



PIDA FINANCIAL STRUCTURING PLAN

Main Report



December 2014

EXECUTIVE SUMMARY

The Programme for Infrastructure Development in Africa (PIDA) provides the strategic framework and agenda of priority infrastructure projects aligned with Africa's long-term goals and highlights the importance of regional infrastructure for Africa's growth. PIDA was launched by the Heads of State and Government of the African Union Commission (AUC) in Kampala, Uganda, in July 2010.

PIDA was approved by the African Heads of State and Government at their 18th Summit in Addis Ababa, Ethiopia, in January 2012, signifying high-level political buy-in and ownership of the programme. PIDA specifically calls for new models of partnership between business, government and donors to implement the 51 Priority Action Plan (PAP) infrastructure programmes and projects already identified.

The projects and programmes in the Priority Action Plan span sectors from energy and transportation to water and telecommunications, with an overall capital cost of US\$ 68 billion through 2012 to 2020, or US\$ 7.5 billion in expenditure per year up to 2020. Energy component alone consists of 15 projects worth US\$ 40 billion focusing mainly on creating hydroelectricity generation capacity, building interconnectors between power pools and constructing regional oil pipelines. Transportation consists of 24 projects worth US\$ 25 billion to link the major production and consumption centres, provide connectivity among the major cities and open the landlocked countries to enhance regional and continental trade.

Within context of the significant resource mobilization effort required for PIDA-PAP and in aligned with its mandate of resource mobilization for infrastructure development in Africa, the Infrastructure Consortium for Africa (ICA) in partnership with the African Development Bank (AfDB), at the request of the AUC, NPCA and the RECs, commissioned this PIDA Financial Structuring Plan with the following objectives;

- A. To develop a PIDA financial resourcing plan that will assist the Regional Economic Communities (RECs), national governments of member countries and other project sponsors such as power utilities to access finance for the PIDA-PAP;
- B. To identify and plot already existing and planned main financing vehicles and financing sources (including private and public, international and local sources, regional development banks) in and for each region that could be eligible for the regional PIDA-PAP projects;
- C. To recommend the optimum financing structure(s) for the identified PIDA-PAP projects for both public and private sector financing arrangements;
- D. To provide advice on the various infrastructure financing and regulatory frameworks in existence in the countries where PIDA-PAP projects are to be implemented and recommend the optimum enabling environment (legal, financial policy).

These four (4) broad objectives as conducted through this plan, sought to assist governments, RECs, specialized institutions, state agencies/utilities and private project sponsors as well as prospective lenders/investors to be informed of;

- Which financing structures/forms have been applied on trans-national infrastructure investments (in Africa preferably) and what are their key features in terms of investment volumes, financing sources and the financing capacity of operators; and what structures should be applied for PIDA PAP?

- What challenges (regulatory and/or financing) arise regarding the financing of such trans-national infrastructure projects
- What are the key success factors i.e. regulatory measures and financing options/instruments should be implemented. comprehensive regional framework for infrastructure projects to achieve regional integration benefits and support

The four (4) work components conducted result in the following conclusions and recommendations;

A. PIDA Financial Resourcing Plan

The PIDA programme provides a comprehensive regional framework for infrastructure projects to achieve regional integration benefits and support. However each individual PIDA project needs to be financed at project level (i.e. the financing is structured and arranged individually for each project). The PIDA projects will require both public and private financing, but the characteristics of each project determine whether it is bankable and how it can be financed (especially the privately financed portion).

PIDA represents an extremely large investment programme and most of the PIDA projects alone are typically large, complex and risky infrastructure projects. There is no 'magic solution' for financing PIDA projects – each project will need to be carefully structured and financed according to its risk profile.

Taking into account the identified challenges hampering infrastructure development in Africa in general and PIDA in particular, the available financing opportunities and instruments and the lessons learned from international practices, the following set of guiding principles and further facilitating instruments are recommended:

1. **Increase government resources for infrastructure development through for example:**
 - a. Increasing tax revenue collection, which is currently below worldwide average;
 - b. Establishing national infrastructure funds (like for example in Ghana);
 - c. Issuing sovereign-backed infrastructure bonds (like for example Kenya) or sovereign-backed project investment certificates (like in Egypt for the second Suez canal).
2. **Facilitate private sector risk mitigation through:**
 - a. Exploring the establishment of a PIDA Guarantee Facility with support from International Finance Institutions to strengthen the availability and reduce the costs of risk mitigating instruments (for example political, currency, interest and revenue risks);
 - b. Establishing Power Deposit Facilities in collaboration with the existing power pools and with support from institutions of the Regional Economic Communities;
 - c. Allocating inflation and currency risks to the users if possible and where appropriate through according provisions in the concession agreements and or the relevant regulations if available.
3. **De-risk projects through:**
 - a. Unbundling/phasing of projects where appropriate in order to reduce the project size and related complexity;
 - b. Effective and thorough preparation with support from a competent external project manager who is given sufficient resources, mandate and incentives (for example with a success fee on top of an appropriate retainer fee);

- c. Adequate inter-governmental arrangements where appropriate in order to reduce the inter-country interface risks;
- d. Effective project implementation authority within the framework of the inter-governmental arrangements where appropriate and with sufficient mandate and resources to effectively manage the project development and implementation.

4. Build private sector confidence through:

- a. Effective prioritisation of the PIDA programme starting with the most bankable projects;
- b. Soliciting private sector participation only for properly prepared, well-structured and adequately bankable projects.

B. Financing Sources

The main conclusions of the assessment of the size and adequacy of the current financial instruments and vehicles spectrum are as follows:

- The spectrum of financial products available appears to be quite extensive, i.e. many instruments already exist which deal with a whole range of risks ;
- The number of financial players active on the continent and the depth of local financial markets remains however limited, restricting competition between financiers and driving financing costs up;
- For different reasons specific to each product type the existing financial instruments spectrum is not perfectly efficient in dealing with key problem areas identified; most commonly encountered issues include the cost of such instrument as well as the low standardisation of product appellations, credit processes and practices between major IFIs;
- It must also be acknowledged that while financing instruments can contribute to mitigating some of the risks associated with infrastructure projects in Africa they cannot solve underlying issues and fundamental economic and regulatory flaws creating those risks in the first place; in the long run only a gradual improvement of the local financial and legal environment can have an effect on the roots of the problems identified.

Perhaps the biggest issue to be dealt with is the capacity / capability of the sponsors of these large projects to effectively structure and manage them up to bankability stage, i.e. to handle all the preparatory work and structure the projects so that they can be financed and proceed to actual implementation.

Arguably there is capital available (institutional, commercial, DFI, etc.), there are multiple specialised risk instruments applicable, there are large multinationals industry players who can take on large-size projects and there are multiple international precedents of such mega projects being financed and implemented (some even in Africa). Key seems to be the capacity of the sponsors (principally the African governments concerned) to put all these ingredients together at the level of each individual project, hence the recommendation to use properly authorised and sourced project implementation authorities supported by external competent project/transaction managers. Should the existing range of guarantee instruments be deemed inefficient or insufficient, the recommended PIDA Guarantee Facility could help coordinate and complement the supply of risk mitigating instruments.

C. Financing Structures

The financing structures are essentially a reflection of the risk management framework. Subject to a detailed risk analysis and consequent risk allocation matrix at a project-level, the following

high-level frameworks are recommended for the main sectors of PIDA based on international best practices and taking into account the specific challenges for Africa:

	Hydropower	Railways	Roads	Transmission	Gas Pipeline
Key private sector contract	Power Purchasing Agreement (PPA)	Operating concession	Build Operate Transfer (BOT)	Wheeling Agreement	Performance based management (PBM)
Risk category					
Construction	Preparation public/ works part of PPA	Public (Engineering Procurement Contract)	Part of BOT	Public (Engineering Procurement Contract)	Public (Engineering Procurement Contract)
Operations	Part of PPA	Part of concession	Part of BOT	Part of Wheeling Agreement	Gas Supply Arrangement PBM
Revenues	Part of PPA	Part of concession	Minimum Revenue Guarantee (MRG)	Part of Wheeling Agreement	Part of PBM
Interfaces	Project Manager with Success Fee	Project Manager with Success Fee	Part of BOT	Project Manager with Success Fee	Project Manager with Success Fee
Country	Political Risk Guarantee (PRG)				
Inflation	Tariff escalation formula				
Currency	PPA in hard currency	contracts freight in hard currency	Currency swaps	Wheeling Agreement in hard currency	PBM in hard currency

Most importantly when it comes to private finance is that – contrary to current practices – governments have to be prudent in the risk transfer to the private sector. It has to be realised that infrastructure itself is already a high-risk undertaking, let alone developing infrastructure in a high-risk region with relatively high level of economic, political and social uncertainties.

A well-balanced risk transfer which takes into account the project characteristics and regional peculiarities will increase the market appetite both from investors and debt providers, which will ultimately lead to increased value-for-money.

Thorough preparation preferably through an independent implementing authority supported by a competent external project/transaction manager and including transparent competitive bidding procedures is critical to minimise the risk exposure and build market confidence. Necessary steps for successful implementation include at least:

- Establishing Implementing Authority
- Appoint Transaction Manager
- Securing up-to-date Project Appraisal documents
- Ensuring Risk Management Framework in place
- Transparent Tendering & Contracting
- Raising Finance

With regard to the 5 selected showcase projects financing structures have been designed taking into account the recommended guiding principles and further facilitating instruments. However it has to be concluded that these projects are far from financial close and that further preparation is essential.

Steps	Project	Batoka	Abidjan – Lagos	ZTK	TSGP	Inga
1. Government Resourcing Appoint and Mandate Implementing Authority		Done	To Do	Done	To Do	Done
2. De-risking of Project Appoint Transaction Manager		To Do	In Process	Done	To Do	Done
3. Building Private Sector Confidence Update existing project appraisal/commission new appraisal		To Do	In Process	Done	In Process	In Process
4. De-risking of Project Design and implement risk management framework		To Do	To Do	In Process	To Do	In Process
5. Building Private Sector Confidence Tendering & Contracting		To Do	To Do	To Do	To Do	In Process
6. Financing Sources Detailed Financial Structuring and Capital Raising		To Do	To Do	To Do	To Do	To Do
		Done	In Process	To Do		

D. Enabling Environment

The main lesson learned from the international experience is that (i) private financing is not an endless source of financing and (ii) facilitating private finance is not only a matter of *ad hoc* financial instruments. In order to facilitate private finance, a framework needs to be in place which includes:

- Conducive legal and regulatory frameworks;
- Coordinating and supporting agencies;
- Financial instruments mitigating project risks and addressing market failures.

Perhaps most importantly is central coordination to ensure cohesion of the different initiatives. In the case of India, the coordination is done by the Department for Economic Affairs. In Europe, the European Commission and European Investment Bank coordinate the different pillars. In Africa, the REC's have to take on this coordinating and promoting role.

For Africa, our analysis has showed that the existing PPP laws and initiatives are developing, but differ from one jurisdiction to another. In our view, three actions would be instrumental in promoting private investment in infrastructure in Africa:

1. Developing a **harmonized legal framework**, in relation to at least a core set of rules necessary to promote PPPs, possibly at the level of certain regional economic communities, would provide for a clear basis for the development of PPPs, both at a national and regional level;
2. Promoting the development and rolling out of **standard PPP guidelines** across the continent (including guidelines and standard PPP contracts); and
3. Implementing consistent **capacity building programmes** at regional level to ensure that the project managers in the PPP units have sufficient knowledge of the guidelines, regulation and preferred risk allocations.

LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AFC	Africa Finance Corporation
AFDB	African Development Bank
AICD	Africa Infrastructure Country Diagnostics
AMU	African Maghreb Union
ARTIN	African Regional Transport Infrastructure Network
ASEAN	Association of Southeast Asian Nations
AUC	African Union Commission
BADEA	Arab Bank for Economic Development in Africa
BNDES	Brazilian Development Bank
BOAD	West African Development Bank
BOT	Build Operate Transfer
BRICS	Brazil Russia India China South-Africa
CAF	Corporación Andina de Fomento
CEMAC	Economic and Monetary Community of Central Africa
CEN-SAD	Community of Sahel-Saharan States
COMESA	Common Market for Eastern and Southern Africa
DBSA	Development Bank Southern Africa
DFI	Development Finance Institution
EAC	East African Community
EC	European Commission
ECCAS	Economic Community of Central African States
ECG	Export Credit Guarantee
ECGLC	Economic Community of the Great Lakes Countries
ECOWAS	Economic Community of West African States
EIB	European Investment Bank
EPC	Engineering, Procurement and Construction
ERDF	European Regional Development Fund
ESIA	Environmental Social Impact Assessment
EU	European Union
FIDIC	International Federation of Consulting Engineers
FSDEA	Fundo Soberano de Angola
GDP	Gross Domestic Product
HIPC	Heavily Indebted Poor Countries
ICA	Infrastructure Consortium Africa
ICRC	Infrastructure Concession & Regulations Commission
ICSID	International Centre for Settlement of Investment Disputes
IGAD	Intergovernmental Authority on Development
IIFCL	India Infrastructure Finance Company Ltd
IIPDF	India Infrastructure Project Development Fund
IIRSA	Initiative for Regional Integration of South America
IRS	Interest Rate Swaps
ISDB	Islamic Development Bank
KFAED	Kuwait Fund for Arab Economic Development
LIC	Low Income Countries

MCA	Model Concession Agreement
MDB	Multilateral Development Bank
MPAC	Master Plan on ASEAN Connectivity
MRG	Minimum Revenue Guarantee
NCBP	Non-Concessional Borrowing Policy
NDB	New Development Bank
NEPAD	New Partnership for Africa's Development
NNOC	Niger National Oil Company
NNPC	Nigeria National Petroleum Corporation
NSIA	Nigeria Sovereign Investment Authority
ODA	Official Development Aid
OECD	Organisation for Economic Co-operation and Development
OHADA	Organisation for the Harmonization of Business Law in Africa
PAP	Priority Action Plan
PBM	Performance Based Management
PCG	Partial Credit Guarantees
PIDA	Programme for Infrastructure Development in Africa
PMU	Project Management Unit
PPA	Power Purchase Agreement
PPP	Public Private Partnership
PPPAC	PPP Approval Committee
PRG	Partial Risk Guarantee
PRI	Political Risk Insurance
RBF	Results-Based Finance
RCF	Risk Capital Facility
REC	Regional Economic Community
ROW	Right of Way
SACU	Southern African Customs Union
SADC	Southern African Development Community
SAPP	Southern Africa Power Pool
SFD	Saudi Fund for Development
SFF	Structured Finance Facility
SOE	State Owned Enterprise
SPV	Special Purpose Vehicle
SSA	Sub Saharan Africa
SWF	Sovereign Wealth Fund
TCX	The Currency Exchange Fund
TEN	Trans-European Network
TSGP	Trans-Saharan Gas Pipeline
UEMOA	West African Economic and Monetary Union
UNECA	United Nations Economic Commission for Africa
VGF	Viability Gap Financing
WAGP	West Africa Gas Pipeline
ZRA	Zambezi River Authority
ZTK	Zambia Tanzania Kenya

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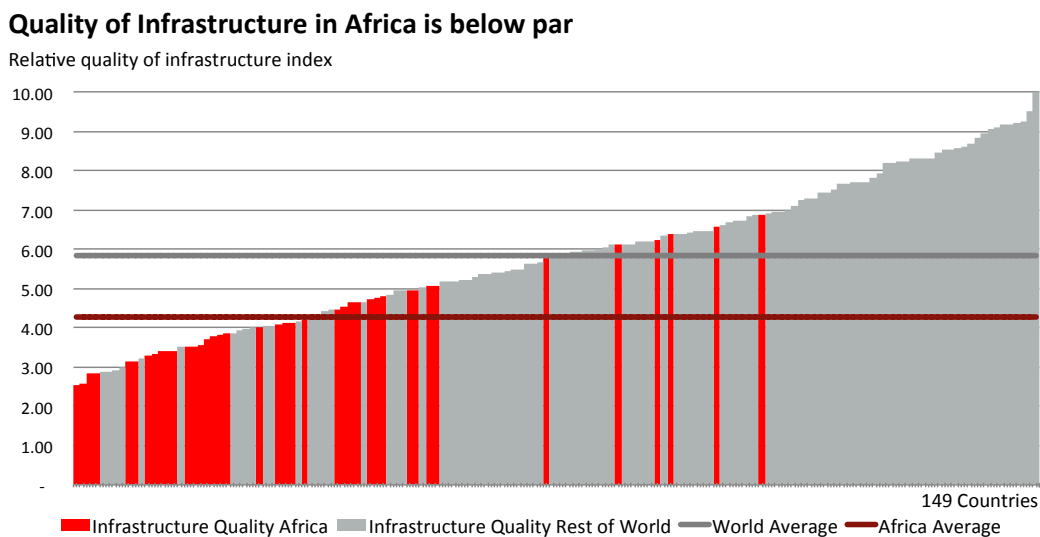
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1 INTRODUCTION

1.1 Background

According to the World Economic Forum Competitiveness Report 2013 – 2014, the quality of infrastructure in Africa is on average significantly lower than in the rest of the world. One of the consequences is that Africa is the least integrated continent both physically and economically, with low levels of intra-regional trade and global trade at 10% and 3% respectively. Infrastructure inefficiencies are costing the continent billions of dollars annually, stunting African GDP growth by an estimate of 2% every year.

Figure 1-1: Infrastructure Quality Index



Source: World Economic Forum, The Global Competitiveness Report 2013 - 2014

Bridging the gap in infrastructure is thus vital for economic advancement and sustainable development. However, this can only be achieved through regional and continental cooperation.

The Programme for Infrastructure Development in Africa (PIDA), jointly developed by the African Union Commission (AUC), the NEPAD Planning and Coordinating Agency (NEPAD Agency), the African Development Bank (AfDB), the United Nations Economic Commission for Africa (UNECA) and the Regional Economic Communities (RECs), promotes regional economic integration by bridging Africa's infrastructure gap.

PIDA aims to accelerate the delivery of current and future regional and continental infrastructure projects in transport, energy, information communications and technology (ICT), and trans-boundary water.

PIDA includes 51 Priority Action Plan (PAP) infrastructure programmes comprising 388 projects which are expected to lead to an integrated continent, fuelling international trade, job creation

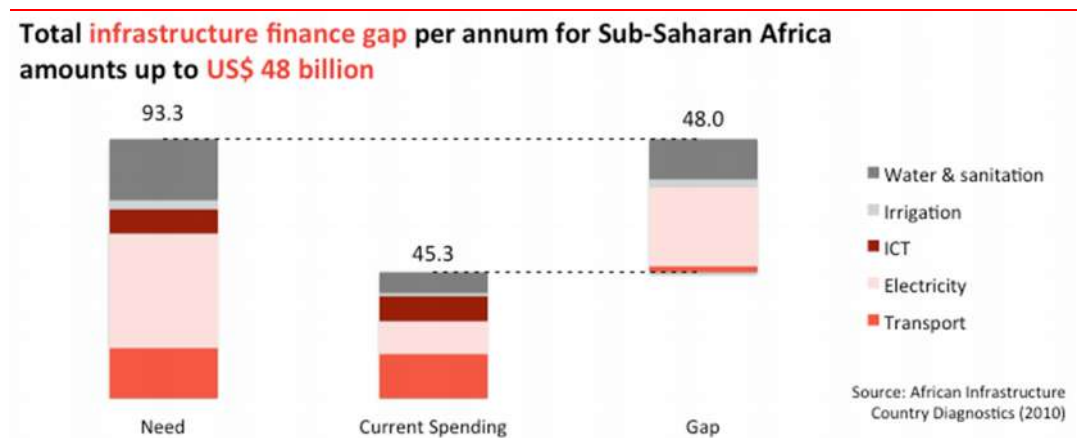
and sustainable economic growth. PIDA is a solution by and for Africans, which was endorsed by African Heads of State and Government at the 18th Summit of the African Union (AU) in January 2012 in Addis Ababa, Ethiopia.

The 51 PIDA-PAP programmes require an estimated US\$ 68 billion for their implementation up until 2020, i.e. approximately US\$ 8 billion per year, whilst an additional US\$ 300 billion are envisaged to be required for the PIDA projects to be implemented through to 2040. With such quantum resource requirements in the long term, there exists a huge financing gap which needs to be addressed for the successful realization of PIDA projects.

It is now critical that the PIDA programme progresses to the financing and accelerated implementation stage and therefore a need for professional advisory services for the development of financing strategies to be applied thereafter by the implementing agencies for fundraising.

It is to be noted that as such the PIDA programme, focusing predominantly on projects with regional impact, only addresses part of Africa’s infrastructure need and is not limited to Sub-Saharan Africa. According to Africa Infrastructure Country Diagnostics (AICD), the annual financial requirements for infrastructure in Sub-Saharan African (SSA) are about US\$ 93 billion for both capital expenditures (66%) and maintenance (34%). However existing spending only amounts up to some US\$ 45 billion, implying a gap of US\$ 48 billion.

Figure 1-2: Infrastructure Finance Gap Sub-Saharan Africa



Following a competitive tender Rebel, in association with Gide Loyrette Nouel, has been selected to provide such advisory services and deliver a study on possible financing strategies and structures for PIDA.

The study is carried out under the auspices of the Infrastructure Consortium for Africa (ICA) given its mandate in resource mobilization for infrastructure development across Africa. ICA was launched at the G8 Gleneagles summit in 2005. The membership is the G8 countries, the World Bank Group, the African Development Bank (AfDB) Group, the European Commission, the European Investment Bank (EIB) and the Development Bank of Southern Africa (DBSA). The African Development Bank has been hosting the secretariat of the ICA since 2006.

1.2 Objective of the Study

The main objectives of the study are:

- A. To develop a PIDA financial resourcing plan that will assist the Regional Economic Communities (RECs), national governments of member countries and other project sponsors such as power utilities to access finance for the PIDA-PAP;
- B. To identify and plot already existing and planned main financing vehicles and financing sources (including private and public, international and local sources, regional development banks) in and for each region that could be eligible for the regional PIDA-PAP projects;
- C. To recommend the optimum financing structure(s) for the identified PIDA-PAP projects for both public and private sector financing arrangements;
- D. To provide advice on the various infrastructure financing and regulatory frameworks in existence in the countries where PIDA-PAP projects are to be implemented and recommend the optimum enabling environment (legal, financial policy).

As agreed following the inception of the study, the identified PIDA-PAP projects i.e. showcase projects as referred to under objective C include:

- 1) Batoka Gorge Hydropower Project
- 2) Abidjan-Lagos Interconnector highway
- 3) Zambia Tanzania Kenya (ZTK) Transmission Lines
- 4) Inga III Hydro Power Scheme
- 5) Nigeria-Algeria Gas Pipeline Project

These projects were selected based on the following criteria:

- Status of the project, i.e. stage 3 (pre-structuring/financial close)
- Opportunities for replicability
- Representative for the PIDA programme

1.3 This Report

This report presents the findings and recommendations from the study. In accordance with the agreed upon inception report, the sequence of the required components of the scope of work has been somewhat refined in the following manner in order to provide a structured flow of reasoning.

Figure 1-3: Methodological Framework



Consequently the required components as per the Terms of Reference have been addressed in the following manner in this report.

Table 1-1: Report Structure

Component as per Terms of Reference	Section in Report
Component 1 – Overall Financing Strategy for PIDA PAP	Chapter 6: Finance Strategy

PIDA Financial Structuring Plan

Component as per Terms of Reference	Section in Report
<p>Formulating a strategy on financing PIDA that takes into consideration different regulatory frameworks applicable to different countries (and regional communities) where PIDA PAP projects are being implemented.</p>	<p>Based on the diagnostic review and international practices as presented in preceding chapters i.e. Chapter 2: Problem Analysis Chapter 3: Legal and Institutional Review Chapter 4: Financial Instruments Chapter 5: International Practices</p>
<p>Component 2 – Mapping of Infrastructure Financing Intermediaries and Instruments By identifying and plotting already existing and planned main financing vehicles and instruments (including private and public, international and local sources, regional development banks) in and for each region that could be eligible for the regional PIDA PAP projects.</p>	<p>Chapter 4: Financial Instruments</p>
<p>Component 3 – Financing Modalities for PIDA PAP by sector/region Drawing from information from component 2 above, recommend the optimum financing structure(s) for shortlisted PIDA-PAP projects. The Consultant should suggest the best and innovative approach to be used in financial structuring per project, per group of projects or both. The Consultant is also expected to justify why identified structure (s) are recommended to be used for a project or group of projects.</p>	<p>Chapter 6: Finance Strategy</p>
<p>Component 4 – Application and showcasing of recommended innovative financing arrangements on selected PIDA PAP projects By applying the recommended financing arrangements and instrument(s) on selected PIDA-PAP projects in each sector or programme and showcasing inventive approaches of the recommended structure. The Consultant shall be provided with criteria to select five (5) 'showcase' projects. Criteria to be applied in shortlisting of projects for showcasing will include the regional spread of one project per geographical region and sector (sub-sector) balance. The Consultant should provide a recommended plan on how the 5 projects could reach financial closure.</p>	<p>Chapter 7: Showcase Projects</p>

2 PROBLEM ANALYSIS

2.1 Mind Map

Governments have an array of options to finance infrastructure and recover costs

When it comes to infrastructure finance, it has to be taken into account that project sponsors have an array of options available that can be distinguished by sources of funds and sources of income to recover such funds. This finance spectrum will impact the possible delivery mechanisms being either conventional public delivery mechanisms or a mode of public private partnership.

Figure 2-1: Infrastructure Finance Spectrum

Finance Spectrum indicates possible sources of funds and income to recover costs for infrastructure development

		Sources of Funds		
		Current Account	Debt	Private
Sources of Income to Return Funds	Taxes	Traditional Project Delivery whereby the capital costs are funded from the current account	Traditional Project Delivery whereby the public authority raises debt and the debt providers have recourse to the public authorities sources of income	PPP whereby the private partner receives income from availability or annuity payments from the public partner e.g. Design Build Finance Maintain or BOT Annuity arrangements
	User Charges	Traditional Project Delivery whereby the capital costs are funded from the current account and the public authority charges the user for its use	Traditional Project Delivery whereby the public authority raises debt and the debt providers have recourse only to the income from user charges e.g. infrastructure bonds	PPP whereby the private partner receives income from user charges e.g. Design Build Finance Operate or BOT arrangements

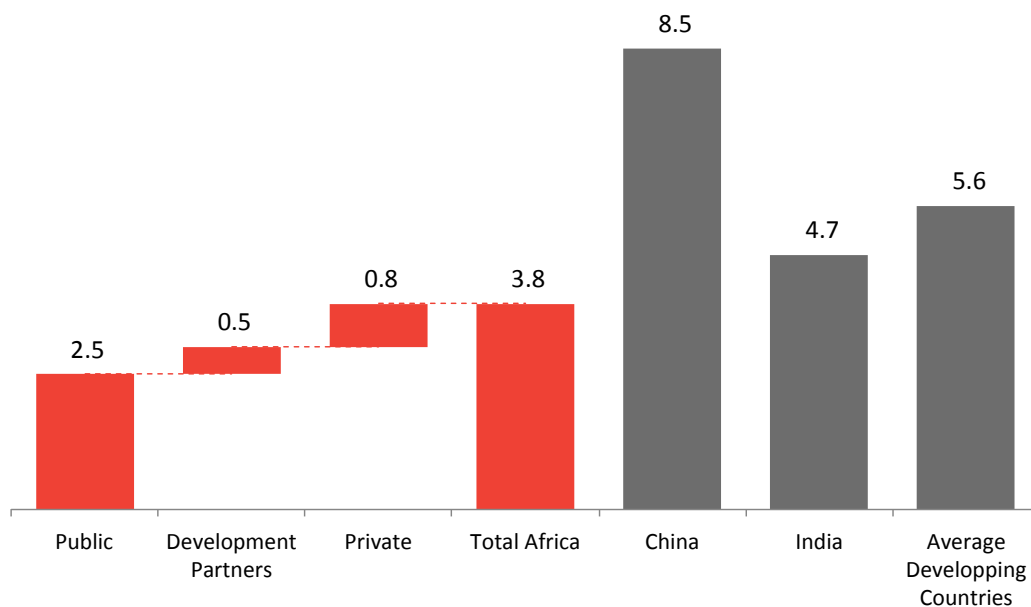
Source: World Bank adapted by Consultant

Insufficient and inefficient infrastructure spending in Africa

In order to formulate a strategy on financing PIDA, it is first necessary to understand the problems infrastructure development in Africa is facing, in particular the problems regarding financing infrastructure. Essentially the two main problems infrastructure development in Africa is facing are (i) insufficient spending and (ii) inefficient spending, though the question is what causes this. Looking at the spending patterns for infrastructure in Africa, not only is spending less than needed, it can also be concluded that it is significantly less in comparison with other developing countries. Whereas total spending in infrastructure amounts up to some 3.8% of GDP in Africa, the likes of India and China are able to spend 4.7% respectively even 8.5% of GDP on infrastructure development. According to McKinsey on average developing countries spend some 5.6% of GDP on infrastructure. Were Africa able to achieve such level, it would imply an increase in spending of approximately US\$ 43 billion per year.

Figure 2-2: Infrastructure Spending Benchmark

Infrastructure spending in Africa as % of GDP is significantly less than other emerging markets

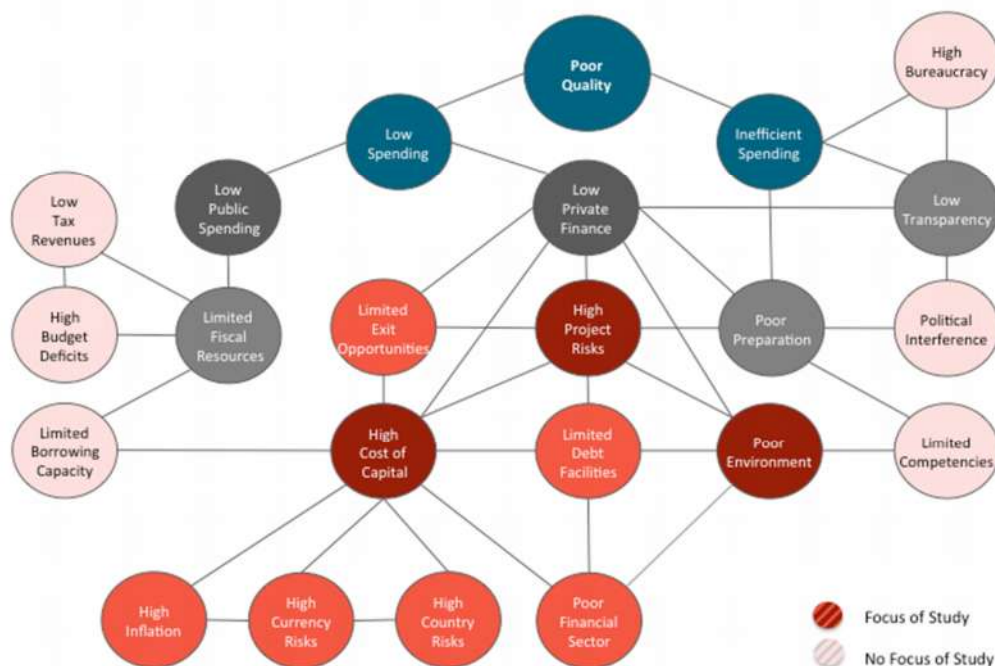


Source: McKinsey, Infrastructure Productivity: How to save \$ 1 trillion a year (2013), Foster c.s., Africa's Infrastructure, A time for Transformation (2010), IMF, GDP 2013 (PPP)

The question is why infrastructure spending in Africa remains so much less than needed and lower than others. Taking into account this finance spectrum, the main problems facing infrastructure development in Africa have been identified through a so-called mind map, which aims to present the problems in symptoms and root causes and also indicates the relations between the different issues. As such presenting a complete and cohesive problem analysis as depicted in the following figure.

Figure 2-3: Mind Map Infrastructure Development Problems

problems



Source: Consultant

This study will focus primarily on finance related issues, though it is undeniable that the poor quality of infrastructure i.e. inadequate infrastructure development is also to a large extent related to inefficient spending caused by poor preparation and low transparency, where poor project preparation is also impacting the low amount of private finance as private investors and banks are not keen to spend money on poorly prepared projects.

The importance of adequate project preparation and the need for improvement has already been acknowledged by the various multilateral institutions, the Regional Economic Communities (RECs) in Africa and most of the African countries themselves and various initiatives are already in place to address this issue as indicated in the chapter on legal frameworks.

ICA conducted an assessment of project preparation facilities in Africa, which is also aimed at improving the quality of project preparation in Africa and as such contributing to enhancing the likelihood of attracting private finance. Some of their observations¹:

The available funds were fragmented across a large number of different facilities undertaking similar activities, thus reducing their impact and potentially losing any economies of scale and other benefits;

A significant and increasing shortfall in infrastructure project preparation support is being observed, while Multilateral Development Banks lack the internal resources to step in to fill the gap. Unless this is addressed it is likely to lead to a reduction in the number and quality of projects available for Multilateral Development Banks / Development Finance Institutions and private financing in future years.

¹ The Infrastructure Consortium for Africa; Assessment of Project Preparation Facilities for Africa (2013)

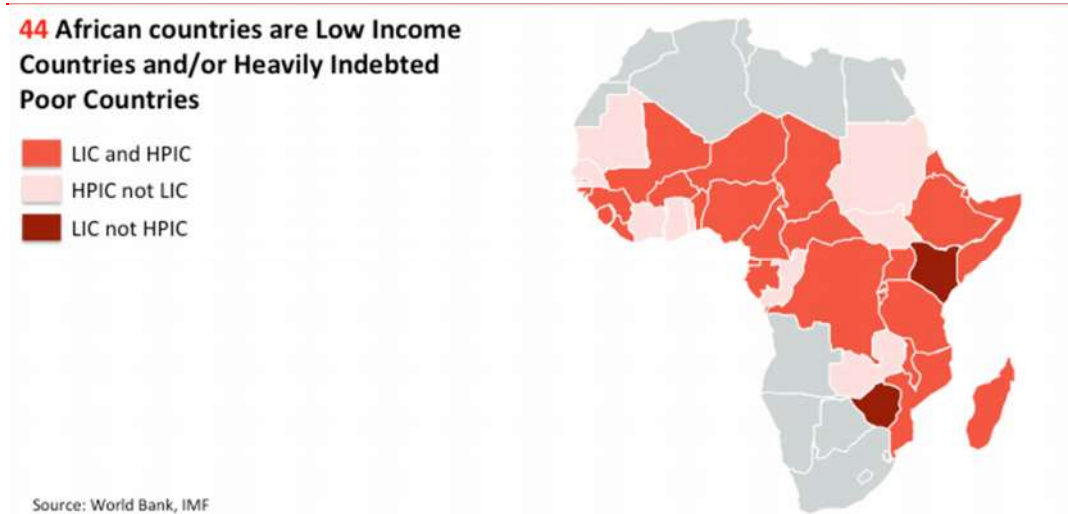
It was concluded by ICA and its consultants that it is necessary to improve the efficiency and effectiveness of the available facilities for infrastructure project preparation in Africa. We concur with these conclusions.

2.2 Public Spending

Strict debt limits

Around 40 African countries are listed as Low Income Countries (LIC) and/or Heavily Indebted Poor Countries (HIPC) under the International Monetary Fund (IMF) and World Bank debt relief programs.

Figure 2-4: Low Income and Heavily Indebted Poorness Map



Commitments to reduce poverty through policy changes are conditions for eligibility to debt relief programmes. Governments benefitting from such programmes must also comply with strict debt limits when borrowing from new creditors, in order to prevent the build-up of new unsustainable debts. In 2006 the International Development Association adopted the Non-Concessional Borrowing Policy (NCBP) to reduce risks of over borrowing.

The main component of the limits established under the NCBP is concessionality requirements applying to debts contracted with or guaranteed by official sectors.

However the NCBP does not prevent all non-concessional borrowing. Debt limits can be mitigated through a case-by-case basis approach based on a country's macroeconomic and public financial management capacity and debt vulnerability. Specific circumstances and the purpose of a loan can also be taken into account.

Normally the external debt performance criterion will relate to debt subscribed by the State or by public entities, or guaranteed by the same. The debt of state-owned enterprises (SOEs) can be excluded from indebtedness indicators when SOEs can borrow without a public guarantee and their operations pose only limited fiscal risks for the government.

In principle, borrowing countries infringing the NCBP are penalised through restrictive access to preferential treatments by IMF and World Bank or higher interest rates and/or shorter refund delays.

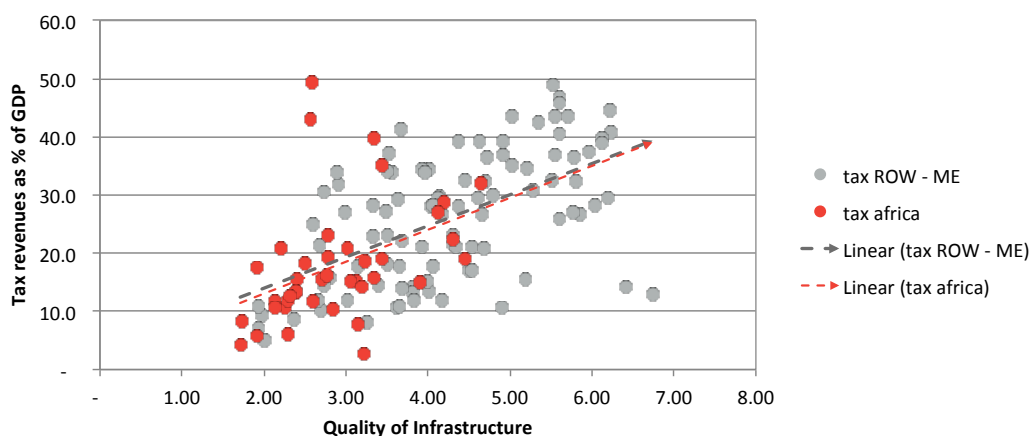
Budget deficits constrain public infrastructure spending

It is often stated that African countries simply do not have the necessary budget resources to spend sufficient money on infrastructure. The majority of African countries, i.e. 28 out of a sample of 46 countries reviewed, already have budget deficits in excess of 3%, which is regarded by most economists as the maximum deficit acceptable.

These deficits obviously constrain the public budgets for infrastructure development both from current accounts and from debt financing as such debt financing will lead to future fiscal obligations in terms of interest expenditures and down-payments.

Figure 2-5: Fiscal Deficits 2013 per country

Positive correlation between quality of infrastructure and tax revenue collection



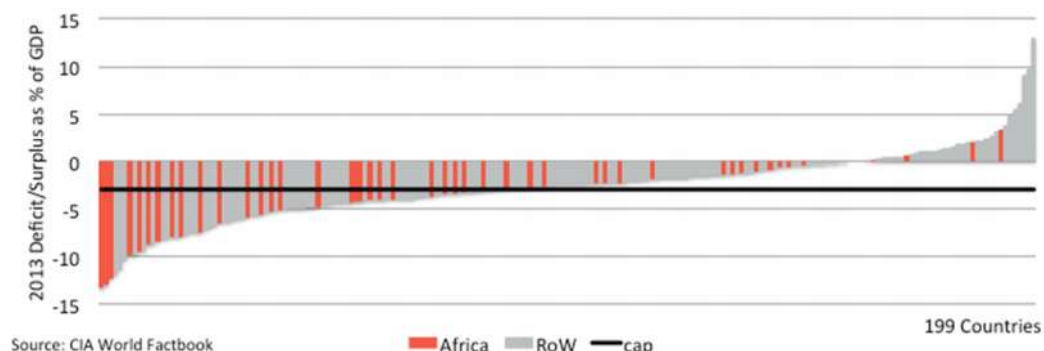
Source: WEF, heritage Foundation, IMF, adapted by Consultant

The figure also illustrates that that most African countries are not only below par in terms of their infrastructure quality but also in terms of their tax revenue collection. This is not

Figure 2-6: Relation Quality of Infrastructure - Tax Revenue Collection

Fiscal constraints limits most African countries to increase public spending

28 out of 46 African countries included in sample have deficits in excess of 3%



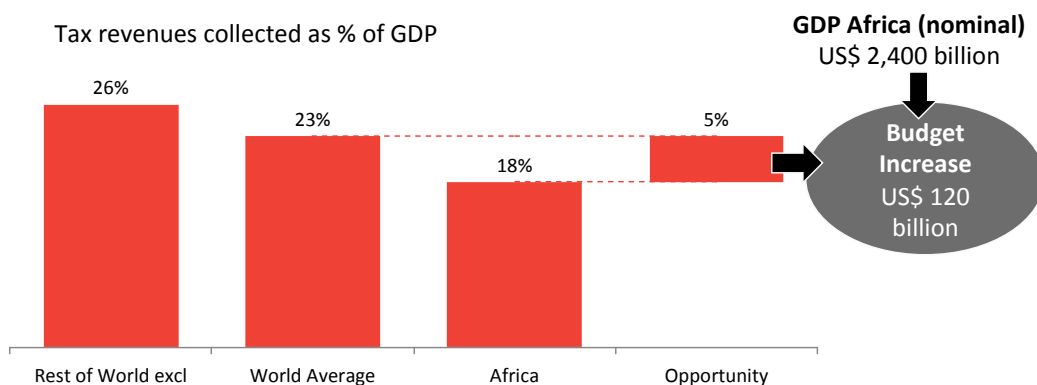
Source: CIA World Factbook

necessarily defined by the tax rates imposed, though could also be driven by the effectiveness of tax collection.

If on average African countries were able to increase their tax revenue collection to the worldwide average, it would imply an additional budgetary spending capacity of around US\$ 120 billion per year. This could be used for improving the quality of infrastructure with all its related economic benefits.

Figure 2-7: Impact Increase Tax Revenue Collection

Increasing tax revenue collection is an opportunity to increase public spending on infrastructure



Source: Heritage Foundation (2012), IMF adapted by Consultant

2.3 Private Finance

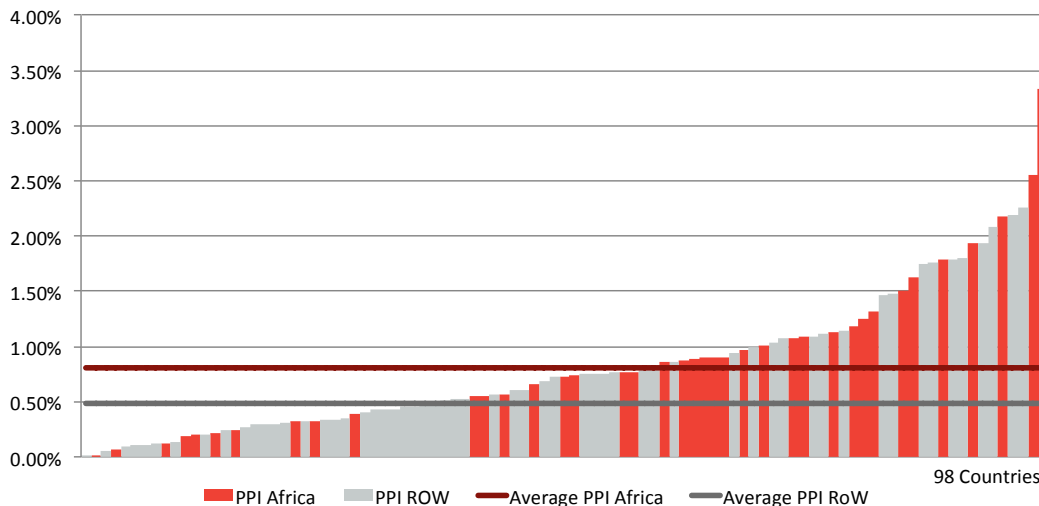
Africa comparable to other emerging economies

When it comes to private financing of infrastructure development, the situation in Africa is comparable to other emerging economies. On average, Africa has relatively more privately financed infrastructure than emerging economies in general. According to the PPI database from the World Bank, Africa has attracted in the past decade some US\$ 15 billion on average per year of private investments. This is 0.8% of GDP worth of privately financed infrastructure investments whereas the average for other emerging economies is around 0.5% of GDP.

Figure 2-8: Private Participation in Infrastructure 2003 - 2012 by country

Private Infrastructure Finance in Africa on average 0.8% of GDP exceeding the 0.5% average for the rest of the developing countries

Average Amount of Private Finance 2003 – 2012 as % of GDP 2012



Source: World Bank, PPI Database, IMF GDP 2012

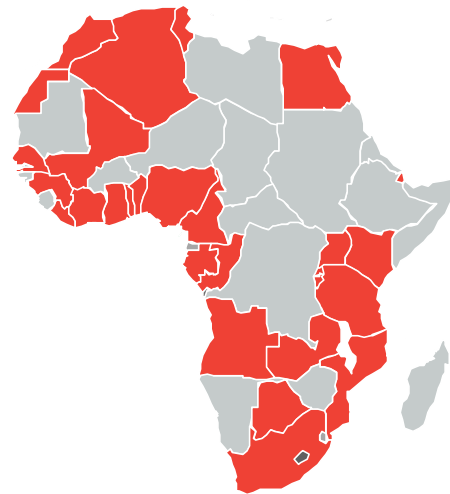
Based on the PPI database it can be concluded that since 2000 28 out of the 54 registered African countries have attracted at least US\$ 50 million of private infrastructure investment into the energy, transport and water sectors. This illustrates that despite the identified challenges it has proven possible to attract private infrastructure finance.

There is no specific region that stands out in terms of attracting private finance, although it is broadly acknowledged that South Africa is considered the most advanced and most mature market for private infrastructure finance through PPP arrangements.

Figure 2-9: Private Finance Mapping

28 out of 54 African countries have been able to attract more than US\$ 50 million of private infrastructure finance over the period 2000 - 2012

- No significant private investment in infrastructure
- Significant private investment in infrastructure



Source: PPI Database

Opportunity for improvement

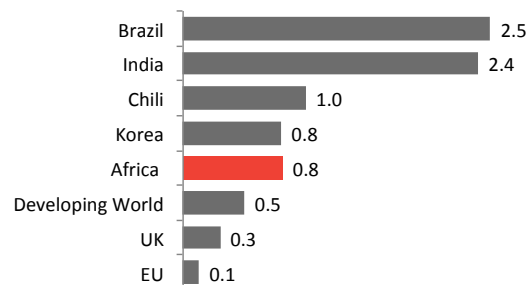
Although private finance has been attracted, some other emerging economies have attracted substantially more. Particularly Brazil and India attract substantially larger sums². They have on average attracted private investments in the amount of approximately 2.5% respectively 2.4% of GDP.

Should Africa attract the same volumes, the total value of privately financed infrastructure would increase by around US\$ 30 - 35 billion, thus significantly albeit not totally reducing the infrastructure finance gap of US\$ 4,8 billion.

Figure 2-10: Benchmark privately financed infrastructure with sample reference countries

Increasing private financing to the levels of India and Brazil is an opportunity to improve infrastructure quality

Private Infrastructure Finance as % of GDP



Source: McKinsey, Infrastructure Productivity: How to save \$ 1 trillion a year (2013), PPI, EIB

² The benchmark may not be fully accurate as different sources have been used which may have defined different infrastructure classes. Therefore the benchmark presented should not be considered as complete and exhaustive but merely illustrative.

How to increase private financing?

Private financing of infrastructure in Africa is widely recognized as an attractive alternative for the public provision of infrastructure, with the potential to both increase the efficiency and speed of delivery. The main question is how Africa *can* increase private financing of infrastructure. The complicating factor for the PIDA programme is that the underlying projects are mostly cross border projects, which adds to the risk profile of the projects as it involves more than one jurisdiction i.e. legal system, currencies and so on, and generates more interface risks.

