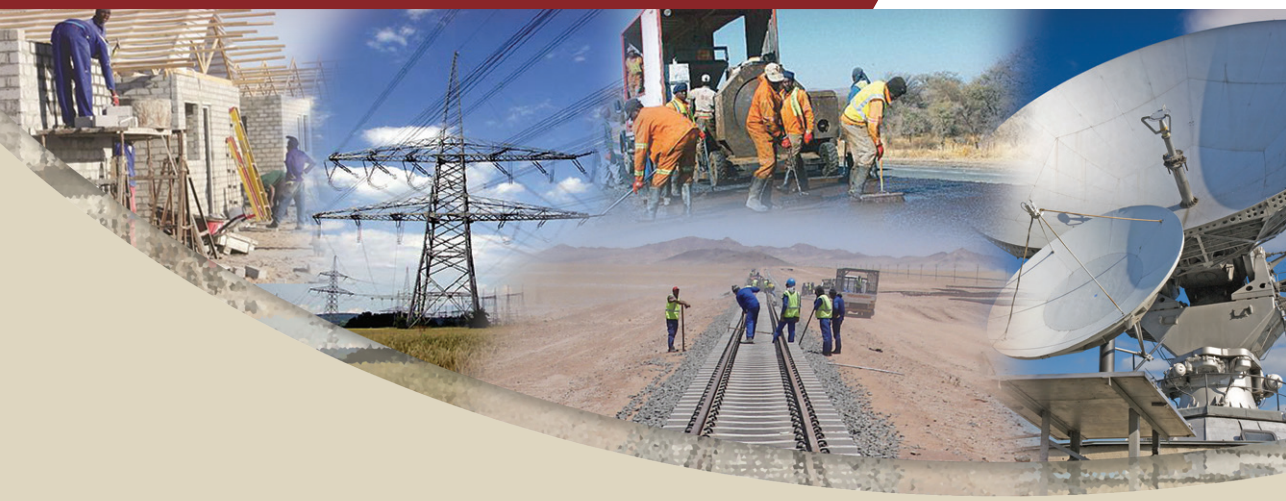
16th Annual Symposium

Bank of Namibia



Financing of Infrastructure for Sustainable Development in Namibia

2014

Bank of Namibia
16th Annual Symposium

September 2014

Financing of Infrastructure for Sustainable Development in Namibia

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PREFACE

The Bank of Namibia held its 16th Annual Symposium at the Windhoek Country Club on 25th September 2014 under the theme: Financing of Infrastructure for Sustainable Development in Namibia. The selection of the theme was informed by the current dire need of infrastructure investment in the country and the realisation of the significance of infrastructure investment in promoting economic growth as outlined in the Fourth National Development Plan (NDP4).

The objectives of symposium were:

- To identify alternative models to effectively finance infrastructure in Namibia.
- To tap from international best practices/models to adequately finance infrastructure development.

These issues were addressed through presentations given by a local and international speakers supplemented by the panel discussions comprising of representatives from the private sector.

This booklet contains the papers presented by the speakers at the symposium. It also includes a summary of the key policy issues emanating from the symposium and recommendations on the way forward.

Welcoming Remarks

By Mr. Ipumbu Shiimi, Governor of the Bank of Namibia
16th Annual Symposium
25th September 2014, Windhoek Country Club
Theme: Financing of Infrastructure for Sustainable Development in Namibia

Director of Ceremonies;
Honourable Ministers and members of Parliament, present;
Members of the Diplomatic corps;
Board members of the Bank of Namibia;
Honourable regional Governors and Councillors, present;
Permanent Secretaries;
Distinguished speakers and panellists;
Captains of the Industries;
Members of the Media;
All invited guests;
Ladies and Gentlemen.

Good morning! I am delighted to welcome you to this prestigious event of the Bank of Namibia. Allow me to extend my heartfelt welcome to our speakers who will share their views and knowledge on this important topic. To our international speakers, welcome to Namibia! Please take time to experience our beautiful country and the warmth of its hospitality!

This year marks the 16th year since the Bank of Namibia started hosting annual symposia. The purpose of this annual symposium is to promote the exchange of ideas on economic issues, and thereby promoting policy dialogue. At this platform, we have covered a broad range of topical issues spanning from central banking, finance, economics and social development. This years' theme is on **"Financing of Infrastructure for Sustainable Development in Namibia".** This is a topical and important subject both at the national and international level.

My job is not to go into the details of the **possible options of infrastructure financing in Namibia,** because there are experts here who will do that. I am going to focus my remarks on three issues, which are:

- The importance of the public infrastructure investment to development
- The emerging funding gap for infrastructure
- The importance and opportunities for Private Sector participation in public infrastructure funding

The importance of the public infrastructure investment to development

Why is infrastructure investment important for development? You will agree with me that investment in infrastructure help to spur economic productivity, create employment, improve trade flows, and overall enhance economic competitiveness. As you are all aware, Namibia faces various socio-economic challenges including poverty, income inequality and high levels of unemployment. Therefore, the expansion of infrastructure in Namibia will apart from the long term benefits mentioned already, also make a meaningful contribution towards eradication of poverty and creation of jobs.

NDP 4 stressed that; and I quote "If we do not increase investment in our infrastructure, industries across the board will be affected, including the nascent transport and logistics sector, the manufacturing sector, the agricultural sector, the mineral sector, and the tourism and hospitality sector – all of which have high potential for economic growth and job creation."

The state of infrastructure in Namibia and the emerging funding gap

Generally, Namibia has a good core physical infrastructure relatively to other Sub-Saharan African countries. Despite vast geographical size, Namibia has managed relatively well to develop good transport networks, electricity distribution lines, water, and telecommunications across the country. However, more investment in infrastructure is still needed if Namibia is to achieve higher and sustained growth and achieve Vision 2030. As some of the key existing infrastructures have reached their lifecycle, there is now a greater need to revamp the old ones and build the new ones. Priority infrastructures, among others include building of new roads, deepening and modernising of the port facilities as well as houses and upgrading of power generation capacities.

Since Independence, the Namibian Government have consistently invested in various development projects of an infrastructure nature.

Despite these efforts, **the rate of investment in infrastructure, unfortunately, lags behind the levels required** to propel Namibia's economic growth to high and sustainable levels, as envisioned in NDP4 and Vision 2030. Obviously, the government alone cannot be expected to fund all the identified infrastructure needs. This in itself reflects a need for a paradigm shift of some infrastructure funding responsibilities from government to the private sector.

The importance and opportunities for the private sector participation in infrastructure funding

Ladies and gentlemen!

Against the backdrop of limited resources and ever increasing competing national needs, the following questions arise: **How do we finance the infrastructure required to propel the Namibian economy? And what are the opportunities for private sector participations in infrastructure funding?**

To bridge the infrastructure gap, government need to encourage private investment in infrastructure. Private sector participation does bring additional benefits other than capital. These benefits include among other the end-user benefits of a more competitive environment, mobilisation of the private sector's technological expertise and managerial competencies in the public interest. Moreover, experiences have shown that private sector participation in infrastructure in recent decades helped boost both the coverage and efficiency of infrastructure services. The private sector and government should, therefore, work together to broaden the range of investable assets and strengthening domestic returns on real sector.

Over the years, Namibia generated large private savings which continues be largely invested abroad, particularly in South Africa. The savings that are outside Namibia could in one way or another help us meet the infrastructure needs that we have in this country. Efforts towards addressing this phenomenon have seen the tightening of domestic investment regulations for pension and insurance industries. Currently, a significant portion of the local assets portion are invested in dual listed shares, while less than 2 percent of the pension and insurers' funds are invested in unlisted investments. This means that there is still scope for institutional investment in infrastructure, which needs to be explored further.

The key and critical questions that remain are:

(i) will the infrastructure projects in its current form be attractive for institutional investors, and
(ii) how must it be packaged in order to meet investor's requirements?

This symposium presents an opportunity for all stakeholders to deliberate on these questions and explore mechanisms of funding infrastructure in Namibia. The experts from outside Namibia will guide us on how to tackle the issues but also to avoid pitfalls that we can ill-afford at this stage.

Director of ceremonies, Ladies and Gentlemen!

I would like to pose a few questions which I hope will be answered as we deliberate on this important issue:

- What is the role of the private sector including the institutional investors in financing infrastructure?
- How can Government and the private sector collaborate in financing infrastructure to the benefit of everyone?

Let me conclude with a quote by Roger McNamee – an American businessman, investor, and venture capitalist - "We need to stop thinking about infrastructure as an economic stimulant and start thinking about it as a strategy. Economic stimulants produce bridges to nowhere. **Strategic investment in infrastructure produces a foundation for long-term growth".**

I thank you for your attention!

Keynote Address

By Mr. Andries Hungamo, on behalf of:
Hon. T. K. Alweendo, Director-General, National Planning Commission
on the occasion of the 16th
Annual Symposium: Financing of Infrastructure for Sustainable Development in Namibia
25th September 2014, Windhoek Country Club

Governor of the Bank of Namibia, Mr. Ipumbu Shiimi;
Distinguished Speakers at this 16th Annual Symposium;
Ladies and Gentlemen and Dear Participants.

It is my distinct honor to officiate at this 16th Annual Symposium of the Bank of Namibia. The topic chosen for this symposium not only that it is timely but it is more relevant for our country's development in particular in the context of the implementation of the Fourth National Development Plan (NDP4).

The need for infrastructure development is one of the great global challenges of our time, and thus Namibia's challenge too. While the term infrastructure can be widely defined, I want to believe that for the purpose of today's discussion, we are referring to the basic physical structures needed for the operation and provision of services and facilities necessary for our economy to function. This include; roads, bridges, water installations, electricity grids, telecommunications, harbors and so forth- these are defined as components of interrelated systems providing commodities and services essential to enable, sustain or enhance societal living conditions.

The importance of infrastructure in support of economic growth has long been recognized however the provision of infrastructure services to meet the demand of businesses, households and other users is one of the major challenges of economic development. The failure to invest in infrastructure determines the future development of a particular country or region, thus infrastructure is an important term in judging a country or region's development.

Infrastructure is important for the services it provides that supports economic growth by increasing the productivity of labor and capital thereby reducing the cost of production and raising profitability, income and employment. It is further an important factor in determining the location of economic activity and the kinds of activities or sectors that can be developed in a particular economy. Infrastructure investment and consumption of infrastructure services have significant implications for achievement of sustainable development objectives as infrastructure services encourages new investment across the economy, underpin many aspects of economic activity and social activity, facilitate the flow of ideas and technological transfer and production of goods and services; facilitate regional economic growth and regional integration. Infrastructure promotes efficient resource allocation through easier access for labour and materials to particular

localities, allow alternative activities, employment opportunities, provide the necessary economies of scale for urban agglomeration. Studies show a direct relationship between economic infrastructure and economic growth running in both directions reinforcing each other in a vicious cycle.

Infrastructure services contribute to poverty reduction and improvements in living standards in several ways. The catalytic role of infrastructure in poverty reduction has received renewed recognition in the Millennium Development Goals in areas of water supply, sanitation, access to health and educational facilities and therefore improved outcomes. The existence of extensive and efficient infrastructure reduces vulnerability in terms of health risk outbreaks, drought, floods and other calamities which befall communities at a particular time.

Ladies and Gentlemen,

There exist in the world today a huge gap between the required infrastructure and the existing infrastructure. Statistics on the global level shows that an estimated 1.1 billion people live without safe drinking water, 1.6 billion people live without electricity, 2.4 billion people live without proper sanitation, and more than 1 billion are without access to an all-weather road or telephone services. Contrasting to the Namibian situation, 20 percent of households in Namibia have no access to safe drinking water, about 70 percent of households have no access to electricity for cooking, and 60 percent of households have no access to proper sanitation according to the 2011 Population Census.

There is a huge discrepancy in accessing these services across regions and between rural and urban areas and the gap is more pronounced in Sub- Saharan Africa and Asia. Therefore the key to African renaissance is in the development of extensive, adequate and quality infrastructure.

The gap in access to basic infrastructure services in part reflects inadequate levels of investment. In most low and middle income countries spending on infrastructure constitutes only half of the required spending on investment, i.e. those countries spends between 3-3.5 percent of GDP in comparison to the required 6.5-7.5 percent of GDP. The lack of funding on account limited domestic capacities and dwindling official development assistance is the reason for the low investment in infrastructure.

Namibia's investment in infrastructure has been steady and modest. There has been several sources of investment in infrastructure and the list here is not exhaustive and among others include; through government budget expenditure, through state-own enterprises who receives funds direct from government but also raise funds from money markets inside or elsewhere; private sector (through foreign and domestic direct investment); through dedicated Funds (such as Road Fund Administration, Energy Fund etc.); and through the offshore development assistance. I am convinced that this

will be elaborated through the presentation on the overview of financing infrastructure in Namibia.

Ladies and Gentlemen,

The national budget is the main source of infrastructure financing among government financing initiatives. The Government capital expenditure since independence up until 2009 has been less than 6 percent of GDP contrary to NDP1 pronouncement to have capital spending at 6 percent of GDP. The average capital spending for the years 2010 to 2012 averages around 6 percent this can be attributed partly to the implementation of the Targeted Invention for Economic Growth and Employment Creation Programme.

The average Gross Fixed Capital Formation (investment) since 1990 to 2012 averages 19 percent of the GDP in contrast to 14 percent of GDP pre independence period (1980-1989). While there has been a slight improvement after the year 2000, investment has been hovering around 22 percent of GDP in exception of 2008 and 2012 when it reached a 25 percent mark as percentage of GDP. It is evident that this level of investment in the country is insufficient to propel economic growth to high and sustainable growth levels and thus create the much needed employment in the economy.

On average the investments in the country has been 30/70 split in favour of private investment, this also is reflected in the contribution to GDP by government and private sector. The mining and quarrying sector has been receiving more investments than any other sector in the country since independence followed by the general government. While investment in agriculture has been low, it has shown consistent positive growth at an average of 4 percent, given that this sector employs the majority of the labour force, such investment is extremely low. The level and pattern of investment in the country, therefore deserves much attention and pro-active action to change the status quo.

There are lessons to learn from the previous and current levels and patterns of investment in the country. There is a need to continue to harness and enhance private investments, even to non-traditional sectors. There is a need to orient government investment to sectors with high propensity to attract further investment and create employment such as roads, railways and harbors. Furthermore there is a need to strike a balance of government investment and consumption for sustainable development and increase levels of government investment in line with agreed policies. Namibia as a larger and sparsely populated country, deliberate action for urbanization will reduce the cost of putting infrastructure and reap the benefits of the economies of scale. Perhaps, the most important aspect is to re-evaluate our financing model(s) for infrastructure development.

Ladies and Gentlemen,

Indeed Namibia is not alone in the struggle to secure funds to finance the most needed infrastructure and the reality is that there is a huge gap between the required infrastructure

and available resources to finance such infrastructure. Advanced economies such as United Kingdom, Australia including the United States of America and many others are relooking their financing models for infrastructure. The national budget's fiscal space is reaching its limits quickly toward unsustainable levels of government expenditure.

If current trends are something to go by, then it is a forgone conclusion that our generation and the generation to come will not be able to enjoy the benefits and social upliftment, which comes with extensive, efficient and quality infrastructure. The result will be a total failure in achieving the aspirations of Vision 2030, that of a prosperous and industrialized country by 2030. Hence the need therefore to look at emerging models elsewhere in the world to enhance our infrastructure development strategies at a faster rate than it is currently.

The shortcomings of relying on Government budget are that funds are never sufficient; the traditional way of government procurement process is slow and tedious; there is high cost associated with the implementation of projects; and over charging by private service providers and lack of proper and watertight supervision in many instances result in poor quality deliverables. There is also inherent inefficiencies and mismanagement in most of the State-Owned Enterprises something which is not impossible to correct, but there is no appetite to do so.

Ladies and Gentlemen,

The Public Private Partnership (PPP) model holds some promises in delivering much of our needed quality infrastructure within relatively shorter timeframes and in the process government will be able to harness the private sector's experience, innovative approaches and efficiencies. Although, PPPs are not cheap by themselves, the study done by the University of Melbourne in 2008 comparing 25 PPP projects and 42 government owned and funded projects in Australia indicated that average cost escalation under PPP contracts during construction was 4.3 percent compared with 18 percent for traditional procurement contracts, while average delay during the same period was 2.6 per cent of PPPs compared with 25.9 percent traditional cost.

Other innovative ways of financing infrastructure is through Pension Funds, Sovereign Wealth Funds, Community Infrastructure Bonds and Infrastructure Development Funds. Pension Funds mobilizes resources from the public through "forced" savings and in many instance they accumulate billions of money and these are invested somewhere else where they create economic capacities for growth and employment. The current thinking is how to tap in these funds without jeopardizing the Funds' commitments.

The idea of using these funds into non-listed shares could be exploited to use these funds to finance public infrastructure. However, for this to happen, it needs long term planning of infrastructure development from government to build confidence for potential investors.

Sovereign Wealth Funds were originally created when governments had budget surpluses or excessive liquidity and were mainly used to reduce government revenue volatility, to counter the boom-bust cycles' adverse effect on government spending and the national economy, build up savings for future generations and may be of economic, or strategic in natures such as in times of war or developing economies as financial centers in case of Singapore and South Korea. Possibilities exist that such a Fund could finance strategic infrastructure development in the country.

Community Infrastructure Bond, this is an emerging model to finance infrastructure constructed and underpinned by suite of revenue streams rather than traditional tax revenues. Such a bond would be issued by an independent Special Purpose Vehicle (SPV). Something coming closer to such an idea is the land tax, which is ring-fenced and allocated only for the purpose of land acquisition and development. Housing could be a potential candidate for such an arrangement. However, advocates for this model acknowledge that there is no "all size fits all", therefore, the structuring and determination of revenue streams depends on individual situation and circumstance and a hybrid of options is recommended.

Infrastructure Development Fund- This is a government created infrastructure fund which could be financed through grants, equity participation, concessional loans or raising funds on the capital markets for eligible projects. The examples include the European Investment Bank, the current negotiated SADC Development Fund, India Infrastructure Finance Company etc. The advantages of an infrastructure fund include supporting projects with high net public benefits, better decision-making on project selection, independent from government bureaucracy and a willingness to fund Greenfield developments, which can be sold off later and proceeds recycled into the fund for future projects.

Ladies and Gentlemen,

The consideration of any infrastructure financing model in Namibia, it should first and foremost originate from the realization that Namibia needs a large amount of both public and private investment to address the economic, social and environmental infrastructure deficit. The solution lies there between government and the private sector working together towards a common goal of increasing economic returns in a win-win scenario. This is not a far distance fetched idea; experience somewhere else shows that innovative financing models have helped countries to narrow the gap between required resources and available resources.

The importance of infrastructure cannot be overemphasized; infrastructure brings greater economic returns on investment than many other forms of capital expenditure. Studies show that infrastructure produces $10 or more of benefit for every $1 spent. Investment in infrastructure is well recognized in having a lasting impact on the long-term prospects for the economy by stimulating the economy, increasing productivity and competitiveness of the economy. Infrastructure reduces poverty by facilitating easy

access and promoting good outcomes in health, education, sanitation and so forth, thus lifting the standard of living of the people.

This symposium on Financing Infrastructure for Sustainable Development will assist in deliberating for the plausible financing model for NDP5 and beyond. I therefore declare this symposium officially opened.

I thank you.

Infrastructure Financing in Namibia[1/2]

Heinrich Namakalu, Evelina Niishinda, Immanuel Kadhila,Helvi Fillipus, Nicholas Mukasa and Dr. Postrick Mushendami

ABSTRACT

This paper analyses the state of infrastructure in Namibia. The paper also reviews the existing infrastructure and estimates the infrastructure requirement for the next 5 years and beyond. The paper estimates infrastructure requirement at N$223.6 billion. Out of the total required figure, N$73.5 billion is expected to come from either borrowing, government subsidy or user fees. As such, the paper estimates an infrastructure financing gap of N$150.0 billion. To finance this gap, the paper recommends alternative funding solutions to complement the traditional sources of finance. These include the use of Public Private Partnerships (PPPs), establishment of an infrastructure fund for Namibia and utilisation of institutional savings.

1. INTRODUCTION

1. **The Namibian Government has identified scaling-up investment in infrastructure as one of the key enablers to achieve its development objectives as outlined in the fourth National Development Plan (NDP4).** These include achieving high and sustained growth levels to reduce poverty, income inequality and high unemployment. The specific areas where infrastructure development is required include transport (road, rail, maritime and aviation), electricity, water, housing and ICT.[3] The question is "how can Namibia finance these infrastructure requirements needed to unlock the potential economic benefits?" And what are the new funding mechanisms that can be employed to ensure a balance between maintenance of existing infrastructure and the expansion of new infrastructure?

2. **Reliable infrastructure is critical for high and sustained economic growth.** The African Development Bank estimates that poor or inadequate infrastructure in sub-Saharan Africa (SSA) reduces the region's Gross Domestic Product (GDP) by up to 40 percent. Relative to SSA, Namibia has a good core physical infrastructure, largely in terms of transport networks, electricity distribution lines, dams, and telecommunications. For instance, the 2012 DHL Global Connectedness Index ranked Namibia the 109th most globally connected country in the world out of 140 countries (Ghemawat, & Altman, 2012). Nonetheless, further investment in infrastructure could enhance economic productivity, accelerate activities in the manufacturing and

1 *The focus of the paper is on financing of public infrastructure in Namibia.*
2 *This paper was presented by Ms Florette Nakusera, Director of Research, at the Symposium.*
3 *See Chapter 9 of the National Development Plan (NDP4), for an extensive discussion on public infrastructure.*

agricultural sector, enhance economic competitiveness, encourage job creation and strengthen Namibia's trade corridors. Further, improving water, sanitation, energy, housing, and transport systems could help reduce poverty; while investments in ICT could promote growth, improve delivery of health and other services and expand the reach of education.

3. **The Namibian Government, at all levels, central, regional and local, has been investing in infrastructure.** The rate of investment, however, lags behind the levels required to propel Namibia's economic growth to high and sustainable levels, as envisioned in NDP4. The latter can be supported by the quote from NDP4, which stressed that "if investment in infrastructure is not increased, industries across the board will be affected, including the nascent transport and logistics sector, the manufacturing sector, the agricultural sector, the mineral sector, and the tourism and hospitality sector – all of which have high potential for economic growth and job creation."

4. **Maintenance of infrastructure has also lagged behind.** As a result, a series of rail accidents have been witnessed in the past and the maintenance backlog on the rail infrastructure is in excess of 20 years (TransNamib, 2014). Meanwhile, Information and Communication Technology (ICT), especially the data network, has limited depth coverage and requires further improvements to keep abreast of international developments in this arena. Thus, the majority of the population is still excluded from vital information and other related benefits of ICT. The exclusion of rural masses may, therefore, contribute to the drag on economic performance of Namibia.

5. **Namibia continues to be a net exporter of capital.** The large savings generated by the economy could be utilised to meet the infrastructure investment needs. There is a need, therefore, to create incentives to increase the total funding of infrastructure. Different forms of financing will be suitable for different projects in various sectors and institutional settings. As such, variant financial instruments should be developed to cater for the widespread and diverse infrastructure funding needs. This way the country could also work towards further developing the domestic financial markets in line with the aspirations of the Namibia Financial Sector Strategy.

