.

In African countries, railways were primarily built during colonial times, often by private sponsors with interests in mining or other industries. Following independence, these railways were transformed into national institutions, reflecting the influence of socialist ideas and resulting in overstaffed and underfunded public sector agencies. In the 1990s, concessions were introduced as a solution to attract investment and improve efficiency, leading to the rise of public-private partnerships (PPP) in the railway sector. Currently, PPP schemes govern the management of approximately 70% of railways in Sub-Saharan African countries⁴⁶. However, public railways continue to maintain their prominence in specific nations, particularly in North Africa and the Republic of South Africa (RSA).

Case Study 1: Morocco

Morocco has taken a unique approach to reforming its state-owned railway monopoly, ONCF (office National des Chemins de Fer), by gradually transitioning towards a market-oriented strategy. This approach has helped minimize labor conflicts during the reform process.

Unlike other African countries, Morocco did not opt for an open-market or privatization model for ONCF, as the network size and technical competence of the staff did not necessitate private expertise. Instead, Morocco focused on transforming ONCF's economic model into a business model through organizational changes and the appointment of dynamic managers with international experience.

The government's commitment to railway development, along with coordinated planning, financing efforts, and continuous training, has ensured the competitiveness and sustainable operation of the state-owned railway. The regulatory framework has been adapted to support the government-operator relationship, with ONCF responsible for infrastructure operations, maintenance, and construction.

Morocco's successful financial mechanisms and railway model have garnered interest from other African countries. The focus on integrated logistics, passenger satisfaction, multimodal connections, and the development of high-speed rail (HSR) infrastructure reflects Morocco's ambitions to lead the African railway market. While public-private partnerships (PPPs) have been utilized on a case-by-case basis, a new legal framework has also been prepared to facilitate private participation in larger projects, such as HSR, if needed.

The sector is also focused on developing freight transportation in railways, including comprehensive plans and platforms to enhance freight attractiveness and improve connectivity with ports over capacity improvement for international appealing. Concurrently, the rail industry will be developed alongside training programs for building, refurbishing, and maintaining rolling stock.

⁴⁶ Rail Infrastructure in Africa, Financing Policy Options – AfDB – 2015 ([link](#))

Passenger transportation also presents significant investment opportunities, as in the past decade it has tripled the number of passengers due to increased service levels and a customer-centric approach instead of the traditional user approach.

Centrally located stations in areas of development will be implemented, and Morocco's construction of the first High-Speed Rail (HSR) line in Africa demonstrates its intention to lead the African market. However, differences between HSR and the regular market require further study.

While PPPs have been used, lengthy processes have made them less viable, prompting the preparation of a new law to enable private sector involvement in the railway sector.

The search for competent operators interested in railway concessions in Africa has been challenging, with limited international private railway operators showing interest. However, industrial sponsors with logistics or maritime transport businesses have shown more interest, as they view specific railway corridors as opportunities to establish a balance between performance and cost. These sponsors collaborate with governments and IFIs to secure development loans through Project Finance schemes by creating dedicated Special Purpose Vehicles. Other corporations have also shown interest in smaller railway lines, particularly for mining purposes, aiming to reduce logistic costs by developing their own networks.

As a result, staff productivity has generally improved in most cases, and there has been an increase in freight traffic due to internal process improvements and better cost structures. Additionally, better management practices and a market-oriented approach have led to an enhanced level of service. However, despite these positive developments, several concessions have faced financial difficulties.

Most railway concessions in SSA have fallen short of their initial expectations in terms of traffic volume and service level. Moreover, these concessions have struggled to attract interest from mainstream private operators, resulting in challenges in securing equity and finance. This has caused stakeholder instability and frustration on both the public and private fronts.

The initial railway concessions in Africa required the concessionaire to assume complete responsibility for infrastructure investment, maintenance, and railway operations, often encompassing public service obligations as well (initial concessions in Cameroon, Madagascar, Senegal or Kenya). This initial model of vertically integrated concessions has proven largely unsuccessful, as these concessions have faced instability from their beginning and have struggled to endure without significant amendments, often lasting only a few years. Due to the operators' inability to fulfill their investment obligations, governments have taken back the responsibility for infrastructure investment, while leaving the concessionaire with the task of maintenance.

In response to the challenges faced during the first waves of railway reforms, many governments are now embracing substantial institutional and regulatory changes. New regulations concerning railways and PPPs are being introduced, aimed at creating a conducive environment for the growth and success of the railway sector.

Initial railway concessions in Tanzania and Zambia, in the early 2000s, had some variations, with the government being responsible for infrastructure development. However, the experiences in both countries highlight the lack of commonly accepted definitions between the private sector and the government regarding investment and maintenance responsibilities. This lack of clarity has been a fundamental factor contributing to concession instability and a primary reason for their failure.

Additionally, there is often a significant variation in the emphasis placed on freight and passenger services by governments and private partners during concession negotiations. Governments tend to consider passenger services as socially and politically sensitive matters and therefore seek a certain level of service guarantee. Generally, passenger and freight transport are separate types of businesses that are challenging

to integrate under a single operator. In most countries, passenger services are still provided by public sector entities.

The business and institutional model of initial railway concessions in Africa has proven to be unstable, placing excessive financial burdens and risks on the private sector. While some concessions have been restructured to address these issues, challenges remain in passenger services, maintenance, and rolling stock. Freight railway operators primarily focus on transportation and outsource construction and maintenance activities. The complexity and risks associated with concessions, combined with political and regulatory uncertainties, have hindered the attraction of mainstream partners for infrastructure construction and railway operations. Dedicated railways for specific customers, such as mines, have shown more success due to their unique business models and financing solutions.

Case Study 2: Development of the Standard Gauge Railway (SGR) in East Africa

Since 2010, a number of countries in East Africa have considered the adoption of the standard-gauge (1,435 mm) metric for the development of new railway lines. Tanzania, Kenya and Ethiopia have developed SGR projects aimed at connecting main seaports in the Indian Ocean with landlocked countries within the region, largely funded by government allocations and loans.

In Kenya, the SGR is one of the largest infrastructure projects ever undertaken. It was conceived as part of the Northern Corridor Initiative, aimed at connecting the coastal city of Mombasa to the landlocked countries of Uganda, Rwanda and South Sudan going through Nairobi. In August 2009, Kenya's Ministry of Transport (MoT) and China Road and Bridge Corporation (CRBC) signed a memorandum of understanding, which included CRBC conducting a free feasibility study on the SGR project.

In January 2011, CRBC submitted the feasibility report to the Ministry. The arrangement of the free feasibility study suggested that the findings would be used by both governments, but it also raised the possibility of favouritism towards CRBC in the procurement process, considering they had already conducted the study. This aligns with China Exim Bank's approach, which typically requires the firm that conducted the feasibility study to implement the project. In January 2012, Kenya Railways Corporation (KRC) requested financing from China Exim Bank to commence construction of the SGR.

The primary source of financing for the SGR project in Kenya was a loan provided by the Exim Bank of China. The initial loan agreement signed in 2014 amounted to approximately USD 3.6 billion for Phase 1 of the project, which covered the Mombasa-Nairobi railway line. This loan was later increased to approximately USD 4.9 billion to incorporate additional works and variations. The Kenyan government also contributed to the financing of the SGR project. It provided counterpart funding and financial guarantees to support the loan from the Exim Bank of China. In the Ugandan side, the project is still under development stages and the government of Uganda is pursuing bilateral and international organizations to secure funding for the implementation of the project. Rwanda and South Sudan are expectant, thirteen years later.

Construction for phase two, spanning 120 kilometres, commenced in late 2016 and concluded in August 2019. However, phase three, connecting Nairobi to Kisumu in western Kenya, is yet to commence. The approval of the loan for phase three by China's Exim Bank, initially anticipated in August 2018, was not granted, raising uncertainties about the extension of the SGR to other regions in East Africa. As of today, only the SGR section from Mombasa to Nairobi is currently under operation in the Kenyan side, while its interconnection with Uganda and the Ugandan SGR network is still at planning stages.

Phases 1 and 2 of the construction, spanning 300 km from Dar es Salaam to Morogoro and 442 km from Morogoro to Makutupora, respectively, have reached advanced construction stages and are scheduled for near-term operations. The EPC (Engineering, Procurement, and Construction) contract for Phase 3, covering a distance of 300 km from Makutupora to Tabora, has recently been signed. Furthermore, construction has recently commenced on a 250 km branch line from Isaka to Mwanza. As for the remaining railway lines within Tanzanian territory and the connections with neighbouring countries, they are still in the preparatory stages.

The map illustrates the East African Railway Network, showing construction progress and project phases across several countries. The network is color-coded by phase: dark blue for 'In construction - S4', light blue for 'Feasibility or Project structuring - S2b / S3a', and orange for 'Project definition or Pre-feasibility - S1/S2a'. Construction progress is indicated by percentages in dark blue boxes: 7%, 0%, 85%, and 96%.

Legend:

- In construction – S4
- X% Construction progress
- Feasibility or Project structuring - S2b / S3a
- Project definition or Pre-feasibility - S1/S2a

Map Details:

- Countries:** UGANDA, KENYA, RWANDA, BURUNDI, DEMOCRATIC REPUBLIC OF THE CONGO, TANZANIA, ZAMBIA.
- Key Locations:** Walikale, Goma, Kigali, Bukavu, Uvira, Bujumbura, Musongati, Kigoma, Uvinza, Mpanda, Karema, Kaliua, Tabora, Mwanza, Isaka, Makutupora, Morogoro, Dar es Salaam.
- Project Phases and Progress:**
 - 7%:** Mwanza to Isaka (In construction - S4)
 - 0%:** Tabora to Makutupora (In construction - S4)
 - 85%:** Makutupora to Morogoro (In construction - S4)
 - 96%:** Morogoro to Dar es Salaam (In construction - S4)
- Other Phases:**
 - Feasibility or Project structuring - S2b / S3a (Light Blue):** Isaka to Tabora, Tabora to Kaliua, Kaliua to Uvinza, Uvinza to Kigoma, Kigoma to Musongati, Musongati to Bujumbura, Bujumbura to Uvira, Uvira to Gitega, Gitega to Kigali, Kigali to Bukavu, Bukavu to Goma, Goma to Walikale.
 - Project definition or Pre-feasibility - S1/S2a (Orange):** Walikale to Kisangani, Kisangani to Kindu, Kindu to Bukavu.

Overall, the Tanzanian internal SGR network is in an advanced development state, the current challenge is obtaining funding for the connectivity with neighbouring landlocked countries, as these are unable to cover the viability gap with their own funds.

Finally, the 756 km SGR in Ethiopia connects the capital city of Addis Ababa with the port of Djibouti. The railway line has been recently inaugurated (in 2018) and is currently under operation. The project has been financed by a combination of government allocations and loans from the Chinese Eximbank. More detail on the Ethiopian SGR is provided in the following sub-sections.

Overall, the ongoing SGR projects in East Africa are primarily funded through government allocations and loans from various sources, with a significant portion coming from the Chinese Eximbank. These endeavours are focused on establishing connections between major ports along the eastern coast and landlocked countries in the region. However, the substantial viability gap that needs to be filled by public funds poses challenges for landlocked countries to advance further in developing their respective SGR sections. Furthermore, no private participation for the development and construction of these SGR projects has been observed, indicating the reduced interest for the private sector in financing greenfield railway infrastructure.

3.3 Benchmark of financing mechanisms in the railway sector

According to international experience, road projects benefit from the PPP model due to the presence of tolls for road users. However, this model is not applicable to the railway sector. Railway projects involve substantial investments and have a long gestation period. The return on investment is received after a considerable period, which conflicts with the private sector's desire for quick returns. Unless additional incentives are provided, attracting the private sector to invest in railways would be challenging. Therefore, the PPP model is unsuitable for the development of new railway lines. Additionally, unless the government fills a significant financing gap, constructing production units for rolling stock would also not be feasible. However, the private sector can be invited to participate in non-core activities.

The involvement of the private sector in government monopolies has not consistently resulted in improved efficiency and modernization by the private sector. Instead, it has sometimes led to the private sector gaining a monopoly position. The success of PPP projects relies on the project's profitability, the development of well-defined policy documents, and the provision of sufficient incentives to the private partner. The Public-Private Partnership (PPP) model has the potential to become a highly desirable option for state-owned enterprises in addressing their growth-related challenges.

Railway projects structured under PPP arrangements have been mainly used globally to build, finance, operate and maintain for types of railways:

- Conventional railway lines, in which PPPs are used for the construction and operation of conventional railway systems, often with fewer technical requirements. However, private sector participation can bring added value due to single ownership, especially in cross-border projects, increased flexibility for freight corridors, or the absence of public expertise in specific markets.
- Equipment and rolling stock, suitable for the construction and maintenance of specific equipment aimed at optimizing costs, such as signaling systems, power supply infrastructure, and train control mechanisms.
- Airport Rail Links (ARL): projects often include the construction and operation of railway lines, along with the provision of specialized transportation services connecting city centers and airports. In most cases, ARL trains use pre-existing conventional railway networks for certain sections of their trips.
- High-speed lines, most of them are infrastructure-only projects that connect on both ends with conventional networks, with open access to train operators.

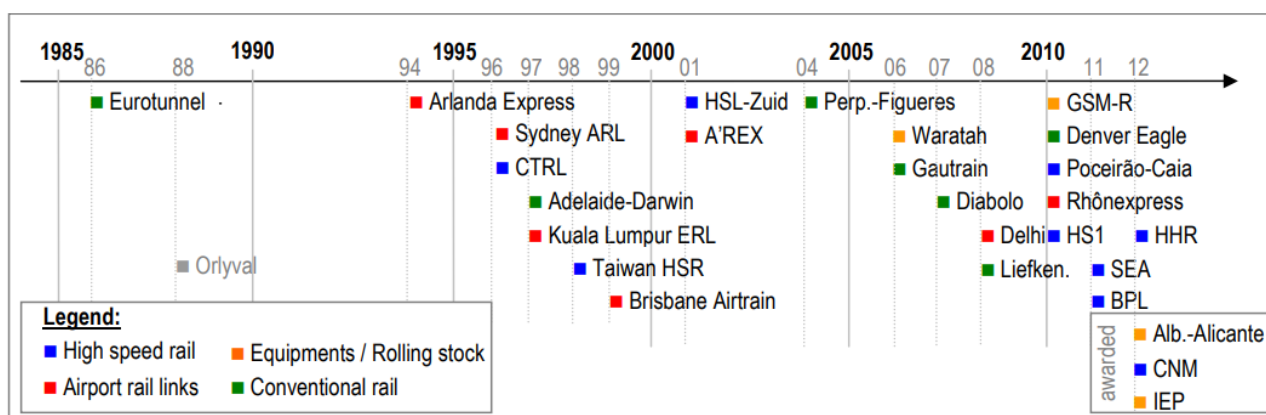


Figure 7. Overview of some types of PPP contracts signed globally⁴⁷

Over the years, there has been a transition from traffic-based concessions to availability-based concessions. In traffic-based concessions, the concessionaire derived commercial revenues from railway users. On the other hand, availability-based concessions involve the public authority retaining the commercial risk by receiving commercial revenues and making payments to the concessionaire based on performance indicators. The acceptance of availability-based concessions is increasing due to the subpar performance of concessionaires in holding the commercial risk. Furthermore, certain traffic-based concessions now incorporate mechanisms for sharing commercial risks, such as the concessionaire assuming all risks within a specified range.

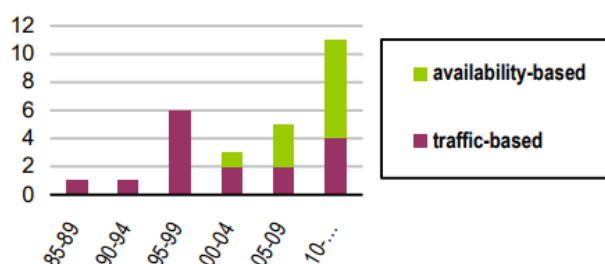


Figure 8. Number of availability and traffic-based PPPs signed globally⁴⁸

To provide a general overview of private sector participation in railway infrastructure, relevant examples have been benchmarked from Africa and other regions globally, such as Europe, Argentina or India.

3.3.1 Private sector participation in the railway sector in Africa

Private sector participation in railway financing has emerged as a key strategy in many countries to address the growing demand for modern and efficient railway systems. By engaging private entities in funding and supporting railway projects, governments can leverage private sector expertise, capital, and efficiency to enhance the development and operation of their railway networks. This approach not only provides financial support but also fosters innovation, technology transfer, and improved service delivery in the railway sector.

Rail transport is an established industry in developed countries that is seeing a notable recovery after a period of decline. The renewed interest in railways relies on their ability to transport large volumes of freight and passengers efficiently and environmentally. However, many railway systems in various countries

⁴⁷ Munich Personal RePEc Archive (MPRA) – PPPS in the rail sector – A review of 27 projects – 2012 ([link](#))

⁴⁸ Munich Personal RePEc Archive (MPRA) – PPPS in the rail sector – A review of 27 projects – 2012 ([link](#))

are still struggling to transition from being reliant on subsidies to becoming more efficient commercial enterprises.

African railways generally lag behind those in other more developed regions worldwide, with a few exceptions primarily found in South Africa and Northern Africa. Rail transport in Africa has faced similar challenges and limitations as in other parts of the world. However, poor economic, technological, and institutional conditions have further exacerbated the situation on the continent. Consequently, outdated infrastructure, sometimes reaching a critical state, and operations that fall below international standards are prevalent.

In the 1990s, concessions were introduced with the support of the World Bank and other international donors to face the declining trend that posed a threat for many railway lines. However, the overall outcomes of this initiative have been mixed. Some cases witnessed failures, while in several others, if any progress was made, it can be considered only a limited success.

The following table provides an overview of the private sector participation in railway projects in sub-Saharan Africa. The results show how most private investment in the railway sector in the region was committed in the 1990s and the early 2000s, largely focused on the rehabilitation of deteriorated railway lines and their operation and maintenance.

Country	Project name	Total investment	Private share	Year	Contract type	Project type
Burkina Faso, Côte d'Ivoire	Abidjan-Ouagadougou Railway Rehabilitation	471 Mn	70%	2017	Rehabilitate, operate, and transfer	Brownfield
Burkina Faso, Côte d'Ivoire	Abidjan-Ouagadougou railway	63 Mn	67%	1995	Rehabilitate, lease or rent, and transfer	Brownfield
Cameroon	Cameroon RailwayS	90 Mn	84%	1999	Rehabilitate, operate, and transfer	Brownfield
Gabon	Trans-Gabonese Railroad concession II	92 Mn	N/A	2005	Rehabilitate, operate, and transfer	Brownfield
Gabon	Transgabonais Railway Rehabilitation	350 Mn	71%	2016	Rehabilitate, operate, and transfer	Brownfield
Gabon	Transgabonais Railway Rehabilitation phase 2	222 Mn	100%	2020	Build, operate, and transfer	Brownfield
Kenya, Uganda	Rift Valley Railways	400 Mn	100%	2006	Rehabilitate, operate, and transfer	Brownfield
Madagascar	Malagasy Railway	36 Mn	75%	2003	Rehabilitate, operate, and transfer	Brownfield
Mali, Senegal	Dakar-Bamako Railway	55 Mn	51%	2003	Rehabilitate, operate, and transfer	Brownfield
Mozambique	Maputo Corridor Railway	78 Mn	100%	2002	Rehabilitate, operate, and transfer	Brownfield

Country	Project name	Total investment	Private share	Year	Contract type	Project type
Nigeria	Central Railway	5.8 Mn	100%	2006	Rehabilitate, lease or rent, and transfer	Brownfield
Mali, Senegal	Dakar-Bamako Railway	55 Mn	51%	2003	Rehabilitate, operate, and transfer	Brownfield
South Africa	Gautrain light rail concession	3,483 Mn	75%	2006	Build, operate, and transfer	Greenfield
Tanzania	Kidatu Transshipment Facility	5 Mn	100%	1998	Build, operate, and transfer	Greenfield
Tanzania	Tanzania Railways	134 Mn	51%	2007	Rehabilitate, operate, and transfer	Brownfield
Zimbabwe	Beitbridge – Bulawo Railway	85 Mn	85%	1998	Build, operate, and transfer	Greenfield

Table 9. Overview of PPP projects in the railway sector in sub-Saharan Africa⁴⁹

Four railway projects in sub-Saharan Africa that were implemented with the involvement of the private sector have been analyzed to identify the key takeaways for successful implementation. The benchmark explores the institutional framework, financing options, best and worst practices from these projects, to provide insights for the Ethiopian government and potential future investors.

