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Investment Risks in Public Private Partnerships in Sub Saharan Africa Infrastructure Projects

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Abstract

Infrastructure development is one of the constraints to the economic development of sub-Saharan Africa. The region needs to invest in excess of US$68bn by 2020 to bridge the gap in the current core infrastructure areas of energy, transport, water and information and communications technology. Governments are therefore pursuing strategies that include Public Private Partnerships (PPPs) for core infrastructure services. This structure involves contracting the private sector to develop and deliver services that would traditionally be the responsibility of the state. In return the private sector retains rights to all revenue related to the service provision under defined terms with the government. Equitable risk allocation, funding structure and contract enforcement are some of the key characteristics of effective PPP programmes and growing private sector investment into the sector.

The investment risk profile of PPP projects is fairly similar in structure to that of typical project finance transactions with the added complexity of the dynamics introduced by public sector policy and politics. Understanding the risk profile of sub-Saharan Africa projects is essential to growth in the sector. Through the literature, the critical risk elements are identifiable and further study into their relevance to sub-Saharan Africa investors and market observers is what this research pursued. These include the state project preparation processes, governance, legislation, political stability, operational and market risk. The research focused primarily on identifying and analysing those elements in the risk profile that are having significant negative impact on the growth of private sector investment participation and in turn the wider adoption of the PPP strategy in infrastructure provision. Further to this was the identification of viable recommendations the industry could implement to improve investor participation.

The research was conducted through structured interviews with market participants, reflecting on the trends data, reports, a selected few project cases and academic studies found in the literature relevant for the risk elements identified. It was found that the lack of sound project selection and preparation processes and poor legislative and regulatory environment were the two highest inherent risks in sub-Saharan Africa impeding the development of infrastructure PPPs. Respondents highlighted the need to establish well governed and resourced PPP agencies responsible for the legislation and regulation of PPP projects. Technical and operational risk management did not concern investors as much as issues with dealing with the political and social dynamics the projects are exposed to. Successful projects in the region are characterised by sound preparation with experienced transaction advisors leading to an equitable risk allocation structure, good governance and availability of support and guarantees against political risk and breach of contract from multilateral agencies like The World Bank.

On-going state fragility will remain a challenge for the region in terms of poverty and political instability in some countries and this would affect the viability of regional integration infrastructure initiatives. The role of multilateral funding agencies like the African Development Bank and World Bank is essential for risk coverage and capacity building. Overall the improvement of planning and governing processes within the

public sector procuring entities is what will result in real improvement in the risk profile of projects in the region and in turn the growth of PPP investment.

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ABBREVIATIONS USED IN TEXT

AfDB	African Development Bank
DFI	Development Funding Institutions
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
ICT	Information and Communications Technology
ISS	Institute for Security Studies
MIGA	Multilateral Investment Guarantee Agency
NEPAD	New Partnership for Africa's Development
O&M	Operations and Maintenance
OECD	Organisation for Economic Co-operation and Development
PIDA	Programme for Infrastructure Development in Africa
PPPs	Public Private Partnerships
SSA	Sub-Saharan Africa

Chapter 1: Introduction

1.1 Context of the study

Infrastructure development has been at the top of the agenda of most African governments for the past few decades. Economic development, particularly growth in industrial sectors, depends on the availability of suitable support infrastructure such as utilities, airports, roads, and harbours. The development of ICT infrastructure has also become a crucial component of growth enablers in sub-Saharan Africa (SSA) (BMI, 2012). The issue has never been the acknowledgement of the infrastructure need, but more how to address factors such as financing, institutional capacity and other constraints that the region faces in the pursuit of infrastructure development.

Global comparative ratings such as the Logistics performance index measuring the quality of trade and transport-related infrastructure place most SSA countries below the global average and far behind the rest of the emerging economies (WorldBank, 2013). This is largely due to poor road networks, limited freight rail capacity and under developed harbour operations.

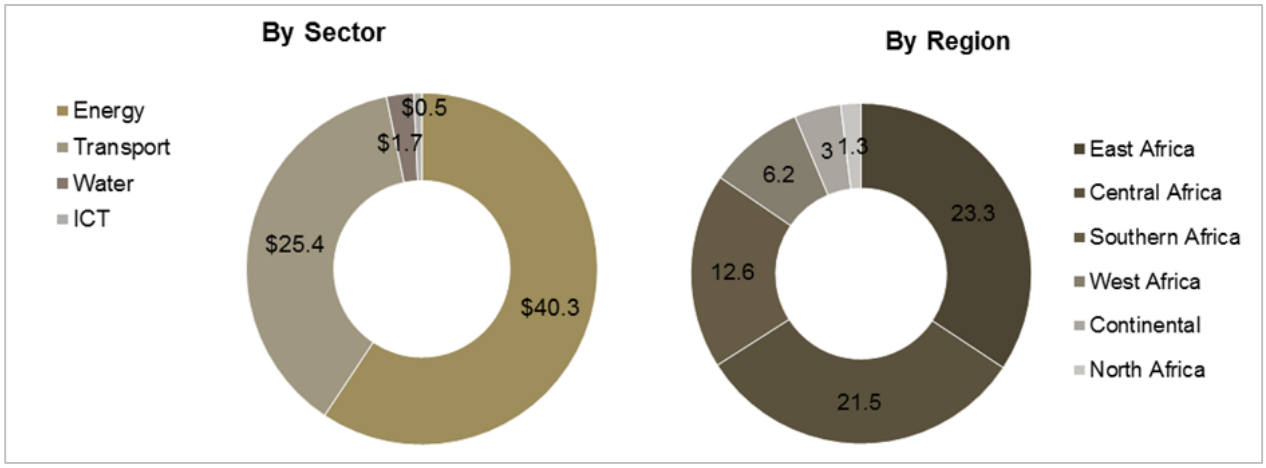
Governments have a number of options available to them when formulating service provision strategies for particular sectors of the economy. Infrastructure investment involves billions in annual capital expenditure. It also requires extensive planning, execution and operations technology and related resources that may not be readily available in developing countries. In the case of SSA, there are also structural issues that further limit the region's ability to easily fund and close the deficit. One key factor is the limited fiscal capacity due to the size of these economies and the limited depth in local capital markets (Andrianaivo & Yartey, 2010).

In the event that the state has limited investment capacity due to budgetary constraints and other institutional resource limits, markets are more likely to see the adoption of service provision strategies that take the form of a partnership with the private sector, Public Private Partnerships (Fourie, 2001). Fourie asserted that this allows for the government to ensure service provision without carrying the burden of the capital outlay and decreases government expenditure and therefore the deficit. PPPs could be an effective way for the public sector to access private sector capital and technical resources.

The extent of the infrastructure deficit is well researched by multilateral funding agencies like the African Development Bank (AfDB). Intergovernmental political structures like The New Partnership for African Development (NEPAD) were founded to address the need for consistency in regional policy creation and integration, especially for the implementation of development initiatives (Von Bratt, 2003). The establishment of The Programme for Infrastructure Development

in Africa (PIDA) through the AfDB and NEAPD followed to find ways to bridge the gap and outline priorities. PIDA currently estimates the budget cost to develop the identified PIDA projects by 2040 alone stands at US$340bn with the urgent need to fund the US$68bn of priority projects to 2020. Energy and Transport networks account for 97% of the 2020 plan, see Figure 1 below (AfDB & Nepad, 2013). However, it has been found that domestic capital markets (both Public and Private) have real limitations in the medium term to meet the funding demand (Kodongo, 2013).

Figure 1: Priority PIDA projects funding requirements, 2020 in billions of US$



In order to keep up with demand levels and growth, SSA needs to spend in excess of $93bn annually while, 2011 estimates of annual spend measured at US43bn (AfBD, 2011).

The PIDA programme recognises the need to co-opt the private sector in the implementation of the strategy. Consider that at the peak of the global investment cycle before the 2008 crisis, Africa only accounted for 5.2% of the overall global FDI inflow, this amounted to only US$ 64bn, with almost 24% targeting North Africa (Cleeve, 2012). These low Foreign Direct Investment (FDI) figures for SSA may indicate a general lack of investor interest in long term investment in the region. There needs to be a larger and more focused effort to bring in private sector investment into Africa and especially into the infrastructure sector.

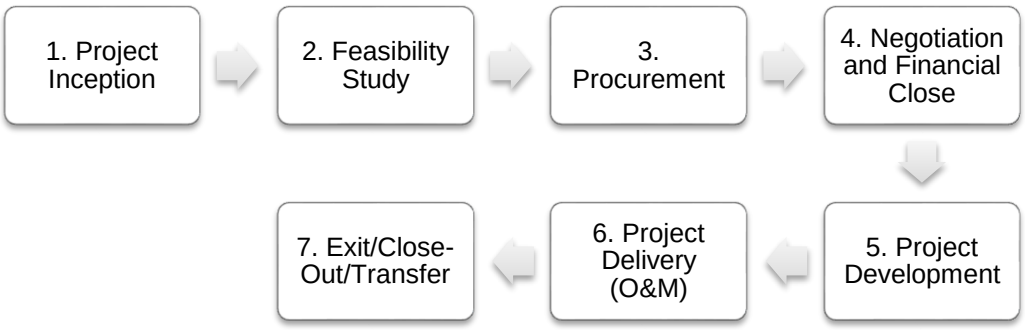
Due consideration of effective Public Private Partnership (PPP) structures in the priority sectors is needed. Generally an effective PPP in the infrastructure environment is characterised as one which results in accelerated project development and construction, completed within the budgeted cost and ensured effective risk transfer to the private sector (Murphy, 2008).

PPP's have been implemented with varying degrees of success in countries across the world such as Germany, United States, India and others (Benković, Milosavljević, & Barjaktarović-Rakočević, 2010; Mahalingam, 2011; Sarangi, 2002). Researchers have attempted to discern and group the critical success factors that aid in the effective execution of the strategy. These factors are; a favourable investment climate, economic viability of the project, a reliable concession consortium with strong technical capability, a sustainable funding strategy, effective risk transfer, strong contract agreements and the reliability of enforcing such agreements (Zhang, 2005). Upon further investigation of the significance of each of these factors, Zhang concluded that economic viability and risk transfer were the most significant for successful implementation of PPPs.

Private sector involvement in infrastructure is growing; World Bank Development Indicators data reported increases in infrastructure related investments including the private sector in South Africa and other SSA economies since 2000 (WorldBank, 2013). Studies have explored the options to bridge the funding gap, such as direct government bond issues and bonds linked to an infrastructure index (Kodongo, 2013).

Practise would dictate that private investors evaluate infrastructure development the same way they would other investment opportunities available to them. To perform a proper appraisal, they must clearly understand the nature of the risks that they face in such investments and how they evolve in terms of allocation throughout the project life cycle illustrated below.

Figure 2: Project Life Cycle[1]



The Feasibility Study[2] (step 2) is a significant step in the process for the following key reasons:

[1] Project Development Process as defined in the South African National Treasury PPP Manual, 2004
[2] The South African National Treasury PPP Manual emphasises the importance of a detailed Feasibility study supported by qualified and experienced transaction advisors. The approval of PPPs by Treasury is

i. The feasibility study sets out the main objectives and output requirements of the initiative
ii. It tests the cost-to-benefit of each implementation option available
iii. At this point, it is determined what level of risk transfer is envisaged by the public sector
iv. It sets out the methodology for the roll-out process along with all required support resources

How would the risk management process work throughout the life cycle of the project? The process is underpinned by the 3 main steps;

i. Risk identification and evaluation – the core elements of risk that exist through the life cycle of the PPP
ii. Risk ownership – effective allocation of risk between the parties of the PPP
iii. Risk mitigation strategies – considerations of the mitigation measures

It is important to note that Risk Identification and Risk Ownership are all determined through the internal process of the PPP originator or procuring entity.

1.2 Statement of the Problem

This study seeks to identify the critical investment risks in SSA PPP initiatives that directly affect investor appetite. Africa is pegged as the next frontier for growth and opportunity, yet attempts at coordinated regional integration and development initiatives have struggled to gain momentum and the infrastructure deficit is expanding (AfBD, 2011). The AfDB agrees that private sector participation is needed as an integral part of the solution. If there is a misalignment of private sector perception and expectation and government policy and process, it should be assessed, quantified where possible, and addressed.

Detailed studies of related risk considerations in environments and transactions similar to this are those focused on project finance risk identification and evaluation (Einowski & Roek, 2007; Gatti, Rigamonti, Saita, & Senati, 2007; Warkentin, 1997). From these studies completed, reasonable inference can be made about the main risk factors applicable to similar project structures. Possible risk mitigation strategies in funding, development and operations are well documented, though the limits of their effectiveness in SSA have not been fully studied (El-Diraby, 2006).

The literature lacks direct contextualised and qualitative studies detailing what investors already in SSA and those looking for emerging market opportunities consider as the current barriers to

contingent on sufficient due diligence and comparative analysis of potential investor interest and effective risk transfer.

entry or substantial risks when reviewing prospects in bulk SSA infrastructure projects in the form of PPPs. There is also a gap in understanding the limitations imposed by legacy socio-political issues on PPP development potential.

1.3 Objectives of the study

The main objective of the study is to identify and analyse relevant investment risk factors in infrastructure PPPs in SSA. The study will also assess the effectiveness of existing best practise mitigation strategies and, where possible, recommend ways to pre-emptively mitigate dominant risk issues for investors during project feasibility considerations.