6. **This paper will analyse the state of infrastructure in Namibia, with the key focus on sources of funding, funding needs, the funding gap and possible funding solutions to complement the traditional sources of finance.** Following this introductory section, the paper is arranged as follows: Section 2 provides a detailed overview of existing infrastructure in Namibia. Section 3 outlines the existing legislative and regulatory environment with a bearing on infrastructure financing; Section 4 reviews existing practices in terms of financing infrastructure, while Section 5 estimates the infrastructure financing gap and outlines alternative funding solutions to traditional modes of funding. Lastly, Section 6 draws conclusions to the study.

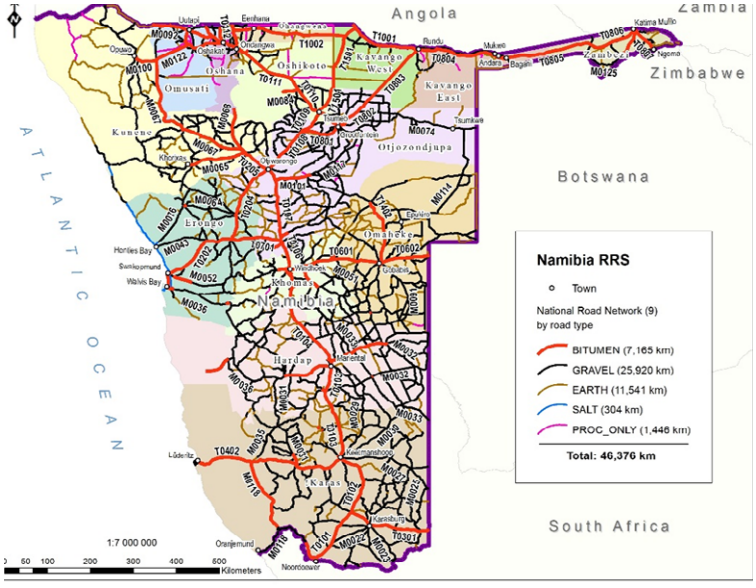
2. OVERVIEW OF INFRASTRUCTURE IN NAMIBIA

7. **Infrastructure development and upgrading is one of the key focus areas in the NDP4, currently under implementation.** This section highlights the current stock of road, railway, water, port, energy and airport infrastructure in the country, with emphasis on near-term expansion and upgrading plans.

2.1. Road Infrastructure

8. **Namibia has a well-established road infrastructure network of about 46,376 kilometres, some of which need urgent rehabilitation.** The majority of towns and communities can be reached by a network of quality bitumen and gravel trunk, main and district roads (see Fig. 1). The country is linked by all-weather bitumen roads to Angola, Zambia, Zimbabwe, Botswana and South Africa. Major roads provide a fast and comfortable road link between Namibia's port of Walvis Bay on the Atlantic coast and landlocked neighbouring countries. This extensive road network facilitates trade between Namibia and its neighbouring countries. In particular, the Trans-Kalahari Highway links the port to Botswana and the Gauteng province, the industrial heart of South Africa. Similarly, the Trans-Caprivi Highway links Namibia's landlocked neighbouring countries, including Zambia and Zimbabwe to the port of Walvis Bay. The Trans-Cunene further links the port of Walvis Bay to neighbouring Angola. Despite such extensive road network, most of the country's road infrastructure has been in existence prior to independence and are in urgent need of rehabilitation and maintenance, as outlined in NDP4 document.

Fig. 1: Road Network Map



Source: Roads Authority

9. **The management of the national road network is entrusted to the Roads Authority (RA) in terms of the Roads Authority Act 18 of 1999.** The RA manages the Namibian road user charging system by securing and allocating funding for the achievement of a safe and economically efficient road system. Funding is allocated to projects and programmes for the preservation and development of the national road network and major urban arterials. In carrying out its mandate of ensuring the development of the road infrastructure, the RA uses its Road Management System to monitor the condition of the roads and to ensure that roads that need urgent rehabilitation, resealing and re-gravelling will be attended to when funds are available. A number of major road upgrade and rehabilitation projects are underway and several are planned in the coming years – see Table 1.

Table 1: Major road projects underway and planned between 2014 and 2030

	Distance (km)	Implementation year	Estimated cost (N$ mill)
Windhoek-Okahandja	97	2014 - 2019	2,867.9
Oranjemund- Roshpinah	100	2014 - 2018	547.3
Gobabis-Aminuis-Aranos	245	2014 - 2018	1,241.6
Otjinene-Grootfontein	231	2014 - 2018	593.1
Liselo-Linyanti-Kongola	205	2014 - 2017	338.0
Omafo-Ongenga-Outapi	98	2014 - 2018	856.5
Omakange-Ruacana	85	2014 - 2018	338.1
Bridges on Rehoboth-Mariental road	-	2014 - 2016	52.6
Swakopmund-Walvis Bay rehabilitation	30	2014 - 2018	886.9
Swakopmund-Walvis Bay upgrading	44	2014 - 2018	1,317.3
Swakopmund-Henties Bay-Kamanjab	402	2014 - 2019	546.5
Ongwediva-Ondangwa-Omuthiya	142	2014 - 2019	3,486.2
Okahandja-Otjizondu-Okandjato	180	2015 - 2019	629.0
Windhoek-HKIA	44	2014 - 2019	1,766.4
Grunau-Keetmanshoop-Mariental	386	2014 - 2019	373.5
Rehoboth-Mariental road rehabilitation	178	2015 - 2019	295.4
Ohangwena region	301	2016 - 2030	424.0
Omusati region	358	2016 - 2030	396.4
Oshana region	149	2016 - 2030	179.3
Oshikoto region	378	2016 - 2030	234.9
Kavango region	241	2016 - 2030	500.1
Zambezi region	84	2016 - 2030	220.4
Kunene region	283	2016 - 2030	246.3
Omaheke region	208	2016 - 2030	266.0

Source: Roads Authority

2.2. Railway Infrastructure

10. **All railway networks in Namibia are managed by TransNamib in terms of Act no. 28 of 1998**. The railway network comprises of 2,382 km of narrow gauge track with the main line running from the South African boarder at Ariamsvlei via Keetmanshoop to Windhoek, Okahandja, Swakopmund and Walvis Bay. Northern section links up with Omaruru, Otjiwarongo, Otavi, Tsumeb, Oshikango and Grootfontein (Fig. 2). The east is linked from Windhoek to Gobabis, while the South from Windhoek-Keetmanshoop to Lüderitz.

11. **Railway transport constitutes an important element of Namibia transport infrastructure, especially for bulk freight.** Rail in Namibia transports in excess of 1.8 billion tonnes of freight every year and a substantial number of passengers. There has been a recent extension project of the northern railway from Tsumeb to the Angolan border, catering for both freight and passengers. Other projects yet to be undertaken include plans to upgrade the railway lines from Rehoboth to Keetmanshoop (410 km), Keetmanshoop to the South African border (361 km), Keetmanshoop to Aus (226km), Windhoek to Usakos (210km), and Walvis Bay to Tsumeb (600 km).

Fig. 2: Railway Map

Source: TransNamib

12. **Although the railway sector has seen more investment in the recent past, it still requires substantial funding.** In this regard, work on a number of crucial projects has started recently. These include, the 400km Kranzberg-Tsumeb Railway Rehabilitation Project, expected to be completed by March 2015; the conversion of 30 cattle wagons into containers project, which will costs N$6 million; and refurbishment of fuel rail tank cars. TransNamib also plans to implement other projects between 2015 and 2017, such as commuter passenger trains to ease congestion on the roads, particularly in the Khomas Region. The trains will cover the City of Windhoek and also connect Windhoek to Okahandja, Windhoek to Rehoboth and Windhoek and the Hosea Kutako International Airport (HKIA).

13. **The Governments of Namibia and Botswana also signed an agreement to build the Trans-Kalahari Railway (TKR).** This consists of a 1,500 km heavy-load railway line linking Botswana's coalfields and Namibia's railhead at Gobabis. Alongside the construction of the new railway line connecting the two countries, the TKR project will also involve the overhaul and refurbishment of the railway line between Gobabis and Windhoek. The TKR project is expected to cost about N$100 billion, which will be sourced mainly from the private sector. The basic aim of the TKR project is to expand freight capacity on congested transport corridors within the SADC region and offer increased trading opportunities for landlocked countries.

2.3. Airport Infrastructure

14. **Namibia has eight airports, managed by the Namibia Airports Company (NAC).** Major airports in Namibia include, HKIA, Walvis Bay Airport and Keetmanshoop Airport, which are both equipped for wide-bodied aircraft. Small airports include, Rundu, Mpacha, Ondangwa, Oranjemund, Swakopmund and Eros. Air Namibia has domestic scheduled flights to Lüderitz, Mpacha, Ondangwa, Oranjemund, Walvis Bay and Windhoek. International destinations include Cape Town, Frankfurt, Johannesburg, Luanda, Maun and Victoria Falls (Air Namibia, 2014).

15. **Crucial capital projects were carried out in the area of airport service infrastructure over the last five years.** These include the upgrading and renovation of terminal building and extension of public parking at HKIA. Going forward, the NAC is envisaging to construct a new terminal building and a second runway at the HKIA. The intention is to upgrade the HKIA to meet 4F international classification, which will enable it to accommodate larger aircrafts and more passengers. Further, there are plans to rehabilitate the runway, taxiway and apron at the Eros Airport, build a new terminal and upgrade the water reticulation network both at the Katima Mulilo and Rundu Airports. These upgrades and developments are needed to equip all airports with required infrastructures and are projected to cost an additional N$7.0 billion.

Fig. 3: Air Routes Map

Source: Air Namibia

2.4. Port infrastructure

16. **Namibia has two main ports, which are operated by the Namibian Ports Authority (Namport), namely Walvis Bay and Lüderitz.** Annually, these ports handle more than 6.5 million metric tonnes of cargo and facilitates trade with countries worldwide. Walvis Bay is the country's main port and the nation's only deep-water port. It has a depth of 12.8 metres and can accommodate container vessels with a maximum capacity of 2,400 tonnes. Walvis Bay Harbour boasts a new cargo and a container quay wall which is 500 metres in length and the channel has a draft of 8.15 metres, which can accommodate vessels up to 150 metres in length. In addition, this port handle over five million tons of cargo a year, 20 percent of which is containerized (NamPort, 2013).

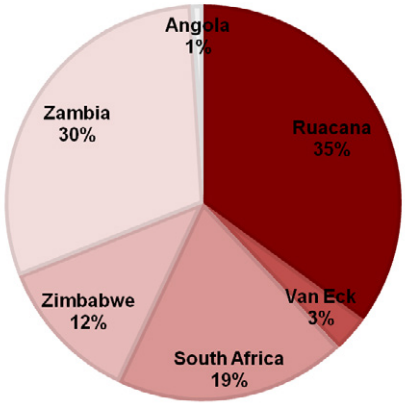
17. **The Port of Walvis Bay is one of the preferred entries in the SADC region due to its accessibility.** Namibia is linked to neighbouring countries of Botswana, Angola, South Africa, Zambia, Zimbabwe and the Democratic Republic of Congo (DRC). The port is also offering a shorter transport time, especially to West and Central Africa, Europe and the Americas. The port is currently under expansion at an estimated cost of N$4.9 billion. The plan is to expand and deepen the harbour from 12.8 metres to 14.5 metres in order to increase capacity (NamPort, 2013). In addition, there are plans to construct a deep water terminal at the port from 2016 at a cost in the region of N$30 billion.

18. **Namibia's second Port of Lüderitz has seen increased activity as a result of the rise in fishing activities and developments in the mining sector.** The extensive upgrade of Lüderitz port began after an N$85 million investment from Government as part of the NamPort four year modernisation plan. Lüderitz, although traditionally a fishing port, has added a new cargo and container quay in 2000. The port is strategically located to cater for Southern Namibia and the Northern Cape. A third harbour is planned for Mowe Bay, 500 km north of Walvis Bay. This would also serve the fishing fleet and accommodate mining activities in the north western part of Namibia.

2.5. Energy Infrastructure

19. **Namibia continues to be a net importer of energy.** NamPower, which manages Namibia's electricity network, is involved in generation, transmission and distribution. The main sources of power are the thermal power plants, coal-fired Van Eck Power Station, the hydroelectric plant at the Ruacana and the stand-by diesel fired Paratus Power Station. Additional electricity is sourced through imports from South Africa, Zambia, Angola, Mozambique and Zimbabwe. For instance, during 2012/2013, Namibia imported approximately 62 percent of its electrical energy requirements from countries in the SADC region, with Zambia (ZESA) being the main source (Fig. 4). Considering generally positive economic growth outlooks as well as demand-supply mismatches within sub-Saharan Africa, this situation is not sustainable for Namibia. Furthermore, power supply is critical to the economic growth of the country, as lack of it can compromise investment. Mining is Namibia's heaviest energy consumer and together with manufacturing sectors drive electricity demand. With the projected increase in mining activities over the coming years, there is a need to expand power generation capacity in the country to meet such demand.

Fig. 4: Sources of electricity



Source: ECB Annual Report, 2013.

20. **The demand for energy in Namibia is projected to increase, and may become critical by 2015/16.** The country's demand for electricity is projected to rise from approximately 3,500 GWh to 7,500 GWh between 2012 and 2031 (ECB, 2013). In addition, the electricity demand per capita is estimated to increase from approximately 0.24 kW in 2011 to approximately 0.34 kW per person in 2031. Most of this expected increase in demand will be due to productive uses of electricity, such as new mining and commercial ventures (Konrad, 2012). Furthermore, just over 40 percent of households has access to electricity – if the coverage is expanded, then per capita usage will increase further. Going forward, the electricity demand is expected to outstrip supply by some 1,900 GWh by 2015 and 3,300 GWh by 2020.

21. **Significant funding is required in the energy sector to ensure uninterrupted power supply needed for investment and economic growth.** Major works will commence in 2015 to upgrade the 300MW Erongo Coal –Fired Power Station and this project is estimated to cost N$5.0 billion. Nampower is also in the process of undertaking the 800MW Kudu Gas-to-Power project, which will cost in excess of N$20 billion and is expected to begin construction in 2017. Plans are also underway to construct the 600MW Baynes Hydro Power Station at a cost in excess of N$10 billion. There are also renewable energy projects to the tune of 50MW to be developed by Independent Power Producers (IPPs).

2.6. Water infrastructure

22. **Namibia has a wide water supply and treatment network, albeit most of it needs rehabilitation and/or upgrading.** NamWater, the only bulk water supplier in Namibia, estimated the total water consumption for municipality sector at 130 million m3 in 2014. Expansion of industrial and agricultural activities coupled with population growth in the urban areas continues to put pressure on water resources (NamWater, 2014). The bulk of water supply in Namibia is sourced from the Hardap, Von Bach, Swakop, Goreangab and Naute dams. Other small dams are the Omatako, Friedenau, Otjivero and Oanob dam. These are supplemented by perennial rivers on the borderlands of Namibia's far north and south. However, these rivers are far away from the population centers; hence water supply is critical in most parts of the country.

23. **Water supply is more critical on the coastline in light of increased developments in the mining sector.** NamWater projects that water supply shortage at the coast will increase from about 400 thousand m3 to more than 15 million m3 by 2018. The widening water deficit is mainly as a result of the demand pressure especially from the mining sector and the situation is estimated to remain critical for the next 5 years. In this regard, NamWater has been sourcing water from the Areva Desalination plant to supplement its own sources.

24. **Upcoming water infrastructure developments are focused on averting potential water shortages in the main economic centres of the country.** Every year NamWater undertakes several new and rolling-over water projects. Most of the major projects are in phases that cut across a number of years, mainly due to lack of funding. The main project involves building a system of pipelines and canals from the Kavango river to the central region, desalinating seawater to increase bulk water supply for industrial use and boreholes. Moreover, construction of the N$2.4 billion Neckartal Dam is currently underway and the dam will hold an estimated 85 million m3 at full capacity. This dam will cater for both developmental, particularly irrigation activities, and household needs. The discovery of substantial ground water in the north of the country provides additional alternative sources.

25. **During 2014, for instance, the cost of water projects is estimated at N$104 million.** The main projects include Von Bach Windhoek transfer capacity increase and Calueque pump station upgrade, which collectively account for about 81 percent of the total cost. Other prominent projects are planned for the next three years and will collectively cost about N$1.5 billion. These include, Otjimbingwe rural water supply, Swakop South water supply, Kuiseb collector-Schwarzekuppe-Swakopmund pipeline replacement, OMDEL-Swakopmund pipeline replacement and Ogongo-Oshakati canal rehabilitation (NamWater, 2014).

3. THE STATE OF INFRASTRUCTURE FUNDING IN NAMIBIA

26. **As outlined in the preceding section, Namibia has a wide network of infrastructure in place, whose construction were mostly funded by the Government.** The main sources of infrastructure funding the Government has been budget financing, external concessional loans, Development Finance Institutions (DFIs) loans and issuance of bonds. This Section reviews expenditure on infrastructure, those undertake directly by the Government as well as those expedited by State Owned Enterprises (SOEs).

27. **Government investment in infrastructure development as a percentage of GDP hovers around 5.0 percent.** This is much lower when compared to growing economies such as China that invest about 9.0 percent of their GDP in infrastructure development (Zhang et al, 2012). Namibia's current infrastructure investment-to-GDP ratio is an indication that more investment in infrastructure is required to make a significant impact on economic growth. Over the past three fiscal years, for instance, the Government allocated a total of N$23.6 billion (Table 2) for maintenance and upgrading of existing infrastructure and construction of new infrastructure.

Table 2: Infrastructure Funding by the Government [4]

Sectors (N$ millions)	2010/2011	2011/12	2012/13	Total
Transport Infrastructure	3,487.5	11,319.6	5,227.0	20,034.0
Energy Infrastructure	119.9	411.2	232.0	763.0
Water Infrastructure	748.7	-	-	748.7
Social infrastructure[5]	1,938.0	-	122.7	2,060.7
TOTAL	6,294.1	11,730.8	5,581.7	23,606.4

Source: Development Budget 2010-2014/15 and authors' own calculations.

28. **In addition to direct Government funding, SOEs also undertook major infrastructure projects.** Most of the projects were funded through direct transfers from the national budget to SOEs complemented by their own sources and borrowing on the balance sheet of SOEs, mainly from DFIs – see Table 3. In some instance, the Government provided further support through issuances of guarantees. Guarantees issued to support infrastructure development rose from N$189.6 million in 1995/96 to N$4.2 billion at the end of 2013/14. The Government also borrowed funds on their balance sheet for purposes of on-lending to SOEs at a non-market rate of 3.0 percent. The size of such on-lending activities grew from N$384.2 million in 2003/04 to N$626.8 million at the end of 2013/14. Nonetheless, owing to poor repayment by SOEs, the practice of on-lending has been discontinued and SOEs are encouraged to access funding using their own balance sheets, and where need be, the Government will provide a guarantee.

[4] *Figures were extracted from the Annual Development Budget books, by selecting infrastructure related projects in Ministries of Works and Transport (Transport Infrastructure), Mines and Energy (Energy Infrastructure), Agriculture, Water and Forestry (Water Infrastructure) and Regional and Local government (Social infrastructure).*

[5] *This comprises development spending on health facilities, education and housing. The government is currently focusing on increasing the number of health care facilities as well as mass housing projects. Therefore the projects included here are those mainly related to upgrading and improving services in district hospital as well as building houses for lower income groups.*

Table 3: Funding of Selected Infrastructure Projects (1993-2013)

	Project name	Year	Cost	Type of funding
Power infrastructure	Caprivi Link Interconnector	2007-2009	N$3.21 billion	Bond issuance, own funds
	Ruacana fourth turbine	2012	N$750 million	Own funds, DFI loan
Water infrastructure	Neckartal Dam	2013-2015	N$2.4 billion	Government funding
	Omdel Dam	1996	N$49.5 million	Government Funding
	Omdel Swakopmund pipeline	2009	N$30.6 million	Own capital
	Opuwo treatment plant	2009	N$5.36 million	Own funds
	Swakopmund Mile 7 water supply	2009	N$7.1 million	Own funds
Transport infrastructure	Tsumeb-Oshikango Railway	2006-2008	N$1.4 billion	Government funding
	Trans-Kalahari Highway	1992-1997	N$850 million	Government funding, DFI loan
	Rundu-Elundu Road	2009-2012	N$1.1 billion	Government funds, DFI loan
	Kamanjab – Omakange Road	2009 - 2012	N$286. million	Government funding.
	Okahao-Omakange Road	N$381 million	N$182.9 million	Government funding
	Gobabis-Otjinene road	2008-2012	Government funding	Government funding
	2012	2013-2014	N$424 million	Own funds
	Okahandja-Karibib road rehabilitation		N$68 million	
	Walvis Airport			
Housing infrastructure	Otjomuise land servicing	2012-2014	N$250 million	Own funds, PPP

29. **The Government also undertook multilateral and bilateral concessional loans to support infrastructure funding.** To this effect, long-term foreign loans incurred by the Government for purposes of advancing infrastructure projects is in excess of N$2.0 billion (Table 4). The advantage of this source of funding is that it is cheaper than market-based funding sources, especially when accessed by the Government as they occasionally contain an in-built grant component.

Table 4: Government external loans for infrastructure projects

Sectors	Amount (N$)
ICT infrastructure	18,659,949
Road infrastructure	1,649,124,916
Rail infrastructure	262,049,078
Airport infrastructure	135,745,526
Water infrastructure	140,715,749
Port infrastructure	32,488,013
Total	2 238 783 232

Source: Ministry of Finance

30. **Due to steady growth in the economy and aging stock of infrastructure, there is an emergent need for further infrastructure financing to complement Government efforts.** The Government, SOEs as well as the private sector need to combine resources. The participation of the private sector and foreign investment in infrastructure development has been limited. On its part, the Government drafted a Public-Private-Partnerships (PPP) policy in 2013 and is setting up the required institutional and legal structures to implement the PPP policy. The objective is to make the best use of the resources of both the public and private sector for infrastructure delivery (see Section 4 for further details on the PPP policy).

4. LEGISLATIVE AND REGULATORY ENVIRONMENT

31. **Namibia has limited regulation explicitly targeted towards private and/or public participation in infrastructure funding.** The State Finance Act of 1991 and the Sovereign Debt Management Strategy (SDMS)[6] have a bearing on infrastructure funding by the Government. The State Finance Act permits the Minister of Finance to undertake borrowing for the Government. Such borrowing, however, is undertaken in line with the prudential limits established in the SDMS document. The key benchmark in the SDMS is the strategic target aiming to keep national debt within 35.0 percent of GDP. The SDMS further stipulates that Government guarantees may not exceed 10.0 percent of GDP. These prudential limits may inhibit the Government from financing bulk infrastructure projects. The stock of Government debt stood at 25.0 percent of GDP, which leaves permissible borrowing by the Government for both infrastructure and other requirements at 10.0 percent of GDP (N$14.1 billion). Similarly, the Government has room to issue about 6.0 percent of GDP (N$5.8 billion) in guarantees for infrastructure as well as other funding needs.

32. **There are, nonetheless, broader regulations pertaining to retaining domestic resources in the country with a view to finance productive investment by the private sector.** These includes the Namibian Pension Fund Act of 1956 as amended and the Long-term Insurance Act of 1998 as amended. The two laws prescribes that Pension Funds and Long-term Insurance companies should invest in domestic assets not less than 35 percent of the value of their assets[7]. The assets of Pension Funds and Long-term Insurers were estimated at N$141.7 billion in 2013. Hence, N$49.6 billion should be invested in Namibian assets. There was a recent amendment to the two Acts, which stipulates that only 10 percent of the domestic assets can be in dual listed stock, to be phased in over a 5 year period. Essentially, this frees up more funds for exclusively Namibian

[6] *The SDMS is not a law but rather it is a document approved by cabinet which outlines prudential measures and benchmarks around which Government borrowing is conducted.*

[7] *The necessity of such a regulation stems from the free movement of capital within the Common Monetary Area (CMA), to which Namibia is a member. Namibian institutions tend to invest their portfolios in South Africa, due to better developed financial markets.*

assets. The requirement on domestic assets, however, only applies to investments in listed instruments. Since Namibia does not have an Infrastructure Fund listed on the stock exchange, the country has been unable to direct such funds towards infrastructure funding. This is one constraint that can be addressed through creating an infrastructure fund and/or privatising certain public entities (see Section 5 for further exposition on this issues).