To answer this question, the first step is to get an understanding of the private sector's perspective, being the envisaged capital provider. The following figure depicts the main considerations private capital providers have when it comes to providing finance for infrastructure in a given country through PPP arrangements.

Figure 2-11: Private sector considerations for PPP

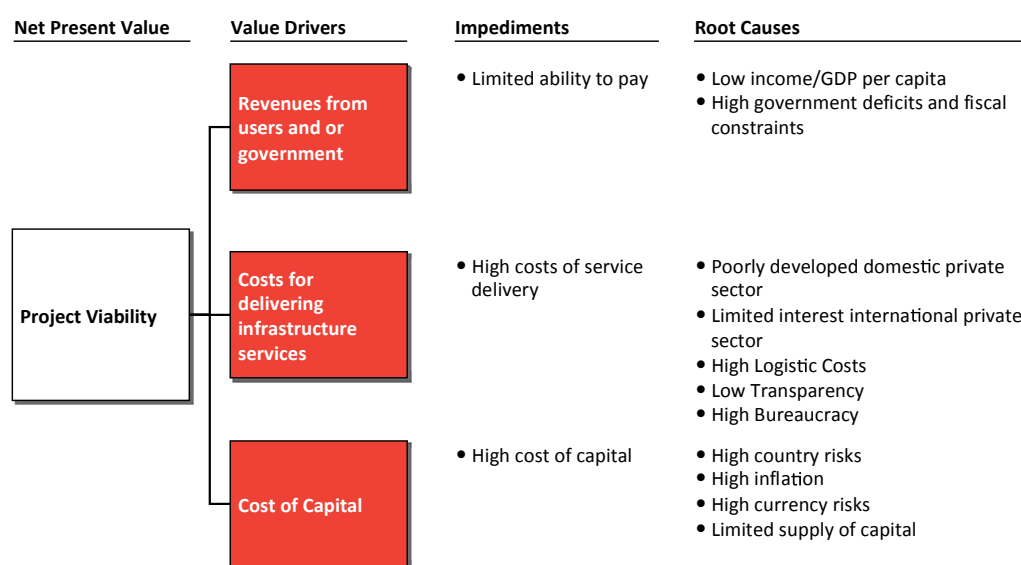
Main considerations from private capital providers e.g. investors and banks for PPP arrangements worldwide

Conducive Environment	Viable Project	Transparent Competition
<ul style="list-style-type: none">• Country Level Risks<ul style="list-style-type: none">• Economic Position• Political Risk• PPP Experience<ul style="list-style-type: none">• Number of deals closed• Policy Framework• PPP Procurement agencies• Standardised contracts• Availability of Finance<ul style="list-style-type: none">• Attitude of funders to project country	<ul style="list-style-type: none">• Sector• Scale• Complexity<ul style="list-style-type: none">• Specialist skills required• Technology• PPP Structure Proposed• Risk Profile Proposed• Bid Costs• Tender Process<ul style="list-style-type: none">• Evaluation Criteria• Length of Time	<ul style="list-style-type: none">• Barriers to Entry• Availability of Partners<ul style="list-style-type: none">• Strength• Experience• Capability• Interest in partnering• Likelihood of Qualification

Source: Deloitte

With regard to the environment, reference is made to the analysis presented in the next chapter. For now, the focus of the problem analysis is the financial viability of the project. In Africa, the viability of projects is often hampered by low ability to pay, high costs of services delivery and high cost of capital, as such summarised in the following figure.

Figure 2-12: Project Viability Framework



Source: Consultant

The limited ability to pay both from users and from governments is driven largely by the economic conditions in the various African countries. It is widely acknowledged that the continent has a huge economic potential, which will increase the ability to pay, although infrastructure development is a critical condition to tapping this potential. For now, the limited ability to pay in terms of low GDP per capita and constrained government budgets is a given for the purpose of this study.

As for the costs of service delivery it is noted that they do not appear to benefit from the abundance of natural resources and the low cost of labour. On the contrary, according to World Bank research, Africa's infrastructure services are twice as expensive as elsewhere, reflecting both diseconomies of scale in production and high profit margins caused by lack of competition³. As with the limited ability to pay, also the high costs of service delivery are beyond the scope of this study, although it has to be noted that subject to sufficient competition and transparency a private developer is likely to be able to deliver infrastructure more efficiently in terms of cost savings and timely delivery than through standard public procurement.

The viability of projects in Africa is similarly impacted by high costs of capital, which will be the core focus of this study as financial structuring can reduce the cost of capital. The main root cause for the high cost of capital include:

1. Limited Supply of Capital;
2. Country risks;
3. Inflation;
4. Currency risks.

Limited supply of capital

³ World Bank; Africa's Infrastructure, a time for transformation (2010)

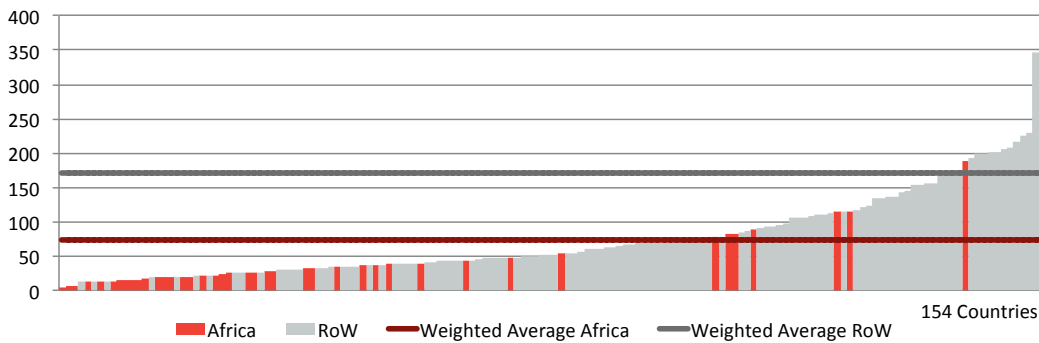
One of the foremost challenges for infrastructure developers in Africa is the limited supply of domestic capital. At first sight, only the South African banks are actively involved in providing project finance on the continent. Incidentally domestic banks are also involved in PPP transactions in their home countries, albeit on a small scale. For example, in the Lekki – Expressway 30% of the US\$ 321 million debt facilities were provided by six Nigerian banks, i.e. on average a capital contribution of US\$ 15 million⁴. Consequently there is strong reliance on international banks, be it multilateral banks or commercial banks.

It is questionable whether the domestic banking sector will be able to meet the infrastructure finance need, given its limited size in comparison with other economic domains. Today, on average, domestic credit provided by the financial sector amounts up to some 73% of GDP (nominal) in Africa, whereas in the rest of the world this is 2.5 times higher, reflecting a significantly more substantive financial sector.

Figure 2-13: Domestic credit as % of GDP by country (2012)

Financial sector Africa is significantly smaller than in the rest of the World

Domestic credit by Financial Sector as percentage of GDP



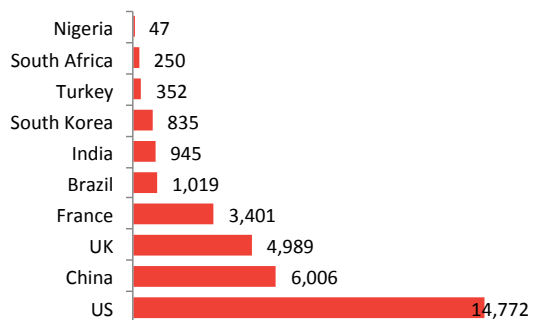
Source: World Bank, Development Indicators, IMF (GDP figures)

Also when looking at the two largest economies in Africa, Nigeria and South Africa, it has to be concluded that the size of their respective banking sectors is a fraction of the size of the banking sector in some of the world’s largest economies.

Figure 2-14: Domestic Banking Assets 2009 by country

The banking sector in the two largest economies of Africa represents only a fraction of domestic banking assets in the world’s largest economies.

In US\$ billions



Source: Statista

It is obvious that the domestic banking sector in Africa does not have the capacity to meet the financing gap. Already the South African banks are the most active infrastructure finance banks

⁴ Project Finance Magazine
PIDA Financial Structuring Plan

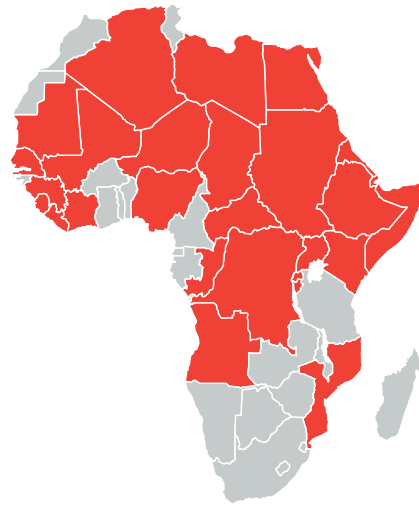
on the continent, although the annual infrastructure finance gap of US\$ 48 billion would require 20% of their asset base, which is unrealistic. Without a doubt, Africa will have to keep tapping into the global project finance market, to which it will have to give sufficient comfort in view of high country risks and high inflation.

High country risks

It will not come as a surprise that capital providers such as investors and banks consider Africa as a high risk region and are consequently reluctant to provide capital, unless the return on capital is sufficient to offset these risks. These country risks are not just risk perceptions but are based on the historical development of African countries, which has not been or even is not without armed conflicts. The last decade alone saw 28 out of the 54 African countries experience some level of armed conflicts, be it acts of terrorism, civil wars or revolutions. Investors will want protection if such events occur.

Figure 2-15: Africa Armed Conflicts 2000 - 2013

28 out of 54 African countries have experienced some level of armed conflict in the past decade

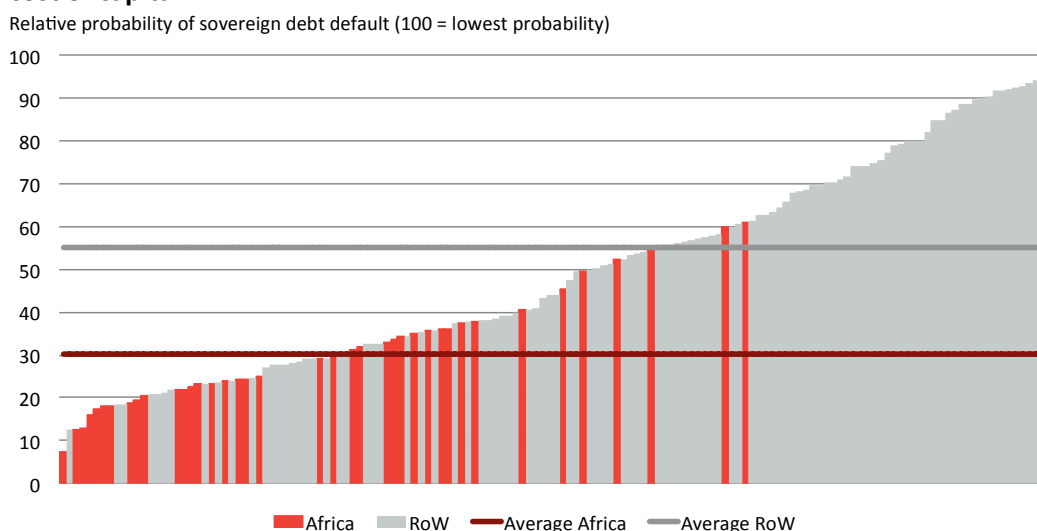


Source: ECDP Conflict Encyclopedia

Country risks also refer to a government's ability to adhere to contractual obligations and avoid default on sovereign debt. On average African countries have a significantly higher probability of sovereign debt default than the rest of the world, i.e. almost twice as high, implying a higher country risk premium driving the cost of capital up. Investors depending on payments or guarantees from African governments will want assurance that contractual obligations will be met and protection from any breach of contract.

Figure 2-16: Probability of Sovereign Debt Default by country

On average African countries have a significant higher probability of sovereign debt default than the rest of the world implying a higher country risk premium driving the cost of capital



Source: Institutional Investor's Country Credit Ratings, March 2013

As a consequence capital providers in Africa are – contrary to PPP financiers in developed countries – more neutral towards demand risk versus government payment risk. The latter is preferred by capital providers in developed countries, being considered less uncertain than income from user charges. In Africa the uncertainty of demand is considered similar to the uncertainty of government payments⁵.

High inflation

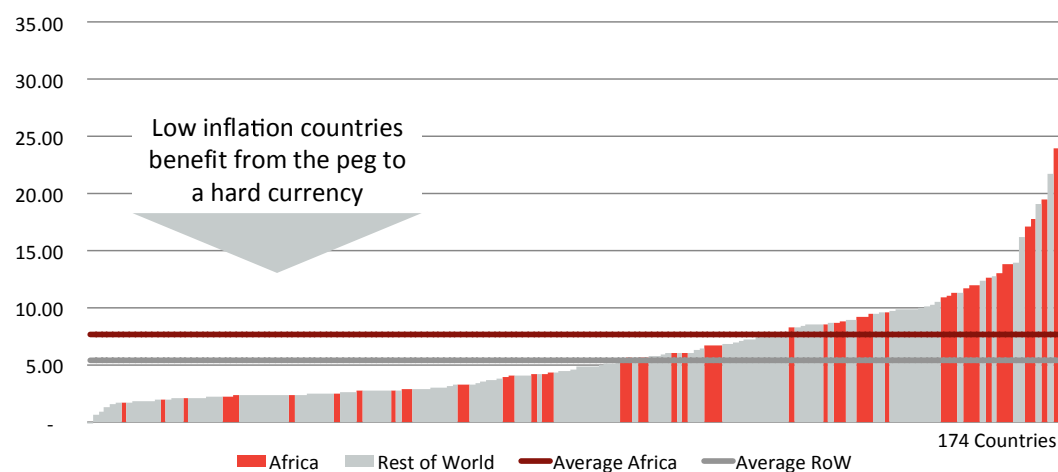
A second issue capital providers in Africa are facing is the high level of inflation. In particular countries with a floating exchange rate have experienced hyperinflation in the past decade, whereas countries with a currency pegged to a hard currency like the euro or the dollar have benefited from the stability related to the hard currency. Average inflation in Africa has amounted up to 7.7% in the past decade. This significantly exceeds the 5.4% average in the rest of the world, driving the cost of capital for private finance up. Given the long-term nature of cost recovery schemes for privately financed infrastructure it is essential that capital providers are somehow compensated for inflation to ensure that they meet their return requirements in real terms.

⁵ As confirmed by a recent market consultation for a possible PPP for the envisaged widening of the Accra – Takoradi road in Ghana.

Figure 2-17: Average Inflation 2003 - 2013 by country

Average inflation in Africa of 7.7% in the past decade exceeds the 5.4% average in the rest of the world driving up the cost of capital for private finance

Average Inflation 2003 - 2013



Source: World Bank, Development Indicators

High currency risks

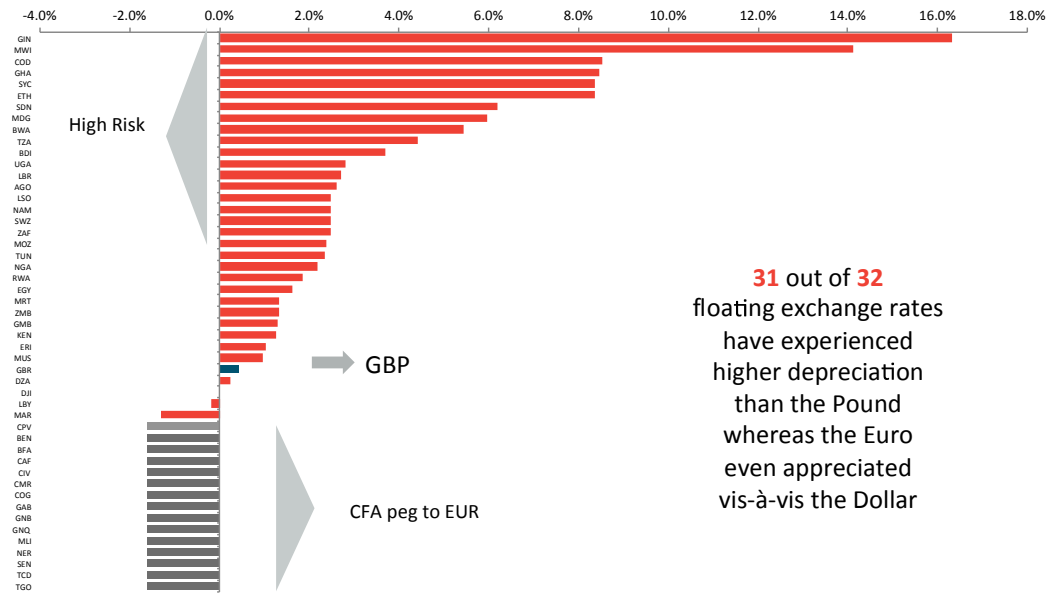
Tapping into the global project finance market also introduces the currency risk, in particular in those countries that have a floating exchange rate, i.e. 32 out of the 54 African countries. Unfortunately in 31 out of those 32 countries with floating exchange rates, the depreciation over the period 2003 – 2013 *vis-à-vis* the dollar has been higher than for example the pound. For 10 countries, the average annual depreciation has been more than 4%, and in some exceptional cases even 14% and 16% (Mali respectively Guinea). That means that local currency revenues have to grow each year by such rates in order to meet hard currency debt service obligations.

In most cases, the response of central banks to currency weakness has been to tighten monetary policy. This does seem to work and has brought currency stability. But it also means that in many of these countries, nominal interest rates are high, which also drives the cost of capital up. On the plus side, given the limited, or weak, monetary policy transmission mechanism, these high rates have only had a moderate impact on economic growth. But more worryingly, faced with further pressure on their currencies and already high interest rates, the next temptation for many central banks may be to impose stricter capital controls or place more restrictions on foreign exchange markets.

Figure 2-18: Average Currency Depreciation 2003 - 2013 vis-a-vis US\$

Most African currencies have experienced high depreciation implying a high premium for currency risk driving up the cost of capital for private finance

Average currency depreciation pa vis-a-vis USD 2003 - 2013



31 out of 32 floating exchange rates have experienced higher depreciation than the Pound whereas the Euro even appreciated vis-à-vis the Dollar

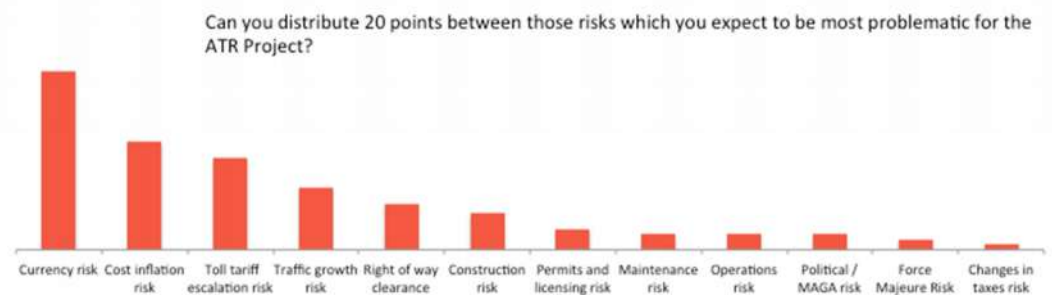
50 African Countries and UK

Source: World Bank, Development Indicators

A recent market consultation for the envisaged widening of the Accra – Takoradi road in Ghana through PPP has even concluded that the currency risk is considered to be the highest risk for the implementation of the project.

Figure 2-19: Market Feedback on Risks for Accra – Takoradi Road PPP in Ghana

Currency risk considered most prominent for the Accra – Takoradi Road PPP in Ghana



Source: RebelGroup

2.4 PIDA Challenges

In March 2014, Aurecon presented an update of the PIDA Priority Action Plan and estimated its total capital value at US\$ 74.9 billion⁶. The main sectors include hydropower, rail, roads, gas pipelines, transmission lines and seaports.

Figure 2-20: Breakdown PIDA Priority Action Plan



Source: Aurecon (March 2014)

Although the update concluded also that the majority of the underlying projects was assumed to be delivered through a conventional construction contract, it is questionable whether such financial resources are available within the public domain. Moreover the respective sectors are at least to some extent quite suitable for private financing subject to certain conditions and structures.

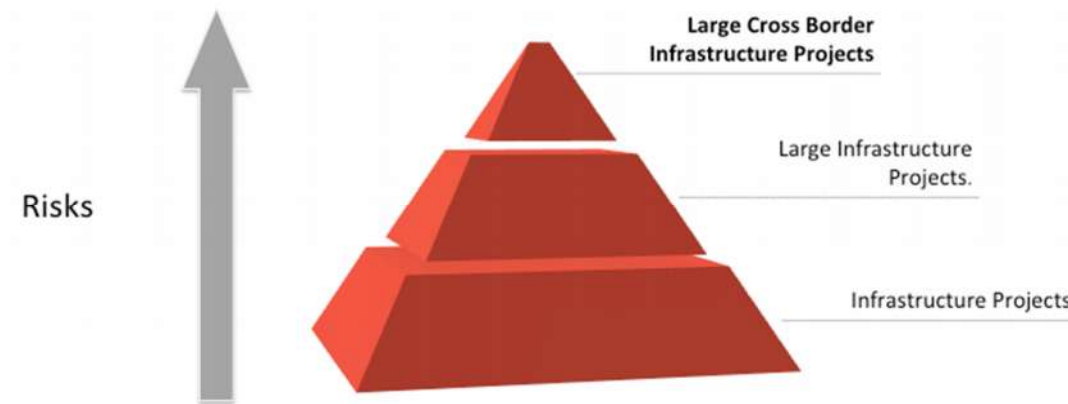
Infrastructure projects in general are already considered risky projects i.e. facing significant uncertainties with regard to costs and possible demand as illustrated by some recent research outcomes.

- "Average cost overrun of hydropower projects is 56%" (Bent Flyvbjerg)
- "Actual traffic on toll roads is 75% of the estimate" (Standards & Poor)
- "10 out of 11 railway concessions in Africa have failed" (World Bank)
- "60% of infrastructure projects have more than 1 year delay" (EIB)

This risk exposure increases when projects become larger and more complex. Regional infrastructure projects, which are mostly large in size, are considered to be the most risky projects as they also include inter-country risks.

⁶ Aurecon, Consultancy Services for Updating PIDA Priority Action Plan (PAP) Project Fiches (March 2014)

Figure 2-21: Risk Profile Pyramid



The high-risk category applies to the PIDA projects, which are characterised by:

- Very large investment size
- Dependencies (e.g. HPPs requiring substantial investments in transmission lines, etc.)
- Potential inter-governmental character (cross-boundaries)
- Very long-term repayment periods

In conclusion, private finance needs risk mitigation

Private capital providers to infrastructure in Africa, both investors and banks, are exposed to significant risks and uncertainties. This applies in particular to the PIDA projects being mostly large and cross-border projects. To increase private infrastructure financing for PIDA, it is essential that sufficient and affordable risk mitigating instruments are in place and that the legal environment provide sufficient comfort and protection to capital providers.

The main challenges for financing PIDA projects include:

- High-risk projects
- Limited government resources
- High costs of private financing
- Limited domestic supply of private capital
- Poorly conducive environment

3 LEGAL AND INSTITUTIONAL REVIEW

3.1 Introduction

We have conducted a high level analysis of the legal, regulatory and institutional framework in force in each of the 54 African countries eligible for the PIDA projects⁷, with a view to establish a mapping of some of the key features which are relevant for the implementation of infrastructure projects on the African continent. The annex provides a detailed overview of the legal and regulatory framework per country.

The mapping resulting from our analysis, which is set out in this section, aims at:

- providing a basis for the more specific legal, regulatory and institutional analyses of each of the showcase projects;
- anticipating some of the key issues which would have to be dealt with when implementing infrastructure projects in certain jurisdictions;
- highlighting key institutional supports which could be available for the implementation of such projects in each jurisdiction; and
- assessing the "replicability" of the legal structures recommended for the showcase projects in other jurisdictions on the continent.

The mapping described in this section has been produced in accordance with the methodology set out below:

- We have gathered the following information on the legal, regulatory and institutional frameworks for each jurisdiction:
 - copies of the various laws, decrees, regulations and other relevant regulatory documents;
 - information on existing regional or national initiatives to promote the development, implementation and/or financing of infrastructure projects in the PIDA countries; and
 - information on existing precedent infrastructure projects developed with private financing in such jurisdiction.
- We have summarized the information obtained in one country fiche for each jurisdiction, which are attached as Annex II to this report.
- On the basis of information set out in the summary fiche, we have prepared a mapping of the following criteria that are set out in the sections below:
 - Existence of PPP precedents which have been developed in each country;
 - General legal system;
 - Existence of specific PPP legislation covering the PIDA sectors⁸;
 - Institutional support for PPP (at REC level or locally); and
 - Business-friendliness of the local environment (including investor protection, enforceability of arbitral awards and general business climate).

⁷ Since some of the projects of the PIDA priority action plan are continent wide, the countries eligible to the PIDA project are all of the African Countries

⁸ The sectors covered by PIDA include (i) transports, (ii) energy, (iii) water and (iv) ICT

The laws and regulations published after 30.06.2014 were not taken into account for the purpose of this mapping.

In this section, the following concepts are used:

- **"Public Private Partnership" -"PPP" or "PPP project"**, for the purpose of this mapping, means a partnership between the public and private sectors pursuant to a long term contractual agreement and covering the design, construction, financing and/or ongoing operation and maintenance of an infrastructure asset⁹.
- **"PPP Law"**: a law specifically regulating any form of PPP including but not limited to Concessions, BOT, PFI and including any implementing regulation and any form of governmental act regulating PPP.
- **"Contracting Authority"**: a public authority empowered to award a PPP and enter into Project Agreements.
- **"PPP unit"**: a specialized institution/agency/ministerial department established to promote and take care of PPP.
- **"Project Agreement"**: one or several agreement(s) between the Contracting Authority and the Private Party regulating their respective rights and obligations with respect to the PPP project.
- **"REC"** means:
 - the eight Regional Economic Communities recognized under the African Union, including the Arab Maghreb Union (UMA), the Common Market for Eastern and Southern Africa (COMESA), the Community of Sahel-Saharan States (CEN-SAD), the East African Community (EAC), the Economic Community of Central African States (ECCAS), the Economic Community of West African States (ECOWAS), the Intergovernmental Authority on Development (IGAD) and the Southern African Development Community (SADC); and
 - other regional communities further described in this report, including the Southern African Customs Union (SACU), the West African Economic and Monetary Union (UEMOA), the Economic and Monetary Community of Central Africa (CEMAC) and the Economic Community of the Great Lakes Countries (ECGLC).

3.2 Legal Systems

Legal systems currently in force in Africa can generally be broken down into three groups. Certain countries, such as Algeria and Gabon, are based on a civil law system, while others, such as Nigeria and Zambia, have adopted a common law system. A third group includes "mixed" legal systems, consisting in a combination of different legal traditions including the two first legal systems, as well as elements of customary law and Islamic law; for example, legal systems in South Africa and Somalia are a combination of common law and civil law. The following sections summarize the main features of the different African legal systems and their impacts on the implementation of PPPs.

⁹ PPP Agreements notably include, for the purpose of this Report, the following structures:

- PFI-type arrangements under which no delegation of public service is granted and where the operator is paid on the basis of a rent and/or service fee to be paid by the granting authority over the long term operation period, corresponding to the availability and performance of the new or rehabilitated public facilities or services rendered; and
- Concession-type arrangements, where the management of a public service is delegated to the Operator and where the revenue of the operator is based on the proceeds expected from the actual operation of the project (generally from the end user).

Civil law system

The civil law systems in Africa are, for the most part, inspired by the French legal system. One distinctive feature of civil law systems is that their laws can be found in codes and/or in regulations which will be binding on courts.

In most civil law countries, a separate body of administrative law will apply to PPPs. The public authorities under civil law jurisdictions are generally subject to derogatory rules in order to protect the general public interest. As such, public authorities are not subject to the same rules as private entities, even while contracting commercial contracts with private investors. Unless the Project Agreement specifies that the parties have agreed to arbitration, the PPP contract will be enforced by the administrative courts.

One of the most important features of contracts with public authorities in civil law jurisdictions is the rule that the rights of a private party arising under a contract entered into with public authorities can be limited by public interest. Therefore, the contracting public authority would typically be entitled to unilaterally (i) modify aspects of the contract if such change was deemed to be in the public interest, for instance the specification of the service to be provided but however not the contract's financial provisions or its fundamental nature; and (ii) cancel the contract early although in this case it would have to compensate the private party. In addition, the private investor under such a contract entered into with a public authority may not suspend the execution of its obligations under the contract, even in the event of a breach by the contracting authority. This derives from the principle of the continuity of public services.

Other significant civil law features regarding PPP arrangements are as follows:

- **Default penalties:** the private operator's commitment default penalty amount which is fixed by contract may be reduced or increased by a judge (it cannot however be reduced below the actual damages suffered); countries applying this rule include Mali, Tunisia and Algeria;
- **Bankruptcy:** the process focuses on liquidation although reform of some bankruptcy laws such as French and OHADA¹⁰ countries is now permitting reorganisations of debtors before they become insolvent;
- **"Corporate benefit" or "financial assistance":** this concept prevents a target company and its subsidiaries from granting guarantees (up-stream and cross-stream) or securities in connection with the acquisition of the target company's shares; the OHADA countries (Article 639 of Uniform Act related to commercial companies) and Algeria (Article 715 bis 6o of the Commercial Code) set out similar concepts;
- **Security interests and syndicated loans:** in PPP arrangements involving private financing (e.g. syndicated loans) such as BOTs, issues may arise from the lack of flexibility due to the absence of the concept of trust, as well as to the need to register security interests each time participations in a loan agreement are transferred to new lenders, as this involves additional registration costs and notarial fees. In OHADA countries, security interests need to be filed with a public notary in order to be formalised, each OHADA country has its own security registration system, and the filing process differs from one OHADA country to another.

¹⁰ OHADA is the French acronym for *Organisation pour l'Harmonisation en Afrique du Droit des Affaires* (Organization for the Harmonization of Business Laws in Africa).

Within the area of infrastructure, it is also important to note that certain forms of infrastructure projects are referred to by well-defined legal concepts in civil law jurisdictions. “*Concession*” and “*Affermage*” have particular meanings and structures that may not be replicated as such in a common law country.

Common law system

The common law system applied in African countries is generally based on English law, with the notable exception of Liberia, which has a common law system based on US law.

A common law system is generally less prescriptive than a civil law system. Key features of a common law system include: uncodified laws, binding judicial precedents and extensive freedom of contract. Implied terms are generally limited, it is therefore important to set out all the terms governing the relationship between the public authority and the private investor in the contract itself. In most cases contractual relationship is subject to private law and courts that deal with related issues.

As for bankruptcy in common law jurisdictions, the emphasis is placed on seeking a reorganisation rather than a liquidation when a business finds itself in financial trouble. Indeed, a central concern is saving the business.

Under a common law system, one generally finds a greater flexibility in granting different types of security over assets to secure commercial financing, especially in comparison to civil law systems. In addition, the concept of trusts enables security interests to be held by a trustee on behalf of lenders in a syndicated loan situation without the need for a formal transfer or a re-registration of security interests in the name and for the benefit of new lenders.

“Mixed” legal system

Countries belonging to a third group of jurisdictions find themselves in the southern tip of the continent and have a hybrid legal system: Botswana, Lesotho, Namibia, South Africa, Swaziland and Zimbabwe have legal systems that are based on (i) civil law for the principles applicable to contract law and (ii) common law for criminal and civil procedure and corporate law. They combine the elements summarized above for each of these fields.

Other legal influences

Most African countries also incorporate elements of a separate legal system based on either customary law or religious law (Islamic law). A detailed analysis of each of these jurisdictions’ legal systems should be carried out in order to determine their impact (if any) on the implementation of a PPP project. This will be done in relation to the showcase projects.

- **Customary law**

As the term implies, customary law is based upon the customs of a community. Common attributes of customary legal systems are that they often result from oral tradition, they embody an organized set of rules regulating social relations, and they are agreed upon by members of the community. It is important to note that customary law differs from one country to another. While its impact on PPP and Project Agreements may be limited, particular attention should nevertheless be paid to the influence that customary law can have on land property issues in some jurisdictions.

- **Islamic law**

In many African countries, Islamic law operates in tandem with a civil law or a common law system. However, even if some African states are members of the Organisation for Islamic Cooperation (for instance Benin, Côte d'Ivoire, Niger and Guinea), Sharia law has no role in these countries' judicial system and should consequently not affect the implementation of PPP projects.

- **Legal Harmonization through regional organizations**

Several regional organizations have issued transnational rules and regulations, which have allowed a certain level of harmonization in some regions of the continent. The regional institutional framework is studied in more details in paragraph 3.6, but the following regional harmonization should be mentioned here for their impact on the applicable legal framework of each of their member states:

- **OHADA**

The highest level of harmonization has been reached through OHADA: OHADA aims at unifying the business laws of its member states to provide investors with a legal framework of certainty, clarity and security. To reach this objective, OHADA has issued nine so-called Uniform Acts which are directly applicable to all member states and the provisions of which prevail over any national laws governing the same matters. However the OHADA treaty does not prevent a member State from enacting specific legislation, provided that it does not conflict with the Uniform Acts. The Uniform Acts cover, respectively:

- General commercial law (1997);
- Commercial companies and economic interest group (1997, as amended in 2014);
- Securities (1997, as amended in 2010);
- Simplified recovery procedures and measures of execution (1998);
- Bankruptcy (1998);
- Arbitration (1999, amended in 2014);
- Accounting (2000);
- Act regulating contracts for the transportation of goods by road (2003); and
- Cooperative companies law (2011).

- **Customs and foreign exchange control regulations**

UEMOA (Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo), EMCCA (Cameroon, Central African Republic, Congo-Brazzaville, Gabon, Equatorial Guinea and Chad) and SADC (Angola, Botswana, Democratic Republic of the Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe²¹) specifically aim to strengthen the competitiveness of their member states by creating an open and competitive market, harmonizing their customs and exchange control regulations and coordinating national sector-based policies. As a result of the harmonization of custom duties, goods imported from a member country to another member country should in principle be free of customs duties.

EMCCA issued an investment code that regulates laws applicable to foreign investors and harmonizes customs duties and exchange control regulations. The

²¹ Noting that DR Congo, Seychelles and Angola are not participating to the Free Trade Area

investment code was adopted with the view to guarantee investors judicial and financial security and stability to encourage investments in the member states.

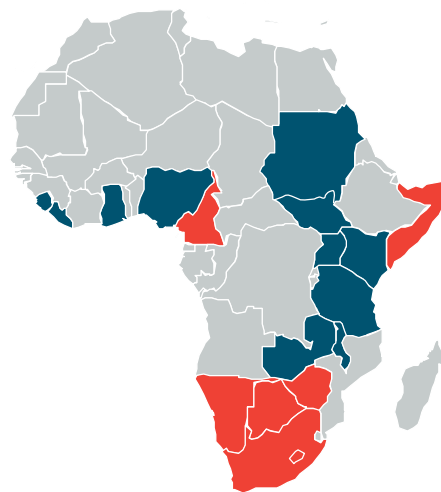
The UEMOA foreign exchange regulation is stated in the UEMAO regulation n°Rog of 20 December 1998. Under this regulation, operations within UEMOA States are free and non-restricted, whereas operations between UEMOA States and foreign countries are subject to specific conditions.

Please note that both UEMOA and EMCCA have adopted a common currency, both named the CFA Franc (ISO Currency Code XAF for EMCCA and XOF for UEMOA).

Figure 3-1: Legal Mapping

33 countries' legal systems are inspired by civil law;
12 countries' legal systems are under common law influence;
9 countries have their legal system based on a combination of civil and common law.

■ Civil Law System
■ Common Law System
■ Mixed Law System



Source: Consultant

3.3 Financing Implications

Loan Agreements

Both common and civil law African States provide a rather flexible legal framework in which the parties are generally free to set forth contractually the terms of their arrangement. As a result, most forms of financing and all types of loan agreements can be put in place (including all kind of financing leases, asset finance loans, project finance loans, export credit loans, inter-creditor agreements, etc.).

As a general rule and except for specific cases, no governmental approval is required when a loan agreement is signed or performed.

For the sake of efficiency, our experience furthermore shows that it is advisable to avoid too complex schemes or stipulations. Likewise, standard form loan agreements generally used in Western countries (e.g. Loan Market Association standard agreements) are not always adapted to an African context.

In any case, a review of each legal system is required in order to analyze in more details the provisions that apply to loan agreements.

- **Civil law and OHADA zone**

There is no harmonized law or OHADA uniform act in relation to general contract law, civil law or banking law. Therefore, the national laws of each country apply. Some African countries which have a civil law background still refer to the French civil code used in the late 1960s.

Given the absence of unified contractual law, each State has its own legal rules governing topics of relevance for finance transactions.

For instance:

- **Usury** - Countries such as Guinea (Conakry), Mali or Algeria have not implemented any usury rules. As a result, interest rates applied by lenders are not capped by any maximum interest rate. On the contrary, certain countries such as Morocco apply a maximum interest rate which is revised annually and which may not be exceeded. In Algeria, there is no usury rate but exchange control regulations provide a possible limitation of transfer by the Algerian Bank in case the interest rate is "too high".
- **Contractual penalties** - In Guinea (Article 719 of the Civil Code), Mali (Article 135 of the general civil law) or Algeria (Articles 177 and 183 of the Civil Code), the judge has no discretionary power to reduce contractual penalties (except if the debtor's undertaking has been partially performed). In Morocco, the judge is vested with the power to reduce liquidated damages or contractual penalties when they obviously exceed the amount of the damage suffered (Article 264 of the Dahir on obligations and contracts).
- **Common law zone**
Legal systems of common law countries (namely Commonwealth countries in Africa) are generally considered to be rather creditor (and so lender) friendly. Specific attention must however be paid to guarantees, as the level of protection for guarantors is often very high. For instance, there must be consideration for the provision of the guarantee, and upstream guarantees are particularly difficult. Lenders can also lose their rights if they do not exercise them in due time or properly.

Securities

All kinds of securities are generally available in African countries: mortgages, pledges, guarantees, first demand guarantees, escrow arrangements, etc.

Although some legal concepts inspired by common law do not exist per se in civil law countries (e.g. floating charges), it is usually possible to implement similar mechanisms in these countries, thanks to the global flexibility of contractual law.

Generally speaking, securities and collateral packages do not require any governmental approval when being executed or implemented. However, they are sometimes subject to specific formalities (e.g. registration with land authorities for a mortgage).

Bankruptcy

African countries generally implement insolvency and bankruptcy regulations protecting debtors which are unable to pay their debts. Solutions generally range from arrangements negotiated with creditors to the liquidation of the debtor. Loan agreements should therefore contain provisions enabling creditors to anticipate an insolvency situation (covenants, reporting) or to exercise recourses against third parties.

Islamic finance

Several African countries are Islamic obedient. However most African countries do not impose Islamic finance legal requirements for investments and Islamic finance is more often used as an additional alternative to raise funds than as a strict religious binding requirement. Economic and financial criteria (i.e. cost and duration of loans) remain investors' main concerns.

Most Islamic finance instruments and Islamic bank services offered in Africa are located in North African countries (i.e. Algeria, Morocco, Tunisia and Egypt). Specific regulations adopted in these countries remain very simple and cannot be compared with that of Gulf or South-East

Asian countries. They mainly focus on the establishment of Islamic banks and the administrative rules applying to the latter. They do not set up any constraining legal framework which would apply to all investments. Moreover, whenever implemented, such regulations remain optional and investors can freely decide whether or not to use Islamic finance instruments.

3.4 PPP Laws

An increasing number of jurisdictions in Africa have either passed, or are in the process of passing, laws relating to the implementation of PPP projects. We have reviewed the legal framework of each PIDA jurisdiction in order to determine whether such PPP laws have been adopted.

Need for PPP laws

The absence of a PPP law does not necessarily mean that infrastructure projects cannot be implemented on a PPP basis. In fact, the need for a specific PPP law depends heavily on the legal and regulatory constraints imposed on PPPs by the underlying legal system. As a result, a specific PPP framework might not be required if the existing legal framework is flexible and permissive enough to allow for the standard PPP contractual arrangements to be implemented. This would typically be the case in common law based jurisdictions. For instance, outside Africa, the United Kingdom has been able to develop a strong market for PPPs without the need for passing a specific legal instrument.

However, civil law jurisdictions (as are most of the PIDA eligible countries) generally have detailed laws and regulations imposing mandatory requirements as described in section 3.3 above.

As a result, there may be a number of areas where existing legal frameworks need to be modified in order to allow for the required contractual flexibility for successful infrastructure PPP projects. Such modifications could include enabling the grant of step-in rights to lenders or the implementation of detailed, transparent and negotiated procurement processes.

Depending on the source of the existing legal constraints, such specific frameworks could take place through amendments to the existing legislation or the issuing of secondary legislations or decrees or of a specific PPP law.

International development agencies and organisations have in the past detailed cases in which a PPP law would be required or desirable, and have provided detailed guidelines in this respect¹² in order to promote the implementation of a legal framework likely to ease the implementation of PPPs in African countries.

Please also note that some civil law jurisdictions (such as Morocco and Algeria), while not having a specific PPP legislation, have some fairly detailed regulation enabling some cooperation between the state and a foreign investor (including under concession laws).

Challenges and lessons from the existing PPP legislations

Based on our experience working with recently adopted PPP laws in African jurisdictions, the passing of a specific PPP law may not always achieve the goal of creating a consistent

¹² Including, but not limited to

- UNCITRAL Legislative Guide on Privately Financed Infrastructure Projects
- EBRD Core Principles on modern concession law
- OECD basic elements on law for Concession Agreements

framework for implementing PPPs and may instead bring more complexity. A key issue is to ensure that the scope of the new PPP law is defined precisely enough and clearly excludes the application of other public procurement or other regulations likely to affect PPPs.

One good example of this issue is Niger: the Ordinance No. 2011-07 dated 16 September 2011 institutes a general regime for PPP Project Agreements which broadly applies, among others, to the financing of an infrastructure, of works or of public services, and provides for detailed award and negotiation mechanisms (including, in certain limited cases, recourse to direct negotiations).

In parallel, Niger has also implemented a new Public Procurement Code dated 29 December 2011, and is also bound by the provisions of the Directive No. 4/2005/CM/UEMOA, which both regulate the granting of public service concessions. As such, there is an overlap in the scope of the PPP Law on the one hand and the Public Procurement Code and the UEMOA directive on the other, which creates uncertainty as to which applicable legal framework should be applied by the Contracting Authorities and the private party. In particular, the direct negotiation mechanism, allowed by the PPP Law in Niger, is prohibited under the Directive No. 4/2005/CM/UEMOA, which creates uncertainty as to the options available to private parties willing to develop infrastructure projects on the basis of a PPP.

Consequently a careful analysis of both the specific PPP legislation as well as the existing legal and regulatory framework, both at the local and regional level, is required in order to determine whether the legal framework applicable to PPPs in a given jurisdiction is appropriate.

Please note that at this stage, we have not conducted this analysis and have not reviewed the appropriateness of all specific PPP legislations. This will be done for each showcase project to determine the best legal basis on which to structure each of them.

Mapping of PPP laws in PIDA Countries

A number of PIDA eligible countries have recently passed, or are in the process of passing, specific PPP laws with a view to providing a clear legal basis for the development of, inter alia, infrastructure projects. 19 countries in Africa have now adopted specific PPP regulations, with another 7 countries being in the process of implementing them.

Table 3-1: PPP Law Mapping

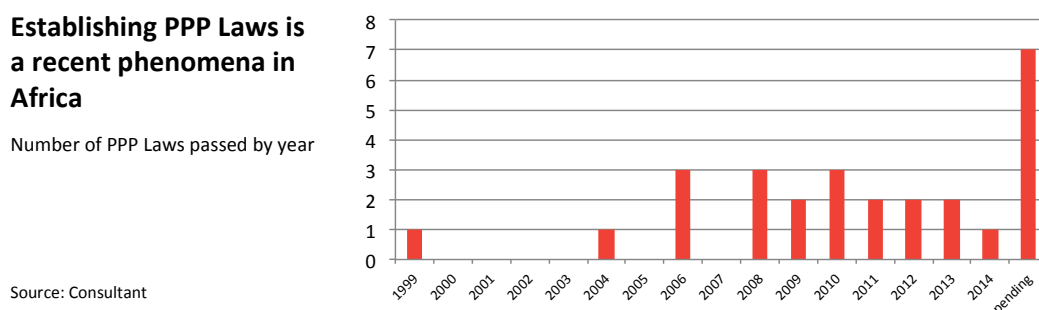
Specific PPP legislation implemented	Specific PPP legislation in process	No specific PPP Legislation
--------------------------------------	-------------------------------------	-----------------------------

Angola	Morocco ¹³	Benin	Algeria	Lesotho
Burkina Faso	Mozambique	Libya	Botswana	Liberia
Burundi	Niger	Morocco	Cape Verde	Mali
Cameroon	Nigeria	Rwanda	CAR	Mauritania
DR Congo	Senegal	Uganda	Chad	Namibia
Egypt	Sierra Leone	Ghana	Comoros	Rep. of Congo
Côte d'Ivoire	South Africa	Madagascar	Djibouti	Sao Tome
Kenya	Tanzania		Equatorial Guinea	Seychelles
Malawi	Tunisia		Eritrea	Somalia
Mauritius	Zambia		Ethiopia	South Sudan
			Gabon	Sudan
			Gambia	Swaziland
			Guinea	Togo
			Guinea Bissau	Zimbabwe

Incidentally, we note that seven out of the nine common law based countries, (Ghana, Kenya, Malawi, Nigeria, Sierra Leone, Tanzania and Uganda) have either passed or are in the process of passing a specific PPP Framework, while only 7 out of the 17 members of the OHADA based countries (Benin, Burkina Faso, Cameroon, DR Congo, Côte d'Ivoire, Niger and Senegal) have done the same.

We also note that most of the PPP laws have been passed fairly recently (see graph below), so that the impact of such passing on the development of PPPs is still difficult to assess.

Figure 3-2: PPP Laws in Africa by year



To determine the extent to which the existence of a PPP Law facilitates the implementation of PPP projects, we can try to correlate the passing of PPP Laws with the number of PPP projects successfully implemented in these countries (as more precisely described in Section 3.2 above).

Restricting the analysis to the countries that have passed PPP legislations taking into account the structuring and closing time of PPP projects in these areas, out of the 14 countries¹⁴ where PPP laws have been passed before 2010, ten (10) have seen the successful implementation of PPP projects.

