Best Practices on PPP Infrastructure Development in SADC Countries

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Abbreviations

AfDB	African Development Bank
AU	African Union
BBBEE	Broad-based Black Economic Empowerment Act 53 of 2003
BOT Act	Build Operate and Transfer Act (Mauritius)
DAC	Development Assistance Committee
DBSA	Development Bank of Southern Africa
DFIs	development finance institutions
DFRC	Development Finance Resources Centre
EU	European Union
EU-AITF	EU-Africa Infrastructure Trust Fund
Ex-Im Bank	China's Export-Import Bank
FfD	Financing for Development
FOCAC	Forum on China-Africa Cooperation Beijing Action Plan
GDP	Gross Domestic Product
ICT	Information and Communications Technology
IIPSA	Infrastructure Investment Programme for South Africa
IMF	International Monetary Fund
IPPF	Infrastructure Project Preparation Facility
LDCs	Least developed countries
LICs	Low-income countries
MDGs	Millennium Development Goals
MICs	Middle-income countries
NDP	National Development Plan (various SADC countries)
ODA	Official Development Assistance
ODF	Official Development Financing
PFI	Private Finance Initiative
PIDA	Programme for Infrastructure Development in Africa
PFMA	Public Finance Management Act 1 of 1999 (South Africa)
PPDF	Project Preparation and Development Fund
PPAD	Public Procurement and Asset Disposal Act/Board (Botswana)
PPPC	Public Private Partnership Commission (Malawi)
PPPFA	Preferential Procurement Policy Framework Act 5 of 2000 (South Africa)
PPPs	Public private partnerships
RIDMP	Regional Infrastructure Development Master Plan, 2012
RISDP	Regional Indicative Strategic Development Plan, 2015 – 2020
SADC	Southern African Development Community
SDGs	Sustainable Development Goals
SOEs	State-owned enterprises
SPVs	Special purpose vehicles
SSA	sub Saharan Africa
VfM	Value for money

Executive Summary

Infrastructure development is essential for achieving sustainable, socio-economic development across Africa. Building resilient infrastructure and promoting sustainable industrialisation has long featured on the multilateral agenda and was first recognised in the Millennium Development Goals (MDGs) as an important requirement for improving living standards. In the follow-up to the MDGs, the importance of infrastructure development is recognised in goal 9 of the Sustainable Development Goals (SDGs): building resilient infrastructure, promoting inclusive and sustainable industrialisation and fostering innovation.

However, a plethora of existing literature and evidence shows that infrastructure development in Africa is not happening quickly enough to meet the needs of its citizens. This infrastructure backlog has negatively impacted Africa's socio-economic development. Building new public assets such as hospitals, transportation services and electrification has stagnated, particularly in rural areas that often face high upfront costs in infrastructure development. African countries, many of which are least developed countries (LDCs), often do not have sufficient domestic reserves and/or a large tax-paying base to finance infrastructure development and might not be able to access concessional loans on the international market. This has only further exacerbated the challenges of financing infrastructure development and has contributed to the difficulties in targeting improvements in development. An inability to access financing for infrastructure projects has also necessitated that African governments, donors and development finance institutions re-think new approaches to infrastructure financing that included collaboration with potential new partners such as the private sector. This relationship has given rise to what is now a widely used concept of public-private partnerships (PPPs) for infrastructure development.

PPPs arose in the 1980s, at a time during which debt crises plagued the developing world and infrastructure development and its accompanying end-goal, the delivery of public services, was under severe strain and criticism. From here on they evolved into a tool for mobilising private finance for public ends and to achieve basic public goods such as hospitals and the construction of schools. PPPs have grown in stature, cumulating in widespread support amongst private and public sector players alike as a panacea for infrastructure development across the global South. Thus far, PPPs contribute 15% to 20% of total infrastructure investment across the world.

The growing utilisation of PPPs as vehicles for infrastructure development is prevalent in developing countries and has received widespread support from development finance institutions (DFIs) such as the World Bank and the African Development Bank (AfDB). The uptake of PPPs as an alternative means of financing infrastructure development in Africa is growing: electricity, ICT and ports are the top three sectors for PPPs within sub-Saharan Africa, showing a desire by both government and the private sector to utilise PPPs as vehicles for infrastructure development. PPPs are considered to be the future of infrastructure projects because they offer solutions to problems of financing, job completion, and investment in large projects without sacrificing government finances. Under the appropriate conditions, there is a significantly higher likelihood of meeting cost and schedule objectives under PPP models compared with traditional public sector project delivery where a project is owned, managed, and financed by government. Lastly, private companies' participation can also play a positive role in replacing aging infrastructure, enabling innovation and implementing new technologies for infrastructure development.

Although PPPs are not a 'one-size fits all' solution to addressing Africa's infrastructure deficit, it is important to understand the kind of contributions that PPPs, if properly implemented, can make towards addressing Africa's infrastructure deficit. It is also important to identify important pre-conditions that enable PPPs to be successfully implemented. It is against this backdrop that this research report identifies and draws on potential best practices for implementing PPPs within Southern Africa, with a specific focus on a selection of 10 PPP projects across the Southern African Development Community (SADC) member states.

Existing literature highlights that PPPs are likely to be concentrated in larger markets with stronger rule of law, political stability, administrative capacity, transparent bidding processes, open communication between the private and public sector, and macroeconomic stability. Equally important is the presence of regulatory frameworks and legislative provisions governing PPPs and the creation of PPP units.

Implementing PPPs can provide national governments with much more attractive conditions for private investment. In return, the government can gain many advantages from the private investor, such as improvements in operational efficiency, management capacity, technology and innovation – ultimately leading to better quality public services. For the private sector, participating in a PPP brings revenue from the public sector for using the infrastructure, which is then used to repay borrowing, cover costs and make profits.

Unfortunately, even with blended financing, African countries have struggled to adequately manage and implement PPPs. The World Bank lists only 16 African countries that have legislation dealing with PPPs, while there are even fewer specialised PPP units – only 10 are reflected throughout Africa. This is further compounded by the fact that, over the past two decades, the majority of PPP projects (60%) have occurred in predominantly middle-income countries (MICs), 37% in lower MICs, and only 4% in LICs. Given that the majority of African countries are LICs, this raises questions as to how successful PPPs have really been across the African continent. Consequently, a closer inspection of the successful implementation of PPPs in Southern Africa is warranted and necessary, in order to ensure that past errors are not repeated and that best practices are replicated.

SADC has a clear focus on long-term infrastructure development. This is reflected in the 2012 Regional Infrastructure Development Master Plan (RIDMP), which calls for $500 billion in capital requirements to finance regional projects. This can include both cross-border projects as well as national projects which have regional economic and/or developmental significance. The RIDMP specifically highlights the critical infrastructure deficit present in Southern Africa: insufficient energy supply, unpredictable transportation and logistics services, inadequate ICT infrastructure and insufficient access to sanitation and clean water. Like other parts of the continent, many SADC countries' challenges lie in pre-project preparation issues such as project conceptualisation and the ability to apply for project preparation funding. Funding available to address these issues is even more limited. The current lack of capacity has exacerbated challenges in cross-border SADC priority projects especially as cross-border projects have to account for different interests and national boundaries. Lastly, diverging regulatory agencies and laws, poor policy frameworks and inadequate attempts at regional harmonisation has only heightened difficulties at launching regional infrastructure projects.

In recent years a number of countries have begun to develop legislation and dedicated PPP capacity, mirroring South African best practice as well as frameworks and toolkits developed by multilateral institutions such as the World Bank. Some of the overarching challenges facing the SADC member states are listed below:

- **Strong political will, an absence of corruption, and political stability are essential for ensuring that PPP developments are successful and that the private sector remain invested in PPP projects**. In the case of **Angola**, for example, public corruption has been a major challenge for PPP development particular in relation to its port developments (Port de Caio and Port of Namibe). In **Madagascar** too political uncertainty negatively impacted PPP development. The 2009/10 coup d'état was a major reason for private sector withdrawal from the Lokoho Hydro for Rural Development project leading to non-completion.

- **Botswana** established its PPP Unit in 2016 to oversee coordination, technical assistance and capacity building activities for entities engaging in PPPs. However, as is often the case in other parts of the continent, **implementation of policy is the challenge**. Despite various regulations, legislation and policy frameworks, the PPP Unit is not staffed, and government has treaded hesitantly in pushing forward with PPPs in practice, though there has been keen interest and pressure from the local private sector.

Botswana also has a very limited investible project pipeline and the **lack of coordination between the public and private sector** to develop such a pipeline exacerbates these challenges.

- Similarly, the **Comoros** has faced resistance from government to undertake PPPs, while **Estwatini** has no PPPs in the country. **Zimbabwe** and the **Democratic Republic of the Congo** have predominantly PIDA-managed projects, which is the African Union's continent-wide Programme for Infrastructure Development in Africa. While the **Seychelles** does not have a specific PPP legislative framework, the island state has predominantly focused on PPPs in the context of transportation and its port infrastructure.

- In **Lesotho** PPPs have not been particularly successful. The Queen Mamohato Memorial hospital, undertaken in collaboration with a South African private healthcare provider is well known for its controversial outcome: the hospital cost $ 67 million per year to run – at least three times what the old public hospital would have costed, and consumed more than half of the total government health budget.

- **Malawi's institutional and legislative framework for PPPs is comparatively robust for the SADC region.** It is one of the few countries with an adequately staffed PPP Unit, who is actually facilitating and implementing projects for PPP development and is one of the few countries to release detailed guidelines on PPPs accompanying the legislation.

- **Mauritius** has an extensive and well-developed PPP legal framework. Currently Mauritius' prime objective for PPPs is the Smart Cities Project, which consists of mixed-use, development spaces (commercial, leisure, education, medical, tourism etc) and technology and innovation clusters. Thirteen initial projects have been identified, valued at $660 million.

- **Mozambique's PPP law jointly covers PPPs, large scale projects and business concessions. The South African private sector has played a large role in driving Mozambican PPPs (energy and transport)**. For example, the N4 Toll Road between South Africa and Mozambique is recognised as a pioneering transport PPP in the SADC region, involving a partnership agreement between the South African and Mozambican governments and a private consortium, the Trans African Consortium.

- **Namibia** has comprehensive PPP legislative frameworks and has been relatively successful in implementing PPP projects. The government is focused primarily on utilising PPPs to address the country's energy infrastructure deficit.

- **South Africa** is generally regarded as a country with relatively high levels of success in PPPs, comprehensive PPP frameworks and legislation, which has served as important lessons-learning and best practices for the implementation of PPPs in the rest of the region. South Africa has also begun to undertake cross-border infrastructure PPPs which, if successfully implemented, could also offer useful lessons for developing and implementing regional infrastructure projects. To date, there have been 31 PPPs valued at R65.3 billion that have been undertaken in South Africa since the introduction of this type of partnership in 1998.

- **Tanzania** also has a thorough PPP framework and a PPP technical committee. The 2018 amendments to the PPP Act have worked towards removing existing bottlenecks in procurement and coordination processes. The majority of Tanzania's PPPs focus on transport and energy infrastructure.

- In **Zambia** PPPs are predominantly focused on electricity and transport infrastructure. Unfortunately, despite an extensive PPP legislative framework and a comprehensive PPP Act **the PPP Unit has been moved at least three times, demonstrating both the capacity challenges that it has faced and lack of adherence to the PPP legislative framework.**

Although not without its challenges, this research report finds that SADC member states have been able to successfully implement a wide range of PPP projects across the water, renewable energy/electricity and transport infrastructure sectors. Some projects, such as **Namibia's *Goreangab Water treatment plant*** has been successful in achieving the water quality standards set out in the project design. Given that it is the **only direct potable recycling plant in the world, it is seen as a model for other countries, and receives many international visits.** It also reflects a deep understanding from Namibian stakeholders involved in the project regarding the concept of recycling wastewater for consumption, which can potentially face significant public pushback. There is a need to understand the intensive quality control processes in order to provide assurance. However, Goreangab plant has instituted an extensive public education/awareness programme including environmental education classes and class tours in schools. Operational since 2018, **Namibia's *Mariental Solar Power Plant*** contributes towards the country's energy deficit and should produce 8.5% of its national electricity production, thereby bringing about a significant reduction in electricity imports (68% in 2016), while making power supply more reliable in Namibia. The savings on energy imports thus made could be directed to the development of new infrastructure in a quest to improve Namibia's energy security and independence. In addition, this project should reduce annual CO2 emissions by 9,400 tonnes (235,000 t CO2 over the 25 years of the life of the project). The social and economic impact of the project will be the creation or maintenance of 1 260 indirect, induced or secondary jobs during the life of the project.

Tanzania's and Zambia's PPPs have had mixed results. The ***Dar es Salaam Port container terminal*** also reflects some measure of success**: overcoming mistrust between public and private sector partnerships, addressing existing bottlenecks and improving the efficiency of the container terminal**. However, there is still room for improvement: removal of political interest from concession agreements and delays in the efficiency of port operations. Similarly, while the ***Bus Rapid Transport (BRT) system*** is widely regarded as a success story, this is not to say that the BRT is not without its challenges. For example, delays in implementing the Resettlement Action Plan, flooding along the trunk line and inadequate engineering designs, such as unmapped ground utilities and weak supervision engineers, together with infrastructure cost overruns, highlight further challenges. The important take-away however, is that the BRT consortium managed to address these challenges. A number of solutions were implemented, such as **providing additional technical assistance, restructuring the project to create a steering committee; engineering redesign to minimise land take and a splitting of the work packages**. **Zambia's *Kafue Gorge Lower Hydropower project*** was plagued by a delayed start of 14 years, insufficient financing and withdrawal of the private sector and multilateral partners. Despite these hurdles, construction of the KGL hydropower plant is finally underway, an important and positive signal for Zambia's future electricity generation capacity to bridge its existing energy gaps. The project is expected to be completed by 2019.

Mozambique's *Central Termica de Ressano (CTRG)* reflects not only a successful PPP but also collaboration between the South African and Mozambican governments. Operational since 2015, the **CTRG is regarded as a successful PPP owing to good risk allocation, project financing and its timely processes.** The CTRG has helped to meet 23% of Mozambique's demand for energy and the various gas PPPs between South African businesses (predominantly Sasol) and Mozambican companies have also resulted in gas royalties growing by 33%. Sasol's provision of the bridge financing helped ensure that the project construction could commence on an expedited basis, removing delays from the project. **CTRG is one of the first investments for DFIs in Mozambique that is solely reliant on revenues generated by a domestic purchaser.**

South Africa's *Durban Water Recycling Project* is hailed as an all-round success: reducing sea outfall pollution and reducing Durban's water consumption by 7% (environmental factors); implementing South Africa's first 20-year concession successfully with strong reliance on the relative expertise of the partners; reducing the city's

operational costs; presenting an attractive investment opportunity to investors; and, reflecting an overall sustainable long-term project. Similarly, the high-speed ***Gautrain transport system***, although not without controversy, is the first high-speed train to be built in South Africa and made a significant contribution to increased employment, construction-related job creation, and government revenue. Total government revenue increased by an estimated R5 billion over the 6-year period due to the construction of the Gautrain. Lastly, the ***Mbombela water and sanitation concession*** in Mpumalanga province is a long-term, successful concession. There are several critical factors that have enabled it to continue its operations 10 years after its implementation: it is managed by a stable operator with good operational capacity; reflects increased access to water with effluent quality in the concession area; has seen continuous investment in extending and upgrading existing infrastructure; the concessionaire has a strong maintenance programme; efficient and knowledgeable technocrats are employed to work in the plant; and, the water and sanitation tariffs are similar to or lower than in comparable municipalities.

1 Understanding public-private partnerships and infrastructure development across Africa: a literature review

1.1 The importance of infrastructure development across Africa as a goal for sustainable, socio-economic development

Infrastructure development is essential for achieving sustainable, socio-economic development across Africa. Building resilient infrastructure and promoting sustainable industrialisation has long featured on the multilateral agenda, and was first recognised in the Millennium Development Goals (MDGs) as an important requirement for improving living standards. Following from the MDGs, goal 9 of the Sustainable Development Goals (SDGs) recognises the importance of building resilient infrastructure, promoting inclusive and sustainable industrialisation and fostering innovation.