33. **The Government also has laws in place pertaining to unlisted investments.** Regulation 15 of the Long-term Insurance Act and Regulation 28 of the Pension Fund Act further compel insurance companies and pension funds to invest a minimum 1.5 percent and maximum 3.5 percent of their assets in alternative or unlisted investment vehicles. 'Unlisted investment' are defined as an investment that takes the form of equity or debt capital in a company incorporated in Namibia and not listed on a stock exchange. In essence, it implies that unlisted investments must be in the form of equity participation and that debt, such as bonds, will not qualify. At present, less than 2.0 percent of the pension and insurers funds are invested in unlisted investments. Therefore, there is still room to encourage private sector investment in infrastructure. This will require creating a regulatory and structural framework to make infrastructural projects attractive and accessible to institutional investors.

34. **The Namibia Stock Exchange (NSX) can serve as a platform to raise funds for infrastructure.** The Development Board on the NSX has lenient requirements, thus making it easier for companies to raise funding. Furthermore, local companies are allowed to raise capital through the listing of debt instruments such as bonds, if they do not wish to list on the NSX. Some of the SOEs such as NamPower, Telecom and the Road Fund Administration have already listed bonds on the NSX to fund some of their infrastructure projects.

35. **The Government is in the process of creating a PPP Act to induce and govern private sector participation in infrastructure funding.** The objectives of the PPP Policy are among others, to encourage private sector investment, encourage innovation, ensure rigorous oversight and governance, and provide the principles, framework and guiding procedures to assist agencies in applying PPPs.

Box Article 1: Namibia Public Private Partnership (PPP) Policy

Namibia Public Private Partnership (PPP) is defined as a medium to long term contractual relationship between the public sector and other private partners in the sharing and transferring of risks and rewards and in the provision of infrastructure and/or services in the performance of a Government function. PPP projects include economic projects, social projects, municipal assets and industrial infrastructure. PPP applies primarily to projects above the threshold level of N$10 million though projects below N$10 million may also be considered. The Policy will apply to the central government as well as to the regional and

local authorities; however, application of the Policy to State Owned Enterprises (SOEs) will be determined by individual jurisdictions. The PPP policy is 'fused' in Vision 2030 and the National Development Plans.

Once enacted, the PPP will comprise of the Line Agency, the PPP Committee and the Central PPP Unit. The PPP Committee will operate under the Ministry of Finance and consists of its Permanent Secretary, as the Chairperson; representatives of the Ministries of Trade and Industry, Works and Transport, line ministry, representative from the National Planning Commission, Attorney-General's Office; and at least two representatives from the lead industry bodies, and/or multilateral agencies, and/or eminent persons with specialist skills in the PPP arena.

The Ministry of Finance will regulate the implementation of the Policy; provide overarching guidance and regulatory oversight; guide and regulate the functioning of the PPP Committee and the PPP Unit; provide approvals where the Line Ministry acts as the Line Agency; and provides approvals for all PPPs that have a contract value in excess of N$150 million.

5. ESTIMATION OF THE INFRASTRUCTURE FUNDING GAP

36. **This section presents the estimation of the core infrastructure gap in Namibia based on the survey on selected SOEs undertaken by the Bank of Namibia in August 2014** (see appendix 1). Infrastructure plans pertaining to SOEs, which were not visited was obtained from their respective Master Plans. In summary, the survey was sub-divided into two parts, with Part one requesting cost of planned infrastructure projects starting 2014 and beyond; and Part two requested respondents to comment on their sources of funding, challenges and funding options. The findings from the survey are provided in the analysis below.

5.1. Infrastructure Funding Needs

37. **The survey results indicate that approximately N$223.6 billion[8] is required for infrastructure funding for the next five years and beyond** (Table 5). Bulk of the funding is required in the transportation sector with a total planned projects with a financing requirement of N$123.4 billion. The biggest chunk is required in rail infrastructure with a requirement of N$60.7 billion, followed by port upgrading to the value of N$34.9 billion and N$17.9 billion in road infrastructure.

[8] *This figure is not inclusive of all potential infrastructure development and upgrading projects in the country, but only reflects the known projects in the pipelines of the different SOEs.*

Table 5: Infrastructure Funding Requirement in Namibia

N$ millions	2014/15	2015/16	2016/17	2017/18 – 2019/20	Grand Total
Transport infrastructure	9,649.9	11,689.8	10,359.5	91,652.3	123,351.5
Roads infrastructure	4,572.3	5,659.8	4,136.6	3,492.3	17,861.0
Rail infrastructure	2,300.0	2,500.0	2,400.0	53,600.0	60,860.0
Port infrastructure	1,967.6	2,450.0	1,012.9	29,500.0	34,930.5
Airport infrastructure	810.0	1,080.0	2,810.0	5,000.0	9,700.0
Energy infrastructure	1,902.5	11,423.4	13,350.3	24,161.2	50,837.4
Water infrastructure	101.7	395.2	540.9	592.9	1,630.7
ICT infrastructure	737.0	608.0	642.0	701.0	2,688.0
Housing infrastructure	2,500.0	2,500.0	2,500.0	37,500.0	45,000.0
Grand Total	14,891.1	26,616.4	27,392.7	154,607.3	223,607.3

38. **There are also various projects in the pipeline to upgrade and develop port and railway infrastructure.** For instance, Namport is constructing a new terminal at the Walvis Bay harbour at the cost of N$4.9 billion and the project will be completed by 2017. Further to that, there are plans to construct a deep water terminal at the Walvis Bay harbour to serve as the SADC Gateway terminal. This project will commence in 2016 and the estimated cost is in the region of N$30.0 billion. On rail infrastructure, the key project is the 1,900km Trans-Kalahari railway line connecting Botswana's Mmamabula coal fields to the port of Walvis Bay at a cost in the region of N$100 billion. The financing of this project will be sourced through private stakeholders. TransNamib is also exploring the establishment of Commuter Passenger Trains to lessen the congestion on the roads within the City of Windhoek, as well as between Windhoek-Okahandja, Windhoek-Rehoboth and Windhoek-HKIA. Feasibility studies on the possible costs of such projects are yet to be carried out.

39. **The funding needs for road and water infrastructure are also extensive.** On road infrastructure, the RA has plans to surface over 2,000 km under their programme of constructing gravel roads and upgrading gravel roads to bitumen standards. The projected cost of road infrastructure upgrading stands at N$17.9 billion. There are other projects such as the expansion of the Windhoek-HKIA and the Windhoek-Okahandja roads into dual carriage way roads, which will be undertaken directly by the Government. With regard to water infrastructure, NamWater is focusing on desalination of seawater, primarily to serve the mining community along the coastline. Nonetheless, a feasibility study to determine the actual costing and set the timelines for the desalination project has not yet been conducted.

40. Plans are underway to upgrade major airports in the country. This include extension and upgrading of the HKIA, to develop a new international airport with extended capacity and separate international arrivals and departure terminals, ancillary facilities, a fire station and a new air-traffic control tower. The expansion of the passenger terminal at the Walvis Bay Airport is currently underway at a cost of N$67.6 million. Other airports in the country, such as Ondangwa Airport, are also in need of refurbishment, however, a feasibility study to establish the exact costs of this exercises are yet to be undertaken. The infrastructure financing needs for airport facilities are estimated at N$9.7 billion.

41. T**he energy and housing sectors also have huge financing requirements of N$50.8 billion and N$42.5 billion, respectively.** The main project in the energy sector is the 800MW Kudu Gas-to-Power project, which if implemented at a cost in excess of N$20.0 billion, is expected to propel the country from a net importer of electricity to a net exporter. The on-going Mass Housing Initiative is the key driver of increased funding needs in the housing sector. This projects emerges from the housing backlog in the country, estimated at around 100,000 units, and is estimated to cost N$45.0 billion over 18 years (NHE, 2013).

42. T**he survey also established the various sources of funding for infrastructure undertaking by the SOEs.** The main sources of funding were outlined to be user fees[9], borrowing through loans and bond issuances and government transfers and subsidies (Table 6). From the projections of the SOEs, N$73.5 billion of the estimated N$223.6 billion funding needs could be financed through these three sources. The SOEs estimate to rely mostly on borrowed funds, accounting for N$32.5 billion while user fees and government subsidy will provide N$26.1 billion and N$14.9 billion, respectively, of the estimated funding requirement. The portion of Government subsidy, however, results in an increased budget deficit and thus a higher borrowing requirement for the Central Government.

Table 6: Sources of funds

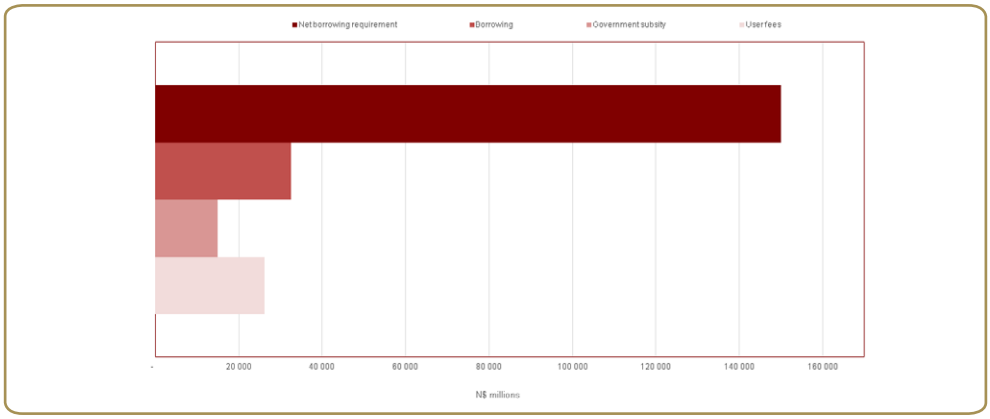
N$ millions	2014/15	2015/16	2016/17	2017/18 – 2019/20	Grand total
User Fees	3,446.3	5,964.6	6,279.7	10,426.6	26,117.2
Government Subsidy	1,999.0	4,523.4	3,598.9	4,787.8	14,909.1
Borrowing	2,176.6	6,723.8	8,639.4	14,965.2	32,505.0
Total	7,622.0	17,211.8	18,518.1	30,179.6	73,531.4

43. **Taking into account the estimated sources of funds result in a net funding gap of about N$150.1 billion (Fig. 5).** Some institutions, nonetheless, indicated that they do not have the capacity to borrow, owing to weak balance sheets.

[9] *A significant portion of user fees are used to finance SOEs operations and maintenance of infrastructure under their mandates, implying that only a small portion is available for capital expansions.*

This is one of the main constraints that results in increased subsidy requirements from the Government. Furthermore, there is limited usage of private equity and other streams of private sector funds as a source of financing for SOEs to undertake infrastructure. This highlights a need for the Government to put in place frameworks and structures that will enable institutional investor to access infrastructure projects.

Fig.5: Estimated Infrastructure Funding Gap



5.2. Alternative funding options

44. **The above discourse, which established a net funding gap of N$150.0 billion, makes it imperative to explore possible funding options.** Previous sections underscored that Government funding, user fees, concessional loans, guarantees, on-lending, bond issuances and loans from DFIs have been the major sources of finance for infrastructure in Namibia. Due to resource constraints and competing priorities, the public sector alone will not be able to fund all identified infrastructure projects, hence there is a need for private sector involvement. The literature provides further funding streams that can be explored for Namibia. These are the PPPs, privatisation, listed Infrastructure Funds and Pension Funds Investments. The rationale behind these funding options are summarised below.

(a) Public Private Partnerships

45. **PPP is one of the many options, through which infrastructure gaps could be funded.** PPP refers to long-term, contractually regulated, co-operation between the public sector and the private sector for the efficient implementation of public projects. Such arrangements have gained momentum in most part of the worlds, and most countries are setting up PPP units within the public sector to attract private sector interest in the infrastructure development space. Namibia has drafted a PPP policy aiming at attracting private funds for economically viable projects. The policy will be implemented under the Ministry of Finance and plans are underway to get the PPP unit operational.

46. **PPP arrangement delivers a couple of benefits to both institutional investors and to the public sector.** One of the advantages of the PPP approach to funding is that it pools resources from the private and public sectors and distributes project risks appropriately in line with the risk management competencies of the project partners (Hans et al, 2009:9). Further to that, PPPs can accelerate delivery of crucial infrastructure projects, which would be otherwise delayed due to limited funds from traditional funding sources. For the private sector, the benefits include being provided with an alternative investment vehicle, which yields diversification benefits and positive returns.

47. **There are various considerations to be made by the Government when engaging in PPPs.** Such funding options are not necessarily cheaper than traditional funding sources. However, for the benefits outlined earlier, it is worthwhile to consider them. Further, the decision to choose the PPP option over public procurement should be ruled by the principle of "Value for Money" (VFM). That is, PPP should be selected only if it delivers better VFM than the public option.

48. **In Namibia at present, there are PPP projects under execution, although on a limited scale.** A case in point is the funding of various projects by the Old Mutual Medina Fund to service land in Otjomuise and construct more than 200 affordable houses, in conjunction with the City of Windhoek and the National Housing Enterprises (NHE).

(b) Privatisation Proceeds

49. **Privatisation refers to the arrangement where ownership and control of public assets are transferred to the private sector.** This can take the form of the individual asset sales or sale of shareholding in state-owned companies. The rationale is for the Government to use the proceeds from the sales of such assets to finance critical infrastructure projects. Privatisation ideally should be considered for non-core essential services such as operation of tourism establishments, airlines and telecommunications, among others.

(c) Listed Infrastructure Fund

50. **A Listed Infrastructure Fund is a public company listed on a stock exchange with the objective to raise funds for infrastructure financing.** This approach is geared towards attracting funds from pension funds, fund managers and long-term insurers with longer-term investment mandates. In terms of structure, a fund can have a prescribed debt-to-capital ratio, that is, there will be initial capital contribution, ideally from the Government to enhance investor confidence. Capitalisation is also crucial considering that infrastructure projects have a long-term span, and positive return are only yielded after a period of time.

51. **Like the PPP approach, raising capital finance is more expensive than debt finance.** The advantage for the government is the opportunity to fast track projects, which results in faster economic growth, increased tax revenue and general welfare. Partnering with the private sector also ensures that projects are executed more efficiently than if otherwise left to the public sector alone.

(d) Pension Funds and Long-term Insurance Investments

52. **Pension and Long-term Insurance funds provide a mechanism to utilise national savings for infrastructure development.** The interests of pension and long-term insurers and infrastructure financing are aligned in that they both have a long-term investment horizon, which is accompanied by attractive yields, with potentially higher volatility. Infrastructure investments can also provide diversification to the portfolios of institutional investors.

53. **Transparent and steady regulatory frameworks are a requirement for attracting institutional investments to the infrastructure space.** Direct investment in infrastructure by institutional investors in Namibia has been limited so far. Regulation 15 and Regulation 28 prescribe that institutional investors are allowed a maximum of 3.5 percent of their portfolios into unlisted investments. Further, there are no clear frameworks of how institutional investor can participate in infrastructure financing. These constraints can be addressed through regulatory amendments as well as creating infrastructure funding instruments and structures. As mentioned before, institutions are required to invest only 35 percent of the market value of their assets in Namibia. If Namibia can offer more investable assets to these institutions, this percentage may increase spontaneously over time. The offering of investment instruments in infrastructure may play an important role in this regard.

6. CONCLUSION

54. **The objectives of NDP4, sustained economic growth, employment creation and improved income equality, can only be achieved through sustained investment in physical infrastructure.** This study reviewed the existing infrastructure in Namibia, the funding sources and estimated the net funding gap of known infrastructure projects. The paper concludes that Namibia faces financial constraints to expedite crucial infrastructure development and upgrading. The traditional funding sources are inadequate to address the huge infrastructure financing requirement. Therefore, the country needs to develop strategies to address the funding shortage and unlock potential economic benefits.

55. **Although the country already has a wide network of physical infrastructure, there is a growing infrastructure gap owing to a combination of aging infrastructure, years of under-investment and the expanding population.** The total infrastructure funding requirement for Namibia is estimated to be in the region of more than N$220 billion. The highest requirement is in the rail, energy, housing and port infrastructures. Moreover, it is projected that SOEs can only manage to raise N$73 billion through a combination of user fee charges, Government subsidies and borrowing. This leaves a net funding gap of about N$150 billion. There is, therefore, a need to establish additional sources of funding to complement the traditional approaches.

56. **The Government has embraced the PPP approach to spearhead infrastructure investment by drafting a PPP policy and enacting the required legislation.** This is expected to be completed by the end of 2014.

57. **Other funding approaches such as Listed Infrastructure Fund, privatisation and channelling institutional funds can also serve as useful funding sources for infrastructure.** There is a need, however, to establish the required regulatory framework and structure for these approaches to become viable.

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APPENDIX

List of SOEs representatives interviewed

Name	Institution	Position
Andre Barlow	NamPower	Head of Treasury & Strategic Finance
Hanri Jacobs	NamPower	Chief Officer: Finance, Treasury and Property Management
Joe Mukena	NamPower	Snr Manager: Strategic Finance
Willem Venter	Namwater	Snr Manager: Fixed Asset Management
Cornwell Chadya	Namwater	General Manager: Finance and Asset Management
Kabende Angelina	Road Authority	Senior Transport Economist: Network Planning & Consultation
John Mugaviri	NHE	Senior Manager: Finance, HR & Administration
Matthias Ngwangwama	NWR	Senior Manager: Finance & Support Services
Thinus Smit	MTC	Chief Financial Officer
Robert Offner	Telecom	Chief Financial Officer
Fanuel Hiiko	NPC	Acting Chief National Development Advisor
George Esterhuizen	City of Windhoek	Chief Financial Officer
Immanuel Shipanga	Walvis Bay Corridor Group	Manager: Projects and Funding

Public-Private Partnerships (PPP's) and Other Innovative Ways of Financing Infrastructure: Regional and International experience

Dr. Emelly Mutambatsere,[10]

EXECUTIVE SUMMARY

Infrastructure financing solutions for African countries are becoming more diverse, fueled by both the realization that current solutions will not meet current and future needs for infrastructure financing, and recognition by private investors that the large infrastructural deficits faced by most countries present important investment opportunities. This study uses projects data from the World Bank Private Participation in Infrastructure (PPI) database over the period 1990 and 2013 for the 54 African countries to analyze trends in the use of public-private partnerships to build or manage infrastructure assets. International anecdotal evidence is used to understand the important factors affecting performance of infrastructure PPPs, highlight risks and propose risk mitigation measures. The study also provides a brief account of some innovative infrastructure financing models that are taking root on the continent, and the extent to which they are being applied.

Results show that PPPs have grown in importance as a method of procurement of infrastructure services in Africa, with cumulative investment commitments reaching USD 110 billion by 2013. However, growth in financing through PPP arrangements in Africa has been weaker than that observed globally for developing regions, and more volatile. The strongest reliance on PPPs is observed in energy and transport, where financing commitments toward new assets are on the rise. PPP options chosen in water and sanitation have been associated with insignificant financial commitments, being used mainly to address efficiency constraints faced by state-owned utilities. In ICT, private procurement not involving partnership with the state far outweighs procurement through PPPs in both number of projects and investment commitments. Moreover ICT projects procured as PPPs exhibit a marginally higher number of cancellations or ongoing projects in distress. Nonetheless, the number of troubled PPP projects has decreased significantly since the 1990s, a moderate hike being observed on contracts awarded in 2007, which failed to reach financial clos. The overall portfolio has an 8 percent contract cancellation rate, of which a third were re-awarded, bringing effective cancellations down to 5 percent.

We find that PPPs have mostly succeeded at improving efficiency of infrastructure services across the board, with strong access effects only in ICT. In the energy sector, the strong performance of PPPs in increasing power generation capacity has not been

[10] *Principal Regional Economist at the African Development Bank.*
The views expressed in this paper are the author's, not those of the African Development Bank, its Board of Directors, or the countries they represent.

matched with similar progress in addressing access gaps, given transmission and distribution bottlenecks. In transport, private sector participation in roads remains very weak; while overregulation has frustrated performance of contracts awarded in railways, airports and seaports. A few cases of best practice have been reported on water sector PPPs, in Cote d'Ivoire and Ghana, which achieved both utility efficiency gains and service expansion. The main outstanding challenges are (i) monitoring and enforcing contract commitments, especially those pertaining to investment commitments, which have caused distress in a number of ongoing projects and explain some of the contract cancellations, (ii) incomplete implementation of reforms, which reduces predictability of operating environment, and (iii) reluctance by government to introduce the private sector in certain markets considered sensitive from a socio-political perspective.

Countries seeking to advance the use PPPs in infrastructure can learn important lessons from the experience of the past two decades of implementing PPPs in Africa, and from international experiences. First, although macroeconomic instability, and incomplete PPP policies and legislation, do not preclude countries from launching procurement through PPPs, they are important positive success factors that must be nurtured as the use of PPPs grows. Countries launching PPP procurement in the absence of a complete framework should seek the support of development partners in structuring and contract negotiation, in addition to procuring expert advisory services. Strong institutions for planning and coordinating infrastructure investments across infrastructure sectors over the medium term, coupled with strong leadership, have also produced strong positive results in private sector engagement even with incomplete regulatory frameworks. Second, it is important to invest in understanding the risks associated with PPPs in a given industry to accurately cost and allocate these risks, and avoid costly cover on perceived risks. Experience has shown that PPPs can be concluded without sovereign guarantees, when involving state-owned entities with strong balance sheets, or with the use of other risk management instruments such as partial risk guarantees in lieu of the traditional sovereign guarantees. Finally, local capacity for PPPs structuring, negotiation, and monitoring in the public sector is often weak given the legacy of public sector dominance in infrastructure sectors. While donor-funded technical assistance packages can be leveraged for capacity building in the civil service, in addition to technical advisory services, it is sometimes necessary for government to access policy-based loans to develop both the policy framework and capacity required for a full scale PPP program.

The study finds that among the 'innovative' infrastructure financing models, sovereign bonds have taken off in a significant way in a number of countries, especially those that have attained stable macroeconomic environments and sustainable debt levels. However, the increased reliance on capital markets to fund infrastructure could negatively affect fiscal sustainability if appropriate safeguards are not adopted. Resource rich African countries are also increasingly relying on resource-backed instruments, for example, infrastructure-for-resources deals, to fund infrastructure investments. These models have not been fully tested, however, anecdotal evidence points to potential pitfalls that must be heeded, including ensuring fair sharing of risks and rewards between the

financier and the recipient country. Private sector led instruments, for example private equity funds, are also emerging but yet to be fully explore given outstanding challenges in the business and regulatory environment in most countries that could potentially benefit from them.

