AFRICAN DEVELOPMENT BANK GROUP

NEPAD - Infrastructure Project Preparation Facility

(NEPAD –IPPF)

Project Information Memorandum
- PIM -

Feasibility Study on the proposed Standard Gauge Railway (SGR) connecting The Federal Democratic Republic of Ethiopia and The Sudan

June 2019

Summary Table

Name of Project	Feasibility Study on the proposed Standard Gauge Railway (SGR) connecting The Federal Democratic Republic of Ethiopia and The Sudan
Countries involved	Ethiopia and Sudan
Sector(s)	Transport
Project sponsors	Governments of the Federal Democratic Republic of Ethiopia and the Sudan
Budget	**Total: US$3,400, 000** NEPAD-IPPF: US$ 2, 000,000 ADF Grant: US$ 1,200,000 Counterpart Contribution US$ 200,000
Objectives of the project	To undertake full feasibility studies – technical, economic, and financial feasibility for the development of the Ethiopia to Sudan Standard Gauge Railway project, including an Environmental and Social Impact Assessment (ESIA). The outputs expected are the complete set of feasibility study reports.
Time Schedule for approval	End June 2019
Implementation Schedule	18 months from Approval expected June 2019
Related Bank activities	The Bank has a portfolio of on-going transport sector projects mostly in the roads subsector in Ethiopia, and a number of institutional support, capacity building, agriculture and water sector operations in Sudan.
Technical Screening	All technical, environmental, social and financial structuring studies completed. Score achieved in Technical Screening – 81%.
Economic Screening	The proposed SGR project presents a strong case for economic development in the sub-region, providing needed transport infrastructure for movement of goods and services supporting trade, industrialization and regional integration.
Environmental Screening	For this Feasibility study phase, no environmental impacts are expected. However, the studies will include the preparation of a detailed environmental and social impact assessment for the project.
Regional Integration	The Governments of Ethiopia and Sudan are developing this project jointly under bilateral agreements, Memorandum of Understanding, and cooperation in various sectors completed by the two Governments, thereby promoting interdependence and regional integration.
Task Manager	Mtchera J. Chirwa, Chief Infrastructure & PPP Specialist, PICU.3;
Management Team	Sector Manager: Mike SALAWOU, Manager, PICU.3 Sector Director: Amadou Oumarou, Director, PICU Regional Director: Gabriel Negatu, Director General, RDGE

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This Project Information Memorandum (PIM) was prepared by Mtchera Johannes Chirwa, Chief Infrastructure & PPP Specialist, PICU.3 (Ext. 8412). Any inquiries relating to this report may be referred to Mr. Mike Salawou, Division Manager, PICU.3 (Ext 3077)

List of Abbreviations

AfDB	African Development Bank
ADF	African Development Fund
DFI	Development Finance Institution
DFID	UK Department for International Development
EIA	Environmental Impact Assessment
ERC	Ethiopia Railways Cooperation
ESIA	Environmental and Social Impact Assessment
EoI	Expressions of Interest
EU	European Union
GoE	Government of the Federal Democratic Republic of Ethiopia
GoS	Government of Sudan
ICB	International Competitive Bidding
IGAD	Intergovernmental Authority on Development
IPPF	Infrastructure Project Preparation Facility
NEPAD	New Partnership for Africa's Development
PAP	Priority Action Plan
PIDA	Programme for Infrastructure Development in Africa
PIM	Project Information Memorandum
PPP	Public Private Partnership
REC	Regional Economic Community
RfP	Request for Proposals
SGR	Standard Gauge Railway
SRC	Sudan Railways Corporation
TBC	To be confirmed
TBD	To be determined
ToR	Terms of Reference
USD	United States Dollars

Executive Summary

1. The Governments of the Federal Democratic Republic of Ethiopia and The Sudan have completed bilateral agreements for cooperation in a number of economic sectors**.** Among them, is an understanding to jointly develop a railway line, linking Addis Ababa in Ethiopia to Khartoum in Sudan, and extending to Port Sudan on the Red Sea coast. The railway line, to be developed in Standard Gauge will follow the agreed route of Addis Ababa, along to Awash-Kombolcha-Weldiya, on to Wereta – Gonder – Metema – Galabat - Gadarif – Kassala – Haiya and to the Port of Sudan, a total estimated distance of 1,522 km.

2. The proposed development of this SGR project is linked to the planned development of Special Economic Zones (SEZ) in the border regions of the two countries intended to enhance production of local goods, industrialisation, and agro-processing thereby increasing the existing trade links between the two countries as well as its neighbours. The planned termination of the line at Port Sudan provides an additional sea access route for Ethiopia, which will most likely revive the full utilisation of the Port of Sudan, as an alternative import-export port.

3. Development of this line is fundamental to enhancing regional connectivity not only within the North Eastern part of the continent but also to the Central African region states of Chad and the Central Africa Republic. Once developed, the railway line will link to the Kampala – Juba – Addis Ababa – Djibouti Corridor Project and the proposed Lamu to Addis Ababa railway link, which is part of the LAPSSET Corridor Development Program both of which are key priority corridor projects in PIDA currently being supported by the Bank.

4. The principle objective of this preparatory phase of the project is to finance the preparation of a full feasibility study. This will cover technical, economic, financial and environmental impacts assessment, in order to inform the two countries and potential financers if its viability. The study will also include an assessment of possible development and financing modalities, including an assessment of its potential for attracting private investment through the Public Private Partnership (PPP) model.

5. The total cost for undertaking the feasibility studies is estimated at USD 3,400,000. Of this amount, the NEPAD-IPPF will provide USD 2,000,000 (59%), with co-financing from the African Development Fund (ADF) resources allocation from cancelled operations in Ethiopia of USD 1,200,000 (35%) and counterpart contribution of USD 200,000 (6%). The IPPF grant will be utilised wholly to finance the main consultancy services for the feasibility studies, and it is estimated that the studies will be finalised over a 15-month duration.

6. The project fits within a regional programme that has been prioritised by the respective member countries, linking to PIDA corridors and delivering of economic infrastructure necessary for achieving tangible development outcomes for the region. The project aligns well with the objectives and operational priorities if the NEPAD-IPPF and those of the AfDB by supporting industrialisation, agricultural and agro processing development as well as regional integration, whilst also increasing the stock of bankable projects available for investment.

Results Based Logical Framework

Country and Project Name: Feasibility Study on the proposed Standard Gauge Railway (SGR) connecting The Federal Democratic Republic of Ethiopia and The Sudan.
Purpose of the project: To Prepare the Ethiopia Sudan SGR Project for investment financing

RESULTS CHAIN		PERFORMANCE INDICATORS			MEANS OF VERIFICATION	RISKS / MITIGATION MEASURES
		Indicator (including CSI)	Baseline	Target		
IMPACT	**Impact**: Enhanced physical and economic integration amongst the two Member Countries and the sub region as a whole	Increased traffic & trade volumes between the two countries (Tonnes & USD)	[2019] TBD	[2025] TBD	National and regional Statistical data	
OUTCOMES	**Outcome:** Implementation of the Ethiopia Sudan SGR project	Ethiopia Sudan SGR project under construction	No exiting railway line linking the two countries	Ethiopia Sudan SGR project ready for investment financing by 2021	All project preparation studies finalised and mobilisation of financing for construction underway	Risks 1. Procurement & implementation delays delaying the outcome. Mitigation Measures 1. Thorough procurement planning & close supervision of services.
OUTPUTS	**Outputs** : • Full Feasibility Study report • Financing & PPP viability Options • Completed ESIA documents.	• Approved feasibility, study documents. • Approved Financing & PPP Options reports • Approved ESIA documents.	No existing Feasibility Study, nor financing, PPP options & ESIA reports at present	• Feasibility report – delivered by September 2020; • Financing & PPP Options Study report – delivered by September 2020; • Complete ESIA study documents delivered by September 2020.	Formal acknowledgement and communication of approval of documents by GoE.	Risks 1. Implementation delays & unsatisfactory outputs. Mitigation Measures 1. Careful selection during biding stage & close supervision & monitoring of services during implementation.
KEY ACTIVITIES	Consultancy Services Procurement, contract and management to undertake: • Full Feasibility Studies for the Ethiopia Sudan SGR Project; • Preparation of Financing & PPP Options Study • Preparation of ESIA for the project.				**INPUTS** **NEPAD-IPPF: US$ 2, 000,000** **ADF Grant: US$ 1,200,000** **Counterpart Contribution US$ 200,000**	

1 INTRODUCTION

1.1 Background

1.1.1 In July 2016, two requests were submitted to the Bank by the Governments of the Federal Democratic Republic of Ethiopia and The Sudan. The joint requests were for financial support to: a) undertake a feasibility study for the establishment of Special Economic Zone (SEZ) at the border between the two countries; and, b) conduct bankable feasibility study for the proposed Standard Gauge Railway (SGR) connecting the Federal Democratic Republic of Ethiopia and The Sudan. The requests were supported by several bilateral Agreements between the two countries, including one pertaining to the utilization of the Port of Sudan by Ethiopia.

1.1.2 In October 2016, the Bank undertook a Technical Mission to the two countries to assess and discuss the SGR project including its readiness for preparation before conducting a full appraisal of the project. Some of the issues to be addressed were that the Government of Ethiopia had submitted three alternative routes as opposed to one ideal route, and it was recommended that one viable route be agreed on by the two countries to move forward. Furthermore, the two countries were to agree and establish an Executing Agency in addition to refining the Terms of Reference (TORs) for the feasibility studies, as well as a realistic cost estimate.

1.1.3 Through communication sent to the Bank in April 2018, the two Governments submitted an agreement (through a Delegation of Authority) stipulating that the government of the Federal Democratic Republic of Ethiopia will lead the development of the railway with the Ethiopian Railways Corporation (ERC) designated as the Executing Agency. Additionally, the preferred rail route was agreed upon, to run from Addis Ababa, along to Awash-Kombolcha-Weldiya direction. The project route starts from the vicinity of Weldiya and runs – Wereta – Gonder – Metema – Galabat - Gadarif – Kassala – Haiya and to the Port of Sudan, a distance of about 1,522 km

1.1.4 Following a review of the project by the Bank and the technical screening outcome by the NEPAD Infrastructure Project Preparation Facility (IPPF), it was concluded that the proposed SGR project presents a strong case for economic development in the sub-region, providing infrastructure to transport goods and services supporting trade, industrialization and regional integration. As such, the project was found to be eligible for NEPAD-IPPF support and was accordingly included in its 2019 Work Programme. Accordingly, a project Appraisal was undertaken in March 2019, on which this PIM is founded.

1.2 Study Objectives

1.2.1 The objective of the studies is to carry out prerequisite technical, economic, financial, environmental and social project preparation work to bring the Ethiopia Sudan SGR Project to a ready state for investment financing. This will be done in a full feasibility study for the project to produce feasibility reports to inform the member states and potential financiers and investors on the key considerations for implementation of the project.

1.3 Justification for the use of NEPAD-IPPF Resources

1.3.1 The proposed Ethiopia Sudan SGR Project is a joint transboundary development between the Governments of Ethiopia and Sudan and is one of the priority projects identified under the IGAD Regional Infrastructure Master Plan as being vital for sub-regional interconnectivity. The two Governments and IGAD have prioritised this project for implementation, in order to promote

economic development and trade between them, but also within the entire sub-region. The planned termination of the line at Port Sudan provides an additional sea access route for Ethiopia, which will most likely revive the full utilization of the Port of Sudan, as an alternative import-export port.

1.3.2 Development of this line is also fundamental to enhancing regional connectivity not only within the North Eastern part of the continent but also to the Central African region states of Chad and the Central Africa Republic. Once developed, the railway line will link to the Kampala – Juba – Addis Ababa – Djibouti Corridor Project and the proposed Lamu to Addis Ababa railway link, which is part of the LAPSSET Corridor Development Program both of which are key priority corridor projects in PIDA currently being supported by the Bank.

1.3.3 These project objectives outlined above fit well with the mandate of the Bank broadly and NEPAD-IPPF in particular; as they will promote regional economic integration, and create opportunities for inhabitants of the sub-region. NEPAD-IPPFs involvement in this regional project is there justified due to its alignment with the mandate of the NEPAD-IPPF.

2 DESCRIPTION OF THE STUDIES

2.1 Overall Scope and Components

2.1.1 The two Governments of Ethiopia and Sudan, have requested the NEPAD-IPPF for funding to support them in the engagement of consultancy services for preparation of the Ethiopia Sudan SGR Project. The services requested for are for full feasibility studies of the project.

2.1.2 The preparatory activities to be undertaken shall comprise:

- Full feasibility studies for proposed Ethiopia to Sudan Standard Gauge Railway Project, covering technical, economic, financial, environmental and social issues in order to provide the two Member Countries with sufficient information to take the project forward for physical implementation;
- Preparation of Environmental and Social Impact Assessment for the project.

2.1.3 The studies and tasks required shall be carried out in accordance with the detailed ToRs (Annex 6) with due care and diligence to attain the objectives of the project

2.2 Expected Outputs

2.2.1 The main study outputs from the contract will be:

i. *Technical Options Report* – A report on the analysis of technical options emanating from the preliminary or outline engineering design and analyses;

ii. *Economic Analysis & Financing Options Report* – A report of the economic feasibility and viability analysis, sensitivity analyses, financial viability assessment, financing options analysis including Public Private Partnerships (PPP) viability analysis;

iii. *Environmental and Social Impact Assessment Report* – A report on the assessment of environmental and social issues, impacts and mitigation undertaken in line with Ethiopia and Sudan EIA Guidelines and the AfDB Policies to ensure the environmental and social soundness and sustainability of the investment project;

iv. *Complete Feasibility Study Report* – A full feasibility study report presenting the findings of the study in relation to the above outlined technical, economic, financial, environmental, and social factors analysed, with clear conclusions and recommendations to enable the two Governments to map out a road map for implementation of the project.

2.2.2 In addition to the above specific outputs, additional progress reports on a quarterly basis shall be produced over the course of the study as detailed in the appended ToRs.

2.3 Anticipated Economic and Social Benefits

2.3.1 The overall goal of the Ethiopia Sudan SGR Project is to contribute to economic growth through the improvement of transport connectivity between two neighbouring and trading countries and provision of alternative seaport access for land locked Ethiopia. Its development will be undertaken in parallel with the creation of Export Processing Zones (EPZ) in the bordering towns of the two countries aiming at scaling up agricultural productivity, agro-processing and creating new industries that will make direct use of this proposed railway.