Sustainable infrastructure is best understood as a comprehensive approach tailored to local economic, social and ecological needs that is both effective and efficient, but also takes into consideration users' preferences and needs in design.[1] Sustainable infrastructure development can have a positive impact on reducing poverty and supporting inclusive economic growth by mitigating against potential negative environmental and social externalities;[2] creating jobs, improving economic activities and connecting markets; and reducing production costs through improvements in transport and connectivity.[3]

The importance of financing infrastructure development is recognised at a global level. The International Conference on Financing for Development (FfD) in 2015 resulted in the adoption of the Addis Ababa Action Agenda, which includes several new commitments to essential public services for all – including a "LDC package" to support least-developed countries.[4] The Addis Ababa Action Agenda also provides for, *inter alia*,

(i) Establishing new forums to bridge the existing infrastructure gap;
(ii) To 'identify and address infrastructure and capacity gaps in least developed countries, landlocked developing countries, small island developing States and African countries'; and
(iii) The importance of private and public investment in infrastructure financing through public-private partnerships (PPPs), public financing such as official development assistance (ODA), and blended finance.[5]

Since then, the Economic and Social Council Forum on FfD has established an intergovernmental process to monitor and review the Addis Ababa Action Agenda and implementation of the SDGs.[6] On the back of these multilateral endorsements is the rise of different and innovative forms of financing, including PPPs, through enhanced private sector financing combined with development finance institutions (DFIs), donors and public sector financing.[7]

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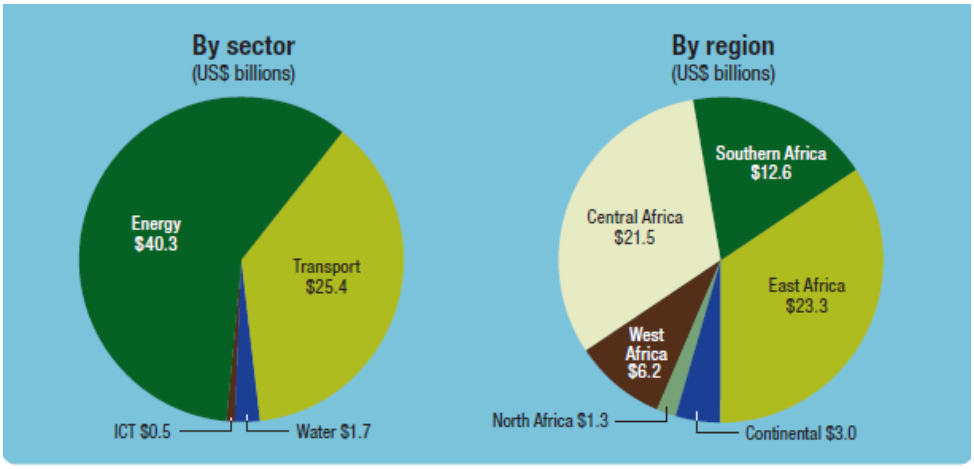
[1] IADB Blogs, What do we mean by sustainable infrastructure? https://blogs.iadb.org/ciudadessostenibles/2015/03/03/mean-sustainable-infrastructure/, accessed on 18 October 2018
[2] Inter-American Development Bank (2018) *What is Sustainable Infrastructure? A Guide to Sustainability across the Project Cycle*. IDB Technical Note ID-TN-1388
[3] Saghir J (2017) *Sustainable Infrastructure Development in Sub Saharan Africa: A View from the Ground*. Research to Practice Policy Briefs PB-2017-02. Institute for the Study of Sustainable Development: Montreal
[4] United Nations Economic Commission for Africa (UNECA) (2017) *Developing Financing in Africa*. UNECA: Addis Ababa
[5] United Nations (2015) Addis Ababa Action Agenda of the Third International Conference on Financing for Development. United Nations: New York http://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA_Outcome.pdf
[6] http://www.un.org/esa/ffd/ffdforum/, accessed on 19 October 2018
[7] Wentworth L & Makokera C (2015) 'Private sector participation in infrastructure for development.' *South African Journal of International Affairs*, Vol. 22 No. 3

Addressing infrastructural backlogs and developing new public assets such as transportation, healthcare and electricity are essential for Africa's long-term development, especially in rural areas that often face high upfront costs in infrastructure development.[8] The World Bank estimates that poor infrastructure in sub-Saharan Africa (SSA) reduces economic growth by 2% and business productivity by as much as 40%, while inadequate infrastructure services can cost twice as much in SSA compared to the rest of the world.[9]

Infrastructure development and industrialisation is recognised and prioritised by the African Union (AU) through its Agenda 2063 and the Programme for Infrastructure Development in Africa (PIDA). PIDA's ambitious cross-continental efforts focus on building cross-border infrastructure that will ultimately increase regional infrastructure integration, address poverty levels, reduce income inequalities and promote socio-economic development. Its 51 programmes, as identified in the PIDA Priority Action Plan, are spread across energy, transport, cross-border water infrastructure and information and communication technologies (ICT). The PIDA Infrastructure Project Preparation Facility (IPPF) (currently valued at $102 million) was established in 2005 to mobilise public and private funds for PIDA programmes.[10] Thus far, the IPPF has approved 76 grants and mobilised investment to the value of $ 8 billion.[11]

Figure 1 – Total capital cost of PIDA's Priority Action Plan by sector and region: $67.9 billion through 2020



Source: *Programming for Infrastructure Development in Africa: Interconnecting, integrating and transforming a continent*. (2012) NEPAD/AU Commission: Midrand/Addis Ababa

Financing for infrastructure development is also mobilised through the Africa50 Infrastructure Fund initiative. Currently targeting $10 billion of equity (from an initial capital of $3 billion) to finance infrastructure projects, the Fund is focused on (i) unlocking international private finance and leveraging infrastructure financing from African central bank reserves, sovereign funds and other similar entities and (ii) enabling private financing for project preparation and early stage project development.[12] Shareholding is comprised of predominantly west

[8] Wentworth L & Makokera C (2015), op. cit.
[9] Saghir J, op. cit.
[10] Loots J (2017) 'Public-Private Partnerships for Infrastructure Development in Africa: The Need for Human Rights-Focused Regulation' in *Perspectives Africa #2/2017: Putting People Back Into Infrastructure.* Johannesburg: Heinrich Boll Foundation. https://www.boell.de/en/2017/06/14/public-private-partnerships-infrastructure-development-africa-need-human-rights-focused, accessed on 22 October 2018
[11] https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/nepad-infrastructure-project-preparation-facility-nepad-ippf/, accessed on 22 October 2018. The activities eligible for financing under the IPPF are: (i) prefeasibility and feasibility studies; (ii) project structuring; and (iii) capacity building for infrastructure development.
[12] Wentworth L & Makokera C (2015), op. cit.

and north African countries, and funding from 23 African shareholder countries, the African Development Bank (AfDB) and numerous domestic DFIs have contributed $ 812 million in capital as of 2017.[13]

Unfortunately, African governments have struggled to source financing for their infrastructure projects. While long-standing donor engagement in Africa's infrastructure development and the rising role of China in Africa's infrastructure financing warrants attention (see Annexure A for a detailed discussion), domestic resource mobilisation is key for fiscal sustainability and African self-sufficiency because it facilitates governments' discretionary spending in pursuit of national development strategies.[14] However, domestic capital markets across Africa remain under-developed, and the AfDB's 2017 estimates suggest that financing Africa's infrastructure needs requires $130 to 170 billion per year, with a financing gap of $68 to $108 billion.[15] This raises questions as to whether PPPs are able to adequately address Africa's infrastructure financing deficit, while also ensuring that sustainable infrastructure development reaches those communities most in need of improved access to basic public services and goods.

1.2 The importance of PPPs in the sub-Saharan African context as tools for promoting infrastructure development in Africa

1.2.1 An overview of PPPs and their potential role in advancing infrastructure development

Although there are many definitions for PPPs, the World Bank defines a PPP as "a long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility, and remuneration is linked to performance."[16] This contrasts with conventional procurement where government would tender for a project and the private contractors almost always build the project, while the public sector owns, arranges design, financing, operations and maintenance. In PPPs, the private sector takes on a larger role in public projects and fulfils functions that would traditionally be the responsibility of the public sector/government agency, and can even provide the financing directly, through loans and private equity.[17]

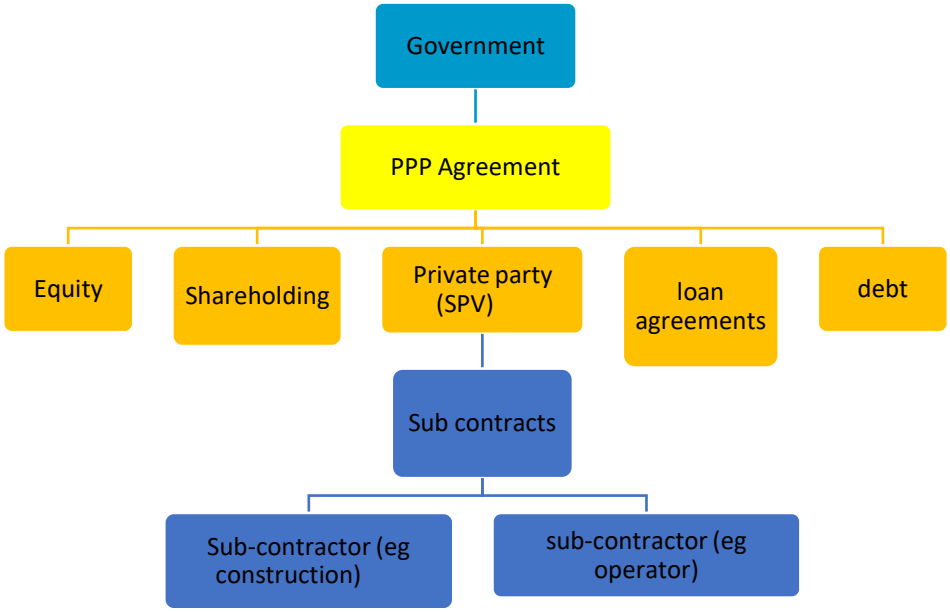
PPPs arose in the 1980s, at a time during which debt crises plagued the developing world and infrastructure development and its accompanying end-goal, the delivery of public services, was under severe strain and criticisms. Concerns about the performance and efficiency of state-owned enterprises (SOEs) lead to greater considerations of alternative forms of infrastructure financing, ownership and delivery, which were coupled with a political shift towards privatisation in the 1980s.[18] The 1980s also bore witness to the advent of new theories and technologies, such as the theory of New Public Management, which promoted the public administration functioning more like private companies.[19] Support for PPPs rose quickly and peaked in 1997. PPP supporters argued that handing over public tasks to private actors was essential for downsizing the role of the state, for enhancing the efficiency of public service provision, and to reverse previously alleged crowding out of the private

[13] Africa 50 overview, September 2017 https://www.africa50.com/fileadmin/uploads/africa50/Documents/Knowledge_Center/Africa50_Overview_September_2017.pdf, accessed on 22 October 2018
[14] UNECA, op. cit.
[15] African Economic Outlook 2018 *Chapter 3: Africa's Infrastructure: great potential but little impact for inclusive growth*. AfDB: Abidjan
[16] World Bank Group "What are Public Private Partnerships?" https://ppp.worldbank.org/public-private-partnership/overview/what-are-public-private-partnerships
[17] Loxley J (2013) 'Are public–private partnerships (PPPs) the answer to Africa's infrastructure needs?' *Review of African Political Economy*, Vol. 40, No. 137
[18] Trebilcock M & Rosenstock M (2015) 'Infrastructure Public–Private Partnerships in the Developing World: Lessons from Recent Experience.' *The Journal of Development Studies*, Vol. 51 No. 4
[19] Wentworth L & Makokera C (2015), op. cit.

sector by SOEs.[20] The new financing regime permitted investors to claim revenues from three separate sources: invested capital, equity appreciation and fee income as project service managers.[21] However, the Asian financial crisis of 1997-1998 resulted in a massive reduction of PPPs, taking almost a decade to regain pre-crisis levels. The second wave of PPPs commenced in 2004, continuing through the global financial crisis of 2008, but slowed down in 2013 owing to a decline in PPP projects in Brazil and India specifically.[22]

Similarly, the introduction of the Private Finance Initiative (PFI) in the United Kingdom in 1992 – one of many government policies designed to increase private sector involvement in the provision of public services – helped to spur interest in PPPs. Offering three broad types of projects (free-standing, joint ventures and services sold to the public sector), the PFI specifically involved a public procurement programme and included the contracting-out of public services to the private sector.[23] The PFI has financed up to 716 projects at a value of 60 billion pounds, and while it has since fallen out of favour in the UK (only 10 PPP projects were undertaken in 2015),[24] it was influential at spurring interest in the use of PPPs within the South African context.

Figure 2 – illustration of generic structure of PPPs



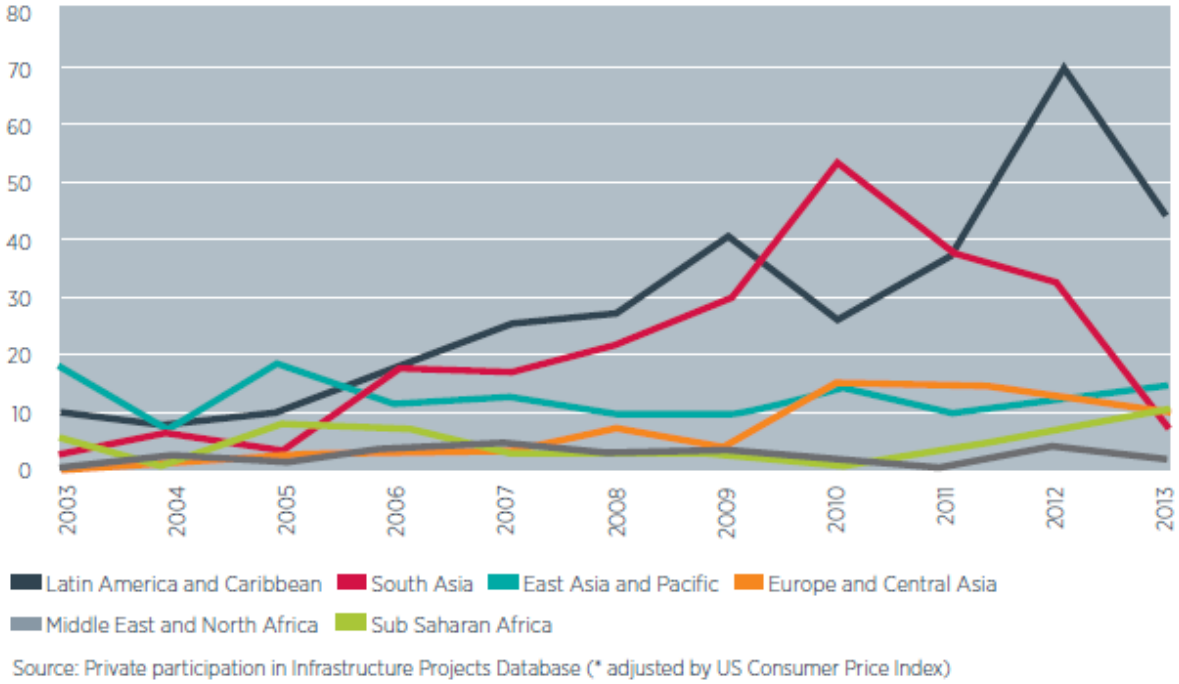
Source: Farlam P (2005) *Working Together: Assessing Public-Private Partnerships in Africa*. NEPAD Policy Focus Report No. 2 South African Institute of International Affairs: Johannesburg

What began as an instrument to facilitate joint development evolved into a tool for mobilising private finance for public ends and has cumulated in (i) the widespread support of PPPs from DFIs, donors and governments alike and (ii) the use of PPPs for a wide variety of infrastructure projects, ranging from technology, ecological and the provision of traditional public services (such as healthcare and education).[25] PPPs have the potential to

[20] KS Jomo et al. (2016) '*Public-Private Partnerships and the 2030 Agenda for Sustainable Development: Fit for purpose*.' UNDESA Working Paper No. 148 ST/ESA/2016/DWP/148, UNDESA: New York.
[21] Sclar, E (2015) 'The political economics of investment Utopia: public-private partnerships for urban infrastructure finance.' *Journal of Economic Policy Reform*, Vol. 18 No. 1
[22] Romero MJ (2015) *What lies beneath? A critical assessment of PPPs and their impact on sustainable development*. Eurodad: Brussels
[23] Allen G (2001) *The Private Finance Initiative (PFI)* United Kingdom House of Commons Research Paper 01/117
[24] https://www.independent.co.uk/news/business/analysis-and-features/pfi-what-private-finance-initiatives-good-bad-carillion-collapse-public-sector-contracts-government-a8165971.html, accessed on 15 November 2018
[25] KS Jomo et al., op. cit.

play a real and significant role in helping African countries to meet their infrastructure targets and to reduce poverty levels. Globally PPPs contribute 15% to 20% of total infrastructure investment,[26] and the World Bank's support of PPP programmes as tools to spur growth and combat poverty has increased from $0.9 billion in 2002 to $2 billion in 2012.

Figure 3 – Investment in PPPs by region, 2003 to 2013 (billion US$ in real terms)



Source: Romero MJ (2015) *What lies beneath? A critical assessment of PPPs and their impact on sustainable development*. Eurodad: Brussels

Supported by the AfDB, the uptake of PPPs as an alternative means of financing infrastructure development in Africa is growing: electricity, ICT and ports are the top three sectors for PPPs within sub-Saharan Africa.[27] Although PPPs are not a 'one-size fits all' solution to addressing Africa's infrastructure deficit, it is important to understand the kind of contributions that PPPs, if properly implemented, can make towards addressing Africa's infrastructure deficit, and the business case that can be made for the private sector to enhance their participation in infrastructure projects.