1. INTRODUCTION

1. **The delivery of economic and social goods and services could theoretically neatly be allocated to the market or the state, depending on whether such a good or service is private or public.** In practice, the confluence of market and state has muddled this separation. Developmental states, for example, were commonly associated with state expansion into economic spheres typically served by the market. The pro-markets reforms witnessed in Africa in the 1980s and 90s focused on re-establishing an effective balance in allocation of roles between markets and governments; a phenomenon most pronounced in the context of structural adjustment programs. These reforms, arguably, at times also extended the market into roles best performed by the state. Public private partnerships (PPPs) emerged from the realization that at times the best model entails a combination of public and private functions in a single operation.

2. **In their narrow technical definition, PPPs apply to functions traditionally performed by the state.** As governments deliver public goods and services, they often confront challenges that threaten long term sustainability: the large budget implications of capital investments; a dynamic technology environment that demands constant upgrade of skill and technologies; and the pursuit of socio-political objectives that could get in the way of efficiency and cost recovery; among others. Different models have been tried to address these challenges, including the full privatization of public assets. Evidence from the privatization programs implemented globally in the 1980s and 90s indicate that the full privatization model also has its limitations when applied to deliver public good and especially when implemented in a weak regulation context.

3. **Public-private partnerships are intended to complement the strengths of the public sector with those of the private sector.** The private sector typically brings to the project creativity, dynamism, flexibility, efficiency and private capital – key ingredients to reducing costs, improving performance and relieve the state of the financing burden. The public partner provides a supportive policy and institutional framework, and often guarantees a minimum level of patronage revenues for the private investor. The state also ensures citizen's access to good quality and affordable public services, in its capacity as a regulator.

4. **In Africa, the PPP model is being employed to develop core economic infrastructure (power, water, transport, and information and communication technologies), as well as in social sectors such as health, education, social**

protection, agriculture, among others. This study explores how the PPP model has been applied in economic infrastructure development on the continent, and establishes which types of public private partnership have worked well in different economic sectors. We start with a brief discussion of the different type of PPPs and the objectives that can be met by each. Section 3 maps infrastructure PPPs by sector and type of PPP, and evaluates how well the PPP contracts awarded to date on the continent have performed in meeting key economic objectives. Section 4 discusses the main considerations for successful public private partnerships, and Section 5 concludes.

2. A PRIMER AN PUBLIC PRIVATE PARTNERSHIPS

2.1. Definitions

5. **A public private partnership is defined in this study as any arrangement entailing partnership between the public sector and private entities in the delivery of a public service.** It involves a contractual agreement in which the private party undertakes to offer certain services to, or on behalf of, the public authority. The public authority could be a state actor such as a government department or state-owned enterprise, or a sub-sovereign entity such as a municipality. The contractual agreement often involves the transfer of authority to a private party to design, build and operate, or to manage, public assets for an extended period of time. The state retains responsibility for service provision, and either partially owns the assets throughout the project's life, or is the ultimate owner at the end of the concession period. The role of the state is not only to ensure that the contracting party satisfies its obligations and fulfills the objectives agreed upon, but also to absorb certain risks, such as securing future revenue flows for the private investors. The partnership may also include non-state actors, such as community trusts or non-governmental organization, as third parties representing stakeholders directly affected by the project (Schmidt and Moisa 2003).

6. **Given the fluidity with which the term 'PPP' has been applied in the literature, it is befitting to state the market arrangements excluded from the definition of PPPs in this study.** The study excludes full divestiture, which involves complete transfer of both ownership of assets and responsibility for service delivery to the private party. It also excludes design and build, or turn-key, contracts whereby the private party is not involved beyond the construction phase of the infrastructure.

7. **PPPs can take several different forms including concessions, joint ventures, management or lease contracts, and outsourcing.** PPPs involving a concession agreement could be applied to industries where the private partner directly serves end-users, or in those where the government is the (sole) buyer of the infrastructure service produced. The former may take the form of a franchise to participate in a particular regulated market, i.e. the private party is granted rights to serve a market

that is normally served by the public authority. The latter involves a private party participation midstream of an infrastructure supply chain, with the public authority as the primary buyer (and distributor to end-users). A standard concession agreement stipulates the manner in which the private party is to provide the service, the tariff or tariff formula, and the tariff adjustment schedule. The private party has the obligation to mobilize financing, build or renovate, and operate the infrastructure over the concession period. The public authority's primary role is regulatory although it might also provide reimbursable financial support, or a subsidy in cash or in kind where such a subsidy is required to ensure financial viability of the project.

8. **Concessions could be structured as build (rehabilitate)-own-operate-transfer (BOOT), build-operate-transfer (BOT), build-own-operate (BOO), build-lease-transfer (BLT), design-build-operate, and other variations of these models.** The first two are the most commonly applied in African infrastructure development as discussed in Section 3. In a BOOT, for example, the concession allocates the responsibility to mobilize the finances, expertise and technology necessary to build and operate an infrastructure asset to the private partner for an agreed period of time – often 20 to 30 years – after which the asset is transferred to the public partner. The private partner operates the asset and collects revenues over the concession period, paying a concession fee set at levels that allow for amortization of the capital invested. At the end of the concession period, the asset is transferred to the state, and the private party is compensated for the end-of-concession value of the asset. BOOTs are therefore used to develop public assets in sectors where a public entity acts as an operator in one or more market segments, and typically involve an off-take agreement with a public operator. The public authority may choose to renew the concession with the private operate at the end of the first contract, to retender for a new service provider, or to assume responsibility for operation.

9. **Depending on who finances the infrastructure, ownership of assets over the concession period may lie wholly (or in part) with either of the partners.** A BOT, for example, operates similarly to a BOOT, except that in this case, the financing is provided by the public authority, which either maintains ownership of the assets through the concession period, or transfers ownership to the private operator over the concession period. In BLTs, the private partner leases the asset from the state, which owns it for the duration of the contract, although the actual initial financing may be provided by either party.

10. **Another important feature of concessions is whether or not the 'design' function is included in the concession agreement.** A concession agreement that allocates 'design' responsibilities to the private partner transfers core preparatory stages of the project to the private partner, and is more comprehensive, but also limits the extent to which the state can influence the design. The details of each concession, therefore, differ according to the sharing of risks and rewards agreed upon, which has also introduced flexibility in the way these concepts are defined.

11. **Management contracts and leases involve the public authority subcontracting asset management services from a private provider, while retaining full ownership of assets, responsibility for service provision, investment authority, and often, the responsibility to finance any new investments or maintenance.** The two differ mostly in that under a management contract, the private party is compensated for its services through a management fee that also covers operating costs, with the public authority bearing most of the operational risk, whereas in a lease, the private party pays a leasing fee to the asset owners (the public authority) and fully bears operational risk. These contracts can be short or long term, with contracts awarded for between 4 and 30 years in the African infrastructure markets over the past two decades.

12. **Outsourcing entails the public entity hiring a private firm to undertake one or more of the tasks that are ordinarily performed by the public authority in its infrastructure service delivery role, for a predetermined fee, and over a limited period of time.** The public authority retains responsibility for full service provision, and funds capital investments. Contracts are often performance-based, awarded through competitive bidding and for a short period of time, which give the public authority comfort that fees are competitive, and room to retender in the event that contractual obligations are not sufficiently met.

13. **Joint ventures are perhaps the most distinct form of public-private partnership.** They involve co-ownership (through capitalization) of the service providing operation by a public entity and a private partner, or partners. The joint venture could be in the form of a special purpose vehicle created specifically to undertake the project, or an established corporation that undertakes more than one operation. Joint ventures can therefore have a life limited to the life of the project, or be an open-ended partnership. A public authority still needs to provide regulatory oversight, which necessitates the creation of Chinese walls around the public entity involved as a partner in the joint venture to minimize conflict of interest.

2.2. Rationale for PPPs

14. *Market failure:* **The typical (theoretic) argument for government involvement in service provision is to correct market failure.** In basic terms, markets fail when perfect competition is not possible, externalities exist, and the goods being provided are public goods[11]. By design, some segments of infrastructure markets operate as "natural monopolies", i.e. production is most efficient from a long run average cost perspective when concentrated in a single producer entity. Others, are naturally oligopolistic, allowing for only a handful of players at a time. Although the availability of instruments to exclude some user groups has neutralized the public good characteristics of some infrastructural services, 'exclusion' in specific sectors (particularly in social sectors) is inhibited by the fact that it can generate public

[11] *Public goods are goods with two key characteristic: non-rival (i.e. the use by one person does not prevent another's simultaneous use), and non-excludable.*

negative externalities. Moreover, most infrastructure services are still non-rivalry. Certainly, the fact that infrastructure service provision is generally associated with negative externalities (climatic, environmental and social) suggests strong elements of market failure. These characteristics largely explain the historic involvement of the state in infrastructure markets[12], and justify the need for the first "P" in PPPs.

From this premise, there are three rationales for engaging the private sector using a PPP structure to provide goods and services typically provided by the state:

15. *Private capital.* **A PPP in which the private partner brings private capital is a powerful tool for off-balance sheet financing of public infrastructure.** This means that a public service can be provided sooner than when the public authority has to mobilize these resources. This justification carries more weight when the public partner is liquidity-constrained and would have delayed service delivery.

16. *Efficiency.* **Implementing infrastructure projects sometimes requires capacities not available in the public sector, such as the expertise to procure the best contractors, mobilize financing at least cost, and monitor implementation to avoid cost overruns.** With the right incentive structure, a private partner can handle these tasks more efficiently. When properly structured, a PPP provides a framework to optimally allocate risks to the partner best placed to absorb the risk, which improves the quality and efficiency (cost-effectiveness) of the transaction.

17. *Performance.* **For the same reasons they pursue efficiency, private partners involved in public service provision also normally have an incentive to maximize availability or reliability of the service provided, and to ensure its sustainability.** Performance enhancement is compatible with profit maximization, when the contractual arrangement allocates performance gains (from the process of developing, maintaining or operating the assets) to the private party, i.e. if the private party is a residual claimant[13].

18. **It is worth highlighting some of the contractual flaws or factors in the operating environment that would reduce or eliminate these expected benefits.** First, government participation in infrastructure development may fail to achieve a socially efficient allocation of resources, or address the market failure being targeted.

    As discussed in section 4, 'government failure' is actually quite common, and has affected performance of PPPs on the continent. Such failure may be due to inadequate capacity to undertake the roles designated to the state in the PPP arrangement, capture of public decisions by political interest groups, or rent seeking behavior by civil servants. In PPP arrangements dependent on financing from the state, failure to mobilize resources in a timely manner can affect performance.

[12] *It is understood that governments have also intervened in markets for other reasons, for example, addressing systematic irrational behavior by producers or consumers, or for distributive justice, i.e. correcting inequalities.*

[13] *The residual claimant retains net income after deduction of all costs.*

19. **Second, if the objective of adopting a PPP model is to mobilize private capital, then only a subset of the PPP arrangements discussed above can be considered, and within this subset, different levels of risk of failure to capitalize also exit.** In greenfield operations wholly funded by the private party, this risk is significantly mitigated. However, in brownfield operations, there is sometimes an incentive for the private party to improve performance by maximizing efficiency gains from the inherited infrastructure while minimizing new capital injections. This has affected performance of railroad concessions on the continent. Performance contracts would have to be airtight to minimize this risk.

20. **Third, efficiency gains could be erased by an underestimation or misallocation of risks in a PPP, as this could lead to costly remedial actions, particularly for the public authority, which normally absorbs all residual risk. T**he use of complex PPP arrangements exacerbates this risk. In addition, while efficiency gains could be harnessed from the sources indicated above, these gains do not always trickle down to users in the form of more affordable public services. In the event of flexibility in the pricing framework agreed upon in the PPP contract, prices may in fact increase. There are number of different methods of managing this risk depending on the type of PPP in question. For example, in energy sector BOOTs, whereby the private partner is operating only on the generation side, a feed-in tariff (and adjustment formula) is often negotiated apriori, so that the price at which the private producer sells power to the grid operator is predictable. In sectors where the private partner serves end-users directly, a sector regulator has been used to either approve tariffs or regulate against non-competitive market practices.

21. **Fourth, private enterprises that are residual claimants cannot always be relied upon to ensure consistent delivery of services.** In industries with high operating costs (for example, the airline industry), a provider may choose to reduce availability of the service in the interest of managing cash flows. Similarly, because PPPs have a limited lifespan they do not always safeguard sustainability of assets. Experiences from railways show that the hardy nature of the infrastructure (railway tracks) may act as an incentive for private operators to squeeze maintenance, with negative implications on post-concession sustainability of the assets. Therefore PPP contracts should include a comprehensive accountability schedule, and a well-capacitated supervisor and regulator is necessary to safeguard performance. In the case of management contracts, the use of a performance-based fee structure, such as including a bonus for achieving specific targets, or defining fees as a share of profits, can mitigate performance risk provided there are mechanisms in place to guard against inflation of achievements.

22. **Finally, by sharing risks and rewards, a public private partnership improves alignment of incentives with the financial success of the project, induces the private party to take a longer-term perspective on the project, and ensures that specific valuable investments are undertaken.** However, the risk for opportunistic behavior is not fully eliminated. This underscores the role of formal

rights to terminate contracts, risk mitigation instruments such as guarantees, as well as soft features such as trust, commitment to a common cause, and reputation, in solidifying contract agreements.

2.3. PPP project design and key considerations

23. *Choice of PPP model:* **Before choosing PPP as the model of procurement, the public authority generally has a clear idea of the objective it intends to meet through the PPP, i.e. whether to mobilize private capital, enhance efficiency, or improve performance on specific parameters such as access.** Some PPP options are not suited to meeting certain objectives, or may not be practicable in certain market environments. Therefore, the first step is determining whether or not the environment is enabling, what reforms to implement and what capacities to enhance. As discussed in Section 4, different PPP options have different prerequisites, and contribute to the key objectives of engaging the private sector to different degrees. The ranking of PPP options should take these factors into consideration.

24. **Assuming that the prerequisites for the use of PPPs are in place, there is still need to determine if the targeted PPP option offers the best value for money.** Tools such as the public sector comparator (PSC) model, a financial model that estimates the net present cost to the state if it was to deliver the project under a more traditional procurement method, are used for this purpose. In the case of the PSC, the estimated cost of public procurement is compared like-for-like to the cost of procuring the project as a PPP, determined either from undertaking a similar estimation of the cost of PPP procurement, or waiting to receive bids for a chosen PPP option. But while there is broad agreement that some type of value for money assessment is required before PPP is chosen, there is lack of consensus regarding the choice of options to be compared, whether to use hypothetical or practical cost estimates, and the best way of anticipating and costing risks. A comparison of public to private service provision, for example, is not always useful given that in some cases, the government is not in a position to fund the project. Likewise, while hypothetical value for money assessments such as PSC are generally more timely, they fail to fully capture risks especially those associated with untested PPP options, and can be captured by private sector interest groups (Leingland and Shugart 2006). These analyses can also be costly when undertaken on a project by project basis. In finance-constrained developing countries, the alternative is to undertake sector diagnostics that provide broad policy guidelines with respect to the use of PPPs.

25. *Assessing technical feasibility.* **Once PPP has been chosen as the mode of procurement, there is need to then define the technical design, which will allow for a more careful assessment of cost.** It goes without saying that technical designs are important in PPPs that involve building new assets or renovating existing

ones. The technical design of an operation is not always clear at the beginning, and goes through several iterations through the project preparation phase. Indeed, there might be need to revisit the technical design during construction, in the event of certain unexpected risks; with implications on project costing. In PPP models that entail building or renovating infrastructure assets, the public authority normally comes up with preliminary specifications at early stages of project preparation that potential bidders have an opportunity to comment on before the publication of the request for proposals (RFP). This creates room for the public authority to gauge the market's appetite for the proposed structure and adopt revisions if necessary. An advanced draft of the technical specifications is used in the RFP to guide the tender process, and bidders have another opportunity to propose further modifications or details in their technical bids.

26. **A PPP solution can allocate the responsibility of financing technical designs either to the public authority or the private party.** This is an important distinction, given that this process accounts for a nontrivial share[14] of total project costs. We said earlier that PPPs are sometimes used to meet public sector funding gaps in infrastructure development. In the absence of public resources to fund project preparation, the addition of the 'design' function to the PPP package could help governments in avoiding lengthy delays in the preparation stage of the project cycle. However, these large PPP packages are only attractive to a few well-capitalized firms, thus inevitably limit competition. Unsolicited bids could also be used as a method of transferring preparation costs to the private partner, although the same competition issues also apply.

27. *Assessing financial viability:* **While some types of PPPs (such as outsourcing and management contracts) can be applied on non-revenue generating business lines, most PPP options only make sense for revenue generating market segments.** It is also necessary, in the absence of subsidies, that the tariff charged by the service provider is enough to cover all costs incurred by the private party and a minimum expected return on investment. Financial modeling undertaken on design options is meant to establish the terms under which a given option is financially viable, thus guide investment decisions. A number of key factors are determined in the process, including the cost-recovery tariff, affordability of the tariff and level of subsidy required, financing structure, and expected returns. Through an iterative process, the financial model helps determine the optimal PPP terms including allocation of responsibilities and benefits between the public authority and the private provider. The private partner may require revisions to the original PPP structure that allows them to better hedge against certain (perceived) risks, or to mobilize the required financing for the project. The main determinants of financial viability summarized in Table 1 are therefore seriously considered when decisions are made as to whether or not to participate in the PPP, and robustly negotiated during contract negotiations.

[14] *The Program for Infrastructure Development in Africa estimates that at least 7 percent of project costs is allocated to techno-economic studies.*

28. *Assessing economic viability:* **Financial models generally do not consider the costs incurred by the public authority to make a PPP commercially viable, the welfare benefits of the project to consumers at the given tariff, or the cost of negative externalities.** It is important that all costs associated with the PPP arrangement, including hidden costs, are quantified and allocated to the relevant stakeholders. For the public authority, the fiscal implications of risk mitigation measures adopted in the PPP contract should be well-understood and quantified. This is an important factor that is discussed further in Section 4. There are other economic benefits from adopting PPPs that do not show up in the financial model, for instance, foregone government expenditures in the form of investment costs and subsidies to inefficient public utilities, and avoided emissions from the use carbon inefficient assets to meet demand (such as diesel generators). The economic viability of a PPP is ideally assessed along all these dimensions, although data constraints often restrict the scope of economic costs and benefits that are included in the economic model.

[15] *This is because creditworthy governments generally borrow at lower costs. However, the opportunity cost of public resources should also be properly assessed.*

Table 1: Key determinants of project bankability

Factor	Implications for PPP
1. Cost and quality of capital	Both equity and debt normally employed, with a higher premium placed on equity Long term capital preferred due to longevity of assets and contracts[75] Public financing could be used to lower the cost of capital Risk management instruments and guarantees can be used to lower the cost of capital
2. Cash flows	Cash flows should allow for reasonable debt service coverage ratios Scheduling of payments concession fees or taxes should take into account investment backlogs and length of construction phase.
3. Tariff	Tariff set at cost recovery, or below cost, depending on affordability If below cost, subsidy mechanism required Tariff adjustment formula that covers inflation and currency risk often included
4. Nature of off-take contract	'Take-or-pay' or capacity commitment contracts preferred to hedge demand risk The currency of the off-take contract is often matched to that of debt service to mitigate exchange rate risks
5. Payment guarantee	Government guarantee on payment often sought when the off-taker is a public entity to mitigate risk of default In the case of direct supply to consumer, a government guarantee on a minimum level of patronage revenues may be sought
6. Predictability of operating costs	Downside risk of operating costs can be mitigated through long-term contracts on inputs supplied by the public sector e.g. natural gas in power production
7. Subsidy level and type	Subsidy enough to meet viability gap often required Different kinds of subsides can be applied: monetary transfer from the government to the service provider; monetary transfer from government to off-taker (buyer of service produced by the PPP); in-kind, through waived fees and taxes; input subsidies; or cross-subsidization between user groups Subsidy structure should not create moral hazard, i.e. minimal use of subsidies linked to revenue performance
8. Regulation of profits	In regulated markets with a few operators, government regulates profits to mitigate abuse of market power A cost-plus or revenue gap formula is normally used

29. *Integrating social objectives:* **The typical PPP structure might require modification to cater for other social objectives of the state.** These include the inclusion of local content in infrastructure contracts, building local expertise, and employee retention in the case of brownfield asset transfer. The government might establish a minimum threshold of local content in PPPs, which affects either the ownership structure of bidding firms, or their choice of subcontractors. PPPs that entail transfer of existing public assets to private service providers often entail some kind of reform of the employee base. Including conditions to retain some or all employees, will have implications on the wage bill and training budget, and the allocation of risks and rewards in the PPP. Retrenchment also carries costs of severance, which must be allocated within the PPP structure, and may negatively affect the labor market in general – a cost that must be captured in the economic model. PPPs could also be required to specifically serve certain user groups regardless of whether or not this group can be served cost-effectively. Taking on

board these social objectives means that the structure of the PPP could be simple or complex, depending on which objectives are pursued and the instruments used. For intuitive reasons, simple structures tend to produce better results.

3. PPPS IN AFRICAN INFRASTRUCTURE

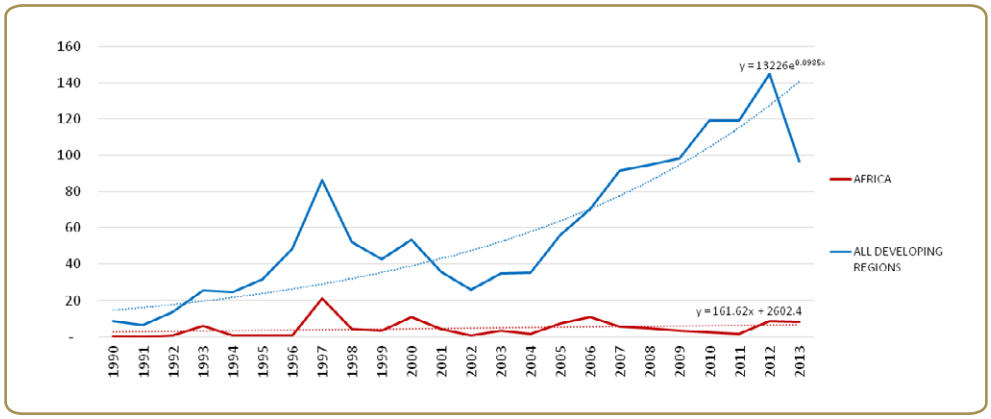
3.1. Salient trends

30. **Investments through PPPs have been filling an increasing part of the infrastructure finance gap in Africa over the past two decades.** Diagnostic studies undertaken by development partners in 2010 showed that the continent requires annual investments amounting to USD 93 billion over a period of 10 years to developt and maintain infrastructure in tandem with demand (Foster and Briceño-Garmendia 2010). At that point, USD 45 billion was being spent, mostly by African governments, leaving an annual funding gap of USD 48 billion. The World Bank estimates that committed investments[16] of a PPP nature in Africa were highest in 1997, 2000 and 2006, when they exceeded USD 10 billion per year, but are overall variable from one year to the next (Figure 1). A mild positive trajectory is evident on investment commitments to Africa, in contrast to a strong exponential growth in commitments observed collectively for developing regions. Moreover, investment flows to Africa are dominated by five countries – South Africa, Nigeria, Egypt, Morocco and Algeria – which collectively account for 66 percent of total commitment (Figure 2). Total cumulative commitments amounted to about USD 110 billion between 1990 and 2013.

31. **The sectoral trends show that the energy sector has driven growth in PPP commitments, accounting for 42 percent of the investments observed in Africa over the past two decades (Figure 3).** Growth in PPPs in the energy sector in Africa started in the early 1990s with continent-wide power sector reforms, when governments turned to the private sector to build, finance and operate infrastructure facilities, hitherto managed by monopolistic public utilities. PPPs quickly gained momentum in the region, increasing in numbers from only one PPP initiative reaching financial close in 1990, to a cumulative 238 initiatives closed by end 2013 with cumulative investment commitments of US$ 46.6 billion. However, energy sector commitments have been volatile, averaging about USD 2 billion per year during this period, with a standard deviation of USD 2 billion.