¹³ Morocco has adopted the Law n° 54-05 relative à la gestion déléguée which allows the implementation of concessions and BOT but is also in the process of adopting a broader and more specific PPP Legislation

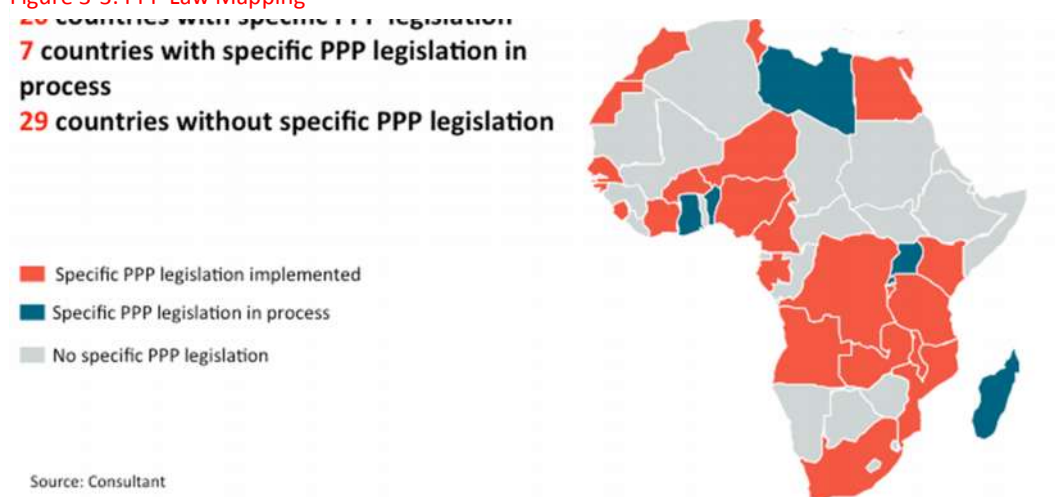
¹⁴ Burundi, Cameroon, Egypt, Malawi, Mauritius, Morocco, Nigeria, Senegal, Sierra Leone, South Africa, Swaziland, Tanzania, Tunisia and Zambia

On the contrary, among the 34 countries where no PPP law is currently in force, 15 (Algeria, Benin, Botswana, Cape Verde, Djibouti, Gabon, Ghana, Guinea, Liberia, Mali, Republic of Congo, Rwanda, Togo, Uganda, Zimbabwe) have to date been able to successfully implement PPP projects.

Please note that this correlation may be explained by many factors other than by the mere existence of a PPP Law, so that the importance of the legal framework alone should not be overstated. Amongst others:

- the passing of a PPP Law generally signals strong political support towards the development of PPPs, and may be accompanied by initiatives to promote private investment in infrastructure (e.g. investors conferences) which create traction in this sector; and
- together with the passing of such PPP laws, governments generally implement institutional support and build capacity to drive the implementation of such PPP laws: as mentioned previously, the lack of proper training and experienced teams is often a strong factor limiting the development of PPPs in our experience. Please see the following paragraph.

Figure 3-3: PPP Law Mapping



3.5 Institutional Mapping

Beyond the need for a suitable legal and regulatory framework, political and institutional support is key to ensure the progress of infrastructure projects (by way of concessions, PPPs or otherwise). In particular, the public procurement framework relating to PPPs is generally complex, recent and consequently requires a significant level of expertise to be implemented. As a result, the existence of dedicated institutional support, in the form of PPP units or otherwise, is critical to the success of the implementation of such projects.

We have examined whether such institutional support for PPP and/or infrastructure projects was available (i) on a regional level, and more specifically at the levels of the RECs, and (ii) in each of the PIDA jurisdictions.

Please note that we have not reviewed in detail the constitution, efficiency or track record of each such institutional support mechanism: the mere existence of some institutions dedicated to supporting PPPs may not be sufficient. Our experience gained during the implementation of

PPP projects – especially when such projects are based on recent PPP laws – is that (i) many PPP units are not sufficiently staffed or (ii) have not received adequate training to fulfil their roles.

We also note that institutional support is available with international organisations or initiatives, such as the IPPF (hosted by the NEPAD), the African Legal Support Facility (hosted by AfDB) or the Public-Private Infrastructure Advisory Facility (PPIAF), as well as from specialised private advisory firms. Such institutional support may be instrumental in providing the necessary technical expertise to structure, award, negotiate, implement and close PPP projects in the infrastructure sector, as well as to build the required capacity within the regional and national institutions to manage such PPP projects.

Regional level: the role of Regional Economic Communities

From a regional point of view, we note that PPP initiatives exist within the Regional Economic Communities (RECs), which could contribute to the successful implementation of regional projects by ensuring a proper supranational coordination between all stakeholders, in particular in order to address particular issues caused by the cross-border nature of these projects. This section summarizes the PPP and infrastructure support and awareness found at the level of each REC (where applicable) which we have identified, and available to help mobilize existing support ahead of the implementation of the showcase projects.

Table 3-2: Overview Regional Economic Communities

COMESA	EAC	ECCAS	ECOWAS	SADC	EMCCA (CEMAC)	WAEMU (UEMOA)	SACU	ECGLC
Burundi	Burundi	Angola	Cape Verde	Angola	Cameroon	Benin	Botswana	Burundi
Comoros	Kenya	Burundi	Benin	Botswana	Central	Burkina Faso	Lesotho	DR Congo
DR Congo	Rwanda	Cameroon	Guinea-	DR Congo	African	Guinea	Namibia	Rwanda
Djibouti	Tanzania	CAR	Bissau	Lesotho	Republic	Bissau	South Africa	
Egypt	Uganda	Chad	Guinea	Madagascar	Chad	Ivory Cost	Swaziland	
Eritrea		Congo	Sierra Leone	Malawi	Congo	Mali		
Ethiopia		DR Congo	Gambia	Mauritius	Eq Guinea	Niger		
Kenya		Gabon	Ghana	Mozamb.	Gabon	Senegal		
Libya		Eq. Guinea	Mali	Namibia		Togo		
Madagascar		Sao Tome	Burkina Faso	Seychelles				
Malawi			Côte d'Ivoire	South Africa				
Mauritius			Nigeria	Swaziland				
Rwanda			Liberia	Tanzania				
Seychelles			Togo	Zambia				
South Sudan			Senegal	Zimbabwe				
Sudan			Niger					
Swaziland								
Uganda								
Zambia								
Zimbabwe								

- **Common Market for Eastern and Southern Africa (COMESA)**

COMESA is active in the infrastructure sector, including through the ongoing establishment of the COMESA Infrastructure Fund, with targeted resources of approximately US\$ 3 billion.

We also understand that COMESA has implemented a division which is specialised in infrastructures and energy and which has stated that the increase of private sector participation in infrastructure development through the development of the legal and institutional frameworks for PPPs lies within its strategic objectives.

- **East African Community (EAC)**

EAC undertakes a sectorial policy to promote the development and financing of infrastructure projects in East Africa, and has identified a list of key infrastructure projects to be promoted from 2012 to 2020 in the **road, rail and communication** sectors. In particular, EAC is in the process of setting up the EAC Development Fund (EACDF), which aims at addressing, among others, funding for infrastructure projects.

In the **energy** sector, EAC is also active with a particular focus on renewable energy: a Regional Strategy on Scaling-Up Access to Modern Energy Services has been prepared with assistance from the UNDP and GTZ.

- **Economic Community of Central African States (ECCAS)**

On **transportation**, the ECCAS had adopted a Consensus Transport Plan (PDCT-AC) to develop certain transport infrastructure projects. The ECCAS region had expressed its interest in developing some of these key transportation project by way of a PPP, but to our knowledge this has not yet been implemented.

On **energy**, an organization named Central Africa Energy Pool (*Pool Énergétique de l'Afrique Centrale - PEAC*) has been created by the ECCAS to promote the development of energy projects (with a focus on hydroelectricity projects) in Central Africa, and has stated as its priorities to promote 13 projects and seek financing accordingly.

- **Economic Community of West African States (ECOWAS)**

Two directorates of ECOWAS deal with infrastructure projects:

The **Transport and Telecommunications Directorate**, which we understand coordinates many transportation projects in the area, including road, highway and joint border post projects; and

The **Energy Directorate**, which coordinates energy projects (including preparatory studies for specific projects), including (i) the west African gas pipeline and (ii) the provision of funding for the West African Power Pool (see below).

Within ECOWAS, we are also aware of two organisations promoting the development of energy projects in West Africa:

The **ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE)**, which has implemented an ECOWAS Renewable Energy Investment and Business Initiative (EREI) to promote investment and financing in renewable energy projects in West Africa¹⁵; and

The **West African Power Pool (WAPP)**, which is a specialized institution of ECOWAS and aims at ensuring the promotion and development of power generation and transmission facilities, as well as the coordination of power trade between ECOWAS member states¹⁶.

- **Southern African Development Community (SADC)**

¹⁵ http://www.ecowrex.org/reee_initiative/ecowas-renewable-energy-investment-initiative

¹⁶ <http://www.ecowapp.org/>

SADC has expressed institutional support to PPP Projects in the region by implementing the SADC PPP Network³⁷: launched in 2011, the SADC PPP Network is a platform for the exchange of information and experiences and a basis for PPP-related capacity development in the public and private sectors. In addition, it promotes the harmonisation of PPP policy and regulatory frameworks in the region.

The SADC PPP Network, together with the relevant ministries in member states, focuses on improving:

- the respective fiscal and budgetary frameworks in the member states;
- the legal, institutional and regulatory frameworks;
- the administrative and technical capacities to develop and supervise projects;
- the domestic financial capacities; and
- political support for PPPs.

- **Southern African Customs Union (SACU)**

Within SADC, the **Southern African Customs Union** is a smaller group of countries with a more integrated legal and institutional framework in which a PPP legislation could be implemented. It has a customs union in place and several institutions, however to our knowledge no specific PPP framework or policy has yet been implemented.

- **Economic and Monetary Community of Central Africa (CEMAC)**

Like UEMOA (see below), CEMAC could provide an interesting framework for implementing PPP framework at a regional level:

CEMAC already have certain institutions in place, such as a parliament, a court of justice and a commission.

CEMAC countries have already agreed to implement certain binding legislation which is relevant for infrastructure, including an investment charter, as well as transport related legislation (including a legal framework for road transportation, an aviation code, etc.).

However, to the best of our knowledge, no specific PPP framework or initiative have been implemented by CEMAC to date.

- **West African Economic and Monetary Union (UEMOA)**

UEMOA has issued binding directives which may impact the procurement and implementation of PPP projects, notably:

Directive N° 4/2005/CM/UEMOA on the procurement process, implementation and regulation of public procurement and public service delegations in the UEMOA; and

Directive N° 5/2005/CM/UEMOA on the control and regulation of public procurement and public service delegations in the UEMOA. UEMOA is preparing a major regional reform on public service delegation and public procurement systems; one of this reform's objectives is drafting a regional legal framework in relation to PPP contracts.

- **Economic Community of the Great Lakes Countries (ECGLC)**

ECGLC is an economic community including Rwanda, Democratic Republic of Congo and Burundi, which does not have any specific PPP initiative. However, ECGLC member states are currently cooperating in developing the Ruzizi III hydro power project.

³⁷ <http://www.sadcpppnetwork.org/>

- **OHADA**

Today, OHADA is composed of 17 members: Benin, Burkina Faso, Cameroon, Central African Republic, Comoros, Congo, the Democratic Republic of Congo, Côte d'Ivoire, Gabon, Guinea Bissau, Equatorial Guinea, Guinea, Mali, Niger, Senegal, Chad and Togo.

In addition to applying unified business law as set out in section 3.3 above, the OHADA countries are also bound by an institutional framework, including a common court of justice and a council of ministers.

OHADA is governed by a Council of Ministers, which is composed of the Ministers of Justice and the Ministers of Finance of the member states. The Council of Ministers is the executive authority of OHADA and vested with the regulatory powers and the power to appoint agents. A permanent secretary assists the Council of Ministers.

The OHADA treaty has also established the Common Court of Justice and Arbitration ("CCJA"), which is located in Abidjan, Côte d'Ivoire. The CCJA has jurisdiction over any issue relating to the implementation of the Uniform Acts. The CCJA performs three functions:

it operates as a supreme court, having jurisdiction of final instance for all member states' appeal courts on the application of the Uniform Acts;

it has an advisory role, providing consultative opinions on the interpretation and application of the Uniform Acts; and

it can operate as an arbitral tribunal in the event that one of the parties is a resident of a member State or has entered into a contract performed in a member state.

To our knowledge, OHADA does not have any specific PPP initiative or legislation.

- **Other RECs and regional organisations**

Three other RECS, namely the African Maghreb Union (AMU), the Community of Sahel-Saharan States (CEN - SAD) and the Intergovernmental Authority on Development (IGAD), exist within the African Union but do not have any significant PPP or infrastructure initiative.

- **Collaborations between the RECs**

We note that the COMESA, the EAC and the SADC, have entered into a tripartite arrangement and are collaborating in relation to projects in the road, railway, civil aviation and communications sectors. The main infrastructure activities under the tripartite arrangement are the implementation of the North South Corridor and the development of similar corridor initiatives covering other corridors.

Institutional support at national level

Institutional support for infrastructure and PPPs within each jurisdiction is key to enable the successful development of complex PPP projects. Most countries having implemented PPP legislation recently have also created PPP units to assist the contracting authorities implementing PPP projects, generally at government level. As mentioned before, due to the general complexity of the adopted PPP laws and PPP documentation, it is essential that the proper level of capacity building is deployed in order to assist the Contracting Authorities in each jurisdiction to successfully tender, grant, structure, negotiate, monitor and decommission (as the case may be) PPP projects.

3.6 Business Environment

We have also tried to map the ease of conducting business for foreign private parties in each of the PIDA countries, taking into account three key indicators in this respect, being:

1. Protection of foreign investments;
2. Enforcement of arbitral awards; and
3. World Bank's doing business ranking.

Investment protection

Investors would generally look to have the benefit of certain warranties relating to, among others, expropriation, free transfer and convertibility of funds, discriminatory change in legislation, tax and custom legislations, as well as, in some cases, the benefit of favourable tax regulations for investing in certain areas and/or in certain sectors. Please note that such comfort may also be granted by government in the Project Agreements directly.

Protection of foreign investments in Africa is achieved both by way of international conventions and local legislations. Protection for nationals of particular countries may also be available under certain bilateral investment treaties.

- **Regional instruments relating to investment protection**

Investment legal protections offered to foreign investors on the basis of international instruments in African countries may arise from regional treaties such as the Investment Agreement for the COMESA Common Investment Area (CCIA) and grant further protections to the investors based in such region and investing in neighbouring countries. We note that the Economic and Monetary Community of Central Africa (CEMAC) has also established an investment charter, and that the West African Economic and Monetary Union (UEMOA) is currently working on establishing a common investment code.

- **National rules relating to investment protection**

With the exception of Botswana and Lesotho, all African countries have adopted an investment code or at least specific regulations, acts or laws with respect to investment protection. At this stage of the survey, we have listed the relevant regulatory instruments in this respect in Annex II but have not reviewed them in detail. We will do so to the extent required for the structuring of the showcase projects.

Dispute settlement

One key factor considered by foreign investors and financiers in the context of an investment involving a public authority or a government in Africa or elsewhere is whether the rights arising under the PPP Agreement will be enforceable in accordance with the rule of law by which they are governed. In this respect, comfort may be taken by submitting any disputes arising under the Project Agreement to international arbitration.

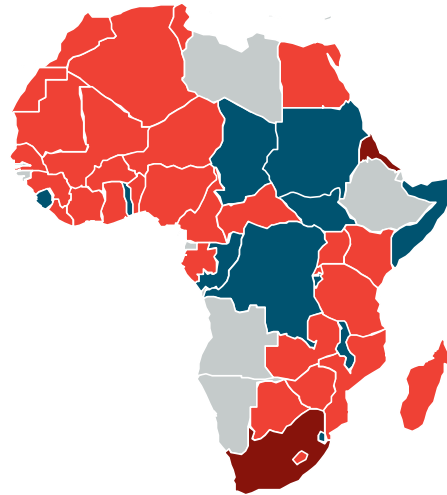
The possibility to do so and to enforce the resulting awards against the Contracting Authority generally arises under international conventions, the most common of which are the treaty signed in Washington in 1965 creating the International Centre for Settlement of Investment Disputes (the "**ICSID Treaty**") and the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards (the "**New York Convention**").

The majority of African countries have signed and ratified the ICSID Treaty and the New York Convention. The map below shows the African jurisdiction in which the ICSID Treaty and the New York Convention (or both) are in force.

Figure 3-4: Dispute Settlement Agreements

49 out of 54 countries have signed and ratified the ICSID Treaty and or the New York Convention.

- Ratification of ICSID Convention and New York Convention
- Ratification of ICSID Convention
- Ratification of New York Convention
- No ratification



Source: Consultant

In our experience, and subject to review of the local judicial system, PPPs will be difficult to put in place in a jurisdiction which has not ratified either the ICSID treaty or the New York Convention, because potential financiers are unlikely to accept the resulting risk on enforcement of the project company or the sponsor's rights, or of their own security interests.

World Bank's ease of doing business ranking

Based on the World Bank's doing business ranking of African countries¹⁸, private investors intending to invest in PPP projects in Africa may have an idea about the challenges encountered to establish and run a business in these countries. One country (Somalia) is not rated by the World Bank in this respect.

For the purpose of the analysis, we have divided the countries in four quartiles depending on their rankings, with results shown below:

Table 3-3: Ease of Doing Business Mapping

	First Quartile (20-125)	2 nd Quartile (128-150)	Third Quartile (153-171)	Fourth Quartile (173 - 189)
Countries	Mauritius Rwanda South Africa Tunisia Botswana Ghana	Egypt Kenya Uganda Lesotho Mozambique Burundi	Algeria Burkina Faso Mali Togo Comoros Djibouti	Mauritania Benin Guinea Niger Senegal Angola

¹⁸ The ranking of each country for 2014 is taken from <http://www.doingbusiness.org>. For the sake of clarity, the higher a country ranks in the doing business ranking, the more efficient the business regulations in this country.

	First Quartile (20-125)	2 nd Quartile (128-150)	Third Quartile (153-171)	Fourth Quartile (173 - 189)
	Seychelles Zambia Morocco Namibia Cape Verde Swaziland Ethiopia	Sierra Leone Liberia Tanzania Nigeria Madagascar Sudan Gambia	Gabon Equatorial Guinea Côte d'Ivoire Cameroon Sao Tome & Principe Zimbabwe Malawi	Guinea Bissau DR Congo Eritrea Republic of Congo South Sudan Libya Central African Republic Chad Somalia
Countries with successful PPP projects	8	8	8	4

We note that there is no difference between the first and second quartile. However, countries in the fourth quartile (below 173) are significantly less likely to implement PPP Projects.

3.7 Conclusions

Our analysis has showed that the existing PPP Laws and initiatives are developing in Africa, but differ from one jurisdiction to another.

In our view, three actions would be instrumental in promoting private investment in infrastructure in Africa:

1. Developing a **harmonized legal framework**, in relation at least to a core set of rules necessary to promote PPPs, possibly at the level of certain regional economic communities, would provide for a clear basis for the development of PPPs, both at a national and regional level;
2. Promoting the development and rolling out of **standard PPP Guidelines** across the continent (including guidelines and standard PPP Contracts); and
3. Implementing consistent **capacity building programmes** at regional level to ensure that the project managers in the PPP units have sufficient knowledge of the guidelines, regulation and preferred risk allocations.

Recommendations

1. Promoting PPP Laws at a regional level

We note that there are a number of organisations and initiatives in the infrastructure sector at the level of the RECs and other regional organisations. However to date there has been no specific legal framework implemented at either the regional or continental level to allow the implementation of regional projects in the PPP sector, apart from the implementation of certain directives relating to public procurement within the West African Economic and Monetary Union (UEMOA) or the Economic and Monetary Community of Central Africa

(CEMAC), which are limited both in scope and geographical area. In our view, the implementation of such regional legislation would be instrumental in promoting the development of regional PPP projects by harmonizing the legal framework.

In practice, such a degree of harmonization and standardization could be achieved by adopting a separate PPP legal framework which would override the existing national legal frameworks, irrespective of the type of legal system (at least in relation to a core set of rules). Such core set of rules could then be consistently applied despite the difference of types of legal systems, i.e. irrespective of whether the country is based on a civil, common or mixed legal system.

Although this could be implemented broadly, it is suggested that, from a regional point of view, this should in priority be launched at the level of the regional organisations which are the most closely integrated and which have already started issuing binding regulations. These include economic or customs unions such as UEMOA, CEMAC and SADC as well as, to a lesser extent, OHADA (although OHADA lacks common rules in relation to contracts).

It should however be noted that, although such harmonization would be instrumental in promoting the development of PPPs, implementing the corresponding regulation could take a few years and could not therefore be seen as an answer in the short term. For this reason, PPP guidelines might be a more efficient way to improve a region's conduciveness to PPPs in the short term.

2. Promoting the emergence of PPP standard documents at a regional level

All the same, we note that a number of jurisdictions have implemented guidelines and PPP units to promote local development of a PPP market and assist private investors and public authorities in developing infrastructure projects. We believe that developing such guidelines at the level of the RECs (rather than nationally) would be beneficial to the development of PPPs by (i) allowing the development of economies of scales, (ii) promoting a harmonized PPP market practice, at least at a regional level and (iii) facilitating training actions and capacity building at the level of the regional and national authorities.

Given the general complexity of PPP documentation, the emergence of standard documents has been a key driving factor in developing the PPP market. Outside of Africa, the following examples are of interest:

- it is interesting to note that the United Kingdom has only adopted a PPP non-binding policy (the Private Finance Initiative - PFI) instead of a PPP legislation. Through this initiative, the PPP industry in the UK has been able to rely on standard drafting and standard treatment which has allowed for a successful development of the industry as a whole. We note, as mentioned above, that the absence of a PPP Law is also correlated to the UK being a common law jurisdiction with more flexible rules.
- the case of India in this respect is also interesting : several initiatives have been undertaken by the government of India to enable a greater PPP framework. Various foreign as well as private investments are encouraged by waiving of charges. Standardized contractual documents for laying down the terminologies related to risks, liabilities and performance standards have been produced and approval schemes for PPPs have been streamlined through the Public Private Partnership Appraisal Committee (PPPAC).

Finally, the same logic has been followed in other sectors than PPPs, including the "Loan Market Association" for finance documents, or FIDIC template documents for construction contracts.

In all cases, these have played a material role by creating a common language and standard practice which all practitioners understand, and as such have facilitated the development of a complex and sophisticated market practice in this respect.

In the case of the PIDA countries, PPP Guidelines would be an addition to the implementation of a consistent PPP legal framework. For a given regional economic community, such guidelines could be adopted in consultation with the main stakeholders in the area and would take the form of consensual agreements on typical practices and structures to be used for developing PPP Agreements. Although we would expect that such PPP Guidelines would be adopted at the level of the RECs, they could be sponsored by regional or global development agencies and organizations. In our view, PPP Guidelines, being non-binding instruments, could be implemented in the short term more easily.

4 FINANCIAL INSTRUMENTS

4.1 Overview

Although far more limited than in more sophisticated European, American or Asian financial markets, the spectrum of financial instruments available for the financing of infrastructure in Africa remains relatively large in terms of scope of products available. At the scale of the continent, the spectrum covers the whole range of instruments typically used for infrastructure financing worldwide, namely:

- Debt instruments;
- Equity and quasi-equity instruments;
- Risk mitigation instruments;
- Other instruments.

A detailed fiche for every financial instrument included in the four above categories is provided in the Annex Report..

The objective of this section is to present and assess the size of this financial instruments spectrum in order to apprehend i.e. understand the possibilities currently offered on the African infrastructure financing market. There are obviously great disparities between on the one hand the more advanced and sophisticated financial markets of South Africa, Kenya and Nigeria and on the other hand the least advanced economies of the continent, which make the assessment of the financial instruments spectrum at continental level an arduous task.

To overcome this difficulty the assessment of size of the spectrum of instruments is proposed according to three dimensions, namely:

Breadth: represents the availability and geographical reach of a specific financial instrument across the African continent;

Width: represents the number of providers able to provide a specific instrument and the level of competition between them;

Depth: represents the total financing capacity of the market relative to a specific instrument.

A scorecard was designed to evaluate each of the listed financial instruments under those three dimensions.

Table 4-1: Financial Instruments Assessment Scorecard Methodology

Score	Breadth	Width	Depth
*	Instrument barely available anywhere on the continent	Instrument barely available except from a couple of sources	Instrument barely available except for very small amounts
**	Instrument only available in the most advanced economies of the continent	Instrument only available from a handful of sources without competition between them	Instrument only available for small amounts with very significant market capacity limitations
***	Instrument available in a significant number of countries but still not	Instrument available from several sources but still with limited competition between them	Instrument available for sizeable amounts but still with significant market capacity limitations

Score	Breadth	Width	Depth
	available in many economies of the continent		
****	Instrument widely available except in the least advanced economies of the continent	Instrument available from a significant number of sources with some competition between them	Instrument available for significant amounts with some market capacity limitations
*****	Instrument available everywhere the continent	Instrument available from many different sources with high competition between them	Instrument available for very large amounts with no market capacity limitations

Source: Consultant

Based on the consultant's experience and research, a score was awarded to each financial instrument under all three dimensions. The results are presented in the table below.

Table 4-2: Financial Instruments Assessment Scorecard Results

Debt Instruments	Breadth	Width	Depth
Foreign Currency Loans	****	***	****
Local Currency Loans	**	**	***
Synthetic Local Currency Loans	***	**	***
Syndicated Loans	***	***	***
Trade Finance	****	***	***
Export Finance (Buyer's Credit)	***	***	***
Export Finance (Supplier's Credit)	***	***	***
Project Finance	***	***	***
Mezzanine Loans	**	**	**
Concessional Sovereign Loans	****	***	****
Concessional Sub-Sovereign Loans	**	**	***
Treasury Bonds	****	***	***
Sub-Sovereign Bonds	**	***	**
Corporate Bonds	***	***	**
Infrastructure Bonds	*	*	*
Equity and Quasi-Equity Instruments	Breadth	Width	Depth
Private Equity	***	***	***
Preferred Equity	**	**	**
Shareholder Loans	***	***	**
Convertible Loans	**	**	**
Risk Mitigation Instruments	Breadth	Width	Depth
Partial Risk Guarantees (PRG)	***	**	****
Partial Credit Guarantees (PCG)	***	**	***
Political Risk Insurance (PRI)	****	***	****
Export Credit Guarantee (ECG)	***	***	***
Interest Rate Swaps (IRS)	***	***	***
Interest Rate Caps	**	**	***
Cross-Currency Deliverable Swaps	**	**	***
Cross-Currency Non-Deliverable Swaps	***	**	***
Commodity Swaps	**	**	**
Other Instruments	Breadth	Width	Depth

Subsidies and Grants	*****	***	****
Results-Based Finance (RBF)	*	*	*
Carbon Finance	**	**	**

Source: Consultant

While this assessment remains qualitative by nature, it provides an interesting overview of the financial instrument spectrum currently available in Africa. The main conclusions of this scoring exercise are as follows:

- Apart from very sophisticated instruments such as infrastructure bonds and Results-Based Finance, **most financial instruments typically used for the financing of infrastructure projects worldwide are also available in Africa**, or at least in a significant portion thereof; as such Africa does not seem to be excluded from the latest trends and developments on the infrastructure finance market and innovations launched on other continents gradually find their way into African projects as well;
- There seems to be an issue in relation to the number of providers of such financial instruments; no score above *** was awarded under the Width dimension, illustrating the **limited level of competition between infrastructure financiers** in Africa; the fact that the continent's largest projects are systematically funded by the same equity investors, commercial banks and International Finance Institutions (IFIs) and that syndication is the rule rather than the exception provides little incentive for financiers to provide their best terms and conditions to public and private project sponsors; this has a negative impact on funding costs and therefore on bankability of projects;
- Linked to the above remark is the observation that the **depth of African financial markets is clearly not sufficient to absorb infrastructure financing needs**; market capacity limitations remain a constraint as small-size balance sheets of local commercial banks do not allow them to participate in projects with large financing requirements; except in the continent's most advanced financial markets, it remains virtually impossible to organise a financing competition for an infrastructure project as the combined capacity of all market players is already insufficient to cover needs.

4.2 Financing Vehicles

As explained above the number of financing vehicles active in the infrastructure market in Africa remains quite limited given the size and needs of the continent. The main players can be organised in the following broad categories:

- Development banks;
- Commercial banks;
- Institutional investors;
- Infrastructure funds and private equity investors;
- Guarantors;
- China/Chinese Institutions.

The above categorisation remains however arbitrary since several players assume various roles. For instance, development banks are typically anchor investors in infrastructure funds and specialised guarantors are often direct emanations of multilateral development initiatives.

China/Chinese institutions will be discussed as a separate category due to their very distinctive role on the financing vehicles spectrum.

A list of all most significant financing players and vehicles active on the African continent is provided in the Annex Report..

Development banks

Multilateral and to a lesser extent bilateral development banks clearly have the upper hand when it comes to making infrastructure initiatives happen on the African continent. In practice it is extremely rare to see a sizeable infrastructure project reaching financial close in Africa without a development bank being involved. Indeed the participation of development banks bring numerous benefits to infrastructure projects:

- Broad range of financial instruments: debt, equity/quasi-equity, guarantees;
- Strong capitalisation and large financing capacity;
- Long maturities: up to 50 years for public sector windows, up to 30 years for private sector windows;
- Cheap financing: down to below 1% for public borrowers in low-income countries;
- Transmission of technical, legal and financial knowledge through technical assistance;
- Political leverage.

The number of development banks currently active on the African continent is estimated to be around 40. However in practice the market is dominated by a handful of players such as the African Development Bank and the World Bank, mostly due to their extended network of offices throughout the continent, which allows them to identify potential projects from a very early stage, as well as the size of their asset base, which makes it possible for them to make a meaningful contribution to the largest projects such as those included in the PIDA-PAP.

Nonetheless the market is far from being static and several trends are being observed in the development bank galaxy.

The growing role of Development Finance Institutions (DFIs)

While total loan approvals by public sector windows of development banks keep increasing, activities of DFIs and private sector windows of development banks are growing at an even faster rate. This trend is the result of the growing recognition by both development players and African governments of the role of the private sector in the provision of public services and the shift towards Public-Private Partnerships as a standard public procurement modality.

Sometimes described as the “Third Pillar” of development aid policy next to Official Development Aid (ODA) and development banks’ public sector lending and guarantees¹⁹, DFIs and private sector desks of development banks offer a whole range of debt, equity/quasi-equity and guarantee products at market conditions. They are however less risk-averse than commercial creditors and can also usually provide longer tenors than the local market.

They are generally self-financing and now make up a significant proportion of development banks’ total commitments without significant capital replenishments being required, which makes them attractive as a means to reach development objectives in a cost-efficient manner.

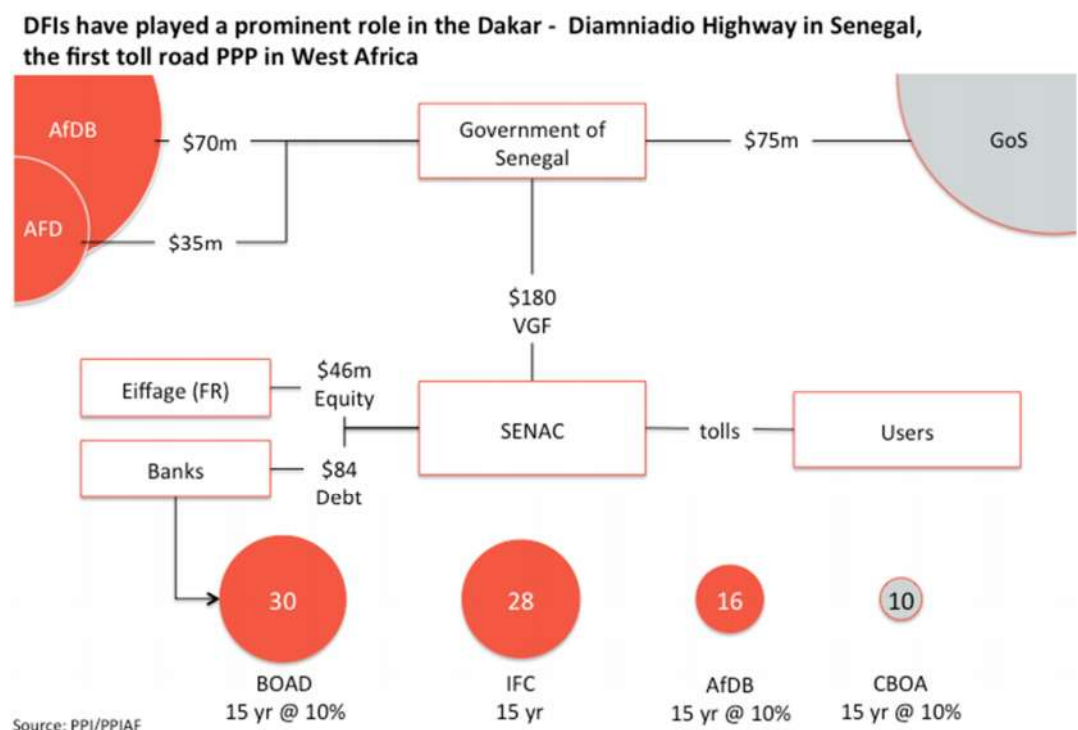
When it comes to infrastructure projects, one of the main benefits of DFIs’ involvement in theory is their capacity to play a catalytic role in attracting private equity and debt investment. While DFI commitments are not subject to a preferential treatment and are generally ranked

¹⁹ The Growing Role of the Development Finance Institutions in International Development Policy, Dalberg, 2010
PIDA Financial Structuring Plan

pari passu with other lenders, their presence at an investor roundtable tend to reassure commercial financiers and to facilitate fundraising from private sources.

However to date, this theory is not yet common practice. Most of the debt facilities for privately financed infrastructure originates from the DFI's private sector windows, supported with concessional loans for any viability gap financing where appropriate, as illustrated among others by the financing scheme for the Dakar – Diamniadio Toll Road PPP in Senegal.

Figure 4-1: Financing Scheme Dakar – Diamniadio Toll Road PPP



The slow development of regional multilateral initiatives

Regional African multilateral development banks are still experiencing difficulties in structuring themselves and acquiring the skills necessary to place them on a sustainable development path, in spite of a strong will from most African governments to reinforce those regional players.

There are however a few success stories, such as the West African Development Bank (BOAD), which is now reaching a size sufficient to play a meaningful role in regional projects, and the Africa Finance Corporation (AFC), a multilateral regional DFI initially launched as a Nigerian initiative.

The emergence of new global development players

Over the past decade the dominant position of international development banks and European bilateral development agencies has been considerably undermined by the emergence of bilateral and multilateral development banks from other parts of the world.

This relates primarily to China's growing involvement in the African infrastructure space, which will be discussed in a separate section.

More generally, emerging economies are gradually starting or beefing up their own bilateral development programmes and are getting more and more interested in Africa. On the southern

half of the continent the Development Bank of Southern Africa (DBSA), funded by the Republic of South Africa (RSA), and the Brazilian Development Bank (BNDES), which recently set up an Africa division headquartered in Johannesburg, are playing a growing role in the development of transport and energy projects. On the northern half of the continent Arabic development institutions from the Gulf region such as the Islamic Development Bank (IsDB), the Arab Bank for Economic Development in Africa (BADEA), the Saudi Fund for Development (SFD) and the Kuwait Fund for Arab Economic Development (KFAED) are building a sizeable infrastructure loan portfolio.

The latest expression of this phenomenon is the recent creation of the New Development Bank (NDB) at the sixth BRICS summit held in July 2014 with the stated ambition to compete with the World Bank and other Western-dominated financial institutions.

Since the global financial crisis the shifting of the balance of power has been accelerating and it is only natural that Africa gradually turns to emerging economies to finance its own infrastructure needs.

Africa50

In 2012, African Heads of States in their Declaration on PIDA called for innovative solutions to facilitate and accelerate infrastructure delivery in Africa. In response, and after broad consultations with African stakeholders, the African Development Bank has proposed the establishment of a new delivery vehicle called Africa50.

The vehicle aims at mobilizing private financing to accelerate the speed of infrastructure delivery in Africa, thereby creating a new platform for Africa's growth. Africa50 will focus on high-impact national and regional projects in the energy, transport, ICT and water sectors.

Africa50 is to be structured as a developmentally oriented yet commercially operated entity. It will be complementary to and legally independent from existing development finance bodies in Africa. Accordingly, the operational decisions will be made by a management team selected solely on technical merit and demonstrated managerial competence.

Africa50 will establish two business segments, as follows:

- **Project Development:** The primary objective of this segment is to increase the number of bankable infrastructure projects in Africa. This will be accomplished through substantially increased funding of early stage project development activities, made possible by innovative partnerships and incentive schemes. Furthermore Africa50 will make skilled legal, technical and financial experts available to projects from an early stage of development, sharing costs with member governments and developers and recovering its funding at financial close or through a carried interest in the project.
- **Project Finance:** This segment will focus on delivering the financial instruments required to attract additional infrastructure financing to the continent. These will include, but will not be limited to: i) bridge equity, ii) senior secured loans, iii) refinancing/secondary transactions, as well as iv) credit enhancement and other risk mitigation measures geared at attracting non-traditional funders such as institutional investors and international investment banks.

Africa50's critical objective is to shorten the time between project idea and financial close from a current average of 7 years to under 3 years, thereby delivering a critical mass of infrastructure in Africa in the short to medium term. Africa50 builds on AfDB's recent successes in overcoming early-stage bottlenecks to infrastructure projects, mobilizing political support for necessary reforms and deploying skilled experts to work alongside government.

To deliver on Africa's current infrastructure pipeline, including PIDA, Africa50 will need an equity investment of US\$ 10 billion, thereby attracting US\$ 100 billion worth of local and global capital. To begin operations, Africa50 targets raising US\$ 3 billion in equity capital so as to establish credibility with governments, private developers and financial markets. Depending on financing needs and the project pipeline, Africa50 will augment its financial capacity by raising debt in the international capital markets. In order to ensure reliable access to capital markets while also offering additional operational flexibility, Africa50 will target an investment grade rating of single A.

As a commercially oriented financial institution, Africa50 will seek to preserve and grow its capital base as well as provide a return to shareholders. It will have three broad groups of investors: i) African countries, ii) the AfDB and other major development financiers and iii) institutional investors such as sovereign wealth and pension funds.

The ownership of the founder's equity by African countries is central to the strategy of Africa50. Such ownership is intended to send a strong signal to developers and financiers about the commitment of African countries to address the continent's infrastructure challenges. Africa50 is expected to be fully operational by 2014.

Text Box 1

Africa set to gain US\$ 3 billion infrastructure fund

Africa's largest development lender plans to launch a US\$ 3 billion infrastructure fund this month, aiming to raise money from regional and non-African pension funds, insurance groups, sovereign wealth funds and institutional investors.

The fund, to be known as Africa50, will help the continent in "delivering vital infrastructure through a new global partnership platform", according to the proposal by the African Development Bank.

Africa needs about US\$ 95 billion a year to close an infrastructure gap in electricity, roads, railway and port. Current investment is running at about US\$ 45 billion – leaving a large shortfall.

The AfDB, which will invest \$500m, aims to approve the fund this month during its annual meeting in Rwanda. It hopes to raise at least US\$ 3bn in funds, "to be scaled up to at least US\$ 10 billion", according to the proposal seen by the Financial Times.

Regional sovereign wealth funds, insurance groups and commercial banks could put invest in Africa50. The AfDB will also tap non-African investors.

Sovereign wealth funds and global institutional investors are starting to pour money into the continent, attracted by a virtuous circle of strong economic growth and improved governance that many have called "Africa Rising".

Financial Times, 1 May 2014

New Development Bank

The New Development Bank (NDB), formerly referred to as the BRICS Development Bank, is a multilateral development bank operated by the BRICS states (Brazil, Russia, India, China and South Africa) as an alternative to the existing World Bank and International Monetary Fund. The Bank is set up to foster greater financial and development cooperation among the five emerging markets. It could take up to two years to get the bank up and running, because it must be approved by each BRICS government.

The bank's primary focus of lending will be infrastructure projects with authorised lending of up to \$34 billion annually. Countries outside BRICS are also eligible for the NDB debt facilities. The bank will have a starting capital of \$50 billion, with Brazil, Russia, India, China and South Africa initially contributing US\$ 10 billion each. Increases may bring the capital base up to \$100 billion over time.

Global Infrastructure Facility

The Global Infrastructure Facility (GIF) is a global, open platform that will facilitate preparation and structuring of complex infrastructure PPPs so as to enable mobilisation of private sector and institutional investor capital. The GIF platform aims to coordinate and integrate the efforts of Multilateral Development Banks, private sector investors and financiers, and governments interested in infrastructure investment in emerging markets and developing countries; enabling collaboration and collective action on complex projects that no single institution could realise alone. GIF's engagement will stretch from upstream support on market structure and project identification and appraisal, through transaction preparation, to financial structuring and credit enhancement. The GIF will operate according to the following core principles, to be finalised upon agreement between GIF partners:

- Leveraging the private sector — specialising in project financing modalities that will draw together comparative advantages of public and private sectors;
- Addressing public goods — focusing on core infrastructure, particularly those infrastructure projects that are climate-friendly or trade-enabling;
- Promoting sustainability and inclusiveness — ensuring projects adhere to best practice standards for social and environmental responsibility; and
- Partnering for solutions — mobilising technical and financial resources of all partner entities — World Bank Group entities, multilateral development institutions, other public institutions and private investors — in an innovative and flexible way, to achieve greater leverage and address the complex infrastructure financing challenges that are beyond the resources of any individual partner.

Over the longer term, by contributing to the stock of high-quality and well-structured infrastructure projects, the GIF can be expected to help in the development of infrastructure as an asset class attractive to the full range of private investors seeking diversification into long-term assets in faster-growing economies, but which until now have been presented only limited infrastructure investment opportunities which meet their risk tolerance and investment profiles.

Commercial banks

The number of commercial banks which are truly active in the financing of infrastructure in Africa remains quite low. The market is dominated by the four big South African institutions, namely Standard Bank, ABSA, FirstRand and Nedbank, a handful of British and French international banks such as HSBC, Barclays, BNP Paribas and Société Générale as well as – increasingly – some of the largest Nigerian banks such as Zenith Bank and United Bank for Africa (UBA), which are nurturing a project finance practice.

Large northern African banks such as National Bank of Egypt and Banque MISR (Egypt) and Attijariwafa Bank and BMCE (Morocco) still mostly confine themselves to their home market – although the latter has recently been involved in a major deal in Côte d'Ivoire – while other significant players like Ecobank, which has the most extended office network on the continent, are often constrained by country limits and the size of the economies in which they operate.

Institutional investors

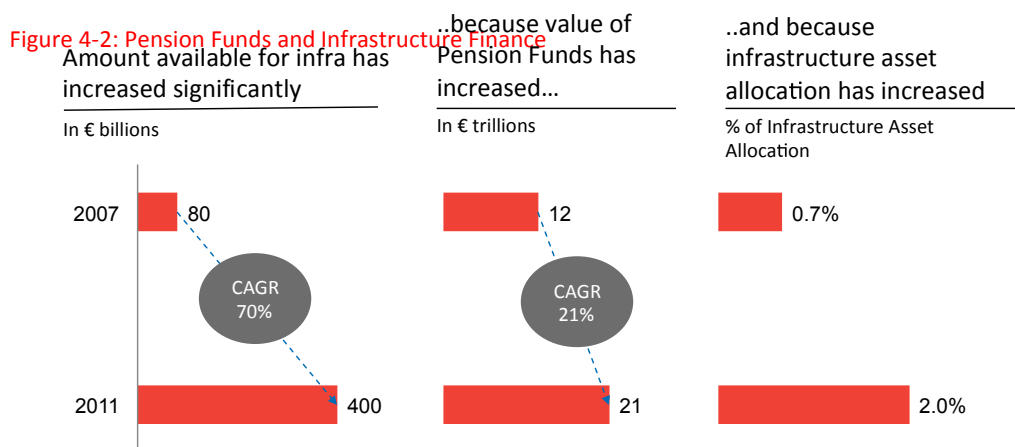
Apart from South Africa, where the Public Investment Corporation (PIC) managing public sector pensions and the privately-owned Old Mutual Group do take stakes in infrastructure projects, to date institutional investors are still largely absent from the infrastructure financing space in Africa. This is however changing at fast pace due to three distinct phenomena.

1. Worldwide growth of institutional infrastructure capital

The infrastructure market is looking anxiously at the pension funds as the solution to all problems. This is based on the increasing involvement of pension funds over the past years in infrastructure initiated by the Australian and Canadian pension funds and driven by the match between the infrastructure business model enabling relatively stable and inflation adjusted dividends over a long period on the one hand and the need for pension funds to provide inflation adjusted pensions to their contributors on the other hand.

In 2008 the OECD estimated that pension funds had allocated on average 0.7% of their EUR 12 trillion of assets under management, EUR 80 billion, to infrastructure, either directly or through listed and unlisted infrastructure funds. Today this has increased to EUR 400 billion, driven by an increase in allocation to 2% and an increase in the value of assets under management to EUR 21 trillion. This increase represents an annual growth rate of 70%.

Pension funds are becoming an increasing source of infrastructure finance

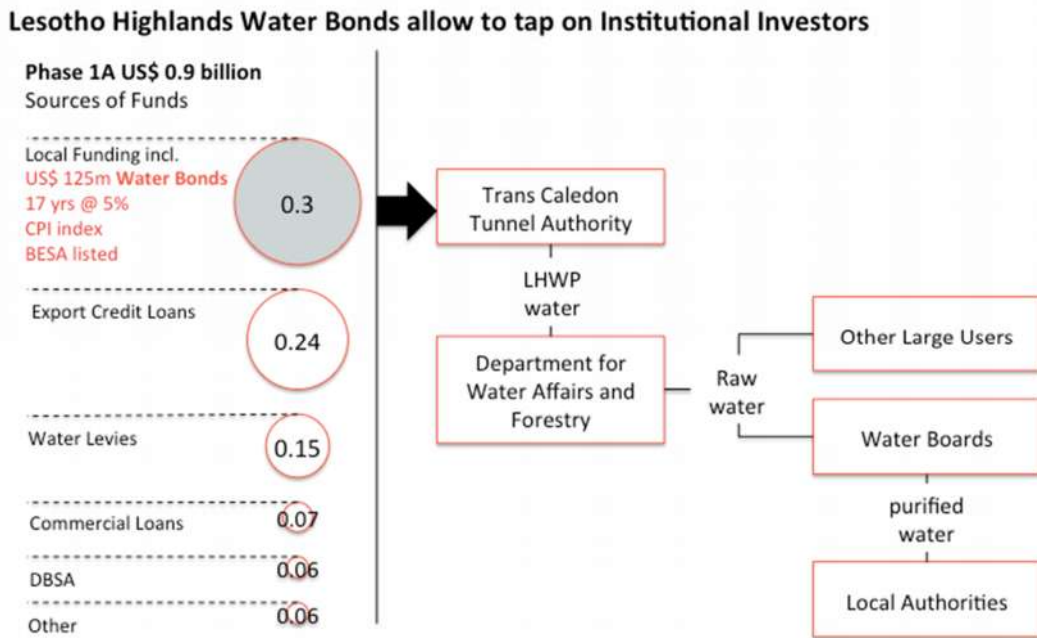


2. The growth and sophistication of local pension funds and life insurance providers

The emergence of an African upper class with significant net worth and savings, coupled with the low returns offered on European and North American markets since the outbreak of the global financial crisis in a context of ultra-loose monetary policies, is boosting demand for locally-invested pension and life insurance products. While African fund managers and life insurers have been traditionally more inclined to invest in safe assets such as treasury bonds and bank deposits, they are gradually considering infrastructure projects as a relevant asset class offering long-term and stable returns.

This is confirmed among others by recent statements from Government Employees Pension Fund (GEPF), Africa's largest pension fund, which is managed by PIC and is set to play a key role in South Africa's multibillion rand infrastructure investment plans, and concretely illustrated by the financing scheme for the Lesotho Highlands projects, which includes US\$ 125 million water bonds issued on the Johannesburg Stock Exchange and designed to tap on the institutional investors market.