PPP development thus far has focused primarily on four African countries during the period 1990 to 2014. Nigeria tops the list with $37.9 billion in investment, followed by Morocco ($27.5 billion), South Africa ($25.6 billion), Egypt ($24.8 billion) and Algeria ($13.2 billion) – accounting for, on average, almost two-thirds of African investment in PPPs.[28] Due to limited funding and increasing constraints, many government agencies look into different models of PPPs to maintain infrastructure without having to make large investments, highlighting the important role that the private sector can play in bridging existing infrastructure gaps (Figures 4 and 5).

[26] Romero MJ, op. cit.
[27] World Bank, 'Private participation in infrastructure database' http://ppi.worldbank.org/snapshots/region/sub-saharan-africa
[28] UNCTAD (2016) *Economic Development in Africa Report 2016: Debt Dynamics and Development Finance in Africa*. UNCTAD: Geneva

Figure 4 – Estimated annual investment needs and potential private sector contribution 2015 – 2030 (trillions of dollars)

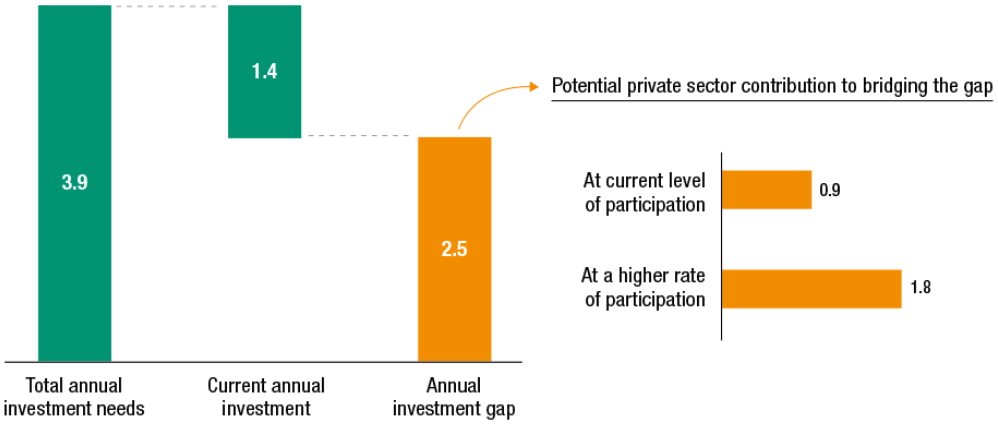
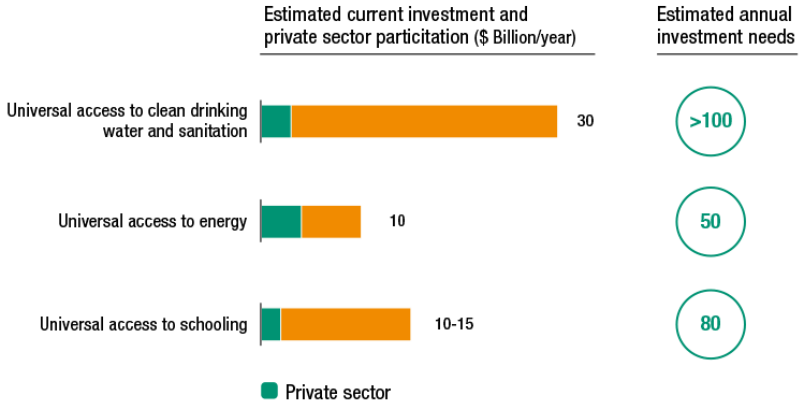


Figure 5 – Example of investment needs in vulnerable and excluded groups



Source: United Nations Conference on Trade and Development (UNCTAD) World Investment Report 2014 'Investing in the SDGs: An Action Plan'. UNCTAD: Geneva

1.2.2 Variations of PPPs

There are many types of PPPs to fit various construction, operation, ownership, and revenue-generating scenarios. For example, PPPs can take the shape of either purely contractual arrangement between government or the private entity, or could be a company structure consisting of private and public shareholding. PPPs can also be used in the form of special purpose vehicles (SPVs), where ownership and/or control could potentially rest with both parties and therefore not subject to the public budget.[29] Lastly, there is also the option to 'bundle' – or vertical integration – that takes the form of a consortium that brings together project designers, managers, construction companies and financiers.[30]

Table 1 – Types of PPPs[31]

[29] Wentworth L & Makokera C (2015), op. cit.
[30] Trebilcock M & Rosenstock M, op. cit.
[31] https://www.thebalancesmb.com/public-private-partnership-types-845098, accessed on 19 October 2018

Types of PPP identified	Description of PPP
1. Traditional PPPs	In a traditional PPP agreement, the public component of the partnership acts as a contracting officer. It looks for funding and has overall control of the project and its assets. Almost any partnership between a private contractor and a government entity can be considered a PPP, but some of the most common examples are public road projects, maintenance of parks, and construction of schools and other public buildings.
2. Operation and maintenance PPPs	With an operation and maintenance PPP, the private component of the partnership operates and maintains the project, while the public agency acts as the owner of the project. Examples of these contracts include bridges and toll-ways. Ongoing maintenance may provide revenue for the private party through tolls or other fees paid through public use.
3. Design-built PPPs	A design-build PPP is similar to a client-contractor arrangement. The private partner designs and builds the facility, while the public partner provides the funds for the project. The public partner retains ownership of the project and any assets generated through its use.
4. Design-Build-Operate PPPs	Design-build-operate PPPs are similar to design-build P3s but include ongoing operation and maintenance of the property facility or project by the private party. The public partner acts as the owner of the installation and provides the funds for construction and operation. If the private partner operates the project only for a limited time before the facility is transferred to the public partner, the arrangement is known as a design-build-operate-transfer agreement.
5. Design-Build-Finance-Operate PPPs	A variation of the design-build-operate P3 includes the component of general financing supplied by the private contractor. With a design-build-finance-operate arrangement, the private party provides financing and design, then builds, possesses, and operates the facility. The public partner provides funding only while the project is being used or is active.
6. Build-Transfer-Operate PPPs	Under a build-transfer-operate PPP, the private partner builds the facility and transfers it to the public partner. The public partner then leases operation of the facility to the private party under a long-term lease agreement
7. Build-Own-Operate PPPs	Under a build-own-operate contract, the private contractor builds, possesses, and operates the facility and also has control over profits and losses generated by the facility. This is similar to a privatization process.
8. Build-Own-Operate-Transfer PPPs	In some cases, the public partner builds, possesses, and operates the project for a limited time, then the facility is transferred, free of charge and including ownership, to the public agency. This may be known as a build-own-operate, transfer P3.
9. Lease PPPs	A lease PPP involves the public owner leasing a facility to a private firm. The private company must operate and provide maintenance for the facility per specified terms, including additions or a re-modelling process.
10. Concession PPPs	With a concession PPP, the private agency operates and maintains the facility for a specific period of time. The public partner has power over the ownership, but the private partner possesses owner rights over any addition incurred while the facility is being operated under its domain.

1.3 The business case for PPPs: why should the private sector be involved?

In understanding why PPPs make financial sense and are a prudent option for infrastructure development, it is important to highlight the benefits that PPPs offer both governments and private companies. As mentioned above, PPPs can play an important role in developing countries by addressing their infrastructural deficits because the private sector often has technical capacity, deep expertise and extensive experience in building, operating and maintaining infrastructure projects, which makes them well-suited to undertaking infrastructure development in developing countries. Making use of PPPs enables governments to increase available funding for infrastructure, as public funds are freed up for investment in sectors where private investment might not be appropriate.[32]

[32] PPIAF (2009) *Toolkit for Public-Private Partnerships in Roads and Highways*. World Bank: Washington DC

Enabling private sector participation in infrastructure development can also play a catalytic role in job creation, enabling the government to prioritise public goods projects without having to compromise on quality, and investing in large projects without sacrificing government finances. In return, the government can gain many advantages from the private investor, such as improvements in operational efficiency, management capacity, technology and innovation – ultimately leading to better quality public services.[33] There are several key benefits to using PPPs for infrastructure development and for the private sector to become involved in PPP infrastructure financing:

- PPPs focus on the project's entire life cost, which helps ensure that construction is completed to plan and to budget; repairs and maintenance are planned at the outset and assets and services are maintained at a pre-determined standard over the full length of the concession. Therefore, long-term investments from the private sector can also mean that the infrastructure assets are serviced and kept in good condition.[34]

- Similarly, PPPs help ensure higher quality and timely provision of public services with reduced delays on infrastructure projects and performance guarantees: under appropriate conditions, there is significantly higher likelihood of meeting cost and schedule objectives under PPP models compared with traditional public sector project delivery where a project is owned, managed, and financed by government.[35]

- Ensure the necessary investments into public sector and more effective public resources management: according to McKinsey's studies from Europe, using PPPs can reduce life cycle costs (i.e. design, construction and maintenance) of social infrastructure projects by up to 20% compared to traditional procurement.[36]

- Competitive tender processes, appropriate risk mitigation and financial due diligence help mitigate against unforeseen extra expenditure in the public sectors: the private sector invests its own money in projects and therefore have a vested interest in ensuring projects are cost-effective, successfully implemented and do not diminish their profits.[37]

- PPPs help to generate new revenue streams from greater asset utilisation – this is done by raising revenues from alternative uses for infrastructure assets, which can ultimately reduce the cost of infrastructure for the government or users.[38]

- Private companies' participation can also play a positive role in replacing aging infrastructure, enabling innovation and implementing new technologies for infrastructure development.[39]

- The private company has the opportunity to obtain a long-term remuneration (see below for a detailed discussion).

[33] UNCTAD, op. cit.
[34] World Bank https://pppknowledgelab.org/guide/sections/9-infrastructure-challenges-and-how-ppps-can-help, accessed on 15 November 2018
[35] *Ibid*, referencing a 2016 study undertaken by the Syracuse University reviewing US-based projects.
[36] Rocca M The Rising Advantage of Public-Private Partnerships. McKinsey, https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/the-rising-advantage-of-public-private-partnerships, accessed on 20 November 2018
[37] Ministry of Finance of the Republic of Lithuania *PPP Advantages and Disadvantages*, http://finmin.lrv.lt/en/competence-areas/public-and-private-partnership-ppp/ppp-advantages-and-disadvantages, accessed on 20 November 2018
[38] https://apmg-international.com/article/what-are-ppps-and-how-can-they-help-infrastructure-funding-and-finance, accessed on 20 November 2018
[39] PPPIAF, op. cit.

- Private sector expertise and experience are utilized in PPP projects implementation, which can enhance best practices, enable greater efficiency in infrastructure projects, and ultimately ensure high-quality service delivery to end-users.

For the private sector, a big attraction for participating in a PPP is the public sector paying an annual lease for using the infrastructure, which is then used to repay loans, cover costs and make profits. PPP payment mechanisms are a defining feature and either involve fee collection by the private sector from service users and/or the government, or a combination of the two.[40] As contracts, particularly in Africa, are very long term (ranging from 25 to 40 years), this allows the private sector to reap large returns on their equity investments, while governments replace direct servicing of loans with the payment of annual leases.[41]

However, in order to ensure that the private sector also delivers high-quality infrastructure, payment to the private sector is often contingent on performance, which creates an overriding incentive for the private company to ensure that the project is properly managed. Therefore, while it might not always be cheaper for governments in the long-run, such arrangements do offer the opportunity of improving the quality of services on offer, which is ultimately beneficial to consumers and users of infrastructure at large.

Conditions that encourage PPPs are an important consideration for businesses looking to expand into infrastructure financing in developing countries. Existing literature highlights that PPPs are likely to be concentrated in larger markets with stronger rule of law, political stability, clear legislative frameworks and administrative capacity, transparent bidding processes, open communication between the private and public sector, and macroeconomic stability – all of which are conditions that can spur greater infrastructure development and attract foreign direct investment.[42] Equally important are regulatory frameworks and legislative provisions governing PPPs and the provision for remedies in the event of disputes. Some governments have created specialised PPP units within their administrations (often located in the Ministry of Finance) as tools to negotiate complex PPP arrangements and enable the development of bureaucratic expertise able to adequately respond to PPP implementation.[43] Participation from local investors should be encouraged as they can build local investors' capacities and facilitate trade relations within the region.[44]

An important consideration for the private sector's engagement in infrastructure financing is 'value for money' (VfM). VfM is defined as 'a measure of the extent to which cost savings are achieved when delivering public infrastructure through a PPP relative to a traditional government-led procurement approach.'[45] VfM is a key determinant of which risks should be allocated to the public and private sectors respectively, and the impact of risk transfer on the financing costs associated with the PPP.[46] VfM requires governments to undertake a detailed forecast and qualitative evaluation of a project over its life cycle and select the best procurement option and (ii) requires a competitive bidding process.[47] Prior to the approval of a PPP scheme, the net benefits and costs of the proposed project are calculated based on the submissions of the winning bidder, which are then compared

[40] World Bank (2014) Private-Public Partnerships Reference Guide Version 2.0. World Bank: Washington DC
[41] Loxley J, op. cit.
[42] Wentworth L & Makokera C (2015), op. cit. See also Maseko M (2014) 'Analysis of critical success factors for public-private partnerships in infrastructure development in South Africa'. *The 6th International Platinum Conference, 'Platinum–Metal for the Future',* The Southern African Institute of Mining and Metallurgy.
[43] Trebilcock M & Rosenstock M, op. cit.
[44] Osei-Kyei R & Chan A (2016) 'Developing Transport Infrastructure in sub-Saharan Africa through Public-Private Partnerships: Policy Practice and Implications.' *Transport Reviews*, Vol. 36, No.2
[45] Siemiatycki M & Farooqi N (2012) 'Value for Money and Risk in Public-Private Partnerships.' *Journal of the American Planning Association*, Vol. 78 No. 3
[46] Bovis CH (2015) 'Risk in Public-Private Partnerships and Critical Infrastructure.' *European Journal of Risk Regulation*, Vol. 6, No. 2
[47] Regan M; Smith J; Love P (2014) 'Assessing Risk in Infrastructure Public Private Partnerships,' paper presented at the DII 2014 Conference on Infrastructure Investments in Africa, Zambia, 25-26 September 2014

against a hypothetical equivalent project that would be delivered through the traditional public-sector procurement processes.[48]

If undertaken properly, VfM is a major reason for encouraging private sector engagement in infrastructure financing because VfM considerations would necessitate that the implementation of infrastructure projects that have been appropriately vetted by government, that would not cause undue fiscal damage/increased risks, and that would ultimately provide a measure of profitability for the private sector. It is important to remember that a project's whole-of-life costing (i.e. capital and operational expenses), innovation and asset utilisation are an important part of VfM considerations and are also listed as VfM drivers of PPPs.[49] Therefore, any undue risk or inappropriate risk allocation can damage the VfM proposition of a PPP deal and, if incorrectly measured, and can eventually result in lengthy and costly renegotiation of agreements that would prove extremely costly and inefficient to the private sector and especially the government.[50] To this end, therefore, it is prudent for both government and the private sector to mitigate against excessive costs and ensure the best possible outcome for both of them.

The second important factor influencing the attractiveness of PPPs is risk allocation. In theory, PPPs aim to allocate risks to the party best able to deal with them, and risk transfers, when linked with managerial freedom, can allow for cost reduction. According to the World Bank's PPP Reference Guide, "allocating some of the risk to a private party that can better manage it, can reduce the project's overall cost to government." Risk assessments are typically guided by two central questions: (i) which party is better able to control the occurrence of risk and (ii) which party is better positioned to manage the outcome of the risk or control its ultimate costs.[51] Risk bearers should have the means to access resources and mitigation instruments, while both government and the private sector should have an accurate understanding of the potential project risks and controlling the likelihood of such risks arising.[52] The concept of risk allocation is at the heart of mitigating against failed infrastructure projects because of external public risks that can arise (and over which the private sector has no control). Both government and the private party would have to appropriate a measure of risk in order to undertake a PPP venture. While it can be difficult to predict the extent of risks throughout the lifetime of the PPPs, both the private sector and government can take measures to mitigate against poor risk allocation: for example, risk allocation should ensure that rising taxes or reduced public services do not affect consumers and that the private sector does not pass on excessive premiums to the government or end-users directly.[53]

There are eight key risk types that can arise during the PPP process:

- Demand risk and political risk
- Technical risks: weaknesses of the project implementation caused by errors in engineering design.
- Construction risks: problems during the construction phase that are associated with cost overruns or delays.
- Economic risks: changes of the cash flows caused by price volatility, changes in the service demand, and changes in the economic conditions.
- Legal risks: legal and regulatory changes that could affect the course of the project.
- Environmental risk: environmental factors that could affect the project sustainability.