The following core questions will be considered in pursuit of these objectives;

i. What PPP structures are suitable for financing bulk infrastructure in the SSA region?
ii. What are the significant risks faced by potential infrastructure PPP investors in SSA?
iii. How effective are current practise mitigation measures in the context of SSA?

1.4 Significance of the study

Understanding the full context of investment risk in PPPs is essential for the success of initiatives like the PIDA. If successful, the application of feasible recommendations that may be identified by this study could ensure effective risk evaluation and transfer and improve private sector participation in infrastructure development. Attracting investors is the first step in developing a thriving PPP investment market in SSA that will assist economic growth and regional integration.

The AfDB, as the lead coordinator for PIDA has done extensive work to evaluate the extent of the deficit and the required solution. The Bank highlights the need to access private domestic and international capital. However, there is no consensus as to why this is a challenge or how to unlock it. This study can be used as a good starting point in understanding the dynamics limiting the advancement of the PPP strategy in infrastructure development which will be to the benefit of SSA's economic development.

Chapter 2: Literature Review

2.1 The Structural Forms of PPPs

A public private partnership is a contractual agreement between a public procuring entity (government ministry, state owned company or agency) and a private sector entity to provide a service that would traditionally be provided by the government (Rebeiz, 2012).

By Reibez's definition, in the context of bulk infrastructure development, a PPP includes public procuring entity to which the service agreement is bound and a consortium of private sector companies likely including an engineering and construction services partner, an operator and a syndicate of financial institutions and investors.

In cases where public adoption plays a key role in the success of the initiative, researchers advocate for the adoption of an extended Public-Private-People-Partnership or P4 framework as opposed to the traditional P3 which treats the community within which the initiative is to be implemented as external parties to the agreement (Ng, Wong, & Wong, 2013). This approach would be more effective in the cases where the infrastructure in question is inclined toward social service provision.

Though there are various forms of PPP contract structures and they have hardly changed since the formal recognition of PPP contracts in the early 1980s, the types below are far more common in practise herein cited as defined by (Ahwireng-Obeng & Mokgohlwa, 2002; Gatti, 2008; Rebeiz, 2012);

i. A lease agreement – a time bound lease to existing assets is given to the private sector and the private sector has rights to all revenue from the asset for the defined period.
ii. A concession agreement: Build-Own-Operate-Transfer (BOOT) – the government grants the rights to fully develop, operate and maintain an infrastructure asset to the private sector for a period, at the end of which the assets are transferred back to government.

An added advantage of the PPP, noted by Garvin (2008), is that the funding strategy is more likely to detract from the traditional dependency on risk averse bond buying investors who lend to government limiting its dependency on fiscal support and opening up options in international capital markets.

PPP form selection is a function of the desired transfer of responsibility. Research into the various options and related responsibilities can be summarised in the following table..

Table 1: Key Responsibilities in various PPP models

Key Characteristic Responsibilities in Different Modes of PPPs					
Modes	**Asset Ownership**	**O&M**	**Capital Investment**	**Main Risk Bearer**	**Typical Duration**
Management Contract	Public	Private	Public	Public	3-5yrs
Lease Contract	Public	Private	Public	Shared	5-15yrs
BOOT	Public & Private	Private	Private	Private	25-30yrs

(Ahwireng-Obeng & Mokgohlwa, 2002; Ncube, 2010)

2.2 Risk in PPPs

There are various elements of risk throughout the lifecycle of PPP projects, including; technical, environmental, political and economic risks. Studies focusing on investment risk evaluation focus on the aspects of the project planning process, execution and operation that present the most uncertainty to the realisation of the returns expected by the investors.

Gatti (2008), project finance literature defines 3 classes of risks. First, there are risks associated with the pre-completion phase which are distinct in terms of scope, causality and ownership to those associated with the second class grouped as post completion risk issues (following financial close and project commissioning). Third, there are risks that are of a global nature across the project life cycle. All these classes of risk either impact the cost of the inputs, time to completion and the cash flows during operation.

The majority of the literature specific to PPP risk found was focused on; the maturity of risk management practise (Ke, Wang, & Chan, 2012), the identification of overall PPP risk elements (Kong, Tiong, Cheah, Permana, and Ehrlich (2008); Warkentin, 1997) and qualitative assessments of successes and constraints of the use of PPPs as a strategy in different environments (Antoniou, 2007; Garvin, 2008; Mahalingam, 2011). Research in the field of global project finance however, is more specific on the areas of risk and the rationale for formulation of viable PPPs is based on fundamental project finance principles with the added complexity of the

state as the originator and guarantor. Project finance innovation is particularly important because it combines organisational structure with effective risk sharing (Byoun, Kim, & Yoo, 2013).

One can group the project cycle in Figure 2: Project Life Cycle, into 2 main phases; Pre-completion and post completion, with steps 1 to 5 representing pre-completion. This will later help in the definition of risk ownership and allocation through the various contractual agreements synonymous with PPPs.

Figure 3: Risk Elements in PPP the Project Life Cycle



Adapted from (Gatti, 2008)

The extent to which investors believe each of these risks can be identified early on and effectively managed will improve the outlook for the investability of a prospective project. In this literature review, the focus is on studies that look into the inherent levels of these risks in SSA, and relying on available trends, indices and extracts from commentary in industry journals and periodicals.

2.3 Project Specific Risks

2.3.1 Project Selection and Preparation Risk

This relates to the uncertainty behind the assumptions of the project strategy overall and rests fully in the domain of public administrators and their processes. Starting from identification of the required project to eventual execution; this risk is related to causes such as the lack of skill or technical capacity to support project development in public institutions, limited market data to aid feasibility assessments, unclear legislative frameworks and ineffective governance of institutional programmes (Dutz, Harris, Dhingra, & Shugart, 2006; Mahalingam, 2011). This preparation process includes the inception, feasibility and procurement process referred to in Figure 2: Project Life Cycle.

Through this process the investment parameters are defined. In many instances poor preparation on the part of public administrators results in failed attempts to present a marketable offer and get through stage 4; the procurement process. As a determinant of investability, planning gives investors a clear sense of the overall strategy considered and comfort that due process has been followed and the right input solicited. Institutional capacity is a going concern in Africa, limiting the depth of policy, processes and governance and adversely affecting the project selection and planning process (AfDB & Nepad, 2013).

The World Bank Infrastructure PPP best practice framework recommends the creation of dedicated PPP oversight units within government (Dutz et al., 2006). These institutions work within the national governments to ensure policy consistency, clear governance and adherence to procedure and rule out the risks of process failure and in some instances corruption. As it stands South Africa, Rwanda, Nigeria, Ghana, Kenya, Malawi, Uganda are a few of the African countries with functional PPP agencies.

The role authority level of these units must align with best practice as shown below in Table 2 as a summary of the agency structures the world notes as highly effective. This highlights the 3 functional levels a PPP unit may cover for selected reference states.

Table 2: PPP Agency Structures and Roles

State	Information & Guidance		Advisory Support & Funding				Approval
	Resource Centre	Guidance Material	Project advice	Funding for preparation	Project developer	Contract Monitoring	Final approval authority
India: AP Infrastructure Authority	Y	Y	Y				Y*
Canada	Y	Y	Y		Y	Y	
Ireland	Y	Y	Y	Y	Y	Y**	Y
South Africa	Y	Y	Y	Y			Y
United Kingdom	Y	Y	Y	Y	Y	Y	Y

World Bank PPP Resource Centre

Project Feasibility: The role of Transaction Advisors

Transaction Advisor is a global term for various professional organisations that specialise in public administrative and planning support in terms of; programme planning and management, public finance and law and technical support for non-core activities like engineering and operations. Tough no academic literature was found relating to the input and value of financial advisors to the process, the South African PPP agency manual (2004) emphasised the importance of the advisor in their process. The Advisor can narrow the skills gap, ensure best practice preparation and evaluation of options for the project and setup a suitable way to engage the market later on.

The involvement of a reputable advisor throughout the project preparation process may provide some comfort around the investability of the proposed project to the private sector investor. There is however no literature available to validate this hypothesis. Therefore, part of this research is to test the value investors place on this criterion. AfDB and Nepad (2013) noted that the success of the recent regional PPP project in power[3] was notably as a result of effective preparation and management.

[3] "*The first regional PPP power project in Africa, Ruzizi III is expected to leverage more than 50% commercial financing (debt and equity), with majority private ownership.. Overseen by a regional entity formed by the three beneficiary countries to develop projects of common interest, the framework for Ruzizi III has been successfully developed, despite its complex public-private structure, over a period of 18 months for a number of key reasons, perhaps none more important than effective project preparation and management" (*AfDB & Nepad, 2013)

Project Procurement – Engaging the Market Effectively

Part of the role of the PPP agencies is to safeguard the processes for public sector procurement for PPPs which gives investors a clear view of the level of protection against corruption and overall transparency.

The bidding costs for the private sector are far higher than normal and duly considered before a consortium is put together and a bid is prepared. Therefore one would expect the level of confidence in the process followed by government leading up to the release of request for proposals to have a significant influence on investor participation in bidding. Mahalingam (2011), attempted to draw the link between institutional structure and capacity to PPP success. The author found that in the context of a developing country, the need to maintain life cycle involvement of the PPP agencies to ensure effective risk mitigation and continuous capacity building at line ministry and local level is essential.

2.3.2 Project Development Risks

This element encompasses these sub-elements; construction and technology risks. Infrastructure project development in PPPs may involve a multitude of engineers, construction contractors and operators. Though the feasibility process would provide details of the output and operations requirements, final design of the solution is left to the party assigned to carry out project development on behalf of the investors. For most large complex projects, the project development is usually contracted through lump sum turnkey contracts (Gatti, 2008). This is far more practical from a risk allocation perspective, to be discussed later on.

The real risks in this category range from uncertainty on timing, performance of technology solutions chosen and the final budget cost. For the party allocated this risk, main concerns would include; dispute resolution mechanisms, quality of labour and industrial relations stability, payment risk, security and unrest, logistical planning, design suitability, health risks (tropical diseases etc.), local corruption and even lack of support infrastructure (utilities) (Ahwireng-Obeng & Mokgohlwa, 2002; Backhaus & Werthschulte, 2006; Bain, 1996). These authors cite these risks as varying in significance depending on the maturity of the business environment under consideration, the complexity of the project and experience of the selected counterparties involved in project development.

For the investor there are a few global risk management options that can be applied to manage project development risk (Bain, 1996; Gatti, 2008). Remedies ranging from Delay Damages and Performance penalties or rewards are good instruments for the investor to manage the appointed

turnkey contractor. However, in some instances the contractor is also an investor and this presents a potential conflict, then it is necessary to ensure effective segregation of responsibilities among the members of the investing consortium.

What must be important to the contractor could be the degree of certainty relating to effectively evaluating and pricing the management strategies for each of these risks during the bidding and contract negotiation process prior to financial close. Bain (1996), highlighted that in the project finance environment the lenders prefer a degree of certainty around costs and will insist on lump sum turnkey contracts. This practice is not expected to have changed nor be treated differently in SSA context.

What is of interest in the context of sub-Saharan Africa is twofold; how significant is project development risk in a PPP scheme, how is it allowed for in the feasibility and budgeting? How much value is placed on the contractor's experience requirements vs. price in the adjudication process? Backhaus and Werthschulte (2006), found that capital risk (project development cost) is most impactful in international Power, Industrial and Toll Road projects particularly because they tend to have predetermined fixed tariff structures based on the original capex assumptions.

These then cover the main pre-completion risk considerations as per Figure 3: Risk Elements in PPP the Project Life Cycle.

2.3.3 Supply Chain Risk

A post completion risk related to access to a sustainable supply chain within the parameters of costs and specifications assumed in the project design, planning and development. This is relevant for input dependent projects like power plants, and industrial production facilities. Sudden loss of high grade coal supply for a coal fuelled power plant will impact production immediately and hence revenue and returns. Gatti (2008), discussed various options for managing supply chain risk in the form of long term contracts with suppliers and ensuring multiple backup options. In SSA Africa however the concerns would be with the overall development of the supply chain support system within the region of operation as discussed in Moyo (2012). Moyo discussed the constraints to production sustainability and growth in SSA industrial operations and though his study that related to operational risk it can be reasonably inferred that his conclusions have implications for input material supply chain where applicable.

2.3.4 Operational Risk

Risk of sub-optimal project performance due to various contributors that cannot be managed through contractual arrangements related to supply risk as described in 2.3.3. These can result in cost inflation, down time and loss of revenue (Backhaus & Werthschulte, 2006; Gatti, 2008; Gatti et al., 2007; Moyo, 2012). Moyo (2012) specifically noted the risks presented by poorly developed overall utility support; water supply, power, and logistics & trade support and the impact they has on operations performance in SSA. His primary focus was on looking at manufacturing based businesses and the comparative performance of SSA economies, citing excessive transportation costs and reliability of utility services as an area of concern.

2.3.5 Market Risk

The importance of thorough market evaluation is stressed by authors of various studies (Ahwireng-Obeng & Mokgohlwa, 2002; Backhaus & Werthschulte, 2006; Bain, 1996; El-Diraby, 2006; Klompjan & Wouters, 2002). Specifically ensuring that the affordability assessment for retail user based revenue models is addressed and that off take agreements with bulk buyers are in place. Market risk is also dependent on all global life cycle risks i.e. inflation, exchange rates and overall economic and political stability. Specifically (Backhaus & Werthschulte, 2006) found that sales revenue is a significant factor across all sectors of projects.