Figure 4-3: Financing Scheme Lesotho Highlands Project



Source: TCTA, Mark Deacon, Andrew Derry, Dariush, Inflation-indexed Securities: Bonds, Swaps and Other Derivatives

Outside of South Africa, the first movers are to be found in Nigeria, where the Asset and Resource Management Company (ARM), in cooperation with Harith fund managers from South Africa, is currently launching an infrastructure fund for West Africa.

3. The multiplication of sovereign wealth funds

The second main trend with regard to institutional investments in Africa is the multiplication of Sovereign Wealth Funds (SWF) throughout the continent. Inspired by the Norwegian example, several Sub-Saharan African countries have recently launched a sovereign wealth fund with the objective of managing surplus revenues from the sale of commodities – principally oil and gas – in a transparent and efficient manner so as to preserve the long-term interests of future generations.

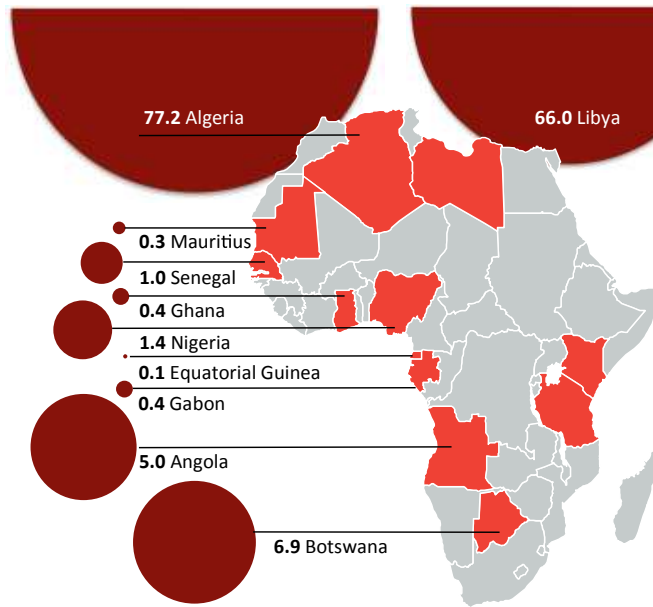
Earlier attempts at such funds in Botswana (Pula Fund), Algeria (Revenue Regulation Fund) and Lybia (Lybian Investment Authority) having delivered mitigated results for several reasons, it is the declared intention of most governments backing the most recent large initiatives in this field, namely the Fundo Soberano de Angola (FSDEA) and the Nigeria Sovereign Investment Authority (NSIA), to have such funds administered according to the highest transparency and accountability standards and to have the portfolio managed by reputable and internationally recognised investment managers.

In the medium to long-term such sovereign wealth funds will most likely constitute a credible source of financing for infrastructure projects.

Figure 4-4: Africa's Sovereign Wealth Funds

Africa's Sovereign Wealth Funds represent a value of approximately US\$ 159 billion

Value per SWF in US\$ billion



Source: SWFI

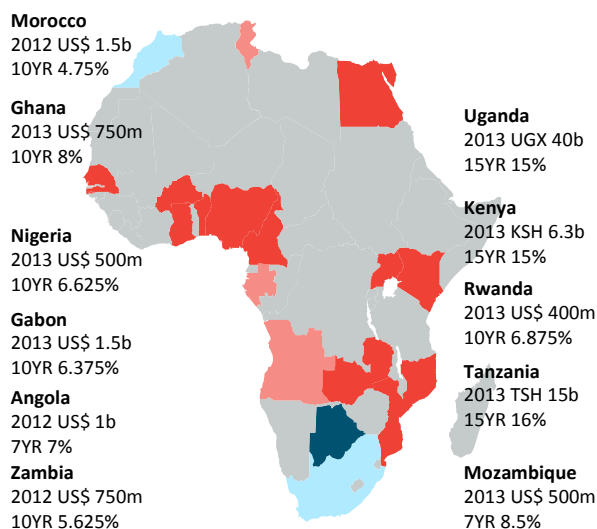
However, increased credit ratings would facilitate institutional investments

Institutional investors prefer the instrument of credit rating to support their investment decision process. This will support them to price the risk profile. Today however most African countries do not have a credit rating, while those who do have a rating below investment grade (BBB), which is not favoured by at least most of the international investors.

On the positive side, in recent years 11 countries have managed to successfully issue foreign currency denominated bonds. Some countries were even able to raise bond financing without a credit rating, reflecting the increasing appetite for African sovereign debt. Most of these bonds were EUR bonds, to mitigate the currency risk. The tenor of these bonds was in the range of 7 to 15 years, which will benefit the access to long-term debt facilities. The coupon rates were between 4.75% (Morocco) and 16.00% (Tanzania).

Figure 4-5: Credit Ratings and Bond Issues
19 countries have a credit rating
3 countries are investment grade
11 countries have issued bonds

Rating
 A
 BBB
 BB
 B
 No rating



Source: Standards & Poors, Financial Times

Some countries have even issued infrastructure bonds which still benefit from government guarantee and therefore cannot be considered as non-recourse financing, but the proceeds of which have been earmarked to finance infrastructure projects.

Text Box 2

13 October 2014

Kenya turns to bonds to finance infrastructure and other needs

Kenya is offering infrastructure bonds for the first time in order to cover its spending needs in the expanding transportation networks and electricity infrastructure.

According to the Central Bank of Kenya, the 12-year bonds are worth US\$ 168 million at a fixed rate of 11%. The sale of the bonds close on October 21st and the money will be used in financing infrastructure such as roads, energy, water and irrigation projects in the country.

The Kenyan government needs money to deliver its investments needs with projects such as roads, a railway and a port, and to lay down a pipeline for the oil reserves that are being developed in the country.

The named projects are expected to accelerate growth in government investment by 30% in 2016-2017 compared with the 16% in the current fiscal year. Kenya is struggling to narrow its budget deficit with its investment needs of US\$ 4 billion termed one of the largest in Africa by African Development Bank.

This comes after a successful debut Eurobond sale on the international market that saw Kenya raise US\$2 billion in 5-year and 10-year notes to finance for capital projects. The portion maturing in 2024 carried an interest rate of 6.875%.

Kenya recently announced that it would start off construction of 3,000 km of roads, as part of the aggressive 10,000 km to either be newly constructed or rehabilitated.

Source: *Construction Review Online*

As an alternative to infrastructure bonds it is also possible to issue so-called investment certificates as has been done for the financing of the second Suez Canal in Egypt.

Text Box 3

14 September 2014

Suez Canal Investment Certificates Available At Egypt Post Authority Today

PIDA Financial Structuring Plan

Egyptians will begin on Sunday purchasing investment certificates to fund the new Suez Canal development project from the Egypt Post authority.

The post authority has made investment certificates available for purchase in its 1600 offices nationwide. Citizens can purchase certificates immediately or within hours upon providing their IDs.

The certificates remain available at the banks, where their purchase has started on September 4. Their sales revenue hit 39.5 billion Egyptian pounds at the end of last week, marking one week since the start of the sale.

President Abdel Fattah al-Sisi issued on September 1 a presidential decree to govern the financing of the 60 billion Egyptian pound project through investment certificates.

The decree pledges the National Egyptian Bank, Banque Misr, Banque du Caire and the Suez Canal Bank to issue investment certificates with multiple categories to use their outcome in financing the project.

Only Egyptian individuals and companies are allowed to purchase the Suez Canal project investment certificates.

On August 5, Sisi launched a mega project which entails digging a 72-km (45-mile) bifurcation to the Suez Canal as well as developing the Suez Canal region. Digging the bifurcation is expected to cost \$4 billion.

The government had announced that five-year investment certificates with an interest rate of 12 percent would be used to finance the project. Certificates were chosen to finance the 60 billion Egyptian-pounds project as they do not grant certificate-holders ownership rights.

The project is implemented under the supervision of the armed forces. While launching the project, Sisi said digging the new bifurcation to the canal would be completed within a year, instead of a previous deadline of three years.

Source: AllAfrica

Infrastructure funds and private equity investors

The number of large private equity vehicles focusing on infrastructure investments in Africa has been exploding in recent years, which illustrates the real need for more diversity in equity sources. However given the sizeable minimum ticket amounts required to participate in such funds, investors targeted by such funds are typically the same players described in the above categories, i.e. multilateral and bilateral development banks, South African commercial banks and institutional investors as well a few international investors such as Macquarie (Australia) and American International Group (AIG).

Additionally the combined size of such investment vehicles remains considerably below that of their international peers as well as insufficient to cover anticipated needs, indicating a potential for additional providers to find their place on the market.

Most recent developments in this field include:

- The US\$ 250 million ARM-Harith Infrastructure Fund (ARMHIF);
- The Carlyle Group had closed its maiden private equity fund targeting sub-Saharan Africa at almost US\$ 700 million – 40 per cent above target – underscoring the growing appeal of investing on the continent.
- The 1 Billion Rand Stanlib Infrastructure Fund

Combined, those private equity funds represent a significant potential source of financing. However, most managers of such funds actually struggle to identify bankable infrastructure projects of meaningful size for them to invest in, which currently constitutes the main constraint preventing them from having a greater impact on the continent.

National Infrastructure Funds

Aside from an increasing number of private infrastructure funds, there is also a trend to establish National Infrastructure Funds. These National Infrastructure Funds are particularly focused on providing long-term debt facilities, which the local financial sector is unable to provide or only to a limited extent. The funds are envisaged to be sourced by proceeds from

fuel levies, VAT appropriations and alike complemented with fiscal budget allocations, DFI funds and ideally also local pension funds or insurance funds. They operate on a commercial basis albeit with less risk restrictions than commercial banks.

Text Box 4

Ghana Infrastructure Fund (GIF)

In July 2014, Parliament has passed the Ghana Infrastructure Investment Fund Bill, 2014 whose purpose is to establish an infrastructure fund that is wholly owned by the Republic of Ghana to mobilise and provide financial resources to manage, co-ordinate and invest in a diversified portfolio of infrastructural projects in the country for national development.

The potential sources of funds for GIF includes:

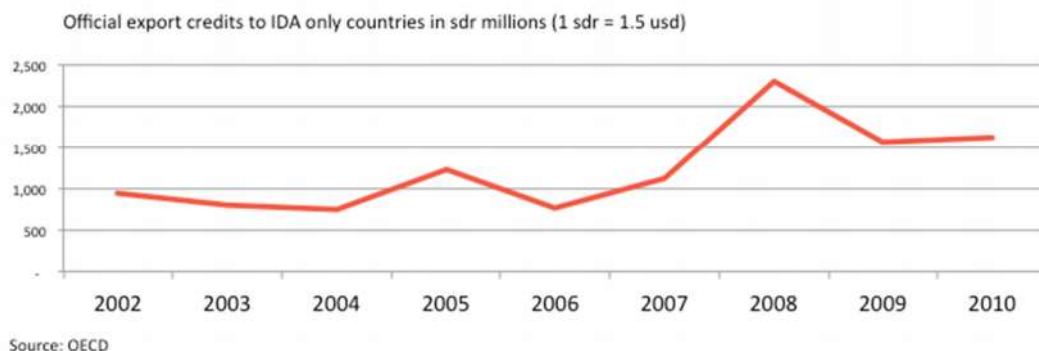
- appropriations by Parliament, including the recently increased VAT, ABFA portion for amortization and infrastructure development.
- escrowed and on-lent funds from prior investments;
- private or public domestic and foreign funds from multilateral institutions and development banks;
- the capital markets (including our stock exchange);
- pensions and mutual funds (including social security and insurance funds);
- and other funds.

Guarantors

- Guarantors active on the African infrastructure market are of three different natures. They include: Guarantors specialised in developing and emerging economies such as the Multilateral Investment Guarantee Agency (MIGA), GuarantCo or The Currency Exchange Fund (TCX), which offer a range of guarantee products especially tailored for the needs of projects in high-risk environments and for which Africa is an important target market; those are generally direct emanations of development partners;
- Development banks, which typically also have their own guarantee programme;
- Export Credit Agencies (ECAs), which offer a standard range of trade insurance and political insurance products, but for which Africa remains a relatively small market.

Figure 4-6: Credit Ratings and Bond Issues

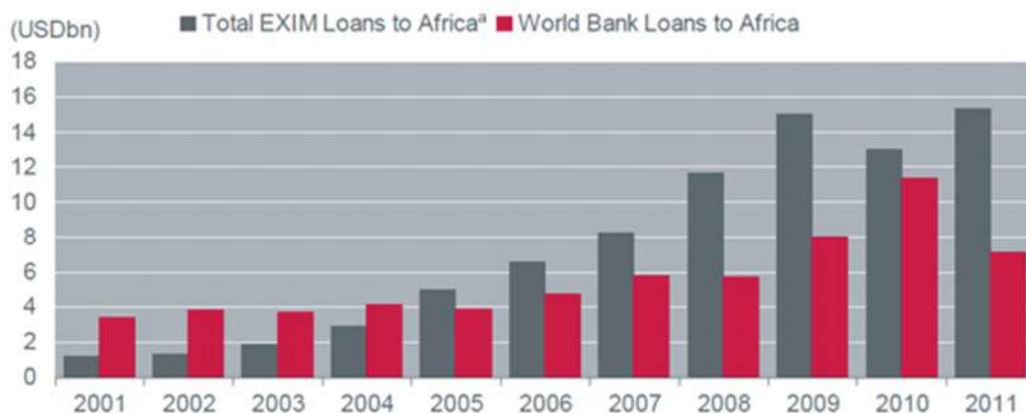
USD\$ 2.5 billion export credits to Africa in 2010



Chinese institutions

Non-OECD financiers like China, India and the Arab states already funded US\$ 2.5 billion per year in Sub-Saharan Africa’s infrastructure in the period 2001-2006, i.e. 5% of total spending. This support has increased significantly in recent years, most notably the support from China, as India is focusing more on telecom and power and the Arab states are concentrating their investments in only some regions of the continent. Today China is by far the largest investor in African infrastructure.

Figure 4-7: China Exim Bank vs World Bank



^a Fitch estimates derived from sources stated

Source: China EXIM Bank, China Statistical Yearbook, World Bank

China’s approach to financial assistance, which is part of a broader phenomenon of south-south economic cooperation, differs from that of traditional donors. Unlike traditional official development assistance, the financing is channelled not through a development agency but through the Export-Import Bank of China (China Exim Bank) and is generally structured as government-to-government loans. China Exim Bank loans account for the vast majority of China’s infrastructure finance for Africa. Consistent with the rationale of promoting trade, the financial support is typically tied to the participation of Chinese contractors.

The China Exim Bank's terms and conditions are normally agreed on a bilateral basis, with the degree of concessionality depending on the nature of the project. On average Chinese loans offer an interest rate of 3.1 percent, a grace period of 4 years and a maturity of 13 years. However, there is significant variation in all these parameters across countries, with interest rates ranging from 1 to 6 percent, grace periods from 2 to 10 years and maturities from 5 to 25 years.

Chinese funding is often characterized by repayment in natural resources, often referred to as the "Angola mode" because it was first applied in Angola. Under this arrangement, a framework agreement covering a program of infrastructure investment is signed with the government. The beneficiary government then awards the projects, supported by a credit from the China Exim Bank, to a Chinese construction firm. At the same time, it awards a Chinese company the rights to begin production of oil or other natural resource that will constitute repayment of the loan.

At least 35 countries in Africa have already received financing from China or are discussing financing opportunities. While about half of the projects have involved financing commitments of less than US\$ 50 million, the amounts for single projects can be very large. Of the confirmed projects, about half a dozen involved commitments from China of US\$ 1 billion or more each.

Chinese financing is typically applied through conventional contracting procedures rather than PPP-like arrangements. The immediate implication is that arrangements still have to be made for the management and operation of the infrastructure considered. Another inconvenience is that it is based on an all-inclusive approach with feasibility study, construction and financing in one single package not subject to an international tender procedure, making it practically impossible for government to ascertain that it is getting the right value-for-money for each of those components and that the option retained is the most economically and financially efficient.

This being said, the Chinese approach has the merit of being quick and delivering concrete improvements on the ground. It is likely to play an ever growing role in the financing of infrastructure projects in Africa, with other emerging nations potentially pursuing a similar model.

Text Box 5

Chinese financing for African infrastructure: a few examples

- China Exim Bank financed the 560-km Belinga-Santa Clara railway in Gabon which, together with the Poubara hydropower dam and deep water port at Santa Clara, is part of the US\$ 3 billion Belinga Iron Ore project. The China Exim Bank loan for the project is to be repaid via sales of iron ore to China.
- Sinohydro Corporation was selected by the government of Zambia to design and build a US\$ 400 million power plant on the Kariba North Bank. China Exim Bank is providing 85% of the financing, while the Development Bank of Southern Africa (DBSA) is providing the remaining 15%.
- China Henan International Cooperation Group (CHICO) was awarded a US\$ 45 million contract to construct a supply system in the central province of Manica in Mozambique. The project will include the construction of a new water treatment station at Chicamba Dam and six water storage tanks.

4.3 Adequacy Assessment

Key problem areas

The mind map for Africa's infrastructure problems analysis developed in chapter 2 has identified a number of key problem areas preventing greater private involvement in the financing of infrastructure projects in Africa. Those key problem areas include among others:

- Limited availability of long-term local currency financing;
- Limited exit opportunities for investors;
- High inflation;
- High currency risks;
- High country risks;
- High interest rate risks and refinancing risks.

The objective of the present section is to establish how effectively the financial instruments and vehicles spectrum currently available addresses each of those key problem areas identified. In order to answer that question one needs to consider:

What financial instruments are available to address each key problem area;
How effective those financial instruments are at solving those key problem areas.

Availability of financial instruments to address key problem areas

The relationship between the financial instruments and the key problem areas is outlined in the cross table below.

Table 4-3: Financial Instruments vs Key Problem Cross Table

Debt Instruments	Limited long-term local currency financing	Limited exit opportunities for investors	High inflation	High currency risks	High country risks	High interest rate risks and refinancing risks
Foreign Currency Loans			*			
Local Currency Loans	*		*	*		
Synthetic Local Currency Loans	*			*		*
Syndicated Loans						
Trade Finance					*	
Export Finance (Buyer's Credit)					*	*
Export Finance (Supplier's Credit)					*	*
Project Finance						
Mezzanine Loans						
Concessional Sovereign Loans						
Concessional Sub-Sovereign Loans						
Treasury Bonds						
Sub-Sovereign Bonds						
Corporate Bonds						
Infrastructure Bonds		*				
Islamic Finance						
Equity and Quasi-Equity Instruments	Limited long-term local currency financing	Limited exit opportunities for investors	High inflation	High currency risks	High country risks	High interest rate risks and refinancing risks
Private Equity		*				
Preferred Equity						
Shareholder Loans						
Convertible Loans						

Risk Mitigation Instruments	Limited long-term local currency financing	Limited exit opportunities for investors	High inflation	High currency risks	High country risks	High interest rate risks and refinancing risks
Partial Risk Guarantees (PRG)					*	
Partial Credit Guarantees (PCG)					*	
Political Risk Insurance (PRI)					*	
Export Credit Guarantee (ECG)					*	
Interest Rate Swaps (IRS)						*
Interest Rate Caps						*
Cross-Currency Deliverable Swaps	*			*		*
Cross-Currency Non-Deliverable Swaps	*			*		*
Commodity Swaps			*			
Other Instruments	Limited long-term local currency financing	Limited exit opportunities for investors	High inflation	High currency risks	High country risks	High interest rate risks and refinancing risks
Subsidies and Grants						
Results-Based Finance (RBF)						
Carbon Finance						

Source: Consultant

The above cross table gives rise to the main observation that although most financial instruments listed appear irrelevant to deal with the key problem areas, all problem areas seem to be covered by at least a couple of financial products. This illustrates the fact that technical solutions to address risks and issues identified already exist.

However at the same time it raises the question of why those issues remain relevant and points out to the less-than-perfect efficiency of existing products in effectively dealing with key risk areas.

Efficiency of financial instruments at solving key problem areas

Limited availability of long-term local currency financing

As explained previously the depth of African financial markets is very limited. Local commercial lending institutions have relatively thin balance sheets which do not allow them to support large-scale infrastructure programmes in their own jurisdictions. Additionally the absence of long-term local currency refinancing markets and the relatively basic bank regulations and internal treasury management practices – which prevent local commercial banks from considering the stickiness of bank deposits for the purpose of calculating the maturity of their liabilities – create a maturity mismatch issue in local currency for the immense majority of African lending institutions which constrains them to focus on short-term lending activities (personal/retail banking, basic corporate banking and trade finance). All those factors result into limited local currency financing being available for infrastructure projects.

Instruments to deal with this issue do exist, such as cross-currency deliverable and non-deliverable swaps. Institutions specialised in the provision of such products have even been created, the most active in Africa being The Currency Exchange Fund (TCX) established in 2007 by a group of European and African Development Finance Institutions (DFIs).

Such institutions have been enjoying growing recognition by the market and are developing at fast pace. They do seem to provide a good solution to extend the maturity of local currency credit facilities. Nonetheless the efficiency of existing financial instruments in dealing with this issue is still hampered by a number of factors:

- Most cross-currency swaps remain over-the-counter and cannot be traded on an established market;
- In the absence of reliable market indicators, pricing such products remains a rather rough exercise;
- The cost of such instruments, which needs to take into account local inflation and currency risks, is still steep (up to about 20% of borrowed amount in Ghana);
- The amount that can be traded per investor is capped (up to US\$ 30 million for TCX).

Text Box 6

Exchange rate risk in the Kenyan power sector

The US\$-based PPA model, whereby national power utilities commit to US\$ or US\$-linked payments to independent producers while they collect user tariffs labelled in local currency, has for lack of a credible alternative become the norm for electricity generation in Africa. In this model however the impact of a currency depreciation is fully borne by the national utility, putting high pressure on its or the corresponding State's finances.

In Kenya the national power utility KenGen has been allowed to automatically adjust electricity tariffs to compensate for currency exchange losses, thereby transferring the currency risk to the users. This has however led to sudden and unpredictable tariff increases which ironically tend to fuel the inflation and depreciation cycle.

In the long run, the only stable model is to have PPA obligations denominated in local currency. This requires however a deepening of domestic hedge markets and, in the short term, a reinforcement of TCX-like tools.

Source: A Powerful Case for Local Currency, Per van Swaay, Senior Vice President TCX Fund, 2013 Africa Energy Yearbook, 2013

Limited exit opportunities for investors

The global infrastructure asset market is by nature very illiquid: investing in such assets requires complex risk assessment capabilities, deep pockets and a very long-term investment horizon. Few investors worldwide match those three characteristics, but this issue is even more acute on the African continent where those features need to be combined with an strong appetite for risk.

As a consequence there are very limited opportunities for investors and lenders to sell their stakes in infrastructure deals and exit projects. While some financial instruments do exist to address that issue, they do not seem efficient at solving it for the following reasons:

The infrastructure private equity market is developing in Africa, however most existing funds are interested in participating in the initial financing structure where bigger returns can be achieved rather than in a refinancing round where they actually try to exit;

The absence of infrastructure bonds and credit ratings prevent institutional investors such as pension funds and insurance companies to invest in infrastructure assets.

High inflation

In specific projects where a significant portion of the costs is dependent on international commodity prices commodity swaps can be used to mitigate inflation risk, although such instruments remain fairly underdeveloped in Africa.

In other cases, apart from very advanced products like CPI-indexed notes which are available only in the most advanced economies of the continent where inflation is not a major issue, this key problem area cannot be dealt with by means of existing financial instruments.

Solutions are rather to be explored in the financial structuring of projects themselves, for instance by introducing smart indexation formulas for government payments and user tariffs which reflect the nature and evolution of the costs to be borne by the private sector partner.

High currency risks

Currency risks are a major issue for most infrastructure projects with significant revenue collection from local users – typically energy, water, sanitation and public transportation projects – and projects based on government payments – typically social sectors. This largely explains why projects with significant foreign currency revenue collection from international users such as ports and airports have a much higher chance of successfully reaching financial close.

Financial instruments dealing with the issue of the limited availability of local currency financing also address currency risks, therefore the diagnostic for this particular key problem area is quite similar: existing products seem to be efficient, however they remain very pricey and still lack a more mature currency derivative market.

In practice such risks remain often partly or wholly retained by project sponsors, with rolled-up short-to mid-term currency hedges when available on the local market.

High country risks

While no financial instrument can solve the underlying issues behind high African country risks observed, several products do exist to mitigate their impact on infrastructure transactions:

Export Credit Guarantees (ECG) are efficient at covering project sponsors and lenders against all forms of country risks and are relatively affordable; their main limitation is that they are only relevant for projects with a high export content, which de facto excludes civil works-oriented infrastructure projects;

Political Risk Insurance (PRI) has developed into an almost standardised product which is now well understood by the market and plays a good role in mitigating a whole range of political risks such as currency inconvertibility and non-transferability, expropriation, confiscation, nationalisation, deprivation, political Force Majeure, breach and repudiation of contract, regulatory risk and change of law, negation or cancellation of license and approval, non-allowance of agreed tariff adjustment, frustration of arbitration, etc. PRI is now fairly widely available from a whole range of public and private sources, although in the case of Africa multilateral development institutions such as MIGA still play the biggest role in this market. The main issue with this instrument is its cost, which is based on a commercial estimation of risks and is therefore fairly high for most African jurisdictions.

Partial Risk Guarantees (PRG) are also very relevant in dealing with political risks in infrastructure projects. They are easily adaptable to the project structure and are usually very attractively priced when provided by public sector windows of development partners. Their main downsides include:

- On the government side, the obligation to provide a counter-indemnity and the fact that the guaranteed exposure is counted against the guarantor's country limit (for 25% to 100% of the amount covered, depending on the institution considered), so that it is sometimes more attractive for government to apply for a sovereign loan instead;
- On the private sector side, the fact that the approval process is generally lengthy and cumbersome and the fact that the products are not yet standardised between PRG providers in terms of risk coverage, pricing, eligibility criteria or even appellation, which creates a confusion with PRI and PCG;
- On the guarantor side, the fact that according to Basel II regulations such non-funded exposures should be treated in the same way as funded commitments for the purpose of Capital Adequacy Ratio (CAR) calculations;
- On the guarantor's staff side, the fact that it is often more challenging to set up a guarantee than a traditional loan, yet going through the effort is not specifically encouraged nor rewarded by the hierarchy, which for the most part remains largely focused on achieving annual loan commitment objectives;

Partial Credit Guarantees (PCG) can indirectly play a role in reducing the impact of country risk on an infrastructure project, although they generally deal with a wider range of risks including of the commercial kind. Those products can be coupled to any form of debt obligations, but

they are most suited to bond issues where they play a role of credit enhancer, therefore they are still fairly uncommon in Africa where bond markets remain relatively underdeveloped. As guarantees provided by banking institutions they suffer from the same inconvenience as PRG, namely the fact that their risk treatment should be similar to that of a funded commitment.

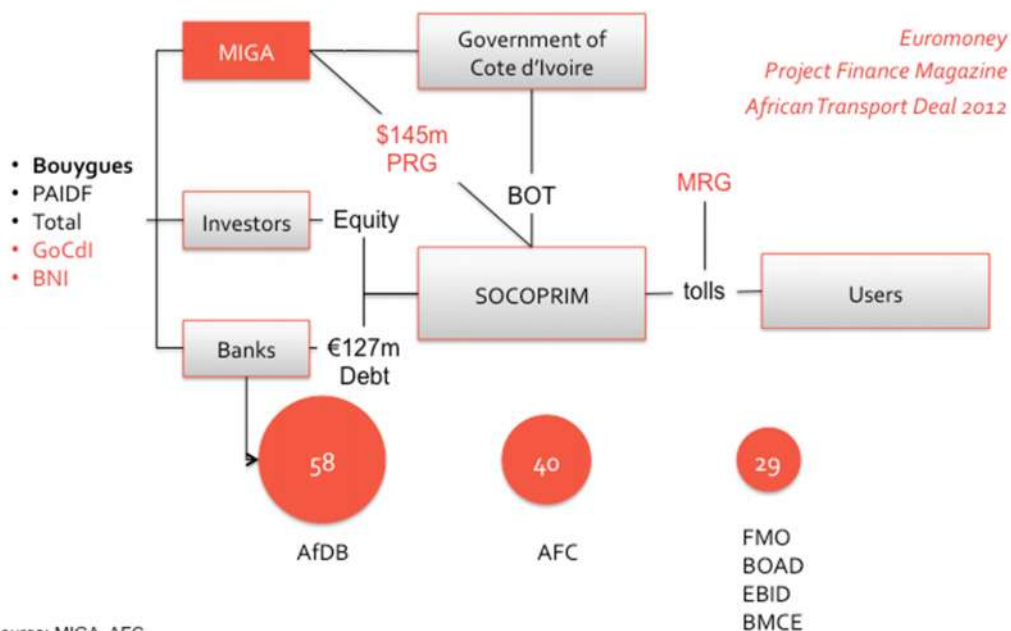
Text Box 7

The Henri Konan Bédié Toll Bridge PPP: a typical African project finance structure

In 1997 French construction group Bouygues Travaux Public won a tender for the design, construction, operation and maintenance of a toll bridge in Abidjan on a 30-year BOT concession basis. At the time the bid did not include committed financing for the project.

In 2012 and following a decade of political turmoil in Côte d'Ivoire the project was successfully closed. The EUR 270 million financing structure included Bouygues TP, PAIDF, Total and the government of Côte d'Ivoire as equity investors and subordinated and senior loans from AFC, AfDB, BMCE, FMO, BOAD and EBID.

MIGA issued a US\$ 14,5 million political risk coverage for the benefit of some of the equity investors and lenders.



High interest rate risks and refinancing risks

Interest rate risks and refinancing risks for African infrastructure projects are effectively dealt with by standard derivatives (swaps and caps) or Commercial Interest Reference Rates (CIRR) in the case of export finance structures, provided financing is labelled in an internationally recognised denomination. The issue mostly arises when financing is provided in local currency, for which in many cases there is no long-term derivatives market.

To overcome this problem cross-currency swaps can be called upon, effectively turning the LCY variable payment obligation into an FCY variable obligation which can then be hedged and turned into a fixed rate on an international market, although the addition of hedging costs can become an issue for project bankability.

In practice and in the absence of long-term local reference rates and interest curves, most local banking institutions would directly provide fixed rates, although such fixed rates would include a significant in-built refinancing risk premium.

4.4 Conclusions

The main conclusions of the assessment of the size and adequacy of the current financial instruments and vehicles spectrum are as follows:

- The spectrum of financial products available appears to be quite extended, i.e. many instruments already exist which deal with a whole range of risks and issues;
- The number of financial players active on the continent and the depth of local financial markets remain however significant issues, limiting competition between financiers and driving financing costs up;
- For different reasons specific to each product type the existing financial instruments spectrum is not perfectly efficient in dealing with key problem areas identified; most commonly encountered issues include the cost of such instrument as well as the low standardisation of product appellations, credit processes and practices between major IFIs;
- It must also be acknowledged that while financing instruments can contribute to mitigating some of the risks associated with infrastructure projects in Africa they cannot solve underlying issues and fundamental economic and regulatory flaws creating those risks in the first place; in the long run only a gradual improvement of the local financial and legal environment can have an effect on the roots of the problems identified.

Text Box 8

"The real challenge is not a matter of money but a lack of bankable projects – a sufficient supply of commercially viable and sustainable infrastructure investments."

Jim Yong Kim

World Bank Group President



"The real challenge – which we are now addressing – is one of getting those projects to bankability, and managing the associated commercial, political and regulatory risks in order to attract the fund managers, the sovereign wealth funds and more."

Donald Kaberuka

African Development Bank President



5 INTERNATIONAL PRACTICES

5.1 Europe

Europe is the most developed region in the world with a total GDP of some US\$ 20 trillion (2010²⁰). The continent encompasses 50 countries and a population of around 740 million. By comparison, nominal GDP of African countries is US\$ 2.4 trillion i.e. 12% of the European economy. The African continent has 54 countries and a population of around 1.1 billion.

Although the two continents differ highly in terms of economic development, there are relevant lessons to be learned from the economic progress experienced in Europe. Only 70 years ago, Europe and its infrastructure were in despair following World War II. Supported by a period of foreign aid assistance based on the Marshall Plan and the subsequent establishment of an increasingly expanding regional economic community, the European Union (EU), the continent has been able to revive its infrastructure and experience sustainable economic progress ever since.

The EU, which today includes 28 countries, accounts for 90% of the economy and almost 70% of the population has been a strong catalyst of infrastructure development in the past 40 – 50 years in Europe, most specifically the Trans-European Networks (TEN), which concept bears resemblance with the principles underlying the PIDA program.

The Trans-European Networks (TEN) were created by the European Union by Articles 154-156 of the Treaty of Rome (1957), with the stated goals of the creation of an internal market and the reinforcement of economic and social cohesion. To various supporters of this policy, it made little sense to talk of a big EU market, with freedom of movement within it for goods, persons and services, unless the various regions and national networks making up that market were properly linked by modern and efficient infrastructure. The construction of Trans-European Networks was also seen as an important element for economic growth and the creation of employment.

The Treaty Establishing the European Community first provided a legal basis for the TENs. Under the terms of Chapter XV of the Treaty (Articles 154, 155 and 156), the European Union must aim to promote the development of Trans-European Networks as a key element for the creation of the Internal Market and the reinforcement of Economic and Social Cohesion. This development includes the interconnection and interoperability of national networks as well as access to such networks.

According with these objectives, the European Commission developed guidelines covering the objectives, priorities, identification of projects of common interest and broad lines of measures for the three sectors concerned (Transports, Energy and Telecommunications). The European Parliament and the Council approved these guidelines after consultation with the Economic and Social Committee and the Committee of the Regions.

A large number of projects of common interest have benefited from financial support of the European Union budget through the TEN-budget line as well as the Structural Funds and

²⁰ IMF

Cohesion Fund. The European Investment Bank has also greatly contributed to the financing of these projects through loans.

Three classes of network were defined by the treaty:

- Trans-European Transport Networks (TEN-T);
- Trans-European Energy Networks (TEN-E or TEN-Energy);
- Trans-European Telecommunications Networks (eTEN).

The European Commission has initiated several instruments to co-finance the Trans-European Transport Networks (TEN-T) investments and to enhance the use of private capital for the TEN-T, including:

- (i) TEN-T Budget;
- (ii) Cohesion Fund;
- (iii) European Regional Development Fund;
- (iv) European Investment Bank.

Financial instruments for the TEN Energy and eTen are largely comparable to the instruments for TEN-T.

(i) TEN-T Budget

The European Commission's Directorate General for Energy and Transport (DG TREN) had a budget available of EUR 8 billion for the Trans-European Transport Networks (TEN-T) for the period from 2007-2013. The TEN-T budget is only available to projects that do not receive grants from the Cohesion Fund or the Structural Funds. As many of the new member states and accession countries are eligible for Structural and Cohesion funds, most of the TEN-T budget goes to old member states. Furthermore, 85% of the budget is allocated to the priority projects. The different financial support schemes from the Commission may be combined. However, regardless of the form of intervention chosen, the total amount of Community aid may not exceed 20% of the total investment cost.

The TEN Financial Regulation²¹ provides that the TEN budget can be used for the following purposes:

- Co-financing of studies (up to 50% of the costs of the study);
- Direct grants for investment in duly justified cases;
- Risk Capital Facility (RCF);
- EIB Loan Guarantee Scheme;
- Interest subsidies on loans granted by the EIB or other public or private financial bodies.

The instruments to facilitate private capital concern:

- Risk Capital Facility;
- EIB Loan Guarantee Scheme.

²¹ Regulation (EC) No 2236/95 as amended by Regulation (EC) No 1655/1995 of 19 July 1999, Regulation (EC) No 788/2004 of 21 April 2004 and Regulation (EC) No 807/2004 of 21 April 2004

Risk Capital Facility

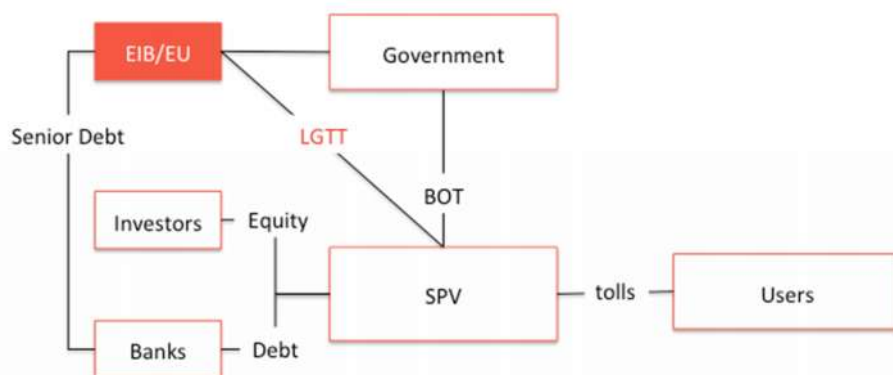
The RCF has been initiated in 1999 by the European Commission as a facility to provide risk capital to TEN projects that are (partly) privately financed through the concept of PPP. The European Commission (EC) has made available EUR 46 million under the management of the EIB for this facility for the period 2000 - 2006. EUR 25 million have been allocated for the purpose of co-investments alongside with a private infrastructure investment fund known as Galaxy Fund (GF), of which EUR 3 million has been disbursed to provide mezzanine debt to ALIS, a project company that holds a concession for the A28 Rouen – Alençon tolled motorway (France).

Loan Guarantee Scheme

The recently designed Loan Guarantee Instrument for Trans-European Transport Network Projects (LGTT) is expected to help attract additional private capital. The instrument is financed by the European Union (EU) TEN budget (EUR 500 million) and the EIB (EUR 500 million). The instrument is intended to provide support for specific types of PPPs. The aim is to stimulate private sector investment in priority TEN-T projects by providing credit assistance. The Loan Guarantee Scheme is therefore designed to provide a cushion for unexpected shortfalls in the cash flow available for debt service. It is a European Commission commitment backing a subordinated debt facility of a TEN project during the ramp-up period, which is from the end of the construction to the stabilisation of the cash flows.

Figure 5-1: EU Loan Guarantee Scheme

LGTT Facility has the capacity to underwrite €5 billion guarantees



The EUR 1 billion fund can provide a total amount of EUR 5 billion worth of guarantees, based on a capital provision of 20%. The guarantee facility underpins the senior debt facility as debt providers have the confidence that subordinated debt will remain in the project. This reduces the risk profile of the project considerably and will attract more senior debt providers. This means that the leverage has high potential to increase further due to this support for bankability. It can be expected that the leverage is 20 to 30 times the original contribution of the Commission.

Text Box 9

Portuguese PPP project first to benefit from LGTT

The A4/IP4 road PPP in the North of Portugal signed in May 2008 is the first project to benefit from the Loan Guarantee instrument for TEN Transport projects (LGTT). The financing included a EUR 20 million LGTT tranche on top of a EUR 180 million Structured Finance Facility (SFF) senior loan. The PPP structure is based on availability and traffic related service payment by the project promoter to the private company and real tolls collected by the private company but fully passed onto the promoter.

Source: EIB Information 3 – 2008

The Commission has furthermore initiated several non-financial instruments to support the preparation of TEN-T projects, most notably:

- JASPERS, focused on technical assistance to the member states;
- Trans-European Transport Network Executive Agency (TEN-TEA), focused on management of the Commission's TEN-T budget.

(ii) Cohesion Fund

The Cohesion Fund is a structural instrument which helps member states to reduce economic and social disparities and to stabilise their economies since 1994.²² For the period 2007 – 2013 EUR 308 billion have been allocated to the Cohesion Fund. The Cohesion Fund finances up to 85% of eligible expenditures of major projects involving the environment and transport infrastructure (as identified in the TEN guidelines). Public or private bidders, responsible for the implementation of a project, can apply. Projects that are co-financed by the EU budget are not eligible. Funds are mainly allocated to projects that are within the fields of transport and environment.

Text Box 10

Lisbon's Vasco da Gama Bridge – Portugal

The Vasco da Gama bridge in Portugal concerns a 33-year Design-Build-Finance-Maintain-Operate (DBFMO) contract including the operations and maintenance of the 25 April bridge (parallel to the Vasco da Gama Bridge). This contract has been awarded to Lusoponte. Although the project was procured based on a DBFMO contract, many of the main risks are contractually allocated to the government. The total investment cost of this bridge was EUR 900 million. The bridge is funded by a 20-year EIB loan (33%), the Cohesion Fund (35%), government grants (26%) and private shareholders (6%). The private capital and EIB repayment are based on toll revenues.

Source: European Commission

(iii) European Regional Development Fund

The European Regional Development Fund (ERDF) is one of the European Structural Funds. It was established in 1975 with the intention to stimulate economic development in the EU's least developed regions. Two types of regions are eligible for ERDF funding:

- Objective 1 regions: regions where GDP is below 75% of EU average;
- Objective 2 regions: regions that are facing structural economic difficulties.

²² Details on the Cohesion Fund are available at: [http://ec.europa.eu/regional_policy/funds/procf/cf_en.htm]

The ERDF does not contribute more than 50% of the eligible costs, although this percentage can be increased to 75% in Objective 1 regions. In case of investment in infrastructure generating substantial net revenue, the contribution cannot exceed 40% of eligible costs in Objective 1 regions. To be eligible for ERDF assistance, projects must meet the following criteria:

- The project objectives must correspond with one or more priorities for support in a regional programming document agreed with the EC;
- The project must have clear and attainable targets and offer additional and sustainable advantages to the economic development of the area;
- The project would not be able to proceed without ERDF support.

(iv) European Investment Bank

The EIB is a leading source of bank finance for transport infrastructure in the EU and Accession Countries. From the inception of the EU through the Maastricht Treaty in 1993 to December 2005, loans amounting to EUR 69.3 billion for TEN-T projects and EUR 9.1 billion for TEN-E (Trans-European Energy Networks) projects were signed.

Closer collaboration between the EIB, the European Commission and other important stakeholders has been initiated. The EIB is acting as an advisor to the Commission, member states and Public Authorities on TEN, PPP financing and other institutional issues. In 2005, the EIB signed a Memorandum of Understanding with DG-TREN to formalise the existing cooperation between the Bank and the Commission in support of TEN-T and TEN-E projects. This agreement concerns policy definition and formulation as well as specific project financing.

The EIB does not finance the total investment cost of a project, the objective being to capitalise on the Bank's first-rate lending terms to attract other viable sources of financing. The EIB contribution does normally not exceed 50% of the total investment cost, although for trans-European transport schemes funding may amount to as much as 75% in exceptional cases.

Restricting EIB financing to 50% enables the borrower to establish a dynamic and diversified finance plan in partnership with other financial institutions and banks.

EIB loans can be an addition to local and national budgetary assistance as well as to EU grants, such as structural funds, depending on the scope and nature of the individual project.

No territorial restrictions apply to EIB loans. They are granted on the basis of banking criteria. These criteria include the financial (i.e. ability to repay), technical and environmental feasibility of the project.

In general terms, the EIB has four main financing facilities for transport infrastructure:

- Individual loans for capital expenditure programmes or projects;
- TEN Investment Facility;
- Structured finance facility;
- Loan Guarantee Scheme (as described already).

Loan facilities

The EIB provides individual loans for capital expenditure programmes or projects with capital requirements of more than EUR 25 million, which are relevant in the context of large-scale infrastructure projects such as TEN projects. A number of facilities can be used for the TEN-T.

TEN Investment Facility

In order to attract more private capital for TEN projects, the EIB has improved its financial instruments, introduced additional risk taking and increased EIB resources with a new TENs Investment Facility (TIF) designed to invest EUR 75 billion until 2013. The Bank's financial operations cover traditional long-term lending products from own resources (senior loans, PPP loans, securitised loans, etc.) with long maturities and grace periods. In exceptional cases (specific cross-border projects), the EIB can, under this facility for investment grade projects, provide maturities of up to 35 years and finance up to 75% of project costs.²³

Structured Finance Facility (SFF)

In order to match the types of financing to the requirements of projects with a high-risk profile and to pursue its equity financing and guarantee operations in favour of large-scale infrastructure schemes, the EIB has established a Structured Finance Facility (SFF).

Under this facility, the EIB can assume a greater degree of credit risk in the financing of projects than it normally would. Total reserves of EUR 750 million have been set aside under this heading over a three-year period for the purpose of generating operations amounting to between EUR 1.5 and 2.5 billion. A broad mix of financial products is provided:

- Senior loans and guarantees incorporating pre-completion and early operational risk;
- Subordinated loans and guarantees ranking ahead of shareholder subordinated debt;
- Mezzanine finance, including high-yield debt for industrial companies in transition from SME scale or in the course of restructuring;
- Project related derivatives.

The aim of the SFF is to render value added for priority projects by complementing the commercial banks and capital markets. These operations are undertaken foremost in the countries of the European Union, but also in non-member countries.²⁴

Relevant Lessons for PIDA

The development of cross border transport infrastructure in Europe as facilitated by the EU is characterised by the following:

Investments have been financed largely through public finance. Private finance has been applied only marginally despite the Commission's efforts and instruments to increase the use of PPP. According to Wagenvoort, de Nicola and Kappeler (2010)²⁵ PPP accounts for

²³Further information is available at <http://www.eib.org/projects/topics/tens/european-action-for-growth/index.htm>

²⁴ Further information is available at <http://www.eib.org/products/loans/special/sff/index.htm?lang=-en>

²⁵ Rien Wagenvoort, Carlo de Nicola and Andreas Kappeler; Infrastructure Finance in Europe: Composition, evolution and crisis impact (EIB Papers, Volume 15, no 1, 2010)

approximately 5% of Europe's infrastructure spending in the period 2006 – 2009 i.e. approximately US\$ 16 billion per annum. Total infrastructure spending amounts up to some US\$ 360 billion per annum.

Member countries have the primary responsibility for their infrastructure development, including cross-border infrastructure. The EU merely facilitates through technical assistance and financial support through grants and loans up to a specific level. The level of support a country is eligible for depends on the economic conditions of the respective country.

The strongest shoulders bear the heaviest burden. The concept of the EU where the members pay a contribution based largely on their economic strength implies that the financial support to infrastructure development is based on the principle of ability to pay irrespective of the direct benefits from that contribution. It is driven by the theory that one will benefit indirectly from well-developed infrastructure in the larger European Union market.

Although PPP plays a limited role in the development of the Trans-European networks, and despite the economic strength of the different member states and the advanced sophistication of the financial sector in Europe, **the EC has established a broad range of facilitating instruments**, including:

- Long-term debt facilities through the EIB;
- Risk mitigating guarantee instruments such as the Loan Guarantee Scheme and the Structured Finance Facility;
- Risk capital facilities to facilitate equity financing;
- Project preparation facilities such as JASPERS and TEN-TEA.

Given the experience in Europe, it is advisable that the PIDA programme does not rely solely on private financing to meet its investment requirements. If a well-developed region such as Europe, with significantly lower project risk profiles in comparison with Africa in terms of country risk, currency risk, inflation risk and others, as well as a significantly more sophisticated and substantive financial sector is able only to apply private finance for up to 5% of its infrastructure spending, it is not likely that a less developed region such as Africa will be able to finance most of its infrastructure need through private financing. Obviously Europe has benefitted from a substantial higher fiscal space to meet its investment requirements than Africa and thus less incentive to apply PPP, so the recommendation is that PIDA should target a higher level of private financing in the short to medium term though should not assume that private financing will meet the entire finance gap.

5.2 India

India presents some similarities with Africa in terms of socio-economic conditions. The size of the economies, respectively US\$ 2.0 and 2.4 trillion, and population, respectively 1.2 and 1.1 billion, are almost the same. GDP per capita in nominal terms in India is around US\$ 1,600 and in Africa around US\$ 2,300. In terms of purchasing power, GDP per capita in India is more than double the size of the average in Africa, i.e. US\$ 4,300 compared to US\$ 2,000.