[48] Siemiatycki M & Farooqi N, op. cit.
[49] Jin X & Doloi H (2007) *Risk Allocation in Public-Private Partnership Projects – An Innovative Model with an Intelligent Approach***.** The construction and building research conference of the Royal Institution of Chartered Surveyors
[50] Jin X, op. cit.
[51] Hovy P (2015) *Risk Allocation in Public-Private Partnerships: Maximising value for money*. International Institute for Sustainable Development: Winnipeg
[52] Ameyaw EE & Chan A (2015) 'Risk allocation in public-private partnership water supply projects in Ghana.' *Construction Management and Economics*, Vol. 33 No. 3
[53] Jin X (2007) 'Allocating Risks in Public-Private Partnerships using a Transaction Costs Economic Approach: a case study.' *The Australasian Journal of Construction Economics and Building*, Vol. 9 No. 1

- Operating risks: problems during the operation phase caused by poor design, failures in the construction, and changes in the forecasted operation characteristics.
- Natural risks: events of force majeure such as acts of nature, fires, floods, wars, or another kind of disaster.[54]

1.4 Challenges in PPP implementation

1.4.1 General challenges for PPP implementation

It is worth nothing that private sector engagement in infrastructure projects is not traditionally a natural fit because PPPs bring together parties with such diverging interests and end goals. While the Principal-Agent incentive theory (i.e. the principal (often government) introduces a set of incentives in order to increase the agent's (private sector) efficiency), conflicting interests can still exist:

- The agent could act contrary to its instructions because the principal's instructions are not in their interests, for example by increasing profit margins despite cost-effectiveness being in the principal's best interests (also known as moral hazard).[55]
- The principal could select an ill-suited agent (adverse selection), which causes problems with project implementation.[56]
- The private sector could be more experienced and have superior knowledge of terms and conditions from previous projects (knowledge asymmetry), compared to the government entity, which has limited PPP experience. This asymmetry could result in reduced access to information as the private sector's engagement in project delivery and operations grows.[57]

Therefore, mitigating against such outcomes in order to enhance congruency of goals involves the publication of best practices guidelines and manuals, making use of knowledgeable transaction advisors and ensuring that costs to the public sector are market related. Additionally, devising a robust monitoring regime can also assist in mitigating 'shirking' during the project implementation.

Some critics have also noted that there is a tendency towards over-engineered and legally complicated agreements because PPPs are risky undertakings. PPPs are thus criticised for their high transaction costs, the long-term and rigid nature of contracts, the difficulty in finding private investors to partners with, and the increased difficulty for local firms and financiers to participate in PPP projects.[58]

1.4.2 Challenges for PPP implementation specific to the African context

Given existing fiscal constraints amongst developing countries, one of the biggest risk concerns for African countries is recording PPPs as 'off balance sheet' expenditure – i.e. their costs are not formally recorded, which means that the cost of the project remains hidden. Current PPP accounting practices enable governments to keep project and contingent liabilities (i.e. payments required from governments in circumstances where the exchange rate falls or if the demand falls below specific levels) as part of these 'off balance sheet' expenditures because the private sector is supposedly borrowing the financing for the project, and governments' future debts do not appear on their budget line once the project is completed.[59] Bearing in mind the vulnerabilities that many

[54] Sastoque LM; Arboleda CA; Ponz JL (2016) 'A proposal for risk allocation in social infrastructure projects applying PPP in Colombia.' *Procedia Engineering* No. 145
[55] Smith E; Umans T; Thomasson A (2018) Stages of PPP and Principal–Agent Conflicts: The Swedish Water and Sewerage Sector. *Public Performance & Management Review*, Vol. 41, No. 1
[56] Shrestha A & Martek I (2014) *Principal Agent Problems Evident in Chinese PPP Infrastructure Projects.*
[57] European PPP Expertise Centre (2015) *PPP Motivations and Challenges for the Public Sector.* European Investment Bank: Luxembourg
[58] World Economic Forum *4 steps to improving public-private partnerships* https://www.weforum.org/agenda/2015/06/4-steps-to-improving-public-private-partnerships/, accessed on 15 November 2018
[59] Romero MJ, op. cit.

African economies have, such practices are extremely dangerous and can influence the private sector's perception of risks in developing economies, and can result in the private sector either refusing to accept certain risks or charging excessive risk premiums to take them on.[60]

There is also an ethical debate around the private provision of essential public goods, given that the poor are often unable to afford private services and that the primary goal of private companies is profit-raising.[61] UNCTAD suggested caution when using PPP financing as it could be more expensive than direct borrowing by governments because project finance requires higher leverage with debt contributing 70% to 90% of financing requirements, while equity can contribute between 10 to 20%. PPPs that take the form of SPVs may also prove to be costly to monitor and can comprise up to 40 individual contracts, which can account for 3 to 5% of project costs for typical projects, and between 10 to 12% for new, untested projects.[62] In certain circumstances international financing results in foreign currency exposure for both debt repayments and dividends, and where returns are in local currency, exchange rate shocks can affect governments' ability to repay and project profitability.[63]

Over the past two decades, the majority of PPP projects have taken place in developing countries with relatively higher incomes: just under 60% of total projects took place in upper middle-income countries (MICs); 37% occurred in lower MICs, and only 4% of projects took place in low-income countries (LICs).[64] Investments in PPPs in relation to the size of Gross Domestic Product (GDP) were higher in LICs compared to upper MICs, and even higher in lower MICs: LICs and lower MICs are even more vulnerable to fiscal implications of PPPs, which is of important concern for African countries, which often constitute the majority in these groupings.[65]

African countries often face the additional complication of poor regulatory frameworks and inadequate legislation unable to comprehensively regulate PPPs, while perceptions of corruption and poor governance (on both sides) continue to make a working relationship between the parties difficult.[66] This can result in the private sector investing in areas and sectors where it is financially lucrative and beneficial for them to participate, rather than targeting vulnerable areas, which would imply greater risks for them. This implies a selective bias in PPPs, known as 'cream-skimming', which occurs within countries when investment is directed towards affluent urban areas,[67] and raises questions as to whether PPPs are a suitable model for infrastructure development especially in developing countries where there is dire need to reach rural communities.

Unfortunately, even with blended financing, African countries have struggled to adequately manage and implement PPPs. The World Bank lists only 16 African countries that have legislation dealing with PPPs, while there are even fewer specialised PPP units – only 10 are reflected throughout Africa.[68] While PPPs can undoubtedly play a positive role in contributing to much-needed infrastructure development in Africa, it is equally paramount that the correct conditions are in place to avoid negative financial, environment and social implications that the literature has highlighted thus far. The abovementioned benefits and challenges for PPPs represent a useful framework with which to examine the success of specific projects within the Southern African Development Community (SADC) region, detailed in Chapter 2 below.

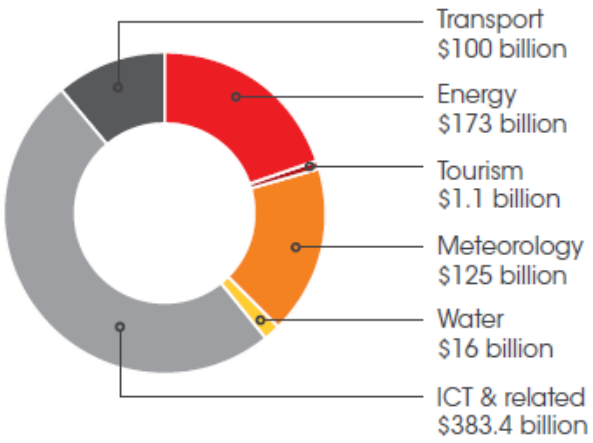
[60] Bovis CH, op. cit.
[61] Markowitz C (2017) *Tanzania's Transport Hub: What Prospects for Regional Trade and Local Economic Development?* Occasional Paper 262 SAIIA: Johannesburg
[62] Trebilcock M & Rosenstock M, op. cit.
[63] UNCTAD, op. cit.
[64] Trebilcock M & Rosenstock M, op. cit.
[65] Romero MJ, op. cit.
[66] Wentworth L & Makokera C, op. cit. See also Maseko M, op. cit.
[67] KS Jomo et al., op. cit.
[68] Loxley J, op. cit.

2. Past and Present Experiences of Infrastructure Development by PPPs in SADC

2.1 SADC's legislative frameworks

At a SADC level, the region's Regional Indicative Strategic Development Plan (RISDP) 2015-2020 is the long-term, overarching SADC implementation framework guiding regional integration and various programmes within SADC – including a focus on infrastructure. Supporting the RISDP is the 2012 Regional Infrastructure Development Master Plan (RIDMP), which calls for $500 billion in capital requirements to finance regional projects. This can include both cross-border projects as well as national projects which have regional economic and/or developmental significance. The RIDMP is aligned with PIDA and is implementable over three five-year intervals: short term (2012-2017), medium term (2017-2022) and long term (2022-2027). It also supports the SADC Vision 2027, a 15-year implementation horizon for forecasting infrastructure requirements in the region.[69] The RIDMP's diagnostic report highlights the critical infrastructure deficit present in Southern Africa, including insufficient energy supply, expensive and unpredictable transport and logistics services; lack of accessible ICT; insufficient access to sanitation and clean water; and inadequate meteorological services for effective and efficient planning. The RIDMP is therefore a cross-border response to addressing these infrastructure deficits.[70]

Figure 6 – RIDMP Financial requirements



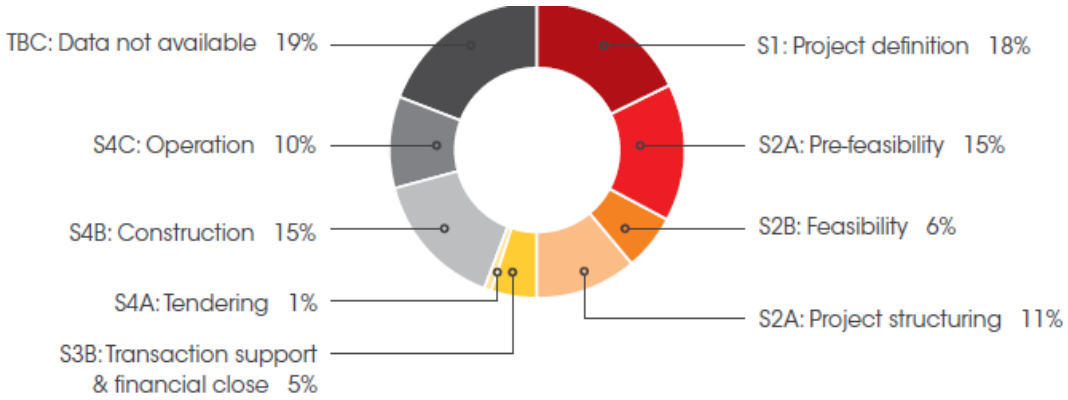
Source: SADC (2012) Regional Infrastructure Development Master Plan: Executive Summary August 2012

Despite its ambitious goals, progress is much slower than expected. Like other parts of Africa, SADC suffers from a dearth of bankable projects, caused by a financing gap in early project development and project preparation stages: for example, in 2009 and 2010 a total of $55 million was made available to spend on projects within Southern Africa, but was not disbursed due to inadequate project preparation and delivery.[71] Of the 81 SADC PIDA infrastructure projects, only 11% are currently at the project structuring stage – emphasising that SADC's

[69] https://www.sadc.int/themes/infrastructure/, accessed 2 November 2018
[70] SADC Secretariat (2012) *Regional Infrastructure Development Master Plan: Executive Summary*. Gaborone: SADC Secretariat
[71] Markowitz C; Wentworth L; Grobbelaar N (2018) *Operationalising the SADC Regional Development Fund*. Global Economic Governance Africa Policy Briefing

infrastructure bottleneck lies in the project preparation stages, as depicted by stages S1 – S3a in Figure 7 below.[72] SADC members are therefore greatly in need of technical assistance and capacity building for project preparation.

Figure 7 – Stages of SADC PIDA infrastructure projects



Source: Markowitz C; Wentworth L; Grobbelaar N (2018) *Operationalising the SADC Regional Development Fund*. Global Economic Governance Africa Policy Briefing

The RIDMP's bottom-up approach is supposed to allow SADC members to identify projects linked to their national development plans and help lessen the risk of conflict between domestic and regional priorities.[73] However, research suggests that infrastructure development at both national and regional level within Southern Africa remains a politicised process. This hinders project development and due diligence for infrastructure projects and leads to under-developed project ideas being put forward in the RIDMP.[74] Additional hurdles in the region include opaque infrastructure procurement and continued reliance on SOEs, which could deter both entry and operations of private investors in utility markets.[75] The current lack of capacity has exacerbated challenges in cross-border SADC priority projects especially as cross-border projects have to account for different interests and national boundaries.[76] Lastly, diverging regulatory agencies and laws, poor policy frameworks and inadequate attempts at regional harmonisation has only heighted difficulties at launching regional infrastructure projects.[77]

Bilateral donors as well as project preparation facilities have been developed to target these early stage issues, most notably SADC's Project Preparation and Development Fund (PPDF), hosted by the Development Bank of Southern Africa (DBSA). However, given these funds are grant-based, they are therefore limited, and insufficient to support the massive needs for early stage concessional finance. Many SADC countries' challenges lie in pre-project preparation issues such as project conceptualisation and the ability to apply for project preparation funding, and funding available for these issues is even more limited. In addition, the PPDF is fully funded by international partners which, when coupled with its location within the DBSA and regional biases associated with South Africa, has raised questions regarding the PPDF's ability to successfully serve regional interests.[78] The SADC region has therefore also renewed the push for its own regional resource mobilisation mechanism, a "SADC Regional Development Fund," with one of its primary focus areas in supporting regional infrastructure.

[72] Markowitz C; Wentworth L; Grobbelaar N; op. cit.
[73] Dube M (2013) *Analysing the Development Process for Infrastructure Projects in SADC*. PERISA Case study 3 Infrastructure: SAIIA/ECDPM: Johannesburg/Maastricht
[74] Markowitz C; Wentworth L; Grobbelaar N; op. cit.
[75] OECD-SADC Policy Brief (2015) *Addressing development challenges in Southern Africa*. OECD: Paris
[76] Markowitz C; Wentworth L; Grobbelaar N; op. cit.
[77] Dube M, op. cit.
[78] Markowitz C; Wentworth L; Grobbelaar N; op. cit.

However, operationalisation of this Fund faces the same regional political challenges and financing constraints as other initiatives.

The above challenges are relevant in the context of PPPs because private partners are not willing to invest in regional or national projects which have not yet reached bankability. Consequently, the SADC region has seen only a small number of infrastructure PPPs come into operation over the last two decades. Despite this, PPPs have been proposed as a major solution to meeting the infrastructure financing gap, and have been endorsed by governments and multilateral organisations –such as the AU, UNECA and the AfDB alike, which has prompted financial and technical support from the World Bank and International Monetary Fund (IMF).[79] Within this context it is important to understand the utilisation of PPP projects in SADC on a country by country basis.

2.2 An overview of PPP projects amongst SADC countries

Despite the challenges outlined in section 2.1, in recent years a number of countries have begun to develop legislation and dedicated PPP capacity, mirroring South African best practice as well as frameworks and toolkits developed by multilateral institutions such as the World Bank. The SADC Development Finance Resources Centre (DFRC) has also developed the SADC PPP network to provide technical assistance and support to PPP frameworks and projects in the region. However, as with any policies, the challenge inevitably comes with implementation. This section provides an overview of the various PPP projects implemented in SADC to date by country, as well as priority future projects outlined by government. It will also examine the regulatory frameworks guiding PPP implementation in each country.

**Other aspects of PPP law (which selected countries have addressed in their regulatory frameworks), such as dispute settlement, local content requirements, public-private division of responsibilities, etc. can also be included in the below summary at the request of the funder.*

Box 1 – SADC Country Snapshot

Angola: Angola's current regulatory framework for PPPs includes a PPP law and private investment law. The PPP law is unique in that it requires PPPs to be implemented using SPVs. The country has small experience in electricity and transport PPPs. Corruption remains a major challenge for PPP implementation.

Botswana: Botswana has a PPP policy; however, the establishment of a legal framework has been long delayed. The country has little PPP activity outside of small real estate projects.

Comoros: Comoros has no legal framework for PPPs and PPP activity is largely nonexistent.

Democratic Republic of the Congo (DRC): The DRC recently passed new PPP legislation in 2018, based on elements of the French PPP model. The country has a small number of PPPs implemented/currently in progress.

Eswatini: Eswatini promulgated a PPP policy in 2008 but has no legal framework, and has not implemented any PPP projects.

Lesotho: Lesotho passed a PPP policy in 2018, which states that the amendments to the Public Financial Management and Accountability Act are underway which will regulate PPPs. Lesotho is known for the large and controversial Queen Mamohato Memorial Hospital PPP.