Retail user based revenue models are common in the Road, Water and ICT infrastructure sectors, however data availability for user affordability assessments remains an issue and no literature is available at this point to indicate the extent of the issue in emerging SSA economies. Klompjan and Wouters (2002), found that the lack of effective external cover for market risk was one of the leading causes of credit default in project finance. In the case of a PPP this would be in the form of a guarantee from the procuring entity.

2.3.6 Environmental Risks

This risk runs across the full cycle of a project and relates to compliance to prevailing environmental law and adequately managing and environmental risk inherent to the project location. Gatti (2008), considers environmental law compliance as within the scope of the risks to be allocated through the various forms of contracts in line with the stages of the project. There have been developments of compliance standards globally. The World Bank notes that various funding agencies have signed onto the Equator Principles code for environmental and societal impact and will not participate in projects that violate this code. This would be over and above whatever national codes exist and must be considered properly while budgeting.

This concludes the elements of risk that may be considered specific to pre and post commissioning, a look into the various global risks across the life cycle follows.

2.4 Global Country Related Risk

A series of studies into the global determinants of investability into emerging markets have been done and their findings are relevant to the SSA context. Ladekarl and Zervos (2004), classified three main areas of consideration for investors in emerging markets[4].

SSA boasts a number of the fastest growing economies in the world i.e. Nigeria, Mozambique, Uganda, Mozambique all with GDP growth rates in excess of 6% pa (BMI, 2013). Some SSA countries fit well into the accepted definition for emerging economies with growing financial markets, sustained take off growth and growing private sector investment participation (Nellor, 2008). Of the main "Housekeeping and Plumbing"[5] issues identified by Laderkal and Zervos macroeconomic stability, political stability, regulatory and legal environment are likely the most relevant to the long term infrastructure PPP environment.

In order to establish standards in practice for evaluation and pricing of risk across emerging markets, Pereiro (2006) concluded that investors still accounted primarily for country risk at a global level through a country risk premium percentage in the discount rate[6] and considered models designed for project specific exposure very rarely.

What drives country risk in SSA? It is rather difficult to separate political stability and macro-economic stability for emerging markets. An assessment of the overall stability of a state is the ideal place to start to understand the causality. The Institute for security studies (ISS) is continuously assessing the overall stability of African states along a series of parameters. The fragility[7] of African states as studied by Cilliers and Sisk (2013) within the ISS indicates that the at least a third of SSA states can be considered "fragile". The Cilliers and Sisk (2013) study

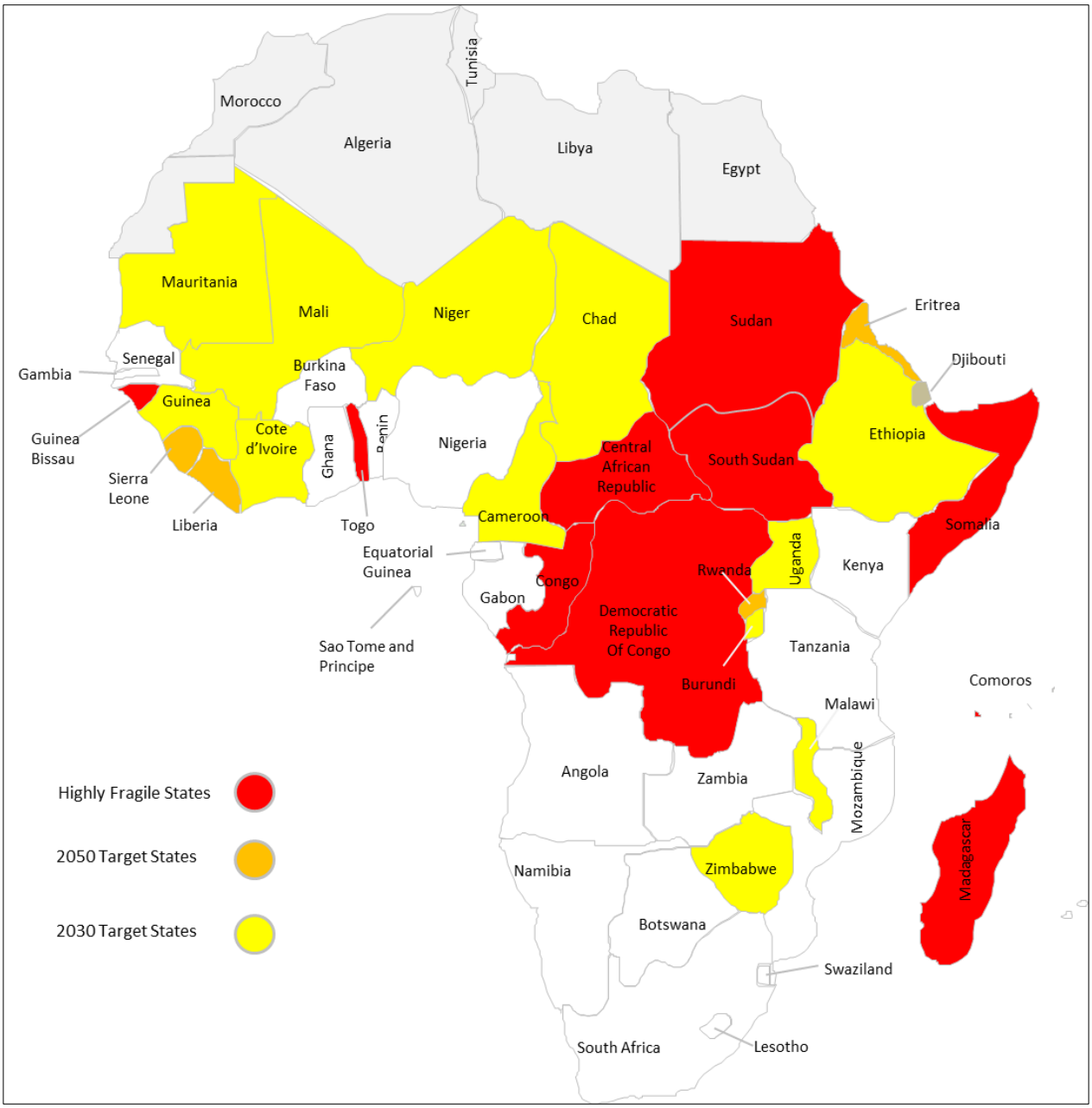
[4] Note the study considered the process applied by investors (particularly fund investors) when formulating an investment strategy, the authors noted the significance of country political and social standing in determining viability. Countries with trade sanctions and social norms in conflict with investor principles are quickly removed i.e. Human rights protection, environmental protection etc. The study also highlighted the need for trusted data (country and market specific) to assist investors completing initial target assessments.
[5] Housekeeping referred to aspect of the quality country socio political financial and economic systems while plumbing referred to the efficiency of overall processes and rule of law.
[6] Pereiro also established that international investors are still primarily using classical investment evaluation methods such as the internal rate of return (IRR), net present value (NPV) and discounted payback period which are all valid for evaluating PPP projects.
[7] Fragility can be defined as low capacity and poor state performance with respect to security and development. A state is fragile when it is unable to provide for the security and development of its citizens. The majority of citizens in highly fragile countries in Africa (1) are poor, (2) experience high levels of repeated or cyclical violence, (3) experience economic exclusion and inequality, and (4) suffer from poor/weak governance (Cilliers & Sisk, 2013)

focused on fragility trends going forward for countries in SSA. The grouping of countries on a time scale relating to their projected ability to improve across all criteria is represented in Figure 4: Sovereign Fragility Heat Map below. Highly fragile states are not projected to improve substantially by 2050. Political instability, violence, growing poverty and poor governance are likely to persist in these states. 2050 and 2030 target countries are forecast to show improvement within that time frame and take on characteristics of the more resilient states in the region. This study provides the basis for the discussion of global country risk elements.

High risk countries like the Democratic Republic of Congo (DRC), Central African Republic (CAR), The Congo and Sudan have all experienced or are still experiencing internal conflict. Some countries have broken out of the conflict cycle and made significant progress toward stability and effective governing like Uganda, Burundi and Rwanda. Researchers note that theoretically Nigeria qualifies as a fragile state from some measures; however its inclusion in stability forecasting models would skew the data due to its size. One would expect to find that Nigeria's current internal conflict with Boko Haram and other security threats in the Delta region, as well as its history of poor governance and regulatory control could reflect negatively on its future prospects for investability in infrastructure PPPs.

The outlook given by this report has a direct impact on various proposed regional infrastructure development and integration programmes. For the key sectors; the Inga Power Scheme in the DRC, the regional power pools and integrated trans-regional road and railway projects would be at risk.

Figure 4: Sovereign Fragility Heat Map



The implications for overall regional or sub-continent level programmes are not explicitly found in literature. AfDB and Nepad (2013), have presented their proposal for the high impact projects, at a country level, regionally and higher. However, the extent to which these regional plans will be affected by these results is not quantified, especially from an investor's perspective.

From the AfDB and Nepad (2013) PIDA report, below is an extract list of the project that are under consideration ranging from power project with a regional power pool focus to trade corridors across multiple states.

The PIDA coordination agency is yet to clarify the real roll out structure for any that may be viable as PPPs and how they will be managed with the multiple stakeholders.

Table 3: Select Regional Infrastructure Projects

Identified Projects	Sector	Regional Exposure
Abidjan-Lagos Coastal Corridor	Transport	Nigeria, Benin, Togo, Ghana, Côte d'Ivoire
Dakar-Niamey Multimodal Corridor	Transport	Senegal, Mali, Burkina Faso, Niger
Praia-Dakar-Abidjan Multimodal Corridor	Transport	Cape Verde, Senegal, Gambia, Guinea Bissau, Guinea, Sierra Leone, Liberia, Côte d'Ivoire
North–South Power Transmission Corridor	Power	8,000 km line from Egypt through Sudan, South Sudan, Ethiopia, Kenya, Malawi, Mozambique, Zambia, Zimbabwe to South Africa
West Africa Power Transmission Corridor	Power	Guinea, Guinea Bissau, Gambia, Sierra Leone, Liberia, Côte d'Ivoire, Ghana. 2,000 km line along the coast connecting with the existing Ghana–Nigeria line with a capacity of 1,000 MW

Historically, successful regional projects that can be referenced here would the South African-Lesotho Highlands Water Project running since the 80s with a new phase already past feasibility. However those projects were never PPPs, they were publicly financed and managed through various agreements between the states.

2.4.1 Political Risk

Political risk refers to the stability of the political structures and processes within the state. This risk has a direct link to regulatory and legal risk. For the purpose of this analysis the focus will remain on the purely political processes and structures. The legitimacy of the state and the stability of its regime are expected to be important investability determinants for investors in infrastructure PPPs.

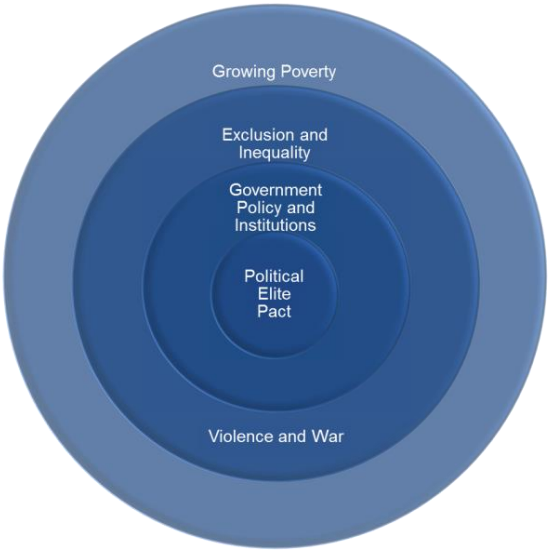
Political regime stability, electoral process and regime transition are issues of great concern to observers of African democracies (BMI, 2008, 2011; Crouzel, 2014; Girardone & Snaith, 2011). Crouzel (2014), noted that in a number of African countries, elections in recent years have not legitimized those in power, and have been the source of greater instability; the Democratic Republic of Congo (2006),Guinea-Bissau (2008), Kenya (2007 and 2008), Lesotho (2007), Nigeria (2007), Senegal (2012), Togo (2005) and Zimbabwe (2008).

In the assessment of the fragility of African states Cilliers and Sisk (2013) considered the implications in the medium to long term, of the threat of persistent poverty and lack of political inclusion in fragile African states.

Cilliers and Sisk (2013), described the political paradigm in fragile states as follows;

> *"In the context of more fragile states, every aspect of the governmental relationship is directly (and often personally) political. Separate institutions do not exist, the policy framework is uncertain, and the summary result is often far removed from the rational-legal processes and systems taught in courses dealing with political sociology. Many functions of governance are performed in ethnic or clan networks and through other informal faith-based institution."*

Figure 5: Political Relationship in Fragile States



The authors went on to conclude that the cycle of political violence in fragile states is very clearly self-reinforcing. The study summarized the general consensus in literature that states with high levels of poverty, a young populous, low literacy levels, high unemployment and political exclusion are likely and therefore political risk is high.