Although India is a sovereign federation, its 29 states are fairly autonomous and differ significantly in terms of economic and social development. For example GDP per capita in the 103 million people state of Bihar is US\$ 330 (lowest in India), and for the 42 million in the state of Odisha, it is US\$2,800²⁶.

²⁶ India.gov.in

India has become the country with the highest share of privately financed infrastructure as proportion of infrastructure capital expenditures in a country. In the period 2006 – 2011, India has attracted some US\$ 30 billion of private infrastructure investments per annum i.e. 2.8% of GDP, which accounts for almost 40% of its infrastructure investments (which amounted up to some 7.1% of GDP)²⁷. By comparison, Africa has attracted on average some US\$ 15 billion per year in the past decade according to the PPI database. Depending on the data source, this equals approximately 20 - 30% of total infrastructure spending or 0.8% of GDP.

The main pillars include:

1. Viability Gap Fund;
2. India Infrastructure Project Development Fund;
3. India Infrastructure Finance Company Ltd.;
4. Model Concession Agreement;
5. Coordinating and implementing PPP agencies.

(i) Viability Gap Fund

Viability Gap Financing (VGF) is meant for projects where financial viability is not ensured but their economic and social viability is high. VGF could come in the form of capital grant or annuity payment or in both forms.

The mechanism is a Plan Scheme administered by the Ministry of Finance with suitable budgetary provisions to be made in the Annual Plans on a year-to-year basis.

The quantum of VGF provided under this scheme is in the form of a capital grant at the stage of project construction. The amount of VGF is equivalent to the lowest bid for capital subsidy, but subject to a maximum of 20% of the total project cost. In case the sponsoring Ministry / State Government / statutory entity proposes to provide any assistance over and above the said VGF, it is restricted to a further 20% of the total project cost.

Support under this scheme is available only for infrastructure projects where private sector sponsors are selected through a process of competitive bidding. The project agreements must also adhere to best practices that would secure value for public money and safeguard users' interests. The lead financial institution for the project is responsible for regular monitoring and periodic evaluation of project compliance with agreed milestones and performance levels, particularly for the purpose of grant disbursement. VGF is disbursed only after the private sector company has subscribed and expended the equity contribution required for the project.

²⁷ Planning Commission; Twelfth Five Year Plan

(ii) India Infrastructure Project Development Fund

The India Infrastructure Project Development Fund (IIPDF) was established with a view that most PPP projects require specialist support to ascertain project viability, feasibility and other preparatory works which need to be funded by the sponsoring department.

Provision has been made to provide up to 75% of total project development costs from the central government as long as there is a commitment from the sponsoring authority to bring in the balance of 25%.

The facility is an interest-free financial assistance to meet project development expenses. This is expected to be recovered from the successful private sector partner upon award of the project. The sponsoring authority will reimburse the IIPDF, the project development expenses along with a fee up to 40% of the funding

(iii) India Infrastructure Finance Company Ltd.

The India Infrastructure Finance Company Ltd. (IIFCL) was established as a wholly government-owned company with an authorized capital of Rs 2000 crore (US\$ 330 million), of which paid-up capital is Rs 1800 crore (US\$ 300 million). It is a dedicated institution purported to assume an apex role for financing and development of infrastructure projects in the country. Its role is to fill the gap for long-term infrastructure finance which banks are not in a position to address. The company lends up to 20% of the capital costs of a project. It provides assistance through long-term debt; either by way of refinance to banks and financial institutions with tenor exceeding 10 years or by direct lending to project companies. It raises resources under Government of India guarantee.

(iv) Model Concession Agreement

The Model Concession Agreement (MCA) forms the core of PPP projects in India. The MCA spells out the policy and regulatory framework for implementation of a PPP project. It addresses a gamut of critical issues pertaining to a PPP framework like mitigation and unbundling of risks, allocation of risks and returns, symmetry of obligations between the principal parties, precision and predictability of costs and obligations, reduction of transaction costs and termination. The MCA allocates risk to parties best suited to manage them.

(v) Coordinating and implementing PPP agencies

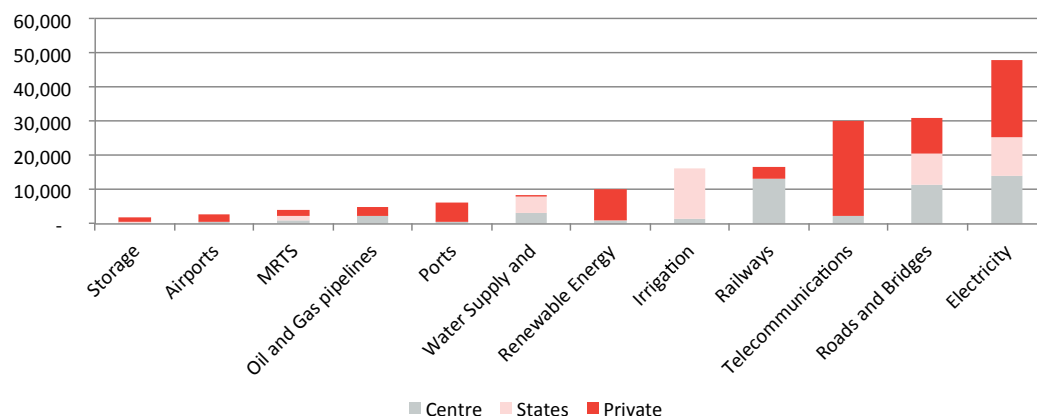
The development of PPP in India is facilitated by a well-designed institutional setting which includes a coordinating agency i.e. the Department for Economic Affairs, an approval committee to ensure checks and balances and nodal agencies responsible for implementation which are located with the concerned implementing agencies i.e. line ministries and states. Adequate resources have been allocated to these agencies including technical assistance through individual experts (funded by development partners) and a panel of advisors. Furthermore an extensive training program is available to ensure proper capacity building as well as various online knowledge facilities e.g. www.pppinindia.com.

For the Twelfth Five Year Plan, India targets to increase its infrastructure spending from 7.1% of GDP to 8.3% of GDP and increase the share of private investments from 40% to almost 50%, which implies an annual private finance market of around US\$ 87 billion. The main priority sectors include electricity, telecommunications and roads, which account for 61% of total infrastructure spending.

Figure 5-2: India Infrastructure Investments and Financing 2012 - 2017

India targets US\$ 180 billion per annum infrastructure spending with 50% privately financed

Projected Investment in Infrastructure per annum Twelfth Plan 2012 – 2017 (in US\$ million)



Source: Planning Commission India, Twelfth Five Year Plan

It is questionable whether India will be able to achieve this objective given the limitations to the equity capacity of local developers. For example, in 2013 – 2014, 21 PPP road projects did not receive a single bid.

Text Box 11

21 road PPP projects without bidders in India, focus on EPC

The Government of India has announced that twenty-one road PPP projects bid out by the National Highways Authority of India (NHAI) did not get a single bidder during the fiscal year 2013-2014.

At present 180 number of PPP projects under the Ministry are under construction through various agencies with total project cost of about Rs1,900 billion (US\$31 billion)

The Minister of State for Road Transport and Highways and Shipping Shri Krishanpal Gurjar stated that the Ministry of Road Transport & Highways and NHAI have taken a number of steps for speedy completion of National Highway (NH) projects including streamlining of process of land acquisition and other statutory clearances, securitisation of road sector loans, introduction of revamped dispute resolution mechanism and close coordination with other ministries.

The Ministry of Environment & Forests (MoEF) has also de-linked the grant of Environment Clearance from the Forest Clearance for linear projects and treated the strengthening and widening of NH projects differently from the new projects and allowed the construction of the NH in the Non-Forest areas.

The Reserve Bank of India (RBI) has also advised all scheduled commercial banks to treat road sector debt as secured within the limits of 90 % of debt due enabling banks to allocate a larger portion of lending to road sector and also to reduce the cost thereon. Concessionaires/developers have also been allowed for harmonious substitution and re-scheduling of premium quoted by them.

The lack of equity in the market there has also been one of the reasons of a lukewarm response from the bidders for the projects under Public-Private Partnership (PPP) mode during 2012-13 and 2013-14. During the year 2013-14, NHAI had awarded 17 projects for a total length of 1435.84 kms of which two projects are on PPP mode.

The Minister said considering the current market conditions, particularly with reference to the highway sector, focus of the Government is on implementation of highways through public funded Engineering, Procurement and Construction (EPC) mode. Once, the highways sector gathers momentum through execution of the EPC projects and current issues plaguing PPP mode are well-addressed, the focus on PPP mode including Build-Operate-Transfer (BOT) (Toll) would be restored in order to effectively take highways sector forward.

Source: <http://infrapppworld.com/2014/08/21-road-ppp-projects-without-bidders-in-india.html>

Relevant Lessons for PIDA

The commendable development of PPP as significant contributor to infrastructure investments in India is characterized by the following:

- **Cohesive and coherent framework for PPP** including strategic objectives, facilitating financial instruments, effective regulations and guidance and a competent institutional setting.
- The **facilitating financial instruments** are tailored to compensate market shortcomings and effectively utilize public resources as a catalyst for private finance.
- The **institutional framework is well designed** and supported through a range of capacity building instruments including training, expert advisors and on-line facilities.
- Obviously **not all PPPs in India have been successful**. There are numerous cases of failed PPPs mostly because of inadequate project preparation or ineffective risk allocation. Such failures are part of the learning curve and call for an adaptive PPP policy and a coordinating agency that initiates further improvements to the PPP framework.

It is also to be noted that there are limits to the use of PPP related to the investment capacity of developers and the financing capacity of banks. One cannot therefore rely solely on private finance. The target/aim should thus be an achievable balance between public and private finance that takes into account efficiency of public and private sector, the market capacity and the government's fiscal space.

5.3 South America

In 2000, the 12 sovereign states of South America initiated the Initiative for Regional Integration of South America (IIRSA) – a development plan to link South America's economies through new transportation, energy, and telecommunications projects.

IIRSA investments are expected to integrate highway networks, waterways, hydroelectric dams and telecommunications links throughout the continent – particularly in remote, isolated regions – to allow greater trade and create a South American community of nations. IIRSA is thus comparable to the PIDA initiative.

The 2000 Action Plan for the Integration of Regional Infrastructure in South America set forth the three guiding principles for the initiative's actions: coordinating plans and investments, harmoniously integrating regulatory aspects and, lastly, seeking out innovative public and private financing mechanisms. At the same time, it set forth a 10-year deadline for IIRSA.

IIRSA is concentrated on ten so-called development hubs (*ejes de desarrollo* or *ejes de integración y desarrollo*). Most of the IIRSA hubs involve road infrastructure programmes linking

the countries in the region with each other as well as world markets, but some hubs involve the improvement of the navigability of waterways, the construction of international telecommunication systems and energy links.

It is being supported by the Corporación Andina de Fomento (CAF), the Inter-American Development Bank (IDB) and the River Plate Basin Financial Development Fund (Fonplata). Together the three institutions form the Technical Coordination Committee (CCT) which provides technical and financial support for IIRSA activities.

The IDB, member of the Technical Coordination Committee of the IIRSA, has supported the IIRSA Initiative since its creation in 2000 through several financial and non-financial instruments, which include loans, donations, guarantees, and technical support. Explicitly for IIRSA, a US\$ 40 million project development facility has been established, entitled Fund for Integration Infrastructures (*Fondo de Infraestructuras de Integración* or FIRII, in Spanish). The resources of the fund are destined to financing studies (up to US\$ 1.5 million per study) related to the technical, economic, financial, institutional and legal feasibility of the projects that belong to the IIRSA Initiatives and the Mesoamerica Project. Within the framework of those activities, the Fund also allows the funding of social and environmental studies, public-private collaborations for specific projects as well as activities to strengthen institutions.

In the period 2003-04 an indicative planning process started in which all countries listed projects. By October 2006 the IIRSA portfolio included 348 projects with a total investment value of around US\$ 37 billion, mostly road projects. Among which were 31 priority projects with an investment volume of US\$ 7 billion. The list is frequently adjusted and updated. In 2013, the list included 583 projects with an investment volume of US\$ 157 billion.

According to the IIRSA website, 44% of the identified projects are implemented or under construction. 47% of the investments have been privately financed or through PPP. According to the IDB website, IDB has contributed US\$ 2.9 billion to 27 IIRSA projects with a total investment of US\$ 10.2 billion.

Although the 2010 deadline has not been met, the investment program has progressed significantly. One of the key contributors to the progress made is the system for monitoring the "Implementation Agenda based on Consensus 2005-2010" grounded on the following guidelines based on the specific situation of each country:

- (i) The system continuously monitors preparation and execution of projects and works;
- (ii) The IIRSA National Coordinator in each country is responsible for following up the pertinent priority project on the Agenda with the objective of identifying in a timely manner and with CCT's support, if the case requires it, problems that may arise in the agencies or countries in the preparation or execution of such project;
- (iii) The IIRSA National Coordinator articulates all the government levels involved in the project's implementation process, thus helping to overcome any obstacles that could arise;
- (iv) When a CCT Hub Coordinator is informed of a problem in the preparation or execution of a project under his/her responsibility, such Coordinator must suggest to the proper levels of the CCT institutions and to the IIRSA National Coordinator the necessary measures to overcome such restrictions;
- (v) The IIRSA National Coordinators, with CCT support, if required by countries, will issue a bi-monthly progress report for each project to directly inform on a restricted basis

- all managerial levels involved in project implementation both at the country as well as at CCT agency level;
- (vi) IIRSA's Presidency, with CCT support, and on the basis of the bi-monthly progress reports, prepares twice a year a Report on the IIRSA Implementation Agenda based on Consensus 2005-2010 indicating progress achieved and problems detected in the implementation of the Agenda's projects;
 - (vii) These reports are analysed by the IIRSA National Coordinators and distributed among the competent authorities of each country helping to create a shared implementation feeling at decision-making levels;
 - (viii) The analysis and monitoring of the Agenda progress is an issue of permanent attention of the IIRSA National Coordinators, besides the rest of the instances of IIRSA.

It has to be noted that South America already has ample experience with private financing supported by – at least in most countries – a conducive environment. According to the PPI database, the average amount of privately financed infrastructure in the past 10 years is around US\$ 34 billion per annum, equivalent to approximately 0.8% of the total South American GDP. The Economist Intelligence Unit concluded in 2010 that 5 out of 9 reviewed South American countries were considered emerging or developed in terms of PPP readiness, and only 4 countries nascent. Brazil, Chile and Peru, jointly account for 85% of the private investments (Brazil alone did 75%) have been taking the lead in this development.

Relevant Lessons for PIDA

The successful progress of IIRSA can be attributed to a **fairly conducive environment to PPP**, particularly in the major economies, and a very strong coordination and monitoring system with **support from the highest level of government**. Also the coordinated **support from international finance institutions**, including a **dedicated facility for project development**, can be considered a critical success factor.

5.4 Southeast Asia

The Association of Southeast Asian Nations (ASEAN) is a political and economic organisation of ten countries located in Southeast Asia, which was formed on 8 August 1967 by Indonesia, Malaysia, the Philippines, Singapore and Thailand. Since then, membership has expanded to include Brunei, Cambodia, Laos, Myanmar and Vietnam. Its aims include accelerating economic growth, social progress, socio-cultural evolution among its members, protection of regional peace and stability, and opportunities for member countries to discuss differences peacefully.

ASEAN has a population of approximately 600 million people, and its combined nominal GDP has grown to more than US\$ 2.3 trillion, almost comparable to Africa's GDP.

ASEAN leaders endorsed the Master Plan on ASEAN Connectivity (MPAC) in 2010. The MPAC represents an in-depth plan of action based on (i) a list of priority projects for ASEAN connectivity, (ii) requirements for institutional and policy coordination, and (iii) recommendations for financing key projects. In 2011 the ASEAN Infrastructure Fund (AIF) was established by ASEAN (excluding Myanmar) and the Asian Development Bank (ADB) to provide

an innovative financing instrument to address the ASEAN connectivity constraints and as a key driver toward realizing the vision for an ASEAN Economic Community by 2015.

Text Box 12

ASEAN Infrastructure Fund Targets US\$ 13 billion towards ASEAN Connectivity

With an aim of leveraging more than US\$ 13 billion in infrastructure financing, ASEAN Finance Ministers, the President of Asian Development Bank (ADB), and Secretary-General of ASEAN signed the ASEAN Infrastructure Fund (AIF) Shareholder Agreement in Washington, D.C. on 29 September 2011.

Dr Surin Pitsuwan, Secretary-General of ASEAN, calls the AIF "an 'innovative financial architecture,' unique, and appropriate for ASEAN, timely for the region as it explores various financing mechanisms to support the ASEAN Economic Community by 2015."

The AIF is a mechanism in which the ASEAN Member States and ADB work together through pooling funds – and promoting the use of ASEAN savings – to foster infrastructure development within the region and make the Master Plan on ASEAN Connectivity (MPAC) a reality. "It's a pooling of regional goodwill, financial strength and economic resiliency that leverages on our collective credibility and mutual confidence," added Dr Surin.

The MPAC, adopted last year, identifies a series of strategies and actions to enhance physical, institutional, and people-to-people connectivity.

The AIF is being set up with an initial equity contribution of US\$ 485.2 million, of which US\$ 335.2 million is from ASEAN while the remaining US\$ 150 million is from the ADB. About six projects each year are expected to be carried out starting next year. The AIF's total lending commitment through 2020 will be roughly US\$ 4 billion.

"With ASEAN countries holding over US\$ 700 billion in reserves, the AIF offers an avenue for mobilising the region's resources for its growing infrastructure requirements," said Dr Surin. "It's a financial package that leverages on our collective credibility and mutual confidence," he added.

Through the AIF, ASEAN is showing confidence by investing in its own future. The Fund will provide financing for selected public-private partnership projects and hopes to attract even greater foreign capital flows to the region. According to the latest ASEAN Investment Surveillance Report by ASEAN Secretariat, FDI flows in the region doubled to US\$ 75.8 billion last year from US\$ 37.8 billion in 2009, and for the first time more than US\$12 billion of those flows were sourced within ASEAN.

For a region with a shared vision, infrastructure development is an important contributor towards achieving sustainable growth and ensuring ASEAN's regional path of progress.

"The ASEAN Infrastructure Fund will help ensure the 600 million people who call our region home will have greater access to energy, clean water and sanitation, and better forms of transportation," said Mr Agus D.W. Martowardojo, acting ASEAN Chair and Indonesia's Finance Minister.

ADB will administer the AIF, and will ensure that safeguards and due diligence are an integral part of financed projects. The AIF will be domiciled in Malaysia as a limited liability company.

Source: www.asean.org/news/asean-secretariat-news/item/asean-infrastructure-fund-targets-us13-billion-towards-asean-connectivity

To put into action the Master Plan on ASEAN Connectivity, the ASEAN Connectivity Coordinating Committee (ACCC) – the body tasked to coordinate and oversee the effective implementation of the Master Plan- was established in 2011. The committee comprises the permanent representatives to ASEAN.

Relevant Lessons for PIDA

As the ASEAN Connectivity programme is still under development, no objective statements can be made on its level of success or progress and the contributing factors. However, from the design of the programme it can be concluded that there is a shared understanding that a **dedicated financing facility** is essential for the successful implementation. It can also be concluded that **pooling sovereign reserves** (similar to the concept of the EIB) is considered

appropriate for the purpose of developing regional infrastructure, which is a relevant observation for PIDA.

5.5 Africa

International practices relevant for the PIDA programme also include experiences from the African continent itself, for example the Maputo Corridor development initiative and the Rift Valley Railway concession.

Maputo Corridor

The Maputo Corridor is a major trade corridor which connects the Gauteng, Limpopo and Mpumalanga provinces of South Africa with Maputo, which is a port and the capital of Mozambique.

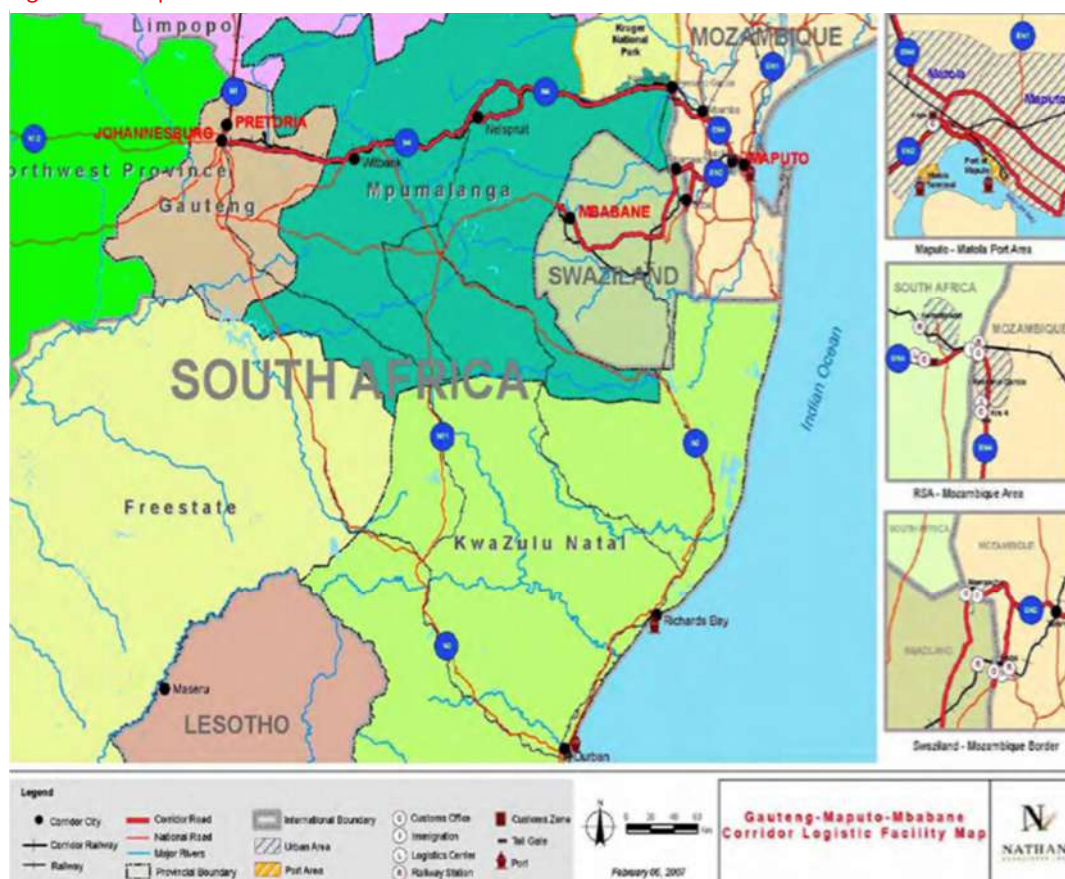
The corridor comprises roads – including the new N4 highway –, railways, ports and border facilities at Komatipoort which connect the industrial areas around Gauteng and mines and agricultural districts to the east with deep-water ports of Maputo and Matola in Mozambique.

The corridor was first planned in 1994 as a rehabilitation project for disused transport links. Since then the project has broadened, new parties have become involved, and over US\$ 5 billion invested.

Key infrastructure investments included the following:

- The N4 Maputo Toll Road, a PPP awarded in 1997 to the Trans African Concessions consortium (Trac) for a period of 30 years, and estimated at ZAR 1.5 billion at the time;
- The management agreement with Liverpool's Merseyside Docks and Harbour Company to upgrade and operate the Maputo Port for an estimated US\$ 65 million initial investment;
- Improvements to the Lebombo Border Post carried out for at estimated ZAR 20 million;
- The construction of two high-voltage electricity lines from Duvha (South Africa, near Johannesburg) to Maputo through a joint venture of South African and Mozambican electricity utilities (Motraco);
- The development of the Pande/Temane gas field in Mozambique and the construction of a pipeline to South Africa (US\$ 1.4 billion) by Sasol (South Africa) and ENH (Mozambique).

Figure 5-3: Maputo Corridor



The financing scheme for the Witbank-Maputo N4 Toll Road has the following characteristics:

- BOT with concession contract to TRAC (US\$ 3 billion over 30 years);
- 20% equity (construction companies and local and international investors);
- 80% debt (the 'big four' South African banks, DBSA and local pension funds);
- Government guarantees.

Although the detailed setup and implementation strategy of the project itself constitute the main reasons for its success, other parameters related to the general context and environment of the project are also believed to have contributed to these results.

Among such parameters one could mention the following:

- South Africa already had some experience with toll projects prior to embarking on the N4 PPP project and in general a very good and established road network countrywide;
- The east-west corridor between the Pretoria/ Johannesburg area and Maputo existed prior to the PPP project as an established route; the PPP toll project merely contributed to its strengthening;
- The Gauteng province is the major trade generator of the South African economy and the Maputo region is its equivalent in Mozambique; the geographical location of the port of

Maputo made it a credible alternative to Durban as a gateway to the Indian Ocean for South African trade.

The governments of South Africa and Mozambique have promoted the revival of the Maputo Corridor as part of a greater Spatial Development Initiative with bilateral policies and substantial public and private sector investments, designed to stimulate sustainable growth and development in the region.

One of the most important mechanisms to facilitate the corridor development has been the Maputo Corridor Logistics Initiative (MCLI).

MCLI is a non-profit organisation consisting of infrastructure investors, service providers and stakeholders from Mozambique, South Africa and Swaziland who are focused on the promotion and further development of the Maputo Development Corridor (MDC) as the region's primary logistics transportation route. The primary strategic focus of MCLI is to engage with South African, Mozambican and Swaziland governments to reinforce the public-private partnerships in the arena of logistics and to ensure that the Maputo Corridor is the first choice for both regional importers and exporters.

The Maputo Development Corridor has been one of the most successful development corridor initiatives in the SADC region to date and has become a model for future initiatives. Several lessons can be drawn, from both its achievements and the challenges it has encountered. Crucially, the involvement of the MCLI, as well as the PPPs that financed the corridor infrastructure, has ensured that its efficacy continues to increase through effective management and by lobbying against outstanding issues. The successful use of PPPs to finance the Maputo Corridor has proved that this mechanism is effective for financing the transport infrastructure sector. This is a positive development, as it demonstrates that fiscally constrained countries can successfully harness PPPs in this way to achieve similar initiatives in the future albeit subject to the caveats mentioned, most notably the conducive environment for PPP and the limited risk transfer to the private sector because of the government guarantees and the backing of the strong credit profile of South Africa.

Rift Valley Railway Concession

The Rift Valley Railways Consortium (RVR) is a consortium that was established to manage the parastatal railways of Kenya and Uganda. The consortium won the bid for private management of the Kenya-Uganda railway in 2005.

In December 2006 the Rift Valley Railway Concession (also known as Kenya-Uganda Rail Concession) led by Sheltam Rail Ltd reached financial closure after seven years of preparation, despite having all the features that had already driven long-term African rail concessions of its kind into virtual extinction. The deal closed successfully and went on to become Euromoney Project Finance Magazine's Africa Deal of the Year.

The joint concession is structured legally as two separate 25-year concession contracts signed by each government with the subsidiary company in each country of the RVR Investments (Pty) Ltd which acts as the overall concession holding company. While for regulatory and political hurdles in each country the concessions were signed by the RVR subsidiaries with each government, it was always the intention of the procuring agencies that RVR should run the railway as a seamless operation. The legal and corporate structures therefore required by the

two governments, in addition to the interface agreement between the two governments and the concessionaires, were aimed at bringing it all together as one business proposal. A large amount of freight traffic was expected to be cross-border and the success of each operation was expected to depend heavily on the joint coordination of operations on the total network.

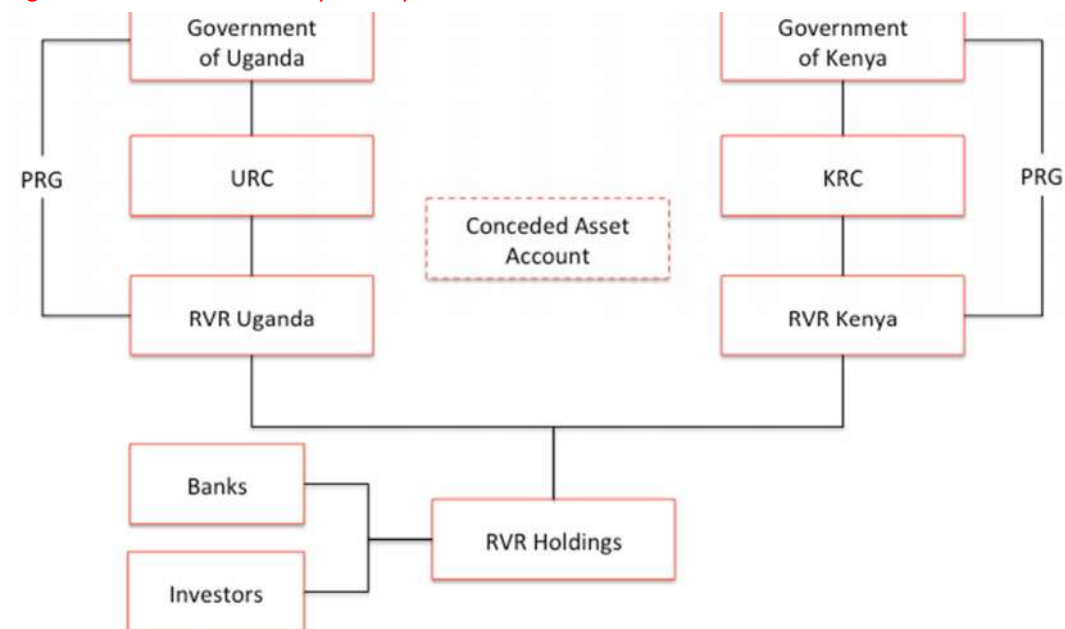
The projected total capital expenditure required over the lifetime of the project was approximately US\$ 450 million and was to be provided via equity, debt financing and internal cash flows generated by project operations. The project was structured and funded as a non-recourse financing, although concessions were no longer typically structured this way. The base case financial projections showed that if RVR met its targets, it might never need to access the bank market for future capital investments after the initial five-year funding. Such investments could then be financed entirely by internal cash generation.

The financial structure of the project assigned project risks, such as commercial risks associated with the concession (including the operation, investment and, most importantly, traffic risks) to the concession companies and their lenders.

The financing tenors of the project were the longest ever negotiated in the region; 15 years with a five-year moratorium on repayment of principal during the investment period. This was the first time such a term structure had been used in Sub-Saharan Africa, outside of South Africa.

Contrary to prior experiences with railway concession in Africa, the concessionaires were required to make the initial track investment, but the investment was protected with one mechanism for precisely documenting the amortised value of the improved assets, and another mechanism to strengthen the ability of these governments to make good on any end-of-contract commitments, i.e. two separate IDA Partial Risk Guarantees (PRGs).

Figure 5-4: Structure Rift Valley Railway Concession



Unfortunately, three years later the deal was on the verge of collapse for the following reasons according to a PPIAF case study:

- RVR proved not to have sufficient expertise in actually running a railway operation to begin improving the system's revenues. Lead shareholder Sheltam Ltd took on operational responsibility but without bringing in outside technical expertise to manage the operation as the government had expected. Undoubtedly the extensive civil unrest that followed presidential elections just a year after contract closure also played a role in disrupting rail operations, but management weaknesses seem to have been clearly apparent before that.
- Because revenues were not improving, RVR was not making required initial investments and was eventually unable to make fee payments to the government owners. The operator reported a loss in 2008 of KSH 1.8 billion (US\$ 24 million) on revenues of KSH 3.7 billion. This was three times the reported loss the year before. The dire financial problems of the operator caused lenders to withhold loans needed for more capital-intensive improvements and the business continued to suffer.
- In early 2009 government officials in both countries began talking about cancelling the concession and the RVR consortium was prompted to take action. The smaller shareholders had begun to view Sheltam's deteriorating relationship with the governments and lenders as a principal obstacle blocking new investment finance. These shareholders proposed a change in the concession agreement requiring that the consortium have a lead investor with at least a 35% shareholding. Their idea was to dilute Sheltam's shareholding to 10% from 35%, with the difference taken up by Trans-Century, a Kenyan equity firm. At the same time, RVR acknowledged its operational weaknesses and announced its intention to engage the services of America Latina Logistica of Brazil as a technical partner to strengthen operational management.
- Sheltam responded to Trans-Century's proposal by selling 49% of its company to Ambience Ventures Ltd, a subsidiary of Egyptian private equity firm, Citadel Capital. This gave

Ambience half of Sheltam's share in RVR, or 17.5% of total shareholding in the rail company.

The key lessons of this failed project are: (i) the importance of attracting competent private companies for the successful implementation of the contract, (ii) the requirement for a cross-border project that the two governments take similar positions on issues, and (iii) the necessity to cater for the possibility that greater political issues may alter the incentives of the parties involved and negatively impact the outcome of a transaction.

5.6 Conclusions

The main lessons learned from the international experiences is that (i) private financing is not an endless source of finance and (ii) facilitating private finance is not only a matter of *ad hoc* financial instruments. In order to facilitate private finance, a framework needs to be in place that includes:

- Conducive legal and regulatory frameworks;
- Coordinating and supporting agencies;
- Financial instruments mitigating project risks and addressing market failures.

Perhaps most important is central coordination to ensure cohesion of the different initiatives. In the case of India, the coordination is done by the Department for Economic Affairs. In Europe, the European Commission coordinates the different pillars.

The general conclusion from these international experiences is that successful application of private finance for infrastructure projects requires project risk reduction through (i) a conducive environment, (ii) thorough preparation and (iii) risk mitigating facilities and a well-balanced risk allocation

6 FINANCIAL PLAN

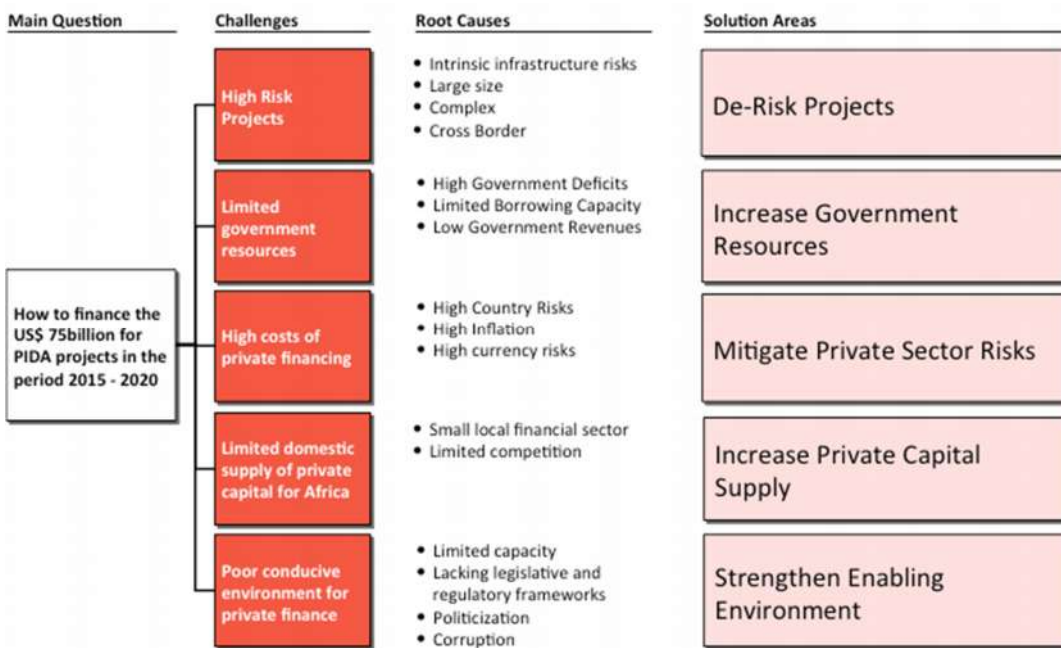
6.1 Recommendations

The PIDA programme provides a comprehensive regional framework for infrastructure projects to achieve regional integration benefits and support. However each individual PIDA project needs to be financed at project level (i.e. the financing is structured and arranged individually for each project), possibly even at sub-project level. PIDA projects will require both public and private financing, but the characteristics of each project will determine whether they are bankable and how they can be financed (especially the private portion of the financing).

PIDA represents an extremely large investment programme and most of the PIDA projects alone are typically large, complex and risky infrastructure projects. There is no 'magic solution' for financing PIDA projects – each project will need to be carefully structured and financed.

Taking into account the identified challenges, the available financing opportunities and instruments and the lessons learned from international practices, the following strategic framework has been defined to guide the financing plan for the PIDA programme.

Figure 6-1: Strategic Framework for PIDA Financing Plan



De-risk projects

The financing of cross-border infrastructure inherently demands a regional perspective taking into consideration different exchange rates, inflation and interest rates, as well as benefit and cost valuation issues over time, increasing the risk profile.

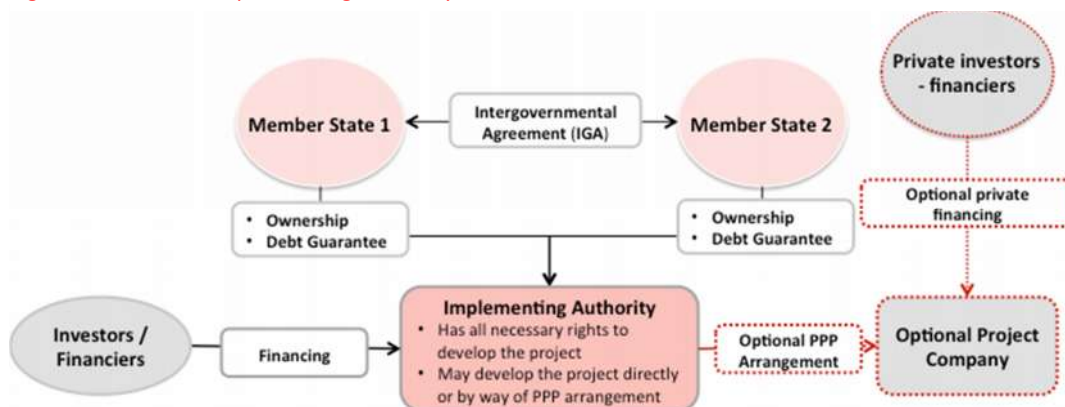
In view of this inherently high-risk profile, each PIDA project requires substantial efforts to be put in project development and financial structuring. In order to reduce the risk profile at project level, it is recommended to unbundle projects wherever possible, i.e. break down large projects into smaller components which may be more easily financed, and to start implementing the most viable components so as to build momentum.

In the same spirit of reducing project interdependencies, both technical and financial, as well as intergovernmental complexity, it is advised to structure and finance projects within national boundaries wherever possible. This does not mean that projects will lose their regional nature but merely constitutes a path to effective implementation.

In order to address the intergovernmental issues and maintain the regional setting of the proposed PIDA projects, it is recommended as a guiding principle to establish for each project an independent implementing authority with the following characteristics:

- Jointly owned and guaranteed by all relevant Member States;
- Holding all the rights (including ownership of the asset, if necessary) and being empowered to grant all authorisations to implement the Project, either by itself or by way of a PPP structure; and
- Having sufficient independence from its Member States to be able to develop and implement the project with limited need for Member States support.

Figure 6-2: Scheme Implementing Authority



Key benefits of such an implementing authority include:

- Elimination of legal interface risks: the IGA provides for a specific legal regime in relation to key areas such as authorisations and land, insulating the project from national legal challenge risk;
- Creation of a single point of contact to develop the project, thus improving operational efficiency;

- Increased creditworthiness of the public counterpart and thus facilitation of fundraising, provided the implementing authority benefits from guarantees from all Member States.

In addition to the establishment of an implementing authority, it is recommended to further strengthen the resources for effective project development and management of interface issues by nominating a competent (external) project manager with sufficient resources (retainer fee), mandate (power to negotiate) and incentives (success fee) to deliver actual results.

Increase government resources

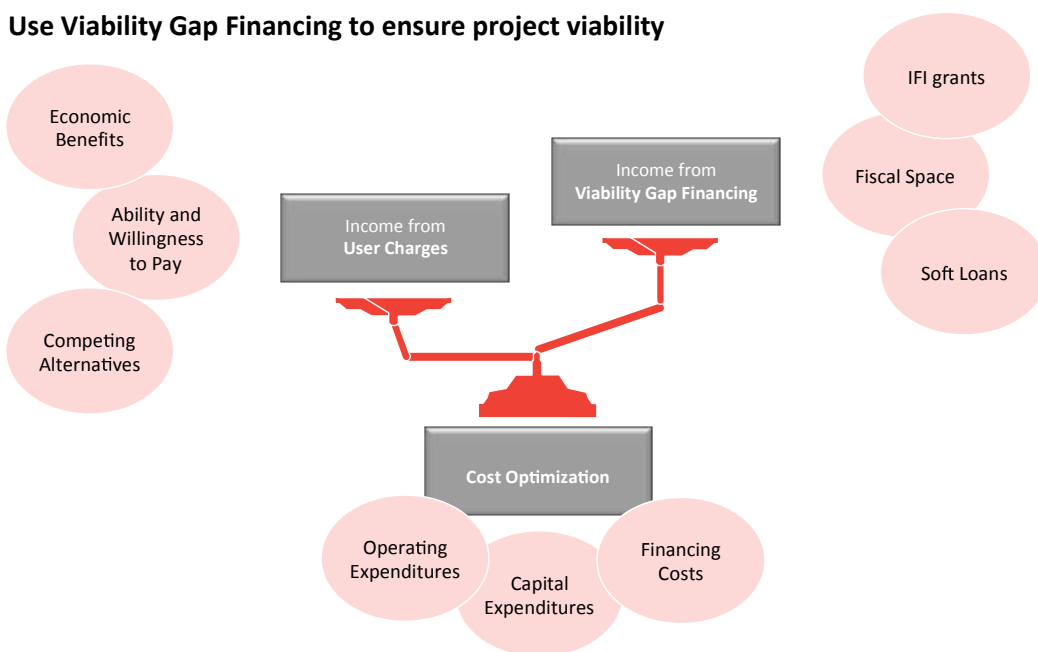
It is obvious that the PIDA programme cannot be financed solely through private capital. Even one of the most developed PPP markets, India, with an economy of a similar size, a well-established PPP framework and the benefits of being one sovereign state, is not able to attract more than US\$ 30 billion of private capital for infrastructure per annum and is now reaching the limits of its ability, as illustrated by the recent difficulties in attracting bids for road PPPs, largely driven by equity capacity constraints in the local market.

Moreover PIDA projects have to compete for financing with projects from all over the world, including Africa, and will be at a disadvantage because of the inherent high-risk profile of regional infrastructure.

PIDA projects will therefore have to be structured based on a blending of public and private finance. At project level, public financing can be used to leverage private financing. If potential income from user charges is not sufficient to recover costs, governments need to use viability gap financing wherever necessary to enhance the viability of projects.

Figure 6-3: Viability Gap Financing

Use Viability Gap Financing to ensure project viability



To provide effectively Viability Gap Financing and or Funding it is recommended to allocate necessary government resources through for example dedicated facilities which could be supplemented by the proceeds of improved tax revenue collections or specific levies e.g. fuel levies or VAT appropriations, or alternatively by grants from development partners such as the EU-Africa Infrastructure Trust Fund (EU-AITF).

Text Box 13

EU-Africa Infrastructure Trust Fund

The EU-Africa Infrastructure Trust Fund (EU-AITF) was established in 2007 with the aim of increasing investment in infrastructure in Sub-Saharan Africa by blending long-term loans from participating financiers with grant resources. EU-AITF funding is available from two different envelopes:

- The regional envelope promotes projects with a demonstrable regional impact;
- The "Sustainable Energy for All" envelope supports regional, national and local projects targeting SE4ALL objectives.

The EU-AITF offers:

- **Technical assistance** in support of all project phases;
- **Interest rate subsidies** to decrease the EU-AITF financiers' loan interest rates;
- **Investment grants** to finance project components or part of the investment;
- **Financial instruments** such as guarantees, risk mitigation measures, equity or quasi-equity investments or participations.

Mitigate private sector risks

Private finance in Africa today is hampered by a high-risk environment and limitations to the capacity of the local financial sector. This has been mostly overcome through the support of international finance institutions. To increase the appetite of international commercial banks, it is necessary to address country risks, currency risks, inflation risks, interest rate risks and revenue risks. There are already instruments available to address these issues such as MIGA services and TCX currency swaps, though the breadth of these instruments is limited and the costs are substantial.

As described in chapter 4, a number of additional facilities is likely to enter the market, thus possible expanding breadth of the facilities and reducing the costs. This would significantly contribute to the attractiveness of project finance opportunities in Africa for international commercial banks.

It is recommended to consider the establishment of a PIDA Guarantee Facility as a joint facilitator for PIDA projects. The Facility would essentially leverage the number and volume of PIDA projects towards the providers of these guarantee products. By choosing the best and most attractive guarantee lines, the Facility would help to indemnify commercial capital providers for losses incurred because of for example:

- Political circumstances/breach of contracts;
- Currency depreciation;
- Refinancing;
- Revenues below a predefined threshold.

The facility should not compete or overlap with existing guarantee facilities. Its primary objective could be to broker demand and supply of guarantee facilities and complement if there are gaps or shortcomings in the existing instruments.

In addition to the PIDA Guarantee Facility, it is also recommended specifically for power projects to consider the establishment of Power Deposit Facilities with the objective to underwrite Power Purchase Agreements in order to reduce the revenue risks. These Power Deposit Facilities could be considered as an upgrade to the existing regional power pools, which act as a facilitator between demand and supply of power in a specific region though do not have the mandate to underwrite PPAs.

Today PPAs are mostly underwritten by national utility companies and therefore as good as the creditworthiness of these utility companies. In most African countries the creditworthiness of national utility companies is not very strong, with the notable exception of ESKOM from South Africa.

In view of the lagging creditworthiness of national utility companies and the regional impact of most of the PIDA power projects, the Power Deposit Facilities could strengthen the PPAs and reduce the revenue risk. This could be done as follows:

- Off-take agreements remain with national utilities but are guaranteed by the power pool, itself benefitting from guarantees from all members;
- If one off-taker stops paying for any reason then the power pool steps in, pays the supplier directly at the agreed price, puts the power for sale on the market and member utilities can bid for it. If the price is equal or higher than the one initially agreed then everybody is happy; if it is lower or if no one wants to buy the power then members repay the power pool;
- The power pool needs to have its own account and an standby letter of credit (e.g. from AfDB) to ensure that it has the means to step in immediately so that it makes it completely neutral for the supplier.

Finally, as a general guiding principle for mitigating private sector risks, it is recommended wherever possible to label revenues in hard currency e.g. PPAs in US\$. Subject to the regulatory framework, it is up to the utility company to pass the currency risk on the final users (as in Kenya) or not.

Increase private capital supply

Our financial mapping has concluded that the number of financial players active on the continent and the depth of local financial markets remain however significant issues, limiting competition between financiers and driving financing costs up.

The suggested guarantee facilities are already an option to enhance the supply of long-term financing by facilitating adequate risk mitigation for the duration of the loan tenure. It is recommended in addition to expand the supply/availability of long-term debt facilities in view of the limited size of the domestic financial sector and the limited appetite of the international commercial financial sector to date.

The Africa50 initiative is well positioned to deliver this recommendation and also the Global Infrastructure Facility and the New Development Bank provide a promising perspective for enhanced availability of long-term debt facilities.