[79] Loxley J, op. cit.

Madagascar: Madagascar passed a PPP law in 2015, with two sets of comprehensive PPP regulations in 2017. The country has implemented PPPs primarily in electricity and transport.

Malawi: Malawi has a PPP law, policy and manual/guidelines. The Public Private Partnership Commission is active in promoting projects for PPP development, though the enabling environment in Malawi is challenging. Small PPPs have been implemented across a range of sectors.

Mauritius: Mauritius has an extensive legal framework for PPPs, with a PPP law, regulations and guidelines, and more recently a Build Operate Transfer law, regulations and guidelines. However, the number/value of PPP projects is still comparatively small. The BOT Act is meant to support the use of PPPs in urban development through the country's Smart Cities project.

Mozambique: Mozambique has a long history of PPP implementation compared to most SADC countries, with the majority of PPPs in transport and electricity sectors. Mozambique has a PPP law and regulations; however, many PPPs were implemented before the passage of the Law in 2011.

Namibia: Namibia has a PPP policy and also recently passed a PPP law. The country is currently implementing multiple IPPs and actively looking to develop PPPs in port and air travel.

Seychelles: Seychelles recently developed a PPP policy, with no current legislation. The country has small experiences with PPPs and is looking to develop PPPs in tourism and fisheries sectors.

South Africa: South Africa has the most developed PPP track record as well as regulatory framework, which is used as a template for many SADC countries. PPPs are regulated under the Public Financial Management Act, along with PPP regulations and nine PPP Manual modules. PPPs have been implemented in transport, water, health, real estate and education, with IPPs also implemented for electricity.

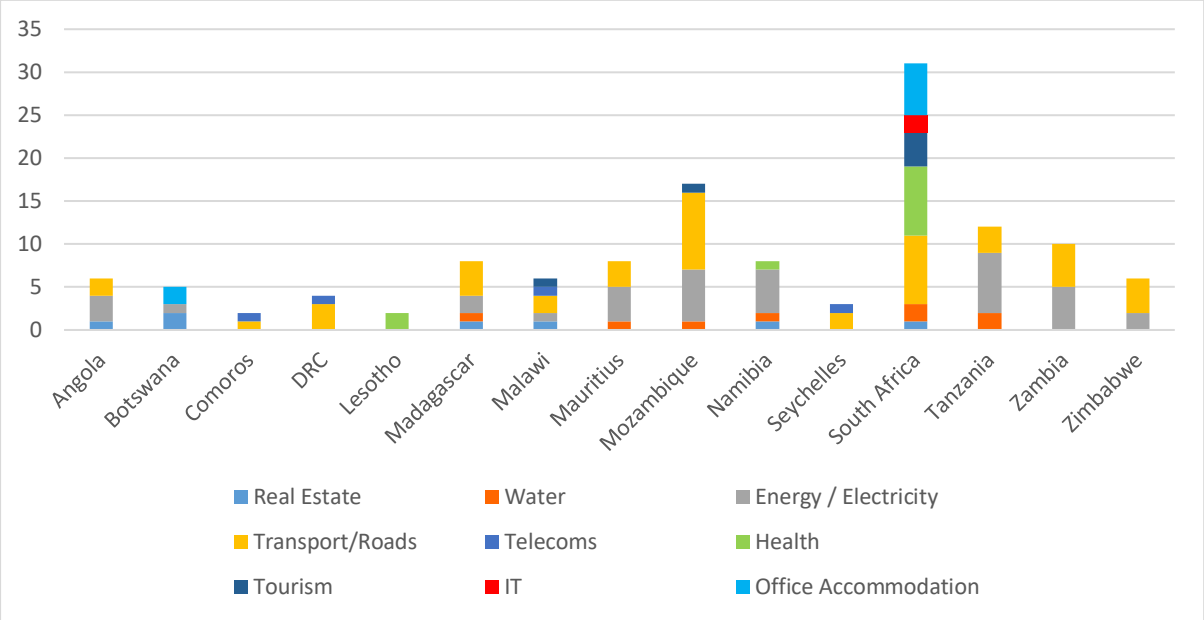
Tanzania: Tanzania has invested significant effort in continually developing its PPP legislation, with a PPP law which has been amended twice (the second amendment is currently underway), as well as regulations which have also been amended. The country has significant experience with the implementation of energy PPPs, which have faced corruption challenges. The government is currently placing a strong priority on transport PPPs.

Zambia: Zambia's has a PPP law which has recently been amended. Zambia has implemented a significant number of PPPs in both energy and transport; however, the PPP Unit has faced challenges in its role as facilitator, evidenced by its location being moved three times.

Zimbabwe: Zimbabwe has a PPP policy and guidelines, but no PPP law. It has implemented a small number of PPPs primarily in transport; however, the political/economic situation has proven challenging for attracting private investment. The 2016 Joint Venture Act covers PPPs only if they are joint ventures.

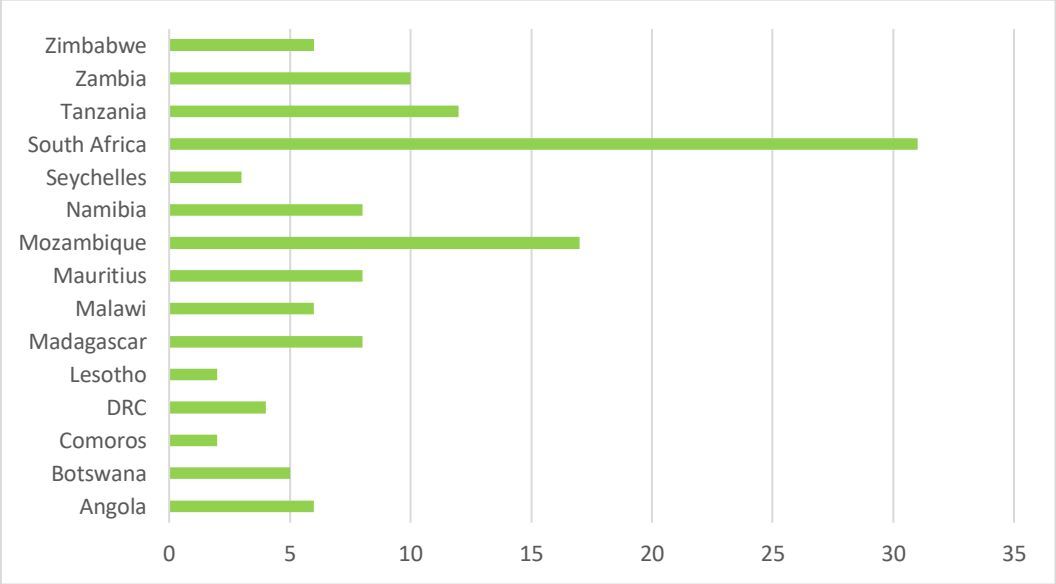
**Please note that data for Figures 8 and 9 are compiled from a variety of sources and from the tables listed below. They are produced based on the researchers' findings and interpretation of available data.*

Figure 8 – Overview of PPPs in SADC, per sector/country



Note: South Africa's real estate refers to a correctional facility; other examples include hostel accommodation, universities and shopping centres (malls)

Figure 9 – Total number of PPPs per country



- **Angola**

Table 2 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
Current	Porto de Caio	Transport	30 Year concession to finance, plan, design, build and manage the Port	$600 million	Caioporto S.A. and Government of Angola
2014	Port of Namibe container terminal	Transport	20 year concession to operate the port's containerized and general cargo terminal		Sogester (a joint partnership between the Maersk group's APM Terminals and a company which is the commercial arm of Angola's ruling MPLA party) and Namibian Ports Authority
2009	Lupasso Mini Hydropower	Electricity	Private partner responsible for production, transmission and distribution	$120 million	Escom Mining Energy (SOE) and Agencia Nacional para o Investimento Privado
2007	Port of Luanda container terminal	Transport	20 year concession		Sogester and Namibian Ports Authority
2006-2008	Aggreko Power Stations	Electricity			Aggreko plc and Government of Angola
2007	Chicapa hydroelectric dam	Electricity			ENE (Angolan Electricity company) and Alrosa

Relevant Legislation

- Law on public-private partnerships (Lei no. 2/11 de 14 de Janeiro: Lei Sobre as Parcerias Público-Privadas) (2011)
- General Electricity Act (2014)
- New Public Procurement Law, Law No. 9/16 (2016)
- New Private Investment Law (2018)

Angola's PPP law is based largely on Portugal's 2003 PPP law (Decreto-Lei no 86/2003 de 26 de Abril). The law defines PPPs as "a contract or a set of contractual arrangements pursuant to which private entities, designated by the private partners, are obliged towards the public partner, on a long term basis, to ensure the development of an activity that satisfies a collective need, and in respect of which the financing and the responsibility for investment and exploitation rests, in whole or in part, with the private partner." The law also covers concession agreements, long term supply contracts, service agreements, management agreements and joint venture agreements. Procurement is to be governed by relevant public procurement legislation and the law does not set out special procedures for the bidding process.

The Law requires the establishment of an SPV to implement and maintain all PPPs. The PPP Law also calls for the establishment of a guarantee fund to cover additional government costs related to PPPs. The Law creates a Ministerial Commission for the Evaluation of PPPs, made up of the Comissão Ministerial de Avaliação das PPP (CMAPP, comprised of the Minister of Economy, the Minister of Finance and the Minister of Planning), with possible participation from the sectoral minister and provincial governor. The Commission oversees PPP processes; however, the sectoral minister has the primary responsibility for implementation. However, relevant sectoral ministers can also participate. Though it was enacted in 2011, regulations have not been published to date which does not allow for fully effective implementation.

Angola's New Private Investment Law replaces the previous private investment law of 2015. The law is relevant for PPPs because it simplifies contracting and improves incentives to private sector investors. The previous Mandatory minimum investment requirements to receive customs benefits or tax incentives have been removed for instance, and the local ownership requirements for investment in certain sectors have also been removed.[80]

The General Electricity Act of 2014 opened up the energy sector to private investment, and also put forward regulations relevant to renewable energy.

Priority Projects and/or Sectors

- In 2014 the Ministry of Energy and Water commissioned the "Angola Integrated Plan for Fostering PPPs in the Electricity Sector"
- The government has engaged in a recent push for PPPs development to signal Angola's openness with the new president.[81] Priority sectors include port and railway[82]
- In September 2018, the president of Angola launched public tenders for construction and concession of the port of Barra do Dande, and the management and operation of Luanda's new airport. The president also signalled a potential tender for the Benguela Railroad, a transport route for mining products between Angola and DRC.[83]

Additional Information

Public corruption has been a major challenge for PPP development in Angola. For example, it is reported that the Angolan government wants to terminate the current Port de Caio concession with Caioporto, after the major shareholder of the company was prosecuted regarding the asset management of Angola's Sovereign Wealth Fund, which is also a financier of the Port.[84] Additionally, Port of Namibe wants to cancel its current concession contract, as they state it was negotiated to give 90% of profits to the JV private operator with no clear investment commitments in return, demonstrating the pitfalls of lack of capacity and transparency in contract negotiation. Additionally, the Angolan portion of the JV has reportedly mismanaged funds and is linked to public corruption. The Port Authority states that it is now struggling to pay its employees.[85] However, with the new administration there is optimism that these issues will be mitigated.

- **Botswana**

Table 3 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
2013	Mongala Mall	Real Estate		$7.15 million[86]	Southern District Council and Time Projects
2012	Orapa Emergency Power Plant (IPP project)	Electricity	IPP	$93.29 million	Karoo Sustainable Energy and Botswana Power Corporation

[80] http://avm.biz/conteudo/en/1418/approval-of-law-no-1018-of-june-26-which-approved-the-new-private-investment-law/

[81] http://www.engineeringnews.co.za/article/angola-ifc-court-south-african-investors-2018-09-21/rep_id:4136
http://www.angop.ao/angola/en_us/noticias/economia/2016/8/39/Angola-AfDB-suggests-public-private-partnerships,73d13bb9-a939-479d-8be8-faac96c01a13.html
https://africabusinesscommunities.com/africadata/angola-spent-$96-billion-on-infrastructure-in-13-years-data/

[82] https://www.railwaysafrica.com/news/angola-to-promote-public-private-partnerships-across-transport-sector

[83] https://macauhub.com.mo/2018/09/26/pt-presidente-de-angola-anuncia-em-nova-iorque-lancamento-de-concursos-publicos-internacionais/

[84] https://www.transportesenegocios.pt/angola-quer-revogar-concessao-do-porto-de-caio/

[85] https://allafrica.com/stories/201809100088.html

[86] Historical exchange rates were used from the Bank of Botswana Annual Report 2014 to convert Pula to USD
http://www.bankofbotswana.bw/assets/uploaded/BoB-AR-2014%20WEB-STAT.pdf

2011	Rail Park Mall	Real Estate			JTTM Properties and Botswana Railways
2009	SADC House	Real Estate	99 year lease agreement	$22.48 million	SADC (partnering with Bongwe Investment (Pty) Ltd, a consortium of BIFM, Stocks and Stocks Botswana, Outsourcing Botswana and ABSA) and the Government of Botswana
2008	Ombudsman and Land Tribunal Office Accommodation Project	Real Estate	10 Year concession	$8.12 million	SPV, Plot 21 Investment (Pty) Ltd (includes Stocks and Stocks Botswana, Outsourcing and Botswana Insurance Fund Managers) and Government of Botswana

Relevant Legislation

- Privatisation Policy (2000)
- Public Procurement and Asset Disposal Act (2001)
- Local Authorities Procurement and Asset Disposal Act (2008)
- PPP Policy and Implementation Framework (2009)
- Public Financial Management Act (2013)

The PPP policy defines a PPP as a "contractual arrangement between a governmental institution and a private party whereby the private sector party provides public infrastructure and/or infrastructure related services." It does not elaborate on the types of PPPs to be undertaken in Botswana. Procurement is carried out under the Public Procurement and Asset Disposal (PPAD) Act/Board, and statutory oversight undertaken by the Public Procurement and Asset Disposal Board. The Policy does not preclude unsolicited bids in special cases. Relevant sectoral ministries/parastatals are responsible for undertaking the PPP process (from project identification through to monitoring). No legal framework has been developed specifically to regulate PPPs, though the PPP Policy calls for an amendment to the PPAD Act to do so.

In 2016 the Ministry of Finance established a PPP Unit tasked with advocacy, coordination of PPPs, capacity building and technical assistance.

Priority Projects and/or Sectors

Based upon Botswana's National Development Plan 11 (2011), the Ministry of Finance has produced a list of priority projects for future PPP development:

Ministry	Project	Description
Ministry of Basic Education	Teachers Housing	Construction of 4,000 housing units for secondary school teachers
Ministry of Lands and Water Sanitation	Glen Valley Waste Water Reuse Project	Glen Valley wastewater treatment and reuse
Ministry of Lands and Water Sanitation	Chobe-Zambezi Water Transfer Scheme	Water abstraction from Chobe-Zambezi river and pipeline
Ministry of Investment, Trade and Industry	Economic Zones Common Facilities	Construction/operation of common facilities for Economic Zones
Ministry of Health and Wellness	New Francistown District Hospital	Construction of a new district hospital and a psychiatric department in Francistown
Ministry of Health and Wellness	Construction of Level 1 primary hospitals	Construction of Level 1 primary hospitals in Werda, Sebina, Tonota, Sehitwa, Botshabelo, Shoshong and Tsetsebjwe

Ministry of Agricultural Development and Food Security	Zambezi Agro-Commercial Development	Irrigation scheme in Pandematenga
Ministry of Defence, Justice and Security	Police Headquarters Expansion	Expansion of Police Headquarters in Gaborone
Ministry of Defence, Justice and Security	SSG Workshops and Houses	Construction of SSG workshops and 150 staff houses in Francistown
Ministry of Defence, Justice and Security	Prison Headquarters	Design, construction and maintenance of BPS headquarters in Gaborone
Ministry of Defence, Justice and Security	Sepopa Prison Farm	Construction of new prison comprising of Security Wing, Farm and staff houses at Sepopa
Ministry of Defence, Justice and Security	Construction of an Offender Rehabilitation Centre Lobatse	Design, construction and maintenance of an offender rehabilitation centre in Lobatse
Ministry of Lands and Water Sanitation	Land Servicing	Provision of integrated infrastructure services to land in Kasane, Ramotswa, Mochudi and Francistown
Ministry of Environment, Natural Resources and Tourism	Gaborone Tourism Precinct	Development of meeting, conference and exhibition facilities and promotion of urban tourism
Ministry of Environment, Natural Resources and Tourism	Three Dikgosi Monument	Development of the "Three Dikgosi Monument" for urban tourism
Administration of Justice	Serowe Magistrate Court	Construction of Serowe Magistrate Court

Additional Information

The government stated its intention to prioritize PPP development as early as the 2003-2009 National Development Plan (NDP);[87] however, virtually no projects have been developed in major infrastructure sectors. According to the country's PPP coordinator, the 2009 PPP policy has not been fully implemented because the government is still awaiting an amendment to the Public Procurement and Asset Disposal Act to ensure regulatory compliance. The PPP Unit has also not been staffed. Overall, government has treaded hesitantly in pushing forward with PPPs in practice, though there has been keen interest and pressure from local private sector.[88] A very limited investible project pipeline and lack of coordination between the public and private sector to develop such a pipeline exacerbates these challenges.[89]

- **Comoros**

Table 4 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
Current	Comores Cables	Telecommunications	Creation of an SPV to commercialise connectivity	$17 million	Comores Cables (jointly owned by Comores Telecoms, Telma and the Government)
2003	Port of Mutsamudu	Transport	Rehabilitate operate and transfer	$500,000	Spanfreight Shipping and AEC Autorité Portuaire des Comores

[87] http://pppstandards.org/botswana/
[88] http://www.botswanaguardian.co.bw/news/item/2524-govt-drags-feet-on-ppp-implementation.html
[89] Interview, African private equity firm, 17 August 2018

Relevant Legislation

- Comoros currently has no legislation or policies that cover PPPs.