The authors also noted what makes evaluating long term stability difficult may be that the desired improvements in economic growth rates – a prerequisite to building state capacity by providing increased tax and other revenues – may simultaneously increase the prevailing inequality and increase instability.

It is worth highlighting the increased social instability caused by armed religious groups in both East and West Africa in recent years. Gounden (2013), notes the cases of conflict in Mali, Nigeria, Somalia and Northern DRC and their implications for long term predictability of stability in those states. Ever present ethnic group tensions in Sudan, Kenya and Ethiopia will also be a going concern in the near future in these countries.

Gatti (2008), highlighted the various forms of political risk in the context of PPPs. These range from continuous disruption due to civil unrest or terrorism, to the extreme cases of unilateral expropriation of assets by the state. Determining which risk is more relevant is difficult and the use of qualified risk evaluation specialists during project planning and execution is a priority.

2.4.2 Macroeconomic Stability Risk

Macroeconomic stability is a challenge for small open economies like most in SSA. The Global financial crisis hit African countries indirectly and over time as investors and donors consolidated assets back to their domestic markets and left capital markets in Africa. This worsened the performance of most markets as they have limited local depth to sustain themselves (Kasekende, 2009; Lyakurwa, 2010; Taiwol, 2009). Dependency on commodity exports worsened as the global crisis saw slower production outputs and consumption and commodity prices fell. Losses in financial markets result in lower investor confidence and self-reinforcing growth decline and the financial crisis affected African stock markets noting JSE and Nigeria declines[8].

Kasekende (2009), emphasised the real issue for African Macroeconomic stability is the high level of undiversified export channels, dependency on aid and limited local financial markets depth. Governments are advised to adopt a dual stimulus and economic reform strategy with core focus on infrastructure improvement and business environment improvement[9]. Sovereign Credit Risk Ratings give a good indication of the overall economic stability of a country and key influencers range from fiscal stability, political and regulatory status and investor protection (BMI, 2011). A number of sub-Saharan countries have experience macro-economic instability in recent years.

[8] Some African economies were barely affected at all, like Ghana and Uganda due to the structural aspects of their economies and financial markets (having little to no exposure to Oil and focused on safe haven exports (gold)) (Taiwol, 2009).

[9] Zambia, Uganda, South Africa and Nigeria have all establish aggressive fiscal expenditure plans for infrastructure and specific regulatory reform for business operations, monetary expansion and taxation (Kasekende, 2009).

Most recently, Ghana's failed monetary control policy resulted in substantial currency devaluation, toppling their short and long term Fiscal and Monetary policy outlook.

Macroeconomic stability is important to PPP investment because it will have a direct impact on returns and an incremental impact on other risks as discussed. The literature lacks studies detailing the impact of macro-economic variables on project level returns. However Kodongo and Ojah (2011) studied the impact of currency risk on stock market pricing and concluded that markets did not price for currency risk. Similarly foreign investors in local projects in SSA must be exposed to a level of currency risk that needs to be accounted for in the budgeting and managed.

2.4.3 Legislative and Regulatory Risk

In the context of this study, these elements were considered purely for their effect on investability and the health of the business environment. There are limited academic sources of reflection on the state of the business environment and investability in SSA however, a good measure of a country's suitability for investment and long term operations that could be used is the Doing Business Report (WorldBank, 2014). Therefore for the purposes of this review, information was drawn from those standard measures.

Each sub-category included in the ranking framework is essential but there are those that give clearer understanding of the economy's approach to support investment. These could possibly be used to rationally infer readiness for foreign direct investment by focusing on issues raised by studies on the key indicators for investors in emerging markets cited in this literature review (Ladekarl & Zervos, 2004; Pereiro, 2006). Therefore, using the parameters identified in the literature, as relevant the focus will be narrowed to the following indicators;

i. Getting credit
ii. Protecting minority investors
iii. Paying taxes
iv. Enforcing contracts

Table 4: Ease of Doing Business Ranking: SSA Selected Economies includes the entire suite of rankings criteria.

The selected criteria comprises the best independent view of the state of affairs on issues related to the strength of legal rights, protection of investors, financial market development and funding access, regulatory capacity, institutional efficacy particularly the legal system and policy suitability. These ratings however have a very real limit to their depth. They focus on domestic firms and their reflections on the business environment; they may not be a true reflection of the

industry experience from a foreign investor's perspective. That is issues such as restrictions on foreign asset ownership, localization requirements, taxation nuances, capital controls and others are not included in this report.

However, reflecting on the results as they are; one can draw the following conclusions; On issue (i) Getting Credit – RSA has the most mature and well regulated financial market system. Angola is the worst, with very poor legal structures and restrictive regulation. This could have implications for the ability to raise capital within the local market and even attracting foreign investors to the domestic market. On (ii) Protecting Minority Investors, RSA, Mauritius and Ghana are the best performers, while the worst performers are mostly the states ranked as highly fragile in Figure 4: Sovereign Fragility Heat Map i.e. Liberia and the Sudan states. The main issue here is the weakness of the disclosure requirements and segregation of responsibilities and the accountability of the board to the management.

For criteria (iii), tax legislation and regulation, the best performers noted are Mauritius, RSA and Rwanda. These are countries with stable taxation policy supported by functional regulators and service departments. A country like Nigeria scores poorly on tax payments because of the weakness of the institutions charged with regulation and service provision. Mauritania is the worst ranked country in this category, with exorbitant tax rates as high as 71.3% total tax.

And lastly, criteria (iv.), arguably the most important element in PPP arrangements is a country's ability to support contract enforcement between parties independent of undue influence and clearly set out in common or civil law statutes. In this instance SSA's best performer (Cabo Verde) is in line with the OECD countries' average on timeline, cost and number of procedures. Angola is the worst across the globe according to this report. The stark variability across the sub regions introduces a further challenge for projects aimed at regional development and integration.

Table 4: Ease of Doing Business Ranking: SSA Selected Economies

Country	Global Rank	Regional Rank	Starting a Business	Dealing with Construction Permits	Getting Electricity	Registering Property	Getting Credit	Protecting Minority Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Resolving Insolvency
Mauritius	28	1	3	26	1	14	3	2	1	1	2	2
RSA	43	2	7	4	27	13	5	1	2	5	4	1
Ghana	70	4	12	23	6	2	3	3	13	11	16	35
Botswana	74	5	26	17	11	5	7	14	6	26	8	3
Namibia	88	7	28	1	5	41	7	8	10	17	7	7
Swaziland	110	8	25	8	22	23	7	16	7	13	41	6
Zambia	111	9	8	21	14	31	2	7	9	41	17	10
Mozambique	127	11	13	16	29	15	18	11	19	14	38	16
Lesotho	128	12	14	36	13	10	32	14	17	22	20	22
Tanzania	131	13	17	41	9	20	32	30	26	18	3	15
Kenya	136	15	24	19	23	25	15	20	14	25	25	28
Gambia, The	138	16	30	11	21	18	36	39	40	3	5	14
Gabon	144	18	22	14	15	45	10	31	29	16	33	24
Benin	151	23	16	9	35	36	15	28	38	12	39	18
Senegal	161	29	10	33	43	38	18	20	43	4	27	12
Malawi	164	31	29	12	41	8	32	27	15	37	32	37
Burkina Faso	167	33	27	13	38	28	18	20	28	39	31	18
Nigeria *	170	36	19	43	46	47	5	5	39	28	26	27
Angola	181	42	38	10	26	35	44	11	24	34	47	39

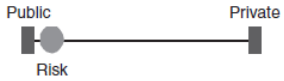
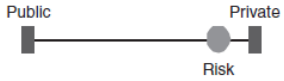
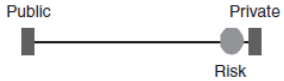
This selection was made in alignment with Figure 4: Sovereign Fragility Heat Map reference for the countries considered the most stable across the sub-continent.

2.5 Risk Ownership in PPPs

Risk allocation is the next factor that determines viability early on in the planning and development process. Page (2008), summarised the extent of risk transfer to the private sector through each type of PPP arrangement, as shown in Figure 6: Risk Transfer in PPPs (Page, 2008)

Figure 6: Risk Transfer in PPPs (Page, 2008)

Public-Private Partnership (P3) Delivery Contracting Types and Risk Transfer

Type	Description	Risk Transfer
Design-Bid-Build (DBB)	Design and construction contracts awarded separately to private sector engineering and contracting firms	
Design-Build (DB)	Combines the design and construction phases into one fixed-fee contract	
Design-Build-Operate-Maintain (DBOM) Build-Operate-Transfer (BOT)	Selected contractor is responsible for the design, construction, operation, and maintenance of the facility for a specified time	
Design-Build-Finance-Operate (DBFO) Design-Build-Finance-Operate-Maintain (DBFMO)	Similar to DBOM, but contractor is also responsible for all or a major part of the project's financing	
Build-Own-Operate (BOO)	The private partner owns the facility and is assigned all operating revenue risk and any surplus revenues for the life of the facility.	

Project finance modeling allows for various analyses to test the project's sensitivity to risk event scenarios (Byoun et al., 2013). Byoun considered the implications for capital structure decisions from risk profile evaluation, concluding that, in practice, the level of leverage is a function of the risk profile and The World Bank PPP resource centre data indicates that current practice sees high risk SSA infrastructure PPP projects with capital structures ranging from 70/30 to 60/40 debt to equity.

Ahwireng-Obeng and Mokgohlwa (2002), noted the principles in risk allocation; assigning the risk to the party best able to manage it and also matching returns to each party for the level of overall risk they bare. For example factors external to the project like socio-political risks are best left to the government while commercial and planning risks are best managed by the private party

assigned with project development (Ahwireng-Obeng & Mokgohlwa, 2002; Gatti, 2008; Gatti et al., 2007; Ke et al., 2012). There may be limitations to how well the risk allocation process may be conducted due to the limited experience of the industry in dealing with risk management in PPPs and in some instances conflicting objectives between the government, private sector and the eventual end user (Gatti et al., 2007). This literature outlines the logic followed in defining the risk allocation matrix of the project. The project work breakdown structure is one that works off the premise of discreet activities in different areas of the project and allocates responsibility for those. This identifies the main variables such as the technical issues, taxes and supply chain then follows on to define elements of risk within each main variable.

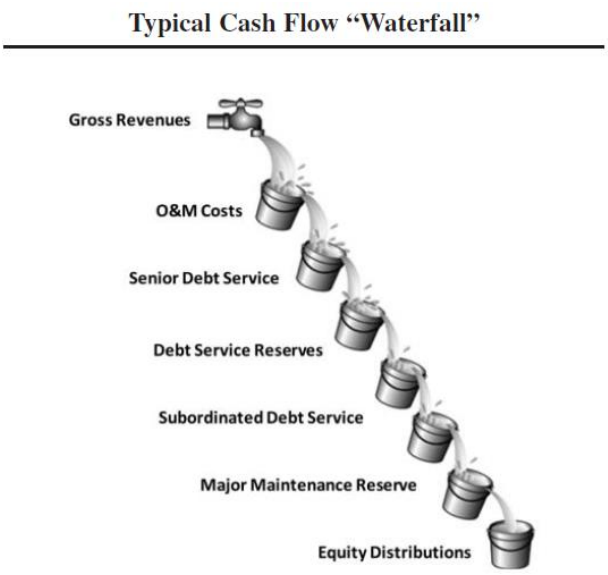
The global risk breakdown structure logic is far more generic and considers the aspect of exposure throughout the project life cycle from external factors and internal milestones. This would cluster issues around country factors, operations and revenue for example. The intersection of these would then give a clear understating of the relevant risks for the project.

A good example; taxation cost projection is a project issue which is directly related to country policy and regulation on a global level.

Table 5: Risk Allocation principles noted from Gatti (2008)

Risk	Owner and Risk Management Strategy
Project Planning Risk	Public entity/Project Originator – **Accept and Manage** through use of qualified transaction advisors
Project Development Risk • Engineering and Design • Construction • Commissioning	PPP Company –**Further transferred** through **turnkey contract** to a contracting company/consortium that may form part of the main project company or not.
Project Operations & Maintenance Risk	PPP company –**partially transferred** through **O&M term contract** to a suitably qualified O&M contractor that may or may not form part of the project company
Market Risk	PPP Company – **Managed** through **term off-take** contracts with anchor customers or **time variant regulated tariff** schemes for the retail market.
Supply Risk	PPP company – **Managed** through term supplier agreements
Macro-Economic Risk • Inflation • Interest rates • Exchange rate	PPP Company – **Managed** through selected financial hedging instruments depending on the level of exposure for the PPP company
Political Risk	PPP company – **Partially transferred** to insurers where possible
Legal & regulatory Risk	**Shared** – the exact extent of this risk depends on the contract terms with the public entity.
Environmental Risk	PPP Company – **Partially transferred** to various contractors within their scope
Force Majeure Risks	PPP Company – Partially Transferred to Insurers where possible

Figure 7: Project Cash Flow Waterfall (Page, 2008)



Practise dictates that commercial risk is allocated to the private party while socio political risk is carried by the public sector.

An investor's main concerns are the project's ability to provide sufficient cash flow to yield a comparable return with assets of a similar risk profile. For an investor engaged as a lender to the project his primary concerns also include debt recovery and understanding the value at risk (Gatti et al., 2007). The cash flow requirements are well illustrated by the waterfall in Figure 7: Project Cash Flow Waterfall (Page, 2008).