Based on an analysis of experiences in the railway sector in different countries carried out by the AfDB⁵⁰, several initial conclusions can be drawn:

- In most cases, concessions were awarded to operators who either underperformed or became financially unstable, or both. This was primarily because they were burdened with obligations that did not align well with their core business, exposing them to significant challenges, costs, risks, and scrutiny. Most concessions required multiple restructuring and amendments to remain operational. However, operators with strong logistic/mining synergies performed better, suggesting that this could be a more suitable model going forward.
- Infrastructure renewal or maintenance involvement is a crucial aspect of most concessions. This means that African concessions typically have a hybrid business model that requires operators to participate to some extent in civil works activities.
- Most concessions underestimated the required investment, and the funds allocated had limited impact on improving railway performance. Some current railway packages being discussed are much larger than the initial proposals from the late 1990s or early 2000s.
- The competitive environment of railways has not been adequately addressed, as some road and rail schemes were promoted simultaneously without full consideration of competition between both modes. Moreover, they have been obliged to take over a substantial share of the state railways legacy.
- Railway concessionaires (most of them freight-driven) have been burdened with passenger obligations. These coexist uncomfortably with their core business and expose them to major complexities, costs, risks and scrutiny.

⁴⁹PPI Visualization Dashboard – The World Bank – Accessed May, 2023 ([link](#))

⁵⁰ Rail Infrastructure in Africa, Financing Policy Options – AfDB – 2015 ([link](#))

- The assignment of responsibilities for infrastructure renewal or maintenance frequently causes instability. Many concessions require operators to be involved, to varying extents, in these activities. Consequently, African concessions adopt a hybrid business model that combines elements of vertically-integrated railways and segregated ones, leading to potential interpretations, disagreements, and, ultimately, termination.
- The public sector provision is not really challenged in in most developed African countries, following the corporatization and modernization of their national railways. Other countries have lost confidence in the private sector. Countries with the most articulated public sector still rely on public provision but there is the risk of politically-endorsed projects with little economic and financial returns.
- Public sector railways in Africa, such as those in Morocco, Botswana, and South Africa, have shown better performance compared to concessioned railways. This does not imply that concessions are not a viable option, but there are fundamental lessons to be learned from these public sector railways that can be applied to any concessioned railway. These lessons include the need for organizational and institutional reforms and a strong financial commitment from the government.
- Many countries have concluded that the management and financing of railways need to be reevaluated. However, they are still facing difficulties in defining the financial models, particularly in terms of how infrastructure maintenance should be handled and funded.
- Most countries have undertaken substantial railway projects that target both freight, predominantly in the mining sector, and passenger segments, including regional initiatives. There is a consensus that PPPs should be considered to access the substantial funding needed for these projects. However, no innovative approaches have been identified thus far.
- Overall, there is a widespread acceptance that the concession model must be reformulated. Many countries that have implemented concessions have come to the consensus that infrastructure assets should be retained and overseen by the public sector. However, these countries struggle with the task of establishing financial models and identifying funding sources for infrastructure maintenance.

The following table offers an overview of the key details and features of the selected railway projects in Africa and other regions. Additionally, each railway project is analyzed in detail in the subsequent subsections.

Location	Cameroon	Madagascar	Tanzania	Senegal & Mali	Kenya & Uganda
Project name:	Camrail concession	Madarail concession	Tanzania Railways	Transrail concession	Rift Valley Railways (RVR)
Concessionaire:	SCCF (Bolloré): 77.4% Cameroon gvmnt.: 13.5% TOTAL Cameroun: 5.3% SEBC (Thanry): 3.8%	Madarail Holdings: 75% Malagasy gvmnt.: 25%	RITES: 51% Tanzanian gvmnt.: 49%	Referee shareholder: 51% Senegal gvmnt.: 10% Mali gvmnt.: 10% Private shareholders: 20% Employees: 9%	Africa Railways of South Africa 51% Trans-Century Limited of Kenya 34% Brown of Australia 15%
Commencement:	1999 (still under operation)	2002 (still under operation)	2003 (cancelled in 2015)	2003 (currently not in operation)	2006 (cancelled in 2017)
Concession period:	Initially 20 years, extended to 30 years	Initially 25 years, extended to 40 years	25 years	25 years	25 years for freight and 5 years for passenger
Concessionaire responsibilities:	Operate, maintain, and invest in rolling stock	Operate, maintain, renew and operate the railway line and invest in rolling stock	Rehabilitation and operation of the railway network and invest in rolling stock	Operation, maintenance, renewal and construction of the track and rolling stock	Operation, maintenance and construction of the track and rolling stock
Grantor responsibilities:	Infrastructure owner, investment in infrastructure and passenger rolling stock	Infrastructure owner and investment in infrastructure	Unknown	Unknown	Unknown
Revenue source:	Transport fees to shippers and passenger tickets	Transport fees to shippers and passenger tickets	Unknown	Concessionaire is free to set fares for freight transport	Unknown
Passenger services:	To be provided, subsidized by the government	To be provided, subsidized by the government	To be provided, subsidized by the government	To be provided, subsidized by the government	To be provided, subsidized by the government
Concession fees:	Annual fixed fee Variable fee as a % of revenues Capped at an annual USD 4.4 million	Variable amount with a minimum of 1% of the revenues	Quarter fixed fee Variable fee as a % of revenues	6% of turnover distributed between the two member states	11.1% of gross revenue to be paid quarterly Minimum investment in infrastructure of 40M annum

Camrail railway concession in Cameroon

The creation of Camrail company emerged from the decision of Cameroon government to grant concessions for the country's railways, as a crucial component of its economic revival plan. This process of granting concessions began in 1996 and reached its conclusion with the signing of the concession agreement in 1999. CAMRAIL officially commenced its operations in April 1999.

Two groups submitted financial offers for the concession. The first group consisted of two companies owned by Bolloré (SAGA/SDV) and Systra, a subsidiary of the French Railways (SNCF). The second group was represented by Comazar. The government decided to grant the concession to SAGA/SDV, but requested that they use Comazar as the operator instead of Systra, and SAGA/SDV complied with this requirement. Through a partnership, Bolloré and Comazar obtained a majority stake in the holding company, Société Camerounaise des Chemins de Fer (SCCF).

The SCCF held an 85 percent ownership stake in Camrail, which served as the operational and managerial entity for the concession. The remaining ownership was divided between the Government and the employees. In April 1999, Camrail commenced its activities as a privately operated enterprise.

Camrail received a 20-year renewable concession to oversee railway assets and handle the operation, maintenance, and improvement of the railway infrastructure. The concession had the provision of being extended for an additional five years at the end of every five-year period.

The government retained legal ownership of the railway infrastructure, including stations and tracks. Camrail had the authority to select the rolling stock, which it then leased for a duration of eight years, with the possibility of buying it later. Additionally, Camrail had the freedom to buy and sell its own equipment. Camrail had to take over 3,000 employees and had a target to decrease its workforce from to 2,600 within a span of five years, which was successfully accomplished in early 2002.

Camrail had the ability to make infrastructure investments could make infrastructure investments through a government delegation. As part of the agreement, Camrail committed to implementing an investment plan worth approximately USD 92 million over a five-year period. The funding for this program was divided, with 58% coming from loans provided by entities such as the World Bank/IDA, French and German development agencies, and the European Investment Bank. The remaining 42% was financed through equity injections (17%) and retained earnings (25%). Within the investment program, around 50% was allocated for the rehabilitation of infrastructure, primarily located north of Yaoundé, while approximately 25% was designated for the restoration of rolling stock.

Camrail had the autonomy to set tariffs, form contracts with shippers and suppliers, and assume responsibility for two pre-existing contracts, one associated with aluminum and the other related to the construction of the Chad Cameroon pipeline. Additionally, Camrail had the obligation to provide specific non-commercial services, primarily the passenger services between Douala and Yaoundé, which made stops at all stations. It was also required to offer certain services north of Douala for plantations, for which it would receive compensation.

Concession payments from Camrail to the government consisted of the following:

- A yearly fixed sum of FCFA 500 million (equivalent to USD 862,000), which increased based on industrial prices; and
- A variable proportion of revenues, starting at 2.25% in the initial year, escalating to 3.0% in years two to five, and then a negotiated amount that would not be less than 5.0% from the sixth year onwards.

In 2008, modifications were made to the concession agreement, incorporating several key measures. These included: (i) extending the duration of the concession from 20 to 30 years; (ii) increasing the capital by an

additional USD 9.0 million; (iii) implementing a maximum annual cap of USD 4.4 million for both fixed and variable concession fees; (iv) securing government-guaranteed financing of USD 193 million for a renewal infrastructure program until 2020, partially funded through the introduction of a RIRIF (Rail Investment and Renewal Fee) payment by the concessionaire to the government, managed by the concessionaire; (v) the government would finance USD 27 million specifically for passenger rolling stock; and (vi) the concessionaire would finance USD 290 million for rolling stock and related investments until 2020.

Camrail stands out as a successful example in meeting the government's privatization objectives. The railway now covers a larger share of its operating costs, relieving the government of significant capital expenditures for nearly a decade until the 2008 concession amendment. Significant investments have been made, resulting in increased traffic volumes and improved services for the concessionaire's own operations as a major railway user. This has been mutually beneficial for both the government and the operator. Furthermore, other freight shippers have also experienced positive outcomes, including enhancements in service quality, security, and reliability. Despite Bolloré's role as a shareholder and major railway user, there is limited evidence of favoritism at the expense of other shippers.

Cameroon stands as a notable example of successful concessions in Africa, and there are several factors that contribute to this achievement:

- Some sections of the railway network in Cameroon were not as deteriorated compared to those in other countries.
- The financial package for the railway concession in Cameroon, amounting to approximately USD 150 million, was greater than in other African examples.
- The government and concessionaire have demonstrated flexibility in negotiating amendments that have enabled the concession to remain viable. Notably, these amendments include arrangements to secure funding for passenger services and the government reassuming responsibilities for the infrastructure.
- The ownership structure of the concession has remained relatively stable, with Bolloré holding a significant major stake. Additionally, Bolloré has identified clear synergies between Camrail and their logistics operations, further strengthening their involvement in the concession.
- Due to Bolloré's large stake in the country's imports, exports, and crucial government revenue sources, they avoid putting pressure on the railway concessionaire. As a result, both partners are committed to always seeking mutually beneficial solutions.

However, some aspects identified to be improved are the following:

- The division of passenger activities within the operator using differentiated costs and management unit has its limitations. Therefore, it is advisable to consider a complete segregation of these activities in the medium term.
- There is a lack of understanding regarding the potential impact on future government budgets when planning to retain and expand passenger services. In Cameroon, as well as in many other African countries, most intercity road transport operates without subsidies, offering frequent options but often lacking in passenger comfort and safety.
- There is a lack of a coordinated strategy for integrating roads and railways in the overall transportation plans. The railway schemes envisioned for the mid- and long-term may appear overly optimistic. Moreover, in the short term, there is a lack of understanding regarding the potential implications of new roads for the railway system.

- The government's proposal to change the gauge of the railway system may become a significant concern. The operational, cost, interoperability, and logistical impacts, among other factors, cannot be comprehensively analyzed without a thorough analysis of the practical and day-to-day challenges. It is crucial that any decision in this matter is made only after considering the perspectives of the operators, shippers, and all stakeholders involved in the logistics chains, and once the full implications are thoroughly understood.

Madarail railway concession in Madagascar

In the 1990s, the railway system in Madagascar experienced a decline in maintenance, resulting in non-functional and outdated motor and towed equipment. As a response to this situation, the Malagasy government made the decision to privatize the National Network of Malagasy Railways (RNCFM). In October 2002, the "Bolloré" group's subsidiary, "Comazar", assumed control of the Malagasy railway's operation, infrastructure, and assets through the Concession Agreement for the Operation of the Northern Network. As a result, the RNCFM transformed into "Madarail" or "Madagascar Railways," a publicly traded company with share capital.

The ownership and shareholding of Madarail have undergone changes over the years:

- From 2002 to 2007, the concession was held by Comazar, a subsidiary of the Bolloré group, which was also the railway operator
- From 2008 to 2011, the Belgian operator "Vecturis" took over as the new railway operator and held the majority ownership
- From 2011, Madarail Holdings assumed ownership, while Vecturis continued as the responsible for operations
- In 2017, 75% of the company's capital is held by Madarail Holding and the remaining 25% by the Malagasy government

As part of the agreement, Madarail made a commitment to implement an investment plan aimed at revitalizing the railway operations. Additionally, they agreed to provide passenger services even if they were not financially profitable.

While the Malagasy government retains ownership of the infrastructure and is responsible for infrastructure investments, Madarail is accountable for the rolling stock investments and remains the owner of the equipment. Any infrastructure renovations conducted by the concessionaire are still owned by the Malagasy government.

During the period from 2003 to 2012, the investment program included various projects aimed at development and improvement. The total investment amounted to USD 83.2 million. The funding sources for these projects were diverse, with the IDA-World Bank contributing USD 48.9 million, the European Investment Bank (EIB) providing USD 14.4 million, and the Malagasy government contributing USD 19.4 million. Additionally, the Bank of Africa contributed USD 3.7 million, and Madarail used its own resources amounting to USD 0.5 million.

	Project development	Railway infrastructure	Rolling stock	Operational costs	TOTAL
Beneficiaries	Madarail	Malagasy gvmt.	Madarail	Madarail	-
WB-IDA	1.43	36.99	3.56	6.92	48.90
EIB	0	0.18	14.17	0	14.35

	Project development	Railway infrastructure	Rolling stock	Operational costs	TOTAL
Malagasy gvmt.	0	12.67	0	6.74	19.41
Bank of Africa	0	0	3.72	0	3.72
Madarail <i>(own resources)</i>	0	0.01	0.53	0	0.54
TOTAL	1.43	49.85	18.26	13.66	83.20

Table 10. Allocation and source of financing for in the Madarail concession (USD million)

Vecturis is compensated annually for its services through a combination of fixed payments and a 5% percentage of Madarail's EBITDA (Earnings Before Interest, Depreciation, Taxes, and Amortization). The payment received by Vecturis cannot be lower than 1% of MADARAIL's income.

The "Comité de Suivi" oversees the Concession and consists of representatives from the Malagasy government, the private sector, and the Concessionaire. The monitoring committee's budget is financed by the FIDF (Fonds d'Investissement et de Développement Ferroviaire), a dedicated fund established to provide the necessary resources for the improvement of the railway infrastructure.

The concession agreement includes provisions for variable payments from the concessionaire to the Malagasy government. The amount of these payments is determined by a specific formula based on the concessionaire's net revenue, amortizations, and debt service. If the result of the formula is negative, the payment is set at 1% of the concessionaire's revenue. The collection of these payments is managed by the ATT (Agence du Transport Terrestre), and along with the funds provided by the Ministry of Finance, they contribute to the financing of infrastructure investments requested by MADARAIL through the FIDF.

As a result, there is a notable difference between the development of the Northern railway system, operated under concession by Madarail, and the Southern railway system, which is not under concession, in Madagascar. While the Southern system has experienced a decline in freight traffic, the implementation of a PPP for the Northern system has had a positive impact, resulting in an increase in freight traffic since the concession began. However, both systems have struggled to attract more passengers, even though they serve remote areas.

The case of Madagascar's railway system demonstrates how railway concessions can effectively revive a complex infrastructure with the support of governments and international financial institutions. By reducing costs and generating higher revenues, the concession has become financially sustainable, particularly with the government's provision of passenger subsidies. Key insights gained from the railway concessioning experience in Madagascar are summarized as follows:

- The collaboration between the World Bank and the concessionaire allowed to focus on specific targets and the optimization of resources. However, the investment of USD 49 million was not enough to fully address the infrastructure rehabilitation needs and the nature of the renovation process over seven years led to bottlenecks and limited the line's capacity. To overcome these challenges, it is crucial to provide more significant financial resources in a shorter timeframe, enabling the concessionaire to improve performance and avoid extensive rehabilitations due to insufficient maintenance.
- Giving priority to rail investments over road when both infrastructures run parallel resulted in a decrease in pollution, accidents, and other negative impacts by shifting freight transportation from road to rail. The World Bank recognized the competition between the two modes of transportation and implemented a coordinated strategy for road and rail transport, realizing that investments were being made simultaneously in both sectors. This approach serves as a valuable reference for future investment plans involving both road and rail transport in the country.

- The inclusion of clauses in the credit agreements from multilateral institutions regarding restrictions on Heavy Goods Vehicles (HGVs) was not put in place at the right time. Consequently, the lenders found themselves providing loans for road rehabilitation projects that were being damaged by these vehicles, even as efforts were being made to establish alternative modes of transportation. Implementing this measure earlier could have saved significant resources and redirected them towards improving the rail corridors.
- The challenges faced by the concessionaire due to unexpected events demonstrate the importance of implementing risk mitigation mechanisms to safeguard the concessionaire from circumstances such as Force Majeure events, political instability, exchange rate fluctuations, inflation, and market risks. Multilateral institutions and the public sector have demonstrated their commitment to protecting the interests of the concessionaire and ensuring the stable progress of the railway concession.
- Alongside investments in infrastructure and rolling stock, it was necessary to implement a strategy aimed at improving the knowledge and performance of the existing staff. The aging workforce and the legacy issues inherited from the previous public railway system have posed challenges for the concessionaire in enhancing railway operations, despite their expertise in the sector.

Concession of TRC in Tanzania

Tanzania Railway Corporation (TRC) is responsible for operating railway transportation services in Tanzania, including both freight and passenger services. From 2007 to 2010, TRC operated under a concession arrangement. TRC also takes charge of most infrastructure maintenance tasks and manages traffic operations. On the other hand, Reli Assets Holding Company (RAHCO) served as the legal owner and custodian of the railway infrastructure and assets in Tanzania. It acted as a landlord to designated operators responsible for railway transportation functions. However, in 2017, the Tanzanian government made the decision to merge RAHCO with the Tanzania Railways Corporation (TRC) in order to consolidate the management of railways infrastructure development and operations.

The concession agreement between TRC and Rail India Technical and Economic Service (RITES) began in 2007 and lasted until 2010. The concession covered both freight and passenger services. The ownership structure of the concession was divided between RITES, holding a 51% share, and the Tanzanian government, holding a 49% share. The concessionaire received a fixed concession fee of USD 1.5 million per quarter, along with an additional variable fee of 5% based on the gross revenue.

However, the concession ultimately failed due to various reasons, including insufficient assessment of the infrastructure, inadequate understanding of the necessary investments, and a series of poor decisions made by both RITES and the government. As a result, the government decided to recover control of TRC and bring it back under state ownership and management.

The primary factors contributing to the failure of railway concessions in Tanzania were the following:

- The Tanzanian concession failed primarily because of a lack of clear understanding between the concessionaire and the government regarding each other's expectations. Several factors contributed to this misunderstanding.
- The Tanzanian government had not invested in railway infrastructure and rolling stock since the late 1970s. This decision was influenced by multiple factors, including a stronger focus on expanding the road network driven by political interests and the influence of the road lobby. Additionally, the government faced financial constraints as the costs associated with rail upgrading and maintenance were rising, exceeding the available funds allocated in the government budget.
- No evaluation was conducted on the infrastructure's condition prior to the awarding of the concession.

- The government made a commitment to raise the salaries of the staff upon the arrival of the concessionaire. However, the concessionaire disagreed with this arrangement and declined to provide a salary increase. Consequently, the government took it upon themselves to fulfill the salary increment.
- RITES considered that the existing staff had performed poorly and played a role in the unsatisfactory performance of the state railway. As a result, they introduced a predominantly Indian management team to oversee operations.
- RITES had limited understanding of the business environment in Tanzania. They were more accustomed to dealing with block train operations, while Tanzania primarily utilized container and wagon operations, which presented a different set of challenges and requirements.
- To generate higher revenue, RITES raised the rail tariffs to a point where the cost of rail transport became 70% more expensive than by road. However, this increase in cost did not result in any reduction in transport times, as it still took considerably longer to transport goods by rail compared to road.
- RITES introduced locomotives from India, which had higher operating costs due to poor fuel economy and demonstrated subpar performance. Furthermore, the unavailability of spare parts locally necessitated ordering them from India.

Rift Valley Railways (RVR) in Kenya and Uganda

The 2,350 km railway connecting Mombasa to Kampala (via Nairobi) is a crucial transportation route for imports and exports, intended to serve as the economic foundation of East Africa. Unfortunately, the inadequate attention to the railway system in Kenya and Uganda in the 1990s and early 2000s resulted in outdated trains, inadequate investment, and inadequate management. As a consequence, the rail service in both countries was in urgent need of attention and improvement.