Priority Projects and/or Sectors

Funds have been allocated from the World Bank, AfDB and Global Climate Facility between 2012-2016, to support private sector water management. However, it is unclear to what extent these arrangements are operational.[90] Government has indicated intention to develop PPPs in tourism.[91] According to COMESA, government wants to encourage IPPs but Comoros currently has no energy policy.[92]

Additional Information

The Comores Cables project has faced some resistance from government, especially with regards to the shareholding of the private partner, Telma.[93]

- **Democratic Republic of the Congo (the DRC)**

Table 5 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
Current	Port of Banana	Transport	30 year concession in port development and management	$350 million	DP world and government of DRC
Current	Renatelsat	Telecommunications	Build, operate, transfer		Renatelsat and AU Financial Services
Current	Kasomeno-Kasenga-Chalwe-Mwenda Road Upgrade (Zambia-DRC)	Transport		$475 million ($254 million for the DRC side)	Duna Azfalt, Group 5, Groupa European de Development,
1995	Sizarail	Transport	Management contract		Sizarail and DRC government

Relevant Legislation

- Act No. 10/010 public procurement (Loi N° 10/010 Du 27 Avril 2010 Relative Aux Marches Publics) (2010)
- Law No 14/005 - tax, customs and para-fiscal system of non-tax revenues and exchange control system for PPPs (Loi n° 14/005) (2014)
- Law No. 18/016 on Public Private Partnerships (Loi n°18/016) (2018)

Before official PPP legislation, PPPs in the form of service concessions have been implemented in DRC under the French Public Service Delegation mechanism. DRC's PPP law does not explicitly define a PPP; however, this legal

[90] https://ppiaf.org/activity/comoros-improving-private-sector-management-water-supply, https://www.greenclimate.fund/documents/20182/893456/15000_-_Ensuring_sustainable_and_climate_resilient_water_supplies_in_the_Comoros_Islands.pdf/d16093f7-fbb0-4ad2-a1a9-576cee5af09c

[91] http://documents.worldbank.org/curated/en/822241468009987154/pdf/820220WP0P12800Box0379855B00PUBLIC0.pdf, https://books.google.co.za/books?id=JydqOf7pJeEC&pg=PA96&lpg=PA96&dq=comoros+PPPs&source=bl&ots=aW3QNZvf1i&sig=vsbkx5oxf3FuelA0y_-aLEaVBEA&hl=en&sa=X&ved=2ahUKEwikpZGuqb3eAhWLJMAKHebUD_Y4FBDoATAFegQIAxAB#v=onepage&q=PPPs&f=false

[92] http://www.comesa.int/wp-content/uploads/2017/12/PPPs_web.pdf

[93] http://documents.worldbank.org/curated/en/162591538364631239/pdf/COMOROS-PADf-09112018.pdf

formulation is continued with the broad division of PPPs into public service delegation contracts and partnership contracts:

The public service delegation contract is mandatory for a public service and includes one of the following forms: the concession, the leasing and the interested party.

The partnership contract covers, in particular, a global infrastructure financing mission, its design, construction, operation and maintenance at the expense of the private partner.

It further details 4 different types of PPP projects:

- *Concession:* a mode of management of a public service under which a concessionaire, private partner, has the right to exploit the work on its behalf and at its risks and peril for a determined duration, covering service prices from users.

- *Affermage:* the Contracting Authority directs the farmer, a private person, to operate the service and to maintain the works delivered to him. The farmer pays a fee to the Contracting Authority for the operation of the enclosed work and is paid for by the income paid by the users. The royalty is variable depending on the operating result. The conditions of payment of the royalty are defined in the contract.

- *Regie Interessee:* a contract by which the Contracting Authority itself finances the establishment of a public service, but entrusts the management to a private person who is paid by the said Authority, while being interested in the results in terms savings, productivity gains or even improved quality of service. The public service continues to operate on behalf of the Contracting Authority which insures the investments and assumes the risk of exploitation.

- *Partnership Agreement:* a contract by which the Contracting Authority entrusts a third party, a private partner, for a specified period, with a global mission for the partial or total financing of construction or conversion, maintenance, operation or management of works, equipment or immaterial goods necessary for the public service or the exploitation of the activity, with the exception of any participation in the capital.

Preparation of PPPs and the tendering process is managed by a contracting authority, with a single step pre-qualification stage and a two-step selection. The new PPP law calls for the establishment of a separate public agency tasked with "advising, coordinating activities and supervising the conclusion of public-private partnership contracts," with the functions of what other countries term PPP Units. Unsolicited proposals are only accepted if the government has made no mention of the project, and must then undergo a formal open bidding process.

Priority Projects and/or Sectors

- The Central African Backbone Program Project to contribute to regional broadband infrastructure is intended to be developed by PPP.[94]
- In 2012 the PPIAF advised the government on 14 conducive projects for PPPs, including national road Matadi-Boma-Moanda-Tshela, National road Kinsasha-Kikwi, ports of Kinsasha, Matadi, Boma and Banana.[95]
- Lumumba Boulevard airport road.[96] Brazzaville Kinshasa Road/Rail Bridge (PIDA project).[97]

[94]http://documents.worldbank.org/curated/en/929951467990389076/Congo-Democratic-Republic-of-Fifth-Phase-of-the-Central-African-Backbone-Program-Project
[95]https://ppiaf.org/activity/democratic-republic-congo-project-pipeline-screening-and-initial-feasibility-assessment
[96]https://www.bizcongo.cd/medias/recrutement_dune_firme_entreprise_ou_consortium_capable_de_financer_dassurer_la_mise_en_oeuvre.pdf,http://www.theworldfolio.com/interviews/drcs-key-partner-in-infrastructure-set-to-become-regional-reference-/4085/
[97] http://www.au-pida.org/view-project/2014/

- **Eswatini (Swaziland)**

PPP projects

None

Relevant Legislation

- Swaziland Final PPP Policy (SPPPP) (2008)
- Swaziland Public Procurement Act no.7 (2011)

Eswatini's PPP Policy defines a PPP as "the contractual agreement between Government or public enterprises or other Government entities and the private sector whereby the private sector will provide services and or facilities in sectors and services traditionally provided by the public sector." It recognizes management contracts, BOT, Design, Build, Operate & Maintain (& Finance), and concessions.

The PPP Policy calls for the establishment of an institutional framework and regulatory authority, including a PPP unit. However, to date no legislation or PPP Unit has been established. The policy also calls for the regulatory framework to outline the policy for unsolicited proposals.

- **Lesotho**

Table 6 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
2012	Mediwaste	Health	Service agreement		Government of Lesotho and Consortium between South African Ditau Health Solutions and Lesotho Matsete Investments
2011	Queen Mamohato Memorial Hospital	Health	Design Build and Operate, transfer after a period of 18 years	$100 million	Government of Lesotho and consortium consisting of Netcare South Africa, an investment company formed by Basotho medical practitioners in SA, an investment company formed by professional and businesswomen in Lesotho, and the investment arm of the Lesotho Chamber of Commerce and Industry.

Relevant Legislation

- Public Procurement Regulations (2007), Amendment (2018)
- Public Financial Management and Accountability Act (2011)
- PPP Policy (2018)

Lesotho currently has no PPP law; however, the PPP Policy states that the current reform of the Public Financial Management and Accountability Act will include PPP legislation.

Lesotho's PPP policy defines a PPP as "a contractual arrangement between a Procuring Unit and Private Partner whereby the private investor and/or operator designs, finances, constructs, operates, maintains and/ or rehabilitates a public asset or service in whole or in part and in accordance with pre-defined output specifications on behalf of the Procuring Unit." The policy mentions the following PPP types: "Performance-based Management Contracts, and Lease Contracts or Rehabilitate, Operate, Transfer (ROT)) and/or contracts for the establishment of new services and/or assets (e.g. Design, Build, Finance, Operate/Maintain Transfer (DBFO/MT), Build, Operate, Transfer (BOT), Build, Own, Operate (BOO)."

The "Procuring Unit" is tasked with managing the PPP process, though it is not specified where the procuring unit is housed. The PPP policy calls for the establishment of a PPP Unit: "the preliminary review and clearance body and an advisory agency for PPPs providing technical support to Public Sector/Procuring Units on matters

related to PPP project identification, development, evaluation and implementation." The PPP Unit and overall process is overseen by the Ministry of Finance. The PPP policy states the government will not accept unsolicited bids at this point in time.

Additional information

In Lesotho, the well-known Queen 'Mamohato Memorial Hospital' PPP also ended with a controversial outcome. Though the government of Lesotho received support from the World Bank's International Finance Corporation (IFC), challenges in risk sharing and especially cost estimations led to a financially unsustainable outcome for the government and ultimately a strained public-private partner relationship. The hospital cost $ 67 million per year to run – at least three times what the old public hospital would have costed, and consumed more than half of the total government health budget.[98]

Priority Projects and/or Sectors

In 2016 the government was in discussions with the IFC in developing small hydropower PPPs.[99]

- **Madagascar**

Table 7 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
2017	Ivato International Airport	Transport	28 year concession. Design, construction and operation	$250 million	Ravinala Airports (formed w/shareholders Groupe ADP. the Bouygues group, Colas Madagascar, and Meridiam) and the Government of Madagascar
2017	Fascene Airport	Transport	28 year concession. Design, construction and operation		Ravinala and the Government of Madagascar
2005-2007	Various energy IPPs	Electricity			JIRAMA (Malagasy electricity company) in partnership (separately) with Sherritt International Corporation, Aggreko, HydelekcHenri Fraise Fils & Cie, Enelec
2005	Toamasina Port	Transport	20 year concession	$42.5 million	International Container Services, Inc., Philippines and Madagascar International Container Services
2005	Lokoho Hydro for Rural Development*(suspended)*	Electricity	BOT		the E8 group (EDF, RWE and Hydro Quebec), Electricité de Madagascar and international development organizations (GIZ, KfW, EU)
2005	Port d'Ehoala	Transport	Concession	$260 million	Rio Tinto and Malagasy government
2003	Malagasy Railway	Transport	25 year concession	$36 million	Madarail Holdings (Comazar is the main shareholder), various local investors and the Madagascan government
1998	Sandandrano	Water	Management contract to provide water to rural and peri-urban communities	$400,000	Sandandrano and local communities

Relevant Legislation

[98] KS Jomo et al., op. cit.
[99] http://documents.worldbank.org/curated/en/580181470238798259/pdf/PIDC72941.pdf

- Public Procurement Law (LOI n°2004) (2004)
- Law on Public Private Partnership (2015)
- Decree 2017-149 (procurement for PPPs) (2017)
- Decree 2017-150 (institutional framework for PPPs) (2017)

The PPP law defines a PPP as "a contract regardless of its form or denomination, by which a public person, entrusts to a third party, for a specified period, depending on the duration depreciation of investments or the terms of selected, a mission whose purpose is: all or part of the financing, infrastructure, works, equipment or property immaterial, necessary for the public service, as well as, all or part of their construction, rehabilitation, transformation, maintenance, maintenance, operation, or management, with or without public services."

PPPs are coordinated in the Presidency with oversight from the Ministry of Finance and Budget. The Autorité de Régulation des Marchés Publics, which also regulates public procurement, manages the contracting process. A PPP Unit assists with the contracting process. The National PPP committee sets PPP policy and strategic decisions. The Ministry of Finance oversees the contracting process and must vet projects for financial viability. The decrees provide more detail with regards to both regulations and timelines. Madagascar's PPP Law allows for unsolicited proposals, which are then subjected to a competitive bidding process.

Priority Projects and/or Sectors

- PPPs are especially being promoted in agriculture and tourism.[100]
- Port of Manakara (at feasibility).[101]
- Sahalanona Hydroelectric[102]

Additional Information

The 2008-2009 coup d'état was the major reasons that private sector partners pulled out of the Lokoho Hydro for Rural Development project leading to non-completion. This highlights the importance of certainty and political stability for private partners.

- **Malawi**

Table 8 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
Current	Salima and Golomoti Solar power stations (IPP)	Electricity	BOO through PPA		JCM Matswani Solar Corp (comprised of JCM Holdco, InfraCo Africa and Matswani) and Escom
Current	Njakwa-Livingstonia Road	Transport	BOT	$80 million	Mota-Engil and Government of Malawi
Current	Malawi public university accommodation project	Real Estate	PPA	$425 million	Old Mutual, M&M, Government of Malawi and five public universities
2016	Regional Communications Infrastructure Programme-Malawi Project	Telecommunications			Simbanet and Government of Malawi

[100]https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Madagascar-AR-Investment_Promotion_Support_Project__PAPI_.pdf
[101] https://www.dgmarket.com/tender/22960622
[102] http://madagascar.tendertiger.com/Inquiry.aspx?svid=1&srno=32435913

2015	Liwonde National Park and Nkhotakota Wildlife Reserve	Tourism	20 year concession		African parks and Government of Malawi
1999	Nacala Railroad	Transport	20 year concession (recently renewed up to 2045)	$6 million	Central East African Railways (comprised of Vale, Mitsui and CFM) and Government of Malawi

Relevant Legislation

- Public Enterprises (Privatisation) Act no.7 (1996) *(replaced by the PPP Act)*
- PPP Act No. 27 (2011)
- Public Private Partnership Policy Statement (2011)
- Public Procurement and Asset Disposal Act (2017)
- PPP Processes Procedures and Guidelines Manual (2018)

The PPP Act defines a PPP as "a contract in which a Contracting Authority partners with a Partner to build, expand, improve, or develop infrastructure or service in which the Contracting Authority and private sector partner contribute one or more of know-how, financial support, facilities, logistical support, operational management, investment or other input required for the successful deployment of a product or service, and for which the private sector partner is compensated in accordance with a pre-agreed plan, typically in relation to the risk assumed and the value of the result to be achieved." The Act details the following types of PPPs: (a) BOOT; (b) BOT; (c) BOO; (d) DFROT; (e) DFBOT; (f) Concession or Leases; and (g) any other mode as the Commission shall determine.

PPPs are either implemented by a contracting authority, which could be a ministry, government department, local authority or state-owned enterprise, or the Public Private Partnership Commission (PPPC). The PPPC was initially established as the Privatisation Commission under the Privatisation Act, but was adjusted with the promulgation of the PPP Law. The PPPC can delegate any activities, i.e. (feasibility, procurement) to the CA. Unsolicited bids are permitted but then must be subjected to an open tendering process. The process is overseen by the Ministry of Finance. Unsolicited proposals are not accepted by the Government of Malawi, due to the potential for corruption. Malawi is one of the few countries to release detailed guidelines on PPPs accompanying the legislation.

Priority Projects and/or Sectors

Projects earmarked (in 2018) for development by the PPPC include:

- Mpatamanga Hydropower Project
- Shire Valley Transformation Project
- Lilongwe Water Treatment Plant
- Songwe River Irrigation Project
- a modern bus terminal[103]
- a recreation park
- a parkade in Blantyre

[103] https://mwnation.com/pppc-earmarks-7-projects-ppp/

The PPPC has stated that lack of resources for feasibility studies and bringing projects to bankability have slowed the process of rolling out these PPP projects.[104] However, feasibility studies have now been completed for the Mpatamanga Hydropower Project.

The 2018 Malawi National Transport Master Plan, Road subsector plan envisions a role for PPPs, especially for new roads where tolls can be implemented.[105]

Malawian SOE ESCOM plans to develop solar IPP projects at Salima, Nkhotakota, Lilongwe and Golomoti. Thus far Salima and Golomoti have been awarded (see the above chart).

Additional Information

Malawi's institutional and legislative framework for PPPs is comparatively robust for the SADC region. It is one of the few countries with an adequately staffed PPP Unit, who is actually facilitating and implementing projects for PPP development. However, Malawi's general macroeconomic conditions create challenges for private sector investments despite the concerted efforts to promote PPPs. Additionally, weak project development capacity within government institutions hampers the development of a project pipeline.