2.6 Risk Management Strategies

PPPs are set up as special purpose vehicles with high leverage ratios and substantial risk to the funding agents backing the project (Bain, 1996; Einowski & Roek, 2007; Gatti et al., 2007; Klompjan & Wouters, 2002). Project finance and development is an international business, for emerging markets the capital and technical requirements may not be available in local markets.

Some economic risks relating to the market driven transactions may be adequately hedged through options, forward contracts and futures. Demand side risk in some instances is hedged operationally through off take agreements (Einowski & Roek, 2007). Similarly, some input factor

risk (e.g. fuel sourcing for Power plants) may be hedged through targeted long term supply contracts.

The cost of risk management is a function of the accuracy of the risk identification and evaluation process. A reasonable hypothesis could be the more volatile the environment (economically, politically) the higher the cost of risk mitigation. Ahwireng-Obeng and Mokgohlwa (2002), noted that equitable allocation to suitably qualified parties substantially lowers the cost while noting the implications of impractical allocation of political risk to private parties as a key draw back. Technical risk mitigation cost could be a function of the experience of the project developer and his contractors. Below is a summary of the various risk mitigation strategies that may be employed, their validity is determined during the feasibility and bidding stages of the contract.

Table 6: Typical Risk Management Strategies (El-Diraby, 2006)

Risk management strategies			
Construction Risk Mitigation	**Economic Risk Mitigation**	**Operating Risk Mitigation**	**Political & Legal Risk Mitigation**
○ Completion Guarantees ○ Performance Bonds ○ Avoid Scope Changes ○ Fixed Price Contracts ○ Contingency Funds ○ Standby Credit Facility ○ Experienced Project Developer ○ Liquidated Damages	○ Tariff Adjustment Formula ○ Forex Options ○ Inflation indexed product prices ○ Loan interest rate swaps ○ Exchange rate indexed product prices ○ Government guarantee for minimum revenue ○ Supplier Agreements	○ Forward Contracts ○ Off take agreements ○ Put and Call options on relevant securities ○ Performance based compensation system	○ Political risk insurance ○ Localisation in operations ○ Government guarantees

As seen above, not all risk can be managed quantitatively through financial instruments and not all risk can be measured at inception and factored into the pricing. For example completion risk is transferred to the party responsible for the overall construction. In the case where major

unknown risks are identified that need to be transferred off the books of the SPV, insurance is used. Insurance can cover anything from adverse unknown environmental events to design fault adequately for both parties (Bain, 1996; Blake, 2007; Gatti, 2008; Girardone & Snaith, 2011). Otherwise, where applicable contingent exposure hedging mechanisms are put in place during the project bidding stages and used throughout the delivery where relevant.

Through the various construction contracts the risk is transferred to lower level parties and secured through performance guarantees. The prevailing public policy and access to financial market products contribute to the effectiveness of the strategies identified.

2.7 Who are the Investors?

Multilateral Funding Agencies like AfDB, The World Bank and International Monetary Fund (IMF) have played a significant role in support of SSA infrastructure development. These agencies also have developed and maintained the knowledge base for the region. However, for the initiatives to succeed, the investor pool must expand. The AfDB's PIDA unit is assigned as coordinator of priority initiatives. Other organisations like the NEPAD Business Foundation's Infrastructure Desk have also assumed the facilitation role. A measure of how successful these and other initiatives have been in engaging the private investors is necessary. These investors include the commercial banks, infrastructure development and operator firms and existing private equity funds.

In a private public partnership, the public sector is the other key investor. The public sector's ability to raise substantial capital to finance the development and lower the private capital requirement and make the project more attractive is a key factor.

The role of the multilateral DFIs in sub-Saharan Africa has always been more than just as a lender, they have been coordinators or programmes (i.e. PIDA in AfDB) and taken on responsibility for capacity building in various sectors.

The private sector however would have a wide selection of investor types with equally different objectives and scopes. These may include but are not limited to;

i. **Commercial Investment Banks** whose primary objective would be to function as effective intermediaries and conduct project finance lending and equity investment across an array of sectors. There is no specific literature detailing the appetite of existing investment banking institutions for PPP project finance. The criteria for growth of the general banking sector detailed by Andrianaivo and Yartey (2010), would be applicable to investment banking operations. The protection of creditor rights, income level, level of repression and political risk are all relevant.

ii. **Private Equity Firms** are also on the rise in Africa (Andrianaivo & Yartey, 2010). They may provide the best source of project equity funding and with their global reach they play a significant part as conduits for international investors looking for long term investment in emerging markets.

iii. **Infrastructure Services Companies** range from construction, product and technology suppliers, logistics firms, operators and engineering services firms. Their participation in PPPs comes as a part of their overall core business; however their role as an investor elevates their capacity requirement.

Chapter 3: Research Methodology

The main objective of this study is to identify the key factors influencing investment viability and investor's risk appetite in infrastructure PPP projects; overall the study will maintain a global SSA focus. This study relies heavily on the findings inferred from the literature review as a basis.

3.1 Structured Interview

The literature review informed the content of the structured interview undertaken with principal officers of organisations within the Infrastructure PPP industry. The interview's main objectives;

i. Identify risk considerations when evaluating PPP opportunities in SSA
ii. Determine the current perceived level of risk among the different groups of investors and how this compares to other mature infrastructure markets
iii. Outline what the investor community would consider acceptable mitigation

The interview was structured in two parts, a qualitative questionnaire and a quantitative risk rating schedule.

3.1.1 Target Group

The target organisations are all involved in infrastructure planning, investment, development and operation. Officers were selected on the basis of their role closer to project evaluation or strategy development and project execution. The target group included Banks, Private Equity Firms, Construction Companies, Engineering Firms, Advisory and Insurance Firms, Government PPP Agencies and Concessions Companies in operation in SSA.

3.1.2 Qualitative Questionnaire

The purpose of the qualitative questionnaire was to capture the organisation's approach to the PPP industry and their perception of current and future potential. The questionnaire was discussed in two parts, firstly to assess their view of the maturity of the PPP industry and processes, governance and related institutions. The second part was to discuss how they would approach strategy formulation and project risk evaluation. Details of the questionnaire are attached in Appendix A.

3.1.3 Risk Rating Schedule

From issues discussed in the literature review, a clustered schedule was created as shown in Table 9 Appendix C, to bring structure to the comments and ensure that a consistent measure was used across the sample and to maintain the soundness of the ranking system.

Each interviewee was requested to then reflect on the inherent level of each risk element from a global SSA perspective, then comment on what he/she considers effective mitigation and re-rate the residual level of each element. Further to that, comments on the best practise allocation of that risk was required as well as a reflection on experience of best and worst in class across the continent. The latter was not limited to organisations but could extend to projects or programmes where the risk was either very poorly or very well managed.

These schedules from the interviews were then consolidated into what could represent the consensus of the members of industry sampled and from this a conclusion of the key risk management determinants of investability for PPP projects in SSA could be drawn.

There were important caveats noted prior to the commencement of the interviews that would impact the quality of the study. There may be a potential sample bias presented by the target group's regional distribution being mostly Southern Africa, particularly South Africa and the limited size of the sample. However, every effort was taken to ensure representatives from organisations in other regions were included and that organisations with a regional focus were the primary targets.

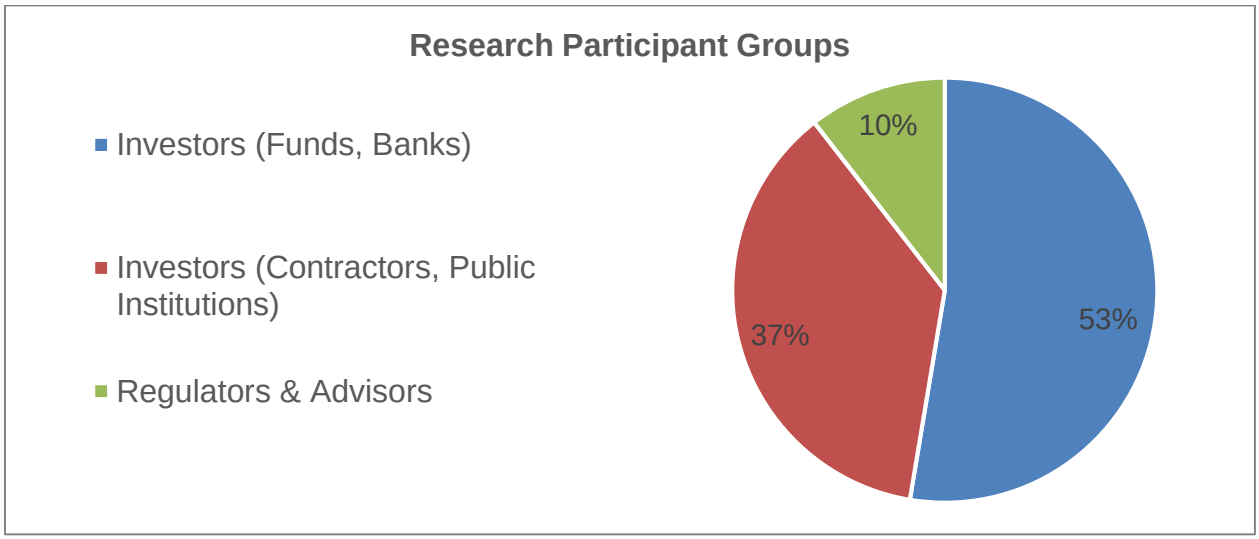
3.2 Case Studies

In order to align the research work to current practise, a small number of past and current PPPs were investigated with a focus on their process and development timeline, requirements and risk management frameworks.

Chapter 4: Results and findings

The findings are presented in 3 parts; the investment approach of the private sector, the views on the maturity of the PPP investment sector, its processes and institutions and finally the main risk considerations. 19 interviews were conducted, out of an initial sample of 42 participants identified. The sample size and potential regional bias had earlier been identified as challenges; however it is noted that there is an apparent convergence in the views shared by the respondents and it gives confidence in the applicability of the findings across the region and with groups that could not be accessed. The respondents were investors and advisory and regulatory organisations in Southern and Eastern Africa.

Figure 8: Groups of Participants



4.1 Strategy approaches to Infrastructure PPP Investment

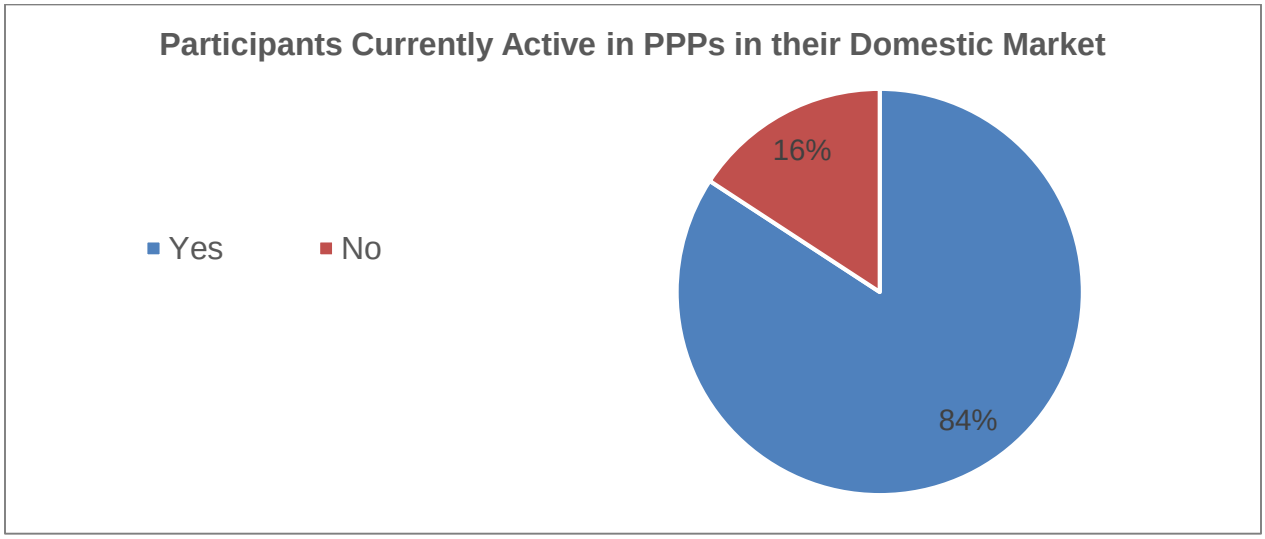
The objective of questions in this section was to identify the strategic value of the PPP model as viewed by investors either in public institutions as a solution to infrastructure delivery or to private sector investors as an opportunity. Below were the key questions posed?

- ✓ How much is your organization involved in PPP infrastructure financing (or development) in SSA?
- ✓ Briefly outline your PPP investment strategy development process? Is it Country driven vs. Project Specific vs. Sector Specific or a combination?
- ✓ Is your level of involvement similar across countries in SSA?
- ✓ What, would you say, are the factors that make your involvement similar/dissimilar across countries?
- ✓ Which regions/countries in SSA do you consider the most viable for investment in PPPs? Why?

- ✓ Which key infrastructure sectors in SSA are the most promising from an investment perspective? Why?