Kenya Railways Corporation (KRC) was a completely state owned and the railway functional arm of the Ministry of Transport. The Kenyan Government sought assistance from the IFC to provide guidance on the privatization of the KRC. Initially, the privatization plan focused on the KRC alone. However, it later evolved into a joint program that also involved the concession of the Uganda Railways Corporation. This expansion was driven by the advantages of privatizing the railway systems as a whole, considering international trade factors.

Under the guidance of the IFC and Canarail (advising the Government of Uganda), an international competition took place to select a preferred bidder. The consortium known as Rift Valley Railways, led by South Africa's Sheltam Rail Company (Pty) Limited, was appointed as the preferred bidder. Their proposal included a comprehensive turnaround and development plan for both railway systems.

During the concession period, there were several changes in the appointed bidders and the original shareholding structure. These changes were prompted by an underestimation of the required investment and the initial shareholders' lack of funding capability. As a result, the stakes of each company were modified. Initially, the shareholding was divided with Sheltam holding 61%, other foreign investors holding 14%, and local investors holding 25%. However, in 2010, two modifications took place. In February, the new shareholding included Sheltam Railways of South Africa (35%), Trans-Century Kenya (20%), Prime Fuels Limited of Kenya (15%), Mirambo Holdings of Tanzania (10%), and Babcock & Brown of Australia (10%). Then, in March, the shareholding was further changed to include Africa Railways of Egypt (a subsidiary of Citadel Capital) with a majority stake of 51%, Trans-Century Limited of Kenya with 34%, and Bomi Holdings of Uganda with 15%.

Rift Valley Railways aimed to establish a well-functioning, dependable, and unified railway system in Kenya and Uganda. The consortium planned to allocate approximately USD 280 million for the rehabilitation of

existing assets and an additional investment of USD 42 million for new rolling stock and operating equipment over the course of the 25-year concession period, intended to enhance the efficiency and effectiveness of the rail network. The concession fee was set at 11.1% of the gross revenue, to be paid on a quarterly basis. A minimum annual investment of USD 40 million in infrastructure was also specified.

The rehabilitation of the Kenya Rift Valley Railways, originally planned for 2014 and financed by the AfDB, IFC and the German Development Bank (KfW), was disrupted by a conflict between Kenya Railways and the Rift Valley Railways company. This conflict resulted in the disagreement between the two entities in 2017, ultimately bringing the project to a complete halt and preventing its completion.

Despite the efforts in the rehabilitation of the railway line between Kenya and Uganda, concessioned by RVR, the Kenyan government inaugurated in 2017 the new Standard Gauge Railway (SGR) from Mombasa to Nairobi. The SGR project in Kenya aimed at modernizing and upgrading the country's railway infrastructure. It involved the construction of new SGR lines, initially connecting Mombasa and Nairobi, and planned to connect with Uganda. The SGR offers improved efficiency, higher speeds, and increased capacity compared to the older meter gauge railway system operated by RVR.

With the introduction of the SGR, the focus shifted from the old meter gauge railway network managed by RVR to the new standard gauge railway system. The SGR project received significant government investment and attention, leading to a decline in the utilization and relevance of the older railway network. The competition between the SGR and RVR concession created challenges for RVR's operations. As the SGR gained prominence and became the preferred choice for freight and passenger transportation, RVR faced a decline in market share and revenue. The competition forced RVR to reevaluate its operations and seek ways to remain relevant in the changing railway landscape.

According to Kenya Railways Managing Director 'RVR defaulted in its payment of concession fees, rent and other key performance indicators under the concession agreement'. In mid-2017, both Kenya and Uganda decided to end their agreements with RVR, resulting in the transfer of control over their respective national rail networks back to the Kenya Railways Corporation and the Uganda Railways Corporation, respectively.

Several key lessons are gained from the implementation of this project, providing valuable insights for future endeavors:

- The absence of consensus regarding the state of the infrastructure and rolling stock was an important challenge. The conditions of these assets were found to be below expectations, indicating that the investment proposed in the contract was insufficient. This inadequate assessment can be attributed to insufficient site visits conducted two years prior to the project, where the presence of competent technical assistance would have been beneficial.
- Inadequate due diligence was conducted on the financial capacity of the initial shareholders, leading to the need for renegotiation of the concession with new private entities. The original shareholders were unable to fulfill the minimum investment requirements as requested.
- The renegotiation process included a thorough assessment of the required investment, which facilitated a partnership with a company capable of meeting and even surpassing the minimum investment requirements.
- RVR has formed a valuable partnership with America Latina Logistica, tapping into their rail infrastructure and service management expertise. This collaboration has allowed RVR to explore innovative methods for transporting large goods, expand into new markets, increase capacity, develop employee skills, and consider the use of refurbished locomotives instead of new ones.

- The absence of a rail regulator in Kenya creates a conflict of interest with RVR, as the concessionaire is solely monitored by the Kenya Railway Corporation, which was seen as a conflict of interest by RVR
- The construction of a new standard gauge track running alongside the existing RVR line resulted in significant government expenditure, which could have been utilized to support the ongoing rehabilitation work and operations on the RVR. This conflict ultimately led to the termination of the contract in 2017.

Transboundary railway concession between Senegal and Mali

The Transrail railway concession is a vertically-integrated arrangement that assigns complete responsibility for infrastructure and rolling stock to the concessionaire. The concessionaire is accountable for all track-related costs, including operations, maintenance, renewal, and construction. Any significant investment in rail infrastructure above a certain threshold by the concessionaire requires approval from the Concession Authority.

The concessionaire bought the rolling stock from the state-owned companies and had the freedom to acquire additional vehicles. The financing, maintenance, and operations of these acquisitions were the concessionaire's responsibility. As part of the concession agreement, the concessionaire was obligated to hire an equal number of staff from the former national railway companies of Mali and Senegal.

For Public Service Obligations (PSOs), the public authority reimbursed the concessionaire for the operation and maintenance costs of rolling stock. However, international passenger services were not considered due to safety concerns. A limited passenger service within Mali (Bamako-Kayes) is still operational and funded by the Mali Government. The concessionaire has the authority to set freight transport fares as desired.

Concession fees were set at 6% of turnover and divided between the two states. The concession contract lacks precise provisions specifying the investment commitments that the concessionaire must fulfill.

The original structure of the Transrail SA concessionaire was designed as follows:

- The main shareholders were CANAC-SIFC-GETMA, a Franco-Canadian consortium, collectively holding 51% of the shares. They established Transrail Investment as the vehicle for the concession, with CANAC holding 24.99% of the shares, SICF holding 23.46%, and GETMA holding 2.55%.
- The states of Mali and Senegal were allocated a 20% stake, with each state holding 10%.
- An additional 20% of the shares were intended to be offered to private shareholders through initial public offerings (IPOs) in Senegal and Mali.
- The remaining 9% of the shares were designated for employees.

The initial capital for the concessionaire was planned to be 9.1 billion FCFA (USD 18.2 million), with the goal of reaching 10 billion FCFA within five years. However, the initial capital structure was never fully achieved, and the disbursement of funds from private investors in Mali is still pending. Transrail SA is registered in Bamako and operates under Malian law, while Transrail Investments is a Senegalese company.

The ownership structure of Transrail has experienced several modifications:

- In 2005, the stake held by Canac-Getma was acquired by SAVAGE, a US logistics operator.
- In early 2007, there was a further change in shareholding. Groupe ADVENS, a French agro-industry and logistics company, became the majority partner of the reference shareholder by acquiring shares previously held by CANAC and SICF, resulting in a 95% stake in Transrail Investissements. However, this acquisition did not receive formal approval from the authorities responsible for granting the concession.

- ADVEN's lack of experience in the railway sector led to the involvement of VECTURIS, a Belgian rail operations and consultancy firm, in the operation of TRANSRAIL, formalized through a rail operation contract signed with the concessionaire company in 2007.
- However, VECTURIS ended its involvement in 2012, and a new operations contract was subsequently signed with CONVECTOR, a Moroccan firm with limited visibility and track record in the railways industry.

The Transrail railway concession in Mali and Senegal has faced various challenges and instabilities. The shareholding structure has undergone frequent changes, with shareholders lacking relevant experience in the railway industry. These changes have raised concerns about potential profiteering and patronage. Additionally, the audit of the concession has uncovered breaches of contract provisions, misunderstandings, opaque decision-making, and mismanagement. Overall, the concession has been marked by instability and issues related to governance and operation.

The concession contract lacks a clear investment target and only references the financial bid, which is not included as an annex to the contract. The available information from various sources provides a fragmented understanding of the concession's economics, which can be summarized as follows:

- The reference investors initially provided USD 18 million in equity for the concession.
- The concessionaire committed to investing approximately USD 19 million over a 5-year period to improve infrastructure and an additional \$21 million in rolling stock. However, there are varying estimates, with some sources suggesting a lower investment commitment of 14 billion FCFA (USD 28 million). It is important to note that the initial investments were not fully realized.
- In addition, it is estimated that about 16 billion FCFA (USD 32 million) in loans previously obtained by the states (IDA and BOAD) were transferred to the concessionaire.
- It is estimated that the concession was supported by a loan package of approximately USD 47 million, primarily from the World Bank and the West African Development Bank (BOAD), with smaller contributions from France (AFD) and Canada. It should be noted that not all loans were fully disbursed, and there were some frozen BOAD loans.

By 2009, Transrail SA had negative capital and was facing the risk of default with a debt burden amounting to 32.4 billion FCFA (USD 64 million). According to Transrail, by 2013, the debt had been significantly reduced to 9 billion FCFA (USD 18 million). The reduction in debt has been particularly notable in commercial debt, and the majority of the remaining outstanding amount is owed to governments.

In December 2015, both nations eventually decided to terminate the concession. Since then, they have been supporting the financial burden of paying staff salaries and covering expenses, which has placed a significant strain on their fiscal resources. In response to the termination of the concession contract, the two governments collaboratively established a specialized railway entity known as Dakar Bamako Ferroviaire (DBF) through a joint ministerial decree⁵¹.

Main lessons:

- The Dakar-Bamako railway concession, involving two sovereign authorities, presents additional complexity beyond what is typically seen in these cases. This complexity arises from the involvement of various jurisdictions, customs regulations, tax systems, and social security frameworks. Additionally, decision-making processes are further delayed due to the involvement of two bureaucracies, and the lack of effective monitoring mechanisms has been prevalent in practice.

⁵¹ Dakar-Bamako Intermodal Corridor Project PID – World Bank – September 2019 ([link](#))

- The financial package provided for the concession (USD 18 million in equity and about USD 47 million in debt) was inadequate to upgrade the infrastructure to required standards. As a result, Transrail, the concessionaire, has struggled to make substantial improvements, leading to declining traffic and limited capacity for investment. The decision-making process has been criticized for lacking professional foundations and being complicated by the involvement of two sovereign states.
- The ownership structure of Transrail has been significantly instable, with frequent changes in shareholders. Many of these stakeholders lack experience in the railways industry, limiting the potential benefits they can bring to the company.
- The railway initially had favorable conditions, serving a landlocked country with no competing paved road in the same corridor. However, the outcome has been disappointing. The recent development of a paved road connecting Dakar and Bamako has changed the landscape. Despite this, the railway still offers advantages in terms of smoother transportation, avoiding road controls and checkpoints, and facilitating customs procedures at the destination.
- Recent concessions, like the one given to GCO in Senegal, demonstrate the advantage of starting without the burden of legacy state railway companies. These experiences emphasize the importance of making clear commitments to increased investment per kilometer of track to bring about significant improvements. Furthermore, they highlight the need for new operators to invest time and resources in training, capacity building, enhancing manuals and operational protocols, ensuring safety and security, and protecting rights of way from intrusions and informal occupation.
- The governments of Senegal and Mali are currently examining a new institutional framework for their railways. The agreement is to separate infrastructure ownership (government) from railway operations (private sector). However, some government officials still hold the belief that fees alone will be sufficient to cover debt repayment and maintenance costs. Therefore, it is crucial for the new institutional arrangements to be built on robust business models, and for the governments to have a thorough understanding of the expenses involved in owning, regulating, and managing their railway networks.

3.3.2 Private sector participation in the railway sector in other regions

In addition to examining the development and challenges of railway concessions in Africa, it is valuable to broaden our perspective and explore railway concessions in other regions. By benchmarking railway concession models and experiences from diverse contexts, we can gain insights into different approaches, best practices, and lessons learned. This section taps into selected examples of railway concessions from various regions, shedding light on their key characteristics, outcomes, and the broader implications for the railway industry. By drawing on these international comparisons, we can enhance our understanding of railway concessions and identify potential strategies for the future operation of the Ethio-Djibouti Railway and other railway developments in Ethiopia.

Concessioning of state-owned railways in Argentina

The privatization and restructuring of Argentina's state-owned railways⁵² occurred within a remarkably short timeframe, driven by the urgent need to address deficit spending and hyperinflation. The process commenced in July 1989 following the election of President Carlos Menem, who utilized his electoral mandate to implement two pivotal laws: the State Reform Law and the Economic Emergency Law. These legislations granted the executive branch extensive discretionary powers to carry out privatization on a case-by-case basis. Leveraging this authority, a dedicated and politically adept team of rail privatization

⁵² University of Leeds - Rail Privatization: The Practice – An Analysis of Seven Case Studies – 1994 ([link](#))

experts, supported by two reform-minded ministers, effectively restructured Ferrocarriles Argentinos (FA), the national railway, into 14 separate concessions ready for private sector participation.

By the year 1989, FA had experienced a notable decline, primarily functioning as a provider of employment benefits to an excessive workforce and delivering low-quality, unreliable services to both shippers and passengers who had no alternative transportation options. The railway company had increasingly become subject to political pressures and was strongly influenced by unions, suppliers, and local government authorities who perceived its services as a "free good." Moreover, FA's service suffered from growing unreliability and safety concerns. The operational deficit, amounting to USD 2 million per day, had become the largest drain on the nation's Treasury.

From the middle of 1990 to early 1994, the railway system in Argentina underwent a comprehensive process of restructuring and reorganization. Following the signing of the Memorandum of Understanding in June 1990, a dedicated entity called the Railway Restructuring Unit was established under the authority of FA to oversee the transition. Concurrently, the Ministry of Public Works and Services formed a task force consisting of 20 experts, which later became known as the Grupo de Apoyo Ferroviario (GAF) or the Group for Railway Support. These two entities played key roles in facilitating and managing the restructuring efforts during this period.

In autumn of 1990, the Railway Restructuring Unit and GAF reached a consensus on overarching principles and subsequently initiated the implementation of a privatization strategy for freight railway operations. The strategy was formulated based on the following principles:

- Private companies would assume responsibility for all cargo operations, and they would be required to submit bids to acquire concessions for specific railway lines. These lines would be carefully selected to correspond to self-sustaining transport markets that demonstrated economic viability.
- The concessions would have a duration of 30 years, with the possibility of a 10-year extension if desired. These concessions would encompass various aspects such as freight marketing, train operations, equipment and track maintenance, as well as rehabilitation responsibilities.
- The concessions would grant exclusive rights to single concessionaires for the use of infrastructure. This means that no other party would be permitted to operate cargo services within the territory covered by the concession without the consent of the concessionaire.
- The private freight operator would have the option, but not the obligation, to offer intercity passenger services. However, the operator would be required to allow intercity passenger operations either by FA or by another concessionaire. In exchange, the operator would receive fair compensation for the use of tracks and traffic control services.
- Initially, concessionaires would be obligated to hire former FA employees, but only those necessary to effectively meet operational requirements. Any personnel not needed by the concessionaires would be provided with a severance payment, which would be funded through the support of the World Bank.
- Each concessionaire would be allocated a designated number of locomotives and rail cars by FA, ensuring they have the necessary resources to operate within their concessioned area. Concessionaires would be required to pay fees for the use of the railway lines, as well as for the use of the allocated equipment.
- Concessionaires would be responsible for supplying new or refurbished locomotives and rolling stock to enhance the quality of service. Additionally, concessionaires would be required to make investments in track rehabilitation to improve the overall infrastructure.

The bidding documents, prepared by the GAF, outlined that proposals would be assessed based on several criteria, including the following clauses, among others:

- The bidder's prior experience as an operator of comparable railway systems.
- The level of financial commitment to the investment plan, both on an annual basis and for each specific project.
- "Additional investment" encompassing the funding allocated for increased freight-generating capacity, such as the construction of grain silos, freight terminals, and similar infrastructure.
- The fee that would be provided to the government in exchange for the concessionaire's operating rights over the railway line.
- The lease payment made to the government for the utilization of equipment.
- The fee to be charged to FA or any other third-party operator for the provision of intercity passenger services on the concessionaire's track.
- The quantity of FA employees to be employed by the newly appointed concessionaire.

From January 1991 to February 1992, the Railway Restructuring Unit released three calls for proposals, seeking to award six freight railway concessions. A total of 10 bidders took part in this process, the majority of which were domestic companies from Argentina. Foreign involvement in the consortia, apart from the rail operators, was limited. Notably, two of the successful consortia were led by railway customers, specifically a producer of soya products and oil, as well as a cement producer. The remaining consortia were spearheaded by diversified holding companies.

By October 1993, five out of the six concessions had been transferred into private ownership, marking a significant achievement within a span of 50 months since the enactment of the Reform State Law. However, the sixth concession for the Belgrano narrow gauge line could not be awarded as the call for bids was canceled due to the absence of interested bidders. The deteriorated state of this line rendered it economically unviable for an unsubsidized operation by the private sector, even with a "zero" fee. Additionally, after the privatization of freight operations, the government proceeded with the concessioning of commuter services in Buenos Aires and the privatization of intercity passenger services.

As of today, all five railway concessions have reached the end of their terms and have been granted an 18-month extension, as there have been no companies submitting bids for the new tender to operate the Argentinian freight railways.

Rail privatization in Great Britain

Until 1994, the railway sector in Britain⁵³, similar to most of Europe, was structured as a unified state-owned company that operated both passenger and freight services, along with the infrastructure supporting these operations across the entire country.

During the 1980s, notable changes were implemented, resulting in the division of rail services into multiple sectors, each with its own specific goals, management, and financial accounts. However, in the early 1990s, the government aimed to pursue more extensive reforms by privatizing the entire railway network. After extensive deliberation on various options, they settled on a model that had become widely accepted as the standard for network industries, a regulated monopoly responsible for providing the infrastructure, with multiple competitive operators utilizing the network.

⁵³ University of Leeds – Rail privatization in Britain – 2004 ([link](#))

The responsibility for the infrastructure was transferred to a newly established company called Railtrack, which operated under a cost-recovery model by levying charges. Eventually, Railtrack itself was privatized. Railway operations were divided into multiple separate companies, which were also privatized.

Nevertheless, operators were initially reluctant to provide passenger services. As a result, the provision of passenger services were franchised out, which involved setting minimum service levels and regulating certain fare aspects. Rail franchising in Great Britain refers to the practice of awarding contracts to private train operating companies through a rigorous bidding and competitive process. These contracts grant the companies the right to operate passenger railway services for a specific duration.

Regarding freight services, the government's approach was to operating them on a commercial basis, with specific subsidies for traffic flows that would otherwise rely on road transportation, considering the associated social and environmental costs. This approach was carried forward into the privatization process. Consequently, the policy for freight aimed to establish a fully open-access system for any licensed train operating company and to foster competition among multiple freight operators by privatizing and dividing the former freight business of British Rail.

As part of the preparations for privatization, the government initiated a significant reduction of unprofitable freight services. The goal was to ensure that all traffic generated at least a 5% rate of return on the capital invested. However, despite these efforts, some of the businesses still faced significant financial challenges at the time of privatization.

During the privatization period, the government had a strong emphasis on promoting new entrants into the rail freight industry. This approach was aimed at enhancing the efficiency and competitiveness of rail freight by fostering increased competition among different operators. However, there were challenges in recruiting experienced staff and providing necessary training. Additionally, acquiring locomotives and rolling stock was difficult due to limited availability in the second-hand and short-term leasing market. Economies of scale played a crucial role, as maintaining high asset utilization and reliability required substantial scale to avoid cost penalties for new entrants.

Another primary factor contributing to the low number of new entrants in the rail freight industry in Great Britain was the comparatively low profitability of rail freight operations. Prior to privatization, the freight operations of British Rail incurred significant overall deficits, although trainload freight services operated at a profit. With the exception of certain concentrated streams of bulk commodities, operating rail freight services in Great Britain is not particularly attractive. This is due to relatively short distances for transportation, limited international traffic and a highly competitive road haulage industry that had been fully deregulated in 1968.