2.3.2 Ethiopia is one Africa's largest countries (by population), with a land area of 1.13Mn Km2, and a population of 90 million people. During the past ten years, the country has witnessed unprecedented accelerated growth in the economy of over 10% p.a. and the envisaged growth strategies and targets of even 7% is expected to more than double the GDP in the coming 10 years. Due to this rapid growth of the economy, demand for reliable, adequate and competitive transportation routes and modes will increase.

Meanwhile, Sudan has a land area of 1,886,068 km2, making it the third largest country on the continent, with a population of around 38 million. Sudan is rich in mineral resources including asbestos, chromite, cobalt, copper, gold, granite, gypsum, iron, kaolin, lead, manganese, mica, natural gas, nickel, petroleum, silver, tin, uranium and zinc. Its economic growth has declined over the recent few years due to economic and political challenges, but registered an overall growth in GDP of 5.2% in 2010.

2.3.3 Supporting the preparation of this project through the feasibility studies will significantly enhance its chances of being bankable, and attract financing. Its physical implementation will increase economic benefits by enhancing the productive capacity of the two economies through additional trade, supported by the development of their resources, EPZs, industrialization and agriculture productivity. In addition, development of the project will result in substantial social benefits for the citizens of the sub-region, including employment.

2.4 Assessment of Bankability of the Project

2.4.1 It is highly likely that once preparation of the project is finalised, it will secure investment financing from DFIs such as the World Bank, the AfDB and others who are already actively supporting development of the transport sector in Ethiopia. In addition, IGAD is currently in the process of preparing its Regional Infrastructure Master Plan in which this project is a part, and this will feed into the upcoming PIDA PAP 2 (for adoption in 2021), which will be the basis for future financing engagements between financers, investors and African Member States.

2.4.2 The Feasibility Study will include assessment of financing options and in particular viability of structuring and implementing the project as a PPP. This is an important part of the study as the investment costs are likely to be high. Should the feasibility study demonstrate economic and financial viability, the two country will have the option to develop the project with private sector investment, which could also enhance its bankability.

2.5 Assessment of Risks for the Services

2.5.1 *Political risk* – Both Ethiopia and Sudan have undergone relatively recent political changes in leadership, which has had an impact on the overall stability of the country for economic development. Currently, Ethiopia has quite a stable political environment. However, Sudan is in a state where the political scene is still evolving with a transitional Government currently in charge of the country. This poses a fair element of risk in term of stability necessary to attract investment and sustainability of its commitments to regional agreements such as for this project.

Mitigating factors are that at this feasibility study phase, the two Governments have designated the Federal Republic of Ethiopia, through a Memorandum of Understanding to take the lead role in coordinating with the Bank for implementation of the studies. The Government of Ethiopia has and is currently implementing a number of Bank financed projects, and has both the experience and track record to show.

2.5.2 *Procurement and Implementation Delay risks* – One of the major potential risks to the project is the timely completion and delivery of outputs that could arise from procurement and implementation delays. This risk could derail the implementation schedule due to lengthy conclusion of procurement activities leading to award of contract to the successful firm. Delays could also be experienced during implementation of studies, potentially due to delays in access to sites, approval or data. Often times in regional project such as this one, validation of reports and issuance of approval of outputs can also be a source of delays as consensus will be required from both countries and other stakeholders.

To mitigate against this risk, the Government of Ethiopia applied for Advance Contracting, which would enable them to commence procurement of the main consultants whilst the Grant approval is being processed. This was approved by the Bank and should reduce delays often associated with procurement after effectiveness. Additionally, through procurement planning, close supervision and adherence to strict review and approval timelines can reduce the potential negative impact of such risks.

3 COST AND FINANCING OF THE STUDIES

3.4 Cost of the Studies

3.4.1 The overall budget estimate for undertaking the feasibility studies is estimated at USD 3,400,000 as broken down in the table 3.1 below. These cost estimates are derived from estimation through first principles and a comparison with other similar studies supported by the Bank in the region.

Table 3.1: Summary of Cost Estimate

Cost Element	Amount in USD
Component 1:Feasibility Study	3,200,000
Component 2: Project management, Workshops, Monitoring & Evaluation	170,000
Component 3: Project Financial Audit	30,000
TOTAL	**3,400,000**

3.2 Financing Plan

3.2.1 The services will be financed through a Grant from NEPAD-IPPF amounting to USD 2,000,000 (59%), with co-financing from the African Development Fund (ADF) resources allocation to Ethiopia of USD 1,200,000 (35%) and counterpart contribution of USD 200,000 (6%).

Table 3.2: Financing Sources

Cost Element	Amount (USD)	Source of Financing
Component 1:Feasibility Study	2,000,000	NEPAD-IPPF
	1,200,000	ADF
Component 2: Project management, Workshops, Monitoring & Evaluation	170,000	Counterpart Contribution
Component 3: Project Financial Audit	30,000	NEPAD-IPPF
TOTAL	**3,400,000**	

Table 3.3: Percentage of Financing per source

Sources of Financing	Total (US$)	Percentage
NEPAD IPPF Grant	2,000,000	59%
ADF Grant	1,200,000	35%
Counterpart contribution	200,000	6%
Total	**3,400,000**	**100%**

4 IMPLEMENTATION OF THE STUDIES

4.1 Organisation and Management of the Studies

4.1.1 The studies will be managed by the Ethiopia Railways Corporation (ERC), based in Addis Ababa Ethiopia. The ERC is a State Owned Enterprise established in 2007 with the mission to establish an urban and national railway network, with links to neighbouring countries within the region. In

addition to building new railways lines, ERC is also responsible for managing both passenger and freight rail operations in order to expand modern transport services within the country.

4.1.2 The ERC as Executing Agency will implement and manage the project. The State Minister in the Ministry of Finance will sign the Grant Agreement on behalf of the two Governments. The Chief Executive Officer (CEO) of ERC shall have overall authority and responsibility over implementation of the project.

4.1.3 A suitably qualified and experienced Project Coordinator (PC) directly responsible to the CEO of ERC will be appointed to be responsible for the day-day management of the project. His/her role shall include ensuring adequate supervision and management of the study consultancy, managing financial resources under the project in accordance with project agreements, and ensuring that periodical technical and financial progress reports are submitted to the Bank on a quarterly basis. The PC shall also ensure that project-related information that may be requested by the Bank at any given time is made available.

4.1.4 To ensure Member Country ownership the Executing Agency shall ensure the active participation and engagement of key stakeholders from both countries during implementation of the study so that it takes into account all important issues and considerations, and to ensure ownership of the final outputs and deliverables.

4.1.5 The management structure of this feasibility study phase shall consist of a Project Coordinating Committee (PCC) chaired by the CEO of ERC and Managing Director (MD) of Sudan Railways Corporation (SRC), comprising the relevant technical and managerial personnel. Independent Project Offices from both countries will support the PCC. The PCC shall be the technical and managerial resource for project and have full responsibility for the development and preparation of the Feasibility Study.

4.1.6 Project managers will be assigned by both countries to be based in Addis Ababa and Khartoum respectively. The assigned Project managers will be responsible for the SGR corridor implementation. The PMs shall be the driving force in the implementation of all decisions that have been drawn by the PCC during implementation of the Feasibility Study.

4.2 Implementation Schedule

4.2.1 The execution of the studies will take an estimated 27 months following approval of the Grant. Grant signature is estimated to be done by August 2019. The tentative implementation schedule is shown in Table 5.1 below and a Gantt chart in Annex 5.

Table 4.1 – Implementation Schedule

Activity	Indicative Timing	Responsibility
♦ Funding approval	June 2019	NEPAD-IPPF
♦ Signing of Grant Agreement	August 2019	AfDB/GoE
♦ Procurement of Consultants	August 2019	GoE/ERC
♦ Commencement of Services	September 2019	GoE/ERC
♦ Completion of Services	September 2021	GoE/ERC

4.3 Financial Management

4.3.1 The Bank conducted an FM assessment to ascertain the adequacy of the financial management system of the Executing Agency, Ethiopian Railways Corporation (ERC) based on the Bank's FM Implementation Guidelines-2014. The assessment concluded that the overall risk is "Moderate".

4.3.2 The Project will substantially make use of ERC's Financial Management System. The overall responsibility of financial management (including Budgeting, Accounting system, Internal Control, Treasury Management/Funds Flow, Financial Reporting and External Audit arrangements) rests with the Management of ERC under the Financial Management and Procurement Directorate Director. The Project FM function will be implemented within the ERC structure under the Finance Director. A Project Accountant with the knowledge and experience acceptable to the Bank will be assigned to carry out the finance function of the Project, and will be supervised by the Project Coordinator and the Finance Director. The Internal Audit Department will, as part of its routine activities, audit the Project financial transactions regularly and accordingly share the reports with the Bank during the bi-annual Supervision Missions.

4.3.3 ERC has its own customized IFRS based Financial Policy manual. The Project is expected to use the IFRS accounting and financial reporting system of the Corporation. The Project Implementation team in collaboration with the Finance Directorate will be required to produce quarterly interim financial reports for the project, which will be submitted to the Fund no later than forty-five (45) days after the end of each quarter. ERC will also submit annual project audit report six months after the end of each fiscal year.

4.4 Disbursement

4.4.1 The grant resources will be disbursed in accordance with the Bank's disbursement procedures, which are also utilised by the NEPAD-IPPF. Payment of consultancy fees and charges associated with the services will be disbursed using the Direct Payment method upon certification of invoices by the Executing Agency and verification by the Bank. Payments for project management related local expenses would be disbursed to a Special Account to be opened by the Executing Agency.

All disbursements under the grant will follow the procedures and standard supporting documents outlined in the Bank's Disbursement Handbook.

4.5 Procurement

4.5.1 Procurement of goods and the acquisition of consulting services, financed by the Bank for the project, will be carried out in accordance with the "Procurement Policy for Bank Group Funded Operations", dated August 2015 and following the provisions stated in the Financing Agreement. Specifically, Procurement would be carried out following:

- *BPS* – Borrower Procurement System: Specific Procurement Methods and Procedures (PMPs) under BPS comprising its Laws and Regulations, namely: Public Procurement and Property Administration Proclamation (September, 2009) and Federal Public Procurement Directives (June, 2010), using the national Standard Solicitation Documents (SSDs) or other SDs agreed during project negotiations" under the defined thresholds for goods

(USD100, 000.00), Non-consulting services (USD30, 000.00) and consulting services (USD100, 000.00), in accordance with;

- *Bank PMPs*: Bank standard PMPs, using the relevant Bank Standard or Model SDs, for contracts that are either: (i) above the above-captioned thresholds, or (ii) in case BPS is not relied upon for any category of procurement.

4.5.2 Procurement Risks and Capacity Development: Country, Sector, Executing Agency (EA) namely: Ethiopia Railway Corporation on behalf of the two Governments, and Project procurement risk assessments were undertaken for the project and the output have informed the decisions on the procurement regimes (BPS, or Bank) and the PMPs being used for specific transactions or groups of similar transactions under the project. The appropriate mitigation measures and costs have been included in the procurement capacity development action plan (CDAP) under the project.

4.5.3 The procurement arrangements for the various components, elements, and items, under the different expenditure categories to be financed by the Loan/Grant and procured using BPS, Bank, and or Third Party PMPs, are summarized in Table 5.1 below. Large-value contracts, each group of similar transactions/contracts, the different PMPs, estimated costs, oversight requirements, and the timeframe as agreed between the Borrower and the Bank, are documented in the Procurement Plan.

Table 4.2 - Summary of Procurement Arrangements

Project Categories	USD,000						
	Borrower PMPs			Bank PMPs			Total (USD,000)
	OCB	LCB	Other	OCB	LCB	Other	
1. Consulting Services- Feasibility Studies for SGR				(3,200)			(3,200)
2. Goods, Non-Consulting Services and Project Coordination			170				170
3. Project Audit				30			30
TOTAL			**170**	**(3,200)30**			**(3,200)200**

+ Figures in brackets are amounts financed by the Bank, Fund or NTF or NEPAD-IPPF.

4.5.4 *Advance Procurement*: Subject to the provisions of paragraph below, the Bank authorized Advance Contracting for the following: shortlisting of consultancy services for the feasibility study under component 1 of the Program in accordance with the Bank's PMPs within a period of two months prior to the Date of Signature in accordance with the Bank's Procurement Policy Framework.

4.5.5 The Recipient acknowledges and agrees that the authorization by the Bank for the use of Advance Contracting in accordance with paragraph above, does not, in any way constitute an offer or undertaking by the Bank to finance the contract awarded by the Recipient in respect of the Advance Contracting

4.6 Supervision and Monitoring

4.6.1 The Executing Agency (ERC) will monitor the implementation of the services. The Executing Agency will prepare and forward to the Bank quarterly progress reports providing updated information on implementation, highlighting the key issues and problem areas and proposals for solutions.

4.6.2 The Bank will monitor the project through review of the quarterly reports and key outputs of the studies. Bank missions will be undertaken at least once a year to supervise the project. These will be coordinated by NEPAD-IPPF Secretariat, but with the support of the Regional Portfolio Team and fiduciary officers located in the East Africa Regional Office (RDGE) and the Ethiopia Country Office (COET).

4.6.3 At completion of the services, the Executing Agency will prepare and submit to the Bank a project completion report in line with the acceptable format. The Bank will use the report as background document to prepare its own completion report.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

5.1.1 Accelerating the delivery of vital infrastructure and services is a priority of African Leaders, as it has the potential to significantly impact on economic growth and the reduction of poverty on the continent. Additionally, efficient and reliable cross-border transport infrastructure is a key ingredient in the achievement of meaningful integration amongst the different countries and regions of Africa.

5.1.2 The Ethiopia Sudan SGR Project is an important regional infrastructure development not only for the two countries directly involved, but also for the entire sub region. Its implementation will enhance regional connectivity within the North Eastern part of the continent but also to the Central African region states of Chad and the Central Africa Republic. Once developed, the railway line will link to the Kampala – Juba – Addis Ababa – Djibouti Corridor Project and the proposed Lamu to Addis Ababa railway link, which is part of the LAPSSET Corridor Development Program both of which are key priority corridor projects in PIDA currently being supported by the Bank. The cooperation between the two states, and the joint benefits to be realised provide an excellent opportunity for fostering regional integration.