Of the 19 participants, only 3 were not actively involved with the PPP industry for the following reasons; the first, a private equity firm was in the process of putting together an initial fund raising strategy to expand its core investment structure into infrastructure. The second, a leading multinational bank stated that in the short to medium it would keep its project financing activities focused on private development and possibly expand into private equity investments in infrastructure services firms in niche markets. Lastly, the third was a diversified property development firm based in South Africa and West Africa, though it expressed interest in growing into PPP investments for government properties, it had yet to formally engage the market. As shown below however, 84% of the participants were actively engaged with the PPP industry at varying levels.

Figure 9: Participants' Current Activity in PPP Market



The objectives for investment in PPPs varied for different participants based on each one's role in the value chain. Construction, Engineering & Operations firms (Contractors), or more broadly infrastructure services companies invest for two reasons; ensuring a secure pipeline of projects as the preferred contractor as well as creating non-core annuity income from the assets in the long term. The sample included only South African major contracting firms and each confirmed they had current projects in operation in the major toll roads or properties and also had projects under construction under the Renewable Energy Independent Power Producer Programme (REIPP). In response to the PPP involvement question, one Contractor, an integrated construction and engineering firm stated that "PPPs are a better method of procurement for major

projects in instances where varied engineering disciplines and industries interact, it is easier for us to organise ourselves if the requirement is made clear and we can manage risk better. We have had successful complex projects we secured as PPPs before and they continue to support our earnings annually".

The other portion of the operationally involved grouping of investors are the public institutions or originating owners of projects. In this sample the respondent was a parastatal which owns and operate major public infrastructure in the transport sector. The participant highlighted the strategic relevance of PPPs for state owned companies as a means to bolster capacity and improve efficacy of infrastructure, noting its own institutional limitations in the form of human resources and capital to manage mass programmes and rapidly bridge the demand gap in the current market.

The next group of participants were the financial investors; Banks and Private Equity Firms. The South African Banks have largely always had multidisciplinary project and corporate finance services teams and when opportunities presented themselves these would then focus on the infrastructure industry and the investments in PPP projects were largely in South Africa. With the introduction and growth of the REIPP in the past 5 years, participants commented that infrastructure project financing became a greater strategic issue and all noted that it was far more complex to execute, to extent where one participant confirmed that "Power & Infrastructure" project finance teams have been created within her organisation unlike in other banks where the teams largely still work through a multidisciplinary structure.

Lastly, those private equity companies interviewed with a PPP specialisation look for opportunities aligned to their returns expectations and sectors of interest. A major investment fund indicated that for a fund to successfully invest in the PPP environment it needed to have dedicated teams and therefore strategically it preferred to invest through established private equity firms in the infrastructure sector. Participants noted that there is a growing number of highly specialised private equity funds.

Responding to the question around regional footprint and barriers to expansion in other countries, none of the respondents responded positively to having a similar level of interest across SSA and only 42% of the participants responded positively to having a strategy with a regional focus or the intent to expand outside the domestic market, while the rest were observing the progression of the industry and had no aggressive strategy to actively pursue opportunities in the short to medium term. The private equity participants highlighted that there are now local and regional private equity firms which are primary infrastructure PPP investors and within this group of active

infrastructure participants all responded positively to what one respondent called “the pan African focus”.

There are now more than 5 funds currently active in SSA that have been established as primary equity investors in infrastructure PPPs, though their depth is still limited and they are no more than 15 years old. The transaction advisors indicated they had no real limits to exporting services other than human resources. There has also been a diversification of service offerings by advisory firms into this space, with some specialists identified and working across the region as transaction advisors. All contracting firms confirmed interest in investing outside their home market.

What would be the main strategy choices to be considered? From the literature a high level framework could be drawn up, which was done and was used as a basis for discussion on strategy, in the steps below:

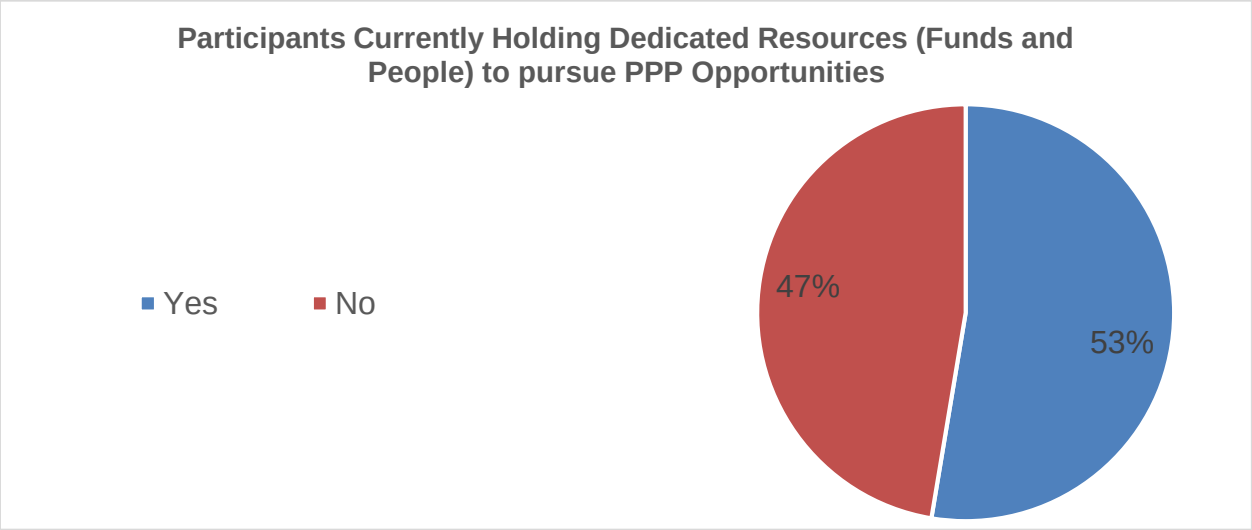
1. Defining tangible goals and objectives – focusing on the expected size of the investment pool, targeted returns and any other socio economic impacts desired.
2. Identifying suitable ventures on a global level (sectors/countries/project types) for consideration through a process of elimination based on the risk return profile. Here some may apply exclusions based on fundamental principles defined in the founding of the company, in line with aspects discussed by Ladekarl and Zervos (2004).
3. Identifying priorities based on the preferences outlined from the above.
4. Raising the capital.
5. Implementing ideal positioning strategies that include the value chain offering and potential partnerships.

From the interviews, the strategy development process maturity varied though the following where considered by all participants as part of their decision making; target project sectors, geographies, resources allocated, identified prospects and the positioning strategy for priority initiatives.

It was found that only 16% of the participants, specifically the specialised infrastructure private equity firms, could confirm having well defined targeted strategies detailing exclusions, financial returns benchmarks, short term project pipelines and investment horizons. Participant organisations lacked clear PPP investment strategies with defined targets. Contracting investors largely respond to the market opportunistically when bankable projects in select countries are released citing the lack of visibility and certainty on project timing as the major drawback to sound investment planning. One investor from the infrastructure sector highlighted the challenges his organisation has had with the cost of maintaining capacity to service PPPs in South Africa with no real opportunity outside of the renewable energy programme in the past 3 years. The

respondents representing contracting organisations with dedicated infrastructure investment divisions (20%) of the total group, confirmed that short term targets could not be clearly defined outside of the current REIPP because of timing uncertainty, making resource planning difficult.

Figure 10: Participants Resourcing for PPP Participation



This then presents a secondary challenge to investors around how to sustain internal capacity to support a strategy in a somewhat dry market as shown in Figure 10: Participants Resourcing for PPP Participation. 75% of the Contracting investors commented that though the financial investment resources could be raised on a project by project basis, the challenge is building and maintaining internal specialist people resources to engage solely in PPP deals is not feasible; and the necessity of this was confirmed through comments from one banking investment as stated. Therefore contractors structured their technical support resources to respond as and when called on by the originating institutions of the state. It could be inferred that this tactic has made the firms far less pro-active and less involved with project origination and planning, alienating the private sector from the process.

Responding to the attractive sectors question, the 84% active in the infrastructure sector all agreed that physical economic infrastructure is considered the most viable sector for investment. This includes power plants, roads, ports, airports and bulk water projects. A further 50% of this group singled out Energy projects as having highest potential and far less barriers to investability improvements compared to other types of infrastructure. In support of this participants gave reasons including the growing energy deficit on the continent along with the relative capacity for coordination through central utilities and energy regulators in most countries. Rail and ports are next on the list in terms of potential but in their comments they were cautiously optimistic about

timing and the coordination requirements for these largely regional initiatives. One participant, an industry regulator and advisor, commented on the viability of regional integration infrastructure programmes acknowledging that maintaining the vision of regional integration is far more relevant to the state than it is practical for investors. An area where investors displayed even more cautious optimism was the provision of social infrastructure, citing issues related to the maturity of the economies, end users and challenges encountered with conflicting ideologies over the role of the state. Various comments were made by the contracting and South African regulatory participants about the failed South African Prisons PPP programme (see Table 8: PPP Case Study Summaries which was largely due to this ideological debate.

Lastly, which geographies are considered more viable for PPP implementation? It is first noted that the trend from responses of the 42% who considered themselves "regional player", investors currently do not drive overall strategies to countries but rather sectors; however they have clear exclusions in terms of "no-go" countries. This list aligns entirely with Figure 4: Sovereign Fragility Heat Map countries listed as fragile in the long term. From the responses, it was concluded that these countries are considered prime for investment: South Africa, Kenya, Ghana and Nigeria, these 4 were mentioned by every participant. These countries have a clear infrastructure deficit, relative long term political stability, improving institutional capability and process and prospects for growth. In the case of Nigeria, respondents' sentiment in the short term varied. The contractors all considered the business environment too volatile to confirm active participation in the short term. All the bankers confirmed actively researching and tracking project finance opportunities in infrastructure but not having yet closed a deal. All comments on Nigeria noted that though there are concerns over state fragility and governance, the country cannot be ignored because it presents significant opportunity in the long run and investors were largely either actively participating in the Nigerian market with its difficulties in other investments or looking for a suitable local partner or acquisition as a point of entry.

Currently the average PPP project value in the market ranges from US$100m - $250m with an average 5-year project development timeline to reach financial close and commence construction.

4.2 Maturity of the PPP investment market; processes and institutions

As discussed in earlier chapters, the PPP model, though old and tested in various countries across the world as discussed in the literature, it is fairly new and not growing rapidly in SSA. Understanding the status of the maturity of the industry i.e. quality of its supporting institutions,

governance and industry engagement mechanisms, is essential to effectively evaluating risk, the questions below were posed to participants;

- ✓ What are the challenges/factors that have hindered optimal utilization of PPPs in the financing and development of infrastructure in SSA?
- ✓ Comment on the aspects of the PPP roll out process that are critical for investability? (Issues can include legislation, coordinating agencies, procurement policies, project planning etc.)
- ✓ How, in your view, might the barriers/challenges you have highlighted be addressed?
- ✓ Who are the key role players and what actions are needed to address the challenges you have highlighted?

This element of the study largely relied on the input from participants in the regulatory and transaction advisory field, just 10% of the total group. In these interviews the opportunity was taken to get specific views on the framework as described in the literature and how it can be applied in practice.

The South African national treasury PPP Unit is tasked with regulating the PPP initiatives in South Africa. The agency has played a critical role in the development and implementation of legislative policy, procurement frameworks and governing processes and guidelines that have supported the growth of PPPs in South Africa. In discussions with officers within the organization on its mandate, role and challenges it brought context to the issues facing the entire industry.

Firstly, the unit's structure was built upon, and constantly strives to align with global best practice as described in the World Bank statutes for PPPs. Officers highlighted their belief that investor confidence is very dependent on transparency and predictability and there is a high degree of trust in the World Bank processes. The Unit's mandate is as described in Table 2: PPP Agency Structures and Roles. The Unit supports and guides line ministries in the identification and formulation of PPPs through the stages outlined in Figure 2: Project Life Cycle whilst appropriately empowered and resourced to deal with what officers described as the design of technical and financial solutions and managing political processes that line ministries would be ill equipped to manage effectively. Describing its first core objectives as ensuring that the state gets value for money by conducting affordability assessments and ensuring good risk allocation. Secondly, running a codified process that gives investors certainty of legislative environment, high standards of work on feasibility studies which in turn will bring more confidence in certainty of returns.

The importance of process definition legislative maturity and institutional technical capacity was then discussed with investor participants. Each participant confirmed that institutionally, South Africa is considered as the leader in the region in terms of mature processes and structures, with the success of the current renewable energy IPP programme, Gautrain and various transport

infrastructure projects cited as evidence. However, over 60% of the respondents also noted that confidence levels had severely dropped in recent years due to failed programmes like the Prisons and the debacle around the Gauteng e-Tolling initiatives. From the literature, we could infer that the successes of the South African industry is largely owed to the placement of the PPP Unit above line mysteries directly in the national treasury and also the level of authority given to the office.

Respondents in the transaction advisory field also noted that Rwanda as a country headed in the right direction in this area having established a central agency following the World Bank guidelines. Countries cited as having real institutional challenges were Zambia, Tanzania both at the time had various proposed PPP programmes at early stages of planning and procurement. Each participant was asked to comment on the fragile states highlighted in Figure 4: Sovereign Fragility Heat Map (Cilliers & Sisk, 2013), all the financial investor participants indicated they would be unlikely to participate in limited recourse financing deals in any of these countries and 50% of the contractors indicated interest if the projects were 100% backed by the multilateral funding agents. Ghana has focused on the legislative enablement in the past 3 years and is now moving on to institutional capacity building; this led to the establishment of a PPP unit in 2014.