The data available indicates a significant increase in rail freight since the implementation of privatization. The total volume, measured in ton-kilometers, has reached levels comparable to those seen in the 1970s. Furthermore, rail has experienced substantial market share growth across all commodities, except for petroleum and chemicals.

The lessons learned from the privatization of British railways can potentially provide insights for other countries undergoing similar policies in their own railway systems:

- Introducing competition into the rail freight market can pose significant challenges. In the case of Britain, was not only limited to new entry but also difficulties in privatizing existing rail freight operations and creating multiple competing companies. Despite subsidies and the efforts of privatized and open access companies, rail freight in Britain has not generated substantial interest among potential investors.

- The significance of economies of scale highlights that competition in the rail freight market is more likely to arise from existing operators in related sectors or from major customers exerting pressure on current operators, rather than from new entrants.
- In the absence of subsidies, the introduction of privatization or open access in the rail industry is likely to result in the termination of unprofitable routes. This is because privatization or open access remove the cross subsidies that sustain unprofitable operations using profits from profitable ones.
- The imposition of track access charges is vital in the railway sector as it allows for the collection of profits from freight operators that exceed their marginal infrastructure usage costs.

Despite encountering various challenges, the overall outcome of rail freight in Britain can be considered a success. The significant growth in rail mode share is truly remarkable, especially considering the prolonged period of decline it experienced.

The new operators have made significant investments, injecting substantial private capital into the rail freight industry and have enhanced the quality of service. Privatization has been instrumental in liberating the operation from reliance on government for strategic decisions and investments, while competition has applied pressure on rates and service quality provided by the operators.

The use of the PPP model to finance high speed rail (HSR) in France

France pioneered in introducing the Public-Private Partnership (PPP) approach to fund high-speed rail (HSR) initiatives, establishing itself as the first European country to adopt this model. France has the most extensive PPP program in Europe, accounting for around 57 percent of the total PPP investment in HSR across the continent.

The implementation of PPPs has enabled SNCF Réseau, the rail infrastructure manager in France, to foster the expansion of the French HSR network beyond what would have been possible through traditional government funding alone. Prior to implementing PPPs, it took approximately 20 years to complete the first four HSR projects. However, thanks to the adoption of PPPs, SNCF Réseau successfully developed four additional HSR projects within a span of only seven years.

Before 1997, SNCF operated as a vertically integrated railway system, overseeing both the management of rail infrastructure and train operations. However, in 1997, SNCF underwent a restructuring process to comply with the European Union's *acquis Communautaire* for railways. This directive mandated the separation of financial accounts between rail infrastructure and train operations, requiring the vertical segregation of SNCF.

The ownership of the railway network was transferred to a different entity known as Réseau Ferré de France (RFF). RFF assumed responsibility for enhancing and expanding the railway network, making decisions on network investments, and handling the financing aspect. RFF entered into a contract with SNCF to handle the maintenance and operation of the railway infrastructure. Meanwhile, SNCF retained its role of providing train services while also fulfilling the maintenance and operation responsibilities of the railway infrastructure under the agreement with RFF. Additionally, SNCF paid track usage fees to RFF for the use of the tracks.

In 2006, changes were made to the existing regulation, granting RFF the ability to engage in Public-Private Partnerships (PPPs). This decision enabled RFF to tap into the technical expertise and financial resources of the private sector, aiding in the financing and implementation of significant infrastructure projects. As a result, two primary PPP models were adopted in the French HSR system: partnership and concession. Both models share the common goal of financing, designing, constructing, and operating railway infrastructure. The main distinction lies in how the risk associated with traffic allocation is divided between the public and private entities involved.

Under the partnership model, SNCF Réseau enters into an agreement where it pays an availability fee to the private sector partner throughout the duration of the contract. This fee is determined based on how well the private sector partner meets the performance indicators specified in the agreement, which consider the quality and availability of the provided infrastructure. It is important to note that the fee paid to the partner is not linked to the volume of traffic using the infrastructure asset. In this model, SNCF Réseau assumes the entire traffic risk and collects track access fees from train operators. The partnership model is typically employed when the expected traffic volume is relatively low, resulting in the private sector partner being unwilling to bear any traffic or revenue risks.

Under the concession model, the private sector is responsible for collecting access fees from railway operators utilizing the infrastructure asset. These access charges cover the operational expenses of the railway line and generate a return on the private investment. However, it is unusual for access fees alone to fully cover the entire investment return. Therefore, RFF, regional authorities, and the national government must subsidize a portion of the investment. Under the concession model, the concessionaire assumes the risks associated with project construction, financing, and operation.

In 2015, a reorganization resulted in the merging of RFF and SNCF into the SNCF Group. As part of this restructuring, all infrastructure assets were transferred to SNCF Réseau, which assumed the responsibilities for infrastructure development, operations, and maintenance. The units within SNCF that previously handled the maintenance and operations contract for infrastructure were transferred to SNCF Réseau, allowing it to directly carry out these activities. On the other hand, SNCF Mobilités took on the role of providing transport services, including both freight and passenger services, as well as managing and developing railway stations.

Through the implementation of PPPs, the risks associated with financing, design/construction, operations, and maintenance are shifted to the private sector. In the concession model, the private sector additionally assumes the traffic risk, whereas in the partnership model, SNCF Réseau would bear the traffic risk.

This case study highlights the role of PPPs in the development of French HSR. In particular, it illustrates that:

- The implementation of the PPP model allows for private sector financing for railway infrastructure projects, enabling faster delivery compared to a traditional approach that solely relies on public sector financing.
- The establishment of a well-defined, consistent, and legitimate institutional framework with a set of laws and regulations played a significant role in facilitating the development of railway PPPs in France.
- To attract private sector investment, it is necessary to have PPP models that allocate traffic risk in different ways, such as the partnership and concession models. The choice between these models depends on the projected traffic volumes and the expected financial performance of the project.

The PPP mechanism offers a path for the private sector to determine the level of self-sustainability of a proposed investment, whether it can operate without subsidies or revenue guarantees to remain financially viable. In this way, PPPs provide a transparent framework for identifying the initial and continuous financial support that may be necessary for lower volume railway lines to achieve financial viability.

PPP in Indian Railways

Indian Railways (IR), during the period of 2010 to 2020, achieved remarkable success in enhancing its transport capacity and increasing its volume. This was accomplished through consistent efforts to reduce unit costs and deliver exceptional service to its customers, positioning IR as a leading benchmarked player in its field. The presence of fierce competition from the road and aviation sectors compelled Indian Railways

to enhance its efficiency and upgrade its infrastructure. Recognizing the importance of acquiring capital, improving managerial implementation, executing infrastructure development projects, and harnessing advanced technology, Indian Railways took steps to promote Public-Private Partnerships (PPPs). The government expedited the creation of a policy framework for PPPs, introduced regulatory modifications, established institutional procedures, and defined a roadmap for the successful implementation of PPP projects.

IR draw up four different financing models to facilitate private sector participation in its ambitious goal of expanding its rail network by 25,000 km, adding to the existing 64,000 km by the year 2020. These models involved the establishment of Special Purpose Vehicles (SPVs) by IR. The partners involved in these SPVs consisted of state governments, infrastructure providers such as port trusts, private ports, and Special Economic Zones (SEZs), as well as users such as fertilizer and steel companies. To facilitate the implementation of these models, various revenue-sharing arrangements and land acquisition methods were put in place, which included:

- Cost-sharing and freight related model: The scheme proposed that the private party would contribute 50% of the overall investment and receive a discounted freight rate of 10-12% for a duration of 10 years or until the investment amount was fully recovered.
- 100% cost-sharing model: Under this model, the private party was responsible for covering the entire project cost associated with the development and construction of the railway infrastructure, and they were granted a 25-year operating period. During the initial ten years, 2% of the freight revenues were allocated to Indian Railways, while for the subsequent 15 years, 4% of the freight revenues were directed to Indian Railways.
- SPV Model: In order to enhance connectivity to ports, Indian Railways collaborated with private partners, where IR contributed 26% of the project cost. The private partner was responsible for constructing the railway line on the land provided by Indian Railways. Furthermore, Indian Railways provided a guarantee for the provision of rolling stock, as exemplified by the case of Pipavav Rail Corporation Limited.
- Private railway line model: The private entity was granted to build and operate a railway line on their own land for a period of 30 years. During the initial 15 years, 2% of the freight rate was allocated to Indian Railways, followed by 3% from years 16 to 20, and 4% from years 21 to 30.

The scope of PPP in Indian Railway was extensive. IR needed more than USD 80 billion during the Eleventh Five Year Plan (2007-2012). During the Eleventh Five Year Plan (2007-2012), IR required over USD 80 billion in funding. The plan itself aimed for a total investment of Rs 2,300 billion, with approximately 60% of this amount expected to be secured through PPPs.

The two main PPP models used were:

- Build, Operate and Transfer (BOT): Ownership of assets with private developers during a 12+ years concession period, during which private parties got annuity twice a year. After the period, assets were transferred to concerned zonal railway.
- Build, Own and Operate (BOO): It was usually for construction of new lines and gauge conversion projects. Operation was undertaken by IR.

Beyond this, IR was quite active in involving the private sector in the provision of non-core activities, such as:

- Catering services, such as budget hotels and food plazas at major stations

- Highway connectivity and smaller assembly units for processing imported raw materials for export units, such as industrial parks located at strategic locations or in the proximity to special economic zones
- Setting up of SPVs for the manufacture of rolling stock
- Privatization of the container business. IR granted licenses to 15 private players to handle container operations
- Construction of Dedicated Freight Corridors
- Commercial development of land and world-class railway stations.
- Development of rail side warehouses
- Wagon Investment scheme
- Strengthening of Rail-Port connectivity

3.4 Analysis of financing options for railway infrastructure in Ethiopia, with focus on the Ethio-Djibouti Railway

3.4.1 Overview of the Ethio-Djibouti Railway

The Ethio-Djibouti Railway (EDR) was established in April 2017, based on the Bilateral Agreement signed in December 2016 between the two states, the Federal Democratic Republic of Ethiopia and the Republic of Djibouti. The Shareholders Agreement was subsequently signed in January 2017 among Public Bodies and State Enterprises of the two countries, to be administered pursuant to the commercial laws of Ethiopia.

The shareholders reached an agreement to establish an Ethiopian share company with the objective of operating and maintaining the 752-km Addis Ababa-Djibouti Standard Gauge Railway line. This includes responsibilities for the maintenance and renewal of all infrastructure and equipment along the line. Additionally, the company will be responsible for providing freight and passenger transport services on the line.

The USD 4,300 million project was financed with 85% debt and 15% equity. 25% of the debt came from an Ethiopian commercial bank and 60% of the debt (USD 2,500 million) came from China Eximbank, under a commercial loan to the Ministry of Finance.

EDR initiated the operation and maintenance of the railway in January 2018. This was made possible through a comprehensive takeover agreement between EDR and the respective railway companies, namely Ethiopian Railways Corporation (ERC) and Société de Chemin de Fer Djibouti-Ethiopie (SCFDE).

EDR is responsible for the operations and maintenance of the railway line connecting Addis Ababa and Djibouti. It also manages both freight and passenger services on this route. Unlike other public enterprises, EDR was established as a commercial company through a joint venture arrangement between the Ethiopian and Djiboutian governments, following the guidelines of the Commercial Code of Ethiopia. While EDR is accountable to the Ministry of Transport as per Proclamation No. 1097/2018, the ultimate decision-making authority lies with the Shareholders' meeting, which is the highest organ of the company. The activities of EDR are guided and supervised by a Board of Directors operating under the Shareholders' meeting.

Currently, a Joint Venture formed by China Railway Group Limited (CREC) and China Civil Engineering Construction Corporation (CRCC), has entered into a 6-year management contract with EDR to operate and maintain the Djibouti Railway in Addis Ababa. It is anticipated that by 2024, EDR will assume full responsibility for the operation and maintenance of the railway, transitioning away from the management

contractor. The government will provide the necessary financing for the management contract, while EDR will be tasked with covering the operational and maintenance expenses of the railway using its own generated income. Additionally, EDR is expected to generate profits to be distributed among its shareholders.

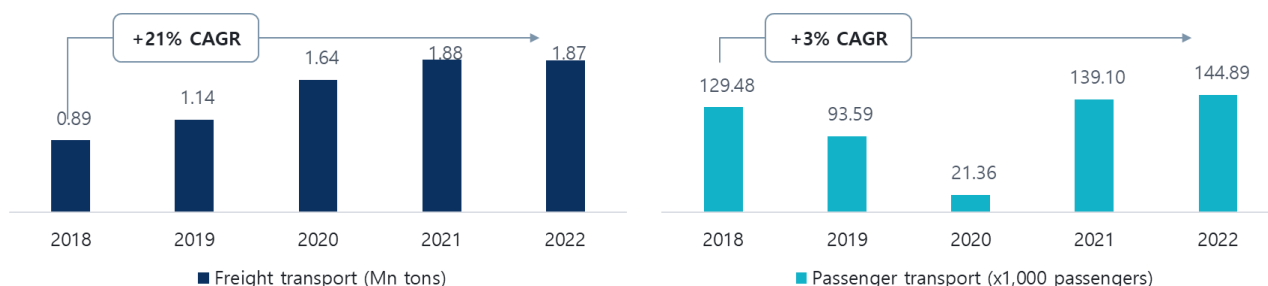


Figure 9. Distribution of EDR's revenue streams (USD Million)

Since the commencement of operations, freight transport has seen a considerable increase (+21% CAGR) in the total tons transported along the railway line, whereas passenger transport has remained stable, with a significant impact from the Covid-19 crisis in 2020.

Regarding the financial performance of EDR, revenues have grown at a +40% CAGR since the commencement of operations in 2018, largely dominated by freight transport (av. 93% of total revenues). Revenues from passenger services and other activities account for between 3% and 4% of total revenues only.

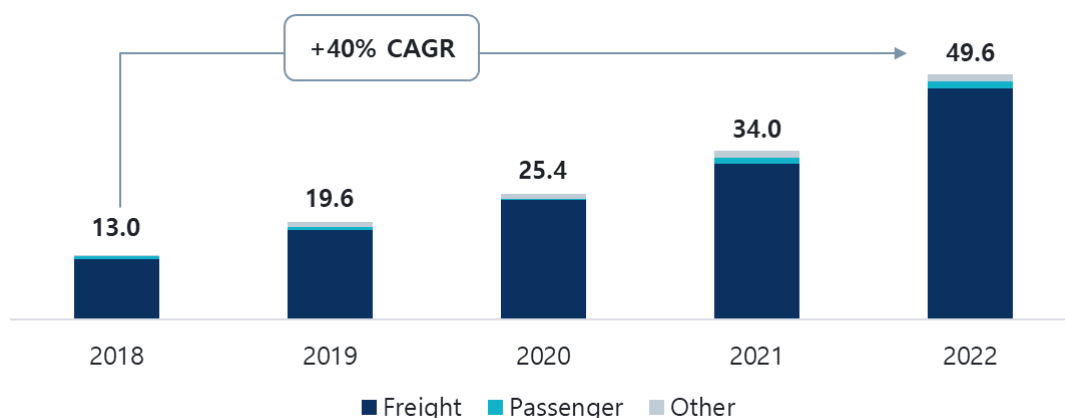


Figure 10. Distribution of EDR's revenue streams (USD Million)⁵⁴

The distribution of freight revenues by type of cargo shows that a quarter of total freight revenues are provided by containerized import cargo, whereas exports, bulks and other services represent a reduced share of total freight revenues.

⁵⁴ EDR Annual Reports

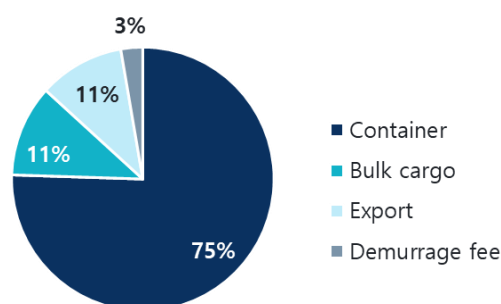


Figure 11. Distribution of EDR's freight revenues (% , 2022)⁵⁵

No information is available on the operation and maintenance expenses incurred by EDR. Therefore, it is not possible to assess the actual financial sustainability of the railway line. A rough estimation is provided in the Ethiopian Transport Master Plan 2022-2025, which estimates a FIRR (Financial Internal Rate of Return) of 9.9% for the Addis Ababa-Djibouti Railway line. However, the estimated FIRR shall be evaluated in detail and assessed based on the current performance of EDR in order to adequately determine the financial viability of the railway line, the potential interest for the private sector and the required government contribution for its financial sustainability.

3.4.2 Private sector interest in railway financing

Although Ethiopia lacks a prior history of private sector participation in the railway sector, there are various factors that have the potential to generate the interest and willingness of private investors to invest in this sector:

- Adequate institutional and regulatory framework: as mentioned in earlier sections, the institutional and regulatory framework in Ethiopia effectively provides the essential legal basis and institutional support for the private sector to consider collaborating with a public authority in operating and maintaining the Ethio-Djibouti Railway through a PPP arrangement.
- Brownfield project recently constructed: since the Ethio-Djibouti Railway line was inaugurated in 2018, it is not expected to require for significant investments in its construction or rehabilitation in the short-term. However, a thorough due diligence process will be undertaken to assess the operation and maintenance costs that may arise in the future.
- Lower revenue risk: the railway line is currently in operation generating consistent revenues. The potential private operator of the railway line is expected to have comprehensive information regarding the current revenue generated by the railway line, which helps minimize uncertainty for the private sector. This also enables the private entity to start generating revenue from the start of its operations.
- Users' acceptability of current tariffs: railway users are already familiar with current tariffs set for railway transport, allowing the private sector to have an understanding of transport tariffs currently accepted by users.
- Lack of a suitable alternative: as the only railway line linking Ethiopia and Djibouti, the Ethio-Djibouti Railway holds a crucial position. Road transport alternatives are often more expensive and time-consuming. Consequently, as long as the railway line remains a reliable and viable alternative, the demand for it is unlikely to shift to other options.

⁵⁵ EDR Annual Reports

- Expertise and know how: the current staff of the Ethio-Djibouti Railway is being trained for 6 years by a Chinese railway operator. Therefore, the private party to be engaged for the operation and maintenance of the railway line can rely on the trained personnel currently operating working in the Ethio-Djibouti Railway.

Overall, based on the characteristics of the Ethio-Djibouti Railway line and the takeaways obtained from the benchmark of railway projects with private participation in Africa and other regions, the project has the potential to engage a private party for the operation and maintenance of the railway line. For this purpose, track access fee schemes for multiple operators or an asset recycling scheme for a single concessionaire could be suggested. However, valuable lessons from the insufficient performance of certain African railway concessions should be taken into account to prevent making similar mistakes in the future.

3.4.3 Financing options for the operation and maintenance of the Ethio-Djibouti Railway line

As mentioned earlier, the Ethio-Djibouti Railway (EDR) has been operating passenger and freight transport services on the Addis Ababa-Djibouti Railway line since 2018. This operation is carried out through a 6-year management contract with a joint venture consisting of CREC and CRCC. By 2024, it is expected that the EDR will assume full responsibility for the operation and maintenance of the railway line.

Since there is limited financial data available on EDR's current operations, it is assumed that similar to many railway lines globally, the provision of freight transport services is financially viable, with generated revenues exceeding the incurred costs. However, it is also assumed that the provision of passenger transport services operates at a deficit, necessitating public funds to support these services.

This section explores different possibilities for involving the private sector in the operation and maintenance of the EDR. These options can also be considered for other railway lines in Ethiopia, providing potential options for private sector engagement in their operation and maintenance. Apart from the options for operation and maintenance outlined in this section, there will be a need for extra funds to cover the transaction costs associated with hiring a transaction advisor. This advisor will be responsible for structuring the project and leading negotiations with private entities. Annex A contains a preliminary draft of the Terms of Reference (ToR) for Transaction Advisory Services for the concessioning of the Ethio-Djibouti Railway.

Drawing from the lessons learned from railway concessions in sub-Saharan Africa, it is recommended that the ownership of the railway infrastructure, including substructure, tracks, and main stations, remains in the hands of the public sector represented by the transport ministries of Ethiopia and Djibouti. Additionally, the responsibility for large investments in infrastructure rehabilitation and upgrades also often falls on the public sector. This is because the private sector tends to be reluctant to invest the substantial funding required for such activities. Consequently, a vertically-segregated model appears to be the most suitable choice for the operation and maintenance of the Ethio-Djibouti railway. This model involves separating the potential investments in rolling stock (trains, locomotives, etc.) from those related to railway infrastructure.