5.1.3 It can be concluded therefore that supporting the preparation of the Ethiopia Sudan SGR will enable the project to secure vital investments downstream, which will result in positive economic development impact for the sub-region and thus justifies the involvement of NEPAD-IPPF.

5.2 Recommendation

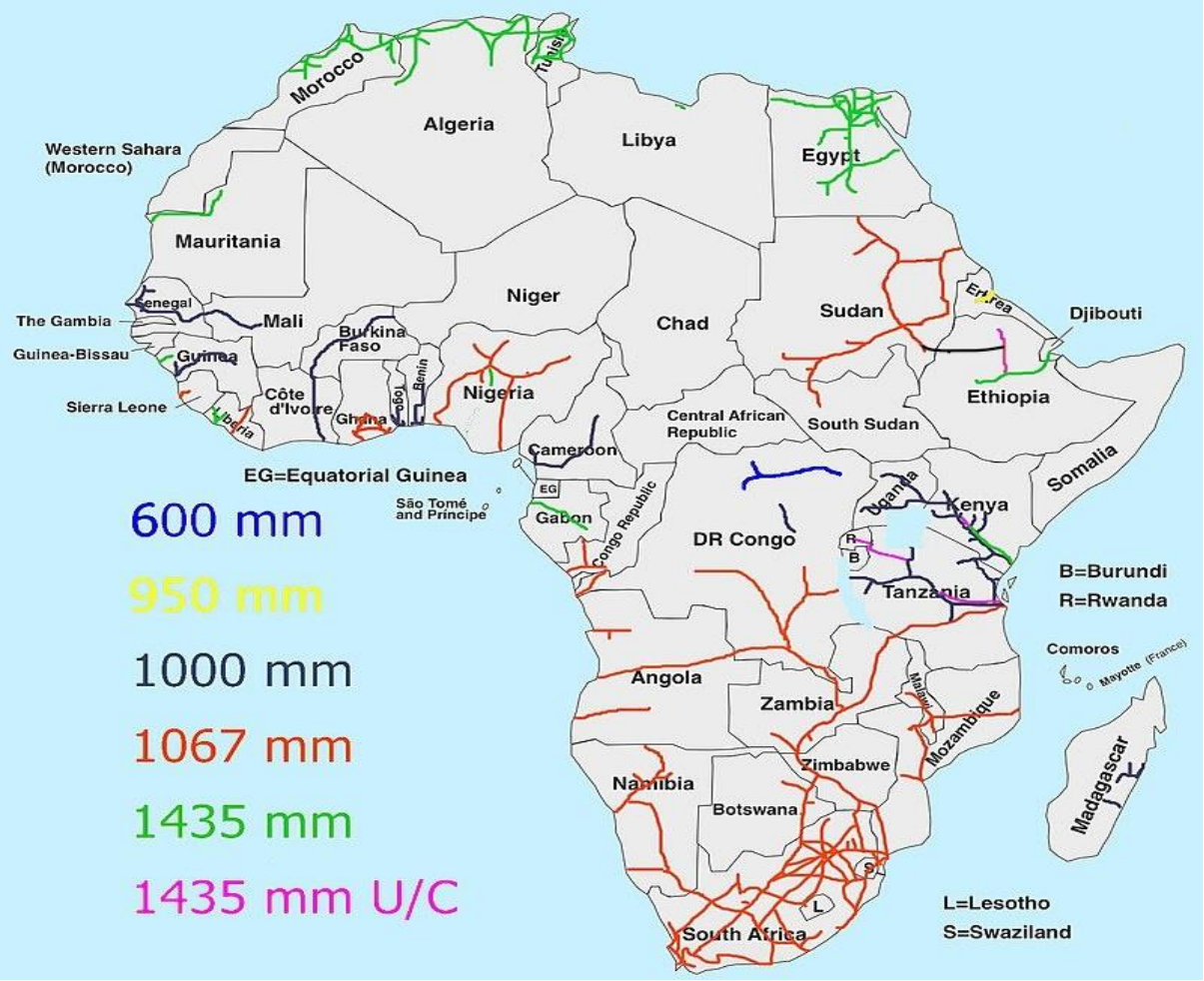
5.2.1 It is recommended that the NEPAD-IPPF extends a Grant of **USD 2,000,000** to the Government of Ethiopia to support the procurement of Consultancy Services for preparation of the Ethiopia Sudan Standard Gauge Railway Project, to link Ethiopia and Sudan.

ANNEXES

Annex 1: Map of the Study Area
Annex 2: Ethiopia Sudan SGR Development Coordination Structure
Annex 3: Draft Letter of Agreement for NEPAD-IPPF Special Fund Grant
Annex 4: Detailed Study Budget
Annex 5: Implementation Schedule
Annex 6: Study Terms of Reference

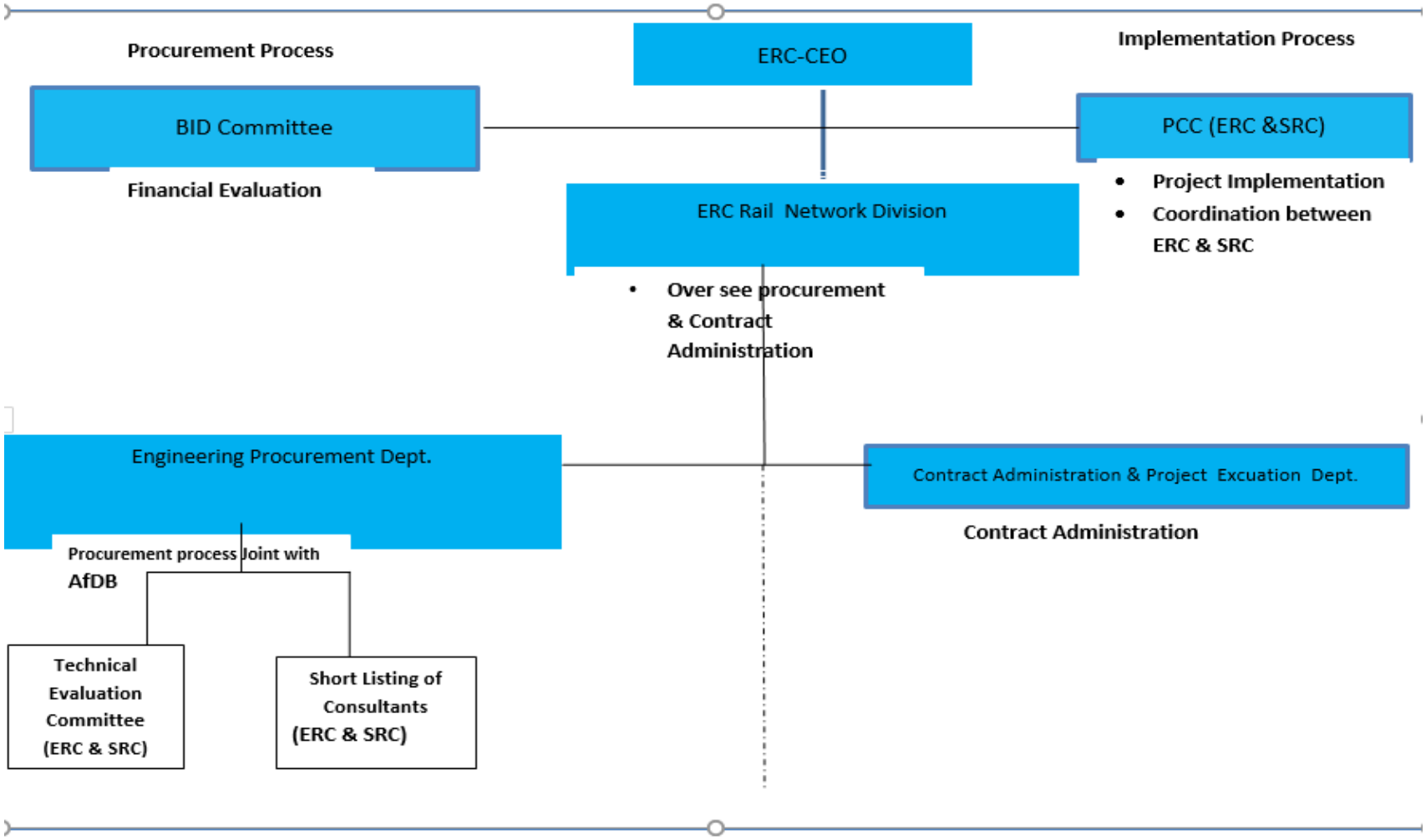
MAP OF THE STUDY AREA

ANNEX 1: Map showing Location of the Ethiopia Sudan SGR Project



The Staff of the ADB Group have provided these maps for the exclusive use of readers of this report to which it is appended. The appellations and demarcations on this map do not imply any judgement on the part of the ADB Group and its members concerning the legal status of a territory or the approval or acceptance of its boundaries.

Project Coordination and Organisation Chart



Draft Letter of Agreement for NEPAD-IPPF Special Fund Grant

AFRICAN DEVELOPMENT BANK GROUP

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VICE PRESIDENT

Date

H. E. Ato Admasu Nebebe
State Minister
Ministry of Finance and Economic Cooperation
P.O. Box 1037/1905
Addis Ababa,
Ethiopia
Email: admasunebebeg@yahoo.com

Dear Your Excellency,

NEPAD-Infrastructure Project Preparation Facility (NEPAD-IPPF) - Grant of USD 2,000,000 to the Government of the Federal Democratic Republic of Ethiopia for Feasibility Studies on the Ethiopia Sudan Standard Gauge Railway Project

Letter of Agreement

In response to the request for financial assistance made on behalf of the Governments of the Federal Democratic Republic of Ethiopia (the "Recipient"), and the Government of Sudan; I am pleased to inform you that the African Development Bank (the "Bank"), acting as administrator of grant funds provided by various donors (the "Donors) under the New Partnership for Africa's Development Infrastructure Project Preparation Facility (NEPAD-IPPF), proposes to extend to the Recipient a grant of an amount not to exceed Two Million United States Dollars (USD 2,000,000) ("Grant") on the terms and conditions set forth or referred to in this letter of agreement which includes the attached Annexes (the "Agreement"), to assist in the financing of the project described in Annex I to this Agreement (the "Project").

This Grant is funded out of the NEPAD-IPPF for which the Bank receives periodic contributions and the Bank's payment obligations in connection with this Agreement are limited to the amount of funds made available to it by the Donors, and the Recipient's right to withdraw the Grant proceeds is subject to the availability of such funds.

The Recipient represents, by confirming its agreement below, that it is authorized to enter into this Agreement and to carry out the Project in accordance with the terms and conditions set forth or referred to in this Agreement.

Please confirm the Recipient's agreement with the foregoing by having an authorized official of the Recipient, initial, sign and date the enclosed copy of this Agreement, and returning it to the Bank. Upon receipt by the Bank of the countersigned copy, this Agreement shall enter into force as of the date of the countersignature. Provided, however, that the offer of this Agreement shall be deemed withdrawn if the Bank has not received the countersigned copy of this Agreement within ninety (90) days after the date of signature of this Agreement by the Bank, unless the Bank shall have established a later date for such purpose.

Sincerely Yours,

AFRICAN DEVELOPMENT BANK

_____

Name: **Pierre Guislan**
Title: **Vice President, Private Sector, Infrastructure & Industrialization**

AGREED ON BEHALF OF:
THE GOVERNMENT OF THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

By_____
Name: ……
Title: ……
Date: _____..... 2019

Enclosures:

1. General Conditions Applicable to Protocols of Agreement for Grants of the African Development Fund
2. The African Development Bank Disbursement Handbook

PROJECT ID:.
GRANT NO:

ANNEX I

Article I
General Conditions - Definitions

Section 1.01. **General Conditions**. The *General Conditions Applicable to Protocols of Agreements for Grants of the African Development Fund*, dated February 2009 and as amended from time to time (the "General Conditions"), constitute an integral part of this Agreement. For purposes of this Agreement, all references to "Fund" and "African Development Fund" in the General Conditions shall, for all intents and purposes, also refer to "Bank" and "African Development Bank".

Section 1.02. **Definitions.** Unless the context otherwise requires, the capitalized terms used in this Agreement have the meanings ascribed to them in the General Conditions or in Annex IV (*Definitions*) to this Agreement.

Article II
Entry into Force and Disbursement

Section 2.01**.** **Entry into Force.** This Agreement shall enter into force on the Date of Signature by the Recipient and the Bank.

Section 2.02. **Disbursement**. The proceeds of the Grant shall be disbursed to the Recipient in accordance with the provisions of: (a) Article IV (*Disbursement of Grant*) of the General Conditions; (b) the Disbursement Handbook; (c) Article II (*Entry into Force and Disbursement*) of this Agreement; and (d) such additional instructions as the Bank may specify by notice to the Recipient, to finance Eligible Expenditures as set forth in Annex II (*Allocation of the Grant*) to this Agreement.

Section 2.03. **Condition Precedent to First Disbursement**. The obligation of the Bank to make the first disbursement of the Grant shall be subject to the entry into force of this Agreement in accordance with Section 2.01 (*Entry into Force*) of this Agreement.

Section 2.04. **Closing Date.** For purposes of Section 5.03 (*Cancellation by the Fund)* of the General Conditions, the Closing Date shall be **31 December 2021**, or such later date as shall be agreed upon in writing between the Recipient and the Bank.

Section 2.05. **Funding Shortfall***.* Notwithstanding the provisions of this Article II *(Entry into Force and Disbursement*), no disbursements shall be made if, as a result of such disbursement, the total amount of the Grant disbursed would exceed the amount available to the Bank from resources provided to it for the purposes of the Grant. The Recipient shall bear the risk of any such funding shortfall, and the Bank shall not have any liability whatsoever to the Recipient or to any third parties in respect of any expenditures or liabilities incurred in connection with the Grant Agreement which exceed the amount made available to the Bank for the purposes of the Grant.

Article III
Project Description and Execution

Section 3.01. **Project Objectives and Description.** The objective of the Project is to jointly develop the Ethiopia Sudan Standard Gauge Railway Project to contribute to economic growth, poverty reduction, regional integration and promotion of socio economic development.

The Project consists of the following parts:

(a) Undertake a full feasibility study for the proposed Ethiopia Sudan Standard Gauge Railway Project to provide the concerned Member countries sufficient information to lead to the physical implementation of the Project;

(b) Conduct an Environmental and Social Impact Assessment (ESIA) for the project.