From these responses we could reasonably conclude that investors place value and added confidence when dealing with states that have central agencies charged with setting up and managing PPP programmes and also empowered in line with World Bank best practice standards over the role of PPP units as discussed in Dutz et al. (2006). That is, an effective PPP unit is one that carries a regulatory responsibility with approval authority as well as considerable capacity and processes to ensure sound technical and commercial feasibility in the project structure and scope. This level of codification (citing examples from South Africa and Rwanda) has a direct impact on the level of investor confidence in the integrity of the processes.

Further comments on investor experience with current programmes highlighted the current Tanzania PPP roll out in the ports sector as a good example of the challenges that may hinder effective application of the model. An initiative mentioned by 75% of the contracting investor participants and also 50% of the transaction advisors, it warranted further investigation. The Dar es Salaam port development project has attracted much international interest because of its potential as outlined in the detail pre-feasibility study commissioned by the Tanzanian Ports Authority (ECORYS, 2011). However the translation of the ports master plan into viable commercial offers to the market and management of the process has been a challenge. Participants were aware of the project's issues and commented on the lack of clarity in the commercial structure, risk allocation and the quality of information provided to the market in the

recent bid for Berths 13 & 14. The study conducted by ECORYS outlined the main viability assumptions and actions the state would need to take in order to maximize the project potential such as; relocation of the adjacent Berth 12 Oil Jetty and aligning tariff structures for existing Port handling and storage facilities. One participant highlighted that the details in the bid have not clarified the status of those major issues in the pre-feasibility study, leading to uncertainty about the timing of the project and revenue risk allocation. Participants close to the project also indicated that the timeline allowed for the preparation and submission of bids was not feasible even if the information available to bidders was adequate. This leads to the issue of timing and effective project preparation because high impact major projects have a long lead time and involve multiple stakeholders, as evidenced by South Africa's Gautrain Project, see Appendix B Table 7.

The Gautrain case demonstrates the need for a highly coordinated approach for high impact multidisciplinary complex projects. It involved the consolidation of transport master plans and alignment of line ministry objectives in the Gauteng Province of South Africa. The project feasibility was commissioned in 2001 and financial close was only achieved 6 years later. The South African treasury ensured equitable risk allocation and ensured other policies were aligned and in place to ensure demand risk mitigation, specifically the introduction of urban tolling across highways in the region of the Gautrain. Further to this, the comments from the participants indicated that the project was a priority politically and enjoyed substantial political support till commissioning.

In response to the questions about critical indicators of investability, discussed in the next section, investor respondents highlighted the need for quality feasibility studies and equitable risk allocation as a top priority. Noting that over 60% of them highlighted concerns over institutional technical capacity, it confirms that there is a need to supplement state capacity with adequately qualified professionals. The involvement of reputable advisors and professionals is recommended as part of best practice globally as discussed in the literature and 50% of the banking investors named it as a key indicator of investability and going further to note that inadequately prepared project tenders released do far more damage to investor confidence and perception. Tanzania's challenges have dampened investor confidence in the port programme and participants were wary of the outcome of the current bidding process for the projects. The cancellation of the South African Prisons PPPs also left investors greatly concerned about the future of PPPs in the country and the current lack of a clear short term pipeline has not improved the perception.

When asked to comment on regional initiatives, regulators and advisors highlighted that the timeline for PPP development is exceptionally long; the typical period from project identification and pre-feasibility to financial close is on average 5years. The regionally driven infrastructure

strategies are expected to face even more challenges gaining traction; with misalignment of objectives, capacity and risk across the countries. Though participants conceded the political prudence of the approach, practically it is seen as some distance away unless the stronger economies and multilateral funding institutions take on the majority of the risk and back these projects. Experience from previous SADC regional PPPs supports the basis for backing by the stronger economies i.e. The Maputo Corridor Project owed its success to the willingness of the South African government to back the entire project considering Mozambique's fragility at the time.

In discussions with respondents, it was apparent that the lack of institutional capacity and due processes is a major bottleneck in the development of a mature industry. The issues highlighted could be summarized as: (1) the processes and institutions behind the identification and planning of PPPs, (2) The lack of precedent in some countries to refer to as guidelines for processes and risk evaluation and (3) the inability of the public sector to clarify priorities and master plans for infrastructure development.

4.3 Indicators of Project Investability – Risk Considerations

At this point it is clear which global and strategic issues investors consider when considering whether or not to participate in a PPP opportunity, and it is more useful to then look at how risk is managed, from identification, evaluation to effective mitigation throughout the project life cycle. The following questions related to issues more directly linked to risk management and it was duly noted that various examples of these risk issues had been discussed in 4.2; (note that this part of the discussion was heavily aided by the review and completion of the risk register set out from the literature and presented with guidelines, see Table 9: Risk Rating Schedule Template with Guidelines).

- ✓ What are the major risks inherent in PPPs in the countries in whose infrastructure development your organization has participated? (Consider the clusters listed in the register)
- ✓ Are these risks similar across all countries? If not, can you note any specific country differences?
- ✓ Broadly speaking, what risk management strategies could you employ to mitigate the highlighted risks?
- ✓ Do your risk management strategies involve the application of particular risk management products and contracts (e.g., Insurance, derivatives, forward contracts, turnkey contracts and long term O&M subcontracting)?
- ✓ Are there instances where the domestic market limits the applicability of certain risk measures? How?
- ✓ From which (offshore) markets do you then obtain these products? Would there be value in building domestic capacity for these products in the countries concerned?
- ✓ Which one(s) of the risk management measures is critical to successful mitigation of top risks in SSA?

From the review of critical success factors in executing the PPP model, it was expected that the country risk elements would be the major risk issues for investors.

Responses to the comparability of risk and return of PPPs to other investment options in SSA varied slightly. It is important to note on the outset that drivers of risk differed for the participant grouping. All respondents commented that it is not easily comparable due to the added dimension of dealing with the state and political risk. The Advisors and Regulators stated commented that given a stable mature business and political environment, PPPs are lower risk because of the long term contracts and front end loaded risk profile. The bankers largely agreed though one noted the need with the statement but noted that the effectiveness of the project structure is the key to the risk profile despite the political environment. Contracting investors considered PPPs higher risk especially because of the level of direct balance sheet exposure for them if appointed as the development turnkey contractor.

Current Inherent Risk Levels to be considered – refer to Table 7: Risk Rating Result - Industry Consensus**.**

The summarized risk register represents the consolidated response from participants interviewed and may be taken as a reflection of current perception, it reflects the average scores for each risk element. Risk management strategies were proposed as described and participants asked to comment on their effectiveness in the SSA context.

Inherently in SSA, the biggest risks to PPP investment are; (1) Project Selection and Preparation (2) Country Risk – Legislation and Regulation and (3) Market Risk – economic viability and demand; each with an inherent risk level >15. Primarily what participants are saying through the register and their comments is:

- Project Preparation – Probability (4) means investors felt they are more likely in SSA to find inadequately prepared projects (poor feasibility, unclear procurement procedure, poorly defined risk allocation structure), and that the impact on their part would be costly should they engage. 100% of contracting investors noted spending in excess of R15m – R25m on submissions for failed major project bids each year, hence the impact rating (5).
- Legislation and Regulation – Probability (4) means investors felt they are likely to expose themselves to policy risk, corruption and contract enforceability risk in most African countries. This is primarily because in most, there is no precedent for PPP implementation and litigation to reference.
- Economic Viability and Demand – Probability (4) meaning investors are likely to see offers where stability of revenues is not well covered because of market factors like income levels and affordability or the financial stability of the off-taker.

Political risk is inherently a concern to investors, specifically regime change and stability; however it is viewed as declining across most countries, with only 10% of participants having rated high inherently.

At the top of risk issues is the state's ability to conduct project selection and preparation along with creating a mature and predictable legislative and regulatory environment for PPP investment. Without prejudice, investors conclude that South Africa's PPP processes are the most effective comparatively, even with South Africa's recent challenges in implementation and the unclear pipeline, while 20% then mentioned the strides taken by Rwanda. Participants reflecting on potential across SSA noted that East Africa's potential rests in Kenya, Ethiopia and Tanzania.

On the issue of legislative and regulatory risk, Nigeria was one country singled out as a challenge as a key investment destination and high potential for infrastructure. One participant recalled a recent experience where negotiations for power purchase agreements fell through on challenges with governance and the eventual enforceability of the contract. Further reinforcing the status of Nigeria in the Table 4: Ease of Doing Business Ranking: SSA Selected Economies and its issues with historical and current contract enforceability and governance.

Market risk is considered a going concern for public infrastructure investments in the developing economies of Africa; specifically the implications of retail market affordability assumptions and the state's ability to step in and bridge the gap, though the risk is considered far lower in Power projects with term off take guarantees. The risk grows with the retail market revenue models of most toll projects for Rail, Roads and Ports. Participants currently considering the Tanzania ports project were concerned mainly about the allocation of the market risk and stability of the revenues in what they called a poorly defined model.

Political risk is managed through various insurance products and participants from commercial banks and private equity have this as a non-negotiable requirement before proceeding with a transaction. Support from MIGA or their domestic Export Credit Agency is essential. The involvement of a multi-lateral institution like The World Bank or African Development Bank as a funder considerably improves confidence, this sentiment was supported by more than 50% of the investor participants.

The technical and commercial risks (No: 6 – 10 on Table 7: Risk Rating Result - Industry Consensus are considered manageable through sound counterparty selection and transfer through the various contracts. Counterparty risk management was emphasised by one bank investor participant as the key to effectively managing the project development risk. PPPs are largely multidisciplinary projects and without a clear project pipeline to allow for the private sector to organise itself; the timeframe allowed for bidding is mostly inadequate to cover the detailed work that would need to be completed if the scope was unclear during prequalification or bidder selection, further adding strain to the bankability and financial closure process with the banks.

Chapter 5: Conclusion and Recommendations

5.1 Summary of Findings

There is an even split amongst the investors on whether or not to consider country aspects first or the project specifics when reviewing an opportunity because the two are not mutually exclusive in this environment. This was discussed when looking at strategy considerations, it is only clear when it relates to geographical exclusions. Assuming the country assessment is first, respondents highlighted focus areas for risk evaluation:

- **The quality of the investment environment**; how predictable is the business environment? Is the judiciary effective? The rule of law and protection of investor rights? What does historical precedent say about the state's integrity and effectiveness in dealing with legal issues and contracts? Is Political Risk Insurance cover available as a starting basis?
- **The existence of a legislative framework;** is there a PPP policy supported by the necessary laws in place? How predictable is the doctrine in the state? If it stable can they obtain adequate breach of contract cover at a reasonable cost?
- **Development of financial markets;** considerations for the depth and regulation. How open is FDI regulation??

As previously highlighted in strategy considerations, investor participants either excluded or included certain regions and sectors based on the assessment of their business environment prior to any project specific considerations.

Secondly, should the country be found "adequately investable" participants then look into the viability of the project proposed and all the processes followed in its development and summarized as follows;

- **Project preparation;** is the feasibility study of a good quality supported by a reputable transaction advisor? Is the funding structure feasible? Is the project part of a greater country infrastructure plan (priority assessment)? How stable is the source of income i.e. how bankable is the off take agreement or retail market?
- **Quality of governance**; Are the institutions behind the project stable, transparent and empowered? Do they have the experience in managing PPP procurement?
- **Risk allocation and predictability;** is the risk sharing structure proposed fair? Can the consortium adequately identify, quantify, price and mitigate the project risk in the time available for bid submission? With all risk considered (i.e. technical solution and

counterparty risk), is the project financeable? Are all the required risk management products and tools accessible?

- **Long term sustainability;** what is the risk of future dilution from competing service provision projects? Chances of other game changing events throughout the term?

Considering the infancy of the industry and the institutional and legislative challenges facing SSA countries, investors have largely responded opportunistically in the past. There is a growing industry of Private Equity Investors and specialized transaction advisory firms specializing in the sector. Overall the private sector interest is not waning, and governments can expect a competitive response from the market if managing the processes well.

5.2 Recommendations

Infrastructure Public Private Partnerships are a key component of service delivery strategy in many developing and developed countries. Their future in SSA rests on the government's ability to create an environment stable enough for meaningful private sector participation. Building political will, improving legislative and regulatory process and institutional capacity should be at the top of the agenda. Lessons that can be learnt from the experiences of South Africa Kenya and Rwanda could shorten the learning curve overall. Consideration of the best practise statutes should not be taken lightly from a policy and regulatory structure perspective. Providing a clear country level infrastructure priority master plan gives opportunity pipeline visibility allowing for the private sector to organise timeously. All these actions will help build up investor confidence as a start. A further review of how to better use resources and programmes started by the multilaterals funding agencies is needed at a regional level and could be coordinated through organisations like the African Union or NEPAD.

There is further potential for quantitative study into existing risk return profiles for active investments in various countries with or without the characteristics highlighted to test the real correlation between perceived risk and actual return.

Further study into the drivers of growth in Independent Power Producer investments across the region is necessary as this was identified as a core focus area for all actively investing participants.