The vertically-integrated model for the EDR would only be feasible under a full public scheme, as the railway line has already been developed and financed with public funds. However, railway branches to main productive areas have the potential to be developed under fully-private vertically integrated schemes, in which the private sector invest in the development, operation and maintenance of the railway lines while owning the infrastructure assets. This alternative may be only feasible for railway links to large productive areas, mostly related to the mining or oil and gas industries.

Based on the observations of railway concessions in Africa and other regions, the following three alternatives are suggested for the operation and maintenance of the EDR within a vertically-segregated framework:

- Option 1: Concessioning of freight operations, in which the private sector will be responsible for the operation of freight services and, optionally, passenger services along the line. In this case EDP would be responsible for the maintenance of the railway line, funded through track access fees charged to the freight operator.
- Option 2: Concessioning of the railway line, in which the private sector is responsible for the provision of freight and passenger services, as well as for the maintenance of the railway infrastructure. In this case, EDR would be compensated through a concession fee and/or an upfront payment; an asset recycling mechanism could be structured, in which the funds collected by EDR would serve to repay the debt incurred for the development of the railway line or to finance new railway developments.
- Option 3: Engagement of the private sector for the provision of non-core activities, monetizing unutilized land plots along the railway. In this case, EDR will grant private developers and operators available land plots under a concession for the development and operation of non-core activities serving cargo owners, passengers and operators.

Option 1: Concessioning of freight operations

This option is based on the successful examples of freight railway concessions in Argentina and Great Britain. In order to implement this strategy, the railway industry needs to undergo restructuring by separating railway operations from maintenance activities, thereby enabling private sector involvement exclusively in operations. It is suggested that the EDR, being a bilateral public organization representing Ethiopia and Djibouti, assumes the responsibility of maintaining the railway line and acts as the contracting entity for the private operation of freight transport services. In order to determine the capacity for the railway line to engage one or several private operators, a viability assessment shall be carried out by a transaction advisor prior to commencement of the tender process.

In this arrangement, the private sector (concessionaire or multiple operators) will take on the responsibility of delivering freight transport services on the railway line and will be entitled to collect transport fees from cargo owners. Given the recent acquisition of rolling stock by EDR, the concessionaire will be obliged to purchase or lease rolling stock from EDR, and complement it with additional rolling stock from other suppliers to meet the necessary level of service. Furthermore, the concessionaire will be required to pay a track access fee, whether it is a fixed amount or varies based on revenues, to the contracting authority. The income generated by the lease of railway equipment and the track access fees will be utilized by the public authority to fund the maintenance, rehabilitation, and improvement of the railway line, as well as to repay the debt incurred for the construction of the railway project and the acquisition of rolling stock. In terms of staff, the concessionaire will also be required to hire the required staff for the operation of the railway line and the non-necessary staff shall be compensated by a severance payment.

Regarding passenger services, based on the example from Argentina, the concessionaire will have the option to provide inter-city passenger services, subsidized by the public authority or will allow EDR, or any other concessionaire, to provide passenger services.

In order to generate interest from the private sector in operating the railway line, it is recommended to assure exclusive rights for railway freight transport along the Ethio-Djibouti Railway line, preventing direct competition on railway freight operations. Transport tariffs shall be defined based on agreement between the concessionaire and cargo owners at market prices, in which the operator will only compete against road transport alternatives. Furthermore, implementing policies that encourage the shift of freight transport from road to rail will increase the appeal of the railway project to potential private operators.

This option allows the private operator to focus on its core expertise, with its services limited exclusively to freight transport. Large local and international transport and logistics companies, as well as large producers, might express interest in operating freight railway services along the Ethio-Djibouti railway line.

Private parties, such as Bolloré and other logistics companies, are potential candidates to become private operators of rolling stock due to their previous investments in similar projects within sub-Saharan African countries, such as the Camrail railway concession in Cameroon. Additionally, freight services have strong interest from private companies in other regions. For instance, CMA GCM has recently announced a dedicated new rail services connecting the ports of Alexandria and Ain Sokhna to October Dry Port (ODP) near the major industrial and logistics zone of Cairo in Egypt. This option presents an attractive investment opportunity for transport and logistics companies.

Under this scheme, the public sector will experience cost savings by reducing government expenditure on railway transport provision and decreasing the debt related to rolling stock acquisition. Additionally, the introduction of open competition and the integration of private sector expertise and efficiencies will facilitate the growth of a sustainable freight railway sector in Ethiopia.

The concessioning of **freight railway services** has **strong interest for private transport and logistics companies**, allowing for the **optimization and enhancement of freight transport services** and **contributing to a more competitive and sustainable freight railway system in Ethiopia**.

Option 2: Concessioning of the railway line

This option is based on the successful examples of railway concessions in Sub-Saharan Africa, with focus on the second-generation of railway concessions, such as the examples from Madarail in Madagascar and Camrail in Cameroon. In this option, the concessionaire will assume full responsibility for the provision of both passenger and freight services, as well as maintaining the railway infrastructure. Consequently, the concessionaire will have the right to collect transportation fees from passengers and cargo owners.

The public authority, transport ministries of Ethiopia and Djibouti, will be the owners of the infrastructure assets and the responsible for undertaking investments in the rehabilitation and upgrading of railway infrastructure if required. However, a restructuring of the institutional environment shall be undertaken, by implementing a bi-national authority responsible for the regulation and oversight of railway operations, which will act as the contracting authority for the concession.

As observed in railway concessions in countries like Madagascar, Cameroon, and other Sub-Saharan African nations, the concessionaire is often structured as a Special Purpose Vehicle (SPV) that involves both public and private entities. Considering the strategic significance of this cross-border railway line for Ethiopian international trade, it is recommended that EDR becomes a shareholder of the concessionaire's SPV. To avoid burdening EDR's budget, the recently acquired rolling stock can be offered as an equity contribution for the concession. Other private entities that may have an interest in participating in the concessionaire's SPV could include large transport and logistics operators such as Bolloré, CMA-GCM or other international railway operators.

The concessionaire will be required to pay a concession fee to the public authority. This fee can be structured in two ways (or a combination of both): as a lease fee, involving regular fixed or variable payments to the public authority, or as an upfront fee to be paid to the contracting authority at the commencement of the concession period. These last approach is broadly categorized as infrastructure asset recycling mechanism, which involve the monetization of existing public assets through their sale or lease to the private sector and the allocation of the reinvestment in new infrastructure of the funds received. This definition can be expanded by allocating the funds collected by the public authority to repay the debt incurred during the development and construction of the railway line, thereby reducing the government's public debt.

Regarding passenger services, these shall be provided by the concessionaire as a Public Service Obligation (PSO). However, as the provision of passenger services is often non-profitable, a detailed analysis shall be conducted to determine whether these services shall be subsidized by the public authority or whether the provision of freight services will generate sufficient revenues to compensate the losses incurred in the provision of passenger services.

Like Option 1, the concessionaire and cargo owners will agree on freight tariffs according to market prices, primarily competing with road transport for transporting goods from Addis Ababa to Djibouti. Conversely, the contracting authority will determine the tariffs for inter-city passenger transport. The contracting authority will establish a detailed specification for the required level of service, including specific Key Performance Indicators (KPIs) that must be met and penalties to be enforced if these requirements are not fulfilled. This is especially important for ensuring the provision of passenger transport at the required level of service and encouraging the concessionaire to actively engage with cargo owners and promote railway transport.

By granting the maintenance and operation of the railway line to a concessionaire, the government will reduce its burden of providing railway transport services. This will bring in the private sector's knowledge and expertise, leading to improved economic performance of the railway line while ensuring the required level of service. By combining operation and maintenance into a single agreement, the concessionaire will be responsible for adequately maintaining the railway line to meet the required service standards in their operations. Moreover, if the financial analysis of the railway line proves favorable, the revenue generated from freight services can potentially offset the costs of passenger services, eliminating the need for subsidies from the public authority.

Transferring the responsibilities of **passenger and freight transport services**, as well as the **maintenance of the railway line**, to the private concessionaire will **reduce the government burden in the provision of freight and passenger services** while ensuring the required level of service

Option 3: Engagement of the private sector for the provision of non-core activities

In addition to options 1 and 2, and following the example set by Indian Railways, involving a private party in the provision of non-core services can generate additional income for EDR. These services would not be directly related to core activities like freight and passenger railway transport services or the development and maintenance of railway infrastructure. Instead, the involvement of a private party in non-core activities would offer supplementary services for cargo owners, passengers, and railway operators, as well as additional funding for EDR.

These arrangements may include the development and operation of the following facilities:

- Real estate for the hospitality industry in the proximity to railway stations, for the provision of restaurant and hotel services for railway users
- Workshops and factories for the maintenance and assembly of the rolling stock for railway operators
- World-class railway stations and commercial areas for passengers
- Industrial and logistics areas for producers, traders, and cargo owners
- Cargo handling facilities and services for containers and other cargoes

In these arrangements, the contribution of EDR will involve providing the necessary land for the development of the required infrastructure. EDR will begin by identifying available land parcels and

assessing their suitability for the development of different types of facilities. These land plots shall be strategically situated near the railway line and in proximity to urban areas, ensuring convenient access to railway services as well as utilities and a workforce.

The private party will have the right to finance, develop, and operate these facilities for a specific period of concession. They will also have the authority to generate revenue from providing these services. In return, EDR will receive compensation in the form of a concession fee. This fee can be paid upfront or as a lease fee throughout the duration of the concession period.

The non-core activities suggested in option 3 can be combined with options 1 and 2, leveraging on private developers and operators to deliver these services. This approach has the potential to generate extra revenues for EDR by monetizing unutilized land plots located along the railway line.

3.5 Conclusions and recommendations

The Ethio-Djibouti Railway is currently operating under a vertically integrated scheme, where the public sector (EDR) is fully responsible for the operation and maintenance of the infrastructure and rolling stock. The vertical integration remains the prevailing model worldwide and is widely implemented across Asia, Russia, and North Africa. This model effectively incorporates public service and social considerations but requires significant funding from government budgets, leading to the risk of political interference and inadequate resource management and allocation. However, experiences from other sub-Saharan African countries have demonstrated the inefficiencies and limited private sector interest in financing railway infrastructure projects under vertically-integrated models.

Two main options are suggested for the operation of the railway line from 2024, after the completion of the 6-year management contract with the Chinese joint venture. Option 1 proposes privatizing freight transport services, while keeping passenger services and railway infrastructure maintenance under the responsibility of the public sector. On the other hand, Option 2 suggests a complete concession where both passenger and freight transport services, along with railway infrastructure maintenance, are handed over to a private entity. Although a comprehensive financial analysis has to be conducted for each option, the second option shows the greatest potential for operating the railway line without requiring government subsidies or public financing. Finally, an additional option is proposed for the provision of non-core activities by monetizing unutilized land plots along the railway line. This third option has the potential to complement options 1 and 2 presented previously.

Considering the recent development of the Ethio-Djibouti Railway line, it is advisable to engage a private entity in the provision of passenger and freight transport services, as well as the maintenance of the railway. This approach involves establishing a joint venture between a private operator and EDR, leveraging EDR's experience since 2018 and ensuring a certain level of public control over railway operations. This arrangement will enhance EDR's capabilities through the involvement of a private operator with industry expertise and alleviate the burden on EDR while ensuring the provision of quality passenger and transport services. Assigning maintenance and operation responsibilities to the concessionaire will ensure efficient maintenance of the railway infrastructure while optimizing associated costs. Additionally, the concessions fees to be paid to the public authority, whether is an annual payment or an upfront payment at the commencement of the concession, will allow to repay debt incurred for the development of the railway line, reducing Ethiopia's public debt. Moreover, alternatives for the engagement of a private party for the provision of non-core activities shall be explored to enhance the economic potential of the railway infrastructure.

4 Analysis of options for private financing options for logistics infrastructure

4.1 Context overview of logistics sector in Ethiopia

Ethiopia, being a landlocked country, depends on the ports of neighboring countries for its international trade. The main trade route for goods entering Ethiopia is through the port of Djibouti, which handles various types of cargo including commercial, governmental, and humanitarian shipments. Nearly 95% of the cargo handled by Djibouti Port is destined for Ethiopia. In addition, alternative ports like Port Sudan and Berbera are also utilized to support Ethiopia's trade endeavors.

Ethiopia is in the process of acquiring land in Sudan to establish its own port, a development that has been agreed upon by both countries. This port in Sudan would serve as an alternative sea outlet for landlocked Ethiopia. While the use of the Mombasa port in Kenya could be an option for the southern regions of Ethiopia, it is currently not considered a time- or cost-efficient choice. Southern Somali ports are inaccessible due to ongoing conflicts, and the ports of Assab and Massawa in Eritrea were also not accessible.

Moreover, following a recent agreement between Ethiopia and Eritrea, telecommunications, transport services, and trade relations have resumed between the two countries after a 20-year pause. Both countries have initiated preliminary preparations to repair roads and upgrade infrastructure leading to the Port of Assab, allowing Ethiopia to utilize it for its sea-borne trade. While geographically, the Port of Assab and other nearby ports would have been natural options for Ethiopia, the current political climate between the countries makes them less viable choices.⁵⁶

Due to Ethiopia's landlocked status, dry ports play a crucial role as inland intermodal terminals that are directly linked by road or rail to foreign seaports, particularly Djibouti's Ports, which enable access to global markets. While the primary focus of Dry Ports is container trade, certain facilities also provide services for the trading of fertilizers and grains.

The Ethiopian Shipping and Logistics Service Enterprise (ESLSE) operates all the dry ports in Ethiopia, along with overseeing sea and road transport and the management of ports and dry ports. In contrast, the Ethiopian Maritime Authority (EMA) is responsible for establishing industry standards and ensuring their implementation as the regulatory authority in the sector.⁵⁷

⁵⁶ Chapter 2.1 Logistics Capacity Assessment Ethiopia – WFP Ethiopian Supply Chain Team – December 2020 ([link](#))

⁵⁷ Official Ethiopian Maritime Authority web – Accessed May, 2023 ([link](#))



Figure 12. Overview of Ethiopian dry ports

Ethiopia has established eight inland ports, also known as dry ports, to facilitate its international trade. Additionally, there is one dry port currently under development. These port projects have been mainly funded by the World Bank. The largest dry port in the country is located in Modjo, covering an area of 150 hectares. It plays a crucial role in handling over 78% of the nation's imports, mainly due to its connection to the new Ethio-Djibouti railway line.⁵⁸

In Ethiopia, the warehouse system functions in a decentralized manner and involves multiple entities, both public and private. These warehouses serve as storage facilities for various types of products, including industrial goods, consumer goods, pharmaceutical supplies, and cold storage. Public organizations engaged in warehouse management comprise the Ethiopian Trading Businesses Corporation (ETBC), the National Disaster Risk Management Commission (NDRMC), the Ethiopia Commodity Exchange (ECX), the Ethiopian Agricultural Businesses Corporation (EABC), and the Ethio-Djibouti Railway (EDR). Most public warehouses largely focus on the storage of agricultural products (i.e., grain, fruits, vegetables, sugar), fertilizers or pharmaceutical products.

The majority of warehouses are predominantly located in the central and northern regions of the country, with a significant concentration in proximity to the city of Addis Ababa:

⁵⁸ Official Ethiopian Shipping and Logistics Service Enterprise web – Accessed May, 2023 ([link](#))

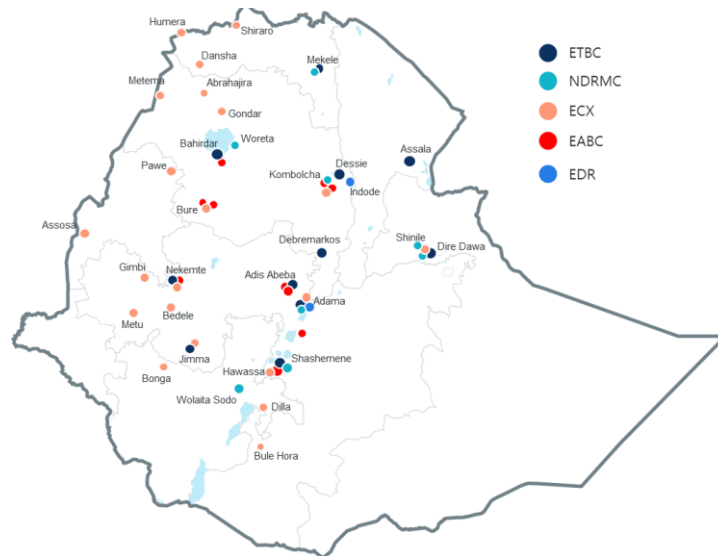


Figure 13. Overview of Ethiopian warehouses

Although the overall condition of warehouses is generally acceptable, a significant number of them are reaching the end of their useful life. Many warehouses still rely on manual management systems without the aid of IT systems. Consequently, the dwell and turnaround times are often prolonged. These extended storage periods increase the risk of product contamination due to factors such as humidity and high temperatures.

In addition to public warehouses, private warehouses are also developed across the country, although smaller than the public ones and focused on serving private cargo. However, the estimation of the exact number and capacity of warehouses owned by private entities can be difficult due to the involvement of multiple organizations.

In addition to Dry Ports, Ethiopia places significant emphasis on the development of Industrial Parks. Currently, there are various types of Industrial Parks operating in Ethiopia, including 13 Federal Government-owned Industrial Parks managed by the Industrial Parks Development Corporation (IPDC). There are also four Regional Government-owned Integrated Agro-Industrial Parks (IAIPs), which serve as Special Economic Zones aimed at modernizing agriculture and promoting agribusiness. These IAIPs are connected to farms and communities through Rural Transformation Centers (RTCs). Furthermore, Ethiopia has several privately-owned Industrial Parks. The key Industrial Parks in Ethiopia are outlined in the table below.

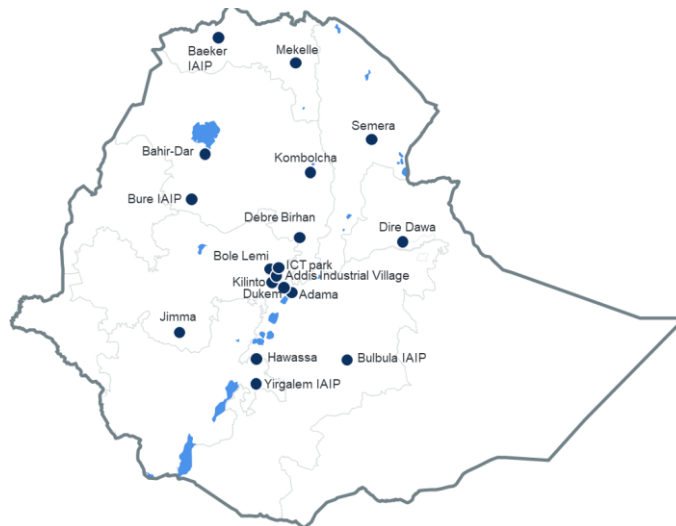


Figure 14. Overview of Ethiopian logistics parks

In the Ethiopian logistics sector, there is a lack of large-scale silos for storing grains and other bulk products. Instead, these goods are typically transported in bags and stored in dry warehouses, resulting in notable inefficiencies and additional expenses. This situation results due to the scarcity of spare parts for silos, which need to be imported from foreign sources. As a result, if a breakdown occurs, the unavailability of spare parts hinders the usability of silos. This is a prevalent problem in the transport sector as well, where the scarcity of spare parts often renders trucks unavailable following a breakdown.

The road transport sector, particularly in trucking, is characterized by a high level of atomization, consisting of numerous small companies or private truck owners. However, there are a few exceptions, such as certain public organizations like the World Food Program, which operates a sizable fleet of trucks.

The EMA is currently in the process of finalizing a new directive that outlines the criteria and regulations for licensing private multimodal transport operators. Previously, the provision of multimodal services was exclusively handled by the ESLSE. Under the new directive, private multimodal operators will be required to have their own dry ports. The government's plan is to initially allocate small parcels of land in areas outside of the capital city and gradually expand these facilities.

The Ethiopian Master Plan outlines a comprehensive vision for the future of logistics infrastructure, encompassing short-, mid- and long-term goals. By 2025, the plan includes the construction of dry ports in Hawassa, Jimma, and Assosa. This will be followed by the development of dry ports in Gambela and Yabelo by 2035, and ultimately, the establishment of ports in Gode, Gondar, and Weldiya by 2050. The estimated FIRR (Financial Internal Rate of Return) for all these new dry ports ranges from 7.5 to 14.0%.