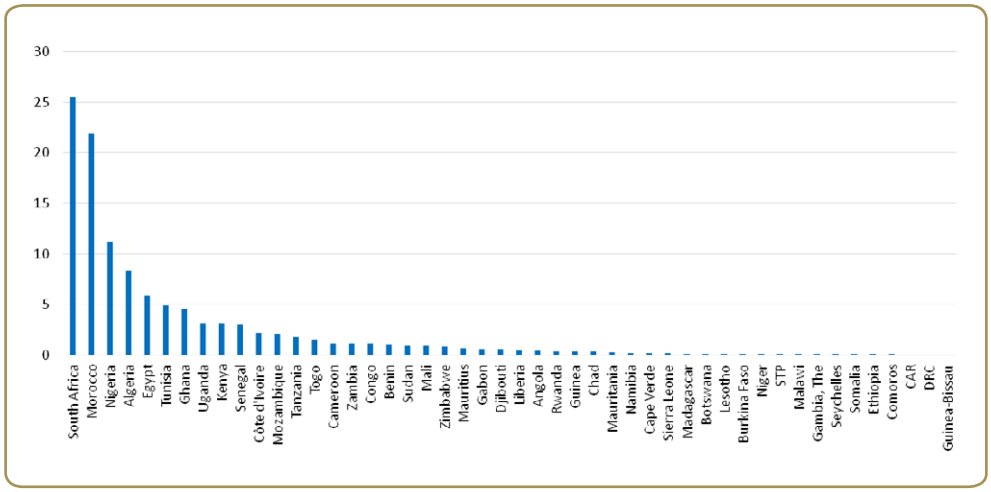
[16] *Committed investment are not to be confused with actual expenditure which is staggered over a number of years according to the construction scheduled of the operation funded. Moreover, some commitments never materialize into actual expenditure in the event of failure to reach agreement on the contract between the public authority and the private sector.*

Figure 1: Total investment commitments by PPP entities, USD billion



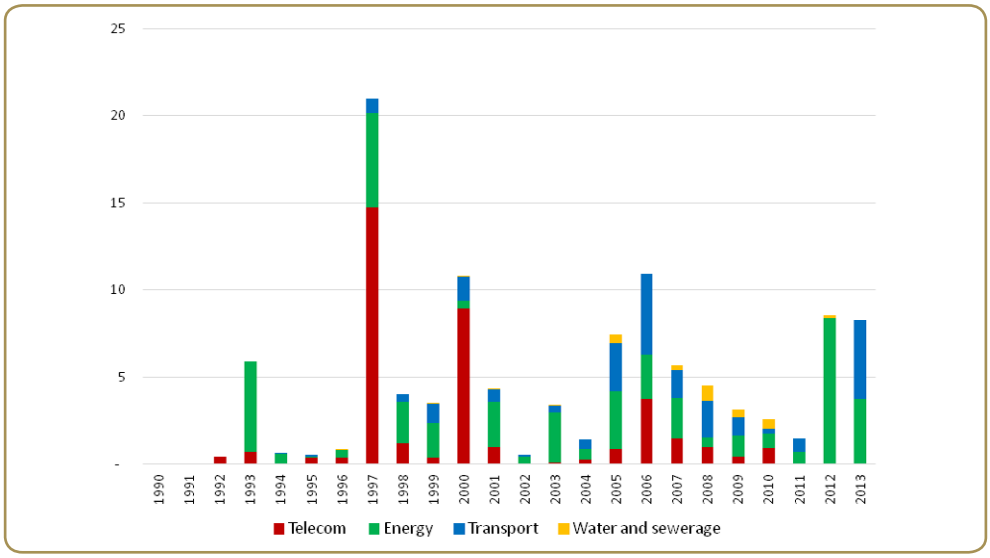
Source: PPI Database 2014

Figure 2: Total investment commitments by country, USD billion



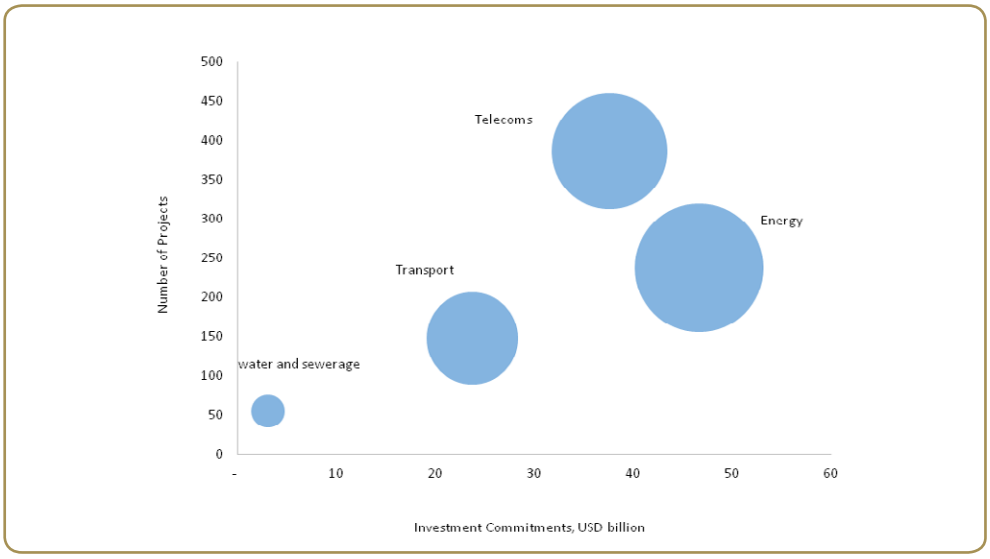
Source: PPI Database 2014

Figure 3(a): Annual PPP commitments by sector, USD billion



Source: PPI Database 2014

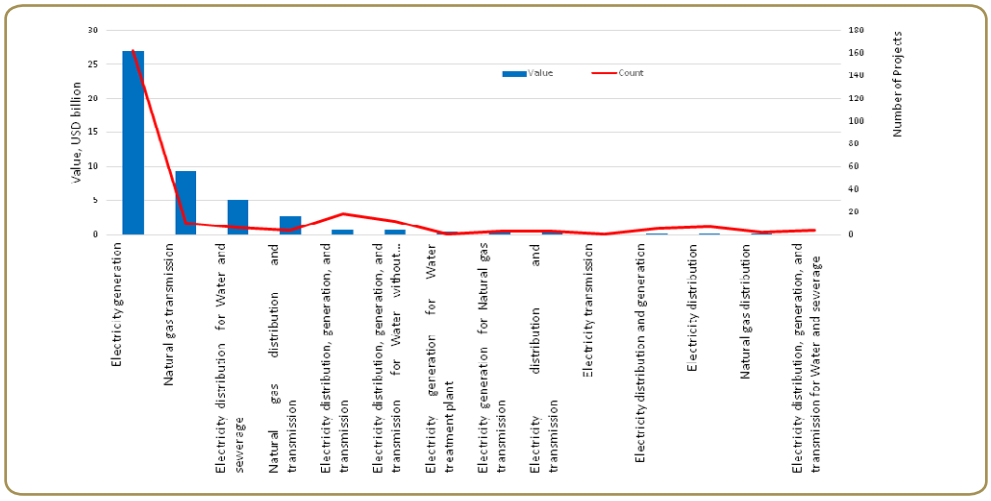
Figure 3(b): Total PPP commitments by sector, 1990-2013



Source: PPI Database 2014

32. **Most energy sector investments were greenfield power generation projects, which followed the reforms that mostly de-monopolized the generation segment of the electricity value chain, enabling the emergence of independent power producers (Figure 4).** 7.5 percent of the projects involved transfer of vertically integrated power utilities (that is, utilities responsible for the generation, transmission and distribution functions), to the private sector through management contracts, leases or rentals. This form of PPP was associated with limited investment commitments. PPPs involving the unbundled transmission and/or distribution segments made up about 5 percent of the projects in the sector, but drew no significant investment commitments.

Figure 4: PPP investment commitments in the Energy sector



Source: PPI Database 2014

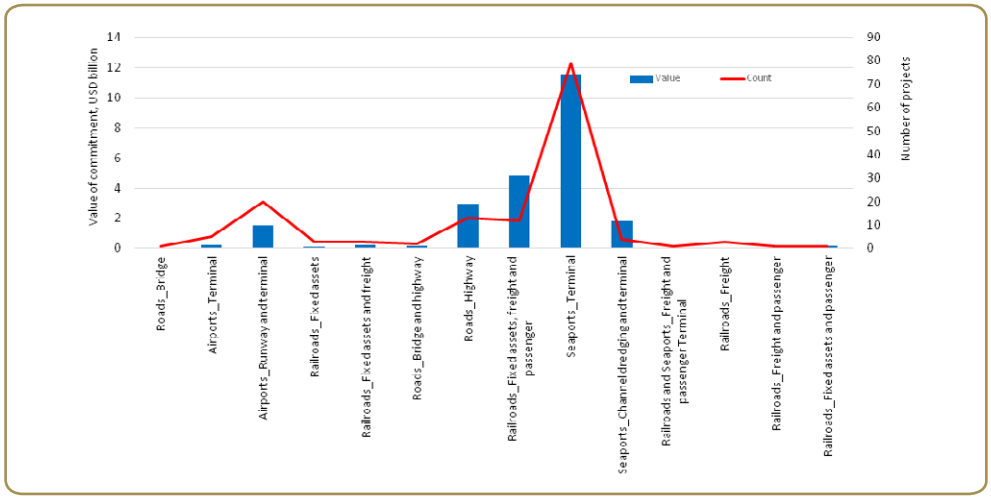
33. **PPP commitments in the telecoms sector were the largest in terms of number of projects, but second largest in terms of investment commitments, accounting for a third of the total investments.** It should be noted that when considering the full scope of private sector investments in infrastructure (including full divestitures and merchant assets[17], which do not entail partnership between the public authority and the private service provider, and therefore excluded from this study), commitments in telecoms are by far the largest. (During the period under review, these fully private commitments to the telecoms sector amounted to USD 114.7 billion between 1990 and 2013, about as much as the total commitments through PPPs for all sectors). 92 percent of the PPP investments in telecoms were in existing projects, and involved network expansion through partial divestiture of

[17] *In full divestiture, the government sells off a state-owned company to private entities through an asset sale, public offering, or broad privatization program. Merchant assets are built by a private sponsor in a liberalized market in which the government provides no revenue guarantees, and the private developer assumes construction, operating, and market risk for the project.*

telecoms utilities involved in provision of fixed access, mobile access and long distance line. The rest were BOO operations developing assets for the provision of fixed and mobile access.

34. **PPPs in the transport sector took off in 1994, late compared to the two leading sectors: telecom and energy.** Transport sector PPP investment commitments were on a relatively steady growth path between 2002 and 2008, but dropped significantly in the aftermath of the global financial crisis. The investments in seaport terminals attracted the lion's share in investment commitments (Figure 5) and half of these were brownfield operations structured as rehabilitate-lease, rent-transfer or rehabilitate-operate-transfer, while a third were new seaport developments structured as BOOT or BOT. PPPs in airport runways and terminals were the second most prevalent, but involved transfer of existing assets to a private partner for management without investment commitments a third of the time; the rest of the projects entailed rehabilitation and/or expansion with some investment commitments. Transport sector PPPs also involved existing road and railroad assets transferred to private partners for management, rehabilitation and/or expansion. Only two projects in this category were greenfield.

Figure 5: PPP investment commitments in the Transport sector



Source: PPI Database 2014

35. **In the water and sanitation sector, investments involving the private sector remain very limited.** Half of the PPPs contracts awarded in this sector were in the form of management contracts and leases, intended to improve efficiency of water utilities, including sewerage systems, and with minimal investment commitments. The limited investment commitments in the sector were mostly for greenfield potable water treatment plants (a total of 13 for the continent over the past two decades) structured as BOO, BOT or BOOT.

36. **The most commonly applied type of PPP, as measured both by volume of commitments and number of projects is partial divestiture (commonly applied in the telecoms sector), followed by build-own-operate (commonly applied to the energy sector).** Management contracts, rentals, leases and build-lease-transfer concessions collectively account for 5 percent of the total number of projects, but only 0.5 percent of total investment commitments. Management contracts are widely applied to the water and sanitation sector where they contribute 40 percent of the total number of projects but without financial commitments; and to a lesser extent in the transport sector, where they are employed in 12 percent of the project with minimal investments. Rentals and leases are mostly used in water and sanitation (30 percent of total number of projects in the sector) where they generally do not involve any investment commitments, and to a smaller degree in the energy sector (10 percent of total number of projects in the sector).

Figure 6(a): Total commitments by PPP type, USD billion

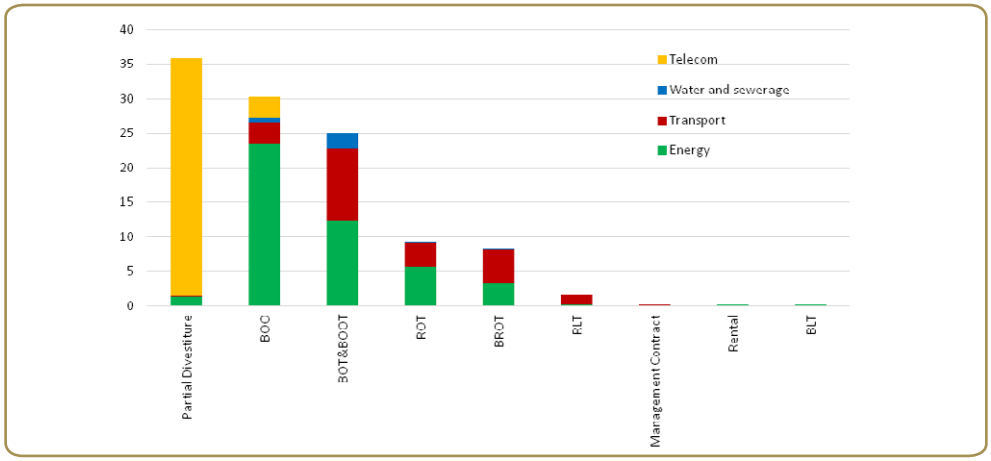


Figure 6(b): Total commitments by PPP type

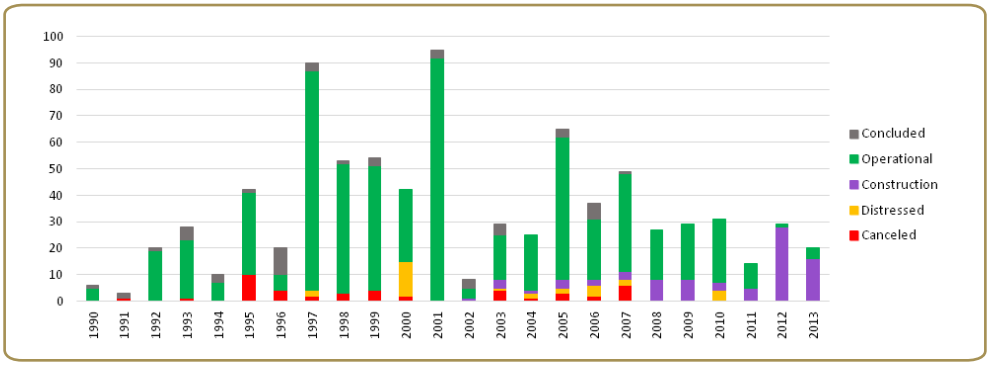
*ROT is rehabilitate, operate, and transfer. RLT is rehabilitate, lease or rent, and transfer. BROT is build, rehabilitate, operate, and transfer. BLT is build, lease transfer. BOO is build, own, and operate. BOT is build, operate, and transfer. BOOT is build, own, operate, and transfer.

Source: PPI Database 2014

3.2. Performance

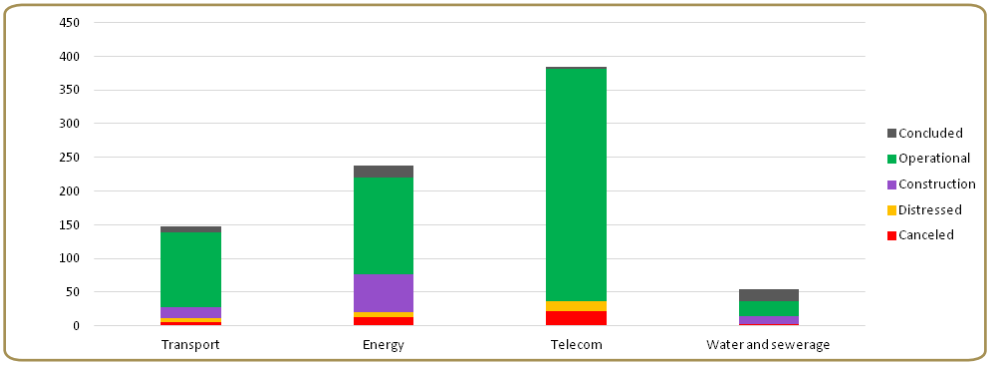
37. Most PPP projects in Africa that reached financial close between 1990 and 2013 were in operation phase as at July 2014, with 5.2 percent canceled, and 3.9 percent in distress (Figure 7). The number of cancelled PPP projects, or ongoing projects in distress, has decreased significantly since the 1990s, a moderate hike being observed on contracts awarded in 2007, which failed to reach financial close. The overall portfolio has an 8 percent contract cancellation rate, of which a third were re-awarded, bringing effective cancellations down to 5.2 percent.

Figure 7(a): Status of PPP Projects, 1990-2013



Source: PPI Database 2014

Figure 7b: Status of PPP Projects by Sector



Source: PPIAF 2014 (data)

3.2.1. Energy sector PPPs

38. **Projects of a PPP nature in the energy sector have trended the average performance of infrastructure PPPs in terms of proportion of projects cancelled or projects in distress, at 5 and 3 percent of the projects in the sector, respectively.** These include two methane gas power contracts to Kibuye Power in Rwanda, structured as 32-year BOO concessions, which were cancelled; a 20-year BROT concession for rural electrification awarded to Energia de Mocambique Lda (ENMo) in 2004, which was also cancelled; and a 20-year BROT concession awarded to Societe d'Energie et d'Eau du Gabon (SEEG) in Gabon in 1997 to rehabilitate the electricity system for water and sewerage, which is currently in distress. Some of the factors affecting project performance include disputes over the sharing of project costs in operations where pre-project costs are covered by the private partner, and failure to fully meet investment targets set out in concession agreements. Only one of the cancelled energy sector concessions had been re-awarded by end-2013. The rest of the projects were operational or still in the construction phase, while 8 percent of concluded contracts were either renewed, or re-awarded to a new provider.

39. **Energy sector PPPs were employed mostly to relieve governments of the large investment needs for the sector, explaining the choice of models involving private ownership (full or partial) of the assets.** PPPs were also used to improve efficiency and effectiveness of power utilities, most of which were failing to recover costs or meet countries' electrification targets. Market reforms have enabled the conclusion of in excess of two hundred PPP projects, three quarters of which were power generation projects. The evidence shows that private sector financing to the sector has increased, particularly in the power generation subsector, with the advent of independent power producers

in many African countries. Despite encouraging potential, power production has not fully blossomed, due to outstanding challenges in the sector, including inadequate investment in project preparation; low private sector appetite for larger projects with long lead times; differences in perception, therefore costing of risk between public and private partners, which affects bankability of projects; and poor transmission and distribution infrastructure. In addition to those and other investment climate factors, some project specific elements – engaging favorable equity partners with developing country experience, access to low cost financing, assurance of security of revenue streams, and availability of credit enhancement and other risk management measures – also play a significant role in determining success in reaching financial closure in new PPP projects, and sustainability of ongoing operations.

40. **Management contracts and leases awarded in the energy sector have also contributed to enhancing the performance of vertically integrated power utilities, by improving revenue collection and cost efficiency.** However, the contribution of PPPs to minimizing transmission and distribution losses, as well as meeting electrification targets, has been minimal. This is explained mainly by the limited application of PPPs to transmission and distribution functions, which for a variety of reasons have remained predominantly public functions. Most countries adopted the standard reform model, which prescribed industry unbundling and the introduction of competition and private sector participation in contestable segments of the market. However, only a few countries completely unbundled their electricity value chains, and fewer still, allowed private sector involvement in transmission and distribution.

3.2.2. Transport sector PPPs

41. Of the 148 transport sector projects in the PPPs database 1990-2013, most were operational or construction phase, with only 5 cancelled and 7 operational but in distress. The cancellations included projects in rail (2), airports (2), and seaports; all brownfield operations structured as ROT, management and lease contract, or divestiture. The cancelled contracts were all awarded in the early phase of the learning curve (1995-1999), with no obvious patterns in terms of country location. Most of the contracts currently in distress are in the railway sector, located in Zambia, Mozambique, Kenya and Uganda, and were awarded between 2003 and 2006 on brownfield projects. Two projects involving airport and seaport terminals in Nigeria were also among the distressed projects in the latter half of the assessment period.

42. **Transport sector reforms in Africa reflect the challenge of involving private partners in sectors that are largely non-commercially viable (for example roads), or those considered strategic for national security reasons (such as seaports and airports).** Road infrastructure services have traditionally been

provided free of charge in Africa, with users only paying vehicle licensing fees and fuel levies. The use of tolling to fully recover construction and maintenance costs is still limited and only a few countries (e.g. South Africa and Mozambique) has long-standing tolling systems involving the private sector. New PPPs are now being developed in Senegal (the new Dakar toll road) and Cote d'Ivoire (Henri Konan Bédié toll road). Generally, road sector PPPs have been limited by the public good characteristics of road infrastructure, and the fact that in most African markets, traffic volumes are not large enough to allow countries to recover all construction and operation costs at affordable rates. 16 PPPs were recorded in the road sector in Africa over the past two decades. However, PPPs in roads have recorded relatively better performance than other transport sector PPPs on measures such as number of concessions cancelled or contracts in distress. Only the Cote d'Ivoire concession was re-awarded after failure to reach financial close at initial contract awarded, explained by the civil unrest experienced in the early 2000s.

43. **PPPs in the rail sector in Africa have been widely used to correct operational inefficiencies, and to build new railroads associated with seaport developments.** 24 such operations were recorded between 1990 and 2013. Concessions have generally improved operational performance through increased freight volumes and enhanced efficiency (Bullock 2009). On other measures – infrastructure investments in particular – the concession model has performed below expectations. These outcomes are explained by a number of factors including: (1) Unrealistic expectations from the state as to the concessionaire's capacity (and readiness) to improve operational performance and make major capital investments. (2) Disputes have emerged post-concession over levels of concession fees and lengths of the concession, increasing uncertainty and the likelihood of renegotiating contracts. (3) Failure by governments to adequately compensate concessionaires for unprofitable passenger services has further strained concessionaires' finances. (4) The absence of a fully coordinated transport sector strategy and poor enforcement of regulations such as load limits on roads has at times left the railways facing unfair competition from road transport. (5) The tendency of policy makers to treat concessions as the last resort means that railways have usually deteriorated so badly by the time of concessioning that turnaround is very difficult. These factors explain in part the larger share of rail PPP concessions in distress, cancelled or renegotiated relative to other transport sector PPPs.