Section 3.02. **Project Execution Generally.** The Recipient declares its commitment to the objectives of the Project. To this end, the Recipient shall carry out the Project, and shall cause the Ethiopia Railways Corporation (ERC) - *the Executing Agency and*, its contractors and/or agents to carry out the Project, in accordance with:

(a) the provisions of Article VII *(Project Implementation - Cooperation and Information)* of the General Conditions;
(b) the Anti-Corruption Policies;
(c) the Bank's Safeguards Policies**;** and
(d) this Agreement.

Section 3.03. **Institutional and other Arrangements**.

(a) The Recipient shall maintain the ERC established at all times until completion of the Project, with the mandate, staffing and resources satisfactory to the Bank. The ERC shall be responsible for inter alia the Project execution and implementation; the procurement of consulting services for the Project; and maintenance of the required levels of financial management;

(b) The Executing Agency will be supported by the National Desk Offices in each of the Participating Member Countries.

(c) The Project Coordination Committee (PCC) shall be established to act in advisory role and offer strategic guidance to the Project. The membership of the PCC shall comprise of members from the Participating Countries (Ethiopia and Sudan) as follows; chaired by the CEO of ERC and Managing Director (MD) of Sudan Railways Corporation (SRC), comprising the relevant technical and managerial personnel. The PCC will be supported by the independent Project Offices from both countries. The PCC shall be the technical and managerial resource for Ethio-Sudan connection corridor and have full responsibility for the development and preparation of the Feasibility Study.

(d) The PCC will undertake the following; (A) approve Project work plans; (B) provide linkages with the relevant national institutions and Project cycles to ensure counterpart support to the Project; (C) Facilitate joint agreements, linkages and reporting to the relevant ministries in the Participating Countries; (D) coordinate the implementation of the Project and its prioritization in the Participating Countries National Development Plans (NDPs).

(e) The PCC shall meet at least twice a year.

(f) The ERC will convene the PCC meetings and act as its Secretariat.

Section 3.04. **Undertakings.** The Recipient shall, and shall cause the Executing Agency to:

(a) Appoint or assign Technical Team Peer reviewers from Ministry of Transport and other relevant institutions with technical expertise from the Participating Member Countries with qualifications

and experience acceptable to the Bank to support the ERC in monitoring and ensuring technical quality of the work to be undertaken.

Section 3.05. **Project Report and Completion Report.**

(a) The Recipient shall monitor the progress of the Project and prepare Project Progress Reports in accordance with the provisions of Section 7.07 *(Accounts, Records and Audit)* of the General Conditions and on the basis of indicators acceptable to the Bank. Each Project Report shall cover the period of one (1) calendar quarter and shall be furnished to the Bank not later than forty-five days (45) days after the end of the period covered by such report.

(b) The Recipient shall prepare and submit to the Bank a Project Completion Report (PCR), pursuant to Section 7.08 (*Completion Report*) of the General Conditions, no later than six (6) months after the end of the Project.

Section 3.06. **Financial Management**

(a) **Internal Control.** The Recipient shall maintain or cause to be maintained proper records and procedures in accordance with the provisions of Section 7.07 *(Accounts, Records and Audit)* of the General Conditions.

(b) **Interim Financial Reporting.** Without limitations to the provisions of Section 3.06 (*Financial Management*) of this Agreement, the Recipient shall prepare and furnish to the Bank semi-annual financial reports for the Project no later than forty-five (45) days after the end of the respective half year in form and substance satisfactory to the Bank.

(c) **Financial Audit.**

(i) The Recipient shall have its financial statements for the Project audited and certified in accordance with terms of reference acceptable to the Bank by a competitively recruited independent auditor appointed by the Recipient with the approval of the Bank.

(ii) Each audit of the financial statements shall cover the entire period during which disbursements were made.

(iii) The audited financial statements shall comprise inter alia (i) a complete set of financial statements of the applicable financial year, (ii) the auditor's opinion on said financial statements, and (iii) the management letter, and shall be furnished to the Bank no later than six (6) months after the end of the applicable financial year. The last annual audited financial statements at the end of the Project shall be submitted to the Bank no later than six (6) months after the Closing Date.

(iv) The cost of the external audit will be borne out of the proceeds of the Grant.

Section 3.07. **Procurement**.

(a) **All Consulting Services** required for the Project and to be financed out of the proceeds of the Grant shall be procured in accordance with the requirements set forth or referred to in the Procurement Framework for Bank Group Funded Operations, dated October 2015 as may be amended from time to time (the "Procurement Framework") and the provisions of the

Recipient's procurement plan for the Project dated 28th January 2019 and set forth in Annex III (*Procurement Plan*) of this Agreement which may be amended from time to time in accordance with the Procurement Framework.

(b) Before the Date of Signature, the Recipient shall submit to the Bank for its approval, a Procurement Plan in form and substance satisfactory to the Bank, covering the entire Project implementation period. The Recipient shall update the Procurement Plan on an annual basis or as needed, and each such update shall, to the extent practicable, cover a period of at least eighteen (18) months of the Project implementation period. Any revisions or updates to the Procurement Plan shall be made in writing with the Bank's prior approval.

(c) **Eligibility**. The Recipient shall ensure that the proceeds of the Grant are used exclusively for procurement of services supplied from, the territories of the Member States of the Bank.

(d) **Procurement Oversight.**

(i) Except as the Bank shall otherwise determine by notice to the Recipient, each contract for **consulting services** procured on the basis of Open Competitive Bidding (International) shall be subject to Prior Review by the Bank.

(ii) Except as indicated in paragraph (i) above, the Procurement Plan shall set forth those contracts which shall be subject to the Bank's Prior Review. All other contracts shall be subject to Post Review by the Bank.

(iii) In accordance with Section 7.02 (c) (*Cooperation and Information*) of the General Conditions, the Bank may, upon reasonable notice to the Recipient, conduct supervision missions, independent procurement reviews and inspection concerning the procurement undertaken using the proceeds of the Grant.

Section 3.08 **Documents; Records**. In addition and without limitation to the obligations set forth in Section 7.07(c) (*Accounts, Records and Audit)* of the General Conditions, the Recipient shall ensure that:

(a) all records evidencing expenditures under the Project are retained for five (5) years after the Closing Date, such records to include: (i) this Agreement, all addenda thereof, and any amendments thereto; (ii) the Recipient's financial and narrative progress reports submitted to the Bank; (iii) the Recipient's financial information related to the Grant, including audit reports, invoices and payroll records; (iv) the Recipient's implementation documentation (including sub-agreements, procurement files, contracts, purchase orders); and

(b) the representatives of the Bank are: (i) able to examine all records referred to above in paragraph (a); (ii) provided all such information concerning such records as they may from time to time reasonably request; and (iii) able to disclose such records and information to the Donors, where applicable.

Article IV
Additional Remedies of the Bank

Section 4.01. **Other Events of Suspension.** For the purpose of Section 5.02 (1) (i) (*Other Events of Suspension*) of the General Conditions, the other event[s] of suspension of the Grant consist[s] of the following:

(a) The Executing Agency's Agreement with the Government of the Federal Democratic Republic of Ethiopia has been amended, suspended, abrogated, repealed or waived, or in the opinion of the Bank, the legal character, ownership or control of the Recipient has changed from that

prevailing as of the Date of the Grant Agreement, so as to materially and adversely affect the ability of the Recipient to perform any of its obligations arising under or entered into pursuant to the Grant Agreement, or to achieve the objectives of the Project.;

(b) Any action has been taken for the dissolution, disestablishment or suspension of operations of the Recipient or Executing Agency; or

(c) Any circumstance arising which in the opinion of the Bank interferes with or threatens to interfere with the successful completion of the Project or the accomplishment of its purposes.

Section 4.02. Other Events of Cancellation In addition, to the events in Section 5.03 (*Cancellation by the Fund*) of the General Conditions, the other event of cancellation of the Grant consist of the following:

(a) Any event specified in Section 5.01(*Other Events of Suspension*) of this Agreement has occurred and is continuing for a period of thirty (30) days after notice of the event has been given by the Bank to the Recipient or such later date as shall be agreed upon in writing between the Recipient and the Bank.

Article V

Authorized Representatives; Addresses

Section 5.01. **Authorized Representatives**. The State Minister in the Ministry of Finance or such other person as the State Minister may designate in writing shall be the authorized representative for the purposes of Article IX (*Miscellaneous Provisions*) of the General Conditions.

Section 5.02. **Addresses.** The following addresses are specified purposes of Article IX (*Miscellaneous Provisions*) of the General Conditions.

For the Recipient:	**Mail Address**: State Minister Ministry of Finance and Economic Cooperation P.O. Box 1037/1905 Addis Ababa, Ethiopia **Email:** admasunebebeg@yahoo.com
Attention:	The State Minister
For the Bank:	**Headquarters Mail Address:** African Development Bank 01 B.P. 1387 Abidjan 01 COTE D'IVOIRE
Attention:	Vice President, Private Sector, Infrastructure & Industrialization

ANNEX II
ALLOCATION OF THE GRANT

The table below indicates the categories of Eligible Expenditure to be financed out of the proceeds of the Grant and the amount allocated to each category:

Category	**Expenditure in US Dollars**
Consulting services (i) Full Feasibility Studies (technical, economic, financial) including ESIA	1,970,000
Audit	30,000
Total cost	**2,000,000**

ANNEX III
PROCUREMENT PLAN

ANNEX IV
DEFINITIONS

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1. **"Anti-Corruption Policies"** means the Uniform Framework for Preventing and Combating Fraud and Corruption dated September 2006, the Whistle Blowing and Complaints Handling Policy dated January 2007, the Procurement Framework, the Cross-Debarment Agreement and the Sanctions Procedures of the African Development Bank Group issued 18 November, 2014 as the same may be amended from time to time

2. **"Bank's Safeguards Policies"** means policies, procedures and guidelines of the Bank that concern environmental and social matters including, the Bank Group Integrated Safeguards System (Policy Statement, Operational Safeguards and Guidance Materials), the Involuntary Resettlement Policy, the Environmental and Social Assessment Procedures, the Bank Group Policy for Disclosure and Access to Information, the Bank Group Policy on Poverty Reduction, the Gender Policy, as the same may be amended and revised from time to time.

3. **"Cross-Debarment Agreement"** means Agreement for Mutual Enforcement of Debarment Decisions dated 9 April 2010 and entered into, amongst the African Development Bank Group, the Asian Development Bank, the European Bank for Reconstruction and Development, the Inter-American Development Bank Group and the World Bank Group as the same may be amended from time to time.

4. **"Completion Report"** means a comprehensive report on inter alia, the execution and the initial operation of the Project, including the cost and benefits derived and to be derived therefrom, the performance by the Recipient and the Bank of their respective obligations under the Agreement , the accomplishment of the purposes of the Grant and the plan designed to ensure the sustainability of the Project achievements, amongst others to be prepared and submitted by the Recipient to the Bank in accordance with the terms of this Agreement.

5. **"Date of Signature"** means the date of countersignature of the Agreement by the Recipient.

6. **"Disbursement Handbook"** means the Disbursement Handbook of the African Development Bank Group dated 22 July 2015 setting out the disbursement policies, guidelines, practices, and procedures of the Bank Group the same may be amended from time to time.

7. **"Eligible Expenditures"** means expenditure determined as eligible for Bank Group financing under the Policy on Expenditure Eligible for Bank Group Financing dated March 2008 as the same may be amended from time to time.

8. "**Procurement Framework**" means (i) the Procurement Policy for Bank Group Funded Operations dated October 2015 and effective January 1, 2016; (ii) the Methodology for Implementation of the Procurement Policy of the African Development Bank; (iii) the Operations Procurement Manual for the African Development Bank; and (iv) the Procurement Toolkit for the African Development Bank as the same may be amended from time to time.

9. **"Procurement Plan"** means the procurement plan for the Project prepared in accordance with the Procurement Framework indicating, among other things: (i) the particular activities required to implement the Project; (ii) the proposed methods for procurement; and (iii) the applicable review procedures; and as the same shall be updated from time to time in agreement with the Bank.

10. **"Project Report"** means the report prepared by the Recipient pursuant to this Agreement containing project information that includes sources and uses of funds including those committed, with the corresponding budgets, progress on project implementation made in the achievement of the results together with supporting schedules and highlighting issues that require attention.

11. **Recipient Legislation** " means the relevant legislation governing the activities and mandate of the Government of the Federal Democratic Republic of Ethiopia.