- **Mauritius**

Table 9 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
2017	Central Térmica de Ressano Garcia	Electricity	Joint venture	$273 million	Sasol Limited and Electricidade de Moçambique (EDM)
2013	M1 Road Development	Transport			Sinohydro and Ministry of Finance and Economic Development
2014	Plain des Roches Wind Farm	Electricity	20 Year PPA	$230.5 million	Plan des Roches, Quadran Group and Central Electricity Board
2009	Sir Seewoosagur International Airport	Transport	Terminal concession	$383	Airport Terminal Operations Ltd (ATOL) (comprised of the State of Mauritius via Airports of Mauritius Co. Ltd. and Aéroports de Paris Management (ADPM))
2008	St. Martin Wastewater Treatment Plant	Water	Management contract		Berlinwasser International AG and Government of Mauritius
2004	St. Aubin (IPP)	Electricity	20 year BOO		Sugar Investment Trust, Mon Tresor Mon Desert, Savannah Sugar Estates. Societe Union St Aubin, Sechilienne-SIDEC, Government of Mauritius
1999	Sir Seewoosagur International Airport	Transport	5 year management contract		British Airport Authority and Government of Mauritius
1998	Bell Vue Power Plant	Electricity	BOO	$109.3	Sugar Investment Trust, Harel Freres, SIDEC and Government of Mauritius

Relevant Legislation

- The Public-Private Partnership Policy Statement (PPPPS) (2003)
- The Public-Private Partnership Act (PPPA) (2004)
- PPP Guidance Manual (2006)
- The Public Procurement Act (PPA) (2006)

[104] https://mwnation.com/resources-delay-some-ppp-projects-roll-out/
[105]http://www.malawi.gov.mw/images/Publications/NTMP_Final_Documents/Sub_sector_roads/NTMP_Road_Sub-Sectoral_Plan.pdf

- PPP Regulations (PPPR) (2008)
- The Build Operate Transfer Projects Act (2016)
- BOT Projects Guidance Manual

Mauritius has an extensive PPP legal framework, with the most recent BOT Act aiming to simplify requirements of the PPP and Public Procurement Acts, and specifically promote PPPs through Build Operate Transfer Models.

The BOT Act defines a BOT project as "a project based on the granting of rights, under a BOT agreement, to a private party, to build, set up, own, operate, rent, lease, finance, modernise, manage, maintain or develop, and to transfer the undertaking, in accordance with the BOT agreement; and (b) includes any agreement which may provide for a project based on BOOT (Build, Own, Operate and Transfer), DBFOT (Design, Build, Finance, Operate and Transfer) or MOT (Modernise, Own/Operate and Transfer) models."

The PPP Act established a PPP unit which is housed in the Ministry of Economic Development, Financial Services and Corporate Affairs, in collaboration with the Central Tender Board. The BOT Act has now established a BOT Projects Unit in the Procurement Policy Office. The projects unit assists the contracting authority in various phases of the PPP process. The procurement process is managed by the Central Procurement Board, under the Public Procurement Act. Neither the PPP Act nor the BOT Act makes mention of procedure for unsolicited bids.

Priority Projects and/or Sectors

Currently Mauritius' prime objective for PPPs is the Smart Cities Project, for which the BOT Act was in part developed. The project consists of mixed use development spaces, including commercial; leisure and residential; industrial; educational; medical; tourism clusters; and technology and innovation clusters. This would notably include a regeneration of the city's buildings. 13 initial projects have been identified, valued at $660 million; the project is seeking PPPs for financing and implementation.[106]

- **Mozambique**

Table 10 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
2017	Central Térmica de Ressano Garcia	Electricity	Joint venture	$273 million	Sasol Limited and Electricidade de Moçambique (EDM)
2017	Essar Ports	Transport	Design, Build, Own, Operate and Transfer, 30 year concession		New Coal Terminal Beira, SA (Joint venture b/w Essar and CFM)
2017	Nacala logistics corridor	Electricity /Transport		$2.73 billion	
2017	Mocuba Solar PV Plant (IPP)	Electricity	25 year PPA	$84 million	Scatec Solar and EDM (IFC financing)
2014	Ressano Garcia gas-fired power (IPP)	Electricity	PPA	$200 million	Gigawatt Mozambique and EDM
2013	Kuvaninga Energia power plant	Electricity	14 year BOT	$99 million	ADC projects and Government of Mozambique
2006	Covane community lodge (terminated 2011)	Tourism	20 year lease		Mozambican Government through the Department of Land, Barra Resorts, Covane community, Trans Frontier Park Destinations
2004	Beira Railway	Transport	JV/concession	$600 million	RITES, IRCON and CFM (Mozambique ports and railways SOE) formed JV with Government of Mozambique
2004	Port of Quelimane	Transport	Concession	$16.7 million	Cornelder and CFM

[106]http://www.mondaq.com/x/527478/Government+Contracts+Procurement+PPP/The+Evolution+Of+PPPs+In+Mauritius

2004	Nacala Railway (terminated in 2008) (acquired by Vale in 2011)	Transport	15 year concession		Corredor de Desenvolvimento do Norte (CDN) consortium (consisting of CFM and the Railroad Development Corporation)
2004	Mozambique-South Africa gas pipeline	Electricity	BOO	$1.2 billion	Rompco (joint venture between Sasol, Companhia Mocambiçana de Gasoduto and SOE South African Gas Development Company)
2004	Energia de Mocambique (terminated in 2007)	Electricity	Concession		ElectroTec (Mozambique) and Rural Maintenance and Siemens (South Africa)
2003	Maputo Port	Transport	15 year concession (& new 15 year extension)	$150 million	Maputo Port Development Corporation (comprised of CFM, Gringrod and DP World) and GoM
2002	Maputo Corridor Railway	Transport	15 year concession	$77.7 million	Ressano Garcia Railway Consortium (comprised of Spoornet and CFM) and Government of Mozambique
1999	Aguas de Mocambique (terminated 2012)	Water	15 year concession		Aguas de Mocambique (Saur, Águas de Portugal and Mazi) and FIPAG
1997	N4 Toll Road	Transport	30 year BOT	$400 million	TRAC (comprised of Basil Read, Stocks & and Bouygues) SANRAL and ANE (South Africa and Mozambique road SOEs)
1996	Beira Port	Transport	26 year concession (renewed for 15 years in 2018)	($290 million investment for renewal)	Cornelder and CFM

Relevant Legislation

- PPP Law, Law no. 15/2011 (2011)
- Decree no. 16/2012 (2012), PPP Regulations
- Decree n.º 69/2013 (2013), small size PPP regulation
- Decree Law no 15/2010 (2010), Law for Procurement of Public Works, Goods and Services

Mozambique's PPP law jointly covers PPPs, large scale projects and business concessions. The law defines a PPP as "the venture carried out in the public domain or public service supply area, in which, by contract and under total or partial financing of the private party, the latter undertakes to carry out the needed investment and to exploit the respective activity – the provision of goods and services the availability of which is a State's responsibility."

The legislation covers three possible PPP contracts: concession contract, assignment of operation contract, management contract. Subtypes of concession contracts include: Build, Operate and Transfer (BOT) Design, Build, Operate and Transfer (DBOT) Build, Own, Operate and Transfer (BOOT) Design, Build, Own, Operate and Transfer (DBOOT) Rehabilitate, Operate and Transfer (ROT) and Rehabilitate, Own, Operate and Transfer (ROOT).

PPPs are managed by contracting parties; either government or another public entity. The procurement process is comprised of public tender with prior qualification or two-part public tender. In exceptional circumstances, negotiation and direct reward is permitted. The law directs the Ministry of Finance to establish a PPP Unit; however, one has not yet been established, though Maputo has its own PPP Unit.[107] Mozambique's PPP Law does not make mention of procedure for unsolicited bids.

[107]https://www.tralac.org/images/docs/7815/mfunwa-ppps-for-social-and-economic-transformation-in-southern-africa-july-2015.pdf

Priority Projects and/or Sectors

- Government priority for private investment is in underdeveloped regions outside of Maputo.[108]
- In 2018, the Government of Mozambique, World Bank, and Global Wildlife Fund held a conference promoting long term PPPs in nature-based tourism.[109]
  The Mueda – Negomano road PPP is currently at feasibility stage.[110]

Additional Information

South African private sector has played a large role in driving Mozambican PPPs (energy and transport). For example, the N4 Toll Road between South Africa and Mozambique is recognised as a pioneering transport PPP in the SADC region, involving a partnership agreement between the South African and Mozambican governments and a private consortium, the Trans African Consortium. Designed to foster economic activities between the two countries, post-construction assessments have seen towns and communities along the toll benefit from improved economic opportunities, and was recognised for its best practices approach including appropriate risk allocations; quality and reliable service delivery upon construction; competitive and transparent tendering process; and, importantly, strong government commitment and political will from both parties.[111]

With regards to the challenges, railway concessions have fared particularly poorly, with two being repossessed by the Mozambican SOE, CFM. Reasons cited for the project failures include weaknesses in contract negotiation and choice of private partner. However, most of these PPPs were concluded before Mozambique's PPP law was passed.[112]

- **Namibia**

Table 11 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
2018	Ejuva Solar Power Plants (IPPs)	Electricity	25 year PPA	$21 million	Local equity partners, CIGenCo and Mergence Unlisted Investment Managers, Nampower, Electricity control board (ECB)
2017	Rosh Pinah Solar Power Plant (IPP)	Electricity	25 year PPA	$8.65 million	RMB, responsibility investments, AEE Power Ventures, local partners, Nampower, ECB
2017	Karibib Solar Power Plant (IPP)	Electricity	25 year PPA	$8.36 million	Metdecci and Nampower, ECB
2012	UNAM Student Hostel	Real Estate	25 year BOT	$11 million	Hanganeni Emona Investments (Pty) Ltd and Unam
2010	Mister Sister	Health			PharmAccess Namibia, Heineken Africa Foundation, Namibian Ministry of Health and Social Services, Namibia Medical Care; Health Insurance Fund, USAID and the Ohlthaver & List (O&L) Group.
2002	Goreangab Water Plant	Water	20 year operation and maintenance contract		Government of Namibia and Windhoek Goreangab Operating Company (comprised of Veolia, Berlinwasser International and WABAG)
2000-2002	Various electricity management contracts	Electricity	Management contract		Reho Electricity (JV between the Rehoboth Town Council and Northern Electricity), Selco and Town Councils of Keetmanshoop and Karasburg, RED-NORED (JV between NamPower and northern Local Authorities)

[108] http://www.commonwealthgovernance.org/countries/Africa/Mozambique/public-private-partnerships/
[109]http://blogs.worldbank.org/ppps/leveraging-ppps-mozambique-scale-conservation-and-promote-economic-development
[110] https://www.partnershipsbulletin.com/news/mozambique-seeks-advisers-for-road-ppp
[111] Osei-Kyei R & Chan A, op. cit.
[112]https://www.theigc.org/publication/assessment-of-public-private-partnerships-in-mozambique-working-paper/

1996	Northern Electricity (not renewed)	Electricity	6 year management contract	$4 million	Namibian Ministry of Regional and Local Government and Housing, Northern Electricity, ECB

Relevant Legislation

- Namibia Public Private Partnership Policy (NPPPP) (2012)
- Act No. 15, Promulgation of Public Procurement Act (2015)
- Public Procurement Regulations: Public Procurement Act, 2015 (2017)
- No. 4 of 2017: Public Private Partnership Act (2017)
- Namibia PPP Guidance Manual

The PPP Act defines a public private partnership project as "an agreement between a public entity and a private entity, in terms of which - (a) the private entity provides public infrastructure assets or services for use, either directly or indirectly, by the public; (b) investments are made by or management of the infrastructure asset or service is undertaken by the private entity for a specified time; (c) risk is optimally shared between the private entity and the public entity; and (d) the private entity receives performance linked payments." The Act does not clarify subtypes of PPPs.

The PPP process is managed by a "public entity," i.e. any office, ministry or agency of government. The Act establishes a PPP committee to oversee the PPP process and advise the minister. According to the Ministry of Finance, the PPP Committee is staffed with six people. With regards to procurement, the public entity must establish a procurement committee to govern the two-stage procurement process, or utilize an existing committee established by the Procurement Act. The PPP Act does not make mention of procedure for unsolicited bids.

Priority Projects and/or Sectors

- Government is seeking to implement PPPs in the public healthcare sector; i.e. leasing medical equipment and establishing new hospital units.[113]
- Government is seeking to implement PPPs in the management of the Hosea Kutako International Airport and Walvis Bay Port container terminal.[114]

Additional Information

Namibia's priority PPP project, the management of the Hosea Kutako International Airport, has faced resistance from the National Union of Namibian Workers, who question the impact it will have on Namibian workers. [115]

- **Seychelles**

Table 12 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
2016	Victoria Port quay	Transport	BOT	$18 million	Ile du Port Handling Services and Government of Seychelles
2012	Seychelles Cable System Co.	Telecommunications		$30 million	Government of Seychelles, Cable & Wireless (Seychelles) and Airtel (Seychelles)
1994	Victoria Port	Transport	Management contract		Land marine and Seychelles Port Authority

[113] https://southerntimesafrica.com/site/news/namibia-considers-ppp-to-boost-public-health-care
[114] https://www.namport.com.na/news/294/namibiaprivatise-walvis-port-terminal-world-bank/
[115] *Ibid*

Relevant Legislation

- Public Procurement Act, Act 33 (2008)
- Seychelles Investment Act, Act 31 (SIA) (2010)
- Seychelles PPP Media Kit (PPP Policy) (2016)

The Seychelles PPP Policy/media kit defines a PPP as "a long-term contract between a private party and a government agency, for providing a public asset or service, in which the private party bears significant risk and management responsibility." The policy outlines the following types of PPPs: Service contract, Operation and Maintenance contract, DBF, BOT, BOO, and Buy-Build-Operate.

Seychelles does not have a specific PPP legislative framework. Section 11 of the Investment Act states "the Seychelles Investment Board may act as a coordinator and facilitator between the public sector and the private sector in the assessment of any public-private partnership project, its implementation, development and monitoring." Clause 68 of the Public Procurement Act states that contracts awarded to private sector for public goods or services are subject to special procedures prescribed by the Minister of Finance, but generally follow the rules of the Procurement Act. The PPP Policy states that this Act is sufficient to regulate PPPs and no further legislation will be developed, and any future PPP regulations should align with the Procurement Act and PPP Policy.

Line ministries are responsible for managing the PPP process, with support and oversight from the Public Investment Management Unit. Unsolicited bids are discouraged, but will be considered in special cases, such as proposals demonstrating "exceptional innovation and the use of proprietary technology."

Priority Projects and/or Sectors

Seychelles' PPP Policy highlights tourism and fisheries as the two priority sectors for PPP development. Subsectors include energy, sea ports and shipping, aviation sector, ecotourism, land use and housing, social sectors. The Energy Act of 2012 now allows for private participation in electricity, which was previously a monopoly of the Public Utilities Corporation.[116] In 2016 Seychelles' Minister for finance, Trade and the Blue Economy indicated that the blue economy as well as road transport are key areas for PPP development.[117]

- **South Africa**

Table 13 – Overview of PPP projects[118]

[116]https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Seychelles_-_Infrustructure_Action_Plan_Report.pdf
[117] http://www.nation.sc/article.html?id=248844
[118] National Treasury defines unitary payments as government payments for infrastructure and related services.