44. **Most African ports are still public assets; however, between 2000 and 2013, an increase in private sector participation through PPP arrangements such as rentals of port assets, subcontracting port services such as cargo handling, and concessioning of port terminals was evident in about half of African coastal countries.** A total of 83 PPPs involving sea transport infrastructure were recorded between 1990 and 2013, of which 37 percent were leases, rentals or

management contracts on existing terminals, 40 percent were BROT or ROT on existing terminal and channels, and the rest were greenfield terminals structured as BOT. PPPs have succeeded at mobilizing capital for expansion of existing infrastructure and development of new assets, as well as improving efficiency of logistics. Private sector involvement is still constrained by vested government interest in seaports, which have either prevented private sector participation, or resulted in cancellation of a number of awarded contracts. Government regulation of port tariffs has also been a source of controversy in a number of contracts.

45. **Only 25 PPPs in air transport infrastructure were recorded between 1990 and 2013, of which three quarters were brownfield runways and terminals structured as ROT, BROT, management contract or partial divestiture.** These projects span 15 countries including Egypt with several projects, South Africa, Nigeria, Cameroon, Mauritius, Tunisia, Congo, Algeria, Senegal, Somalia, Madagascar, Cote d'voire, Tanzania, Kenya and Djibouti. Forty percent of the contracts (including three BOTs) were awarded in the 1990s. Only one contract renewal was observed, while another was re-awarded following a cancellation of the first contract. The industry trend is such that most airport and airline operators (including some concession holders) remain quasi-public, with majority share held by the state. There are few cases of full divestiture involving mostly secondary airports (for example, Kruger Park Gateway Airport in South Africa); and several cases of subcontracting of landside services such as baggage handling. However, specific strategic functions such as navigation and air traffic control remain in the purview of the state. The private sector's participation is also undermined by the fact that profitability of airport infrastructure remains a challenges, given the reliance on carrier tariff, non-payment of these fees by carriers with weak balance sheets.

3.2.3. ICT sector PPPs

46. **There are fewer telecoms PPPs compared to fully private operations** – a ratio of 1 to 4 – with PPPs being mostly in the form of partial divestiture of previously state-owned telecoms utilities or greenfield projects involving joint investment in fixed and mobile telephone assets, in contrast to purely private operations, which were mostly stand-alone greenfield mobile telephony operations. Seventy percent of African countries recorded at least one PPP in telecoms in the past two decades. However, the performance of these contracts has not been perfect: the largest number of contract cancellations and contracts in distress was observed in ICT (37 out of 387). An additional 12 contracts were re-awarded after cancellation, while only 5 were renewed following conclusion of the first contract. Most of the troubled contracts were partial divestitures (62 percent) while greenfield operations structured as BOO accounted for 26 percent. The cancelled contracts include partial divestiture of Sotelgui in Guinea in 1995, the first and second attempts at partial divestiture of Rwandatel in 2005 and 2007, respectively, partial divestiture of Ghana Telecom in 1996, partial divestiture of Nitel in Nigeria in 2006, and partial divestiture of Gamtel in Gambia in 2007.

47. **Some of the issues explaining these cancellations include failure by the winning bidder to meet the capital injection deadline, failure of the PPP to compete in increasingly competitive telecoms markets, and failure to achieve roll-out targets for fixed telephone lines.** Overall though, the introduction of the private sector in the ICT sector has significantly changed the structure of the telecoms industry and succeeded at increasing market penetration for telephone services. However, the effect on prices has been generally weaker than expected, a result of exclusivity benefits afforded to private operators of ICT assets including those with PPP contracts, the perpetuation of state-owned enterprises in some market segments, as well as generally weak regulatory frameworks and capacities. Moreover, ICT PPPs have not been as successful at expanding access to the internet and related services, such as internet based telephony, and the cost of internet access remains prohibitive.

3.2.4. Water sector PPPs

48. **In the water sector, African governments have been less keen to introduce private sector participation, compared to other developing regions, where long-term instruments such as build, rehabilitate, operate, and transfer were employed to rehabilitate infrastructure and expand service.** In Africa, socio-political difficulties around specific reforms necessary to employ a wide range of PPP options, such as tariff reforms, as well as the civil resistance to 'privatization' of service delivery, explain the preference for management contracts and leases. These contracts performed relatively well: only 5 percent of the contracts signed between 1990 and 2013 were cancelled, none of the ongoing projects were in distress, and 22 percent of the contracts were renewed post conclusion (PPI data 2014). For example, Cote d'Ivoire renewed for the second time the management and lease contract with Societe Distribution d'Eau de Cote d'Ivoire (SODECI) in 2008, which had succeeded at increasing the number of users served nearly 100 fold since taking over supply in 1987. Senegal's PPP arrangement with the private operator Senegalaise des Eaux (SDE) for urban water supply and sewerage was also considered overall successful leading to contract renewals.

4. MAKING PPPS WORK FOR DEVELOPMENT

4.1. Macroeconomic considerations

49. **For the same reasons that general foreign direct investment responds to stable macroeconomic environments, PPPs fare better in countries with low inflationary pressures, stable exchange rates, and investor friendly forex management policies.** Private capital investments into infrastructure assets are mostly foreign currency based, given the capital intensive nature of infrastructure projects. However, revenue streams are local currency based, which increases the foreign exchange risk faced by private investors. In PPP arrangements where

the state is the off-taker, such as in independent power production, this risk is often managed by pegging off-take tariffs in foreign currency, although normally the actual payments are made in local currency by converting the forex equivalent at either the market exchange rate, or the rate guaranteed in the contract agreement. In PPPs involving direct service to the end-user, or in which the private partner provides a service for a predetermined management fee, this risk can be significant enough to require purchase of a risk mitigation instrument by either the public authority or the private partner as discussed in Section 4.4. Excessive inflation or foreign exchange volatility would act as a deterrent to the participation of the private sector in PPPs. In addition, because investors are often foreign or would have accumulated foreign currency based debt to participate in the transaction, currency convertibility is also an important consideration.

50. **The state is an active partner in PPPs, which means that investments also respond to the sovereign risk or risk perceptions.** Sovereign risk ratings, which are an indication of the credit worthiness of both the state (a guarantor of the payment obligations of the public authority involved in the PPP) and the state-owned entities that act as partners in PPPs, can be used to determine the extent of this risk for rated countries. These ratings also provide an indication of the extent of political risk associated with the business environment, including the risk of policy reversals, nationalization of infrastructure assets and non-compliance with contract terms. It is therefore important that countries seeking to aggressively pursue PPPs as an infrastructure procurement model also pay attention to these macro factors and establish a track record.

51. **As mentioned above, PPPs normally involve government guarantees to secure a minimum revenue stream for the private partner, backstop the payment obligations of the participating public entity, or guarantee the exchange rate.** There is a complex relationship between these guarantees and fiscal sustainability. On one hand, guarantees, especially those provided by countries with strong balance sheets, facilitate private investments, which create fiscal space for other public sector projects, which cannot be procured from the private sector. On the other hand, guarantees are implicit fiscal liabilities, which can turn into large revenue outflows, but are not easily accounted for on the fiscal balance sheet. The size of the liability can be managed by adopting credible guarantee valuing techniques, such as those used in Chile and Columbia. A quantification of PPP guarantees in the road sector in Chile, for example, indicated net contingent liabilities of at least

[17] *In in full divestiture, the government sells off a state-owned company to private entities through an asset sale, public offering, or broad privatization program. Merchant assets are built by a private sponsor in a liberalized market in which the government provides no revenue guarantees, and the private developer assumes construction, operating, and market risk for the project.*

0.25 percent of GDP with a maximum exposure of 5 percent of GDP (IMF 2005). Sovereign guarantees can become a major fiscal cost when applied to sectors that do not recover costs, such as renewable energy IPPs, which in a number of countries in Africa are still produced at a generation cost that exceeds the end-user tariff.

52. **For these reasons, PPPs tend to make the most economic sense when applied to commercially viable operations, where the need for the guarantee, or the risk that the guarantee will be called, is minimal.** Some countries have resorted to purchasing risk guarantees at concessional terms from development finance institutions to support infrastructure PPPs (for example, Kenya), while others have required commercial autonomy of state-owned enterprises, to minimize the need for such guarantees (for example, South Africa).

4.2. Policies and institutions

53. **As earlier discussed, the rise of PPPs in Africa is closely linked to infrastructure sector reforms that were implemented across the continent throughout the 1990s.** These reform programs generally followed a standard model, starting with the legislative removal of monopoly powers from the public utility, followed by unbundling or divestiture of the utility, and introduction of regulated competition. The challenge is that for a variety of reasons, most countries did not complete the reform protocol. Some countries chose to revert to public ownership after failing to sustain PPP contracts, while some sectors transitioned quickly to private sector dominance even with incomplete reforms. For example, a private sector led-growth of the mobile telephony industry in most African countries took off after market liberalization and regulatory frameworks matured as the need for better oversight on the sector emerged.

54. **However, scholars agree that at the minimum, the policy environment should be transparent and predictable, with as few legislative gaps as possible, to improve efficiency in PPP procurement and success of contracts.** While in some cases, the conclusion of PPP contracts has gone ahead of legislative reforms (normally backed by strong political support and leadership), this increases transactions costs, the risk of corruption, and the likelihood that governments will commit to costly options given their far less experience and knowhow compared to private partners. In such cases, seeking the assistance of development finance institutions that can act as honest brokers is important, to not only mitigate these risks, but to also mobilize assistance in building a supportive policy and legislative environment for future operations. This model was adopted in Burkina Faso, where the first concession for a commercial solar power plant was awarded ahead of

[18] *The statutory instruments were SI 33 which prohibited the quoting, paying, demanding or receiving foreign currency as legal tender for goods, services or any other domestic transactions; and SI 55 empowered the Bank of Zambia to monitor forex inflows, outflows and international transactions.*

the renewable energy legislation, but with the support of development partners through contract review and viability gap financing.

55. **To establish an enabling policy environment for PPPs, an audit of policies, laws, regulations, and legacy contracts that directly or indirectly affect operations in the specific sector of interest, is required.** This audit gives an initial indication of which PPP models can be undertaken with no or limited reforms, therefore partly determines the sequencing of reforms. In most cases, new legal instruments are required to facilitate new procurement models. Reforms to enable PPPs can also include restructuring and redefining mandates of existing institutions, as was observed in Kenya and Uganda to facilitate the concessioning of the state-owned railway corporations; or scrapping prohibitive statutory instruments, as was done in Zambia to unlock bottlenecks in negotiating a power purchase agreement[18].

56. **Experience has shown that results in terms of PPP performance depend to a large extent on the type of model chosen given the existing policy framework, political commitment, and extent of commercial viability of the sector.** According to Skilling and Booth, 2007, outsourcing is the least demanding and can be successfully executed with moderate government capacity for contracting, management and analysis, even when political commitment to PPPs is low and the regulatory environment is not very strong. Management contracts could also be implemented successfully with only moderate government capacity, political commitment and regulatory frameworks. This is because in this type of PPP tends to be short term, providing either party an early exit option if the arrangement does not work. On the other hand, concessions (such as BOOTs) require high levels of political commitment, cost recovery tariffs or consistent subsidies, a strong regulatory environment, low information asymmetry, and high government capacity, to succeed. Concessions often require the private partner to fund infrastructure investment, which reduces flexibility, since exit is not feasible before debt is amortized and returns at least as high as the cost of capital has been achieved. Concessions also often involve direct participation of a state actor as an off-taker of the output produced, increasing exposure to political risk. Lease agreements are also demanding in terms of government capacity for contracting, reliability of the regulatory framework, and scope for cost recovery, although the risk for political interference is generally lower than in concessions.

57. **The extent of private sector involvement in infrastructure should also be consistent with the maturity of institutions.** New institutions such as planning agencies, regulatory bodies, and PPP units may be required to support private sector participation. The East Asian experience indicates that cross-sector infrastructure planning institutions are key to successful infrastructure development in general, and engaging the private sector. In Singapore, the institutions established to determine infrastructure priorities and guide construction, are accredited with

setting the agenda for infrastructure investment that supported an economic growth strategy anchored on industrialization and exports, through targeted investments in trade, industrial and communication infrastructure. This agenda also emphasized commercially viable infrastructure projects laying the foundation for private sector engagement (Mody 1997).

58. **Strong planning institutions have also allowed coordination coherence of plans across related infrastructural sectors, and specifically, adopt a multimodal planning approach in the transport sector.** Evidence suggests that sustainability of railway PPPs is significantly impacted by developments in the roads sub-sector, where intermodal competition policies are required to eliminate unfair advantages on road, for example, pursuing cost recovery on roads and enforcement of axle-loading regulations (di Borgo 2011).

59. **Regulation is important for consumer protection in markets structured as monopolies or oligopolies.** Regulatory agencies must be adequately capacitated, efficient and independent in order to effectively play this role. Global experiences with regulation indicate mixed outcomes; at time government involvement through regulation has introduced inefficiency arising from the bureaucratic nature of regulatory units, and from conflicting interests. This was the case with regulation of urban transportation in Japan. It is worth noting that regulation can be minimize cost if the market is contestable, or by introducing price competition in the bidding process in non-contestable markets. Indeed, regulation has at times trailed private sector participation in infrastructure, suggesting that a comprehensive regulatory framework is not a necessary condition for PPPs. This was the case with privatization of infrastructure service delivery in Malaysia, which progressed with ad hoc regulatory control initially.

60. **PPP units have also played an import role in enabling private sector participation in infrastructure.** These units are typically located in Ministries of Finance, and provide one-stop-services to line ministries and state-owned enterprises for the preparation and procurement of projects structured as PPPs. Aside from performing these project-specific activities, PPP units may also undertake upstream functions such as identification and prioritization of projects, or downstream activities such as contract oversight. The performance of PPP units suggests a number of factors to be considered when establishing them, including the structure of the unit, location and staffing, as well as the scope of activities undertaken. The location of PPP units should be correlated to the market activities being supported. For instance, in the Philippines, PPP units were established in each sectoral agency involved in implementing the private infrastructure program, supported by a national build-operate-transfer center which provides oversight and performs macro activities such as maintaining a national inventory of projects, marketing the PPP program, providing advice to foreign investor, providing technical assistance and training to national and local government officials (Asian Development Bank 2008).

4.3. Local capacity

61. **PPP structuring requires specialist skills to undertake financial and economic analyses; arrange financing; draft terms of reference for contractors, bidding documents, and concession agreements; and negotiate contracts.** There is also need to retain expertise to monitor contract implementation and compliance with performance targets. Strong administrative capacity is required to ensure transparency in tendering, while effective regulatory capacity and regulatory autonomy is important to safeguard government and consumer interests. African governments at the beginning of the learning curve with respect to PPPs generally do not have all these skills in the public service, and must seek complementary external expertise. The more complex the PPP structure chosen, the more extensive the advisory services required. Transaction advisors are engaged at different stages of project development as and when their support is required, however, it is important to ensure that advisors are on board early enough to avoid costly errors being made. It is also important that public sector capacity is developed in the process; by pairing advisors with local staff, and training staff of PPP units.

62. **Clearly, some public functions cannot be outsourced, which means that countries should be prepared to invest in building and retaining these skills.** Technical assistance from development partners can be leveraged for this purpose. However, countries with an ambitious reform program may have to go beyond grant-funded capacity building programs, to using concessional loans for PPP capacity building. Nigeria, for example, used a USD 31 million concessional loan from the African Development Bank to (i) familiarize all stakeholders with PPP processes; (ii) provide specialized training to key public sector personnel; (iii) prepare project feasibility studies; (iv) provide hands-on technical support in procurement processes and project management; (v) facilitate the setting up of mechanisms for competitive procurement processes; and (vi) establish rules for handling unsolicited proposals (Brixiova et al 2011). It is important to highlight that this capacity development program was supported by a long list of potentially viable projects, including 32 licensed independent power producers, and 7 major highways and bridges.

63. **PPPs have been used as a method of promoting broad-based ownership of private enterprises in developing countries.** This is the case with the renewable energy independent power producer program in South Africa. Such inclusion effects could be attained more effectively by minimizing the use of broad-based ownership options that dilute the influence of the technically competent private partner. The strategy to integrate the local private sector should be a comprehensive one, involving not just local content thresholds in tenders, but capacity building efforts supported by appropriate curricula in institutions of higher learning, as well as supporting the setting up of regional manufacturing and maintenance hubs to bring to 'localize' part of the infrastructure supply chain. This strategy has been applied in infrastructure development in a number of middle income countries including South Africa, Egypt and Morocco.

64. **One aspect of capacity building that is easily overlooked involves building trust between the private sector and public authorities, especially in the early stages of implementing the PPP program.** This can be achieved through political leadership; training the private sector on government policy, strategies and procedures; and training civil servants on the symbiotic relationship between government and firms. Concepts such as "productive interaction" between the private sector and civil servants were used in Malaysia to build responsiveness, impartiality, and accountability as implemented during the infrastructure privatization phase. Consultations with the private sector should also precede policy reforms, not to harmonize goals and values, but to reach mutually beneficial outcomes. Moreover, an appropriate balance between stability and change should be maintained. Consultations can be facilitated by setting up structures to formalize engagement with the private sector, e.g. Business Councils and other industry groups.

4.4. Risks and risk mitigation

65. **Infrastructure PPPs are associated with a number of important risks that need to be well analyzed and mitigated to improve contract performance.** We already discussed foreign exchange risk and some of the mitigation measures normally included as conditions within the PPP contract. Other methods of mitigating foreign exchange risk include currency hedging, government exchange rate guarantees, and devaluation liquidity schemes. Political risk can be mitigated through instruments such as the partial risk guarantee offered by the African Development Fund and International Development Association (IDA), or political risk insurance offered by the Multilateral Investment Guarantee Agency of the World Bank (MIGA). Aside from enabling private sector participation in PPPs, political risk management instruments also incentivize governments to implement reforms that address performance risk to minimize the likelihood of the guarantee being called.

66. **PPPs structured as project finance operations, for example BOTs, often seek non-recourse debt (i.e. debt guaranteed by project cash flows), which means that the availability and cost of financing is highly sensitive to perceived commercial risk.** Commercial risk can be managed through instruments such as government guarantees or credit risk insurance. Given the long term nature of infrastructure debt, private partners in PPPs could also choose to purchase cover against interest rate risk. In the event that local currency is mobilized, instruments such as the African Development Bank's innovative Currency Exchange Fund (TCX) can be used to provide specialized cover against interest rate risks. It is worth noting though that while risk management instruments improve the viability of projects, costs could exceed benefits if risk perceptions overstate the actual risk or the expected cost from a risk materializing exceeds the cost of the mitigation instrument. This underscores the need for good risk analysis efforts during project due diligence.

5. OTHER INNOVATIVE INFRASTRUCTURE FINANCING INSTRUMENTS

67. **As traditional strategies and sources of finance are not enough, closing Africa's infrastructure gap has obliged innovation, beyond PPPs, on the part of the public sector, development partners, and the private sector.** The adoption of new instruments has been supported by a combination of factors. First, while the private sector is taking an increasingly larger role, opportunities to revamp public sector financing are also seen, as most countries have exhibited positive trends in terms of debt sustainability over the past decade. This trend has created the fiscal space to tap new sources of public debt. External flows remain important in this respect. However, African countries are also increasingly looking to domestic markets to mobilize savings to productive use and increase diversity of debt instruments. A positive trend in domestic private and public savings observed in 57 percent of the countries (with Liberia, Algeria, Libya, Gabon and Botswana leading) has made it possible to tap local markets for local currency debt.

68. **Second, in the wake of the recent global financial crisis, countries are seeing the need to deepen local capital markets.** This is resulting in tax reforms, and regulatory reforms to improve liquidity and efficiency of domestic capital markets. The reforms are also enabling innovation in local capital markets, some specifically targeting long-term investors, thus broadening the scope of financing availability for long term investments such as in infrastructure projects. A positive trend relating to financial sector development has thus emerged, as evidenced by trends in broad money to GDP and stock market capitalization to GDP ratios. Other positive macro-economic trends have also made it possible for African countries to venture into new financing instruments. One pertains to the extent of macroeconomic stability as measured by inflation and currency volatility. Another relates to a positive balance-of-payments and forex reserves trend in a number of countries (particularly those benefiting from favorable commodity prices, as well as from new mineral discoveries), which allows countries to undertake larger foreign currency based investments. Some of the innovative financing instruments being applied to infrastructure development in Africa are discussed below.

5.1. Resource-backed instruments

69. **Mineral resources are increasingly being leveraged for infrastructure development in Africa.** There are three main avenues that have been explored: 1) the resources-for-infrastructure model whereby mining revenues are committed to service debt associated with infrastructure projects; 2) leveraging infrastructure developed for mining operations to serve a wider population; and 3) establishing sovereign wealth funds to accumulate windfall gains from natural resources and direct them to infrastructure development. Chinese investments in African infrastructure, for example, are sometimes supported by strategic partnerships

negotiated between the African government and the Chinese government, offering concessions to develop infrastructure in exchange for natural resources. In Angola, oil-backed concessional loans from China were used to support post-war reconstruction over the period 2004 to 2008, and serviced through dedicated oil revenues. One of the key challenges with this type of financing is that it is often 'tied', that is, the bulk of the services and equipment are procured from the country supplying the loan. Aside from this, there is risk of unbalanced sharing of risks and rewards in resources-for-infrastructure deals particularly as they relate to new discoveries, given that for most natural resources, it is not possible to determine apriori the exact amount and quality of natural resource reserves being given up.

70. **To harness the growth and development benefits from recent discoveries of natural resources, African countries must make major investments in infrastructure directly supporting the mining activities.** Estimates by the Deutsche Bank are that to fully exploit the iron reserves on the continent, investments amounting to USD 50 billion are required to construct the 4,000 km of new railway lines required to evacuate the ore. Some of this infrastructure traverses remote areas and could be leveraged to meet broader access targets. However, in the integrated mining model typically used in resource extraction, infrastructure is developed solely to serve the mining operation. Lately, a number of countries are exploring methods of revising this model to leverage mining infrastructure for broader economic benefits. One method involves including 'open access' requirements for infrastructure in mining concessions to allow access to users within the mining infrastructure's catchment area. Another model entails having the mining infrastructure developed and operated by an independent developer, whereby the mining company has a take-or-pay capacity allocation and first-mover rights, and the independent operator can raise capital on the back of the take-or-pay agreement. However, it remains unclear how to optimally revise the 'captive infrastructure' model without compromising asset availability for the mining operation in the case of an independent operator, or introducing inefficiencies and risks by requiring private mine operators to provide public services.

71. **Sovereign wealth funds (SWFs) are government investment funds capitalized from the proceeds of resource exports, which resource-rich countries can use to mobilize financing towards infrastructure projects.** But examples of SWFs established with the exclusive or partial aim to support infrastructure development on the continent remain very limited. The Nigerian Sovereign Investment Authority established in 2011 is one example, which aims to allocate part of its initial capitalization of USD 1 billion to support infrastructure development in Nigeria. In Angola, the Fundo Soberano de Angola established in 2012 with an initial endowment of USD 5 billion, also has a medium term objective, to establish within it an Infrastructure Fund, specially targeting infrastructure investments in Angola and in sub-Saharan Africa. Other African countries (Ghana, Equatorial Guinea, Mauritania, Gabon, Algeria and Botswana) have established sovereign wealth funds, though without intending to invest in infrastructure. A study by Triki

and Faye (2011) suggests that African SWFs tend to seek safe investments in stable economies, investing primarily in government bonds and long-term offshore assets. The constraints to directing SWFs to infrastructure investments is that often, the Fund is established primarily for economic stability purposes, hence the focus on safety and liquidity of assets. Funds may also be established to reserve part of the mineral wealth for future generations, therefore cannot be committed to meet current investment needs of the country without clear recapitalization modalities. SWFs must also be well-governed to avoid misappropriation of funds.