Such initiatives also create an opportunity to tap on the resources of pension funds, insurance companies and sovereign wealth funds. Institutional investors are typically looking for

diversification into new asset classes with stable cash flows over a long-term repayment horizon to match their liability profile and infrastructure provides exactly that. Pension funds for instance are becoming increasingly active in the financing of the sector, both through equity and debt, either directly or through specialised infrastructure funds. The advantage of the latter solution is that it allows for a diversified investment portfolio without the constraints of having to assess the risk profile of each individual project, which would require significant human and financial resources and generate high transaction costs.

Critical to effectively and increasingly involving such institutional investors is to reduce the risk profile of their investments. This implies that the respective financing instruments, be they funds, bonds, loans or direct equity, should be supported by an appropriate security package.

Strengthen the legal and institutional framework

Although Africa is catching up in terms of improving the legal framework for PPP, as illustrated by the numerous PPP laws enacted in the past years, still 29 out of 54 countries do not have specific PPP legislation. Although a PPP law is not a necessity for private finance, in particular in common law countries, it generally contributes to the reduced risk perception of the country risk profile. It should also be taken into account that a legal framework is more than a PPP law but also typically includes regulations and guidance material, including for example model concession agreements (such as in India). A well-established legal framework is likely to contribute to the comfort and thus appetite of private investors and banks.

With regard to the institutional framework, various countries have already established a PPP unit. However this is not the case in all countries and in most instances those PPP nodes are limited to a dedicated team within the Ministry of Finance created for the purposes of policy design, coordination and promotion, with little capacity available for project development support to the concerned ministries and implementing agencies. If Africa wants to double its private infrastructure investments, it needs to allocate human resources accordingly.

The RECs are recommended to take the lead in the further strengthening of the legal and institutional framework. This could be materialised by allocating the necessary resources, possibly with the support of development partners, and appointing PPP champions within government to promote and coordinate the strengthening of the PPP framework and build capacity within implementing agencies.

Summary of recommendations

The following table summarises the specific recommendations for the defined solution areas in response to the identified main challenges for financing PIDA projects.

Table 6-1: Summary of recommendations for the PIDA Financing Plan

Solution Area	General Infrastructure Finance	PIDA-specific
De-risk projects		<ul style="list-style-type: none"> Appoint competent project managers

Solution Area	General Infrastructure Finance	PIDA-specific
		<ul style="list-style-type: none"> Phase/Prioritise PIDA programme Unbundling/phasing Establish independent implementing authorities
Increase government resources	<ul style="list-style-type: none"> Establish national infrastructure funds Improve tax revenue collection 	<ul style="list-style-type: none"> Design effective blending mechanisms
Mitigate private sector risks	<ul style="list-style-type: none"> Power deposit facilities 	<ul style="list-style-type: none"> Improve project development facilities (Africa50) Establish a PIDA Guarantee Facility
Increase capital supply	<ul style="list-style-type: none"> Sovereign-backed infrastructure bonds 	<ul style="list-style-type: none"> Operationalize and strengthen Africa50/GIF and initiatives alike
Strengthen the enabling environment	<ul style="list-style-type: none"> Implement PPP laws at a regional level Develop regional PPP guidelines Implement consistent regional capacity building 	

6.2 Sector-specific Recommendations

The following sections outline the recommended financing schemes for the three main PIDA priority sectors (encompassing 73% of total investment needs).

Hydropower

Hydropower is considered to be the key to resolving the continent's power crisis because:

- Large hydropower projects generate significant economies of scale and can produce base-load energy at a very economical cost (in the order of US\$ 0.03 per kWh for Grand Inga, as compared with a long-run marginal cost from all forms of generation of US\$ 0.07 per kWh within the Southern African Power Pool (SAPP));
- Hydropower is clean energy, avoiding carbon dioxide emissions;
- Hydropower generation stations require far less maintenance than thermal stations and are therefore more likely to be sustainable.

However unleashing hydropower's transformative potential will require closer integration of African power pools and transmission infrastructure needed to promote regional power trade.

Hydropower has the specificity to be a capital-intensive technology with long lead times for development and construction mostly due to each project having to be tailor-made for its

specific location. All those parameters have an impact on how hydropower plant projects are financed.

Many financing models are available once these parameters are set. In the case of independent power plants, the typical scheme is project finance. In this case a project company (also called Special Purpose Vehicle or SPV) is created and this company is responsible for recovering both capital and operational costs based on revenues from sale of electricity generated by the project. In practice a share of the investment is then financed by private investors in the form of equity, which they invest as shares in the project company. It has often been observed that Independent Power Producers tend to have higher revenues than public operators in the first years after commissioning to fulfil private sector requirements on return²⁸.

The remaining amount required for the investment is contracted by the project company in the form of debt. Debt will be repaid over the loan period with an interest rate. For hydropower projects with long-term sales agreement, the leverage is usually 60 to 70% but can reach 75 to 80%.

Risk mitigation is of peculiar importance for hydropower projects given their inherent high-risk profile. The following risk management framework needs to be in place to facilitate private financing through BOT concessions.

Table 6-2: Hydropower Risk Management Framework

Risk Category	Description	Management
Construction	The average cost overrun of dams is 56% ²⁹ . Three out of every four large dams suffered a cost overrun in constant local currency terms; actual costs were on average 96% higher than estimated costs ³⁰ .	Allocate to competent, competitively selected private developer through at least EPC contracting or BOT contracting where possible (bankable)
Operations	The production capacity is impacted by uncertainty on hydrological developments over time as well as climate change, and also the availability of funding to ensure maintenance.	Allocate to competent, competitively selected private developer through at least PBM contracting or BOT contracting where possible (bankable)
Revenues	Uncertainty on the offtake from utility companies with low creditworthiness	Arrange Power Purchase Agreements with at least the national utility companies and probably also a Power Export Agreement
Interfaces	Uncertainty on the development of related projects such as transmission lines, land acquisition, resettlement schemes and alike	Interface management through a competent (external) project manager with sufficient resources (retainer fee), mandate (power to negotiate) and incentives (success fee) to deliver actual results

²⁸ <http://localenergynetwork.org/financing-hydropower-challenges-and-solutions/>

²⁹ World Commission on dams

³⁰ Ansar & Flyvbjerg, 2013

Risk Category	Description	Management
Country	Uncertainty on political and economic developments in the sponsor country	Arrange Partial Risk Guarantees (PRG) to mitigate country risks (political risks, war, breach of contract) for debt providers
Inflation	Uncertainty on future price escalations	Include tariff escalation formulas in PPAs (transfer inflation risks to offtakers)
Currency	Uncertainty on the exchange rate between the local currency and hard currency, which is typically applied for the debt financing	Arrange PPA in US\$ (transfer currency risk to offtakers), which also allows to tap on the long-term US\$ debt facilities

Text Box 14

Financing Nam Theun Hydropower project (Lao PDR)

The Nam Theun 2 Hydropower Project, or simply NT2, is a hydroelectric dam located on the Nam Theun River in Laos. Commercial operation of the plant began in March 2010. The scheme diverts water from the Nam Theun, a tributary of the Mekong River, to the Xe Bang Fai River, enabling a generation capacity of 1,070 MW, from a 350 m (1,148 ft) difference in elevation between the reservoir and the power station.

The Nam Theun 2 project was identified in the 1980s and a concession was awarded in 1993. It was subjected to a long anti-dam campaign. The project was frozen after the 1997 Asian financial crisis, but preparation resumed in 1999. In October 2002 a concession contract between the Nam Theun 2 Power Company Limited (NTPC) and the government of Laos was signed, followed by the signing of PPAs between NTPC on the one hand and Electricity Generating Authority of Thailand (EGAT) and the Laotian state-owned power company Electricité du Laos (EDL) on the other hand in November 2003. Financial closing was reached in June 2005.

NTPC is a company set up to build and operate the Nam Theun 2 Multi-Purpose Project in Khammuan Province in Laos. It is owned by a consortium comprising:

- Electricité de France International (EDFI) of France (40%), a wholly owned subsidiary of the state-owned French power company Electricité de France (EDF);
- Electricity Generating Public Company (EGCO) of Thailand (35%), a leading owner and operator of independent power plants in Thailand that itself is owned by the state-owned Thai power company EGAT (25.4%) and the Hong Kong-based privately owned international CLP Group (22.4%);
- Government of Laos (25%), represented by Lao Holding State Enterprise (LHSE).

Governments and government-owned enterprises own a majority of NTPC. This situation is atypical for an Independent Power Project (IPP), where normally the power generating company is privately owned.

At the time of signing in 2005, NT2 was the largest foreign investment in Laos, the world's largest private sector cross-border power project financing, the largest private sector hydroelectric project financing and one of the largest internationally financed IPP projects in Southeast Asia.

A total finance package worth US\$ 1,580 million in capital commitments to NTPC was arranged in May 2005 to finance total base project costs of \$1,250 million plus additional amounts for contingency and ancillary bonding facilities.

The financing was structured so as to exactly reflect the project's economics and was provided in US\$ and Thai Baht in the same proportions as the split of NTPC's revenues between the two currencies. This considerably increased the financial stability of the arrangement.

The US\$ senior debt facilities included political risk guarantees from the Asian Development Bank (ADB), the World Bank and the Multilateral Investment Guarantee Agency (MIGA), export credit agency support from Coface of France, EKN of Sweden and GIEK of Norway, as well as direct loans from a number of multilateral and bilateral development agencies including ADB, Nordic Investment Bank, Agence Française de Développement (AFD), PROPARGO and the Export-Import Bank of Thailand.

Nine international commercial banks (ANZ, BNP Paribas, BOTM, Calyon, Fortis Bank, ING, KBC, SG and Standard Chartered) and seven Thai commercial banks (Bangkok Bank, Bank of Ayudhya, Kasikornbank, Krung Thai Bank, Siam City Bank, Siam Commercial Bank and Thai Military Bank) provided long-term loans to NTPC.

Shareholders completed the project financing by contributing a significant percentage of equity. The equity contribution of LHSE was financed by means of loans, grants and other financing from institutions including AFD, ADB, European Investment Bank and World Bank

As indicated previously a number of regional power pools have already been constituted throughout the continent to promote cooperation between electricity generation, transmission and distribution companies. The SAPP, which is the most advanced of those power pools, already benefits from an integrated electricity grid and a small inter-country market for the sale of electricity in the SADC region.

It may be considered to upgrade their role to the recommended power deposit facilities i.e. a bank-like facility where backed by the involved governments and or regional DFI's, the Power Pool could underwrite power off-take and commit to PPAs.

Railways

Following economic liberalisation in many African countries and major improvements to the region's road network, most of the continent's railways lost their economic edge. Except in South Africa, few still play an integral role in the economy, except to link mining sites to ports. Surviving passenger lines do not recover costs, and freight tariffs are constrained by road competition. With traffic declining, few railways are able to generate enough revenue to fund investments. The standard policy response has been to concession many of Africa's railways.

Of the 30 Sub-Saharan countries with publicly-owned railways, 14 have opted for a concession arrangement and one operates under a management contract. In total some 17,600 km have been conceded, which represents some 30% of the total railway network in SSA and even 50% excluding the South African railway network. The conceded railways in SSA handle more than 45% of the freight transport by rail.

However private sector participation in the SSA railway sector has been focused on operations and maintenance rather than greenfield developments. Until the 1980s almost all African railway companies were government departments or publicly-owned corporations with varying degrees of financial and management autonomy. Attempts at commercialisation while retaining public ownership were generally unsuccessful, so concessions began to be introduced in the 1990s. Under those concessions the state remained the owner of some or all of the existing assets (typically infrastructure) and transferred the other assets (typically the rolling stock), as well as responsibility for operating and maintaining the railway, to a concessionaire.

The total amount of financing required for those concessions, mainly for rehabilitation works and rolling stock, amounted to approximately US\$ 1 billion up to 2010, which for different reasons has not been actually fully invested. Most of this financing has been made available by multilaterals, especially the World Bank, through loan facilities of some US\$ 600 million representing 60% of total financing needs. Commercial banks are only marginally involved.

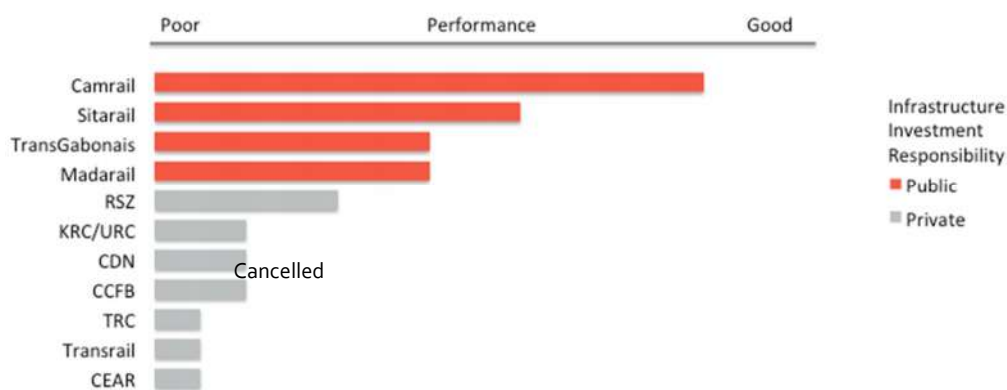
The limited share of private finance in railways in general, and in Africa in particular, is driven to a large extent by the high-risk profile of railway projects. In particular the construction risk and the demand risk are above the average for transport infrastructure. Research has illustrated that actual costs for rail projects are on average 45% higher than estimates and actual traffic

figures 39% lower than estimates. Such deviations are significantly higher than for toll roads for instance³¹.

Based on World Bank research it can be concluded that there appears to be a relation between the infrastructure investment responsibility and the performance of the concession. Concessions with infrastructure investment responsibility transferred to the private sector appear to perform worse on average, both operationally and financially, in comparison with concessions where the infrastructure investment responsibility has been retained by the public sector.

Figure 6-4: Railway Concessions Review

Public Infrastructure Investment Responsibility leads to better performance for railway concessions



Source: World Bank adapted by Consultant

Taking this observation into account, the following risk management framework is recommended for railway projects.

Table 6-3: Railways Risk Management Framework

Risk Category	Description	Management
Construction	Actual costs for rail projects are on average 45% higher than the estimated costs	Allocate to competent, competitively selected private developer through EPC contracting
Operations	Uncertainty on availability of funding for maintenance	Allocate to competent, competitively selected private developer through at least operational or affermage concession
Revenues	Actual traffic is below estimate	Allocate to competent, competitively selected private

³¹ Bent Flyvbjerg: Megaprojects and Risks (2003)

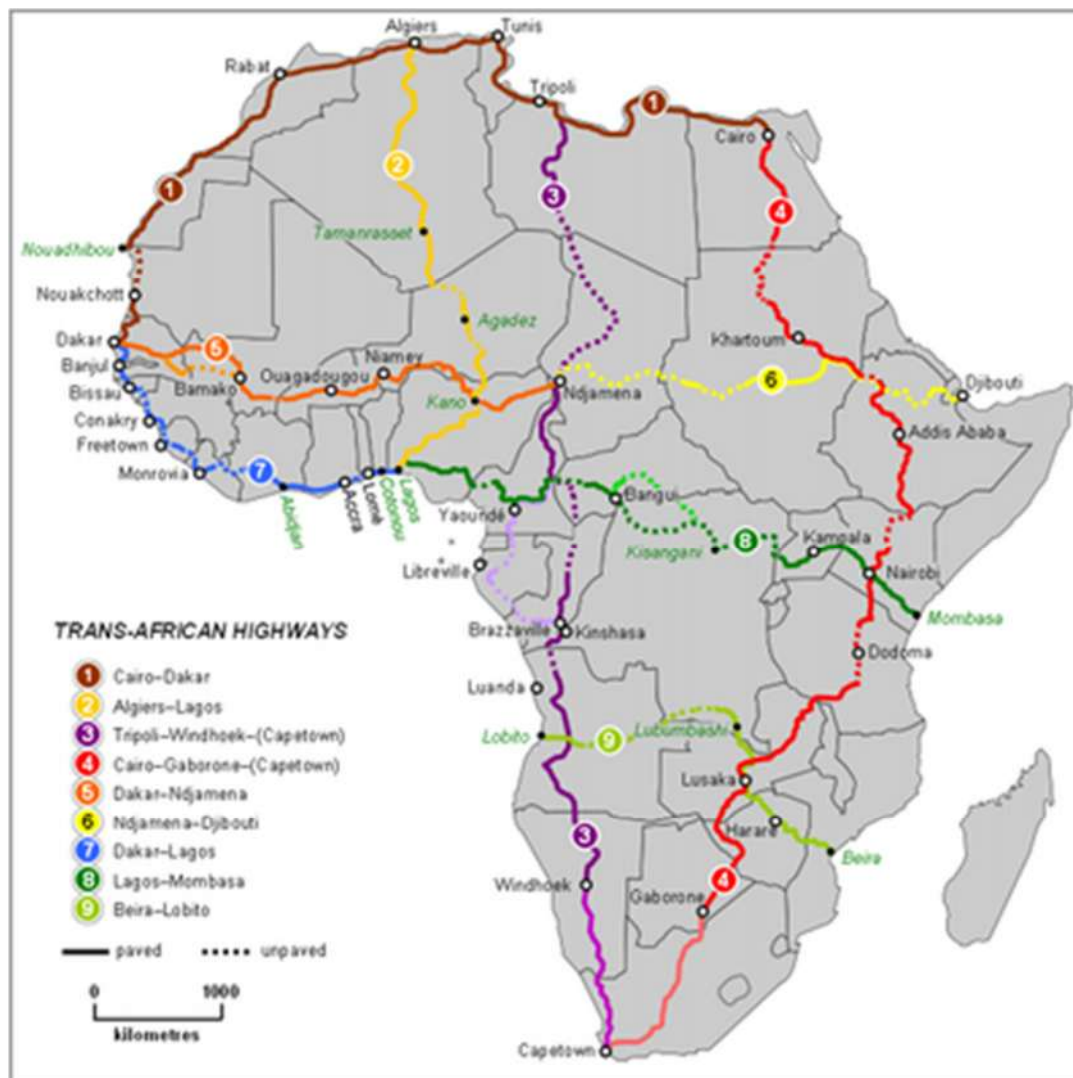
Risk Category	Description	Management
		developer through at least operational or affermage concession
Interfaces	Uncertainty on the development of related projects such as land acquisition, resettlement schemes, etc.	Interface management through a competent (external) project manager with sufficient resources (retainer fee), mandate (power to negotiate) and incentives (success fee) to deliver actual results
Country	Uncertainty on political and economic developments in sponsor country	Arrange Partial Risk Guarantees (PRG) to mitigate country risks (political risks, war, breach of contract) for debt providers
Inflation	Uncertainty on future price escalations	Include tariff escalation formulas in tariff-setting schemes which are to be included in the concession agreements
Currency	Uncertainty on the exchange rate between the local currency and hard currency, which is typically used for the debt financing	Where possible (freight) label tariffs in US\$ (transfer currency risk to freight forwarders)

Roads

According to the Africa Infrastructure Country Diagnostic (AICD), road conditions have improved in most African countries in recent years, as governments have strived to increase the density of their road networks and carry out institutional reforms. Tremendous progress has for instance been made in establishing institutions to manage and maintain Africa's roads, nevertheless still only one in three rural Africans has access to an all-season road. Unable to reach urban markets, millions are trapped in subsistence agriculture. In cities, road construction has not kept pace with urbanisation. In many countries, road maintenance remains inadequate. Even the Trans-African Highway Network, the symbol of modern Africa, has large gaps.

This network of corridors has been defined by the United Nations Economic Commission for Africa (UNECA), the African Development Bank (AfDB) and the African Union (AU) in conjunction with regional international communities. It aims to promote trade and alleviate poverty in Africa through highway infrastructure development and the management of road-based trade corridors. The total length of the nine highways in the network is 56,683 km.

Figure 6-5: Trans-African Highway Network



Public-Private Partnerships are considered as one of the main solutions areas to improve the road sector in general, including the realisation of the Trans-Africa Highway Network. However it has to be noted that PPP is an umbrella concept covering a range of contractual arrangements between the government and the private sector. For privately-financed road infrastructure development and rehabilitation the most distinctive feature is the cost recovery mechanism. The basic cost recovery options are:

- User charges: The user is charged a fee for the use of the infrastructure. In case of roads this fee is commonly referred to as 'toll'.
- Shadow tolls: Shadow tolls are periodic payments from a public authority to the private company based on the actual usage of the infrastructure.
- Unitary payments: Unitary payments are periodic payments upon operations from a public authority to the private company. There are various options to define these payments, the

most common one being availability or annuity payment whereby the payment is based on the level of availability of the infrastructure. Alternatively the payment scheme could also be defined through so called Output and Performance Road Contracting (OPRC) principles. Annuity-based PPPs in the road sector are mainly applied in Europe and India.

Research illustrates that the major part of privately-financed road infrastructure applies real tolls to recover part or all of the costs. For example in Europe some 60-70% of the road PPPs are based on real tolls, 25 – 30% on availability payments and 5 – 10% on shadow tolls³².

In view of the limited government budgets (including limitations to contingent liability exposure) in Africa, the preferred PPP mode is BOT whereby the costs are to be recovered through tolls, possibly supplemented with government grants in case of a viability gap.

However to date only 6 road PPPs based on tolls have achieved financial close in Africa with a total value of approximately US\$ 2 billion. Four of these projects are located in South Africa and already date back to some 10 years ago when South Africa initiated its PPP programme. Since 2003 South Africa has not awarded any road PPPs though they do have some ongoing road PPP tenders. The other two concern the Lekki – Epe Expressway in Nigeria and the Dakar – Diamniadio Toll Road in Senegal. Of these two only Lekki – Epe Expressway has been funded in a commercial manner at least to a large extent, but has been recently bought back by the government. The Dakar – Diamniadio Toll Road, which is sponsored by French contractor Eiffage, has received debt financing largely from DFIs (on commercial terms) including AfDB, IFC, West African Development Bank (BOAD) and the Banking Company of West Africa (CBAO).

The main impediment to developing toll roads is the social resistance to tolling, as illustrated by the experiences in Nigeria.

Text Box 15

Social resistance to toll roads in Nigeria

Already during the 4th NDP (1981 – 85) the Federal Government of Nigeria (FGN) introduced tolls to fund highway maintenance. 31 toll plazas were built. However due to lack of maintenance road quality was not meeting expectations and the tolling was being perceived by the public as revenue generation only. Because of the public outcry the tolling was stopped and the toll plazas were demolished in 2004.

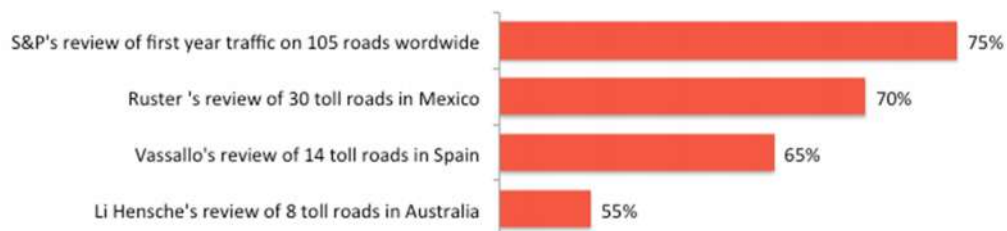
Only recently tolling was re-introduced in Nigeria as a cost recovery system for the Lekki – Epe Expressway, which was awarded as a BOT concession to Lekki Concession Company. This has not been without controversy given the numerous protests from users against tolls. Also the social unrest following the recent initiative to remove the fuel subsidy has led the FGN to be more cautious with increasing costs to road users.

The second main risk concerns the so-called optimism bias, which concerns both cost estimates and traffic forecasts. Research indicates that cost overruns and delays for roads are more common than uncommon and traffic forecasts for toll roads throughout the world are almost consistently higher than actual figures, in particular in the first years.

³² Source: ECORYS Research & Consulting, Infranews based on review of closed PPP transactions in 2005 - 2007

Figure 6-6: Toll Roads Review

Actual demand as percentage of forecast



Given the limited success so far with regard to privately-developed toll roads in Africa, the main recommendations for its financing scheme is to be very cautious in the risk transfer to the private developer and have sufficient risk mitigation in place.

Table 6-4: Roads Risk Management Framework

Risk Category	Description	Management
Construction	Cost overruns Delays	Allocate to competent, competitively selected private developer through BOT contracting
Operations	Uncertainty on availability of funding for maintenance	Allocate to competent, competitively selected private developer through BOT contracting
Revenues	Actual traffic is below estimate	Minimum Revenue Guarantees in combination with Benefit Sharing Arrangement (part of BOT)
Interfaces	Uncertainty on the development of related projects such as land acquisition, resettlement schemes, etc.	Interface management through a competent (external) project manager with sufficient resources (retainer fee), mandate (power to negotiate) and incentives (success fee) to deliver actual results
Country	Uncertainty on political and economic developments in sponsor country	Arrange Partial Risk Guarantees (PRG) to mitigate country risks (political risks, war, breach of contract) for debt providers
Inflation	Uncertainty on future price escalations	Include tariff escalation formulas in tariff-setting schemes which are to be included in the concession agreements
Currency	Uncertainty on the exchange rate between local currency and hard currency, which is typically applied for the debt financing	Arrange currency swaps

6.3 Action Plan

In summary, the following strategic levers have defined:

- Reinforce PIDA as the platform for project promotion and attainment of regional integration benefits: This requires the combined weight of African governments and stakeholders and coordinated efforts in order to ensure that regional benefits are achieved;
- Create momentum for PIDA by moving a number of projects into the financial structuring and implementation stage rapidly (“eat an elephant one bite at a time”), deliver much-needed infrastructure, create demonstration effects and build market confidence;
- De-risk projects and the project financing environment, i.e. reduce risks and improve financing conditions, both in each region and for each project;
- Mobilise projects using available capital sources, facilities and instruments immediately: strongly support project preparation and structure financing principally using existing financing capacity, supplemented by new instruments only in the medium term and where structural deficiencies are encountered which cannot be solved otherwise.

This can be translated into the following action areas:

- Action Area 1: PIDA programme-level
- Action Area 2: Project-level arrangements and financing
- Action Area 3: Potential PIDA ‘market changers’
- Action Area 4: Africa / Regional-level systemic (macroeconomic) improvements to the infrastructure financing environment

Activity	Start	Deadline	Responsible	Result
ACTION AREA 1: PIDA PROGRAMME-LEVEL				
Share and adopt this action plan, thus securing combined support of PIDA members		Next PIDA meeting	PIDA chair	Accepted action plan by PIDA members
PIDA project ranking and prioritization based on (1) investment size, (2) complexity, (3) derisking possibilities, (4) sponsor readiness, (5) project preparation, (6) value added of PIDA involvement	Jan 2015	April 2015	PIDA Secretariat in cooperation with PIDA project managements	Proposal to PIDA steering committee
Selection of maximum of three projects as short-term demonstration projects	March 2015	April 2015	PIDA Secretariat in cooperation with PIDA project managements	
Organize Road-Show in order to communicate the program and the action plan	May 2015	June 2015	PIDA Secretariat	Create momentum with potential sponsors and projects

<i>Support to project managements of selected project in securing funding</i> for further project preparation of each project	May 2015	June 2015	PIDA Secretariat / Project management/ Project Preparation Funder/s	Funding agreements / commitments in place by Project Preparation Funder/s
ACTION AREA 2A: PROJECT-LEVEL ARRANGEMENTS AND FINANCING				
Prepare <i>scope of work and requirements of Transaction Manager</i>	June 2015	First demonstration project: Jul 2015	Project management (possibly supported by PIDA backing)	SOW and Requirements for Transaction Manager
Appoint core <i>project team</i> responsible for project preparation stage of each project and establish <i>project preparation budget</i>	June 2015	First demonstration project: Sep 2015	Project management (possibly supported by PIDA backing)	Core team and budget to undertake further project preparation
For projects without suitable / adequate governance arrangements <i>prepare and establish</i> inter-governmental agreements and Implementing Authority	Jul 2015	First demonstration project: end of 2015	Project management (possibly supported by PIDA backing)	Intergovernmental Agreements and Implementing Authority in place
Procure and appoint Transaction Manager	Aug 2015	First demonstration project: Oct 2015	Project Team / Project Preparation Funder/s	Transaction Manager appointed for each project
Start project-level financial structuring (especially de-risking), including viability gap funding required, risk mitigation products and available resources (vide annex)	Oct 2015	First demonstration project: Dec 2015	Project Team (possibly supported by PIDA backing)	Project implementation plan
Prepare <i>Market Teaser</i>	Nov 2015	First demonstration project: Nov 2015	Project Team (possibly supported by PIDA backing)	Basic project information available for potentially interested sponsors, investors and bidders
<i>Project Kick-Off Events</i>	Nov 2015	First demonstration project: Dec 2015	Project Team (possibly supported by PIDA backing)	Formal Kick-Off of three selected projects with project governance arrangements and

				Transaction Managers in place
ACTION AREA 2B: PROJECT IMPLEMENTATION STAGE				
Update or prepare Project Appraisal Data/Reports (economic, technical, financial, legal)	Dec 2015	First demonstration project: March 2016	Transaction Manager	Project Appraisal Documents to support project procurement
In parallel, undertake Project Structuring and define Project Implementation/Procurement Strategy (the selected procurement strategy affects further project activities – e.g. direct public implementation versus PPP)	Jan 2016	First demonstration project: Sep 2016	Transaction Manager	Confirmed Project Structure and Project Implementation/ Procurement Strategy
In the event of public implementation : <ul style="list-style-type: none"> • Prepare Project Information Memorandum and Data Room • Conduct investor / financier Roadshows • Request Term Sheets • Negotiate Financing Agreements • Conclude Financing Arrangements • Establish Project Implementation Manager 	Mid 2016	First demonstration project: 2017	Transaction Manager	Concluded project Investor and Financing Agreements Project Implementation Manager appointed
In the event of PPP implementation : <ul style="list-style-type: none"> • Prepare Project Bidding Documentation Package (PIM, RFO, RFP, Draft Contracts,...) • Soft market testing and investor roadshows • Conduct procurement/s • Contract award and conclusion of financing arrangements • Project implementation by PPP partner 	Mid 2016	First demonstration project: 2017	Transaction Manager	Awarded PPP contract/s including financing agreement/s
ACTION AREA 3: POTENTIAL PIDA 'MARKET CHANGERS'				
Prepare scope of work and requirements of PIDA Guarantee Facility manager	Jan 2016	March 2016	PIDA secretariat	SOW and Requirements for Manager, to be approved by PIDA members
Select and appoint manager responsible for the PIDA Guarantee Facility	June 2016	Sep 2016	PIDA secretariat	Contracted manager
Start PIDA Guarantee Facility operations	End 2016		Manager	

Prepare <i>scope of work and requirements of advisor to establish Power Deposit Facility</i>	Jan 2016	March 2016	PIDA secretariat	SOW and Requirements for Manager, to be approved by PIDA members
Select and appoint advisor for study to transform regional power pools to Power Deposit Facility	June 2016	Sep 2016	PIDA secretariat	Appointed advisor
Implement Power Deposit Facility	Oct 2016		Power Pool management	Start of Power Deposit Facility
ACTION AREA 4: SYSTEMIC IMPROVEMENTS TO THE INFRASTRUCTURE FINANCING ENVIRONMENT				
Harmonization and standardization of basic rules to PPP contracts on the level of economic or customs unions	Jan 2015	continuous	UEMOA, CEMAD, SADC, OHADA (with possible backing by PIDA)	Harmonized set of basic rules
Development of PPP standard documents at regional level	Jan 2015	Dec 2015	UEMOA, CEMAD, SADC, OHADA (with possible backing by PIDA)	Standardized set of conditions and basis contract features

7 SHOWCASE PROJECTS

7.1 Batoka Gorge Hydropower Project

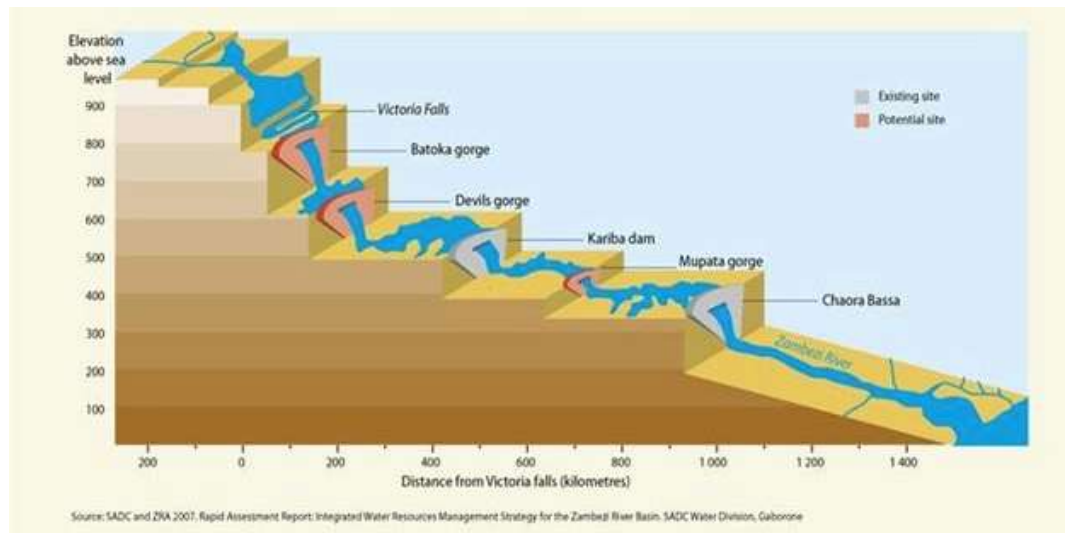
Project Description

The Batoka Gorge Hydroelectric Power Station is a 1,600MW hydroelectric power station planned on the Zambezi River across the international border between Zambia and Zimbabwe, some 50 kilometres downstream from the Victoria Falls, producing a lake of some 50 kilometres in length.

There will be two power plants, each with an installed capacity of 800 MW: one on the Zambian side and another on the Zimbabwean side, each with a capacity of 800 MW. The dam to supply the reservoir with water will be a 181 m (594 ft) tall arch-gravity type.

The Batoka project would be the third large hydropower development on the Zambezi River, after Kariba and Cahora Bassa, and the tenth large reservoir on the Zambezi system.

Figure 7-1: Existing and potential hydropower projects on the Zambezi River



Project Rationale

Zimbabwe suffers from a chronic power deficit and desperately needs to boost power generating capacity within the country. It currently imports approximately a third of its needs from neighbouring countries, and a wider power deficit is expected to grow across the region in the next few years, affecting the long-term availability of these energy imports.

Zambia has significant untapped hydropower potential. Out of its 6,000 MW potential, less than 2,000 MW has been harnessed. Sites yet to be developed include Kafue Gorge Lower, Kalungwishi, Mambilima, Batoka Gorge, Devil's Gorge, Kabompo and others.

Abundant hydro resources allow Zambia to produce electricity at around US\$0.08 per kWh, about half the average cost of electricity production in Africa.

Zambia's total demand currently exceeds internal generation as a result of the thriving mining sector. Zambia is also faced with the challenge of satisfying the demand of more than 80 percent of its population for modern forms of energy. Inadequate investment in recent years in generation and transmission infrastructure has led to deterioration in the power network. Sub-economic power tariffs have been blamed for limiting investment. Sale of electric power tariffs in Zambia are amongst the lowest in the region. In 2008, 450 MW were unavailable from the country's generating infrastructure, leading to a peak-period deficit of 280 MW. Load management has been practiced since then in order to maintain the balance of supply and demand.

The objective of the BGHP project is to increase generation capacity and reduce reliance on electricity imports. Once completed, the Batoka hydropower plant will leave Zimbabwe a net exporter of power. The project will also improve the power generation mix which is currently skewed in favour of fossil fired plants.

The proposed 1,600 MW capacity is to be shared equally between the two countries. It is also believed that the project could further enhance generating capacity at the Kariba power station, downstream of the Batoka Gorge Dam site, by an estimated 300 MW.

Execution of the project will significantly increase base load. Power exports to the region will boost inflows of much-needed foreign currency. The project will also stimulate other downstream economic activities.

Project Appraisal

The estimated construction costs are between US\$ 2.5 to 3.0 billion³³, though some sources also quote US\$ 4 billion³⁴. Construction was expected to begin in 2014.

The detailed feasibility study that was prepared by Lahmeyer International, Knight Piesold Consulting Engineers and EWI Engineers & Consultants and was completed in 1993, indicated that it is economically and technically feasible to construct 4 x 200 MW units on the Zimbabwe side and 4 on the Zambian side.

Assuming construction costs of US\$ 2.5 billion, operating and maintenance costs of US\$ 9 million per annum and a tariff of US\$ 1.78/kWh, the Zambezi River Authority (ZRA) assessed the financial IRR at 17% and the economic rate of return at 10.2% (below the World Bank's minimum requirement of 12%).

If construction costs would amount up to US\$ 4 billion and operating costs would be around US\$ 100 million per annum based on benchmark data from the International Renewable Energy Agency, and a weighted average cost of capital of 11% in real terms, the full cost recovery tariff

³³<http://www.lusakatimes.com/2013/09/27/construction-of-dam-for-batoka-gorge-hydroelectric-power-stations-to-start-next-year/>

³⁴<http://www.comesa.int/attachments/article/842/Batoka%20Gorge%20-%20Project%20Profile-%2019052013%20-Draft%201.pdf>

would be around US\$ 0.07 per kWh given the assumed level of energy generation of 8,700 GWh per year as indicated in the PIDA project fiche³⁵.

Environmental and Social Impact

The development potentially threatens to flood the river rapids currently used for white-water rafting day and multi-day trips, widely recognised as the best commercially operated white-water rapids in the world and a major tourism attraction for Victoria Falls in Zimbabwe and Livingstone in Zambia.

The Batoka Gorge itself is listed as an Important Bird Area by Birdlife International on the basis of its conservation importance. The taita falcon, a small, agile and endangered species, breeds here, as do many other rare birds of prey, such as the Verreaux's eagle (previously known as the black eagle), the lanner and the peregrine falcon.

There are concerns that local communities will see little of the benefits of the development, with fears of negative impacts on long-term tourism and employment opportunities. It is thought that the narrow, deep-water nature of the resulting lake will not sustain large fish populations, as has happened with the wide and shallow Lake Kariba, where a thriving fishing industry has developed.

The local main electricity network is also unlikely to be developed and it is thought that many rural communities will continue to be isolated from the national electrical supply.

Implementing Authority

The Zambezi River Authority (ZRA), a joint body established by Zambia and Zimbabwe, is currently pressing ahead with the commissioning of feasibility studies for the environmental and social impact of the 1,600 MW Batoka Gorge project and has applied for US\$ 3 billion of World Bank financing for the project.

In 2012 the governments of Zambia and Zimbabwe had signed a joint Memorandum of Understanding resurrecting the long proposed Batoka Hydro Power Station development.

Project Structuring

The following main options in terms of public-private responsibilities apply to the implementation of the project.

³⁵ See annex for overview of assumptions

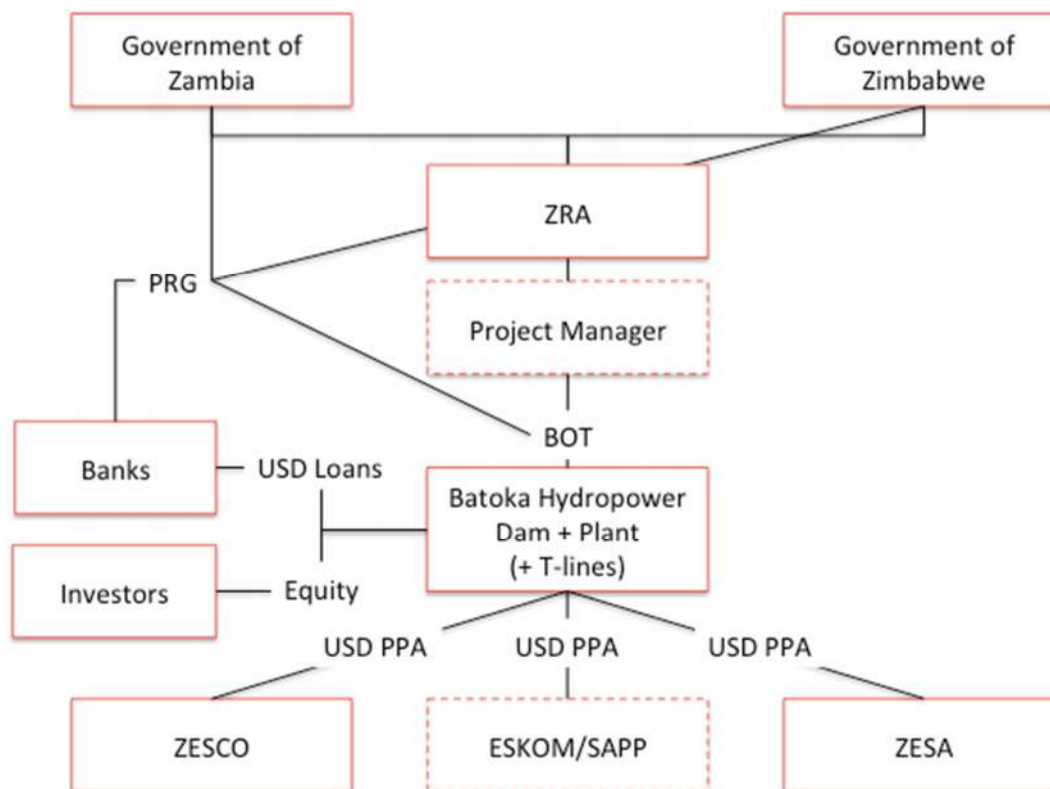
Table 7-1: Batoka Gorge Hydropower Project Structure Options

Item	Option 1	Option 2 ZRA option	Option 3	Option 4
Dam	Public	Private	Public	Public
Power Plant Zambia			Private 1	Private
Power Plant Zimbabwe			Private 2	Private
T-line Zambia			Private 1	Public
T-Line Zimbabwe			Private 2	Public

The option envisaged by ZRA is an integrated BOT where a private developer will be responsible for raising finance as well as the design, construction, maintenance and operations of the dam and the 2 power plants. It is assumed that the project scope also includes the necessary transmission lines though this has yet to be confirmed. Alternatively the respective governments will be responsible for developing the necessary transmission lines.

This option is depicted in the following financial structure scheme.

Figure 7-2: Batoka Gorge Project Structure Scheme



The structure assumes that in addition to the PPAs with the national utility companies ZESCO and ZESA, which are recommended to be in US\$ to mitigate the currency risk, there will possibly also be a third PPA with the South African utility company Eskom or the Southern Africa Power Pool or something alike with the ability to underwrite the off-take of any excess power.

The scheme also assumes a political or partial risk guarantee from a development institution to mitigate the country risk for debt providers.

Alternatively it could also be considered to split up the project (see options 3 and 4), in for example, on the one hand the dam, and on the other hand the power plants in or excluding the transmission lines. The dam could be implemented by ZRA through a conventional EPC contract, whereas the power plants could be developed as BOT. This would result in smaller financing packages which might be more attractive for prospective capital providers. Also the power company would not be responsible for the civil works related to the dam, which are fairly complex and risky.

However, the different components are strongly related. If the dam is not ready in time, it will not be able to produce power, so the power plant concessionaire would not be able to generate revenues. And if the transmission lines are not ready in time, again the power plant concessionaire would not be able to generate revenues, as it will not be able to deliver the power. It is questionable whether a public authority would be better able to manage these interfaces. More likely is it that a private developer who has the incentive to deliver the system as a whole in order to generate revenues is more capable of managing these interfaces.

Risk Management Framework

The project structure including the necessary risk mitigation, in particular the PPAs, reflects the following risk management framework.

Table 7-2: Batoka Gorge Hydropower Project Risk Management Framework

Risks	Nature	Risk Management
Construction	<ul style="list-style-type: none"> • Cost overruns • Project delays 	Allocate to competent, competitively selected private developer and service provider through at least EPC contracting or BOT contracting where possible (bankable)
Operations	<ul style="list-style-type: none"> • Availability of water supply • Impact of climate change³⁶ 	Allocate water supply risk to insurance companies/PIDA Guarantee Fund through so called index-based insurance arrangements ³⁷

³⁶ The Zambezi River basin has one of the most variable climates in the world. Its already extreme range of conditions is predicted to experience the worst potential effects of climate change among 11 major African river basins.

³⁷ For further information see "Managing water supply related financial risk in hydropower production with index-based financial instruments" by Benjamin T. Foster (2013)

Risks	Nature	Risk Management
		Allocate performance risk to competent, competitively selected private developer and service provider through at least PMB contracting.
Interfaces	<ul style="list-style-type: none"> • Project interfaces (dam, plant, T-lines) • Social impact (tourism) • Environmental Impact 	Interface management through a competent (external) project manager with sufficient resources (retainer fee), mandate (power to negotiate) and sufficient incentives to deliver results (success fee)
Revenues	<ul style="list-style-type: none"> • Availability of water supply • Economic growth 	Arrange Power Purchase Agreements with at least the national utility companies and probably also an Power Expert Agreement with for example ESKOM
Currency	<ul style="list-style-type: none"> • Zimbabwe has US\$ (since 2009) • Avg depreciation past decade Zambian kwacha 1.3% 	Arrange PPA in US\$ (transfer currency risk to off-takers and allows to tap on the LT US\$ debt facilities
Inflation	<ul style="list-style-type: none"> • Inflation Zambia 2003 – 2013: 12% • Zimbabwe: Hyperinflation 	Include tariff escalation formulas in PPAs (transfer inflation risks to off-takers who will transfer this onwards to the end-users)
Country	Country credit risk (3) <ul style="list-style-type: none"> • Zambia # 97 • Zimbabwe # 147 (last) 	Arrange Partial Risk Guarantees (PRG) with WB (MIGA) or AfDB to mitigate country risks (political risks, war, breach of contract) for debt providers

Legal Context and Challenges

Transnational legal framework

The Zambezi River Authority Act (the "ZRAA") has been passed by Zambia and Zimbabwe in 1987, for the development of the Zambezi river, entrusted to the Zambezi River Authority (the "ZRA") (see below). Notably, it includes an undertaking from both States to amend their respective legislation to give effect to the provisions of the ZRAA.

The Agreement on the Establishment of the Zambezi Watercourse Commission was signed in 2004 between eight riparian countries. We note that the States are required to conduct their projects on Zambezi Watercourse in accordance with a strategic plan adopted by the commission.

Key legal issues

Two key legal issues for the financing of the projects will be the assessment of (a) the risk on water supply and (b) the risk on revenues from the sale of electricity (including credit risk of off-takers).

a. Risk on water supply

Securing water supply requires (i) obtaining the right to use water and (ii) allocating the risk that water becomes unavailable.

(i) Legally, the following authorizations need to be obtained :

- As to the Zimbabwean part, in line with the Water Act, a water use permit should be granted for use of water for the purpose of electricity production. However Article 120 of the Water Act carves out the extraction and storage of water in or from the Zambezi River in respect of the Kariba dam. A similar legislative carve out should be provided in relation to the Batoka Gorge Dam.
- Zambian Water Act also requires the granting of a water use permit, and includes similar carve outs covering agreements on shared waters (including ZRAA).

The easiest way to deal with these issues would be to include in a transnational treaty (see below) a clear right to use water for the duration of the Project to the SPV, and to endow ZRA with the permitting authority.

(ii) If possible, the risk of water supply should be allocated to insurance companies through so-called index-based insurance arrangements, as financiers are unlikely to fund a project company bearing resource risk.

b. Freedom to generate and to enter into long term PPAs with selected off-takers

Creditworthiness of the off-takers is key for the Project. From a legal point of view, the SPV needs to have a clear right to (i) generate electricity and (ii) sell the electricity to the off-taker of its choice.