ANNEX 4

DETAILED STUDY BUDGET

Professional Fees (Remuneration) Estimates

NO.	List Of Experts	Person-Months	Payment Per Month,USD	No of Experts	Total Payment,USD
1	Project Manager	15.00	20,000.00	1	300,000.00
2	Senior Railway Alignment Engineer	5.00	18,000.00	2	180,000.00
3	Junior Railway Alignment Engineer	5.00	7,000.00	2	70,000.00
4	Senior GIS and Remote sensing expert	2.00	10,000.00	1	20,000.00
5	Senior Railway Operation Specialist	2.00	15,000.00	1	30,000.00
6	Senior Trafic analysis and forcasting expert	2.00	15,000.00	1	30,000.00
7	Senior Transport Economist	5.00	18,000.00	1	90,000.00
8	Junior Transport Economist	5.00	7,000.00	2	70,000.00
9	Senior Power supply expert	2.00	18,000.00	1	36,000.00
10	Senior Signaling and communication expert	2.00	18,000.00	1	36,000.00
11	Senior Structural Engineer	6.00	18,000.00	1	108,000.00
12	Senior Geotechnical Engineer	6.00	18,000.00	1	108,000.00
13	Senior Hydraulics and hydrology Expert	6.00	18,000.00	1	108,000.00
14	Junior Hydraulics and hydrology Expert	6.00	7,000.00	2	84,000.00
15	Senior Environmental and Social expert	3.00	18,000.00	3	162,000.00
16	Senior Surveyer	2.00	10,000.00	2	40,000.00
17	Junior Surveyer	2.00	7,000.00	3	42,000.00
18	Senior Legal expert	2.00	20,000.00	1	40,000.00
19	Senior financial expert	2.00	18,000.00	1	36,000.00
			Total Required Staff	28.00	
				Total Payment,US	1,590,000.00

DETAILED STUDY BUDGET

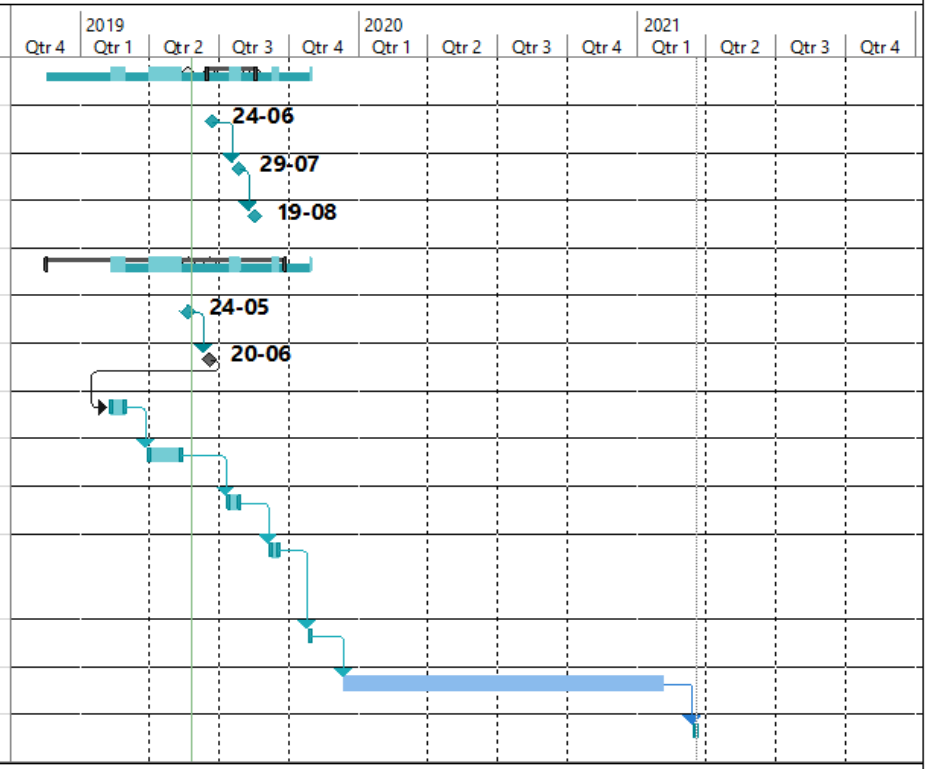
Reimbursables Estimates

Reimbursables	Unit	Unit Cost USD	Quantity	Cost USD
International Flights				
To and From Ethiopia (round trips)	round trip	2500	48	$120,000.00
Operational Flights				$0.00
local flights within Ethiopia & Sudan	round trip	250	224	$56,000.00
International flights between Sudan and Ethipoia	round trip	800	112	$89,600.00
Perdiem				$0.00
Local and Foreign Experts	day	50.00	3,390.00	$169,500.00
Accomodations				$0.00
For Senior Experts (Sudan and Ethiopia)	month	800.00	94.00	$75,200.00
Office Rental	month	5,000.00	15.00	$75,000.00
Use of Computers and software	LP	2,000.00	28.00	$56,000.00
Vehicle Rental	days	1,700.00	90.00	$153,000.00
			Total =	**$794,300.00**

IMPLEMENTATION SCHEDULE

Feasibility Studies for the Ethiopia Sudan SGR Project

ID	Task Name	Start	Finish
1	**IPPF Grant Approval & Effectiveness**	**Mon 17-06-19**	**Mon 19-08-19**
2	Grant Approval	Mon 24-06-19	Mon 24-06-19
3	Signing/Effectiveness	Mon 29-07-19	Mon 29-07-19
4	Project Launch	Mon 19-08-19	Mon 19-08-19
5	**Procurment of Consultants**	**Mon 19-11-18**	**Fri 27-09-19**
6	Publication of GPN	Fri 24-05-19	Fri 24-05-19
7	Issuing of EoI	Thu 20-06-19	Thu 20-06-19
8	Shortlisting of consulting firms	Mon 11-02-19	Fri 01-03-19
9	Call for proposals	Tue 02-04-19	Mon 13-05-19
10	Evaluation of Technical Proposals	Tue 16-07-19	Mon 29-07-19
11	Evaluation of Financial proposals & combined report	Tue 10-09-19	Wed 18-09-19
12	Award of consultancy contract	Thu 31-10-19	Thu 31-10-19
13	Feasibility Studies	Fri 13-12-19	Thu 04-02-21
14	Investors Roundtable	Fri 19-03-21	Fri 19-03-21



Project: Feasibility Studies for th
Date: Mon 27-05-19

Task	Inactive Summary	External Tasks
Split	Manual Task	External Milestone
Milestone	Duration-only	Deadline
Summary	Manual Summary Rollup	Progress
Project Summary	Manual Summary	Manual Progress
Inactive Task	Start-only	
Inactive Milestone	Finish-only	

STUDY DRAFT TERMS OF REFERENCE

Sudan Railway Corporation (SRC)

&

Ethiopian Railway Corporation (ERC)

Terms of Reference (TOR) for Jointly Developing Bankable Feasibility Studies for the Standard Gauge Railway Connecting Ethiopia and Sudan

Table of Contents

1. Objectives of the Terms of Reference (TOR)

1.1 Overall Objective

The objective of this TOR is to produce Banking Feasibility Study (BFS) documents which demonstrate the socio-economical and political viability for the planned construction of railway which will form the connection of Railway between The Federal Democratic Republic of Ethiopian (FDRE) and The Republic of Sudan (ROS) comprising the following routes.

Table (I)Schedule of Planned Railway Interconnecting Ethiopia (FDRE) and Sudan (ROS)

S.NO	Route	Length (KM)		Total (KM)
		Ethiopia	Sudan	
1	**Addis Ababa-Weldiya-Wereta-Gonder-Metema-Galabat-Gadarif-Port Sudan**	594	918	1512

A BFS document will be produced for the routes listed in Table I above:-.

1.2 Railway Sector Objective

Develop an integrated and efficient high speed, high capacity railway transport system in order to ensure competitive and affordable transport for freight and passengers between the two countries at an affordable tariff structure.

2. Background Information

2.1 General

2.1.1 Sudan

Situated in northern Africa, bordered by Egypt to the north, the Red Sea, Eritrea and Ethiopia to the east, South Sudan to the south, the Central African Republic to the southwest, Chad to the west and Libya to the northwest, with 853 km coastline bordering the Red Sea. With an area of 1,886,068 km2, it is the third largest country on the continent (after Algeria and DR Congo) and the sixteenth largest in the world. Sudan lies between latitudes 8.4° and 23.3°N and longitude 21.5 and 39 E. Sudan population is amount to 38 Million.

The terrain is generally flat plains, broken by several mountain ranges. Deriba Caldera (3,042 m), located in the Marrah Mountains (Greater Darfour States in the west Sudan), is the highest point in Sudan; in the east are the Red Sea Hills.

The Blue and White Nile rivers meet in Khartoum to form the River Nile, which flows northwards through Egypt to the Mediterranean Sea. The Blue Nile's course through Sudan is nearly 800 km long and is joined by the Dinder and Rahad Rivers between Sennar and Khartoum.

The amount of rainfall increases towards the south. In the north there is the very dry Nubian Desert; in the south there is Savannah climate. Sudan’s rainy season lasts for about three

months (July to September) in the north, and up to six months (June to November) in the south. The dry regions are plagued by sandstorms, known as haboob, which can completely block out the sun.

Rich mineral resources are available in Sudan including asbestos, chromites, cobalt, copper, gold, granite, gypsum, iron, kaolin, lead, manganese, mica, natural gas, nickel, petroleum, silver, tin, uranium and zinc.

According to a World Bank report the overall growth in GDP in 2010 was 5.2 % compared to 2009 growth of 4.2 %. This growth was sustained even during the crisis in Darfur and period of southern autonomy preceding South Sudan's Separation.

2.1.2 Ethiopia

Ethiopia is one of the oldest countries of the world which is found in Eastern Africa, known as the Horn of Africa. It is located in the tropics between 3°- 15°N latitude and 33° - 48°E longitude. The country has a land area of 1.13Mn Km^2, a Population of 90Mn and hence a density of about 67 people per Km^2. It has a federal democratic government system with nine Regional States and two Municipal Administrations.

The terrain of the country consists of a high plateau with mid to high central mountains which is divided in to two by the Great Africa Rift Valley and surrounded by the lowlands of the border regions. The topography and the influence of the surrounding continental masses and oceans have created a varying climate, agro-ecology and vegetation with immense natural resources potentials for development. The major potentials of the country consist of human, agriculture, livestock, water and mineral resources which if harnessed effectively, developed properly and utilized efficiently could boost the socio-economic growth and development of the country.

The governments' appropriate socio-economic reforms, sustainable macro-economic policies and successful sectoral and regional strategies and programs have already started unleashing the potentials to accelerated development. It has achieved over 10% annual growth rates in the last ten consecutive years which is a feat never achieved before. The governments' over-reaching goals is to further pursue the socio-economic policies to eliminate poverty and vulnerability, to raise the living standards of the people and promote rapid growth and development of the country.

In this regard the Plan for Accelerated and Sustained Development to End Poverty(PASDEP) and long-term indicative program envisage a high sustainable economic growth that could help attain the level of middle income countries in the coming decades. This calls for efficient use of natural resources, expansion of production and productivity and increasing trade, especially external trade through sustainable competitiveness in the world market.

One of the major factors that help achieve the development goals is the provision of efficient transport services. The transport sector can support the social and economic development in three ways.

- Improving the connectivity of the network,

- Minimizing the cost/price of transport and,
- Providing high quality of services.

2.2 Current Condition

2.2.1 Sudan

The total transported tonnage in the year 2011 is 26,006,663 tons, where Sudan Railways Corporation (SRC) share is 3.8 % (998,915ton).

During 2012 the number of passengers by all means of transport (road buses, railways, and airways) is equal to 37,433,218 passengers while SRC share is just 180,000 passengers.

2.2.2 Ethiopia

At present the dominant mode is road transport which serves about 95% of interurban and almost 100% of urban motorized passenger and freight transport. The other modern land transport system is the Addis – Djibouti railway which for reasons of age, management, investment problem and poor service quality to customers has stopped its commercial operation. The modem motorized transport serves about 30% of the total national transport demand and the balance of 70% use the traditional non-motorized transport means (NMT). So far the trunk road system has been well developed as determined by the economy, traffic, topography, demography, resources and particularly disperses nature of population and economic activities. Road transport has been and will continue to serve the country's transport needs as its technico-economic characteristics permit.

Although great improvements have been made in the expansion of road network, the country still suffers from limited connectivity, high cost and poor quality of services. In particular, the assessment of the sector indicates that the existing transport system could not adequately cope up with expected growth of the economy and mobility needs of the people.

2.3 New Socio-Economic Situation

2.3.1 Sudan

Transportation is one of the most important infrastructure requirements that are essential for economic opportunities growth. It plays an important role in making or breaking the comparative advantage of an economy. In light of recent international economic trends such as globalization of markets, international economic integration, and removal of barriers to business and trade and increased competition; the role of transportation has become even more crucial.

Transport volumes and traffic in African countries remain far less than those in the developed countries. The globalization of economic process has made the role of railway transport more crucial for the national economic growth of these countries. The movement of goods and services is considered as an essential factor to consolidate bilateral relations among the countries, thus reinforcing and enhancing their mutual economic cooperation. Therefore, the governments of these countries have to come to a common agreement to further improve these ties by the development of a regional railway link on agreed routes.

2.3.2 Ethiopia

Now the country is at the cross-roads of development. In addition to the growing population, vast land area and big natural resource potentials, there are now new policies, new development needs and excellent future prospects which require a new strategy for the sector of transportation. This new environment includes the following:

Country wide: During the past ten years the country has witnessed unprecedented accelerated growth of over 10% p.a. and the envisaged growth strategies and targets of even 7% is expected to more than double the GDP in the coming 10 years. Due to the rapid growth of the economy, the transport requirement could rise to unprecedented levels for both road and rail. Therefore, the entire transport strategy of the country (urban, rural, inter-urban transport and cross-border connection to international water bodies) has to be reconsidered taking into account the need for better access to new areas to unlock the hitherto unexploited or underutilized potential of the country and for short, cost effective, efficient and high volume transport system into the international water bodies.

Foreign Trade Corridor: The country's foreign trade indicated very high growth rate of over 30% p.a. in the last ten years. Even if the growth rate is assumed to be 10%, the current 5Mn ton **of** foreign trade traffic could double to 10Mn tons in the coming eight years. At present, the cost of trade transport is becoming very high due to increased transit charges, inefficient facilitation and inadequate capacities. Studies show that Ethiopia spends about 17% of its import value (Birr 32.16Bn) and 7% **of** its export earnings (Br. 7.13Bn) on transportation. This gives a weighted average of about 14% of the total foreign trade value of Br. 40Bn or about Br. 5.6Bn annually. It is obvious that without drastic reduction of this high transport cost, it will be difficult to achieve competitiveness in the international market and meet development objectives. A new corridor strategy is required for both the improvement of trade and transport facilitation and the expansion of transport capacity to further strengthen the newly developed very promising inter-modal transport arrangement.

The expected growth of the economy will no doubt produce increased traffic which calls for higher capacity and more efficient transport system. The need for long term transport planning, as well as the urgency for such action, are further reinforced by the following factors:

1. Building of transport capacity is time consuming;
2. Transport demand/traffic tends to grow much faster than the growth of production and trade and,
3. The sector serves as an effective catalyst to greatly facilitate the efforts of other socio-economic sectors to achieve their objectives.

2.4 Approaches to Transport Development

2.4.1 Sudan Railways Strategic Future Projects

The economies and problems of narrow gauge line have constituted one of the major topics which were discussed in the regional and international rail organizations like the International

Railway Union, African Union and African Railways Union. All those studies confirm the necessity of transformation from the narrow gauge to standard gauge. The latest recommendations concerning this issue are the recommendations which were adopted by the Johannesburg. Professional Conference which was organized by the African Union in Johannesburg in November 2007 i.e. recommendation number 4 which reads as follows: " For new railway lines, encourage the constriction of tracks with standard gauges in order to bring Africa railway transport in line with the development perspective".

Satisfactory infrastructure is fundamental condition for well-functioning transport systems. Consequences of weak and poorly maintained infrastructures are multiple and varied but most important is usually longer transit time and higher transport costs. Those two conditions form the most important exigencies in modern transport market especially for passenger traffic. Unfortunately Sudan Railways with its very aging lines has been unable to meet those requirements. Construction of most of the lines was completed during the first quarter of the 20th century. Length of the lines which constructed there in with an age which exceeds 80 years amounts to 3151 kilometers and represent 75.4% of the total network length. 1362 kilometers of the lines were constructed during the beginning of the second half of the 20th century and most of them are more than 60 years old.