5.2. Bonds

72. **Bonds are defined as debt instruments used by sovereign, sub-sovereign or corporate entities to mobilize financing at a fixed interest rate.** The World Bank Global Finance Development (WDI GFD) database's definition places a lower bound of one year on the tenor of bonds[19] . Bonds could be publicly placed, privately placed with a public guarantee, or privately placed with no public guarantee; and could be denominated in local or foreign currency. Bond issuance may also be targeted to specific investors (e.g. diaspora bonds), or for a specific use (e.g. infrastructure bonds). From the borrower's perspective, one of the main advantages of using bonds to meet a funding need is the possibility of lengthening the tenor of debt. From the lender's perspective, bonds provide a secure investment option when sovereign guaranteed and, where markets for secondary trade exist, without large liquidity constraints.

73. T**he largest investors in (government) bonds in Africa, historically, are commercial banks (Adelegan and Radzewicz-Bak 2008).** There is growing participation by institutional investors, which favor long-term securities for maturity matching purposes, such as pension funds and insurance firms, especially in countries where reforms aimed at promoting participation or relaxing regulation of investments have been implemented. For example, countries which have undergone legislative reforms to allow private management of pension funds have experienced significant increase in the asset value of pension funds. These reforms have in turn translated into increased participation by institutional investors in government bonds. For example, Nigeria's pension funds are estimated to have reached a net worth of USD 26 billion in 2014, up from roughly USD 5 billion in 2007. This growth has also resulted in an increase in the amount of pension fund investments held in local and federal government securities, from about USD 1.8 billion in 2007 to USD 5.5 billion in 2010 (Stanbic 2011). In South Africa, pension funds' assets grew from USD 150 billion in 2005 to USD 227 billion in 2011 and their participation in bond markets was around 20 percent in 2012 (Financial Services Board, 2013; Alexander Forbes, 2012).

[19] *Bonds defined in the WDI GFD database as securities issued with a fixed rate of interest for a period of more than one year. Short-term notes have maturities of up to five years; intermediate bonds 5 to 12 years; and long-term bonds 12 years or more.*

74. **In Africa, bonds are mostly sovereign placed or sovereign guaranteed with limited use of nonguaranteed instruments, even in those countries with a longer history of bond issuances.** In the WDI GDF database, 27 African countries have issued publicly guaranteed bonds between 1970 and 2010. These include South Africa, Tunisia, Côte d'Ivoire, Nigeria, Egypt, Algeria, Zimbabwe, Morocco, Gabon and Ghana in the top ten by volume of public debt mobilized. Only three countries – Egypt, Ghana and South Africa – have record of non-sovereign guaranteed private bond issuances over the period 1999 to 2010.

75. **Bond issuances, in particular sovereign ones, have pick-up in the recent past, benefiting from improvements in debt sustainability on the continent.** Nevertheless, bond markets remain relatively underdevelopment due to cumbersome regulation, high issuance costs borne by the insurer, and the general absence of a market for secondary trade, which limits convertibility of bonds for lenders (see Beck et al 2011). A few countries including South Africa, Nigeria and Kenya have bond exchanges and stock markets, on which government and corporate bonds can be traded. Studies have shown that there is scope to increase this participation, while heeding the need to strengthen financial market institutions to manage agency problems (Adelegan and Radzewicz-Bak 2008).

76. **The use of bond issuances to finance infrastructure projects is also a relatively new phenomenon in Africa where much of the existing infrastructure was funded through fiscal revenue allocations and concessional loans.** Both targeted infrastructure, corporate and project bonds, and the less targeted external sovereign bonds are being used, as well as diaspora bonds. Kenya, for example, was able to issue 5 sovereign infrastructure bonds over the period 2009 to 2011. These bonds were denominated in local currency with maturities ranging from 8 to 12 years and coupon rates of 6 to 12.5 percent. The success of the first four issuances is attributed in part to the use of incentives; for example, holders could use the bonds as collateral to acquire bank loans while the banks could pledge them as collateral for their repo operations. The lower appetite on the fifth issuance, which was initially under-subscribed by over 40%, on the other hand, underlines the importance of the macroeconomic environment in determine success in the use of bonds to raise local currency debt. This bond targeted Kenyans in the diaspora, but was issued at a time when the Kenyan shilling was losing value against major international currencies and had depreciated year-on-year by 33% against the US dollar. The high inflation rate also meant that the market weighted average yield on short term securities soon outstripped the bond's coupon rate.

77. **The issuance of sovereign bonds in Kenya has also paved way for corporate bonds issues by private or state-owned companies, for example the electricity utility KENGEN and mobile phone company Safaricom (Brixiova et al, 2011).** To boost corporate issuance in local currency in Kenya, incentives including an exemption for bond investors from tax on interest were adopted.

Bond issuances by sub-sovereign entities involved in infrastructure development is also on the rise in South Africa. A number of state-owned enterprises, which operate autonomously, also regularly issue bonds to fund capital investments. In particular, the three utilities, which collectively account for over 90 percent of capital expenditures by state-owned enterprises – the roads agency SANRAL, the electricity utility Eskom, and the rail and ports utility Transnet – are active players in the bonds market. SANRAL was second only to the National Treasury in bond issuances over the past five years, relying on capital markets to fund its toll road projects. SANRAL bonds have included inflation-linked bonds and half of the debt (about USD 600 million) was government guaranteed. Its success in raising debt on the capital market was explained in part by its high credit ratings at the time of bond issuance[20], transparent and consistent information sharing, and also by sovereign guarantees on half of the bonds. SANRAL also successfully ran the ZAR 10 billion Domestic Medium Term Note program, comprising of a suite of six bonds of varying maturities and coupon rates, without a government guarantee (SANRAL 2008, 2009, 2010). High credit ratings have also supported bond issues by Transnet. The SANRAL experience also underscores the importance of consumer buy-in when using corporate bonds to fund infrastructure projects, as this affects commercial viability of the project, and debt sustainability of the corporation[21].

78. **Other factors also determine the extent to which bonds can be used.** A study by Adelegan and Radzewicz-Bak (2009) shows that factors including the size of the economy, its balance of payments position, size of the banking sector and macroeconomic stability (including level and volatility of interest rates and capital controls) have a significant effect on prospects for bond market development. The study finds that larger economies, those with lower access to foreign exchange through exports, and those with lower access to credit from the banking sector, are making greater progress in development of domestic bond markets. Other considerations such as level of economic development, applicable legal framework, quality of bureaucracy, macroeconomic stability, including debt sustainability, are also found to be significant factors.

[20] *SANRAL had a Moody's national issuer rating of Aa2.za, a short-term rating of P-1.za, and a global scale rating of A3 (long term) and Prime-2 (short term) in 2008 and 2009. It was also voted Best Borrower in the Bond Exchange of South Africa's annual Spire Awards in 2008 and 2009.*

[21] *SANRAL struggled to launch revenue collection on its toll roads developed under the Gauteng Freeway Improvement Project (GFIP) due mostly to public opposition to the project. The signature into law in late-2013 of the Transport Laws and Related Matters Amendment Bill authorizing the parastatal to enforce electronic tolling, as well as a government decision to reduce tariffs, helped with the commencement of revenue collection which rating agencies considered overall successful in the mid-2014 assessments (Moody's 2014).*

5.3. Private equity and debt instruments

79. **Other new vehicles being used to mobilize financing from private (both international and local) investors for infrastructure development are private equity and debt funds.** Equity and debt funds can be specialized, focusing exclusively on infrastructure investments or on specific infrastructure sectors. Most of these specialized funds are championed by established infrastructure firms such as Macquarie Group, and normally provide a mix of financing instruments including equity, subordinated debt, or mezzanine capital. The use of equity funds in infrastructure in Africa is recent, and early applications were observed in South Africa in the mid 1990's. Apart from South Africa, countries that offer tax havens or those with well-developed capital markets, e.g. Mauritius and Egypt, have been most successful at attracting domiciliation of private equity and debt funds. But once established, funds have sought investment opportunities in a wider market and often have regional or pan-Africa reach.

80. **Between 2000 and 2012, about 30 specialized infrastructure funds with a cumulative target fund size of USD 12 billion had been established in Africa.** Most of these specialized funds have targeted investments in energy (independent power producers), transport (toll roads), ICT (towers), as well as upstream infrastructure industries such as cement manufacturing. Financing through equity and debt funds has several advantages including mobilizing foreign currency financing, extending tenor (e.g. 15 years in the Sub-Saharan Africa Emerging Africa Infrastructure Fund), and mobilizing resources from investors who would ordinarily not invest into infrastructure. According to the Emerging Markets Private Equity Association (EMPEA), foreign institutional investors and development finance institutions contribute a lion's share of the financing utilized by equity funds, while the participation of African institutional investors (though increasing) remains small.

81. **Investors' appetite for equity funds is negatively affected by funds' tendency to deliver negative returns initially (during their investment period), lack of familiarity with equity funds as an asset class, and the investment security objectives of institutional investors, which often override the likelihood of large returns (Kwafo-Akoto, 2013).** For instance, the participation of African pension funds has historically been constrained by legislation that restricted the scope of instruments these pension funds could invest in. Other factors that affect the success of equity funds involved in infrastructure include stability of the environment for private procurement of infrastructure services, fund raising and fund management expertise, reforms in institutional (pension funds and insurance firms) investment policies, as well as extent and stability of expected returns.

6. CONCLUSION

82. **Public private partnerships have the potential to improve investments in infrastructure asset building and rehabilitation, and to improve efficiency in service delivery.** The analysis of PPP contracts awarded for infrastructure development in Africa between 1990 and 2013 shows that this method of procurement has grown in importance, and contributed to achieving key economic objectives such as improving efficiency of public utilities, increasing electricity generation capacity, and enhancing access to ICT services. A number of factors have been identified as important to enhancing the success of PPPs contracts. At a macro level, there is need for (i) consistency of macro policies with the objectives and functioning of PPPs, (ii) coherent policies across related infrastructural sectors, and coordinated planning, and (iii) local capacity building.

83. **The government should market its PPP program to increase competition in the bidding process and lower costs; undertake public consultations, especially when the transition to PPPs entails changes in tariffs.** Moreover, well-targeted safety nets should be provided to prevent exclusion of some user groups from accessing the infrastructure service following transfer of service delivery to a private partner. However, subsidies should be designed to offer only temporary relief during the transition period, and not become a permanent drain on fiscal resources. What is more, PPPs that require fiscal commitments, whether subsidies or guarantees, demand adequate understanding of the value of the business and its risk profile, in order to adopt the most economical option and at the right price.

84. **At a micro level, the choice of PPP option should be consistent with (i) the government objectives, that is, whether to mobilize private capital, improve efficiency of public utilities, or improve access; and (ii) with the maturity of institutions.** There is need to undertake value for money assessments, taking into consideration both the bid price and costs of administrating and monitoring the contract to ensure cost-effective procurement. Transparency in procurement is an important factor in building private sector confidence, and this could be achieved by making non-commercially sensitive details of the procurement process publicly available, and abiding to conditions laid out in the request for proposals. Careful analysis and appropriate sharing of risks and rewards between the government and the private partner is important to avoid costly oversights and minimize disputes during contract implementation.

85. **The study finds that among the 'innovative' infrastructure financing models, sovereign bonds have taken off in a significant way in a number of countries, especially those that have attained stable macroeconomic environments and sustainable debt levels.** However, the increased reliance on capital markets to fund infrastructure could negatively affect fiscal sustainability if appropriate

safeguards are not adopted. Resource rich African countries are also increasingly relying on resource-back instruments, for example, infrastructure-for-resources deals, to fund infrastructure investments. These models have not been fully tested, however, anecdotal evidence points to potential pitfalls that must be heeded including ensuring fair sharing of risks and rewards between the financier and the recipient country. Private sector led instruments, for example private equity funds, are also emerging, but yet to be fully explored given outstanding challenges in the business and regulatory environment in most countries that could potentially benefit from them.

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Local currency finance for privately financed infrastructure: The potential role of government and state owned enterprises

By Jeffrey Delmon [22]
World Bank [23]

Money is a handmaiden, if thou knowest how to use it; a mistress, if thou knowest not.
Horace, Roman poet, d. 8AD

ABSTRACT

This paper discusses Government efforts to mobilize long-term local currency finance for PPP, in particular through the use of "intermediaries", such as state owned enterprises (SOEs). It also summarizes the sources of long term private capital. The paper discusses different types of Government intervention to help mobilize long term capital, while an analysis on the use of intermediaries (e.g. state owned enterprises) to mobilize long-term private capital is also provided.

1. INTRODUCTION

1. **Infrastructure is normally financed by tax-payers and/or rate-payers, in either case using current funds or by financing against future income.** The financing may come from public or private financiers and investors. For private financiers, infrastructure promises long lifecycle assets, which are sensitive to significant variations in demand or tariffs, but in many cases provide a relatively secure and consistent revenue stream.

2. **Financing for infrastructure ideally involves long term debt, at fixed rates.** This allows the high upfront cost of infrastructure to be spread out over its long lifecycle (as much as 30 – 50 years), and therefore makes the infrastructure more affordable; the fixed rates help avoid sudden changes in financing costs and therefore user tariffs. Long-term financing (12 – 18 years term), either with fixed interest rates or with variable interest rates that are supported by interest rate swaps to become fixed, are generally available in the global currencies, e.g. US Dollar, Euro, Yen and Pound Sterling (with notable exceptions during the credit crunches in 2008/9 and 2011/12), but is more difficult to access in developing financial markets.

3. **Long-term infrastructure investments can provide opportunities to debt**

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This paper is drawn from Delmon, Jeffrey, Public Private Partnership Programs: Creating a framework for private sector investment in infrastructure (Kluwer International 2014).
[23] *The views expressed in this paper are the author's, not those of the World Bank, its Board of Directors, or the countries they represent.*

capital markets, help to increase the depth and breadth of the markets, establish robust yield curves, and provide long-term placement opportunities in local markets that are often starved of such opportunities. Long-term capital for infrastructure can provide a platform for reforms and market dynamism.[24]

4. **Accessing long term financing for infrastructure in local currency is not so simple.** Commercial banks in many countries do not have access to long-term liquidity. They fund themselves primarily through short term deposits. The debt capital markets may offer only short to medium term positions (e.g. 3-5 years), depriving banks of the opportunity to lay off long-term loans against long term bond issuances. These banks will face a "liability mismatch" to the extent they lend long-term (long-term loans funded with (the volatility of) short term deposits).

5. **Governments can do much to mobilize long-term local currency debt.** Governments regulate financial markets, setting rules for banking and capital markets, to protect different market actors and encourage activity in those markets. They also enable and provide market information, clearing functions, rating of credit risk, exchanges for different instruments, etc. One of the key sources of long term local currency financing is institutional investors, such as pension and insurance funds. Government reform programs can do much to protect institutional investors, and thereby enable them to invest in good projects.

6. **While it is not a focus of this paper,** it should be highlighted that, in PPP one of the most important efforts a Government can make to mobilize local currency financing is to prepare projects well, ensuring financially viable projects with bankable[25] risk allocation. Government reforms of financial markets can help address these challenges and release the capacity of financial markets to support PPP development.

7. **This paper discusses Government efforts to mobilize long-term local currency finance for PPP, in particular through the use of "intermediaries", such as state owned enterprises (SOEs).** Section 2 summarizes the sources of long term private capital. Section 3 discusses different types of Government intervention to help mobilize long term capital. Section 4 analyses the use of intermediaries (e.g. state owned enterprises) to mobilize long-term private capital, and Section 5 concludes.

[24] *For further discussion of PPP frameworks and opportunities, see Delmon, Public Private Partnership Programs: Creating a framework for private sector investment in infrastructure (Kluwer International 2014).*
[25] *See also Chapters 3 – 5 of Delmon, Private Sector Investment in infrastructure, Project finance, PPP projects and risk (2009).*

2. SOURCES OF LONG-TERM, LOCAL CURRENCY FUNDING

This section discusses sources of long-term local capital and how to attract such resources to infrastructure.

8. *Local commercial banks* - **Local banks (public and private) may provide a very convenient source of long-term financing.** While often less sophisticated than their global brethren, local banks have more access to local currency. Local banks also tend to be less risk averse when assessing projects in their own country, taking a more pragmatic view of Government and political risk, and having the confidence that local bureaucratic and technocratic challenges can be resolved in a satisfactory manner.

9. *Global commercial banks* - **Global commercial banks are often more sophisticated, with experience in construction risk, operation of infrastructure and structured finance that will give them a clear competitive edge (though this capacity may be located in other offices and not in the local office).** Global banks may also have superior access to the global financial markets, with its deep pools of liquidity and long tenors, well suited to infrastructure finance. Global banks may have local activities, giving them access to local currency liquidity, but generally in limited volumes. There are exceptions where the global bank has a strong local subsidiary or branch, but the local offices of global banks may have competing interests and are unlikely to have serious capacity on infrastructure in the local office, as they will be staffed for local operations. For these reasons, global banks tend to focus on foreign currency finance for infrastructure and are less competitive in local currency finance for infrastructure.

10. *Development financial institutions* - **External development financial institutions (DFIs), including multilateral institutions like the World Bank and the IFC, and bilateral institutions like Agence Francaise de Developpement (AFD) of France, are ideally placed to support infrastructure finance and are increasingly critical to PPP in developing countries.** They tend to have relatively low interest rates, long tenors, and grace periods. In addition to debt, they can also provide guarantees and insurance that may address specific financing risks faced by the project. However, DFI financing tends to be in foreign currencies and can involve additional costs, related to the conditions imposed (such as procurement, safeguards, financial management), complying with DFI practices and the time it takes to access finance.

"For a [development bank] not to take enough risk is as bad as it taking too much risk."

Source: Gutierrez, Rudolph, Homa and Beneit, "Development Banks: Role and mechanisms to increase efficiency" (World Bank Policy Research Working Paper July 2011)

11. *Institutional and retail investors* - **Long term liquidity may be available in local currency, in particular from institutional investors like pension and insurance funds.** Institutional investors like pension funds would seem to offer an ideal opportunity for infrastructure finance. Pension funds hold large volumes of long-term capital; in most countries they have difficulty finding long-term placements outside of Government bonds and real estate. Long term liquidity may also be available from retail investors, such as high wealth individuals otherwise tempted to move capital off-shore, retirees looking for long term security, etc., in particular where other long-term investment opportunities are not available in local currency. Access to these investors is often facilitated through capital markets.

12. *Debt capital markets* - **Capital markets often hold depth of liquidity in addition to, and often in excess of, that available from commercial banks.** Debt capital markets (through the issuance of debt securities often called "bonds") may provide access to credit at lower interest rates and longer tenors than commercial banks by providing access to retail investors and to institutional investors. However, the financing available through capital markets is often less flexible than the financial instruments available from commercial banks. E.g. they are not designed to provide grace periods (where the lenders agree not to defer payment of debt service during an initial period and instead to capitalise these payments) nor to provide debt in tranches (where the borrower must pay a commitment fee from financial close, but only pays interest once it has drawn down the amount needed), instead under a bond issuance, the project company must borrow the full amount of debt needed at financial close, and pay interest on that full amount until repayment (the extra interest charged for funds not yet needed is called "carry cost"). Also, the most active purchasers of debt securities (i.e. pension funds, insurance and other institutional investors) do not generally have the expert staff and processes of commercial banks, designed to assess and manage risk, and respond to changes and requirements of dynamic investments like infrastructure; and must hire investment banks and other intermediaries to provide such expertise.

13. *Global capital markets* - **The global capital markets have access to deep and long-term capital, from sophisticated investors likely to be more interested in infrastructure investments.** However, these investors are likely to have limited appetite for local currency placements. Even in foreign currency, these investors will be subject to certain limitations on the credit rating of the securities they purchase, in particular the prominence of pension, insurance and other prudential funds in the global markets may limit appetite for anything less than investment grade, or

even higher international credit ratings. Global capital markets are unlikely to be a significant source of local currency debt. There have been local currency bonds issued in the global markets (e.g. diaspora bonds), with some success, but usually not in large volumes. These efforts often focus on currencies from countries with large emigrant communities with close contact with their home country and desiring investments in local currency.

Box 1: Prudential rules for pension funds

In general, Anglo-Saxon countries adopt the prudent person rule (PPR) in pension fund investment, which requires only that funds be invested "prudently" rather than limited according to category. Furthermore, there are few restrictions on investment in specific assets. Such a system in fact requires an efficient court system with well-trained and informed judges, capable of establishing clear jurisprudence on prudent investor behaviour and of guaranteeing its swift enforcement for market participants. In many other countries, different quantitative restrictions have traditionally been applied, normally stipulating upper limits on investment in specific asset classes, including equity.

Source: OECD, Pension fund investment in infrastructure: A survey (September, 2011)

14. *Domestic capital markets* - **Local capital markets have more appetite for local currency positions, and will be less sensitive to political and other country specific risk.** However, for the purposes of financing PPP, local debt capital markets often elicit a number of challenges:

- liquidity – local capital markets, in particular in developing countries, often suffer from a lack of liquidity.
- tenor – infrastructure is best financed with long term debt. Local capital markets will need a robust yield curve, covering the different tenors up through long tenors.
- familiarity with infrastructure – local investors may not be familiar with the risk profile of infrastructure, and therefore may be particularly risk averse.
- lack of a yield curve – in sum, there are no comparable financial instruments freely traded in the local market, so no way to set a price.

Box 2: Securitization of Infrastructure Revenues

Dubai hired local and international banks to raise $800 million by securitizing road toll receipts and will use the proceeds to fund infrastructure projects in the Gulf emirate. Securitization requires a reliable revenue stream; careful structuring from experienced and well respected advisers and possibly credit enhancement to ensure the placement is sufficiently credit worthy to attract debt at the cost and tenor desired.

3. GOVERNMENT INTERVENTIONS THAT CAN FACILITATE ACCESS TO LONG-TERM LOCAL CAPITAL

A variety of instruments are available where Government seeks to help mobilize long-term local currency financing for infrastructure, including:

15. **Advisory services bring the assistance of experienced transaction advisers to the aid of contracting agencies or private investors, depending on the need.** Mobilizing debt for infrastructure projects requires particular skills, for example packaging debt efficiently and managing lender groups and their due diligence requirements. One of the key advisory roles is the "arranger" of debt. An arranger needs to know the market and be known by the market to facilitate arranging and negotiation with other lenders.

16. *Equity* and *"equity-like"* **instruments for infrastructure projects can be large in value and risky, with long periods before equity distributions are realized.** Sponsors are often the construction companies, infrastructure operators or other service providers whose principal focus is the provision of services to the project. The Government can provide equity investment and supply an intermediary to act as an equity investor. Equity investment in infrastructure is a difficult function to fulfil well; it requires a level of sophistication different than most equity investment. It is not just a question of funding, but rather the governance, the ability to make critical decisions in times of need, and to provide technical and commercial support, given the complexity of an infrastructure transaction.

Box 3: Arguments for Government Equity Holdings in Infrastructure

Some argue that Government should be an equity holder in infrastructure transactions. The argument usually runs that Government needs:

- A share in the upside of very profitable projects, to ensure that Government gets a piece of the action. Counter-argument: But equity distributions in infrastructure are hard to control and harder to forecast. If Government wants to share in the upside, it should require a share of revenues or a fixed lease payment instead.
- Control of the sector – to maintain Government influence over the project and the sector. Counter-argument: But private partners are likely to limit real Government control over the project as equity holders to mitigate conflict of interest and ensure that decisions are made on a commercial rather than political basis. Government would do better maintaining control through regulations and regulatory powers.