The Ministry of Transport and Logistics seeks to foster an open and competitive environment for dialogue and negotiations between public enterprises and private operators. The goal is to improve the competitiveness of both national and international logistics corridors. In order for Ethiopian logistics corridors to effectively compete at the continental level, targeted initiatives are needed to address cross-border barriers.⁵⁹

⁵⁹ Ethiopian Transport Masterplan 2022-2052 – Ministry of Transport and Logistics – 2022 ([link](#))

4.2 Overview of financing options for logistics facilities

Developing and upgrading logistics facilities, such as warehouses, dry ports, and logistics areas, often requires substantial investment. Companies and governments seek financing options that can support these projects while ensuring financial viability and sustainable operations. This section explores different financing mechanisms, including public funding, private investments and public-private partnerships (PPPs). This will allow to have a broader view of potential financing mechanisms currently implemented in other regions:

4.2.1 Public provision of logistics infrastructure

In these types of facilities, the government assumes complete responsibility for all aspects, including regulation, ownership, development, and operation.

Generally, public ownership is favored in cases where there is ample independence from interest groups and where the sole profit motive may not ensure the overall success of the zone for the entire country. For instance, many Special Economic Zones (SEZs) in countries such as China, Korea, Malaysia, and Singapore are publicly owned. These countries are known for having robust and efficient bureaucracies. For instance, in China, public ownership was decentralized to the local level, and competition among local authorities created strong market incentives for the zones to achieve optimal economic outcomes.

Public provision of logistics infrastructure faces three primary disadvantages. They are not widely favored in many countries due to their potential to drain public finances. Additionally, governments often lack the requisite technical expertise to efficiently manage logistics facilities. Moreover, the presence of conflicts of interest, a common challenge in government institutions involved in commercial ventures, can undermine the effectiveness of public logistics infrastructure.

4.2.2 Private provision of logistics infrastructure or Build-Operate-Own (BOO)

With the exception of regulation, a private entity assumes responsibility for all elements of the development. The private company retains the complete operating revenue generated from the logistics zone. In certain instances, the same private company may possess ownership rights while also handling the development and operation of the zone. Alternatively, the owner of the infrastructure can choose to subcontract the development or operation to another private company.

The BOO model is widely adopted in most developing countries for their logistics zones. This model is favored when the primary goal is to maximize the direct economic benefits of the zone and when the government has a robust regulatory capacity. The private sector is often deemed as the most capable in maximizing the economic returns from logistics zones. An example of a private logistics infrastructure is the Phnom Penh SEZ, which was established in 2008 in Cambodia and is operated by Royal Group Phnom Penh SEZ Plc.

In situations where the government has limited regulatory capacity, privately operated zones may lack sufficient accountability. Moreover, private logistics facilities may prioritize their own economic gains within the zone, potentially neglecting the broader benefits to the overall economy. An instance of this can be seen in India, where limited public accountability led to reports of private operators utilizing acquired land for their own self-serving purposes instead of the intended objectives.

4.2.3 Build-Operate-Own-Transfer (BOOT)

BOOT models are commonly used to finance individual projects rather than entire infrastructure systems. Under this model, a private company assumes ownership of the project for a predetermined duration. At the end of this period, the private company transfers both ownership and operational responsibilities back

to the government. This model is employed when the government seeks to involve a private company in the management of a logistics infrastructure on its behalf, while retaining ownership without a permanent transfer. This approach is not widely favored for logistics operations due to potential difficulties with the eventual transfer to the government, as governments often lack the expertise required to effectively operate these facilities.

4.2.4 Concessions

Concessions, in contrast to BOOT schemes, typically encompass entire infrastructure systems rather than individual projects. They are commonly employed for the revitalization of existing infrastructure projects. These arrangements typically involve long-term contracts spanning 20-30 years, granting the private company the authority to develop and operate a logistics infrastructure for the entire duration. In exchange, the concessionaire pays the government a fixed fee and retains all the operating revenue. However, once the agreement expires, ownership of all assets, including those acquired by the concessionaire, reverts back to the government.

Like the BOOT model, concessions are employed when governments seek to leverage private sector expertise for the development and operation of a logistics infrastructure without permanently relinquishing ownership. This approach is suitable when the government is open to long-term engagement with the private sector. Notable examples of concessions include the Panama Pacifico SEZ and the Aqaba International Industrial Estate in Jordan.

Like the BOOT models, concessions may not be the most optimal choice as there is an eventual transfer of ownership to the government. This aspect can discourage investors who are seeking more long-term investment opportunities.

4.2.5 Lease or landlord model

In contrast to BOOT and concession agreements, lease agreements involve the government taking responsibility for developing the logistics infrastructure (often logistics zones with several land plots or warehouses) and then leasing it to a private company for operation. In this arrangement, the private company assumes significant risk as its revenues are directly tied to the operating revenue of the logistics zone. The private company pays the government a fixed fee or a percentage of the revenue and retains the remaining amount. Lease contracts typically span a duration of 3 to 5 years.

The lease model is often used when private investors are not initially interested in developing a logistics zone, but the government seeks to introduce private sector efficiency to its operation. An example of this model is the Que Vo Industrial Park in Vietnam.

However, due to the government's responsibility for the development of the logistics zone, the private sector may have reservations about the commercial viability of the zone.

4.2.6 Operator or management contract

Operator or management contracts are typically shorter in duration compared to lease and concession agreements. In these contracts, the government retains the responsibility for developing the logistics facilities but engages a private company to handle its operations. Unlike lease agreements where the private company pays the government a fee, in management contracts, it is the government that compensates the private company in exchange for the provision of the required services, under an availability-based contract. This payment can be a fixed fee, or a variable fee related to the performance of the logistics infrastructure, depending on the company's risk tolerance.

This model is employed when a government desires to retain control over its assets while engaging the private sector for a temporary period to enhance the operations of a zone. Example of these arrangements are the Industrial City Abu Dhabi in the United Arab Emirates (UAE) or the Abuja and Lagos Federal Medical Warehouses in Nigeria.

4.3 Benchmark of private sector participation in the logistics sector

This benchmark examines the involvement of the private sector in the development and operation of warehouses, dry ports, and silos in several countries across Africa, Middle East and in India. These critical components of the logistics and supply chain infrastructure play a vital role in facilitating trade, storage, and distribution of goods. This section provides a comprehensive analysis of the benefits, challenges, and best practices associated with private sector participation and PPPs in these sectors. By assessing successful case studies and identifying key factors for success, this benchmark aims to offer valuable insights and recommendations for stakeholders interested in promoting private sector involvement and fostering effective partnerships in warehouses, dry ports, and silos in Ethiopia.

Based on this benchmark, the following best practices are identified for procuring silos, warehouses, dry ports and other logistics facilities in the country with the involvement of the private sector:

- A competitive and transparent bidding process has proven to be crucial in attracting private sector participation. This approach ensures that negotiations are conducted openly, enhancing the appeal for private entities to enter into agreements. Furthermore, the involvement of the private sector can bring benefits to both the public entity and the private party during renegotiations, fostering mutual gains and long-term success.
- These projects will require a thorough study of the asset's location. It is crucial to ensure these facilities are strategically connected with direct connection to main transport corridors for trade cargo and allowing for intermodality between road and waylay, assuring a consistent cargo flow and reducing the demand risk for the private operator.
- Large logistics companies and international traders have proven strong interest in the development of these facilities, as these will benefit from a substantial cargo demand while improving the logistics services in the country
- Local producers will significantly benefit from the implementation of these facilities, which may also consider be involved in their development and operation as part of the SPV

	Niger	Egypt	India	Rwanda	Saudi Arabia	Nigeria
Project name:	Dosso and Niamey dry ports	Sixth of October dry port	Punjab Silos	Kigali dry port	Riyadh Dry Port	Pharmaceutical warehousing facilities
Concessionaire:	Bolloré Africa Logistics (BAL)	October Dry Port Company (ODP)	LT foods	DP World	Saudi Global Ports (SGP)	Unknown
Concession awarded	October 2014	July 2021	May 2010	2016	2021	2019
Concession period:	20 years	Unknown	Unknown	25 years	10 years	5 years
Investment	USD 50 million obligatory fee + 20% increase salary + leases financed by BAL	USD 70 million financed by EBRD and ODP	USD 8 million financed by LT foods	USD 35 million financed by DP World	Unknown	USD 10 million
Concessionaire responsibilities:	Build, Operate and develop	Build, operate and maintain	Build, operate and maintain	Develop, operate and maintain	Rehabilitate, operate and maintain	Operate and Maintenance
Project size	Unknown	450,000 square meters	50,000 metric tons grain silos	130,000 square meters	920,000 square meters	Unknown
Revenue source:	Fees from users	Fees from users	Availability payment	Fees from users	Fees from users	Availability payment
Project type	Greenfield	Greenfield	Greenfield	Greenfield	Brownfield	Greenfield

4.3.1 Development of Dosso and Niamey dry ports in Niger

As a landlocked country, Niger is dependent on its neighboring countries for maritime connections, which significantly increases transport costs and hampers development efforts. In response to this challenge, the Government of Niger (GoN) made the strategic decision to plan and execute two dry port projects in Dosso and Niamey. These projects aim to enhance trade facilitation and mitigate the obstacles posed by the country's landlocked status.

The International Finance Corporation (IFC) was engaged by the GoN as the lead transaction advisor to attract the private sector to the development and operation of the greenfield projects.

IFC proposed a transaction structure for the dry port projects in Dosso and Niamey based on a 20-year concession agreement. This agreement involved the construction, development, and operation of the platforms located in Dosso (corridor of Benin) and Niamey Rive Droite (corridors of Togo, Ghana and Côte d'Ivoire). The concession was designed to ensure a balanced allocation of risks and protect the rights of all parties involved, including stakeholders. The agreement included a minimum mandatory investment of USD 50 million divided into four phases, and the payment of concession fees for an estimated minimum of USD 48 million. Bolloré Africa Logistics (B.A.L.) was selected as the winning bidder, offering an upfront fee of USD 2 million. Additionally, a fixed fee for land lease based on square meters and variable fees per ton of cargo were established, totaling an estimated minimum revenue of USD 48 million throughout the concession's duration. The agreement between the parties was officially signed in October 2014.

The Government of Niger initiated this project with the aim of enhancing and facilitate international trade by strategically investing in multi-modal transportation assets. The project's key objectives include promoting value-added services during the movement of goods along the supply chain, expediting cargo flow between ships and the major land transportation network, reducing bureaucracy and transportation expenses for stakeholders in Niger, and relocating the time-consuming sorting and processing of merchandise inland, away from the congested seaports in Benin, Togo, Ghana, and Côte d'Ivoire, which serve as the country's primary gateways to the sea.⁶⁰

The most important outcomes and advantages taken from the construction of this dry port in Niger are the following:

- The Government of Niger conducted a comprehensive assessment of the feasibility and potential benefits of establishing dry ports in various locations across the country. The study concluded that Dosso, situated 136 km from Niamey and the Cotonou corridor, which serves as a crucial transit route, was the most favorable option. Additionally, Dosso's proximity to the rail head in Parakou, located 462 km away, offers a significant advantage over other potential alternatives. This strategic positioning facilitates faster, more reliable, and cost-effective connectivity between the seaport and the hinterland, promoting efficient trade operations.⁶¹
- In line with the suggestions put forth by the IFC, the Government of Niger established a dedicated Dry Port Authority in 2014 to oversee the development of the country's first dry port through a public-private partnership (PPP). The newly formed Authority assumes the role of the granting and supervising entity for the concession, serving as the primary point of contact for Bolloré Africa Logistics (B.A.L.) and ensuring effective management of the project.

⁶⁰ Public-Private Partnership Stories Niger: Dry Port – International Finance Corporation – Accessed May 2023([link](#))

⁶¹ The Selection of Dry Port Location by Analytic Network Process Model: A Case Study of Dosso-Niger - Hamadou Tahirou Abdoukarim – April 2019 ([link](#))

- The envisioned dry port is anticipated to have a multimodal nature, incorporating a link to the proposed railway project connecting Benin's Port of Cotonou with Niger. However, the construction of the railway has encountered significant setbacks due to financing disputes, and its current status remains uncertain. Once operational, the Dosso dry port platform is expected to serve as the primary hub for handling a wide range of goods imported from Benin, offering extensive multimodal cargo handling capabilities.

4.3.2 Sixth of October dry port project in Egypt

The 6th of October Dry Port is located within the industrial and logistical zone of the newly developed 6th of October City. Spanning across 100 acres, it is positioned 25 km to the west of the existing industrial zone on the Bahariya Oasis Road, with convenient access to the regional ring road. Additionally, it is well-connected to the Egyptian national railway network (ENR), enabling efficient transportation between the dry port and various Egyptian seaports. Its primary purpose is to serve all Egyptian ports, particularly Alexandria Port and its two sectors, Alexandria and Dekheila, alleviating traffic congestion on roads.

The PPP has been structured under a build-operate-transfer (BOT) model, wherein the General Authority of Land and Dry Ports provides the land for infrastructure development and grants exclusive rights to the concessionaire, the October Dry Port Company (ODP), to develop and operate the dry port for a duration of 30 years. ODP is a joint-stock company, with 70% ownership by Elsewedy Electric, 20% by SLP for Logistic Properties, and 10% by Schenker Egypt.

The concessionaire is entitled to collect cargo handling and storage fees from cargo owners. Additionally, they are obligated to pay both a fixed annual fee and a variable fee, based on a percentage of their total revenues, to the contracting authority, as a revenue sharing mechanism between the public and private parties involved.

To address the shortage of logistics services in Egypt, the European Bank for Reconstruction and Development (EBRD) has extended a senior loan of USD 29.6 million to ODP. The loan will partially finance development of the Sixth of October Dry Port (DP6) greenfield project.

The development and construction of the 6th of October Dry Port is the first public-private partnership (PPP) project in the sector and the first under the EBRD Green Cities programme in Egypt. Once operational, the 6th of October Dry Port will contribute to a reduction in road congestion, accidents and CO2 emissions by transferring some of the container traffic from road to rail. The cooperation between stakeholders aims to prioritize environmental and climate change issues in the city and implement green investments and policy interventions to mitigate their impacts.⁶²

In addition to the investment from private companies in the development of the dry port, other companies have also announced the provision of dedicated railway services for the dry port. That is the case of CMA GCM, which has recently announced a dedicated new rail services connecting the ports of Alexandria and Ain Sokhna to October Dry Port near the major industrial and logistics zone of Cairo⁶³.

The most important advantages for the realization of this project are mostly related to the environmental part and will be the following:⁶⁴

- The project's significance lies in its role as the pioneering Public-Private Partnership (PPP) in the dry port sector, setting a precedent for future ventures and encouraging increased private sector

⁶² EBRD on board to finance Sixth of October dry port – Enterprise the state of the nation – July 2021 ([link](#))

⁶³ CMA GCM – Intermodal solutions – October Dry Port in Egypt – January 2023 ([link](#))

⁶⁴ 6th of October Dry Port – European Bank for reconstruction and Development – July 2021 ([link](#))

involvement in the country's infrastructure. This development is expected to enhance competitiveness and quality within the sector, while also addressing the demand for greater private sector participation.

- The dry port facilitates seamless intermodal transportation between road and railway networks. It strategically occupies a position along key Egyptian transport corridors, establishing direct links to multiple ports within the country. This advantageous location guarantees a continuous flow of cargo, thus mitigating demand risks for the private operator involved.
- The project is situated on undeveloped desert land, specifically allocated for industrial purposes and positioned 24 km away from 6th of October City. The site and its immediate surroundings do not contain environmentally sensitive areas, and the nearest community is located more than 20 km away.
- At operational stage, the Project will have an overall net environmental benefit due to facilitating decongesting at Alexandria and El Dekheila container terminals which will allow for faster turnaround of berthing vessels and reduce air pollutants and GHG emissions in the port area and through modal shift achieved through use of the railway infrastructure to transport cargo closer to its main destination
- Approximately 1200 direct and 350 indirect jobs will be created during the construction phase. The construction contractor will build temporary employee accommodations onsite during this phase.

4.3.3 Punjab silos project in India

India's logistics expenditure accounts for approximately 14 percent of its GDP, which is significantly higher compared to advanced economies such as the US and Europe, where it hovers around 10 percent of GDP. This inefficiency in India's logistics sector comes at a high cost, estimated to be around USD 100 billion. The challenges faced include damages, pilferage, and wastage of inventory during transit. Particularly in the cold chain sector, which encompasses perishable goods like fruits, vegetables, pharmaceuticals, chocolates, and dairy products, the value of the material can be lost if proper refrigeration is not maintained. The overall supply chain in India struggles to effectively support the country's production needs. These issues are particularly prominent in the Punjab region, known for its significant contribution of approximately 22 percent to India's total food production.⁶⁵

Considering the substantial grain production in India and the lack of sufficient facilities to handle it, the Punjab State Grain Procurement Corporation (PUNGRAIN), on behalf of the Punjab government, partnered with the International Finance Corporation (IFC) to establish a PPP framework aimed at addressing this issue.

As part of the concession agreement, the concessionaire was required to purchase the land, construct the facility, and be ready to commence grain storage operations. Once the concession period concludes, the operator will be able to operate the facility for private purposes. The International Finance Corporation (IFC) estimated the overall project expenses, including land and preliminary costs, to be around USD 8 million. On the other hand, PUNGRAIN holds the responsibility of procuring grain, ensuring the payment of guaranteed fees to the concessionaire for storage services, and regulate the operations of the private sector. In order to mitigate operational risks for the concessionaire, PUNGRAIN agreed to pay a fixed service fee that remains constant irrespective of the capacity utilized. Additionally, it has agreed to pay variable service charges for the handling of wheat grain during each reception and dispatch from the silos.

LT Foods, a leading exporter of basmati rice known for its extensive distribution network, was granted a 30-year greenfield concession to construct, manage, and maintain state-of-the-art steel grain silos. These silos are designed to be fully temperature-controlled and have an initial capacity of 50,000 metric tons.

⁶⁵ Government pushes for building warehousing on PPP model – TCBU Editorial – February 2020 ([link](#))

The tender process for this project attracted a total of 33 bids, and the concession was ultimately awarded to LT Foods in May 2010.

This project marks a significant milestone as it is the first of its kind to be commissioned by an Indian state government. In the event that the pilot phase proves successful, the Government of Punjab has the potential to expand the program, potentially increasing the grain storage system's capacity by up to 2.5 million metric tons.

Upon the conclusion of the concession period, the operator will have the opportunity to utilize the facility for private purposes.⁶⁶ In contrast to the build-own-operate-transfer (BOOT) or build-operate-transfer (BOT) models, the private entity retains ownership of the facilities and is not required to transfer them to the government upon the completion of the concession period.

The main outcomes and lessons learned from the development of Punjab 50,000 MT grain storage facilities are the following:

- The project took advantage of a transparent and competitive bidding procedure, which resulted in the selection of a capable and experienced private partner based on the lowest cost criteria.
- The project was honored with a prestigious gold recognition award by the IFC for its significant contribution in addressing issues associated with traditional open-air storage methods and the commission agent system. The "Amritsar model of silos" project has emerged as a benchmark for the Food Corporation of India (FCI) and other state governments in implementing silos nationwide.
- The project generated big attraction and expectations since the final number of bids reached 33, a considerable number of bids for a project
- The project derived advantages from a well-defined distribution of responsibilities and risk between PUNGRAIN and the private partner, supported by explicit and enforceable standards and specifications.
- The project's success was influenced by the willingness and capability of the parties to engage in renegotiations of the fixed storage fee, ensuring the long-term viability of the project.
- Lastly, the project benefitted from a strong dedication of the public contracting party. The remarkable success and appeal of the project generated significant interest among potential bidders, who recognized the intense competition surrounding its execution.

In addition to the Punjab silos, the Food Corporation of India (FCI) has continued promoting the development of silos under PPP schemes. As an example, FCI has recently planned to construct modern steel silos at 249 locations spread across 12 states under the Hub and Spoke model under the Public Private Partnership with a total investment of approximately USD 1.2 billion. These silos are planned to be constructed in three phases over the next 3-4 years.

Monetization of logistics assets in India⁶⁷

In July 2020, the Indian Ministry of Finance (MOF) launched the National Monetization Pipeline comprising potential brownfield infrastructure assets. The monetization of operating public infrastructure assets has now been recognized as a key financing option for new infrastructure construction. The MOF proposes to create an Asset Monetization dashboard to track progress and provide visibility to investors.