Beside their old ages the technical characteristics of those lines are very primitive and were built on earthen embankments. The bad situation of the railway lines is exemplified in the very long transit time and the very low train speeds not exceed 35 km/hr. The bad situation of the lines constitutes one of the major causes of derailments, and the weakness of their earthen embankments doesn't enable them to withstand to their strength. Maintenance of those lines forms the biggest item of expenditure and exhausts most of the railway major resources.

The idea of the future plan to standard gauge is to overcome the great difficulties which the SRC faces in the provision of any new purchases for rolling stock, track materials and tools and machineries. Importation of narrow gauge equipment takes a long time and cost large amounts of money because their manufacture is very limited and always begins after Completion of all the purchasing procedures and opening of the letter of credit for the winning bidder.

Length of narrow gauge lines represents only 7% of the total international railway network and most of the narrow gauge Lines are only used for side traffic like transportation of metals and other similar goods.

2.4.2 Ethiopia

It is necessary to adopt the national transport policy of the two countries to respond to accommodate the rapidly changing economy of today and the prospective requirement for the coming decades. In view of the above analysis, the provision of transport infrastructure is not only an essential precondition but also an urgent matter. Any delay in the construction of the required transport project until traffic demand for transportation reaches levels which stifle both the economy and impose a negative influence on the social and environmental impact of the country would be unacceptable.

The central issue of transport investment policy is to allocate the sector resources among different modes to meet transport needs of the economy at minimum cost to society. It is to be noted that the optional mix in transport system is always a combination of modes in which each provides the best technico-economic service that meets the country's' transport needs in terms of adequate, efficient and integrated or multi-modal transport system.

The transport objectives could be achieved by adopting the following principles and steps:

i) Consider all demand and supply spectrums of transportation such as passenger and freight, supply, all modes of transport, such as road, rail, aviation and pipeline and spatial factors such as rural, urban, inter-urban and corridor network.

ii) Determine an optimal inter-modal mix in which different modes should basically complement, rather than substitute each other i.e. each mode must perform the task for which it is best suited based on its comparative resource cost advantage to the economy.

iii) Estimate the volume and composition of existing and future projected traffic demand, nature of the passenger and commodity flows and origin-destination distances involved.

iv) Take into account the various external and qualitative issues including scarce input such as energy and foreign exchange, social costs such as congestion, pollution, accidents, and other environmental impacts and political feasibility including regional balances.

v) Determine the pricing and subsidy aspects of transportation. Price must in principle be cost-based in which users pay at least the resource cost of its transport with some mark-up in contribution to capital cost. Subsidies promote inefficiency and should not be entertained unless there is a serious social consideration in which case it must be explicit and treat each mode equally.

vi) Finally, it is necessary to underline here that successful transport system requires to establish an optimal level of operation (appropriate economics of scale), to introduce modern technology in all aspects of its operation, to steak to its dominant technico-economic competency and above all to be run by an excellent management team.

2.5 Relevant Railway Related Questions Answered

It is pertinent to raise some of the questions relating to major railway construction that need answering or clarifying before proceeding to the next stage. Presenting a common answer to these questions is not always possible due to mainly regional differences and dynamic changes which are occurring in all sectors. Nevertheless, it is possible to indicate the general orientation for consideration during discussions. The five major questions are presented as follows:

Question 1 - Examine the relative roles of road and railway transport?

Studies show that with some exceptions:-

Railways are better suited for serving bulk freight on long distances of over 400km while;Roads are economical for most commodity movements and door-to-door delivery of goods for up-to300-400km.

There are some exception's – roads can better serve perishable and high value goods to up to 500km beyond the point of origin, while for bulk goods, e.g. cement, sand and aggregate, the railway domain is only 200km from the point of origin.

Question 2 - Examine the critical traffic figures that justify a new railway?

Studies show that the critical figures/volume below which it does not pay to build and/or operate a railway system depends on many factors such as traffic, topography and distances but over all :

- The building of a new railway could be justified at a critical traffic figure of up-to one million tons per annum about 1,500km.

This equates to a weekly traffic of 20,000 tons for the chosen route round trip.

Question 3 - Can be economically viable and self sustaining without Government Subsidy?

Studies show that the railways could cover their operating cost and achieve a normal return on capital under competitive equilibrium price and capital adjustment. I his answer is reinforced by the following developments:

i) Modern railways are different from outmoded systems in management technology and operations. They can attain very high efficiency (capacity), apply ICT, Introduce modern management and improve services,

ii) In terms of energy, railway carries 80T/Km per litter compared to 24T/Km by trucks i.e3.3 times expensive than railways. Electrification of railway advances its advantage as it is six times cheaper than the diesel train

The issue of energy is becoming very serious. The energy price and crises has prompted planners to select modes which are most fuel-efficient and compatible with the country's energy resources. Energy has special significant in transport sector and needs special attention because:

- It is the major user of energy,
- Modes apply different forms of energy and have varying intensities,
- It causes pollution and has negative environmental impact and,
- It consumes the biggest share of the country's foreign exchange

Question 4 - Why railways lose traffic to road in long-distance routes in-spite of their lower freight rates?

Examples are Addis-Djibouti and Mombasa-Kampala links. In the Mombasa-Kampala (1,211km) routes the average railway rates is US$64.50 per tone compared to the average US$ 90 per ton on road **or** about 35% cheaper, but captures only 26% of the 2 million tons of Uganda traffic. Studies show that the basic problems of the railways include inefficient management and intensive road competition which leads to:

- Loss of traffic and revenue,
- Excessive labor cost,
- Deferred maintenance, with reduced reliability and,
- Inadequate investment for modernization.

However today many of today's railways systems have successfully addressed the above deficiencies, mainly through the infusion of modern commercial management systems and improved market driven services as a result of

- Privatization,
- Operating Concession Agreements,
- New Investment

Question 5 - Should railway expansion be carried out simultaneously with/following traffic growth or be planned in anticipation of demand?

Studies show that it is preferable to build the network ahead of traffic because:-

- It is possible to anticipate the nature of future transport challenge which comes with rapid economic development, big growth in trade, population and traffic, advancing technologies and high cost of fuel.
- It is prudent to make sure that transport bottlenecks do not hamper progress of the economy and mobility of the people and,
- Any delay in developing the required transport project until sufficient traffic builds up will be like putting the cart before the horse.

3. Current Status of the Project Development

The two countries agreed on the route to be studied in this BFS is **Addis Ababa-Weldiya-Wereta-Gonder-Metema-Galabat-Gadarif-Port Sudan.**

3.1 Alignment Selection Using GIS (Geographic Information System) and RS(Remote Sensing) Software

GIS (Geographic Information System) is a computerized system for collection, storage, manipulation, analysis and presentation of geographically referenced data.

RS (Remote Sensing) is a satellite' based geographic data collection of the earth's objects using the response of earth features to electromagnetic radiation of the sun.

The advantages in using GIS-RS are that it is:-

- Efficient

- Accurate
- Cost Saving
- Fast
- Provides a tool that helps decision making

It analyses different factors such as:

- Engineering factors (curvature, gradient, bridges, mountains, which effect construction, operation & maintenance costs),
- Economic factors (as much as lowest cost possible for construction, operation & maintenance, etc),
- Geographic factors (environmental issues, sensitive areas, landscape, land use and barriers such as rivers, mountains, roads, etc),
- Socio-cultural factors (potential sites for economic growth, population density, aesthetic values such as parks, lakes, scenic places, etc).

For application to Railway Engineering in General, it has the following key advantages:-

- Infrastructure management and maintenance planning
- Real estate management
- Rolling stock management
- Safety and security
- Design and construction
- Supply chain analysis
- Passenger information systems
- Intermodal management

The data and methodology used for route selection is summarized as follows:

- Origin and Destination
- Slope/Elevation (Derived From SRTM 30-90 meter)
- Land Use (Derived from Satellite Image -SPOT 5 meter)
- Existing Roads
- Proposed towns (from Ethio-GIS)
- Soil (From FAO)

The weighting criteria used to determine the track alignment is summarized as follows:-

- Elevation/Slope 40%
- Proximity to Road 30%
- Land Use 20%
- Proximity to Town 5%
- Soil Condition 5%

The consultant shall determine the railway line detailed route using GIS and remote sensing, and site visit.

3.2 Definitive Alignment Design Using MX Rail Software

The Horizontal and vertical Alignment data for all routes shall be presented.

4. Outline Technical Specification and Schematic Layouts

An outline Technical Specification is shown in Appendix 9.1.

This specification will be expanded to cover all aspects of the design and construction and will be applied to all lines to ensure full system integration.

Capacity Assessment and Performance Modeling studies are to be carried out to determine if single or double track infrastructure is to be provided for either the current or future operating requirements.

Performance specifications for all supply items are to be fully compliant with UIC or similar international railway standards. In order to assist with establishing a preliminary operational concept of the proposed system, as well as for determining land requirements for supporting railway infrastructure which is outside the main corridor, needs the following schematic information:-

- Schematic Layout - Main Stations (All Routes)
- Indicative Location of Passenger and Freight Yards
- Preliminary Freight Yard Layout
- Preliminary Dry Port Container Handling Arrangements

Developing the above indicative arrangements into outline operational conceptual drawings will part of the Feasibility Study scope of work.

5. Scope of the Feasibility Study

5.1. Engineering Services

5.1.1 Engineering Design Study

The first task of the Consultant will be to select, in consultation with the two governments, the appropriate design criteria for the proposed standard gauge railway line based on the traffic forecasts. The important technical specifications that require a decision but not limited are:

- Gross allowable loads
- Bridge design loads
- Maximum speeds for freight and passenger trains
- Maximum allowable grades and ruling grades
- Design maximum and minimum curve radii
- Rail size
- Minimum depth (thickness) of ballast beneath of sleepers or ballast per km

The Consultant will also examine all of the options available for a proper interoperability of the proposed railway line with the existing rail networks of the two countries. The Consultant will complete these consultations before issuing the Inception Report specified.

The Consultant will then adjust the high level designs and cost estimates to reflect the existing topographical and geotechnical data to finalize an engineering design study of the project that will include but not be limited to the following elements:

5.1.1.1 Route alignment:

The consultant will develop at least two preliminary railway alignments options from Haragebeya (in Ethiopia) to Port Sudan(In Sudan) that connects major focus areas like sea ports, towns/cities, industrial areas, dry ports, mining and economic zones, etc.., along the route. It shall also show the type and locations of railway stations along the route. The best alignment option shall ensure a seamless connectivity and operability between the origin and destination points of the project. And it shall be compatible with international railway standards.

5.1.1.2 Earthworks and Embankments:

The Consultant will develop longitudinal profiles, cross-sections, embankment qualities and cost estimates meeting the technical specifications standard gauge railway for the proposed alignment of the new tracks. In addition, the Consultant shall recommend the minimum ballast specifications and identify the borrow pits and quarry sites that can meet these specifications both in terms of the quantities required and ability to meet the construction schedule.

5.1.1.3 Bridges, Viaducts and Culverts

The Consultant will identify and determine the types structure bridge, viaducts and culverts location, their type and numbers with all required technical parameters which are essential to estimate the construction cost and operational viability. The estimation has to stick with all relevant standards.

5.1.1.4 Interlocking Installations in the Stations and Signaling Equipment:

The Consultant shall develop preliminary designs and operating specifications for the signaling and interlocking installations taking into account the modifications of the station geometries (loop lengths, number of loop lines, operational/commercial sidings and potential closed stations). And shall adapt the signaling specifications according to the optimal maximum speeds and maximum train lengths.

5.1.1.5 Railway Energy and Telecommunications:

The Consultant shall set out the preliminary design of the telecommunication network, equipment and power supply along the new railway lines. Note that the employer already decided to have electric traction system in this route.

5.1.1.6 Operations and Commercial Buildings:

The Consultant will review and prepare a preliminary design for the operations, commercial buildings and workshops of the new line in accordance with the international standards as appropriate.

5.1.1.7 Construction Schedules:

The Consultant will develop a proposed General Construction Schedule that identifies the key tasks and critical path.

5.1.1.8 Design of Sleepers:

The Consultant will prepare an preliminary design for both concrete sleepers in accordance with international standards as appropriate (AREMA, UIC, BS, ASTM, etc.).

5.1.1.9 Cost Estimates

Based on the technical evaluation, the Consultant will create capital cost estimates for the Railway line, the new railway infrastructure, the new workshops (if required), passenger stations, office buildings, locomotives, coaches (or diesel motor units) and wagons required to handle the expected traffic.

At the end of this exercise, based on the state of art and engineering practice, the Consultant will develop a position paper on the technically, economically, and financially optimal option for presentation to the governments concerned and the potential investors.

5.1.1.10 Railway Operation Analysis

For all option studied, the Consultant shall determine operations scenarios which are appropriate for the traffic forecasts developed. The Consultant will develop operating plans that include the use of single or multi-unit consists and the resulting estimates of the average transit times and cycle times for each wagon type and origin-destination pair.

5.2. Environmental and Social Impact Analysis

The Consultant will determine if less stringent geometric criteria, that will still allow the railway to meet its targeted service requirements, will also permit adjustments to the alignment avoiding, or reducing the impact, on these sensitive areas.

The Consultant will assess and address environmental or social consequences from the realization of this new railway line in its lifecycle.

The Consultant shall take into account cases that might result from the operation of the fleet such as noise and emission levels, the potential for environmental contamination, deliberate or accidental, resulting from maintenance practices for both rolling stock and infrastructure. Finally, the Consultant will prepare an Environmental and Social Management Plan (ESMP) and a Resettlement Plan of the population that comply with the African Development Bank (ADB) format.

5.3. Economic and Financial Analyses

5.3.1 Impact Area

The Consultant shall asses socio-economic data, prepare a statement of the production, consumption and sub-regional and international trade of the Project specific area and establish the relationship between traffic and socio-economic activities (movements of persons and goods). In making this analysis, the Consultant shall identify rail transport generating activities and assess the role that the railway can play in the development of such activities, and poverty reduction.