- Access to information – Government may see equity as a mechanism for accessing company information. Counter-argument: However, private partners will inevitably establish a governance structure that isolates sensitive information. The Government may find that regulatory powers and data gathering of its own will provide a more practical solution to information access.

17. *Long-term liquidity for equity investors* - **Equity investors also need access to large amounts of capital.** Project sponsors will normally have less robust balance sheets and will not be able to leverage like lenders. In many countries, the lack of equity investment is a major challenge for infrastructure programs, reducing competition and making projects expensive.

18. *Debt* - **The Government may want to, or through an intermediary, help provide or mobilize debt for infrastructure projects themselves.** Acting as lender is a difficult function for many Governments who do not have the due diligence, oversight, implementation and other key governance functions of financiers.

19. Long-term liquidity for commercial banks - Commercial banks may have staff and capacity to finance projects, but may not have access to sufficient long term local currency capital. Often, their deposit base will be short term in nature, creating a liability mismatch if they create long-term assets. Also, commercial banks may be nervous about using what long-term capital they have on infrastructure (where competing opportunities are more profitable). The Government can help by providing financial institutions (in particular commercial banks) access to long term liquidity, which they can then on-lend to infrastructure projects, for example helping commercial banks access local capital markets or supplying/lending long-term funds directly to commercial banks.

Box 4: Chilean Infrastructure Bonds

Chile successfully tapped the bond market for project finance debt through infrastructure bonds amounting to an average of USD 1 billion a year during 1996-2001. This situation was aided by Government revenue guarantees and even foreign exchange guarantees in certain cases and political and regulatory risks were mostly insured by DFIs.

4. USING AN INTERMEDIARY

20. The Government may want to provide a vehicle (an "intermediary") to provide financing for infrastructure projects and an intermediary for institutional investors who could or would not invest directly in projects. Such an intermediary is often created through state owned enterprises, which provide a convenient nexus between public, government support and commercial, private context. Such an intermediary can help:
    - use Government and donor funding, to leverage private sector funding
    - reduce the transaction costs represented by Government and donor funding by creating a wholesale mechanism
    - increase transparency and consistency of Government support by establishing an entity with governance mechanisms and operational guidelines establishing rules of the game
    - allow private sector salary scale to attract suitably skilled and expert staff and create a centre of expertise based on larger volumes of transactions, with commercial selection criteria
    - use the leverage available through a financial institution to increase the amount of support made available from a limited capital base.

Box 5: Tamil Nadu Urban Development Fund (TNUDF)

TNUDF was created as a trust fund with private equity participation and without state guarantees, the first such structure in India. Its paid-in capital combined with debt raised from a World Bank loan allowed TNUDF to issue the first non-guaranteed, unsecured bond issue by a financial intermediary in India, in 2000. The issue received a LAA+ rating from ICRA due to credit enhancement and structured payment mechanism, low gearing and strong repayment record.[26] The proceeds from bonds are deposited in the fund, and subsequently lent back to the participating local bodies as sub-loans to finance their infrastructure projects. [27]

Source www.tnudf.com

[26] *Krishnan, L. Tamil Nadu Urban Development Fund: Public-Private Partnership in an Infrastructure Finance Intermediary. Financing Cities, 2007.*

[27] *Peterson, George. Innovations and Solutions for Financing Water and Sanitation Background Paper. The Urban Institute, 2003.*

4.1. Functionality

Three key functions for the intermediary that can help mobilize local finance include: origination, liquidity and refinancing.

21. *Origination:* Intermediaries originating infrastructure finance will assess a project, influence its design and structure, and then build a book of debt either alone, with a club of other lenders, and/or through syndication.

22. *Liquidity:* **Long tenor funds can be made available to those financiers or as co-financing (senior or subordinated) to the project.** Other instruments, like take-out guarantees can be used to extend tenors of debt.

Box 6 : Development Bank of Southern Africa (DBSA)

The Development Bank of Southern Africa (DBSA) is a development finance institution wholly owned by the Government of South Africa that focuses on investments and joint ventures/partnerships in public and private sector financing. DBSA can raise money on local and international capital markets and is publicly listed on the New York Stock Exchange. Its bond ratings are the same as South African Sovereign Ratings.

DBSA offers a variety of financial products, including grants, equity, debt (senior and subordinated), underwriting guarantees and other credit enhancement.

Source: http://www.dbsa.org

23. *Refinancing:* **Liquidity constraints, risk ratios, single borrower limits and other prudential requirements can constrain the amount of support that local financiers can provide to infrastructure markets.** Refinancing involves the pre-payment of part or all of a project's debt by borrowing from a new lender (possibly at a lower interest rate, longer tenor or on easier terms).

4.2. A few challenges

24. **PPP financial intermediaries (FI) can be particularly difficult to implement effectively.** Some of the key challenges when creating an intermediary are discussed below. The annex provides a quick snap shot of some of the global TFs.

25. *Staying demand responsive* – **the FI must address identified market gaps, with access to products and instruments designed to address those gaps, but also with the flexibility to use other instruments or approaches that respond to the changing nature of such gaps and market needs.** The Indonesian Infrastructure Finance Facility (IIFF) was created after much effort at market analysis and coordination with other market actors. The Brazilian Economic Development Bank (BNDES) was a public bank that was adapted to address a growing market need. In the same way, the FI must focus on the gap, rather than squeezing out private investment, it must squeeze-in private lenders and investors, to give them new opportunities. Once FIs are created, it is often difficult to get rid of them once they have served their purpose. Provision needs to be made for the FI to be wound up, sold off, absorbed into another entity or to evolve into some other mechanism that will be responsive to other market demands, relevant at that time.

26. *Governance and management structures* – **investment project selection must be based on sound commercial criteria, and not driven by purely political priorities; the risk of capture of the intermediary by political interests is high.** This is generally addressed by developing the FI as a privately owned company, for example the IIFF. At the same time, purely commercial motivation may be too risk averse for the investments available. The Emerging Africa Infrastructure Fund (EAIF) faced this challenge, a partnership between development financiers wanting to take risk and commercial financiers with a more risk averse approach to project selection, creating a particular challenge in the early days searching for an appropriate incentive mechanism for the fund manager.

27. *Amount and source of original capital* – a**ny effort to make a significant impact on an infrastructure market is likely to require a large investment of capital in the FI.** The Indian Infrastructure Finance Corporation Limited (IIFCL) and BNDES were allocated funding from government bond issuances, giving them access to significant amounts of capital at a low cost. The National Infrastructure Fund (FONADIN) of Mexico was allocated the revenues from a portfolio of publicly owned toll roads. The IIFF and EAIF started from a smaller capital base. Other credit enhancement can be provided by the Government.

28. *Skilled staff and resources* – **newly formed FIs are a risky bet for experienced financiers, and yet an FI needs a solid, experienced management team to give comfort to the financial market and politicians.** They must be able to attract funding from institutional investors and display a keen understating of the infrastructure market. The management team also needs to be committed for a reasonable period; this is not the job for a political appointee, a retiree looking for something to keep them busy, or a short term consultant. The role of CEO is key, a politically acceptable individual but with good banking experience and the right incentives to take calculated risks. The IIFF and the African Finance Corporation both had challenges with their management teams in their early days, finding the

right set of skills and personality. These skilled staff can also be sourced through secondments from shareholders as was done for the Infrastructure Development Finance Company (IDFC); or through a management contract as was done for the EAIF.

29. *Identifying a solid pipeline* – **it is often tempting to focus on the market gap to be resolved by the FI. But, the FI's first investments, the demonstration projects, will be critical and must be carefully prepared as the FI is being created.** This creates a timing challenge as the market is unlikely to wait for the FI. The Investment Promotion and Financing Facility (IPFF) of Bangladesh addressed this challenge by focusing on a series of gas-fired power projects in its first phase, projects that were well developed, easy to market and limited to one sector. Phase two expanded to other sectors and more risky projects. The IDFC and IIFF spent their first few years providing advisory services to the infrastructure sector and thereby developing their own pipelines of investments, the former by necessity and the latter by design.

Box 7 : Fondo Nacional de Infrastructura (Fonadin) of Mexico

Fonadin is housed within Banobras, Mexico's national development bank and was created in response to the tight credit market of the financial crisis to address risks that the market was not able to handle. It began with a sum of over 40 billion pesos (US $3.3 billion) in 2008 and has its own revenue source from existing toll road assets that were rescued in a Government bailout in the late 1990's, and therefore does not rely on Government support for its financing base.

Fonadin's role is to finance infrastructure. It offers a variety of instruments including: grants, subsidies, guarantees (for stock, credit, damage and political risk), subordinated lines of credit, and grants for technical assistance.

Source: www.fonadin.gob.mx

Box 8 : Brazilian Economic Development Bank (BNDES)

Formed in 1952, BNDES raises money through the issuance of Government securities in favour of BNDES. It also has access to the capital markets and can raise money through trading securities and all manner of derivatives; it also earns income from its loan portfolio and can issue debentures. With its long term financing BNDES has been fundamental in the growth of PPP in Brazil. But is also subject to criticism, in particular long wait times for approval of loans, being overly risk averse, and requiring security from sponsors more appropriate to corporate financing than PPP. BNDES is also criticised for squeezing out private lenders due to its dominant position.

Source: www.bndes.gov.br and author)

5. CONCLUSION

30. **Infrastructure projects (in particular PPPS) provide an ideal opportunity for holders of long-term local currency.** In addition to treasuries and real estate, infrastructure offers one of the better long-term placement opportunities for developing economies. It also creates economic opportunities, jobs, and growth.

31. **However, most developing country financial sectors are ill-equipped to respond to the opportunities of infrastructure finance.** They do not generally have lending products with the long tenors, fixed interest rates and grace periods needed by infrastructure investments. Also, the risk profile for infrastructure differs from the normal diet of local financiers.

32. **Intermediaries can help.** These are specially equipped entities that can provide advice, structure projects and offer specialised financial instruments to help address the challenges faced by local financiers. These intermediaries can borrow from the local markets and convert these liabilities into the kind of financial instruments sought by infrastructure projects, and/or they can co-finance with local financial institutions and financiers to achieve together the lending products sought.

33. **Creating such intermediaries (whether from existing entities or by creating new ventures) can be costly and time consuming.** There is no easy or standard approach to intermediation. Each country will need to consider carefully its requirements, its legal framework, the make-up of its financial sector and the kind of infrastructure that is to be financed, before creating such an intermediary. Key lessons have been discussed above, learned from countries that have significant experience in creating intermediaries for infrastructure finance.

ANNEXURE

The following provides a snap-shot of a few of the global Financing Intermediaries.

Investment Promotion and Financing Facility (IPFF) of Bangladesh is a publicly held vehicle in operation since 2006 that provides long term funding through eligible financial institutions, who on-lend to qualifying PPP projects on market terms. The equity contribution of the sponsor (minimum of 30%) and the debt share of the local financial institution (minimum of 20%) ensure market-based incentives in selecting only commercially viable PPP transactions, and their successful implementation.

FONADIN (National Infrastructure Fund--Mexico) was established in February 2008, under the management of the national infrastructure bank Banobras. Fonadin was created in response to the tight credit market of the financial crisis to address risks that the market was not able to handle. It began with a sum of over 40 billion pesos (US $3.3 billion) in 2008 which will build up to approximately 270 billion pesos (US $22.2 billion) in 2012 through toll-road revenues. Fonadin can offer credit guarantees to project companies seeking funding from commercial banks or financial intermediaries or for bonds issued by a concessionaire. Fonadin can cover up to 50% of the loan or issuance with its guarantee. Fondo Nacional de Infrastructura (Fonadin) of Mexico Fonadin's role is to finance infrastructure. It offers a variety of instruments including: grants, subsidies, guarantees (for stock, credit, damage and political risk), subordinated lines of credit, and grants for technical assistance.

Source: www.fonadin.gob.mx

Infrastructure Development Finance Company ("IDFC") of India was set up in 1997 by the Government of India along with various Indian banks, financial institutions and IFIs. IDFC's task is to connect projects and financial institutions to financial markets and by so doing develop and nurture the creation of a long-term debt market. It offers loans, equity/quasi equity, advisory, asset management and syndication services

Source: www.idfc.com

India Infrastructure Finance Company Limited (IIFCL) started operations in April 2006. IIFCL accesses capital from the Government, IFIs and the financial markets (in some cases benefitting from a Government guarantee). These funds are on-lent to PPP projects. The IIFCL does not have a sophisticated risk assessment function. It follows commercial banks, providing only part of the debt requirements of the project and therefore ensuring that the incentive to assess projects and ensure successful implementation rests squarely on the commercial equity and debt providers.

Indonesian Infrastructure Finance Facility (IIFF) is a private, non-bank financial institution, commercially oriented with private sector governance, mandated and equipped to mobilize local currency private financing. The IIFF is capitalized through equity investments and subordinated loans from the Government, the private sector and multilaterals. It will invest in PPP projects, with debt, equity and/or guarantees, and by providing advisory services. (Infrastructure Development Finance Company (IDFC)) Emerging Africa Infrastructure Fund (EAIF) is a US$600 million debt fund, which aims to address the lack of available long-term foreign currency debt finance for infrastructure projects in sub-Saharan Africa. The EAIF was created through a joint venture of development institutions and commercial banks. By mixing equity from donors, subordinated debt from development partners with senior debt from commercial lenders, EAIF seeks to reduce its cost of lending and provide mid-market debt managed by commercial lenders.

Indonesian Infrastructure Guarantee Fund (IIGF) is a company, wholly owned by the Indonesian Government, that acts as the single window for guarantees for PPP projects. It assists the MoF in its role of monitoring and allocating Government support by assessing projects and helping to source any guarantees needed for that project, for example from the World Bank, MIGA, its own capital or the Government.

Brazilian Economic Development Bank (BNDES) is a publicly owned commercial bank. Formed in 1952, BNDES raises money through the issuance of Government securities in favour of BNDES. It also has access to the capital markets and can raise money through trading securities and all manner of derivatives; it also earns income from its loan portfolio and can issue debentures. With its long term financing BNDES has been fundamental in the growth of PPP in Brazil. It is a dominant force in Brazil's infrastructure market and provides debt for most of its PPP projects. As a Government owned Bank it received funds from the Government and uses the Government's credit position to offer very low rates for long-term debt. BNDES is also subject to criticism, in particular for squeezing out private lenders due to its dominant position, for long wait times for approval of loans, being overly risk averse, and requiring security from sponsors more appropriate to corporate financing than PPP.

Source: www.bndes.gov.br

Development Bank of Southern Africa (DBSA) is a development finance institution wholly owned by the Government of South Africa that focuses on investments and joint ventures/partnerships in public and private sector financing. DBSA can raise money on local and international capital markets and is publicly listed on the New York Stock Exchange. Its bond ratings are the same as South African Sovereign Ratings. DBSA offers a variety of financial products, including grants, equity, debt (senior and subordinated), underwriting guarantees and other credit enhancement.

Source: www.dbsa.org

Tamil Nadu Urban Development Fund (TNUDF) was created as a trust fund with private equity participation and without state guarantees, the first such structure in India. Its paid-in capital combined with debt raised from a World Bank loan to the Government allowed TNUDF to issue the first non-guaranteed, unsecured bond issue by a financial intermediary in India, in 2000, three to four years after being established. The issue received a LAA+ rating from ICRA due to credit enhancement and structured payment mechanism, low gearing and strong repayment record.[28] The proceeds from bonds are deposited in the fund, and subsequently lent back to the participating local bodies as sub-loans to finance their infrastructure projects. [29]

Source: www.tnudf.com

[28] *Krishnan, L. Tamil Nadu Urban Development Fund: Public-Private Partnership in an Infrastructure Finance Intermediary. Financing Cities, 2007.*
[29] *Peterson, George. Innovations and Solutions for Financing Water and Sanitation Background Paper. The Urban Institute, 2003.*

Policy Issues Emanating from the 16th Bank of Namibia Annual Symposium

By Bank of Namibia Research Department

1. INTRODUCTION AND BACKGROUND

The Bank of Namibia held its 16th annual symposium at the Windhoek Country Club on 25 September 2014 under the theme: **Infrastructure Financing for Sustainable Development in Namibia.**

A key conclusion from the symposium was that Namibia's physical infrastructure base compares well with other Sub-Saharan African countries; however more investment is still needed. Despite its vast geographical size, the country has managed to develop good transport networks, electricity distribution lines, water and telecommunications infrastructures. More investment in infrastructure is still needed if Namibia is to achieve higher and sustained growth and achieve Vision 2030. As some of the key existing infrastructures have reached their lifecycle, there is now a greater need to revamp the old ones and build the new ones. Priority infrastructures, among others include building of new roads, deepening and modernising of the port facilities as well as houses and upgrading of power generation capacities.

A total infrastructure funding requirement for Namibia is estimated at N$223.6 billion in the next five years and beyond. It is projected that SOEs can only manage to raise N$73.5 billion through a combination of user fee charges, Government subsidies and borrowing. This leaves a net funding gap of about N$150.0 billion. There is, therefore, a need to establish additional sources of funding to complement the traditional sources.

The papers and discussions raised a number of policy issues regarding infrastructure financing in Namibia and elsewhere. These issues are summarised in the following section.

2. KEY POLICY ISSUES EMANATING FOR THE SYMPOSIUM

i) Investment in infrastructure is imperative for growth

There was consensus that infrastructure is a key ingredient and a catalyst for growth and development. As such, failure to invest in infrastructure tends to make almost everything in the economic value chain slower, less reliable and more expensive. It is therefore, critical to invest in infrastructure development in Namibia if the country will realise and achieve Vision 2030.

ii) Formation of effective partnership between the public and private sector in infrastructure financing

Since the Government alone cannot address the infrastructure backlog, the private sector needs to come to the party. In this regard, the Government is in the process of creating a public-private partnership (PPP) legal framework to induce and govern private sector participation in infrastructure funding. This partnership will among others, encourage private sector investment, encourage innovation and promote efficiency in infrastructure financing and development. It is however, important to note that for the PPP to be effective, both parties need to understand the risks involved and have clearly defined roles.

iii) Institutional arrangements to ensure the effectiveness of various funding models

It has been observed that savings generated by institutional investments in Namibia has been exported, mainly to South Africa. To ensure that most of these funds are invested locally, there is a need to set up clear frameworks of how institutional investors can participate in infrastructure financing. This can be addressed through regulatory amendments as well as creating infrastructure funding instruments and structures. Moreover, it was suggested that investment contracts with international investors should make provision for local participation and ensure skills transfer and local sourcing of intermediate goods.

iv) Alternative funding options

A number of funding options were suggested. These include usage of privatisation proceeds to fund public infrastructure, institutional savings, infrastructure fund, local currency infrastructure bonds, external sovereign bonds, and private equity funds, amongst others. These models may work differently in different sectors. Thus, no single solution or best approach was recommended. The effectiveness of each model can not be generalized since each model fit for a specific purpose.[30] In this regard, there is a need to explore each of these options in order to establish the settings that fit each case most.

Case studies shared at the symposium indicate that global experience on different financing models is vast; however, there is no "one size fit all". Models work depending on the projects and countries' characteristics. For example private equity funds are likely to work well in countries with well developed financial markets.

v) PPP has proved successful as a funding model but requires an enabling environment

Despite the undeniable success of the PPP as one of the infrastructure financing models, this model may not fit all infrastructure projects and should also be

[30] *For instance, private equity financing is more conducing in countries with well developed financial markets, whereas the PPP is more effective in the transport and energy sector.*

supported by a clear legal framework. PPPs have succeeded mainly in the transport and the energy sectors. It also came to light that for the PPP model to be effective, it is important to ensure that there is an enabling environment for private sector procurement, and regulations of domestic capital markets are in place. It was expressed that the Namibian private sector is ready and willing to support Government in financing infrastructure. However, it was also clear that the private sector could only come in, if its returns were guaranteed, and if there was a legal framework that protects their investments.

3. POLICY RECOMMENDATIONS

3.1 Recommendations on the PPP

a) There is a need to speed up the enactment of the PPP Act.
b) To ensure that PPPs deals are effective, rigorous assessment, costing and allocation of risks should be clearly determined. Further, there is need to develop capacity/skills to structure, negotiate, monitor and enforce contracts.
c) Relevant policies, legislation and institutions should be supportive of the PPP or any other chosen financing model(s).

3.2 General Recommendations

a) There is need for further exploration of various funding options that can be used to finance infrastructure.
b) Incorporation and enforcement of local sourcing and skills transfer in investment contracts is needed.
c) Prioritize infrastructure projects based on their economic impacts.

Concluding Remarks and Vote of Thanks

By Mr Ebson Uanguta, Deputy Governor of the
Bank of Namibia
25th September 2014, Windhoek Country Club
Theme: "Financing of infrastructure for Sustainable Development in Namibia."

Director of Ceremonies;
Honourable Ministers;
Members of Parliament;
Members of the Diplomatic corps;
Board members of the Bank of Namibia;
Honourable Governors present;
Mayors and Regional Councillors;
Permanent Secretaries;
Distinguished speakers and panellists;
Captains of the Industries;
Members of the Media;
All invited guests;
Ladies and Gentlemen.

Good afternoon!

It is an honour and privilege for us at the Bank of Namibia to have hosted the 16th annual symposium, under the theme **"Financing Infrastructure for Sustainable Development in Namibia."** The symposium is a platform where we interact with the public and policy makers to discuss issues of national importance, with a view to impact on policy making! The support we have received from you, policy makers and the public at large, when it comes to this event, not only highlights its relevance, but also gives us the motivation to continue hosting events of this nature!

Director of Ceremonies, ladies and gentlemen! Before delivering my vote of thanks, allow me to point out some of the key issues that emerged from the discussions today:

First, **modern and reliable infrastructure is critical for high and sustained economic growth.** The importance of infrastructure development can, therefore, not be overemphasised as a catalyst for economic growth and prosperity in any nation. In the absence of critical infrastructure, almost everything in the economic value chain tends to be slower, less reliable, and more expensive.

Second, **there is a huge gap between the infrastructure funding needs of Namibia and the available funds to finance these needs.** Today our speakers have clearly demonstrated that there is a wide range of options that can be explored and used to fund the identified infrastructure financing gap.
Third, **the Government cannot address the infrastructure backlog on its own; it**

needs to join hands with the private sector. I would thus like to take this opportunity to applaud our Government for drafting the required PPP policy and PPP law which is expected to be enacted by the end of 2014.

Fourth, **there is a need to relook our financing model and create an enabling environment for PPP to thrive.** To this effect, I have no doubt that such partnerships can work in Namibia as long as both parties bring to the table the required expertise and innovation.

I would like to close by giving our vote of thanks to the following people and institutions:

- All the invited guests and policy makers who attended this event,
- All our speakers and panellists for agreeing to share with us and tap on their expertise at this event,
- Members of the media fraternity for covering this event,
- The management and staff of the Windhoek Country Club and Resort for agreeing to host us,
- DB Audio for the excellent, professional audio and visual services,
- Last but not least, our own Bank of Namibia staff for once again organising yet another successful annual symposium.

Finally, I would like to inform you that as usual, the proceedings of the symposium will be compiled in a booklet, titled: "Bank of Namibia Annual Symposium 2014", which will be posted on the Bank of Namibia website. Once again, I thank you all and look forward to seeing you at our 17th Annual Symposium next year.

Director of Ceremonies, I thank you!!