We understand that three off-takers are contemplated at this stage, namely ZESCO (in Zambia), ZESA (in Zimbabwe) and ESKOM (in South Africa). Currently, the situation is as follows:

Zimbabwe: the Zimbabwe Electricity Act and Electricity Licensing Guidelines set forth different licenses for generation, transmission and bulk supply activities which may need to be obtained by the SPV (depending on the scope of the project and the inclusion of transmission lines).

Zambia: the Zambian Electricity Act provides a similar licensing procedure for generation, supply and transmission of electricity.

Export of Electricity: based on our review, there are no specific provisions applicable for this purpose. Depending on the exact scope of the project (i.e depending on whether ESKOM takes delivery of the power at the delivery station or if electricity transits through the national/regional grid), additional authorizations may need to be obtained or dealt with in a ratified treaty.

c. Land rights

Long term rights over land can be granted and secured for the benefit of financiers in both countries.

In addition, each country has specific land regimes for electricity projects, generally granting the relevant governments power to proceed with compulsory acquisition of the land.

Contracting Authority

ZRA is jointly owned by Zambia and Zimbabwe. Its main purpose is the management of the Zambezi River, which includes construction, operation, monitoring and maintenance of dams on the Zambezi River.

Since the ZRA "has the judicial personality with capacity to contract, acquire and dispose of immovable and movable property and do or perform such other acts or things as a body corporate may by law do or perform", ZRA could serve as granting authority for the Batoka Project. ZRA also has the authority to issue regulations which will take effect upon publication in each state's official gazette.

Potential Challenges / Way forward

The legal framework created under the ZRA is not detailed and might not sufficiently harmonize potentially conflicting legal provisions in both states for the purpose of the Batoka project: as it stands, the Batoka Project would remain subject to, for instance, electricity regulations (such as electricity grid code and safety rules and regulations, which would be subject, on the Zimbabwean side, to the Energy Regulatory Act, 2011 and on the Zambian side, on the Energy Regulation Act), land regulation and environmental regulations with which it might be difficult (and in any case cumbersome) to comply simultaneously.. However, it is encouraging that a binding commitment already exists from both States to adapt their legislations.

To harmonize the framework applicable to Batoka (including on land rights, title to electricity, security, environment, technical standards, etc.), two approaches could be considered:

(i) signing an Inter-Governmental Agreement covering the above which would be ratified by the parliaments; or

(ii) having ZRA issuing regulations which would then be adopted as laws in each state (see above).

We would also suggest that such transnational regulations includes (i) a clear guarantee to the SPV to have access to water (and undertakings from the State not to develop upstream projects without the SPV's prior consent) and (ii) a clear right to sell the electricity produced to off-takers chosen by the SPV (including by way of exports).

Current status

In December 2012, the Zambezi River Authority put out bids for investors interested in entering a BOT deal for the Batoka project. In April 2013 they announced that six international investors had been shortlisted. The ZRA also advertised for tenders for a new Social and Environmental Impact assessment in 2013, to be funded by the World Bank.

The current status of these proceedings is unknown despite inquiry with ZRA.

The 1993 feasibility study will require review and updating. Similarly, comprehensive EIA and SIA were carried out in 1993 and 1998. These too will require updating.

Bankability Gap Review

In order to bring this project to financial close, the following steps are recommended:

Step 1: Appoint a reputable Transaction Manager

It is of the utmost importance that a reputable and competent Transaction Manager/ Project Manager is appointed with the responsibility to manage the further proceedings up to at least financial close and preferably also including project implementation monitoring. This is a critical success factor as it fills the lack of project management skills within the involved governments and most importantly is to provide confidence for prospective bidders and capital providers that the project is well prepared.

The project manager should be selected based on track record in order to demonstrate its proven ability to deliver similar transactions. Track record is significantly more important than the advisor's fee, which is only a fraction of the total project costs. The fee structure should include sufficient retainer fee to ensure that the project manager can utilise sufficient resources. This retainer fee should be paid with regular intervals and should not be subject to lengthy and bureaucratic approval proceedings involving different stakeholders (as is currently not uncommon for such services). Also the fee structure should include a success fee in order to give the project manager the incentive to deliver the project on time and with financial close. The success fee should be payable at financial close and or if project implementation monitoring is included possibly also upon start of operations.

The project manager should be given sufficient mandate to manage the transaction. Ideally it should manage the full budget of preparation including the necessary related activities e.g. environmental and social impact assessment. Its mandate could also include the power to negotiate on behalf of the involved governments or the contracting authority where the Transaction negotiates an in-principle agreement, which is to be approved by government and or ratified by parliament depending on the legislative context. The process should be de-politicalised as much as possible as politicisation is one of the key impediments to successful project preparation in Africa.

Step 2: Update the 1993 Feasibility Study

The following questions have to be answered:

- How much will the project costs (taking into account current market conditions and including the necessary transmission lines)?
- Is it possible to incrementally develop the dam i.e. could the dam still produce power if it was built only halfway?
- What is the potential output i.e. generation efficiency?
- What is the required tariff to recover the costs including capital costs (taking into account current market conditions)
- Are users willing and able to pay such tariffs, and if not is there sufficient fiscal space from the respective government to finance the viability gap)
- What are the main risks impacting the financial viability of the project and how can they be mitigated?
- What is the economic impact of the project and does it meet the requirements of International Finance Institutions (most notably the required economic rate of return of 12%)

Step 3: Update the 1993 Environmental and Social Impact Assessment

- What is the environmental impact of the project (taking into account the latest climate change implications)?
- What is the social impact of the project e.g. is there a need for resettlement?
- What are possible measures to mitigate the environmental and social impact to a level acceptable to government legislation and to the requirements for IFI's (equator principles)?

Step 4: Arrange the necessary risk mitigation facilities

Taken into account the findings from the updated feasibility study, the necessary package of risk mitigation needs to be arranged before presenting the project to the market. This includes at least (not limited to):

- PPA arrangements with the principal off-takers i.e. ZESA and SEZO and preferably also ESKOM and or the Southern Africa Power Pool (assuming its mandate can be upgraded to underwrite power off-take) in order to mitigate the revenue risk;
- Partial Risk Guarantees (PRG) and or Political Risk Insurance to mitigate the country risk;
- Interest Rate Swaps in order to allow for long-term debt financing with fixed interest rate.
- Harmonize the framework applicable to Batoka (including on land rights, title to electricity, security, environment, technical standards, etc.).

Step 5: Prepare tender documents

With the updated Feasibility Study, Environmental and Social Impact Assessment and Risk Mitigating Package in place, the project manager can prepare the tender document (or update the existing tender documents), which includes:

- Request for expression of interest
- Request for proposal including functional specifications for the scope of work
- Selection and evaluation criteria
- Draft BOT contract
- Risk allocation matrix
- Risk Mitigation Instruments

The tender package has to be approved by the respective governments including the affordability assessment of the contingent liabilities (taking into account the respective government’s fiscal space and debt sustainability framework). It is important that this is done before the start of the tender

Step 6: Tendering and contracting

With the approved tender package, and assuming that the 2012 tender has not yet materialised, ZRA and the project manager could re-initiate the tender process, which includes the following steps:

- Request for expression of interest
- Review of expression of interest and shortlisting of candidate bidders
- Request for proposal
- Review of proposals and selection of preferred bidder
- Invitation to negotiate and agreement on final BOT contract
- Financial arranging by the selected bidder (with support from ZRA/project manager where applicable)
- Financial close

Table 7-3: Batoka Gorge Hydropower Project – Possible Finance Sources

Equity US\$ 0.6 – 1.6b	Debt US\$ 1.5 – 3.0b	Risk Mitigation
<ul style="list-style-type: none"> • International Developers • Infrastructure Funds • (Government of Zambia) • (Government of Zimbabwe) 	<p>Subordinated Debt/A-Loans</p> <ul style="list-style-type: none"> • AfDB • IFC • AFC • DBSA • DFIs • <i>Africa50</i> • <i>NDB</i> <p>Senior Debt/B-Loans</p> <ul style="list-style-type: none"> • Sub debt providers (see above) • Commercial Banks • Expert Credit Agencies 	<p>PRG</p> <ul style="list-style-type: none"> • MIGA • AfDB • <i>PIDA Guarantee Fund</i> <p>External Project Manager</p> <ul style="list-style-type: none"> • SADC • COMESA • NEPAD IPFF • AfDB • World Bank/PPIAF • EU-AITF • <i>Africa50</i> <p>PPA</p> <ul style="list-style-type: none"> • ZESCO • ZESO • ESKOM • <i>SAPP Deposit Facility</i>

7.2 Abidjan-Lagos Interconnector highway

Project Description

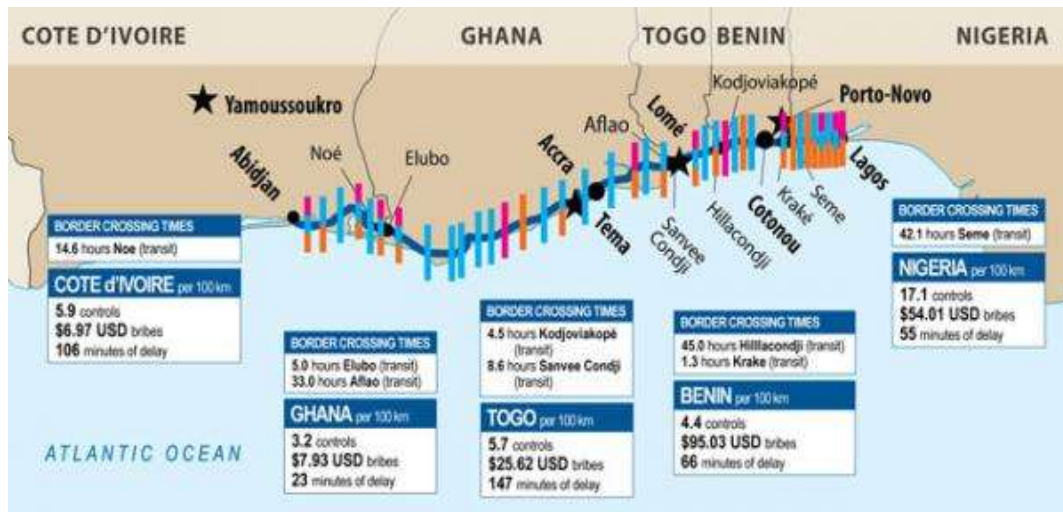
The Abidjan – Lagos Highway³⁸ project concerns the envisaged widening of the existing road. The total length is approximately 1,000 km and the highway crosses 5 different countries; Côte d'Ivoire (168 km), Ghana (583 km), Togo (65 km), Benin (122 km) and Nigeria (90 km).

The envisaged scope of work includes³⁹:

- (i) the roll out of five road related smart corridor modules;
- (ii) the modernisation of a 384 km stretch of highway;
- (iii) the upgrading of 288 km of road; and
- (iv) the creation of four one-stop border posts (OSBPs).

In addition, the project involves the dualisation of the Abidjan-Lagos Corridor to a 2x3 lane highway with an associated rail link and ICT technology to transform the coastal transport/trade corridor into a 'smart corridor'.

Figure 7-3: Abidjan – Lagos Highway



Project Rationale

The Abidjan – Lagos Highway is part of the 4,000 km Trans–West African Coastal Highway from Dakar to Lagos, which is part of the Trans-African Highway network.

The Abidjan – Lagos Highway is the most travelled West African corridor on the African Regional Transport Infrastructure Network (ARTIN). It is therefore important that this corridor is modernised and upgraded in order to speed up regional integration. Joint Border Posts (JBPs) for common or simultaneous controls by border agencies from pairs of neighbouring countries are aimed at enhancing trade facilitation through the efficient movement of persons, vehicles

³⁸ Also known as Abidjan – Lagos Coastal Corridor

³⁹ Source: NEPAD, DAKAR FINANCING SUMMIT FOR AFRICA'S INFRASTRUCTURE, Brochure (2014)

and goods within ECOWAS and with adjoining regions through the reduction of border crossing time. The more efficient transport system and new border posts will ease the crossing between countries for people and goods. This, in turn, will increase regional trade and contribute to regional integration involving the five countries – Ghana, Côte d'Ivoire, Togo, Benin and Nigeria, all of which members of the Economic Community of West African States (ECOWAS).

In conclusion, the objectives of the project are⁴⁰:

- Reduce border crossing time, harassment and cost
- Reduce transport and logistics costs
- Promote trade and economic development amongst countries

Project Appraisal

As per Aurecon, the construction costs for the project are US\$ 1.1 billion⁴¹. However, news clippings (July 2013) on an ECOWAS meeting, refer to an investment amount of US\$ 2 billion⁴².

The envisaged widening of the 200 km road between Accra and Takoradi in Ghana is estimated to cost US\$ 340 – 630 million, i.e. US\$ 1.7 - 3.1 million per km . In that sense the US\$ 2 billion figure for the entire Abidjan – Lagos Highway does not appear to be unreasonable albeit on the low side. Moreover, it is not clear what the project scope is underlying these estimates despite inquiry with ECOWAS.

There are no details available on the traffic figures, though it has been assessed as one of the most travelled Western African corridors.

The 200 km between Accra and Takoradi has some 15,000 ADT, though it is questionable whether this is representative for the entire distance between Abidjan and Lagos. Most likely traffic will be high around urban centres of Abidjan (7 million people), Accra (4 million), Lomé (2 million), Cotonou (1 million) and Lagos (21 million).

If the following assumptions apply:

- Average daily traffic around 10,000 vehicles
- Traffic growth per annum 5%
- Operating costs US\$ 100 million (in line with benchmark data from the World Bank)
- Weighted average cost of US\$ capital 11% in real terms

Then the full cost recovery tariff for the tolls would be around US\$ 0.07 per km⁴³. This is not unreasonable in comparison with international benchmark data.

Obviously this needs to be further analysed and appraised through an adequate feasibility study.

Environmental and Social Impact

⁴⁰[http://addisababa.mfa.ir/uploads/Abidjan - Lagos_19951.pdf](http://addisababa.mfa.ir/uploads/Abidjan_-_Lagos_19951.pdf),<http://www.dakar-nepadsummit.org/sites/default/files/DFSBrochure-English-version.pdf>

⁴¹ Aurecon, Consultancy Services for Updating PIDA Priority Action Plan (PAP) Project Fiches (March 2014)

⁴² <http://www.dailytimes.com.ng/article/ecowas-estimates-lagos---abidjan-highway-cost-2bn>

⁴³ See annex for overview of assumptions

No details are available on the environmental and social impact, though the main impact can be expected to be related to resettlement, as the road is most likely highly encroached, which is typical in that region.

Implementing Authority

A Project Steering Committee (PSC) made up of Ministers in charge of Works/Infrastructure and chaired by the Nigerian Minister will oversee the implementation of the project. The ECOWAS Commission is the secretariat of the PSC. Other lead agencies will be ECOWAS and the West African Economic and Monetary Union (UEMOA) for OSBPs and AUC, NPCA, AfDB and ECOWAS for the highway.

Project Structuring

The following main options in terms of public-private responsibilities apply to the implementation of the project.

Table 7-4: Abidjan – Lagos Highway Project Structure Options

Item	Option 1	Option	Option 3
NIGERIA (110km) Lagos – Badagry Expressway	Private	Private	Public
BENIN (156km) Seme – Grand Pope		Private	Public
TOGO (50km) Grand Pope - Lome		Private	Public
GHANA (556km) Lome – Accra Accra – Takoradi (200km) Takoradi - Noe		Private	Public
COTE D’IVOIRE (188km) Noe - Abidjan		Private	Public

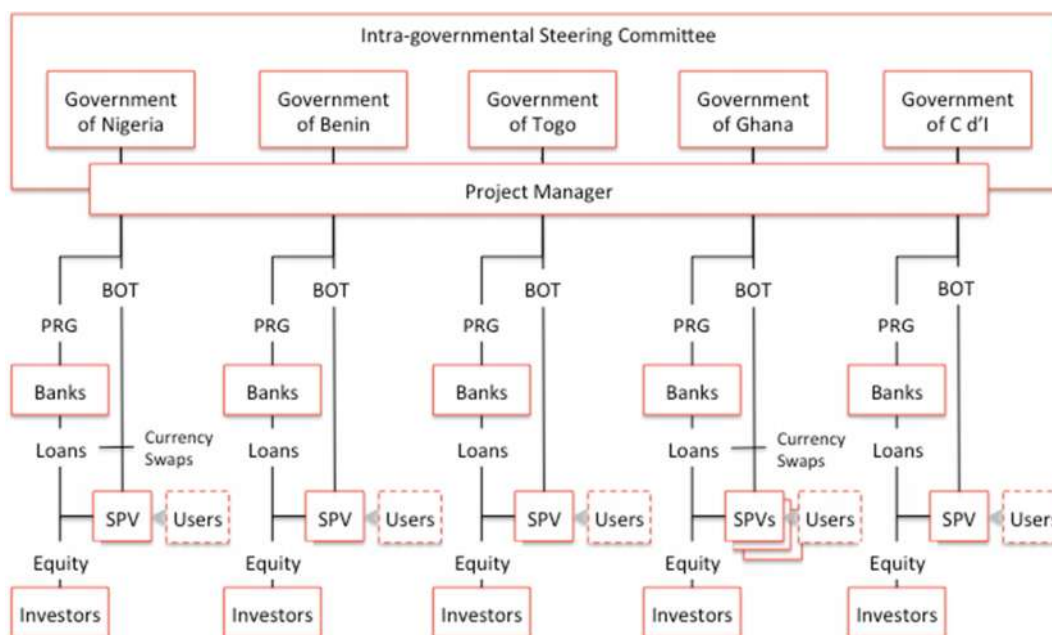
It is assumed that the preferred cost recovery mechanism is tolls in view of the fiscal constraints for the involved governments. It is recommended that this project should be potentially broken into several projects, inter alia based on:

- Differences in legal jurisdiction
- Differences in demand / technical / investment / financial characteristics of each section of the highway. Presumably some parts are more viable than others?
- Different fundamental business cases of different components of the system, most notably the border posts versus the highways
- Creating a number of smaller projects with higher chances of investment / financing

- Facilitating the possibility of sequencing, notably implementing those parts of the network (sections of highway and/or border posts) with highest potential first. Potential resides at least in (i) demand characteristics for that part, and (ii) stability / readiness of the national regulatory framework / procuring authority concerned. Basically to create some momentum for the whole highway development by getting parts built which are most doable (and implicitly are internally viable without needing the whole highway to be completed). Completing such parts should make completion of other parts more viable
- Facilitating the possibility for standardization/ simplification taking into account the differences in legislative frameworks and other differences as mentioned.

Consequently the recommended project structure assumes country specific implementation schemes supported by overall project management to facilitate coordination and standardization, as well as the necessary risk mitigation packages, as reflected in the following scheme.

Figure 7-4: Abidjan – Lagos Highway Project Structure Scheme



Risk Management Framework

The project structure including the necessary risk mitigation reflects the following risk management framework.

Table 7-5: Abidjan – Lagos Highway Risk Management Framework

Risks	Nature	Risk Management
Construction	Cost overruns & delays Flyvbjerg: roads have an average cost overrun of 21%	Allocate to competent, competitively selected private developer and service provider through BOT contracting

Risks	Nature	Risk Management
Operations	Maintenance backlogs	Allocate to competent, competitively selected private developer and service provider through BOT contracting
Interfaces	<ul style="list-style-type: none"> • 5 countries • Border crossings • Social and environmental impact (resettlement issues) 	Interface management through international Steering Committee and a competent (external) project manager with sufficient resources (retainer fee), mandate (power to negotiate) and sufficient incentives to deliver results (success fee)
Revenues	<ul style="list-style-type: none"> • Number of vehicles • Willingness and ability to pay user charges 	Minimum Revenue Guarantees in combination with Benefit Sharing Arrangement (part of BOT)
Currency	<ul style="list-style-type: none"> • Togo, Benin and Cote d'Ivoire have CFA which is pegged to Euro (limited currency risk) • Ghana Cedis 8.5% avg depreciation past 10 yrs and Naira 2.2% 	Fix exchange rates through currency swap
Inflation	<ul style="list-style-type: none"> • Average inflation past decade in Togo, Benin and Cote d'Ivoire around 3% (thanks to CFA peg to Euro) • Nigeria 12% • Ghana 14% 	Include tariff escalation formulas in BOT arrangements (transfer inflation risks to the end-users)
Country	<ul style="list-style-type: none"> • Out of 147 countries • Nigeria # 85 • Ghana # 90 • Benin # 120 • Cote d'Ivoire # 124 	Arrange Partial Risk Guarantees (PRG) with WB (MIGA) or AfDB to mitigate country risks (political risks, war, breach of contract) for debt providers

Legal Context and Challenges

Existing National Legislations to implement the Project

Côte d'Ivoire and Nigeria have a specific PPP legislation encompassing highway projects. However the other three Project countries (being Benin, Togo and Ghana) do not yet have a specific piece of legislation on PPPs. Benin and Ghana are in the process of reviewing PPP laws, and Ghana applies a National Policy on PPPs.

We assume that the PPP Law in preparation in both Benin and Ghana will be implemented to serve as legal basis for the project. In relation to Togo, to our knowledge no PPP law is being prepared and the highway would need to be implemented under a concession structure. However, comfort may be taken in the fact that Togo has a track record of private investment in infrastructure.

Tolling Regulation

We understand that at least part of the revenues of the Project will arise from direct payment from the users to the SPVs. As a result, each SPV will need to have the right (under the PPP or the concession agreement) to levy tolls on the users. As to the tolling authority and applicable piece of legislation in each Project country please refer to the table below:

Table 7-6: Abidjan – Lagos Highway Risk Management Framework

	Current situation	Comments
Nigeria	Federal Highways Act gives the authority to fix and collect tolling fees to the federal Ministry of Transport	The PPP law is unclear in this respect: Legal amendment may be required to allow the SPV to levy taxes directly on the users.
Ghana	Ghana Highway Authority can negotiate concession agreements with private sector entities to enable them finance, build and operate selected trunk roads as toll roads under conditions to be agreed with the relevant ministry	Ghana Highway Authority Act sets forth that the Authority has the right to collect the fees whereas it can also be agreed to delegate it to a commercial body through a contract to be approved by the cabinet.
Benin	The Government has given the authority to enter into concession agreements and collection of toll fees to the Benin Road Fund.	We note that toll gates are already operated by the private sector under concession agreements in Benin. However, the legal basis on which these are operated is unclear since the underlying legal instruments were not available for our review. In case any legislative amendment would be required as to collection of the fees by private parties, these could be provided for in the new PPP law.
Togo & Cote d'Ivoire	To our knowledge neither country has a clear regime as to the collection of fees. From the publicly available information we understand that there are tolled roads in both countries where the fees are determined and collected by their respective Road Funds. Depending on the current situation, further legislation could be required.	

Customs regulation

We note that the Project includes the development of four one stop border posts. From a legal point of view, the principal legal issue is that the customs authority from one state needs to be able to apply its laws in the territory of another state (i.e. being granted extraterritorial jurisdiction).

In practice, a bilateral agreement between the two bordering states will be entered into for each border post and will need to be submitted for ratification to the parliament. The practice for this types of posts is fairly well defined and we further anticipate that the negotiation of that kind of agreement will be facilitated between Togo and Benin, which are both members of the UEMOA area.

Current status

ECOWAS Heads of State and Government approved in January 2014 the sum of US\$ 50 million to support feasibility studies and project design .

Apparently a selective tendering process has been initiated to select consultants to undertake the feasibility and design studies for the project, while AfDB had been approached for funding the studies as part of the initial fund mobilization and project financing efforts.

The section between Accra and Takoradi in Ghana is subjected to a pre-feasibility study funded by the World Bank to assess the viability and PPP potential. The study undertaken by Rebel is expected to be completed by the end of 2014.

Bankability Gap Review

In order to bring this project to financial close, the following steps are recommended:

Step 1: Appoint a reputable Transaction Manager

It is of the utmost importance that a reputable and competent Transaction Manager/ Project Manager is appointed with the responsibility to manage the further proceedings up to at least financial close and preferably also including project implementation monitoring. This is a critical success factor as it fills the lack of project management skills within the involved governments and most importantly is to provide confidence for prospective bidders and capital providers that the project is well prepared.

The project manager should be selected based on track record in order to demonstrate its proven ability to deliver similar transactions. Track record is significantly more important than the advisor's fee, which is only a fraction of the total project costs. The fee structure should include sufficient retainer fee to ensure that the project manager can utilise sufficient resources. This retainer fee should be paid with regular intervals and should not be subject to lengthy and bureaucratic approval proceedings involving different stakeholders (as is currently not uncommon for such services). Also the fee structure should include a success fee in order to give the project manager the incentive to deliver the project on time and with financial close. The success fee should be payable at financial close and or if project implementation monitoring is included possibly also upon start of operations.

The project manager should be given sufficient mandate to manage the transaction. Ideally it should manage the full budget of preparation including the necessary related activities e.g. environmental and social impact assessment. Its mandate could also include the power to negotiate on behalf of the involved governments or the contracting authority where the Transaction negotiates an in-principle agreement, which is to be approved by government and or ratified by parliament depending on the legislative context. The process should be de-politicalised as much as possible as politicisation is one of the key impediments to successful project preparation in Africa.

As indicated, despite the differences in legislative environments and the differences in project specifics, the recommended mode of implementation is BOT, which could be standardized to some extent. This will reduce the transaction costs significantly and as indicated contribute to confidence building for private investors. If one section is successfully implemented, it is very likely that other sections are also successfully implemented if the same project manager is used.

We have been informed that a transaction advisor has been appointed by ECOWAS.

Step 2: Prepare Feasibility Study

The following questions have to be answered:

- How much will the project costs (per identified section) taking into account current market conditions?
- Is it possible to incrementally develop the corridor (section by section and or dualization vis-à-vis widening to 2x3 lanes, and if so, what is the recommended phasing strategy and based on which objective criteria (e.g. demand)
- What is the required toll rate to recover the costs including capital costs (taking into account current market conditions)
- Are users willing and able to pay such toll rates, and if not is there sufficient fiscal space from the respective government to finance the viability gap)
- What are the main risks impacting the financial viability of the project and how can they be mitigated?
- What is the economic impact of the project and does it meet the requirements of International Finance Institutions (most notably the required economic rate of return of 12%)

We have been informed that feasibility studies are in progress financed by NEPAD.

Step 3: Prepare Environmental and Social Impact Assessment

- What is the environmental impact of the project?
- What is the social impact of the project e.g. is there a need for resettlement?
- What are possible measures to mitigate the environmental and social impact to a level acceptable to government legislation and to the requirements for IFI's (equator principles)?

Step 4: Arrange the necessary risk mitigation facilities

Taken into account the findings from the updated feasibility study, the necessary package of risk mitigation needs to be arranged before presenting the project to the market. This includes at least (not limited to):

- Acquiring the Right of Way (RoW). Although it concerns an existing road it may be necessary to acquire further RoW to allow for the envisaged widening;
- Awareness and sensitization building of the need to pay for the use of the road. It has to be acknowledged that the current road users are not accustomed to road tolls or only very low tolls (Ghana). It is therefore essential that users (and related stakeholders) are informed and convinced on the need for tolls if they want to experience an improved road;
- Minimum Revenue Guarantees i.e. sovereign guarantees whereby the government guarantees minimum revenue. If demand falls below a pre-defined threshold, the government will supplement the revenues. This will provide more comfort for prospective investors and make it more attractive to them increasing the market's appetite. It is recommended to offset this guarantee with a Benefit Sharing provision, which implies that if demand exceeds a pre-defined threshold the excess revenues will be shared between the government and the concessionaire;
- Partial Risk Guarantees (PRG) and or Political Risk Insurance to mitigate the country risk;
- Interest Rate Swaps in order to allow for long-term debt financing with fixed interest rate;
- Currency Swaps (in particular for Ghana and Nigeria) in order to allow for accessing the market of long-term US debt facilities. Such swaps are to some extent already offered by for example TCX though at a significant cost. It may be considered to develop such facilities at the costs of the involved governments or with the Africa50 fund.

Step 5: Prepare model tender documents

With the updated Feasibility Study, Environmental and Social Impact Assessment and Risk Mitigating Package in place, the project manager can prepare model tender documents, which includes:

- Request for expression of interest
- Request for proposal including functional specifications for the scope of work
- Selection and evaluation criteria
- Draft BOT contract
- Risk allocation matrix
- Risk Mitigation Instruments

The tender package has to be tailored to the respective sections and approved by the respective governments including the affordability assessment of the contingent liabilities (taking into account the respective government’s fiscal space and debt sustainability framework). It is important that this is done before the start of the tender

Step 6: Tendering and contracting

With the tailored and approved tender package, the contracting authority and the project manager could initiate the tender process for each section identified and in the sequence as recommended by the Feasibility Study and agreed upon by the Intra-Governmental Steering Committee, which includes the following steps:

- Request for expression of interest
- Review of expression of interest and shortlisting of candidate bidders
- Request for proposal
- Review of proposals and selection of preferred bidder
- Invitation to negotiate and agreement on final BOT contract
- Financial arranging by the selected bidder (with support from government/project manager where applicable)
- Financial close

Table 7-7: Abidjan – Lagos Highway – Possible Finance Sources

Equity US\$ 0.5 – 0.8b	Debt US\$ 1.2 – 1.5b	Risk Mitigation
<ul style="list-style-type: none"> • International Developers • Infrastructure Funds • (Respective governments) • (EU-AITF) • (IFC) 	<p>Subordinated Debt/A-Loans</p> <ul style="list-style-type: none"> • AfDB • IFC • AFC • EU-AITF • BOAD • EBID • DFIs • <i>Africa50</i> • <i>NDB</i> <p>Senior Debt/B-Loans</p> <ul style="list-style-type: none"> • Sub debt providers (see above) • International Commercial Banks • Local Commercial Banks 	<p>PRG</p> <ul style="list-style-type: none"> • MIGA • AfDB • Guarantco • <i>PIDA Guarantee Fund</i> <p>External Project Manager</p> <ul style="list-style-type: none"> • ECOWAS • NEPAD IPFF • AfDB • World Bank/PPIAF • EU-AITF • <i>Africa50</i> <p>MRG</p> <ul style="list-style-type: none"> • Respective Governments • <i>PIDA Guarantee Fund</i> <p>Currency Swaps</p>

Equity US\$ 0.5 – 0.8b	Debt US\$ 1.2 – 1.5b	Risk Mitigation
		<ul style="list-style-type: none"> • Respective governments • TCX • <i>PIDA Guarantee Fund</i>

7.3 Zambia Tanzania Kenya (ZTK) Transmission Lines

Project Description

The Zambia Tanzania Kenya (ZTK) transmission line concerns the development of a 1,600 km 400 MW bi-directional 400kV power transmission line. It is planned to run from Pensulo in Zambia, through Mbeya, Iringa, Singida and Arusha in Tanzania, to Isinya in Kenya.

The project has three main components:

- (i) In Zambia a second 330kV circuit from Kabwe will be strung to the existing line to Pensulo to enable the transfer of 400MW to Mbeya (via Kasama).
- (ii) A 400 kV line from Mbeya to Iringa will provide the strong path for power to be delivered to the northern load centres in Tanzania;
- (iii) Another 400 kV line from Singida onwards to Arusha will be required to deliver power to the Arusha load centre as well as transmit power to Isinya in Kenya.

Figure 7-5: ZTK Transmission Line



Project Rationale

Zambia has significant untapped hydropower potential. Out of its 6,000 MW potential, less than 2,000 MW has been harnessed. Sites yet to be developed include Kafue Gorge Lower, Kalungwishi, Mambilima, Batoka Gorge, Devil's Gorge, Kabompo and others.

Zambia's total demand currently exceeds internal generation as a result of the thriving mining sector. Zambia is also faced with the challenge of satisfying the demand of more than 80 percent of its population for modern forms of energy. Inadequate investment in recent years in generation and transmission infrastructure has led to deterioration in the power network.

Tanzania also has the potential to play a significant role in regional power trade within the framework of the East African Power Pool, as well as the Southern African Power Pool. A simulation exercise exploring Tanzania's potential contribution to a fully integrated East African Power Pool found that if the region pursued power trade to its fullest economic potential, Tanzania could emerge as a power exporter with exports rising to 2.4 TWh within a decade, equivalent to over 20 percent of future domestic consumption⁴⁴

Kenya's power supply remains unreliable because generation and transmission are stretched too thin. The country's installed generation capacity is meagre at only 33 MW per million inhabitants, i.e. about one tenth the average in Africa's middle-income countries.

In conclusion, the project targets the following objectives:

- Promote power interconnection across the continent and facilitate the creation of an integrated Pan-African power market;
- Promote and stimulate development of new power generation projects and electricity export potential;
- Improve access to electricity in Northern Zambia (via Kasama) and Western Tanzania (Sumbawanga);
- Reinforce the national grid in Tanzania and make Tanzania an operating/trading member of the Southern African Power Pool (SAPP);
- Assist Kenya to diversify fuel sources for generation – hydro, thermal, etc.

Project Appraisal

Total estimated project value is US\$ 1.1 billion. Assuming among others an operational period of 20 years, 100% debt financing at LIBOR + 300 – 500 basis points and a wheeling charge of US\$ 0.03/KwH, the project has been assessed as financially viable⁴⁵.

Implementing Authority

The lead coordinating agency at present is the Office for Promoting Private Power Investment (OPPPI) of the Government of Zambia. A Project Management Unit (PMU) is to be established by ZTK governments to manage the project until the formation of the transmission company, Transco, which will be a Special Purpose Vehicle (SPV).

⁴⁴ Rosnes and Vennemo, 2009

⁴⁵ Project Information Memorandum May 2013 prepared by the transaction advisors Fieldstone in association with Norton Rose (legal) and Scott Wilson (technical)

Project Structuring

The following main options in terms of public-private responsibilities apply to the implementation of the project.

Item	Option 1	Option 2	Option 3	Option 4
Zambia link (900 km – US\$ 0.5b)	Private	Public	Public	Private
Tanzania link (800 km – US\$ 0.4b)			Public	Private
Kenya link (100 km US\$ 0.1b)			Public	Private

Although the project was planned as a PPP, the sponsors decided to develop it as a public sector project because of the differences in legislation on the ownership of the power lines and high return expectations of the private sector. The current proposal is for the project to be implemented through an SPV jointly owned by the governments of Zambia, Tanzania and Kenya.

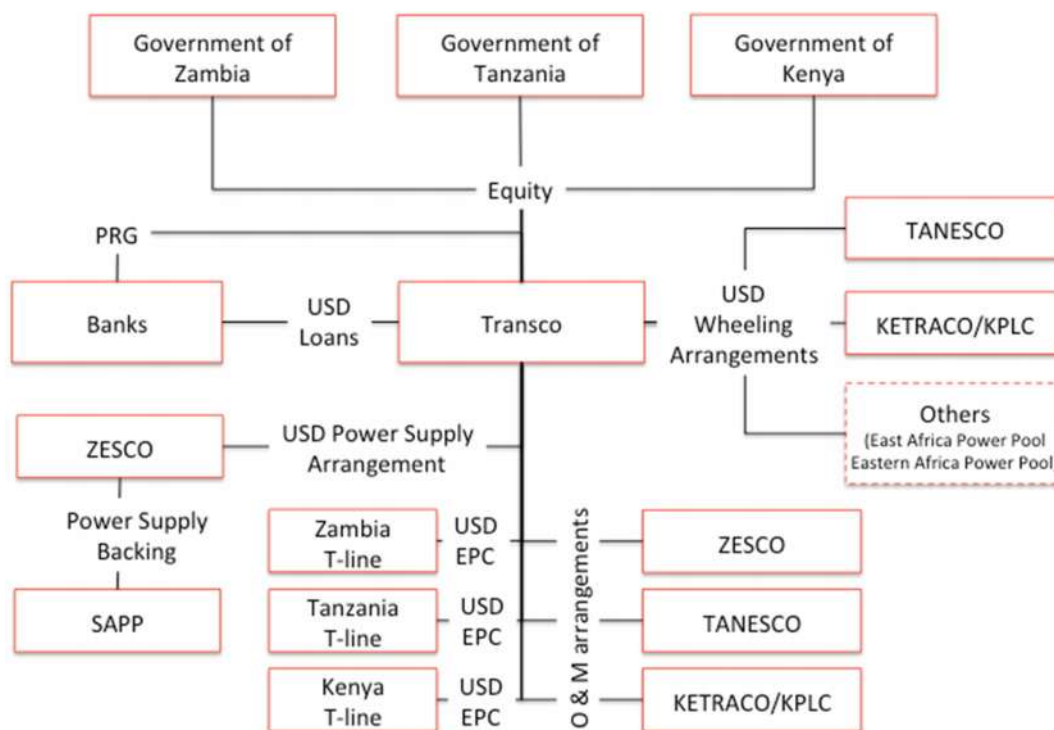
Upon completion of the construction, operation and maintenance contracts will be signed between the project company and the three utilities (KPLC, TANESCO and ZESCO) to operate and maintain the section of the interconnector traversing each of the three countries.

Power Purchase Agreement (PPAs) would be signed between ZESCO (seller) and KPLC and TANESCO (buyers). These will be long-term agreements under which ZESCO will commit to supply power to both TANESCO and KPLC. The three utilities will conclude a wheeling agreement with the project company. These agreements will provide the security to lenders as wheeling proceeds net of recurrent expenses will be used by the project company to service and repay the loans.

The SAPP has apparently committed to backstop Zambia's power supply capacity in the event of emergency or any other temporary or permanent constraints to Zambia's capacity to deliver on the PPA commitments.

The consequent project structure along with the assumed partial risk guarantees (PRG) is depicted in the following scheme.

Figure 7-6: ZTK Transmission Line Project Structure



Risk Management Framework

The project structure including the necessary risk mitigation reflects the following risk management framework.

Table 7-8: ZTK Risk Management Framework

Risks	Nature	Risk Management
Construction	Cost overruns & delays	Allocate to competent, competitively selected private developer and service provider through EPC contracting
Operations	Power Supply Maintenance backlog	<ul style="list-style-type: none"> Power supply arrangement with ZESCO. SAPP has committed to back stop Zambia’s power supply capacity in the event of emergency or any other temporary or permanent constraints to Zambia’s capacity to deliver on the PPA commitments Maintenance contracts with ZTK utility companies

Risks	Nature	Risk Management
Interfaces	<ul style="list-style-type: none"> • 3 countries 	Project Management Unit (PMU) will be jointly established by the ZTK Governments. It will manage the project until the formation of the transmission company (Transco or the SPV). The responsibilities of the PMU will subsequently be taken over by Transco.
Revenues		Wheeling Agreements with national utility companies
Currency	<ul style="list-style-type: none"> • Zambia 1% p.a. depreciation 2003 – 2013 • Tanzania 4% • Kenya 1% 	Wheeling arrangements in US\$
Inflation	<ul style="list-style-type: none"> • Zambia 12% p.a. 2003 – 2013 • Tanzania 9% • Kenya 11% 	Include tariff escalation formulas in wheeling arrangements (transfer inflation risks to the off-takers)
Country	Out of 147 countries <ul style="list-style-type: none"> • Zambia # 96 • Tanzania # 108 • Kenya # 103 	Arrange Partial Risk Guarantees (PRG) with WB (MIGA) or AfDB to mitigate country risks (political risks, war, breach of contract) for debt providers

Legal Context and Challenges

Transnational framework

The construction of an interconnector is subject to the Tripartite Inter Governmental Memorandum of Understanding (MoU) signed in 2003 between Zambia, Tanzania and Kenya. This was not available for our review.

Key legal issues

a. SPV form

We would recommend having a single SPV ("Transco") incorporated to own (or lease) all assets in three countries. We understand that the participating states have already agreed to incorporate it in Lusaka. Transco would be granted international organization status, and would sign an incorporation treaty providing relative independence from the incorporation state.

b. Electricity regulation: harmonization or national regulations

Licenses for Transmission of Power: Each of Zambia, Tanzania and Kenya has its own regulatory regime in relation to transport of electricity (in Zambia under Article 8 of the Electricity Regulation Act, in Tanzania under Article 8 of the Electricity Act and in Kenya under Article 3 and 27 (a) of the Electricity Act) : each of these regulation provide that Transco will have to obtain one separate license authorizing it to transport electricity. Each of these acts

also provide for an application procedure in relation to such license which will have to be followed by Transco.

Regulatory requirements for Electricity Transmission: Transco will need to have the right to transport power in each State (but does not need authorizations to generate or sell electricity). We understand that Transco will also not be expected to provide ancillary services (such as balancing services) and will consequently not require authorizations in this regard.

However, the regulatory and technical requirements for transmission of electricity differ between each State, therefore two approaches could be considered:

- (i) to have Transco comply with the regulations in each State, or
- (ii) to fully harmonize the rules and regulations applicable to Transco.

To the extent possible (in particular, subject to technical due diligence in this respect), approach (i) should be considered: Transco would be granted the relevant licenses in each State. To promote smooth cooperation, an implementation treaty could provide for an obligation from the States to institute ongoing cooperation between the three regulators.

If the technical requirements between the three states are found to be too divergent, option (ii) would need to be implemented (i.e. full harmonization by way of a treaty or common regulator). This would ease the implementation of the Project once implemented, but is likely to be cumbersome.

c. Contractual structure - Risk on electricity supply and off-take

Transco would enter into three wheeling agreements with each of ZESCO, TANESCO and KPLC (to our knowledge, KETRACO is in charge of the transmission system in Kenya).

To improve bankability, Transco should only bear the risk of operating the transmission line, and risks relating to supply and demand of electricity should be allocated to generators and off-takers by providing for a capacity-payment structure under the wheeling agreements (off-takers would pay Transco for being able to transmit, irrespective of the quantity of electricity transmitted).

O&M Agreements could be entered into with each State's grid operator (namely ZESCO, TANESCO and KETRACO).

d. Land rights

Each State has specific land regimes for electricity projects (in Tanzania, under article 36 of the Electricity Act, in Zambia under Article 14 and seq. of the Electricity Act and in Kenya under Article 54 of the Energy Act), generally granting the relevant governments power to proceed with compulsory acquisition of the land. We would suggest having an undertaking from each State to provide Transco with the required site for the project.

However, we note that the ZTK project will cross wooded lands - both Tanzania, Zambia and Kenya have passed specific laws for protection of forests, which may need to be applied depending on the specific path.

Coordinating authority

We understand that, under the MoU, the States have agreed to incorporate a Project Management Unit ("PMU") to coordinate the project. Until the PMU is incorporated, Zambia,

acting through the Office for Promoting Private Power Investment⁴⁶ ("OPPPI") is empowered by Tanzania and Kenya to coordinate. To the extent that Transco owns the installations and is granted the licenses to implement the project, there would not need to be any single granting authority.

Legal challenges

Legal harmonization

- As long as there is sufficient collaboration between the regulators of each state it could be considered to use the existing laws and regulations with minimal adjustments.
- Alternatively, an Inter-Governmental Agreement could be considered, covering the regulations applicable to the transmission activity of Transco, as well as land rights, wayleaves, rights to enter into wheeling agreements and cooperation commitments.
- Going forward, developing electricity production in the region will require the implementation of numerous transmission lines to connect hydroelectric generators to consumers' national grids. This would be strongly facilitated by a certain level of harmonization and cooperation between national regulators and grid operators.

Current Status

- COMESA governments MOU for funding of ZTK's Project Management Unit (PMU) has been signed and disbursement has commenced
- In 2013 the involved governments solicited financing through a preliminary project information memorandum prepared by Fieldstone in cooperation with Norton Rose (legal advisor) and Scott Wilson (technical advisor). The current status of this process is unknown despite inquiry with ZESCO.
- Pensulo – Kasama (within Zambia) is under implementation but the route seems not to coincide with the ZTK
- Shinyanga – Singida – Iringa (Tanzania Backbone) is fully funded and under construction (see text box below). It seems that this line also does not coincide with the initial route which was to run from Singida to Mbeya
- The project has accessed funds pledged by EDF during the North-South Corridor Summit (Lusaka 6-7 April 2009) through COMESA
- Increased interest is being shown from lenders and donors (AfDB, DFID, DBSA, EIB, KfW, etc.)

Text Box 16

Financing Scheme Tanzania Backbone

This project is being financed by several multilateral financial institutions. The African Development Bank (AfDB) has committed to provide US\$64.8 million, Korea's Economic Development Cooperation Fund (EDCF) will provide US\$36 million, the European Investment Bank (EIB) will provide US\$134.5 million, the World Bank's International

⁴⁶ The OPPPI was formed before the MoU in 1999, by a policy of the Government of Zambia related to the framework and package of incentives for hydro power generation and transmission development.

Development Association (IDA) will provide US\$150 million and Japan International Cooperation Agency (JICA) will provide US\$64.8 million. TANESCO will contribute US\$18 million for the project.

In August 2010, the World Bank approved a US\$150 million credit line to Tanzania for the project. The World Bank's loan will finance the first section of the high voltage line namely the 400 kV section of Iringa to Dodma. The World Bank also allocated US\$10 million as technical assistance to TANESCO, who issued a general procurement notice for the project.

In December 2010, Tanzania received a EUR130 million loan facility from the European Investment Bank (EIB) for the construction of the Singida to Shinyanga segment of the transmission line the project.

In January 2011, TANESCO began construction of the Iringa–Shinyanga transmission line and in April 2011, the utility launched prequalification bids for installation of the three line sections.

In September 2013, India-based KEC International was awarded a contract for the construction of Singida–Shinyanga transmission line.

The project is scheduled for completion in 2014/2015.

Source: *Global Transmission* (<http://www.globaltransmission.info/archive.php?id=1473>)

Bankability Gap Review

In order to bring this project to financial close, It appears that all the necessary steps have been made according to the 2013 preliminary project information memorandum, although the current status of the proceedings are unknown to the consultant despite inquiry with ZESCO.

Table 7-9: ZTK Possible Finance Sources

Equity	Debt US\$ 1.1b	Risk Mitigation
<ul style="list-style-type: none"> Respective governments 	<p>Subordinated Debt/A-Loans</p> <ul style="list-style-type: none"> AfDB IFC AFC DFIs EU-AITF <i>Africa50</i> <i>NDB</i> <p>Senior Debt/B-Loans</p> <ul style="list-style-type: none"> Sub debt providers (see above) International Commercial Banks Local Commercial Banks 	<p>PRG</p> <ul style="list-style-type: none"> MIGA AfDB <i>PIDA Guarantee Fund</i> <p>External Project Manager</p> <ul style="list-style-type: none"> NEPAD IPFF AfDB EAC World Bank/PPIAF EU-AITF <i>Africa50</i> <p>PPA</p> <ul style="list-style-type: none"> TANESCO KETRACO EAPP Deposit Facility <p>PSA</p> <ul style="list-style-type: none"> ZESCO SAPP

7.4 Nigeria-Algeria Gas Pipeline Project

Project Description

The Nigeria – Algeria Gas Pipeline (also known as Trans-Saharan Gas Pipeline (TSGP)) is a proposed natural gas pipeline with a diameter of 48 or 56 inches extending from Nigeria, across Niger to Algeria. The pipeline is designed to supply Europe by connecting to the existing Trans-Mediterranean, Maghreb-Europe, Medgaz pipeline (which started operations in early 2011) and the Galsi pipeline (expected to come on stream in 2014).

The length of the pipeline is estimated at roughly 4,400 kilometres, comprising a 1,037 km segment across Nigeria, 841 km segment across Niger, and 2,310 km segment in Algeria. The pipeline would start in the swampy region of the Niger Delta basin, then cross the cultivated lands and tropical forests of North Nigeria. In Niger, the pipeline would cross the Sahel region, a semi-arid tropical savannah preceding the Sahara desert. Almost half of the proposed route traverses arid expanses before crossing over the Atlas Mountains, finally reaching Hassi R'Mel, a hub for natural gas and oil pipelines running to the Algerian coast.