5.3.2 Traffic Forecasts

The Consultant shall determine the nature, composition and volume of the traffic carried by railway for the three following scenarios:

1. Base case (normal);
2. Low case; and
3. Optimistic case.

5.3.2.1 Freight Traffic Forecasts

The Consultant will develop a forecast of the economic developments that will take place in both countries and other neighboring countries over the next 30 years which may have direct impact on the identified route. The Consultant will then distil this information into forecasts of growth in demand.

To arrive at the flows of major commodities to and from Ethiopia and Sudan, the Consultant will conduct interviews with major shippers, producers, importers, exporters, shipping lines, industry groups, government bodies, etc. to develop reasonable and realistic forecasts of the traffic that will move in the corridor and the service characteristics that the railway will need to deliver to be an attractive modal choice. The Consultant will prepare three scenarios; - low, medium and high. For each scenario, the Consultant will propose modal share percentages and a justification for them based on tariff and quality of service factors and the changes thereto as the investor and operator(s) making the investments required.

The required output of the freight forecast will be origin-destination statistics for major commodity groups including:

- Tonnages
- Tariff per ton or per container
- Revenue and net ton-km generated by each operator over each independent section
- Wagon type and tare
- Average Payload per wagon
- Gross tons hauled
- Gross ton-km hauled in each direction
- Wagon cycle times
- Wagons required for operations by type.

The Consultant shall develop an operating plan that has transit times that provide the service characteristics needed to make rail an attractive modal choice. The Consultant should review existing highway operators' tariffs and other rail operators tariff in other rail networks of both countries. It will arrange this data to compare and develop annual revenues, wagon requirements, locomotive requirements, electric energy, fuel and lube oil consumption, and crew requirements. The Consultant must segregate this information for each track section and for each country. The Consultant will utilize these factors in developing income statements in the financial analysis section.

5.3.2.1 Passenger Traffic Forecasts

The Consultant will develop the passenger traffic in each country in terms of passengers, passenger-km, revenues, capacity, and number of coaches (or motor units) per train, cycle times, electric, fuel and lube oil consumption, coach-km, train-km, and average coach occupancy figures. The Consultant will use these data in the financial analysis of the profitability of the passenger services and the levels of subsidy that the operator will require.

In addition, the Consultant will identify other investments that the project developer must make to sustain and support the passenger services such as passenger stations, wash pits, catering facilities (if any), additional customs and immigration facilities, depots for coaches, etc. The Consultant will also develop the annual costs associated with operating and maintaining these facilities.

5.3.3 Economic Costs

The Consultant will develop the Economic Costs of Investment (ECI) in US$ from the estimated costs stemming from the preliminary design The Consultant shall also determine the Economic Costs of Investment.

The Economic Costs of Investment shall include the amount of investments in works and their control, equipment, locomotives and wagons, as well as the costs of operation and maintenance of installations that depend on traffic. The Economic Costs of Investment, including the physical contingencies and the costs mitigation measures of the negative environmental impacts of the project, shall be expressed net of taxes and then broken down into local costs and foreign currency costs.

5.3.4 Economic Benefits

The Consultant shall express the quantifiable benefits in US$ and evaluate them from the point of view of:

- Economic gains accruing to users of the railway
- Profits stemming from the maintenance cost of trains (considering traffic forecasts)
- The residual value of investments.
- The labor and business connectivity can be created and its contribution for both countries GDP

The Consultant shall also take into account the benefits on the net value of economic activities (mines, industries, trade, etc.). Additionally, the project benefits should include savings on:

- The maintenance cost of rail installations and on transport time
- Expenses on the safety of the transport of goods and persons
- The cost of accidents
- All other savings that the Consultant identifies as being significant.

The Consultant shall describe the social and environmental benefits associated with the new railway line in a separate section in order to highlight the advantages of the railway project.

The implementation of the project will probably generate some unquantifiable benefits. The Consultant shall make an exhaustive and quantitative analysis of this category of benefits. He shall identify related investments in other sectors that could enable the service area to derive maximum benefits from the project. In addition, if the project entails the displacement of populations, the Consultant shall evaluate both the economic and social consequences of such displacements.

5.3.5 Economic Evaluation and Sensitivity Analysis

5.3.5.1 Economic Evaluation

The Consultant shall prepare a current statement of costs and profits can be generated by the different sections of the railway line. In addition, the Consultant shall undertake a comparative cost-benefit analysis of all Transport Corridors. This statement shall take into account the quantifiable economic costs and benefits in the "without" and the "with" project situations over a minimum period of 30 years after opening of the railway line to traffic. The Consultant shall also take into account social and environmental data. The Governments of both countries shall furnish the Consultant with the discount rate to use in this calculation. The Consultant shall determine the economic evaluation indicators (including the rate of return, net present value, etc...) corresponding to each section and the optimal date of putting into service of each track section.

5.3.5.2 Sensitivity Analysis

The Consultant shall carry out a sensitivity analysis to assess the effect of changes in the selected parameters on the Economic Rate of Return. The Consultant shall test the following factors separately or together:

- The cost of construction
- The economic benefits
- The level of traffic
- Construction delays, and
- Any other variables that the Consultant would consider relevant to improve his analysis.

The Consultant shall carry out the analysis of the sensitivity of rates of return in accordance with the +/-20% variation of key parameters of the project or at another rate deemed acceptable by the Governments. The parameters shall be as follows:

- Sensitivity 1: increase in the cost of investments
- Sensitivity 2: reduction of economic benefits
- Sensitivity 3: combination of both scenarios
- Sensitivity 4: reduction of the estimated annual traffic growth rate, and
- Any other parameter that the Consultant would consider relevant to improve his sensitivity analysis.

The Consultant shall illustrate all data clearly in a table. Furthermore, the Consultant shall define the unquantifiable benefits of the project. The Consultant shall synthesize the results of this analysis to show clearly the most sensitive factors and the resulting change in the Economic Rate of Return.

5.3.6 Financial Analysis

5.3.6.1 Financial Assessment:

Based on the cost estimates of the route options, the Consultant shall assess the financial projections over an evaluation period of 30 years. The Consultant shall explain in detail any assumptions made in the financial statements. In addition, the Consultant shall also conduct a financial evaluation by calculating the Financial Internal Rate of Return (FIRR) and compare it with Weighted Average Cost of Capital (WACC) using standard price for the base year (2019). Again, the Consultant shall calculate the Net Present Value (NPV) for the financial venture over the life cycle of the investment for all future cash flows directly related to the construction and operation of the railway system using a discount rate that reflects the project's risk profile. The Consultant shall convert the cost estimates and financial projections in nominal terms to real terms by removing the projected effects of foreign and domestic inflation and currency fluctuations. The Consultant shall analyze the financial viability of the project, in particular its bankability, separately from the perspective of each potential railway investor, operator and service provider.

5.3.6.2 Financial Sensitivity Analysis

In addition, the Consultant shall conduct a comprehensive sensitivity analysis to assess the robustness of financial viability with respect to a number of key criteria such as:

- Traffic growth scenarios
- Variation in capital and operating costs
- Modal splits
- Capacity constraints of the railway infrastructure
- Uncertainties about different transport externalities, and
- Any other variables that the Consultant would consider relevant to improve its analysis.

The Consultant will calculate switching values of these factors to assess the individual as well as combined impacts of a number of key parameters under different permutations and combinations on financial profitability indicators.

Based on the existing appetite for risk that the financial markets have for investments in developing countries, the Consultant shall evaluate the various possible financing options scenarios for the selected option. This analysis shall determine the preconditions that investors and lenders must meet the financing schedule, and the type of investors and lenders most likely to be interested in the project.

5.4 Institutional Analysis

The Consultant shall investigate and evaluate all of the institutions within and among the two countries that would have an impact on the operation and financial viability of the railway project. The Consultant shall examine all of the possible scenarios involving single or multiple infrastructure companies and operating companies. These institutional arrangements include but may not be limited to the following issues:

5.4.1 Railway Regulation

The Consultant shall examine the optimum ownership and operating arrangements possible and propose legal and regulatory remedies for the following issues:

- Will the Governments of Ethiopia and Sudan allow the private investors to own railway infrastructure in Ethiopia and Sudan or will the infrastructure company by law be state-owned as in the rest of the world (with a few exceptions)?
- Will the Governments of Ethiopia and Sudan demand that the private investors incorporate separate railway companies in each country, complete with corporate headquarters, workshops and depots, etc? Alternatively, will either country or both countries allow a private investor to incorporate a railway outside either or both countries to operate over the tracks of the local infrastructure company? If either or both countries allow a foreign railway to operate over its infrastructure company, will it demand reciprocity from the foreign country so that a railway company incorporated in Ethiopia and/or Sudan has the right to operate over the infrastructure of the foreign country? Will the same rights apply to railways in the future that may wish to transit through either Ethiopia or Sudan? The private operator may never use his reciprocity, but its inclusion could add value to the PPP package.
- In all cases in which a foreign railway operates over the infrastructure of another country, a regulatory authority should adjudicate an equitable means of determining access charges to be paid to the host country's infrastructure company. Because these types of negotiations can be lengthy and sometimes acrimonious, it is always preferable to have a procedure in place to establish the level of charges in the first place and to allow the infrastructure company to adjust them for inflation. These access charges should be designed to cover the ownership and financing costs of the infrastructure (including any communication and train control systems provided), the costs of normal maintenance and

future renewals, the costs associated with train dispatching and supervisory, management and administration activities.

- A local safety regulatory body is required in both Ethiopia and Sudan that will

i issue operating licenses for their railway infrastructure companies;
ii set technical and operating standards and approve changes thereto; and
iii Issue regulations relating to safety issues, emergency response, and accident/collision liabilities.

- The Consultant shall propose the degree of economic legislation required that would still leave a PPP project attractive to investors. This evaluation will consider the impact of through tariffs for transit traffic and the extent to which a single railway operator could establish the division of the through revenues. This evaluation will also consider whether there is any need to require the railway operator(s) to provide lower tariffs for export traffic, assuming that it is backhaul traffic.

The Consultant should prepare recommendations for harmonized regulations wherever possible.

5.4.2 Customs Duties

Transit and import/export traffic now moves across the borders of these adjacent countries by truck; and all borders have customs posts staffed by trained officials from the respective revenue authorities that follow more or less common procedures. The introduction of railway services should present no additional problems for the revenue authorities.

The revenue authorities are concerned with both collecting the legal duties specified in the customs regulations and with identifying and stopping the diversion of non-taxed transit cargoes to the domestic markets. The Consultant will meet with the customs authorities involved with each route to determine:

- Their specific requirements that they may require at each crossing in terms of terminal layout and security arrangements
- Specialized scanning and weighing equipment
- Communications and information systems
- Office space and computer systems
- The levels of investment and operating costs of these customs facilities and the extent of any delays to trains for customs clearance activities

The Consultant will also meet with the appropriate revenue authorities to determine whether it is possible to establish a mechanism under which track maintenance equipment and heavy earth moving equipment owned by either an operating company or an infrastructure company can pass without the laborious volume of paperwork that usually accompany this process. Ideally, the revenue authorities could develop a procedure to treat this equipment in the same manner as locomotives and wagons. The Consultant will develop a position paper on this subject for presentation to the governments concerned.

5.4.2 Interchange between Railway Operating Companies

In the event that private investors incorporate railway operating companies in Ethiopia and/or Sudan, they may desire to interchange rolling stock, track maintenance equipment and other mobile equipment to rationalize operations. The Consultant is required to assess the possibilities of arranging agreements between the two countries about the daily rental charge for all wagon types, free time and approved procedures for wagon maintenance charges for repairing wagons off-line. And for locomotives, coaches or other equipment. In cases where separate railways interchange traffic, there are rules in place known as "interchange regulations" that determine the equipment standards that are required to be met. These standards address both safety issues and the implications on maintenance from the point of view of the host railway. This could implicate two infrastructure owners (two participating governments) and two operators. The Consultant will examine the existing regulations in place among the EAC railways and determine if they can be adopted for this route.

5.5. Private Sector Participation (PPP Approach)

The Consultant will examine all of the options to forming a PPP venture for the railway project. There are two basic options:

i The passive approach, and
ii The active approach.

In the passive approach, the investor would construct the infrastructure but would rely on a separate operator (or operators) to run freight and passenger trains over his infrastructure. The investor would collect access charges for owing and maintaining the infrastructure.

In the active approach, the investor would construct the infrastructure and would purchase rolling stock (locomotives and wagons) and operate over his tracks.

Inherent in all of the options that the Consultant must study is the minimum financial strength of each investor and the gearing of the investment structure. The Consultant will thus determine the financial capabilities of each option; but also the likely cost and terms of the debt packages and the recommended maximum debt equity ratio.

In case the financial viability is low, the ventures may require assistance from the governments involved. The Consultant will examine the existing legislation and regulations in the two countries to determine the levies, taxes, duties that the new venture will encounter during both the construction and operating phases to determine where the governments may be able to provide partial relief or complete waivers of these additional costs to improve the financial attractiveness of the project. These additional costs could include:

- Duties, levies, taxes, assessments on construction-related activities and for imported machines, equipment and infrastructure assets
- Duties, levies, taxes, etc. on electricity for locomotives, track equipment and machinery, construction equipment and highway vehicles, etc.

- Relief from VAT on some or all activities associated with the construction of the railway and/or during the operating phase – hotels, subsistence, communications, engineering services, purchased utility services, etc.
- Relief from or a delay in paying additional social charges and other taxes etc...

The Consultant will determine whether these additional benefits provided by the governments should be effective during the engineering and construction phases only, or if they should extend into the operating phase also, and for how long.

5.6 Other Project Delivery Approaches

The consultant shall examine the possibilities of other project delivery methods from view points of the two countries government's, project financers and contractors. The consultant will present a position paper for concerned bodies on the suitable project delivery methods. These project delivery methods can be but not limited to DBB, DB, EPC, EPCM, BOT, concession, etc.