⁶⁶ Public-private partnership briefs India: Punjab silos – World Bank Group – October 2011([link](#))

⁶⁷ Government of India – National Monetization Pipeline – 2021 ([link](#))

The main assets included in the initiative include (i) the National Highways Authority of India operational toll roads; (ii) transmission assets of Power Grid Corporation of India Limited; (iii) oil and gas pipelines of GAIL (India) Limited, Indian Oil Corporation Limited, and Hindustan Petroleum Corporation Limited; (iv) Airports Authority of India (AAI) airports in Tier II and III cities; (v) other railway infrastructure assets; (vi) warehousing assets of central public sector enterprises such as the Central Warehousing Corporation and the National Agricultural Cooperative Marketing Federation of India Limited (NAFED); and (vii) sports stadiums.

As part of this strategy, the Central Warehousing Corporation has recently (in February 2023) launched the tender for the development of the warehousing facility through PPP under DBFOR model at the state of Tamil Nadu in India. The tender process is currently undergoing.

4.3.4 Kigali dry port project in Rwanda

Rwanda is becoming a trade hub for other African countries in East Africa region such as Burundi, Uganda, Central African Republic of Kenya, Zambia, Malawi and the Democratic Republic of Congo. It is an emerging economy that tripled this year's Economic Recovery Fund to support the recovery of businesses severely affected by the pandemic. With this Rwanda now aspires to reach Middle Income Country status by 2035.⁶⁸

To reach this goal the Government of Rwanda carried out a seven-year National Strategy for Transformation which included the construction of an innovative dry port in Kigali. In 2016, Rwanda's president signs a 25-year concession with DP world to develop, operate and maintain the greenfield project of Kigali Logistics Platform(KLP). The investment added up to USD 35 million to construct over 130,000 square meters, including a 12,000-square meter container yard and a 19,600 square-meter warehousing facility with an annual capacity of 640,000 tons. The private party will benefit from the operation of the infrastructure until the end of the concession.⁶⁹

The location of this landlocked country creates a great opportunity for this project to become a gateway to Africa as is providing grate access to key African ports as Mombasa in Kenya and Dar es Salaam in Tanzania. This project will promote the development of new service corridors and improvement of existing ones, as the railway from Mombasa port in Kenya passing through Uganda and going straight to Rwanda, and the rail link from Dar es Salaam that is currently under construction.

The Logistics Platform became operative in October 2019. This phase 1 of the project allows that 13.3 hectares of the project are now accessible and operational, offering 30,000 sqm of certified Bonded and Non-Bonded warehousing, 500 sqm of cold storage, 198 truck slots, an inland container terminal with a capacity of 50,000 TEU, one stop center, a cargo clearing and forwarding division, and an owned truck fleet.⁷⁰

The main objectives fulfilled with the construction of this facilities at the moment are the following:

- At full capacity, the dry port facilities have the potential to save Rwandan businesses up to USD 50 million a year in logistics cost, as for now it is connecting with the larger market of more than 1.2 billion consumers in Africa and beyond.
- It is the first in Rwanda and the second in Africa to use articulated forklifts and modern narrow aisle racking system (VNA) to reduce operational time.

⁶⁸ Kigali White Paper Design – DP World – Accessed May 2023 ([link](#))

⁶⁹ Rwanda launches \$35 million dry port – IOL – October 2019 ([link](#))

⁷⁰ Presenting DP World Kigali – DP World – Accessed May 2023 ([link](#))

- It is the only cargo terminal in Rwanda monitored by 24-hour CCTV with costumers able to access real-time tracking through mobile and online portals. This will improve service offered and will increase the security in the infrastructure.
- Inland container depot with modern IT infrastructure: This crucial facility helps make containers readily available for use promptly, allowing us to respond efficiently to client demands and providing a one-stop facility for efficient cargo management on site. A single-window operating system links the Rwanda Revenue Authority, the Rwanda Standards Board, and other government institutions, allowing a faster and transparent clearing of goods

4.3.5 Concession of Riyadh Dry Port in Saudi Arabia

Riyadh Dry Port was founded in 1982 and initially operated by the Saudi Railways Organization (SRO), which also operated the cargo railway line and managed the empty container yards in Dammam. However, SRO eventually made the decision to privatize the port's operations. In 2011, BAAS International Group (BIG) secured a 10-year contract to manage the operations at Riyadh Dry Port.

According to the National Committee for Customs Clearance (NCCC) the dry port's operation was deemed poor, resulting in significant damage to goods. During a 45-day period, customs brokers lodged complaints with the SRO due to disruptions in the clearance of around 7,000 goods.

In December 2021, Saudi Global Ports (SGP)⁷¹ was granted the concession by the Saudi Railway Company (SAR) to establish and manage the Riyadh Dry Port (RDP) Ecosystem. SGP is a joint-venture company that is formed between Public Investment Fund (PIF) of the kingdom of Saudi Arabia and PSA International and Al Balagaa which operates the first and second container terminals in King Abdulaziz Port in Dammam.

As a result, the RDP Ecosystem consists of three facilities, the dry port located in Riyadh and the two container terminals in Dammam. The concession was awarded through a tender process under the supervision of the Privatization Supervisory Committee of the Kingdom, following a public-private partnership (PPP) arrangement.

Under the concession agreement, SGP has been granted exclusive rights to develop and manage the RDP as an integrated logistics ecosystem. This includes responsibilities for upgrading the infrastructure, improving operational efficiency, and increasing the handling capacity of the dry port.

As part of the agreement, SGP and SAR are planned to enhance the operational effectiveness of the Riyadh-Dammam Freight line. Their joint efforts aim to increase the handling capacity of the Riyadh Dry Port to 1.5 million TEU per year by 2030, which is more than double its current capacity. The 10-year concession agreement for RDP was signed in Riyadh on December 7, 2021.

SGP intends to establish and manage RDP and the port of Dammam as an interconnected system, aiming to enhance the efficiency of logistics network flows and decrease logistics expenses within Saudi Arabia. The company will work closely with SAR and other stakeholders to offer multimodal transportation and cargo solutions tailored to market demands, while also expanding the rail freight operations of RDP.

As part of the agreement, SGP will carry out a modernization program aimed at enhancing civil infrastructure and facilities, acquiring new equipment, and investing in technologies such as automation and a unified digital platform. These efforts will not only improve the security, safety, and sustainability of supply chains but also align with the goals set forth in the National Strategy for Transport and Logistics Services.

⁷¹ Port Technology – Saudi Global Ports awarded concession to operate Riyadh Dry Port Ecosystem – 2021 ([link](#))

4.3.6 Pharmaceutical warehousing facilities in Nigeria

Despite numerous attempts over the years to develop a standardized central warehousing system for public health supplies, Nigeria⁷² still faces a notable shortage of well-sized and well-maintained storage facilities for pharmaceutical supplies. To overcome the difficulties associated with inventory management, human resources, and quality assurance, the Federal Ministry of Health (FMOH) considers necessary to seek the expertise of a private sector operator and adopt best practices in this area. The main objectives of the project included:

- Improve the accessibility of high-quality public health infrastructure specifically designed for pharmaceutical purposes by enhancing operational effectiveness through private sector management.
- Access to substantial financial resources from the private sector.
- Strengthen collaboration between the Nigerian government and the private sector.
- Build capacity of the public sector by leveraging on the technical expertise, experience, and efficiency of the private sector.
- Transfer some risks related to the project to the private sector.

In 2015, USAID and the FMOH signed a Memorandum of Understanding (MoU) to finance the development of two pharmaceutical-grade warehouses in Abuja and Lagos. The MoU outlined that a private sector operator would be involved in ensuring the facilities meet high-quality standards and operate efficiently. As a result, a Project Delivery Team (PDT) was formed, consisting of individuals tasked with overseeing and facilitating the entire process.

The Federal Government of Nigeria (FGoN) provided the land for the Abuja and Lagos Warehouse facilities through the FMOH. In addition, the FGoN contributed to the warehouse project by waiving building fees. USAID (70%) and the Global Fund (30%) financed the construction of the facilities, in the amount of approximately USD 10 million.

PPPs in Nigeria are regulated by the National Council for Public-Private Partnerships. Once the project was identified by the Ministries, Departments, and Agencies (MDAs) and their partners, the MDAs took the initiative to involve and collaborate with the Infrastructure Concession Regulatory Commission (ICRC) before the project's commencement.

To mitigate risks and potential liabilities associated with such projects, the Ministry of Finance was consulted. Additionally, a transaction advisor (TA) was appointed by the Project Management Team (PMT) through a competitive bidding process in accordance with the Public Procurement Act of 2007.

The Federal Government of Nigeria (FGN) had two main choices for the operationalization of the Medical Warehouses: to directly manage the facilities, or to enter into a PPP scheme by collaborating with a private sector operator.

The resulting management contract considered the ownership of the facilities to remain with the Government. A private sector partner was contracted to handle the operation and maintenance of the infrastructure for a fixed contract term. The selected private partner shall have the necessary technical knowledge, managerial expertise, and relevant experience to effectively manage this specific type of facility.

Under the conventional model, the private operator receives a predetermined payment that covers operating expenses along with an agreed management fee or a fixed fee. The contract agreement includes

⁷² USAID - Public-private partnership to achieve pharma-compliant warehousing for public health commodities in Nigeria – 2019 ([link](#))

minimum key performance indicators (KPIs) to ensure operational performance meets the specified standards.

As a result of the process, in 2019 the Minister of Health officially commissioned and put into operation both the Abuja Premier Medical Warehouse (APMW) and the Lagos Federal Medical Warehouse (LFMW). An interim warehouse operator was responsible for managing the two warehouses until a long-term private sector pharmaceutical warehouse manager was appointed.

A private pharmaceutical warehouse operator entered into a five-year contract to oversee the operations and maintenance (O&M) of the warehousing facilities, with the government in the lead. This initiative marks the first successful implementation of an infrastructure management PPP by the FMOH, in accordance with the guidelines set by the ICRC.

This PPP initiative serves as a viable and replicable model for governments to rely on private sector resources and expertise in tackling warehouse management issues. Its aim is to enhance access to high-quality medicines within the public healthcare system, and it can be replicated and sustained for future endeavors. Engaging and involving stakeholders is crucial for the successful implementation of a project and mitigating potential bureaucratic delays. A broad spectrum of stakeholder involvement ensures transparency, enables the sharing of experiences, and incorporates diverse perspectives. During the negotiation and contract review process, the participation of legal teams from all parties is essential. Furthermore, robust donor support plays a significant role in accessing best practices.

4.4 Analysis of mechanisms to involve private financing in the Ethiopian logistics sector

4.4.1 Private sector interest in logistics financing

Ethiopia has no previous experience with private participation in its logistics infrastructure, as all operations have been managed by public companies. Historically, the government has been strongly opposed to the idea of private entities taking control of the country's logistics. Even now, the solutions proposed to address this issue and promote private participation remain limited. As mentioned earlier, the options primarily involve granting access to smaller regions located far from major cities within the federation.

However, there is still significant untapped potential for growth in the country, and the government is beginning to encourage private participation, although these changes are still insufficient. There are several factors that could generate the interest and willingness of private investors to invest in this sector:

- Actual infrastructure: Currently the country counts with 8 operating dry ports and 1 in construction process. These facilities are outdated and require rehabilitated to align with the country's economic progress and future expectations.
- Undergoing transport projects: The country is currently undergoing a significant overhaul of its road and railway infrastructure, leading to a notable improvement in the transportation of goods. New connections through Ethiopia are being established from the most important ports of the neighboring countries to other landlocked regions. As a result, the country is in need of improvement of the infrastructure for freight storage in a manner that the government alone cannot afford, needing private sector involvement creating a synergy between the private sector and the different projects going on in the transport sector.
- Ethiopian transport masterplan: The Ministry of Transport and Logistics of Ethiopia has developed a long-term master plan for the next 30 years, which includes the establishment of new dry ports in 2025, 2035, and 2050. This plan aims to align with the government's goal of opening up the logistics

market to private operators. As part of this plan, the ministry is proposing a framework for Public Service Obligation, which will determine the ownership and management of the naval fleet. The Ethiopian Shipping and Logistics Services Enterprise (ESLSE) will be responsible for providing the services under a contractual agreement.⁷³

- Major exports of the country: The country's major exports primarily consist of agricultural products. Like other countries in the region, a significant amount of potential export material is wasted due to inadequate storage facilities. The country specializes in products such as coffee, which accounts for 26.4% of total exports, followed by other seeds, cassava, and flowers. All of these products require proper storage to maintain their quality. This offers an opportunity to generate synergies between traders or producers from the agricultural production for the inversion in this kind of silos projects.⁷⁴
- The variety of options: Most of the dry port, silos, or ICD projects in the continent are typically greenfield developments, which is a feasible option in Ethiopia according to regulations. However, the existing infrastructure also presents opportunities for brownfield projects since there is significant potential for improvement. Brownfield projects, specially, generates a great opportunity for private participation as the initial inversion will be highly reduce as is not a project started from scratch, and the benefit obtained in the operation will be similar to the one obtains in a greenfield project.

4.4.2 Financing for project preparation

Funding for project preparation in the logistics sector should encompass expenses related to conducting feasibility studies and engaging transaction advisory services for their procurement under PPP arrangements. However, in the case of existing logistic infrastructure, project preparation funding should be allocated to enroll the assistance of a transaction advisor who will offer support during negotiations with a private entity. This advisor will oversee and guide the negotiation process aimed at involving a private party in the operation and maintenance of the existing infrastructure.

Government funds, International Financial Institutions (IFIs), or Project Preparation Facilities (PPF) can provide financing for the project preparation phase. Given the limited experience of the PPP Directorate General in Ethiopia with private participation in logistics projects, involving an IFI or PPF during the project preparation phase not only provides the necessary funds to cover costs but also offers expertise and knowledge required for the process.

As shown in the benchmark of logistics projects, the involvement of IFIs such as the International Finance Corporation (IFC) or the European Bank for Reconstruction and Development (EBRD) has played a pivotal role in the development of these logistics infrastructures under PPP arrangements.

The transaction advisor will undertake crucial tasks, including conducting a market analysis, structuring the PPP project, and preparing a comprehensive business case to attract potential private operators in the logistics sector. Additionally, the advisor will provide support to ESDSE throughout the negotiation process with private operators until reaching financial closure.

4.4.3 Financing options for project implementation, operation and maintenance

The logistics sector in Ethiopia is currently mainly dominated by the public sector through the Ethiopian Shipping and Logistics Service Enterprise (ESLSE). However, the sector is under an opening process to attract investments from the private sector. The National Transport Master Plan: Road network 2022-2052 identifies a total of 7 dry ports planned to be developed under PPP arrangements, requiring a total

⁷³ Ethiopian Transport Masterplan 2022-2052 – Ministry of Transport and Logistics – 2022 ([link](#))

⁷⁴ Imports and trade partners Ethiopia – OEC – Accessed May 2023 ([link](#))

investment of USD 850 million. Additionally, and as observed in the case studies analyzed, silos, warehouses and logistics areas are also a target logistics infrastructure with potential to be developed with the collaboration between the public and private sectors.

The analysis of potential options for private sector engagement in the development, operation and maintenance of logistics facilities primarily focuses on those needed to fulfill a Public Service Obligation (PSO). Facilities designed solely for commercial purposes will be entirely developed, operated, and owned by the private sector, without requiring collaboration between the private and public sectors.

Due to the variation of logistics infrastructure assets, the analysis of financing options for logistics facilities is then structured into two different categories: (i) dry ports and logistics parks, and (ii) warehouses and silos.

Financing options for dry ports and logistics areas

As mentioned before, dry ports and other logistics areas play a crucial role for Ethiopia's international trade due to its landlocked characteristics. A total of eight dry ports are currently implemented in the country and the Transport Masterplan considers seven additional dry ports with strong potential to be structured under a PPP arrangement, with preliminary FIRR of around 10%. The following two options are proposed to involve the private sector in the development, operation and maintenance of dry ports in Ethiopia:

- Development of new dry ports and logistics areas

The examples of Niger, Egypt, and Rwanda illustrate the considerable potential for implementing PPP arrangements in the development of greenfield dry ports, which may also apply to logistics areas, as observed in the examples mentioned in section 4.2.

These arrangements are typically structured as concessions or lease contracts for a period ranging from 20 to 30 years. Under a concession contract, the private party assumes responsibility for both developing and operating the logistics facilities. The concession agreement often incorporates the payment of fixed or variable fees to the public authority, as a revenue sharing mechanism. On the other hand, a lease contract involves the public party developing the logistics infrastructure, which is then operated by the private party in exchange for a lease fee. The latter option is commonly referred to as a landlord model, where the public party assumes the role of a landlord for the private party.

Both options share a common aspect: the government provides the necessary land for infrastructure development, while the private sector assumes a PSO by developing and operating logistics facilities that contribute to the growth of the national economy and international trade, or ensure food and health security within the country. Additionally, in the lease/landlord model, the public sector develops the required infrastructure, reducing the initial investment and financial risk for the private party.

In both scenarios, the private party is often remunerated through tariffs charged to cargo owners for cargo handling and storage services, bearing the demand risk. However, availability-based payment mechanisms can be incorporated to enhance logistics services for certain cargoes. Furthermore, the logistics premises offer opportunities to provide additional value-added services, diversifying the revenue streams for the concessionaire and making it more appealing to potential customers. These supplementary services may encompass cargo consolidation and deconsolidation, as well as container cleaning and repair services. By offering these services, a sustained demand for the dry port and other logistics areas can be ensured.

The development of new dry ports and logistics areas has the potential to leverage synergies with other companies in the logistics and transport sectors within the region. Companies like Bolloré, DP World (current operator of Djibouti Port), or a potential future private operator of EDR, might express

interest in these projects due to the benefits derived from the services offered at these facilities and the optimization of logistics costs. Furthermore, exploring synergies with other transport infrastructure is essential. For instance, strategically locating dry ports near the Ethio-Djibouti Railway line will ensure a consistent demand for cargo storage and handling. Similarly, implementing dry ports near road border posts can achieve the same objective. In these options, it is crucial to involve the private entities engaged in the railway and road sectors in the development of these facilities.

Government commitment has been observed as a key element for the successful implementation of dry ports and logistics areas in other countries. The main benefit for the government is the reduced impact on government expenditure for the development of these projects, while enhancing the logistics infrastructure in the country and reducing logistics costs for producers and traders.

Currently, the operation of dry ports in Ethiopia is entirely controlled by ESLSE, and there is a lack of prior experience with private sector involvement in the development and operation of these facilities. Therefore, it is suggested to establish a joint venture between a private operator and ESLSE for the initial development and operation of PPP dry ports. This approach will help raise awareness and understanding within the public sector and society regarding the private provision of such services. However, in the long run, it may be appropriate to procure dry ports through a concessionaire fully owned by the private sector. These projects have attracted considerable interest from the private sector, as seen in countries like Egypt or Rwanda.

Implementing **dry ports through PPPs** will enhance logistics capabilities, strengthen international trade, and reduce public spending. Experiences from other regions show **significant private sector interest** in such arrangements. However, it is important to **assess synergies with other transportation infrastructure** to mitigate demand risks for the private party.

- **Operation and maintenance of existing dry ports and logistics areas**

This option presents an alternative to the previous, requiring a lower investment as the private sector would solely be responsible for operating and maintaining existing dry ports or logistics areas. Involving a private partner in the operation of dry ports currently managed by ESLSE has the potential to enhance the current capacity of dry ports through improved operations and resource utilization. Additionally, it could serve the purpose of outsourcing the provision of these services, thereby reducing government expenditure.

In this approach, the private sector will take on the responsibility of procuring equipment, as well as operating and maintaining existing facilities. Depending on the scenario, the equipment may be obtained through a purchase from ESLSE, in case the equipment is in good conditions and services are outsourced to a private operator, or through external procurement if there is a need to expand the current range of services provided. The private sector will benefit from the collection of fees for the provision of cargo handling and storage, as well as other value-added services described for the previous option.

However, while conducting a detailed assessment of the current characteristics and condition of the existing facilities will be necessary, it is anticipated that certain rehabilitation and improvement works will be required to enhance the capacity of the current dry ports and logistics areas. In such cases, similar to the example of Saudi Arabia, there will be an investment requirement from the concessionaire, although lower than compared to the development of greenfield facilities. These contracts are suggested to be arranged as a concession model, leveraging on private investment for

the rehabilitation of existing facilities. Although, as in the previous scenario, a lease contract can be arranged if the infrastructure is in adequate condition or the rehabilitation costs can be incurred by the public party.