Once functioning, the TSGP is expected to reach a capacity of 1,059 billion cubic feet or 30 billion cubic meters of natural gas per year.

Figure 7-7: Nigeria Algeria Gas Pipeline



Project Rationale

The African continent holds 8% of global gas reserves, with its main reserves located in Nigeria and Algeria (respectively 5,246 and 4,502 billion m³⁴⁷). Its relative economic weakness and the almost absence of natural gas networks means there is limited internal gas consumption – almost none outside of Algeria and Egypt (representing two-third of the continent’s gas consumption⁴⁸) – giving it considerable exporting capabilities. A pipeline joining Sub-Saharan Africa with the EU is therefore a reasonable and logical project in economic terms.

The two interested blocks have been discussing this with increasing intensity since the early 2000s. The European area has three important natural gas providers; Norway, the UK and the Netherlands. However, Norwegian and Dutch production will begin to decrease in coming years’ and British production has already fallen considerably since 2000. Logically EU imports will increase accordingly.

Simultaneously the EU is considering a diversification of its supply sources so as to reduce its dependency on Russian natural gas, without which Russia could be supplying around 70% of the European market by 2050.

Consequently the project has the following main objectives⁴⁹:

- Diversification of export routes for the marketing of Nigerian natural gas;
- Integrating African economies and strengthening regional cooperation;
- Boosting domestic gas supply in African countries;
- Assisting in the fight against desertification through sustainable and reliable gas supply;
- Diversification of the European Union's gas supplies.

Whether TSPG is the most economic option to deliver gas to Europe in comparison with for example shipping or an extension of the Western Africa Gas Pipeline, is beyond the scope of this study. However it needs to be confirmed in anticipation of questions from possible capital providers.

Project Appraisal

The project costs are estimated at US\$ 20 billion⁵⁰. This appears to be somewhat on the high side. ICF international recommends a unit rate of US\$ 30,000 – 100,000 per inch diameter per mile length for building natural gas pipeline infrastructure based on historical cost data review⁵¹. Given the 48 – 56 inch diameter for the TSGP project that would imply a cost of US\$ 3 – 3.5 million per km. This is in line with for example the cost of the onshore section of the Nordstream gas pipeline (with a per km cost of US\$ 3.3 million and total costs for the onshore section of US\$ 6 billion and the off-shore section US\$ 9 billion)⁵². Assuming an average cost of US\$ 3 – 3.5 million per km, the total costs for TSGP would be around US\$ 12 – 15 billion. This

⁴⁷ World Factbook

⁴⁸ BP Statistical Review of World Energy 2009

⁴⁹ NEPAD, Brochure "FINANCING AFRICA'S INFRASTRUCTURE DEVELOPMENT DAKAR FINANCING SUMMIT FOR AFRICA'S" (2014)

⁵⁰ <http://www.au-pida.org/node/234>

⁵¹ ICF International, Natural Gas Pipeline and Storage Infrastructure Projections Through 2030 (2009)

⁵² http://en.wikipedia.org/wiki/Nord_Stream

remains a megaproject and would be by far the largest infrastructure project ever implemented on the continent.

There has been a feasibility study in 2006 with the following financial conclusions:

Table 7-10: TSGP Feasibility Study 2006 - Highlights

PIPELINE CAPEX	US\$ 10 billion 48" line diameter US\$ 13.7 billion 56" line diameter
GAS GATHERING CAPEX	US\$ 3 billion
BORDER PRICE	4.2 – 5.1 US\$/MMBTU (MSCF) @ \$25 – 40/BBL OIL
PROJECT FINANCING	EQUITY + DEBT FINANCING
INTERNAL RATE OF RETURN	15.5 – 25%
EQUITY PAYBACK	4 – 7 YEARS
GAS MARKET IN EUROPE	GAS MARKET OF 20BCM/Y (2BCF/D) EXISTS FROM 2015

If the investment costs would amount up to US\$ 20 billion, and if the following assumptions would apply:

- Demand of 20 billion cubic meter per year
- Operating costs US\$ 100 million per year
- 100% debt financing (through infrastructure bonds) at 10% interest and with a 30 year tenor
- No corporate tax

Then the tariff required to recover the costs would be around US\$ 0.15 per cubic meter of gas.

Given the fact that the gas pipeline will significantly reduce the need for gas flaring implying a reduction of emissions it is possible to receive income from so called Certified Emissions Reductions (CER). These are currently priced at EUR 6 i.e. US\$ 7.80 per ton of CO₂ reduction. If transporting 1 billion cubic meter would reduce emissions with 2.3 tonnes of CO₂ the necessary tariff to recover costs would reduce from US\$ 0.15 to US\$ 0.13 per cubic meter⁵³

Environmental and Social Impact

There are no details available, though one of the critical side benefits of the gas pipeline would be the potential to significantly reduce gas flaring in Nigeria, which currently represents a loss of energy equivalent to 220.000 barrels of oil per day and thus has serious consequences on the environment.

The TSGP would also provide energy to the areas which it crosses, thereby contributing to the revival of those areas, where there exists water and fertile land. It would also enable several countries in the region to improve their electricity production.

Furthermore enhanced economic activity would have a stabilising effect on the region and could encourage the settling of nomad populations.

⁵³ See annex for overview of assumptions

The distribution of natural gas for energy would prevent usage of wood for this purpose and therefore reduce deforestation.

Implementing Authority

The proposed Nigeria – Algeria pipeline project will require the cooperation of three countries as co-sponsors. The demand for energy will come from the EU as well as the three countries' utilities: the Nigeria National Petroleum Corporation (NNPC), the Niger National Oil Company (NNOC) and Algeria's Sonatrach.

Nigeria's Infrastructure Concession and Regulatory Commission (ICRC) is the focal point responsible for developing financing options for the project through a Public-Private Partnership (PPP).

Project Structuring

The following basic options in terms of public-private responsibilities apply to the implementation of the project.

Table 7-11: Nigeria Algeria Gas Pipeline Project Structure Options

Item	Option 1	Option 2	Option 3	Option 4
Nigeria Link (1,037 km)	Private	Public	Public	Private
Niger Link (841 km)			Public	Private
Algeria Link (on-shore 2,303 km Off-shore 220 km)			Public	Private

Although the project is envisaged as a PPP it is questionable whether the inherent risks of traversing through the different volatile regions are acceptable to private investors, even if the recognised developers in the oil & gas sector have ample financial resources and even if the tariff would be sufficient to recover the costs.

Reference is often made to the Western Africa Gas Pipeline (WAGP), which is structured as a PPP, though it has to be noted that the project is significantly smaller (US\$1 billion vis-à-vis US\$ 20 billion) and less exposed to terrorist risks, and has nevertheless incurred severe issues and delays.

Text Box 17

West African Gas Pipeline

The West African Gas Pipeline (WAGP) project began in 1982, when the Economic Community of West African States (ECOWAS) proposed the development of a natural gas pipeline throughout West Africa. In 1991 a feasibility report conducted by the World Bank on supplying Nigerian gas on West African markets deemed that a project was commercially viable.

In September 1995, the governments of four African countries signed a Heads of Agreement. The feasibility study was carried out in 1999. On 11 August 1999, a Memorandum of Understanding was signed by participating countries in Cotonou, Benin. In February 2000, an Inter-Governmental Agreement was signed. The WAGP implementation agreement was signed in 2003. Ground-breaking ceremonies for the project were held at Sekondi-Takoradi, Ghana, on 3 December 2004. Construction began in 2005.

The pipeline consists in three sections with a total length of 678 km. The 569 km long offshore section starts at the Itoki terminal in south-eastern Nigeria and runs through the waters of Benin, Togo and Ghana parallel to the coastline. The Nigerian onshore section of the pipeline connects the offshore section compressor station at Lagos Beach with the Chevron-owned Escravos – Lagos pipeline system, operational since 1989. It is possible that later the WAGP will be extended to Côte d'Ivoire and in the longer term even to Senegal.

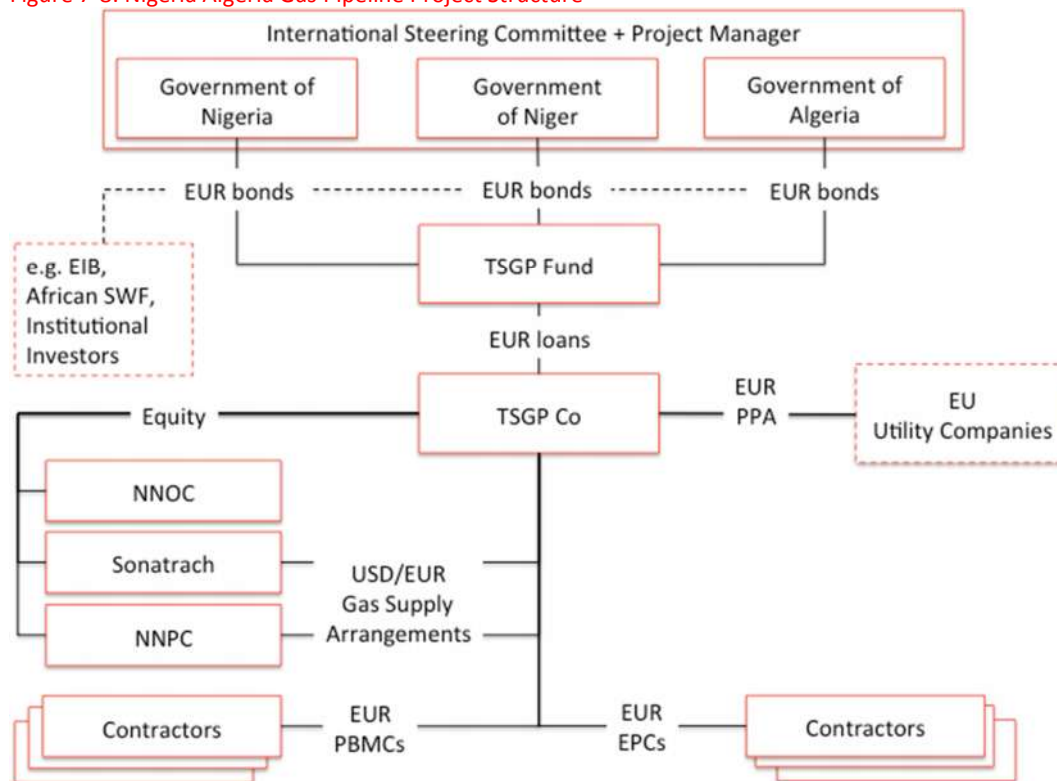
The offshore pipeline was completed in December 2006 and was scheduled to start operating on 23 December 2007 but was delayed after leaks were detected in supply pipelines in Nigeria. The second delivery deadline was scheduled on 13 February 2008, but regular deliveries were delayed again, when one of the contractors of Willbros was shot and killed in Nigeria by armed robbers.

Gas deliveries were expected by the end of 2009 after commissioning regulating and metering stations in Takoradi and Tema (Ghana), Lagos Beach (Nigeria), Cotonou (Benin), and Lomé (Togo) in May 2008. However deliveries were postponed again due to an irregular amount of moisture found inside the onshore gas pipeline.

The pipeline is owned by West African Gas Pipeline Company Limited (WAGPCo), a consortium of Chevron (36.7%), Nigerian National Petroleum Corporation (25%), Royal Dutch Shell (18%), Volta River Authority of Ghana (16.3%), Société Togolaise de Gaz (SoToGaz - 2%) and Société Béninoise de Gaz S.A. (SoBeGaz - 2%). It is operated by Chevron Corporation.

Consequently it is recommended to consider implementing this project as a public project supported with sovereign-backed bond financing in euro's in order to facilitate access to international institutional capital and EU financing. The latter for the obvious reason of the strategic importance of the project to Europe. The proceeds from the bond financing could be disbursed to a ring-fenced financing vehicle, the TSPG fund, which would finance the TSPG company. The operational risks for the TSPG company would be mitigated through gas supply arrangements from NNPC and Sonatrach and Gas purchase arrangement from European utility companies.

Figure 7-8: Nigeria Algeria Gas Pipeline Project Structure



Risk Management Framework

The project structure including the necessary risk mitigation reflects the following risk management framework.

Table 7-12: Nigeria Algeria Gas Pipeline Risk Management Framework

Risks	Nature	Risk Management
Construction	Cost overruns & delays	Allocate to competent, competitively selected contractors through EPC contracting
Operations	Gas Supply Maintenance backlog Terrorist attacks	Allocate to competent, competitively selected contractors through PBM contracting Gas supply arrangements with NNPC (Nigeria) and Sonatrach (Algeria)
Interfaces	<ul style="list-style-type: none"> 3 countries The project only makes sense if fully completed, though one could start with Algeria 	Given the investment size and project risks it is questionable whether the project can be developed as an integrated BOT. Only a few private

Risks	Nature	Risk Management
		<p>developers would be able to take on such a project.</p> <p>Breaking up the project into separate EPC contracts is more likely to deliver value for money</p> <p>Interface management through a competent (external) project manager with sufficient resources (retainer fee), mandate (power to negotiate) and sufficient incentives to deliver results (success fee)</p>
Revenues	<ul style="list-style-type: none"> Lack of demand 	PPA with European utility companies
Currency	<ul style="list-style-type: none"> Algeria +0.3% p.a. past decade Niger -1.6% (CFA) Nigeria -2.2% 	PPA in EUR
Inflation	<ul style="list-style-type: none"> Algeria 4% pa.. Past decade Niger 2% Nigeria 12% 	Include tariff escalation formulas in PPA (transfer inflation risks to the off-takers)
Country	<p>One of the most volatile regions in the world (albeit not so much reflected in the country risk rating)</p> <ul style="list-style-type: none"> Algeria# 68 Niger not assessed Nigeria # 85 	Arrange Partial Risk Guarantees (PRG) with WB (MIGA) or AfDB to mitigate country risks (political risks, war, breach of contract) for debt providers

Legal Context and Challenges

Intergovernmental Agreement

Cross border pipelines are subject to operations under different legal regimes. States that are implementing a cross-border pipeline project are generally faced with two options in terms of legal framework:

- (i) connected national lines, pursuant to which each sponsoring state will apply its own legal framework to the pipeline crossing its territory; or
- (ii) international pipeline agreements, pursuant to which a single, integrated system of rules will apply to the whole project.

Based on publicly available information, we understand that an intergovernmental agreement ("IGA") has been signed for the Nigeria-Algeria Pipeline Project ("NAP") and is being ratified. This signals that the sponsors (Governments of Nigeria, Niger and Algeria) opted to proceed with the international pipelines method. This will provide more legal security for the investors. To date, Algeria and Niger have ratified the IGA and Nigeria has started the ratification process.

Need for host government agreements

Although the IGA was not available for our review, we assume that it sets out a broad legal framework necessary for the construction and operation of the pipeline. However, based on the structure used for similar projects, the IGA should be supplemented with host government agreements ("HGA") to be signed between the project company and each host country. Under the HGAs, each sponsoring state should detail its undertakings under the IGA to facilitate the implementation of the Project (including amending its legislation). In turn, HGAs should be ratified in each country. HGAs would typically cover such topics as ownership of gas flowing through the pipeline, technical standards, land rights, taxes, authorization to transport, determination of the tariffs for gas transportation, environment and various reciprocal undertakings from the government and the project company.

From a documentary point of view, since Nigeria and Algeria seem to already accept the legitimacy of the Energy Charter Secretariat ("EC") by becoming an observer thereto we would recommend the use of HGAs model agreements produced by the EC. Please note that the method was successfully used in Baku-Tbilisi- Ceyhan Pipeline Project.

Permitting /licensing

Depending on the level of harmonization to be included in the IGA/HGAs, it will still be necessary to obtain certain licenses, permits or authorizations under local law (full harmonization seems to be unrealistic). We also expect that the States will have obligations to cooperate with the SPV for the purpose of permitting and licensing.

Based on our experience in similar pipeline projects, instead of having full harmonization, we would recommend that the HGAs include provision from the Government to appoint a single point of contact or authority, empowered to provide the SPV with the relevant authorizations to implement the Project in each Country on behalf of the relevant organizations.

Project company structure

To facilitate the project implementation, we would recommend the whole project to be developed and operated by a single project company (the "SPV" or TransCo) (instead of separate vehicles in each country), to be held, either directly by the implementing states, or by the key public stakeholders (namely NNPC, NNOC and Sonatrach). Compared to the multiple project company structure, this would:

- (i) avoid creating additional interface risk (by simplifying construction and operation); and
- (ii) ensure that the shareholders have a common interest in completion of the entire project.

Off-take structure

As per similar projects of this size, the NAP Project will only be implemented to the extent that it can have sufficient long term revenue perspective from creditworthy off-takers. In this case, given the rationale of the project, an approach would be to have long term gas supply agreements with European off-takers, with take or pay obligations for a sufficient quantity of gas.

Under the transport agreement, the SPV will have an obligation to transport and deliver the gas and to be available, up to a certain quantity of gas shipped. Similarly, the off-taker would commit to ship at least a certain quantity of gas throughout the pipeline (or to pay the SPV a certain amount even if it does not use the transport capacity - ship or pay obligation).

Current Status

In 2013, Nigeria set aside a sum of US\$400 million for construction of the Calabar – Ajaokota – Kano pipeline, which constitutes the first direct activity aimed at supplying gas for the TSGP project.

The 2014 status update on the project is as follows⁵⁴:

- NNPC is making progress with the Trans-Nigerian Segment of the pipeline to kick-start and fast-track the initiative:
 - The Front End Engineering Design (FEED) of a 2X48" pipeline from Calabar via Ajaokuta to Kano has been completed.
 - The pipeline's right of way has been identified and surveyed.
 - An optimisation study of the pipeline to enable domestic utilisation in the first instance is currently being carried out.
 - During construction, a loop pipeline will be built at critical locations – river crossings etc. – to reduce construction costs when full TSGP capacity is being deployed.
 - Engineering design and construction activities within Nigeria have started in 2013.
- TSGP sponsors have carried out a full market revalidation in 2013 to:
 - Assess changing global market dynamics, particularly in Europe in view of USA shale gas, Russian pipeline to southern Europe, LNG imports etc.;
 - Revalidate economics of the project and impact on overall pipeline design and scope;
- Project governance issues:
 - Nigeria is making progress in securing National Assembly ratification of the Inter-Governmental Agreement (IGA) for the project.
- Gas supply:
 - NNPC is re-assessing gas supply options in view of unprecedented growth in domestic gas demand compared to estimated demand upon initiation of the project.
 - Progress is also being made on evaluation of the alternative consisting in Sonatrach's participation in the Nigerian upstream as a basis for progressing with the project.
- For the PPP process ICRC, in collaboration with NNPC, has undertaken the following towards the successful implementation of the project:
 - Constitution of an inter-ministerial team made up of NNPC, ICRC, the Debt Management office (DMO) and the Nigerian Electricity Regulatory Commission (NERC) to fast-track the implementation of the project through a PPP model.

⁵⁴ Project Fiche: http://addisababa.mfa.ir/uploads/Nigeria_-_Algeria_Pipeline_19959.pdf

- Engagement of private investors and financial institutions such as the African Development Bank (AfDB), the African Finance Corporation (AFC) and the European Investment Bank (EIB) to provide funding for the actualisation of project studies.
- In addition, the following are in progress:
 - A review of the Gas Transmission Tariff Study.
 - Consultation strategies to discuss a way forward with other sponsoring governments on the ratification of the IGA.

Bankability Gap Review

In order to bring this project to financial close, it appears that NNPC/ICRC are progressing the further project preparations. The following steps are recommended to further streamline their activities.

Step 1: Appoint a reputable Transaction Manager

It is of the utmost importance that a reputable and competent Transaction Manager/ Project Manager is appointed with the responsibility to manage the further proceedings up to at least financial close and preferably also including project implementation monitoring. This is a critical success factor as it fills the lack of project management skills within the involved governments and most importantly is to provide confidence for prospective bidders and capital providers that the project is well prepared.

The project manager should be selected based on track record in order to demonstrate its proven ability to deliver similar transactions. Track record is significantly more important than the advisor's fee, which is only a fraction of the total project costs. The fee structure should include sufficient retainer fee to ensure that the project manager can utilise sufficient resources. This retainer fee should be paid with regular intervals and should not be subject to lengthy and bureaucratic approval proceedings involving different stakeholders (as is currently not uncommon for such services). Also the fee structure should include a success fee in order to give the project manager the incentive to deliver the project on time and with financial close. The success fee should be payable at financial close and or if project implementation monitoring is included possibly also upon start of operations.

The project manager should be given sufficient mandate to manage the transaction. Ideally it should manage the full budget of preparation including the necessary related activities e.g. environmental and social impact assessment. Its mandate could also include the power to negotiate on behalf of the involved governments or the contracting authority where the Transaction negotiates an in-principle agreement, which is to be approved by government and or ratified by parliament depending on the legislative context. The process should be de-politicalised as much as possible as politicisation is one of the key impediments to successful project preparation in Africa.

Step 2: Update the 2006 Feasibility Study

The following questions have to be answered:

- How much will the project costs (taking into account current market conditions and including the necessary security measures)?
- Is it possible to incrementally develop the pipeline i.e. what is the revenue potential when only the Nigeria part is implemented and or only the Algerian part?
- What is the required tariff to recover the costs including capital costs (taking into account current market conditions)
- Are users willing and able to pay such tariffs, and if not is there sufficient fiscal space from the respective government to finance the viability gap)
- What are the main risks impacting the financial viability of the project and how can they be mitigated?
- What is the economic impact of the project and does it meet the requirements of International Finance Institutions (most notably the required economic rate of return of 12%)

Step 3: Prepare Environmental and Social Impact Assessment

- What is the environmental impact of the project? In particular the implications of the expected reduction in gas flaring and the consequent revenue potential from carbon credits?
- What is the envisaged alignment and has the RoW been acquired?
- What is the social impact of the project e.g. is there a need for resettlement?
- What are possible measures to mitigate the environmental and social impact to a level acceptable to government legislation and to the requirements for IFI's (equator principles)?*

Step 4: Arrange the necessary risk mitigation facilities

Taken into account the findings from the updated feasibility study, the necessary package of risk mitigation needs to be arranged before presenting the project to the market. This includes at least (not limited to):

- PPA arrangements with the principal off-takers i.e. European utility companies in order to mitigate the revenue risk;
- Partial Risk Guarantees (PRG) and or Political Risk Insurance to mitigate the country risk;
- Rating of the recommended infrastructure bonds taking into account the revenue and country risk mitigations.

The risk mitigating package has to be approved by the respective governments including the affordability assessment of the contingent liabilities (taking into account the respective government's fiscal space and debt sustainability framework). It is important that this is done before the bond issuance.

Step 5: Raise Finance

With the updated Feasibility Study, Environmental and Social Impact Assessment and Risk Mitigating Package in place, the project manager can prepare necessary documents to issue bonds and raise finance.

Table 7-13: Nigeria Algeria Gas Pipeline Project - Possible Finance Sources

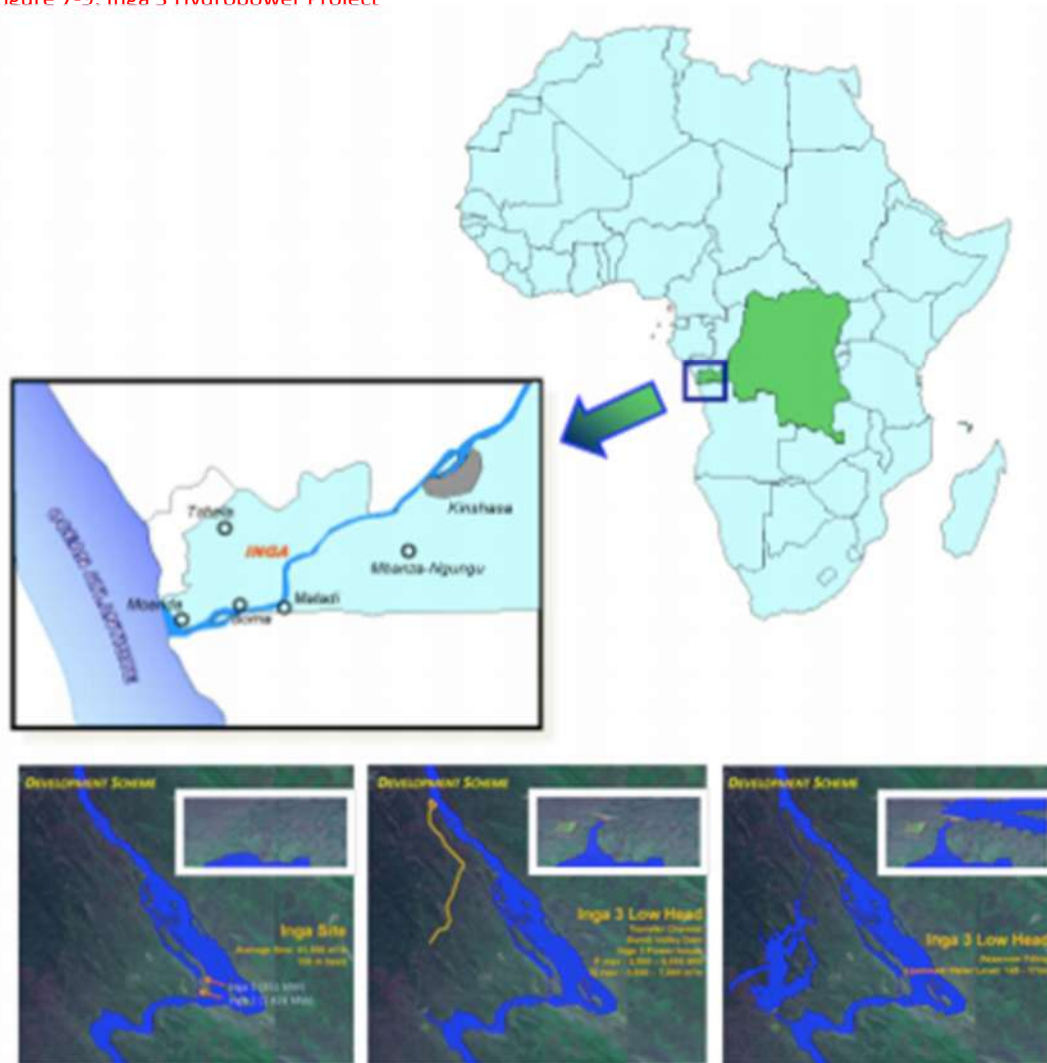
Equity	Debt US\$ 20b	Risk Mitigation
<ul style="list-style-type: none"> • NNPC • Sonatrach • NNOC 	<p>Subordinated Debt/A-Loans</p> <ul style="list-style-type: none"> • AfDB • IFC • AFC • DFIs • <i>Africa50</i> • <i>NDB</i> <p>Bonds</p> <ul style="list-style-type: none"> • Sub debt providers (see above) • EIB • Pension Funds • SWF • Other Institutional Investors 	<p>PRG</p> <ul style="list-style-type: none"> • MIGA • AfDB • <i>PIDA Guarantee Fund</i> <p>External Project Manager</p> <ul style="list-style-type: none"> • NEPAD IPFF • AfDB • World Bank/PPIAF • EU-AITF • <i>Africa50</i> <p>GPAA</p> <ul style="list-style-type: none"> • EU Utilities <p>ERPA</p> <p>GSA</p> <ul style="list-style-type: none"> • NNPC • Sonatrach

7.5 Inga 3 Hydro Power Scheme

Project Description

Inga 3 Basse Chute (BC) is the next phase of the Inga site development following Inga 1 and Inga 2, which were built in the 70s and 80s. The Inga 3 BC with a scheduled capacity of 4,800 MW development consists of a diversion of part of the water of the Congo River into the Bundi tributary and a dam across the Bundi valley. It will not require the construction of a dam on the Congo River itself.

Figure 7-9: Inga 3 Hydropower Project



Inga 3 is part of the staged development of a scheme, known as the Grand Inga, which could eventually provide up after finalisation of Inga 4 to 8, to 42,000 MW of electricity capacity (making it much larger than the Three Gorges hydro power project in China) for the African continent.

Project Rationale

DRC's hydropower can be a regional game changer and light up the African continent. DRC has an enormous hydropower potential estimated at 100 GW (equivalent to about 774 TWh per annum), the third largest country potential behind China and Russia.

With 40 GW, Inga is the largest hydropower site in the world and one of the continent's most cost-effective potential power sources (estimated generation cost is 0.03 US\$/kWh). The countries of the Southern Africa Power Pool (SAPP) constitute a natural market for DRC hydropower as DRC is already interconnected with the SAPP grid.

The DRC needs the expansion of Inga in order to secure power for productive activities, particularly the mines in Katanga province in the south east of the country, and to expand access to electricity for its people. DRC has a population of over 70 million. Only 11% of who have access to electricity. Average per capita consumption is around 100 kWh per capita per annum, as compared with 520 kWh per capita per annum in SSA as a whole and 4,600 kWh per capita per annum in South Africa.

The DRC has other hydropower resources in addition to Inga. These are at sites with more 'normal' levels of potential, hence also lesser economies of scale and higher energy costs (of the order of 6.5 to 9 US\$/kWh, as compared with ~3 US\$/kWh for Grand Inga, though tariff for Inga 3 BC is likely to be considerably higher)⁵⁵.

Project Appraisal

According to the World Bank, the construction costs of Inga 3 BC development and associated transmission lines are estimated at approximately US\$11 billion (including the transmission lines beyond the DRC borders). The total cost including financing costs could reach US\$14 billion⁵⁶.

Other sources quote different cost estimates e.g. US\$6 billion as per PIDA, US\$8.5 billion as per Aurecon and US\$ 6.2 billion as per SNEL. These deviations are largely related to differences in scope, i.e. the transmission lines.

The US\$11 billion figure includes the transmission lines inside DRC and to the SAPP.

Table 7-14: Inga 3 BC Cost Estimate

Item	Costs in US\$ billion
Intake, Canal, Dam	2.6
Power Station	3.6
T-line DRC	2.3
T-line SAPP	2.0
Total	10.5

Source: World Bank

Environmental and Social Impact

According to the Dutch Sustainability Unit of the Netherlands Commission for Environmental Assessment the preliminary ESIA as per the World Bank's project Appraisal Document from March 2014 assesses a series of important impacts of Inga development in a superficial way, indicating that further studies are needed (impacts on river and sea biodiversity and productivity [fish, fishing], dam safety and sedimentation).

⁵⁵ Netherlands Commission for Environmental Assessment, Dutch Sustainability Unit: Advice on the adequacy of the information underlying decision making on the Inga Basse Chute and Mid Size Hydropower Development Technical Assistance Project (March 2014)

⁵⁶ http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/03/05/000456286_20140305164405/Rend/INDEX/774200REPLACEM0140Box382121BooOUO90.txt

The present proposal to develop Inga 3 BC cannot be separated from further Inga developments. The Impact Assessment proposed under the project should address the cumulative impacts of development of Inga 3 through 8.

These studies may lead to the conclusion that the impacts are significant and prohibitive for components of the proposed development. If that were to be the case, then it would be necessary to consider a redesign of the initial project and subsequent stages of development of the Inga site (i.e. to revisit the technical options analysis section of the 2012 Feasibility Study).

The preliminary ESIA does not, and should have, addressed the impact of climate change on river hydrology.

The preliminary ESIA does address gender issues for development of the Inga site. The Project Appraisal Document, however, does not, neither does it refer to gender aspects being secured by the banks' safeguard policies. It remains unclear how gender aspects will be paid due attention to in project implementation.

Implementing Authority

The GoDRC is setting up a ring-fenced development authority (Agence pour le Développement et la Promotion d'Inga – ADEPI) to manage and monitor the Inga development and to help mobilise private participation and public financing. ADEPI will be created by law as an autonomous entity reporting to the Prime Minister's office with a Board of Directors that represents various Inga development stakeholders. It will be set up by the end of 2014, and is expected to start its operation before the end of that year, with staffing gradually building up from approximately 15 staff to about 30 staff. In addition to staff, ADEPI will benefit from external strategic advisers. ADEPI's annual budget would be in the range of US\$2-3 million, including external support. All ADEPI staff, including its director, will be recruited competitively with the help of a specialised recruitment firm. All contracts will be renewable based on performance assessments carried out by a specialised firm.

Project Structuring

The following basic options for project implementation in terms of public-private responsibilities are being considered by the GoDRC.

Table 7-15: Inga 3 BC Project Structure Options

Item	Option 1	Option 1a	Option 2 Preferred	Option 3	Option 4
Intake, canal, dam	Private	Public – Private SPV	Public	Public	Private
Power plant			Private	Private	
T-line DRC			Public	Public	
T-line SAPP			Public	Public	

The very large amount of financing needed for the Inga 3 BC development in the weak business environment of the DRC requires that special attention be paid to the institutional structuring of the project.

The level of investment is so high that neither the public sector nor the private sector alone could bear the full cost of development of the project. On the one hand, public financing reduces the project's cost but it is limited by the DRC's debt ceiling and concessional financing limits. On the other hand, private financing faces financial and country risk constraints. The private sector can also bring relevant technical and managerial capacities into Inga 3 BC development that would otherwise not be available within GoDRC.

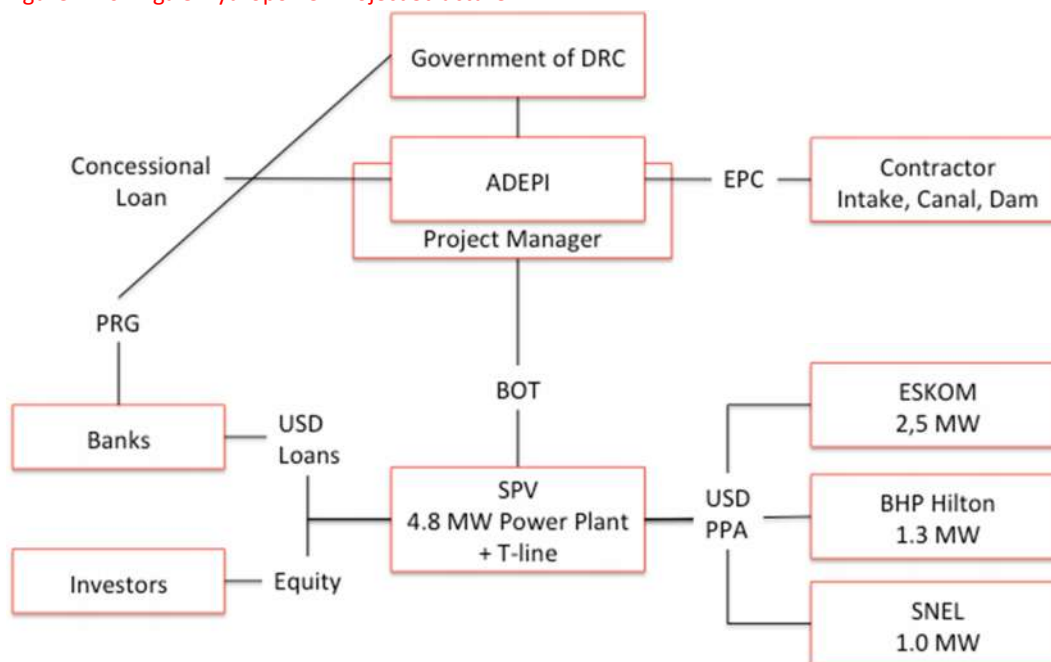
The GoDRC has expressed its preference for a project structuring option in which public financing for the Inga 3 BC development (likely to come from donors) would be used to finance the dam, the water intake, and the canal ("common infrastructure"). The GoDRC has also indicated that the option might be adjusted based on market tests. The preferred project structuring consists of two sub-developments: (a) the intake, canal and Bundi dam will be developed and financed by a public entity contracting out works to one or several Engineering, Procurement and Construction (EPC) contractor(s), and (b) the power station and the transmission lines in DRC will be developed, designed, financed, constructed, and operated by a private consortium under a concession contract (option 2).

GoDRC already agreed with South Africa's power utility Eskom on a Memorandum of Understanding for the off-take of 2,500 MW. 1,300 MW is to be reserved for the mining activities i.e. BHP Billiton's smelter plant⁵⁷ and the remaining 1,000 MW is envisaged to be reserved for DRC's national power utility SNEL.

The consequent project structure can be depicted as follows.

⁵⁷ The World Appraisal Document states that BHP has withdrawn itself from the project.

Figure 7-10: Inga 3 Hydropower Project Structure



The GoDRC selected this option as its preferred one as it balances public and private financing needs and is one of the options that could protect the DRC’s sovereign rights against private and foreign interests in subsequent developments of the Inga site. The next phase of the Inga site development, Inga 3 Haute Chute (HC), will involve the heightening of the Bundi dam. Therefore control of the Bundi dam should ultimately remain with government, either through ownership or as part of the developer’s obligations in a PPP agreement. Given costs of the same order of magnitude as Inga 3 BC development, and its complexity, Inga 3 HC could reasonably not be developed earlier than ten years after Inga 3 BC development commissioning. The preferred option could be adjusted based on study results and market testing and taking into account the facts that (a) government rights with regard to the development of subsequent Inga phases need to be preserved, (b) interface risk could be reduced by entrusting engineering and construction supervision of common infrastructure to the concessionaire under a project management contract or a minority cross shareholding, (c) tentatively committed public financing needs to be secured to reduce need for private financing.

Regarding the PPAs it has to be noted that it is doubtful whether mining companies will be willing to commit now to bankable PPAs which will only come into effect in 5+ years’ time and secondly, total electricity demand from mining activities in Katanga is presently in the order of 500 MW only. As for a possible PPA with SNEL it has to be taken into account that the company is heavily indebted and subject to a WB-funded corporate recovery programme⁵⁸.

Risk Management Framework

⁵⁸ Netherlands Commission for Environmental Assessment, Dutch Sustainability Unit: Advice on the adequacy of the information underlying decision making on the Inga Basse Chute and Mid Size Hydropower Development Technical Assistance Project (March 2014)

The project structure including the necessary risk mitigation reflects the following risk management framework.

Table 7-16: Inga 3 BC Risk Management Framework

Risks	Nature	Risk Management
Construction	<ul style="list-style-type: none"> • Cost overruns • Project delays 	Allocate to competent, competitively selected private developer and service provider through at least EPC contracting.
Operations	<ul style="list-style-type: none"> • Availability of water supply • Impact of climate change 	Allocate water supply risk to insurance companies/PIDA Guarantee Fund through so called index-based insurance arrangements <i>a.</i> Allocate performance risk to competent, competitively selected private developer and service provider through at least PMB contracting.
Interfaces	<ul style="list-style-type: none"> • Project interfaces (dam, plant, T-lines) • Social impact (tourism) • Environmental Impact 	Interface management through a competent (external) project manager with sufficient resources (retainer fee), mandate (power to negotiate) and sufficient incentives to deliver results (success fee)
Revenues	<ul style="list-style-type: none"> • Availability of water supply • Economic growth 	Arrange the understood Power Purchase Agreements with ESKOM, SNEL and BHP Billiton
Currency	<ul style="list-style-type: none"> • Avg depreciation past decade DRC CDF 8.5% (one of the highest in Africa) 	Arrange PPA in US\$ (transfer currency risk to off-takers and allows to tap on the LT US\$ debt facilities
Inflation	<ul style="list-style-type: none"> • Inflation DRC 2003 – 2013: 11% 	Include tariff escalation formulas in PPAs (transfer inflation risks to off-takers who will transfer this onwards to the end-users)
Country	High <i>b.</i> B ₃ (highly speculative) credit rating by Moody's	Arrange Partial Risk Guarantees (PRG) with WB (MIGA) or AfDB to mitigate country risks (political risks, war, breach of contract) for debt providers

Legal Context and Challenges

Legal framework applicable to the Project

Our understanding is that the structuring of the Inga III Project is well under way and has been extensively documented in publicly available sources, and recently in particular, in the Project Appraisal Document from the World Bank dated 5 March 2014. We set out below the key outstanding issues arising from our review.

Developing the project in DRC

a. PPP Law and joint governmental ownership

The Government of DRC (“GoDRC”) has decided to use a Public Private Partnership (PPP) approach for Inga III. The Law No 14/005 creating tax, customs and parafiscal system of non-tax revenues and exchange control system applicable to Cooperation Agreements and Cooperation Projects (the “PPP Law”) will apply to the project. We note that the PPP Law provides for participation from the government in the joint companies to implement a PPP. Such provision entitles therefore for the State to be a shareholder of the SPV⁵⁹. To the extent that another structure is sought, exemption should be made in the Project Law.

b. Reform of Water and Electricity Framework

DRC currently lacks a consistent water and electricity legal framework. However an electricity reform is currently under discussion. We understand that a draft law has been prepared and is aiming to liberalize power generation, transmission, and distribution. To our knowledge a water legal framework is also under discussion and should lead to the enactment of a water law. These reforms should be used to promote the Project implementation, in particular:

- the new water framework should provide for clear conditions relating to use of water for electricity generation; and
- the new electricity framework should provide for a clear regime of authorizations and requirements for the development, construction, operation and maintenance of power plants, as well as requirements for dispatch, transmission and distribution of power.

c. Project Specific Law

We understand that the GoDRC intends to prepare a project specific law (the “Project Law”) in order to set out the framework for the development of Inga III. The Project Law will be an opportunity to address any regulatory issues (to the extent not addressed in the reform set out above) and to insulate the Project from contradictory legislations.

In particular, unless this is clearly addressed during the reform of electricity, we would suggest that the Project Law includes (i) a clear guarantee to the SPV to have access to water (ii) a clear right to sell the electricity produced to off-takers chosen by the SPV (including by way of exports), and (iii) various issues such as rights over land (for the dam and the transmission line) and status of the SPV.

⁵⁹ Article 9 of the PPP Law

Exporting electricity

a. Off-take agreements

We understand that two off-takers are contemplated at this stage, namely ESKOM (in South Africa) and the SNEL (*Société Nationale d'Electricité*) - the National Electricity Company whereas the status of the arrangement with BHP Billiton is unclear.

The SPV will consequently enter into long term project agreements with both companies on a capacity payment basis. The water supply risk could be mitigated through index-based insurance arrangements.

b. Framework applicable to transmission and exportation of Electricity : challenges and opportunities

Given the limited creditworthiness of SNEL, the ability of the project to raise financing will depend on the sale of electricity to ESKOM. The new Electricity Framework should provide for (i) an authorization to export electricity and enter into power purchase agreements with foreign off-takers; and (ii) clear provisions for the construction, operation and maintenance of power transmission facilities.

In addition, the success of the Project will depend on the implementation of a transmission line from DRC to South Africa. We understand that this will be implemented by SAPP.

As evidenced by the ZTK Project, developing electricity production in the region will require the implementation of numerous transmission lines to connect hydroelectric generators to consumers' national grids. This would be strongly facilitated by a certain level of harmonization and cooperation between national regulators and grid operators.

To promote the development of Inga III as well as to facilitate the development of further transmission projects, we would recommend that the new DRC electricity regulations relating to dispatch, transmission and distribution are drafted in collaboration with the grid operators and regulatory authorities in the area.

Granting Authority

We understand that a specific authority, the Inga Development Authority ("IDA") will be established to manage and monitor Inga's project development.

Interim institutional arrangements have been implemented to pursue the development of Inga 3 BC until the establishment of IDA. An Inter-Ministerial Commission for Inga Development chaired by the Prime Minister has notably been set up.

Potential challenges / Way forward

- Given the current ongoing reforms, the national regulatory framework for Inga III will largely be tailored for the Project, which is an opportunity to ensure that the applicable regulations will provide sponsors with an adequate legal framework.
- However, the success of the Project widely depends on its ability to export electricity to creditworthy off-takers. The current electricity reform should be conducted in close

cooperation with regional countries to promote harmonization of the regulations applicable to transmission and distribution of electricity.

Current Status

The African Development Bank, the World Bank, the French Development Agency, the European Investment Bank and the Development Bank of Southern Africa have all shown interest in financing Inga 3. In December 2013 the United States, through its development agency USAID, also expressed interest in contributing to the financing of Inga 3.

A competitive selection process for a private developer was initiated by GoDRC in 2010. Six candidate developers were prequalified in 2011. Two of them notified the government that they were withdrawing from the bidding process, based on the project design at the time, and a third candidate has since dropped out. This leaves three remaining consortia; China's Sinohydro and Three Gorges Corporation, Spain's Actividades de Construcción y Servicios (ACS), Eurofinsa and AEE, and South Korea's Daewoo and Posco with Canada's SNC-Lavalin (one of the consortia includes a firm which is currently under a 10 year cross-debarment sanction by the WBG, another one includes a firm which has been temporarily suspended).

The GoDRC has decided to continue the process to select a developer for the powerhouse and transmission lines in the DRC. The project design has changed since the launch of the developer selection process. Therefore the three prequalified consortia will be allowed to reorganise and to bring new partners into their consortium during the selection period. In order to compete, firms will have to become members of one of the pre-qualified consortia. The GoDRC and its strategic advisors are currently developing the Request for Proposal (RFP) with the objective to launch it early 2015, to select a developer by mid-2015. The RFP will include a reference project design, information on the applicable fiscal regime, and preliminary results of the geological testing. The selection will be followed by a period of exclusive collaboration with the developer resulting in the attribution of a concession for the power station and transmission lines in DRC to a Special Purpose Vehicle (SPV) by the end of 2016.

In the current structuring option, in parallel with the selection of the developer, the government will prepare the detailed design of the common infrastructure and select the EPC contractor for the construction of the facilities. It is expected that the EPC contract for the common infrastructure will be awarded simultaneously with the concession for the power house and the transmission lines to the private developer.

.Early 2014 the World Bank and the AfDB agreed with GoDRC to finance a US\$106 million Technical Assistance programme to support the further development of the Inga 3 project as well as the development of mid-size hydropower sites through PPP.

The TA program includes complementary studies, transaction advice and procurement support, and institutional support and sector strengthening.

This includes: technical studies to complete the reference project design, social and environmental studies and panels, and economic studies, including power supply-demand analysis. Technical studies will include geological and geotechnical investigations on site to confirm the foundation conditions for the Bundi dam, a study of the sedimentation in the canal, a study of the Congo River water intake to confirm the design and maximum capacities of the Inga 3 BC canal and water intake, and a study of the impact of Inga 3 BC development on the operation of Inga 1 and Inga 2, especially during the low river flows. Based on the various

complementary studies, the feasibility study will be refined and transformed into a reference design that will form the basis for the selection of the concessionaire.

Interim institutional arrangements have been set up to continue the preparation of Inga 3 BC development until ADEPI is in place, including the establishment of:

- An Inter-Ministerial Commission for Inga Development chaired by the Prime Minister (Commission pour le Développement du Site d'Inga – CODESI), in charge of overseeing the implementation of the TA;
- An Inter-Ministerial Technical Committee (Comité de Facilitation d'Inga – CFI), in charge of coordinating the technical work of the TA; and
- A technical unit in the Ministry of Hydraulic Resources and Electricity (MRHE) (Cellule technique Inga 3 – CGI3), in charge of implementing the TA.

Bankability Gap Review

In order to bring this project to financial close, It appears that all the necessary steps have been made based on the information reviewed, although the current status of the proceedings are unknown to the consultant.

As per PIDA information, it is estimated that construction is due to commence in 2014 if updated feasibility studies are completed in time and the project should be operational by 2018. The feasibility study has been completed and a Steering Committee is in place⁶⁰.

⁶⁰ <http://www.au-pida.org/sites/default/files/pdf/program/4545.pdf>