6. Contents of the Feasibility Study

The contents of the BSF includes include the following tasks among others:-

1. Project Definition /Characteristics of the Areas Affected.
2. Description of Railway Corridor Physical Features; Geology, Geo-hydrology, Hydrology, Hydraulics, Social, Economic, Climate, Construction Material Availability Etc.
3. Transportation /Passenger & Freight Demand Studies & Forecasts.
4. Initial and Long Term Performance Modeling and Capacity Assessment.
5. Environmental Impact.
6. Corridor and Alignment, Alternatives Examined & Final Route Selection.
7. System Basic Design Parameters Requirements, Standards of Design and Construction and Technology Review
8. System Design Details and Plans, Cross-Sections Etc for Track and Civil Works, Stations, Freight Yards and Depots, Locomotives and Rolling Stock, Signaling& Communications, Electrical-Mechanical, Power Supply & Distribution, Overhead Line SCADA, Systems Integration.
9. Operational Assessments and Procedures
10. Emergency Working Arrangements and Recovery from Disruption
11. Design and Construction Schedules

12. Organization and Man Power

13. Spare Parts and Training

14. Construction and Operating Cost Estimate

15. Project Revenue Generation and SubsidyAssessment

16. Project Cost Benefit Analysis

17. Project Financing strategy

18. Project Legal Enforcement

19. Obligations of the Consultant and the Governments

7.1. Obligations of the Consultant

The Consultant responsible for the study shall, within a maximum period of one month from the date of notification of the study contract, submit for the approval to the Project Coordinating Committee (PCC) or project office the list and the curricula vitae of the expert and support staff assigned to the mission. The client shall reserve the right, during the entire period of the study, to refuse or cause to be replaced any staff member whose technical capacities or behavior are deemed unsatisfactory. The client shall also reserve the right to refuse any expatriate middle or lower level staff – who has the same specialty, qualification and experience as nationals. The Consultant shall comply with the existing legislation for the recruitment of all national workers.

Up on the Consultant request both countries will devise a technical team to conduct a site handover and site visits of the route during the study period as stipulated on the schedule on section 9.3 below.

For the needs of this study, the Consultant shall procure all materials necessary for the implementation of the study, particularly office materials, software and equipment, including data-processing equipment. Upon termination of the study, the consultant shall leave the purchased reimbursed software/material/equipment/ to both countries.

The consultant shall propose a capacity building package for the PCC members and/or to the feasibility study project offices of the two countries on conducting the feasibility study. The consultant will cover all costs related to the capacity building works.

In case of absence of data and information from the client or the countries the consultant shall produce and analyze appropriately.

7.2 Obligations of the Governments

The Governments of Ethiopia and Sudan shall place at the disposal all existing studies and information relating to the railway project. Also assist the consultant to obtain relevant data in the respective countries.

The Governments shall grant the Consultant and expatriate staff (according the law and regulations of the countries):

(i) Facilities to import foreign currencies into the countries for the purposes of the studies and for personal needs to level of salaries paid to them. The amounts in foreign currencies imported in this context shall be subject to exchange regulations in the countries. At the end of the studies, the Consultant and expatriate staff shall benefit from the same facilities to re-export sums corresponding to the balance of salaries paid to them;
(ii) Exemptions from immigration restrictions for the Consultant's staff, their spouses and dependent members of their family, the visas, and all required permits, authorizations and access to installations on the Ethiopian and Sudanese territories.

As the proceeds of African Development Bank (IPPF II) financing cannot be used for the payment of taxes, levies, customs duties and fees relating to goods and services necessary for the implementation of the study, any taxes, customs duties and fees under the study shall be borne by the Governments of Ethiopia and Sudan (according the law and regulations of the countries)

The Governments shall provide all necessary assistance to facilitate the work of the Consultant in the preparation and organization of seminars and the roundtable. This involves payments needed for acquiring venues, and other expenses related to the realization of the seminars. To this end, as soon as the study begins, the Consultant shall ensure that the Executing Agency: (i) draws up a list of community organizations, NGOs, local officials, donors and representatives of the populations of the project service area; and (ii) initiates, following confirmation by the Consultant of the list of seminar participants initiates the correspondence for signature by the Authority to inform participants of the holding of a seminar.

20. Management Structure and Resources

8.1 Management Structure

The management structure of the preparation of the BFS consists of a Project Coordinating Committee (PCC') that is chaired by the CEO of ERC and the MD of SRC consist the technical and managerial personnel required the preparation of the BFS. It will be supported by the Project Managers that are assigned to implement and managed its decision.

8.2 Responsibilities of the Project Coordinating Committee (PCC)

The PCC's shall be the technical and managerial resource for all Ethio-Sudan connection corridors. It shall have the responsibility for the development and preparation of all technical and managerial features of the BFS. In specific terms, the PCC shall be responsible for:

- Providing day to day leadership, direction and guidance for the preparation and production the BFS for each corridor and its respective project;
- Ensuring implementation of all decisions and resolutions of the ERC CEO and SRC Managing Director;
- Reviewing and Approving technical policies and standards;
- Evaluating technical reports and preliminary designs;
- Advising the CEO of ERC and Managing Director of SRC on technical issues;
- Providing liaison with the various organizations and government institutions related to the project;
- Seeking intervention of the commission on matters that may require local or cross border decision-making;
- Preparing annual action plan and budget for approval by the JC and/or CEO of ERC and MD of SRC;
- Undertaking any other duties delegated by the joint commission and/or the CEO of ERC and MD of SRC;

8.3 Project Coordinating Committee (PCC) Personnel

There shall be a PCC set by suitably qualified personal comprising of:

- Chief Executive Officer and Managing Directors of the Railway Organizations from both countries;
- For the purpose of implementing the projects from the start project managers will be assigned on both sides based in Addis Ababa and Khartoum respectively;
- Other qualified and relevant personnel to be engaged to support the functions of the PCC as need arises;

8.4 Project Coordination Committee Project Managers

The assigned Project managers will be responsible for the Ethio-Sudan railway corridors implementation. The PM shall be the driving force in the implementation of all decisions that have been drawn by the PCC:

In specific terms the responsibility of the PM includes the following:

- The PMs will assume complete leadership on the respective corridors of the project involving the preparation of the BFS and its professional and managerial inputs and the eventual result that are expected;

- The PMs will also be responsible for the preparation of the work plan and time schedule and will arrange for the availability of the required resource;

- The PMs will also be required to produce the work methodology for the preparation of the BFS;
- Carrying out the study for which the PMs shall maintain sufficient staff to achieve the objectives of the TOR;
- Commencing the BFS on the date established jointly with the PCC shall define and agree on what activities and/or participation is required of the various institutions;
- Making own arrangement, for offices, accommodation, local and international transportation, and all necessary facilities the PMs require in connection with the BFS;
- Undertaking the study with all the seriousness and in any accordance with internationally recognized standards,
- Conducting the BFS with diligence and in accordance with proposed and accepted implementation schedule;
- Submitting all reports mentioned herein by the due dates;
- Responsible for the collection, analysis and interpretation of data irrespective of its source;
- Responsible for the conclusions drawn and the recommendations made from analysis of data;
- Treat all documentation, information, and data obtained in connection with the study as confidential; and shall not save, in so far as may be necessary for the purpose of performance thereof publish or disclose any particulars of the study without the written consent of the Executing Authority;
- Liaise with the relevant ERC & SRC departments to make sure the day to day activities of the project are smoothly conducted;

Produce the following reports (i) the BFS Inception Report (ii) BFS monthly report, (iii) *Draft Final* Report (iv) Final Report for approval by the PCC;

21. Work Program and Reporting

9.1 Work Program

The Consultant shall organize its services in a logical fashion and ensure that the staffs assigned to the study consistently understand the necessary specifications for the smooth execution of the study. The Consultant shall begin providing its services no later than one month after notice to proceed. The program of work shall be submitted for approval by the Executing Agency.

9.2 Reporting

9.2.1. Inception Report. The Consultant shall submit the reports in English on A4 format paper. He shall submit a service mobilization and start-up report within a period of one month following the date of commencement of services. This inception report shall summarize the first decisive facts/elements of the study and provide, in addition to the statement of mobilization of staff assigned to the study, a revised study implementation program as well as the statement of additional separate studies that could be envisaged together with their estimated cost. The Consultant shall include in this report the decisions reached in consultation with the two Governments the details of the options to be studied. The inception report shall be submitted in ten copies in English to the Administration and in two copies in English, to the ADB.

9.2.2 Progress Report. The Consultant shall submit a study progress status report every three months. This report shall give details of the work accomplished during the last three months and the number of experts used and the duration of their services, the results and recommendations as well as the program of work for the next three months. The report shall identify the problems encountered and those likely to impede the implementation of the study, the delay that could result there from, the causes and the mitigating measures. The progress reports shall be submitted in twelve copies in English language, to the Administration and three copies in English to the ADB.

9.2.3 ***Draft Report.*** The draft report shall be submitted to the Administration and to the ADB as following:

(i) For the Administration: in twelve copies in English
(ii) For ADB, five copies in English language.

This draft report shall contain the findings of the various investigations of the Consultant as well as its conclusions and recommendations and shall be accompanied by all relevant supporting documentation. The Consultant shall submit a complete report on each aspect of the study examined: - engineering, - economic, - financial, - institutional, - PPP approach, - environmental and social impact, and a report on comparative cost-benefits analysis of the various transport corridors. The Administration shall examine the draft report and submits its observations to the ADB within 30 days following reception. The ADB will examine also the reports and the observations of the governments. After no objection of ADB about the Governments comments, the executing agency will send them to the Consultant.

9.2.4 ***Final Report.*** The Consultant shall submit to the Administration two sample printouts of the various study documents, briefs, and drawings with indication of the format and layout; likewise, the data media used shall be submitted in two copies. After taking into consideration the corrections and improvements made by the Administration and the ADB to the draft final report, the Consultant shall produce and submit in English the final reports. The final reports shall be acceptable to the Governments and ADB.

A) To the Administration: (all in English language)

- Twelve (12) copies of the PPP approach and other project delivery methods report analysis,
- Twelve (12) copies of the engineering designs reports
- Twelve (12) copies of the final economic analysis report
- Twelve (12) copies of the socio-economic analysis report
- Twelve (12) copies of the financial analysis report
- Twelve (12) copies of the environmental and social impact study report
- Twelve (12) copies of the comparative cost-benefits analysis for the various Transport Corridors
- Twelve (12) copies of the study summary report
- One (2) electronic copy of all different reports and all the electronic spreadsheets.

B) To the ADB:

- Four(4) copies in English, of each of the documents listed above;
- One (1) electronic copy of all different reports and all the electronic spreadsheets.

9.3 The Project Timetable

The study shall be spread over a period of twelve months including the review period of all the reports. The summary schedule is presented below.

Activity	***Action/Agency***	***Period***
Site handover	*Consultant / Gov (ET,SD))*	*Mo*
Starting of the Study	*Consultant*	*Mo*
Study Inception Report	*Consultant*	*Mo + 1*
Information Seminars	*Consultant / Gov (ET,SD))*	*Mo + 1*
Starting the Technical Assistance	*Consultant*	*Mo + 1*
Technical Assistance Inception Report	*Consultant*	*Mo + 1*
Quarterly Study Progress Reports	*Consultant*	*Mo + 3, 6, 9, 12*
Quarterly Technical Assistance Progress Reports	*Consultant*	*Mo + 5, 8, 11, 14*
First Audit Account Report	*Consultant*	*Mo + 6*
First Results Presentation Seminars	*Consultant / Gov (ET,SD))*	*Mo +6*
Study Draft Reports	*Consultant*	*Mo + 7*
Restitution Seminars	*Consultant / Gov (ET,SD))*	*Mo + 7*
Validation Seminar by the two Counties	*Consultant / Gov (ET,SD))*	*Mo + 9*
No-Objection of the Draft Study Reports	*ADB /Gov (ET,SD))*	*Mo + 10*
Final Study Reports	*Consultant*	*Mo + 11*
Round table of the Development Partners and Private Sector	*ADB / Gov (ET,SD))*	*Mo + 11*

Technical Assistance Draft Report	*Consultant*	*Mo + 12*
No-Objection of the Technical Assistance Draft Report	*ADB /Gov (ET,SD))*	*Mo + 12*
Final Technical Assistance Report	*Consultant*	*Mo + 12*
Final Audit Account Report	*Consultant*	*Mo + 12*

ET = Ethiopia
SD = Sudan
ADB = African Development Bank

Note: A joint site visit shall be conducted at the 2nd progress report before approval.
The first information seminar will be conducted in Addis Ababa
First Results Presentation Seminar will be held in Khartoum
Validation Seminar will be held in Addis Ababa

22. Composition and Qualification of the Consultant's Team

The composition of the team of experts shall be given as part of the detailed estimates attached to the Consultant's bid submission, which shall contain the projected quantities on the basis of which the Consultant shall make his offer. The Consultant's core team shall comprise but not limited to the following experts:

a) A Project Director;
b) A Project Manager/team leader (Civil Engineer, coordinator of the activities of the Consultant's experts);
c) At the technical level, senior and junior Railway Engineers, Signals and Telecommunications Engineers, Power supply expert, Traffic analysis specialist, Bridge/Structural Engineer, Hydraulic Engineers, Civil Construction Engineer, Railway Alignment Experts, Geological/Geotechnical Engineer, Railway Operation Specialist, Railway Equipment Specialist, Surveyors,
d) At the level of the environment, an Environmental Specialist; and
e) At the economic level, a Transport Economist, a Socio-economist, an Expert in cross-cutting issues (gender, poverty, malaria, HIV-AIDS), a PPP and Project Delivery Methods Analyst, and a Financial Analyst.

The Consultant shall submit to the Administration for approval, the curriculum vitae of the expert staff that it intends to assign to the study. The staff shall not be commissioned without the prior authorization of the executing agency.

The Project Director/team leader shall have at least ten (10) years of experience specifically in railway feasibility study. The Project Manager (Civil Engineer), Civil Construction Engineer, Geotechnical Engineer, Bridge/Structural Engineer, Railway Engineer, Traffic analysis specialist, surveyor and Railway Equipment Specialist shall have at least eight (8) years of experience part of which was acquired outside his country. The PPP Expert and Financial Analyst shall have at least seven years of experience (part of which was acquired outside his

country) in the areas of PPP and finance and transport infrastructure. The other members of the Consultant's team shall have at least five years of professional experience in their respective domains part of which was acquired outside their countries, preferably under the same conditions as those prevailing in Ethiopia and/or in Sudan. The Consultant's key staff shall be required to have a perfect knowledge of the English language.

Notes:

- **An Engineer means a minimum A0 level of academic qualification (1st degree or bachelor degree). Below this level, the submitted CV is not considered. This is applicable ;**
- **Each expert must have specific experience (worked on similar project) of at least 5 similar projects on similar post.**
- **List of experts and each CV must clearly indicate which post each of experts whose CV will be provided in technical proposal will be assigned and failure to do so will lead to rejection of the concerned CV**