An alternative for private sector involvement in less financially attractive dry ports and logistics areas is the bundling of these facilities with more profitable ones, such as the Modjo dry port. This approach enhances the appeal for the private sector by providing broader access to greater demand and revenue sources and enables the private sector to optimize resource utilization. Moreover, the public sector will benefit from improved logistics operations across all the concessioned dry ports, as well as the possibility of expanding the range of services provided at these facilities.

Similar to first option, an SPV composed by a private party and ESLSE is suggested, leveraging on ESLSE's significant involvement in dry port operations within the country and the public interest in maintaining a certain level of control over the logistics infrastructure. However, in the long run, there is a possibility of granting the concession for these services to a fully private SPV, after the successful track record of private sector involvement in other dry ports and logistics areas in the country. As described previously, logistics companies such as DP World may have strong interest in these arrangements, leveraging on the synergies with the current operations in the port of Djibouti.

Engaging a concessionaire to **upgrade and operate the existing dry ports** presents strong potential for **optimizing and expanding the range of services currently offered**, without expanding current facilities or increasing government spending. **Main international logistics companies** are likely to be interested in these arrangements, potentially through **joint venture with ESLSE**.

Financing options for silos and warehouses

This option for private sector involvement in the logistics sector centers around the development and operation of silos and warehouses specifically designed for handling bulk and palletized cargo. As observed in the benchmarked examples, there is considerable potential for the development of silos serving the agrifood industry, particularly in countries with substantial agricultural production. Ethiopia is a prime example of such a country, given that agriculture contributes around 40% to its GDP and accounts for up to 80% of Ethiopian exports.

The development and operation of large storage facilities and warehouses bring substantial advantages to Ethiopia. These benefits include increased trade volumes, lower logistics costs, and the promotion of domestic production, especially in the agricultural sector. Moreover, involving private entities in the development and operation of these facilities will decrease government expenditure while generating significant economic benefits for the country. Consequently, the government might consider providing warehousing services as a PSO by partnering with private companies. These partnership agreements may be structured as concession contracts, as in the case of Punjab silos in India, or as an operation and maintenance (O&M) contract.

Under the terms of the concession agreement, the private developer will be responsible for constructing, operating, and maintaining the silos and warehousing facilities for the duration of the concession. Similar to the Punjab silos, the private party may be obligated to acquire the necessary land. Once the concession period concludes, the private party will have the right to operate the facilities for their own benefit. The public authority will remunerate the private developer through an availability payment for providing storage capacity under a certain level of quality, regardless of the actual level of utilization. These silos and warehouses are suitable to be developed in large productive regions or strategic transport corridors.

However, building on the previous examples observed for the development of dry ports and logistics areas, the public party may provide the land to the concessionaire for the development and operation of the facilities for a fixed time period, after which the public party will hold the ownership of the infrastructure. In this case, the concessionaire will be entitled to collect fees from cargo owners for the handling and storage of their goods or, previously mentioned, be remunerated through an availability payment for the provision of storage space under a certain level of quality.

In addition to the core services of storing and handling cargo, these facilities can offer complementary value-added services. These services not only generate significant income for the facility operator but also enhance the value of the goods being handled, thereby benefiting the cargo owners. Examples of such value-added services include product washing, sorting, packaging, and labeling. Furthermore, transport services can be offered to agricultural producers, providing them with a seamless and efficient logistics service for their cargo.

Key promoters of concession arrangements for silos and warehouses may include the Ethiopian Trading Businesses Corporation (ETBC), the National Disaster Risk Management Commission (NDRMC), the Ethiopia Commodity Exchange (ECX) or the Ethiopian Agricultural Businesses Corporation (EABC), as these are the largest public owners of warehousing facilities in Ethiopia. Main beneficiaries of these facilities are the agriculture associations in Ethiopia and ultimately the small producers, which will benefit from dedicated logistics services for their cargo. Furthermore, the utilization of these facilities allows for efficient storage of excess produce, enhancing productivity and reducing produce wastage. This initiative has the potential to create synergies with private firms specializing in the agricultural sector, ensuring a reliable and steady income flow, reducing the risk associated with fluctuating demand.

O&M (Operation and Maintenance) agreement follows a different approach. In this scenario, the public party takes on the responsibility of developing and constructing the storage facilities and retains ownership of the infrastructure. The private party (operator), on the other hand, focuses solely on operating and maintaining the warehouse or silo. The operator receives an availability payment from the public party to carry out their assigned tasks in accordance with specified quality standards. An example of this arrangement can be seen in the case of pharmaceutical warehousing facilities in Nigeria. O&M agreements typically have shorter durations, typically ranging from 3 to 5 years, compared to the longer durations observed in concession contracts for silos and warehouses, which can span from 10 to 20 years.

O&M contracts are more suitable when the expertise and knowledge of the private party play a crucial role, especially in cases involving pharmaceutical or cold storage facilities, as these facilities require advanced technology and have a higher level of complexity. Therefore, the involvement of a private party with specialized knowledge becomes essential in effectively managing and maintaining such facilities.

Concession contracts, on the other hand, are better suited when the expertise and knowledge of the private party, while beneficial, are not crucial requirements for the development and operation of the infrastructure. Instead, concession contracts are primarily aimed at addressing the financing needs for constructing such facilities. These agreements focus on providing the necessary funding for the development of large storage facilities, which in turn contributes to the economic development of the region.

The development of **silos and warehouses** through PPP arrangements allows to consolidate logistics services for local agricultural producers, **boosting production and exports** while minimizing food waste. **Major export companies may be highly interested** in investing in these facilities to handle large cargo volumes, optimize resources, and ensure a consistent demand for logistics services.

4.5 Conclusions and recommendations

Ethiopia heavily depends on the presence of dry ports, silos, warehouses, and other logistics infrastructure to facilitate its international trade. As stated in the National Transport Master Plan: Road Network 2022-2052, there are currently 8 operational dry ports, and an additional 7 dry ports are planned for development under public-private partnership (PPP) arrangements.

Logistics projects in various countries have demonstrated the success of PPPs for the development of different logistics facilities, generating advantages for both the public and private sectors through diverse arrangements and models. However, in the case of Ethiopia, collaborations between the private and public sectors for the development and operation of logistics facilities have not yet been realized.

All proposed options for private sector participation in the logistics sectors are suitable for the development of logistics infrastructures in Ethiopia, depending on the type services to be provided. The sector is currently monopolized by ESLSE, which is responsible for the operation of all dry ports across the country and other logistics infrastructure. However, a collaboration between a private party and ESLSE is likely to generate important synergies in the operation of these facilities, fostering the logistics sector, facilitating trade and supporting local production. Large exporters, logistics companies or producers' associations have demonstrated strong interest in being involved in the development and operation of these facilities in other countries.

Among the options analyzed involving the private sector through a concession agreement holds strong potential for the development of new dry ports and logistics areas. Under this agreement, the private sector would be responsible for developing and operating the necessary facilities for a specified period of time, while the public party would provide the land needed for the development. In the case of existing dry ports, the ESLSE could collaborate with a private operator who would take charge of the facilities' operation, maintenance, and necessary upgrades or renovations, if needed. Both of these approaches would help reduce ESLSE's expenses while simultaneously optimizing and expanding the range of logistics services available in the country. This can be achieved by leveraging the knowledge and expertise of the private sector.

All analyzed options for the development of silos and warehouses in Ethiopia are well-suited for implementation. One promising approach is to promote concession agreements under Build-Operate-Own (BOO) schemes, which have strong potential to attract private sector involvement in establishing these facilities across the country. The use of availability-based payment mechanisms in BOO concessions fully transfers the demand risk to the public party, making it an attractive option for private operators. Over time, BOO concessions will contribute to the growth of a logistics environment with substantial private sector participation, as the private party will eventually own and operate the facilities once the concession term ends. On the other hand, Operation and Maintenance (O&M) contracts are most suitable when the engagement of a private operator is primarily driven by the need for expertise and knowledge, rather than private funding. This is especially relevant for complex infrastructures like pharmaceutical or refrigerated warehouses, where the technological complexities require specialized operational and maintenance skills.

Annex A: Consulting services for providing transaction support for the concession of the Ethio-Djibouti Railway (EDR) – Draft Terms of Reference (ToR)

Introduction

In the Ethiopian region there is only one operational line that connects the capital Addis Ababa with the port of Djibouti along 759 km. Ethio-Djibouti Railway (EDR) is the responsible authority for the operation of the railway line based on a bilateral agreement between the governments of Djibouti and Ethiopia. Since 2018, EDR has been providing passenger and freight services through a 6-years management contract with the joint venture formed by China Railway Group Limited (CREC) and China Civil Engineering Construction Corporation (CRCC), which is planned to terminate in 2024.

Objective of the assignment

The Government intends to pursue this project in partnership with the private sector through a PPP arrangement in accordance with the National Policy on PPPs.

The objective of the Assignment would be to each contractual agreement with a concessionaire for the operation of the Ethio-Djibouti line. As such, the Consultant shall provide Transaction Support in regard to:

- Assistance through various phases of the PPP Project cycle to procure investor(s) through competitive tendering procedures to operate the Ethio-Djibouti Railway line on a PPP arrangement in agreement with the Governments of Ethiopia and Djibouti.
- Review existing studies on the Ethio-Djibouti line and undertake traffic forecasts, financial & economic analysis, legal review and environmental & safeguards studies etcetera, to develop a Business Case Feasibility Report.

Scope of works

This section provides an indicative scope of works for the Transaction Advisor, but it should not be construed as the total set of activities required for the successful closure of the Project. The assignment involves PPP transaction structuring and competitive tendering. The Transaction Advisor's team will review and update previously conducted studies of Ethio-Djibouti line in Ethiopia.

With updated information and data, the Transaction Advisor will undertake financial, economic, technical, environmental/safeguard, and legal feasibility and after extensive due diligence, and market sounding, prepare a bankable document for the project and recommend the commercially and technically most viable PPP transaction structure. The Transaction Advisor will be responsible for marketing the project, prequalifying potential investors according to the pre-established financial and technical criteria, drafting bidding documents, and assisting in the selection of the winning bidder.

The Transaction Advisor will also assist with negotiating/signing of the PPP contract, and facilitating the financial closure process.

The transaction support is divided in three phases: (1) Transaction Preparation, (2) Decisions and Commitments, and (3) Transaction Implementation.

PHASE 1: TRANSACTION PREPARATION

Activity 0: Inception

- a) Review of the concept and requirements of the Project
- b) Overview of the key issues
- c) Review of the timetable of activities / milestones / team organization / way forward
- d) Development of a communication protocol with the Client's counterpart
- e) Review of a plan or strategy to transfer knowledge, skills, tools and techniques to the stakeholders
- f) Discussion of any specific issue requiring the immediate attention of the Ministry of Transport and Logistics
- g) Review of the existing studies regarding the Project

Activity 1: Viability Assessment

- h) Needs Analysis
 - i) Define relative area of influence for Ethio-Djibouti railway line.
 - ii) Analysis of the economic outlook of Ethiopia.
 - iii) Assessment of current and future cargo transport capacity in the region.
 - iv) Assessment of current and future passenger transport capacity in the region.
 - v) Execute market share analysis of Ethio-Djibouti line vis-à-vis other railway projects in the region.
 - vi) Prepare updated container traffic forecast for Ethio-Djibouti line.
- i) Technical Assessment
 - i) Phasing plan for future investments
 - ii) Operational plan for the Ethio-Djibouti railway line
 - iii) Assessment of traffic handling capacity of the Ethio-Djibouti line
 - iv) Recommendations for technical requirements
- j) Legal Assessment
 - i) Assessment of the relevant legal (PPP) framework
 - ii) Regulations governing applicable tariffs
 - iii) Procedures for foreign investors
 - iv) Identification of tax law impediments or incentives
- k) Environmental and Social Impact Assessment
 - i) Development of an environmental, social, and heritage impact assessment.
 - ii) Propose a framework to integrate environmental and social issues into the formulation of plans to undertake the Project in compliance with the enforced regulations
 - iii) Carry out an Environmental and Social Assessment of the Ethio-Djibouti railway line

- iv) Carry out a Gender Analysis/assessment.
- l) Financial Assessment
 - i) Capex estimates for the concession period.
 - ii) Opex estimates for the concession period.
 - iii) Revenue estimates for the concession period, including different scenarios analysis.
 - iv) Prepare a flexible Financial Model to assess financial feasibility and bankability, including main financial indicators (NPV, IRR and payback period)
 - v) Include sensitivity and scenario analysis
- m) Economic Assessment
 - i) Assess conversion and allocation factors to translate financial cash flows into economic cash flows
 - ii) Define case setting and hypotheses
 - iii) Prepare economic benefit estimates for the concession period
 - iv) Prepare economic cost estimates for the concession period.
 - v) Prepare a flexible Financial Model to assess economic feasibility including main economic indicators (Economic NPV and Economic IRR).
- n) PPP Structuring
 - i) PPP Business Case
 - ii) PPP responsibility matrix
 - iii) Deal-structuring: Concession / JV / equity
 - iv) PPP Valuation
 - v) Public-Sector Comparator
 - vi) Value for Money Analysis
 - vii) Risk Analysis
 - viii) Heads of Agreement
- 1) Activity 2: Market Sounding
 - a) PPP Business Case
 - b) Project Information Memorandum (PIM)
 - c) Consultation of Potential Partners
 - d) Transaction promotion

Activity 2: Transaction Strategy

- e) Propose transaction content: (scope, value, structure, commitments)
- f) Propose Transaction Process
 - i) Tender organisation
 - ii) Method (open/restricted/negotiation)

- iii) Determine Public Procurement Compliancy Tender organisation for Value for Money Assessment
- g) Risk Assessment

PHASE 2: DECISION AND COMMITMENTS

Activity 3: Assistance in obtaining necessary permits and approvals.

PHASE 3: TRANSACTION IMPLEMENTATION

Activity 4: Prequalification

- a) Management of the data room
- b) Defining qualification criteria
- c) Issue the Request for Expression of Interest
- d) Organise Q&A sessions with potential bidders and other stakeholders
- e) Evaluation of EOIs
- f) Shortlisting

Activity 5: Selection

- a) Defining selection criteria
- b) Issue the Request for Proposal
- c) Competitive dialogue
- d) Evaluation of proposals
- e) Best and Final Offer
- f) Selection of preferred candidates

Activity 6: Final Negotiation & Signing

- a) Final contract negotiations
- b) Contractual close

TEAM COMPOSITION

The Transaction Advisor needs to be a firm. Associating with other entities to enhance capability is allowed. The Transaction Advisor will include qualified personnel in the field of railways, railway operations, transport, engineering and planning, PPP project preparation and appraisal, project management, project finance, financial modelling; structuring; investment promotion economic and financial analysis, risk analysis, procurement policy and legal issues and drafting and negotiating PPP agreements.

The firm should have recent experience in Transaction Advisory work in Africa within the Transport Sector as well as transport-related work in the region. The latter should be in the last 12 months.

The team shall have extensive demonstrated international experience/expertise that would include knowledge of the sector, regulatory issues involved, and the initiatives taken by the Government for the successful implementation of PPP projects.

The list of experts provided is indicative and the Transaction Advisor shall include additional experts that may be required to successfully complete the assignment.

- Key Expert 1 - Team Leader (International)
 - Education: MSc (Master of Science).
 - Minimum of 20 years relevant experience in terms of successfully leading and coordinating a team of professionals in similar transport- related assignments and similar country characteristics.
 - Minimum of 20 years of demonstrated experience in providing PPP Transaction Advisory services / development of large railways and other transport projects on PPP basis including extensive experience in project preparation, project structuring, risk analysis, allocation and management, project agreements, negotiation and bid process management.
 - Minimum of 4 railway PPP projects in the last ten years.
 - Experience with IFI railway PPP projects.
 - Experience in Capacity Building and PPP training
 - Demonstrated ability to work with government / public sector decision-makers and organizations alike.
 - Knowledge of relevant international and national policies, legislation, institutional and regulatory frameworks for PPPs.
 - Ability to manage multiple tasks effectively and a strong team player with excellent leadership and interpersonal skills and the ability to work in a high-profile environment.
 - Strong oral and written communication skills in English language with a capacity to communicate effectively to a wide variety of audiences, including conducting periodic presentations. French language capability would be added value.
- Key Expert 2 - Senior Railway Finance Specialist (International)
 - Education: Master's in any degree (Master of Science/MBA).
 - Minimum of 15 years of experience in transport infrastructure financial and business case advisory in developed, emerging economies, structuring large infrastructure projects in PPPs, financial modelling, project costing and tendering arrangements.
 - Regional experience in countries of the region.
 - Experience with AfDB.
 - Demonstrated ability to work with government / public sector decision-makers and organizations alike.
 - Strong oral and written communication skills in English language with a capacity to communicate effectively to a wide variety of audiences, including conducting periodic presentations.
- Key Expert 3 - Senior Transport Economist (International)

- Education: Master's in any degree
- Minimum of 15 years relevant experience in railway economics, railway business, and railway advisory, in developed and emerging economies, experience in undertaking detailed demand analysis and conducting long-term freight and passenger traffic forecasts.
- Minimum of 5 railway PPP projects in the last ten years.
- Experience with IFI railway PPP projects.
- Demonstrated ability to work with government/ public sector decision-makers and organizations alike.
- Strong oral and written communication skills in English language with a capacity to communicate effectively to a wide variety of audiences, including conducting periodic presentations.
- Key Expert 4 - Senior Transaction Expert (International)
 - Education: Masters in any degree.
 - Minimum of 15 years relevant experience in Transport sector PPP transaction structuring in developed, emerging and island economies.
 - Experience with IFI railway PPP projects.
 - Demonstrated ability to work with government/ public sector decision-makers and organizations alike.
 - Strong oral and written communication skills in English language with a capacity to communicate effectively to a wide variety of audiences, including conducting periodic presentations.
 - Demonstrated experience with working in emerging countries.
- Key Expert 5 - Senior Railway Operations Expert (International)
 - Education: MSc (Master of Science in Engineering).
 - Minimum of 15 years relevant experience in operations, technical design, maintenance of railway in developed and emerging economies.
 - Minimum of 5 railway PPP projects in the last ten years.
 - Experience with IFI railway PPP projects.
 - Demonstrated ability to work with government/ public sector decision-makers and organizations alike.
 - Strong oral and written communication skills in English language with a capacity to communicate effectively to a wide variety of audiences, including conducting periodic presentations.
- Key Expert 6 - Legal Advisor
 - Education: LLM (Master of Laws) or equivalent.
 - Minimum of 15 years relevant experience in legal and PPP advisory in the region, with established experience in SADC/EAC legislation relating to the transport domain, concessioning procedures and railway governance.
 - Experience with infrastructure PPP projects.

- Demonstrated ability to work with government/ public sector decision-makers and organizations alike.
- Strong oral and written communication skills in English language with a capacity to communicate effectively to a wide variety of audiences, including conducting periodic presentations.
- Key Expert 7 - Environmental and Social Specialist (MSc)
 - Education: MSc (Master of Science).
 - Minimum of 15 years relevant experience in environmental aspects of infrastructure projects.
 - Experience with IFI railway PPP projects
 - Demonstrated ability to work with government/ public sector decision-makers and organizations alike.
 - Strong oral and written communication skills in English language with a capacity to communicate effectively to a wide variety of audiences, including conducting periodic presentations.
- Key Expert 8 -Transport Planning Expert
 - Education: MSc (Master of Science) in Transport Planning/Engineering.
 - Minimum of 20 years relevant experience in planning integrated infrastructure projects.
 - Experience in Transport/Land Use Planning
 - Experience with Transport PPP projects.
 - Experience in Capacity Building and PPP training/production of training modules.
 - Demonstrated ability to work with government/ public sector decision-makers and organizations alike.
 - Strong oral and written communication skills in English language with a capacity to communicate effectively to a wide variety of audiences, including conducting periodic presentations.

DURATION OF CONTRACT

It is expected that the assignment (completion of all tasks) will be concluded over a maximum period of twelve (12) months. The first phase of the assignment shall be completed in a total of about four (4) months, the second phase of the assignment shall be completed in a total of about one (1) month, and the third phase of the assignment shall be completed in a total of seven (7) months.

DELIVERABLES AND REPORTING SCHEDULE

The indicative deliverables and reporting schedule is as follows:

Deliverable	Timing
Inception Report	1 month
Due Diligence Report	3 months

Deliverable	Timing
PPP Structuring Report	4 months
Tender Documentation	4 months
Revised Tender Documentation	5 months
Prequalification Report	7 months
Bid Evaluation Report	11 months
Signed Concession Agreement	12 months



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