A study into the actual financial depth limitations of regional financial markets with access to international markets in providing capital to infrastructure initiatives is necessary, if only to identify what the main bottlenecks are to growing the regional capital pool using the more mature financial markets like South Africa as conduits for international private capital.

5.3 Conclusion

Countries with real opportunity in the medium term like South Africa, Nigeria, Kenya and Ghana need to align to the above recommendations where they still have gaps and capitalise on their growth, stability and the improving state of their business environments. The fragile states require more support from multilateral institutions as providers of political risk insurance and funders to encourage private sector participation. As multilaterals, the AfDB and World Bank, may have a theoretical level of political leverage based on the resource base they control and influence they have over the state and that can be used to accelerate project development and transaction closure by showing capital is available and providing guarantees.

The findings do not contradict past studies on risk allocation such as Ahwireng-Obeng and Mokgohlwa (2002) but it does highlight what matters for sub-Saharan Africa in terms of investability indicators for this sector. As detailed by Ladekarl and Zervos (2004), the macro level issues are still relevant but there are more processes related to the project planning and development that need better consideration.

This study focused on summarising the key aspects of risk identified from the literature related to the industry and reflecting on where SSA is along that risk management and process improvement continuum using qualitative insights gathered through interviews with a select group of industry players. It has confirmed that the main risks to investment in PPP projects in SSA are; Project selection and preparation by the state, Maturity and efficacy of legislation and regulation in the sector and the market viability in the long run.

Table 7: Risk Rating Result - Industry Consensus

	Risk Element	Includes such Consequences	Main Causes	Inherent Rating			Mitigation Strategy	Residual Rating			Allocation	Best in class	Worst in Class
				P	I	Level		P	I	Level			
1	**Project Selection and Preparation**	Corrupt tendering, inadequate specification and contract alignment	(1) Inadequate Project preparation and development of commercial offer (2) Lack of skills in public administration	4	5	V-20	(1) Development of central PPP coordination agencies with adequate governing authority (2) Involvement of qualified and reputable transaction advisors	2	5	H-10	Government	RSA, Rwanda PPP Agencies	Tanzania, Ethiopia
2	**Country Risk: Legislation and Regulation**	Policy stability, regulatory capacity and control (Taxes, contract enforceability)	Lack of Policy stability, regulatory capacity and control (Taxes, contract enforceability)	4	5	V-20	Breach of contract cover (PRI) where practical, legal opinion (local counsel) and clear precedent availability.	3	3	H-9	Government/ ECA/MIGA	Rwanda, Zambia, Mozambique	Nigeria
3	**Market Risk: Economic viability and Demand**	Retail market affordability, government fiscal support capacity	Lack of due diligence of marketability of revenue model, market shifts in the medium to long term (competition, political position)	4	4	V-16	Allocate through the off take agreement or government support for gaps identified in the retail market whichever is applicable.	3	3	H-9	Government		
4	**Country Risk: Political Stability**	Inclusivity, democratic rule,, Protection of property rights, expropriation	In country political fragility (poverty, illiteracy, factionalism etc.), no established political ideology related to the role of the state, dysfunctional state departments etc.	3	5	V-15	Political risk insurance (PRI) through MIGA or Export Credit insurance. Involvement of a multilateral funding agency in project.	2	4	H-8	Shared/ Insured		All “red” states in SFA[10], Zimbabwe
5	**Country Risk: Macroeconomic stability**	Exchange rate volatility, inflation, financial markets and systems, interest rates, sovereign credit profile	Highly volatile exchange rate regime, inflation, under developed financial markets and systems, high interest rates, deteriorating sovereign credit profile	3	4	H-12	Short term hedging through market instruments, long term risk allocated to government through Tariff recovery contracts. Cover for convertibility and transferability through facilities from MIGA.	2	2	M-4	Shared	RSA, Nigeria	Ghana, Zimbabwe
6	**Project Development: Construction**	Achievement of milestone dates, managing productivity and labour	Limited counterparty experience, logistical difficulties, external disruptions, skills etc.	3	4	H-12	Strong counterparty experience and financial capacity. Sound contractual agreements with recourse for non-delivery. Define project engagement frameworks with local communities at feasibility.	2	2	M-4	Contractor		
7	**Global Force Majeure Risks**	Natural disasters, wars and acts of terrorism, civil unrest	-	3	4	H-12	Insurance coverage where possible.	3	2	M-6	Insurer		
8	**Project Development: Technology/Commissioning**	Achievement of specified output and plant performance	Selection of untested technology, availability of support infrastructure, alignment of input specifications to technology etc.	2	5	H-10	Strong counterparty experience (technology supplier). Ensure scope covers critical support infrastructure provision either through state or own.	1	5	M-5	Contractor		
9	**O&M: Supply Chain Risk**	Materials sourcing, export & import support	Lack of local input sources, underdeveloped trade support infrastructure, restrictions on importation of capital goods etc.	2	5	H-10	Contractor tasked with O&M to cover commercial and operations risk at this stage.	2	2	M-4	Contractor		
10	**Project Development: Design and Planning**	Design adequacy and planning adequacy, constructability	Limited counterparty experience, protectionist in country localisation legislation	2	4	H-8		2	2	M-4	Contractor		

Note: Ratings legend is attached in Appendix C

[10] SFA – State fragility assessment as per Figure 4: Sovereign Fragility Heat Map

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Appendix A: Questionnaire

Questionnaire Part 1 – PPP Development Process and historical experience

i. How much is your organization involved in PPP infrastructure financing (or development) in SSA?
ii. Is your level of involvement similar across countries in SSA?
iii. What, would you say, are the factors that make your involvement similar/dissimilar across countries?
iv. Which regions/countries in SSA do you consider the most viable for investment in PPPs? Why?
v. Please comment on the aspects of the PPP roll out process that are critical for investability? (Issues can include legislation, coordinating agencies, procurement policies, project planning etc.)
vi. In your opinion, have countries in SSA optimally utilized the private sector to realize development objectives in the infrastructure financing context?
vii. [If the answer to (VI) is NO, what are the challenges/factors that have hindered optimal utilization of PPPs in the financing and development of infrastructure in SSA?
viii. How, in your view, might the barriers/challenges you have highlighted be addressed?
ix. Who are the key role players and what actions are needed to address the challenges you have highlighted?

Questionnaire Part 2 – Approach to project risk evaluation

i. How does risk in a SSA PPP compare to other investment opportunities in the sub-continent?

ii. Briefly outline your PPP investment strategy development process? Is it Country driven vs. Project Specific vs. Sector Specific or a combination?

iii. What would you summarize as the key indicators for investability of a PPP in SSA?

iv. Which key infrastructure sectors in SSA are the most promising from an investment perspective? Why?

v. What are the major risks inherent in PPPs in the countries in whose infrastructure development your organization has participated?

vi. Broadly speaking, what risk management strategies could you employ to mitigate the highlighted risks?

vii. Are there instances where the domestic market limits the applicability of certain risk measures? How? Where do you go for alternatives?

viii. Which one(s) of the risk management measures is critical to successful mitigation of top risks in SSA?

Appendix B: Case Summaries

Table 8: PPP Case Study Summaries

Project	Project development Timeline	Key Stakeholders	Investment Value & Financing Structure	Risk Allocation	Awarded Party	Key Success Factors (or Failures)
		Name and Role				
Gautrain South Africa	✓ Treasury approval of feasibility study 2001 ✓ RFQ 2001 ✓ RFP April 2002 ✓ BAFO April 2004 ✓ Preferred Bidder Award June 2005 ✓ Effective Date September 2006 ✓ Financial Close January 2007	✓ Province of Gauteng acting through Department of Roads and Transport ✓ Nationals Department of Transport ✓ National Treasury	R24bn estimated capital expenditure including R7bn fiscal support. (2007 Terms)	✓ Demand Risk – Shared ✓ Operating Risk – Concessionaire ✓ Development Risk - Concessionaire	**Bombela Concession Company, Shareholders** ✓ Murray and Roberts ✓ Bouygues Travaux Publics ✓ Bombardier ✓ Strategic Partners Group ✓ J&J Group	✓ Strong political support ✓ Strong project team ✓ Continuity in PPP process ✓ Project developed as transport and economic development project
Prisons PPP South Africa	✓ 1st Registration September 2003 ✓ Deregister 2006 ✓ Re-register July 2007 ✓ TAI for feasibility study issued September 2007 for 4 3000 bed high security Prisons: Paarl/East London/Klerksdorp/Nigel ✓ TAIIA RFQ issued October 2007 ✓ 5 Submission received; 4 Consortia shortlisted ✓ TAIIA- RFP issued October 2008 ✓ Bid Submissions May 2009 ✓ Evaluation – not started	✓ Department of Correctional Services ✓ PDNA and Kagiso Financial Services lead advisors.	ZAR1.2 billion investment per prison in 2007 terms. 25 year DBFMO inclusive of the provisioning of Custodial Services 90/10 Debt Equity split.	✓ Demand risk –Government ✓ Operating Risk – Concessionaire ✓ Construction Risk – Concessionaire ✓ Change in Law – Government	Policy Review undertaken by Department in2010. Outcome required material changes to the RFP Projects cancelled by Department	✓ Changes in political and executive leadership in Department impacted decision making and sentiment towards PPPs. ✓ Market confidence suffered as a result of the cancelling of projects. ✓ Huge losses for market in terms of development costs. ✓ Impact on other PPP projects that came to market after. ✓ Policy debate was ongoing when projects released
Tanzania Ports Development – Dar es Salaam Port Berths 13 & 14	✓ Project identification 2006/7 ✓ Ports master plan published 2008 and advisor appointed for pre-feasibility study ✓ Pre-feasibility Study Published 2009 ✓ Berth 13&14 RFQ/EOI Sepember 2014 ✓ Berth 13&14 PPP Tender January 2015 ✓ Anticipated Tender Submission March 2015 ✓ Anticipated Award July 2015	✓ Tanzanian Ports Authority ✓ CPCS Transcom International pre-feasibility consultant ✓ No bankability study provided ✓ No advisor officially linked to the current procurement process	Design-Build-Operate-Transfer 25yr Concession Estimated at US$350m total project development cost. Anticipated Debt/Equity ratio 65/35.	✓ Demand risk – Concessionaire ✓ Construction risk – Concessionaire	TBD 10 Prequalified Bidders in January 2015.	✓ TBD

Appendix C: Risk Rating Template with Guidelines

Table 9: Risk Rating Schedule Template with Guidelines

Impact Rating	Financial Impact Loss of Profit Increased Capital	Time or Schedule Delays/Improvements	b. Performance/Output
1. Insignificant	≤ 1% of Project value	≤ 1% of Project Duration	Robust well defined system, well implemented with very rare failure.
2. Minor	> 1% but ≤ 4% of Project value or .	> 1% but ≤ 4% of Project Duration	System deviation (Occasional failure).
3. Moderate	> 4% but ≤ 6% of Project value	> 4% but ≤ 8% of Project Duration	System defined and implemented but failing regularly (repetitive failure.
4. Major	> 6% but ≤ 10% of Project value	> 8% but ≤ 10% of Project	System defined, not implemented (system failure - one cause).
5. Unacceptable	> 10% of Project value	> 10% of Project Duration	No system (Significant system failure - multiple causes).

		Impact (I)				
		1. Insignificant	2. Minor	3. Moderate	4. Major	5. Unacceptable
Probability (P)	5. Almost certain	**M-5**	**H-10**	**V-15**	**V-20**	**V-25**
	4. Likely	**M-4**	**H-8**	**H-12**	**V-16**	**V-20**
	3. Possible	**M-3**	**M-6**	**H-9**	**H-12**	**V15**
	2. Unlikely	**L-2**	**M-4**	**M-6**	**H-8**	**H-10**
	1. Rare	**L-1**	**L-2**	**M-3**	**M-4**	**M-5**

	Risk Element	Includes such Consenquences	Inherent Rating			Mitigation Strategy	Residual Rating			Allocation	Best in class	Worst in Class
			P	I	Level		P	I	Level			
1	**Project Selection and Preparation**	Corrupt tendering, inadequate specification and contract alignment	1	1	L1		1	1	L1			
2	**Project Development: Design and Planning**	Design adequacy and compliance to all laws, constructability	1	1	L1		1	1	L1			
3	**Project Development: Construction**	Achivement of milestone dates, managing productivity and labour	1	1	L1		1	1	L1			
4	**Project Development: Technology/Commissioning**	Achievment of specified output and plant performance	1	1	L1		1	1	L1			
5	**Country Risk: Political Stability**	Inclusivity, democratic rule,, Protection of property rights, expropriation	1	1	L1		1	1	L1			
6	**Country Risk: Legislation and Regulation**	Policy stability, regulatory capacity and control (Taxes, contract enforceability)	1	1	L1		1	1	L1			
7	**Country Risk: Macroeconomic stability**	Exchange rate volatility, inflation, financial markets and systems, interest rates, sovereign credit profile	1	1	L1		1	1	L1			
8	**O&M: Supply Chain Risk**	Materials sourcing, export & import support	1	1	L1		1	1	L1			
9	**Market Risk: Demand and Pricing**	Retail market affordability, government fiscal support capacity	1	1	L1		1	1	L1			
10	**Global Force Majeure Risks**	Natural disasters, wars and acts of terrorism, civil unrest	1	1	L1		1	1	L1			