Project name	Government institution	Type	Date of close	Duration	Financing structure	Project value R million	Form of payment
Transport							
SANRAL N4 East Toll Road	SANRAL	DFBOT	Feb-1998	30 years	Debt: 80% Equity: 20%	3 200	User charges
SANRAL N3 Toll Road	SANRAL	DFBOT	Nov-1999	30 years	Debt: 80% Equity: 20%	3 000	User charges
SANRAL N4 West Toll Road	SANRAL	DFBOT	Aug-2001	30 years	Debt: 80% Equity: 20%	3 200	User charges
Northern Cape fleet	Northern Cape Dept of Transport, Roads and Public Works	DFO	Nov-2001	5 years	Equity: 100%	181	Unitary payment
Chapman's Peak Drive Toll Road	Western Cape Dept of Transport	DFBOT	May-2003	30 years	Debt: 44% Equity: 10% Govt: 46%	450	User charges and guarantee
Fleet management	Eastern Cape Dept of Transport	DFO	Aug-2003	5 years	Debt: 100%	553	Unitary payment
National fleet management	Dept of Transport	DFO	Sep-2006	5 years	Equity: 100%	919	Service fee
Gautrain Rapid Rail Link	Gauteng Dept of Public Transport, Roads and Works	DFBOT	Sep-2006	20 years	Debt 11% Equity: 2% Govt: 87%	31 800	User charges and patronage guarantee
Water and sanitation							
Dolphin Coast water and sanitation concession	Kwa-Dukuza Local Municipality	DFBOT	Jan-1999	30 years	Debt: 21% Equity: 18% Govt: 61%	130	User charges
Mbombela water and sanitation concession	Mbombela Local Municipality	DFBOT	Dec-1999	30 years	Debt: 40% Equity: 31% Govt: 29%	189	User charges
Correctional services							
Mangaung and Makhado maximum security prisons	Dept of Correctional Services	DFBOT	Aug-2000	30 years	Debt: 88% Equity: 12%	3 600	Unitary payment
Health							
Inkosi Albert Luthuli Hospital	KwaZulu-Natal Dept of Health	DFBOT	Dec-2001	15 years	Debt: 70% Equity: 20% Govt: 10%	4 500	Unitary payment
Universitas and Pelonomi Hospitals co-location	Free State Dept of Health	DFBOT	Nov-2002	16.5 years	Equity: 100%	81	User charges
State Vaccine Institute	Dept of Health	Equity partnership	Apr-2003	4 years	Equity: 100%	75	Once-off equity contribution
Humansdorp District Hospital	Eastern Cape Dept of Health	DFBOT	Jun-2003	20 years	Equity: 90% Govt: 10%	49	Unitary payment
Phalaborwa Hospital	Limpopo Dept of Health and Social Development	DFBOT	Jul-2005	15 years	Equity: 100%	90	User charges
Western Cape Rehabilitation Centre and Lentegeur Hospital	Western Cape Dept of Health	Facilities management	Nov-2006	12 years	Equity: 100%	334	Unitary payment
Polokwane Hospital renal dialysis	Limpopo Dept of Health and Social Development	DBOT	Dec-2006	10 years	Equity: 100%	88	Unitary payment
Port Alfred and Settlers Hospital	Eastern Cape Dept of Health	DFBOT	May-2007	17 years	Debt: 90% Equity: 10%	169	Unitary payment
Tourism							
SANPARKS tourism projects	SANPARKS	DFBOT	Apr-2000	Various years	Equity: 100%	270	User charges
Eco-tourism Manyeleti three sites	Limpopo Dept of Finance, Economic Affairs, Tourism	DFBOT	Dec-2001	30 years	Equity: 100%	25	User charges
Cradle of Humankind Interpretation Centre Complex	Gauteng Dept of Agriculture, Conservation, Environment and Land Affairs	DBOT	Oct-2003	10 years	Equity: 100% opex Govt: 100% capex	39	User charges
Western Cape Nature Conservation Board	Western Cape Govt	DFBOT	Jul-2005	30 years	Equity: 100%	40	User charges

Information techology							
Information systems	Dept of Labour	DFBOT	Dec-2002	10 years	Equity: 100%	1 500	Unitary payment
Social grant payment system	Free State Dept of Social Development	DFO	Apr-2004	3 years	Equity: 100%	260	Unitary payment
Office accomodation							
Head office accommodation	Dept of Trade and Industry	DFBOT	Aug-2003	25 years	Debt: 80% Equity: 8% Govt: 12%	870	Unitary payment
Head office accommodation	Dept of International Relations and Cooperation	DFBOT	Jan-2005	25 years	Debt: 81% Equity: 19%	1 959	Unitary payment
Head office accommodation	Dept of Education	DFBOT	Aug-2009	27 years	Debt: 90% Equity: 10%	512	Unitary payment
Head office accommodation	Dept of Environmental Affairs	DFBOT	May-2012	25 years	Debt 49% Equity: 15% Govt: 36%	2 731	Unitary payment
Head office accommodation	Statistics South Africa	DFBOT	Mar-2014	24 years	Debt 54% Equity: 9% Govt: 37%	2 533	Unitary payment
Head office accommodation	City of Tshwane	DFBOT	Mar-2015	25 years	Debt: 86% Equity: 14%	2 005	Unitary payment

Source: National Treasury

To date, there have been 31 PPPs valued at R65.3 billion[119] that have been undertaken in South Africa since the introduction of this type of partnership in 1998. These projects, funded through a combination of equity, debt and capital contribution by the government, range from hospitals, tourism, head office accommodation, transport and roads, water and sanitation, IT and correctional services facilities. Even though most of these projects are operational, there are a few that have reached the end of their project term and in some instances, project durations have been extended. Under the PPP model, the South African projects are categorised the following types of PPPs:

- 23 are DFBOT (design, finance, build, operate and transfer) projects;
- 3 are DFO (design, finance and operate) projects;
- 3 are DBOT (design, build, operate and transfer) projects;
- 1 is an equity partnership project; and
- 1 is a facilities management project.[120]

Relevant Legislation

PPPs are regarded as a specialised form of public sector procurement which is governed by the following legislations:

- Section 217 of the Constitution;
- Section 51(1)(a)(iii) of the Public Finance Management Act (PFMA) 1 of 1999;
- The Preferential Procurement Policy Framework Act (PPPFA) 5 of 2000;
- The Preferential Procurement Regulations adopted in 2017;
- The Broad-based Black Economic Empowerment Act (BBBEE) 53 of 2003; and
- The Promotion of Administrative Justice Act 3 of 2003

There are 9 National Treasury PPP Modules, namely:

- National Treasury's PPP Manual Module 1: South African Regulations for PPPs,

[119] National Treasury, 2017 Budget Review, http://www.treasury.gov.za/documents/national%20budget/2017/review/annexure%20e.pdf, Accessed 2 November 2018.
[120] *Ibid*

- National Treasury's PPP Manual Module 2: Code of Good Practice for BEE in PPPs,
- National Treasury's PPP Manual Module 3: PPP Inception,
- National Treasury's PPP Manual Module 4: PPP Feasibility Study,
- National Treasury's PPP Manual Module 5: PPP Procurement,
- National Treasury's PPP Manual Module 6: Managing the PPP Agreement,
- National Treasury's PPP Manual Module 7: Auditing PPPs,
- National Treasury's PPP Manual Module 8: Accounting Treatment for PPPs, and
- National Treasury's PPP Manual Module 9: An Introduction to Project Finance

In addition, the following legislation regulates the feasibility, procurement and implementation of PPPs:

- Treasury Regulations 16 to the PFMA (last amended in 2013); and
- National Treasury's PPP Manual issued as various Practice Notes including the Standardised PPP Provisions.

The South African National Treasury defines a PPP as "a contract between a public-sector institution and a private party, where the private party performs a function that is usually provided by the public-sector and/or uses state property in terms of the PPP agreement. Most of the project risk (technical, financial and operational) is transferred to the private party. The public sector pays for a full set of services, including new infrastructure, maintenance and facilities management, through monthly or annual payments."

South Africa has established a firm regulatory framework for both national and provincial government participation in PPP agreements. The South African Cabinet approved the appointment of an inter-departmental task team to develop a package of policy, legislative and institutional reforms to create an enabling environment for PPPs in April 1997. A Strategic Framework for PPPs was endorsed by Cabinet in December 1999, and in April 2000, Treasury Regulations for PPPs were first issued in terms of the Public Finance Management Act (Act 1 of 1999, PFMA).

The central legislation governing PPPs for national and provincial government is Treasury Regulation 16 issued to the PFMA. Treasury Regulation 16 defines a PPP, provides precise and detailed instructions for PPPs, details the phases and tests it will have to go through, and the regulations have been amended to take account of experiences in implementing PPPs.

PPPs for municipal government are governed by the Municipal Systems Act, 2000, and the Municipal Finance Management Act, 2003. For municipalities not subjected to the PFMA or to Treasury Regulation 16, the National Treasury issues separate PPP Manuals for them.

Each module of National Treasury's PPP Manual, together with Standardised PPP Provisions, is issued by National Treasury as a PPP Practice Note, in terms of section 76(4)(g) of the PFMA. There are 10 PPP practice notes that get updated regularly and constitute instructions in terms of section 76 of the PFMA which is aimed at facilitating the application of the PFMA and its regulations.[121]

The South African PPP regulatory framework provides for a specific tax regime[122] for PPP transactions under section 12(P) (2A) of the Income Tax Act of 1962 (2A) notwithstanding section (2), there must be exemptions of normal tax for PPPs. Also, section 12N provides for tax deductions in respect of improvements not owned by a taxpayer.

[121] National Treasury, PPP Manual, http://www.ppp.gov.za/Legal%20Aspects/PPP%20Manual/Module%2001.pdf, Accessed 2 November 2018.
[122] World Bank, Procuring Infrastructure PPPs, http://bpp.worldbank.org/en/data/exploreeconomies/south-africa/2018, Accessed 2 November 2018.

Unsolicited proposals are allowed by the legal framework – refer to National Treasury Practice Note No 11 of 2008/2009 that deals with unsolicited Proposals.

The **PPP Unit** was established in National Treasury in 2000 with technical assistance funding from USAID, GTZ and DIFID. Today the PPP Unit comprises seventeen professional staff specialising in various government priority sectors including health, accommodation, water, transport, ICT, tourism, waste, etc. Overarching considerations include black economic empowerment (BEE) and the essential elements of a PPP, namely: affordability, value for money and transfer of significant financial, design, technical and operational risks to the private sector.

The democratic South African government adopted a **BEE policy** which is broad-based, inclusive, and part of the country's overall growth strategy in an effort to redress the stifling economic effects of the past. South Africa's BEE policy is articulated in the 2003 BBBEE Strategy and is given effect in the BBBEE Act. The BBBEE Strategy outlines government's policy instruments for achieving BEE and sets out a balanced scorecard to measure three core elements of BEE progress: (1) direct empowerment through ownership and control of enterprises and assets; (2) human resource development and employment equity; and (3) indirect empowerment through preferential procurement and enterprise development.

National Treasury is committed to ensuring that BEE is integral to all phases of the regulated PPP project cycle, and that it is made contractually binding in all PPP agreements. National Treasury's PPP Manual Module 2 (Code of Good Practice for BEE in PPPs) informs how BEE must be approached in PPPs, and the provisions of the Code for BEE in PPPs are therefore reflected in all modules of the and in the first issue of the Standardised PPP Provisions (of 11 March 2004). PPP BEE policy is to be applied in the two distinct procurements of the regulated PPP project cycle in compliance with the PPPFA: firstly, in the selection of its Transaction Advisor; and secondly, in the selection of a Private Party for the PPP itself.[123]

Additional Information

Notwithstanding the fact that South Africa has enjoyed tremendous success in implementing PPPs, the number of new PPPs has decreased over the past five years from an estimated R10.7 billion in 2011/12 to R4.8 billion in 2016/17. According to National Treasury, R947.2 billion will be spent on public-sector infrastructure over the medium-term but only 1.7% (R16.5 billion) of this budget will be spent on PPPs. Unitary payments of PPPs per annum are increasing slowly from R4. 840 billion in 2016/17 to an estimated R5. 869 billion in 2019/20 with the largest expenditure going to the transport and office accommodation sectors. This decline is mainly attributed to delays and cancelled projects in the health and security sectors. But given the fact that the South Africa government is making considerable strides to achieve the objectives of the National Development Plan[124] which states that infrastructure investment as a percentage of GDP should increase to 30% by 2030 (from a base of 21% in 2015), this trend will be reversed in the medium-term. To this end, National Treasury estimates that PPP expenditure will increase from R4.8 billion in 2016/17 to R5.9 billion in 2019/20[125]. To increase the PPP project pipeline and ensure that it meets this ambitious expenditure target that is based on current PPP projects that are at an advanced planning stage, National Treasury: (1) has partnered with international and local development finance institutions to explore new innovative infrastructure funding mechanisms and diversifying sources of funding to crowd-in private-sector participation; (2) is streamlining the implementation of PPPs in the country with a view to reduce the time spent on the planning phase of these projects. The ultimate objective is to increase the pool of funds available and lower project costs for PPPs in the country. National Treasury estimates that unitary payments of PPPs will increase to R16. 473 billion over the medium-term (to 2019/20). Table 14 provides pipeline of PPP projects that National Treasury is currently reviewing.

[123] National Treasury, Code of Good Practice for Black Economic Empowerment in PPPs, http://www.ppp.gov.za/Legal%20Aspects/BEE%20Code%20of%20Good%20Practice/BEE%20CODE%20OF%20GOOD%20PRACTICE.pdf, Accessed 2 November 2018.
[124] The NDP is a long-term South African development plan that was developed by the National Planning Commission.
[125] *Ibid*

Table 14 – Pipeline of PPPs under review

Project name	Implementing agent	Project description	Current status
Solid waste			
KwaDukuza waste services	KwaDukuza Local Municipality	Collection and disposal of 603 559 cubic meters of solid waste from an estimated 54 888 households	Procurement
Solid waste diversion and beneficiation opportunities	Nelson Mandela Bay Municipality	Development of waste management infrastructure to treat waste for beneficial reuse or sale	Procurement
Ikusasa	Department of Higher Education	Student financial aid programme	Feasibility
Transport			
Extension of the Gautrain Rapid Rail	Gauteng Department of Roads and Transport	Expansion of the existing Gautrain rail network	Feasibility
Gautrain: Acquisition of additional rolling stock	Gauteng Department of Roads and Transport	Procurement of 48 additional coaches and expansion of depot facility to accommodate increased demand and ease constraint capacity	Feasibility
Tshwane fleet management	City of Tshwane	Provision of fleet services for the City of Tshwane	Procurement
De Aar Logistics Hub	Northern Cape Department of Transport, Safety and Liaison	Provide a sustainable transport network for the transportation of freight/products by small miners and farmers	Feasibility
Western Cape regeneration programme	Western Cape Department of Transport and Public Works	Leasing underutilised commercial properties in Cape Town CBD to the private sector for a period of 50 years	Procurement
Rehabilitation/upgrading of 6 border posts	Department of Home Affairs	Redevelopment of 6 border posts	Feasibility
Procurement of emergency towing vehicles	Department of Transport	Procurement of 2 emergency towing ocean vessels	Feasibility
Office accommodation			
National Metrology Institute of South Africa laboratories and equipment	National Metrology Institute of South Africa	Construction of a new building to provide laboratories and equipment to meet technical specifications	Feasibility
Department of Rural Development head office accommodation building	Department of Rural Development	Construction of office accommodation to consolidate operations of 6 buildings into a single location	Financial closure
Kopanong Precinct	Gauteng Department of Infrastructure Development	Construction of the Gauteng provincial government to consolidate administration function of 19 buildings in the Johannesburg CBD	Feasibility
KwaZulu-Natal Government Precinct	KwaZulu-Natal Department of Public works	Construction of an office precinct for KZN provincial departments in Pietermaritzburg	Procurement
Bhisho Office Precinct	Eastern Cape Department of Roads and Public Works	Construction of offices for 7 Eastern Cape departments in a single location in Bhisho	Procurement

Innovation Hub	Gauteng Department of Economic Development	Development of a science park where entrepreneurs will network and exchange ideas	Procurement
Ekurhuleni Precinct	Ekurhuleni Metro Municipality	Consolidation of the municipality's various service-delivery departments into a centralised municipal office	Feasibility
New municipal office project	Bitou Local Municipality	Consolidation of the municipality's various service-delivery departments into a centralised municipal office	Procurement
Health			
Tri-generation Chris Hani Baragwanath Hospital	Gauteng Department of Infrastructure Development	Installation of tri-generation plants at the Chris Hani Baragwanath Hospital to reduce dependence on the national grid	Procurement
Northern Cape renal dialysis	Northern Cape Department of Health	Refurbishment, staffing and equipping hospitals in Kimberley, Upington and Springbok with renal dialysis units	Procurement
Energy			
Rooftop solar project	Gauteng Department of Infrastructure	Installation of solar panels on Gauteng provincial government buildings	Procurement
Education			
Ikusasa	Department of Higher Education	Student financial aid programme	Feasibility

Source: National Treasury

Priority Projects and/or Sectors

- The outcome of a 2012 workshop hosted by the Swaziland Investment Promotion Agency and COMESA suggested priority sectors for PPPs to be agriculture, energy, health, construction, water supply and education.[126]
- The Swaziland Rail Link project, a cross-border rail link between Swaziland and South Africa, was put out to tender in 2017. The partners are the countries' two SOEs, Transnet and Swaziland Railway.[127]

- **Tanzania**

Table 15 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
2016	Ngaka Power Station	Electricity	PPA	$25 million	IEC Synohydro and TANESCO
2017	Bus Rapid Transit phase 1	Transport	Interim concession	$180 million	Uda-rt and Tanzanian government
2013	Nwash/Bomba	Water			SNV, Dunea, TNO, Hatenboer, BoP Innovation Center, Muwasa and the regional secretariat of Mara Region
2013	Mtwara power plant	Electricity		$1 billion	Symbion, GE and TANESCO
2011	Symbion, Dodoma and Arusha power plants (IPP)	Electricity	15 year concession (PPA)		Symbion and TANESCO
2011	Ubungo and Tegeta	Electricity	12 month emergency contract	$37 million	Aggreko and TANESCO
2010	Millennium Challenge Corporation rehabilitation and expansion	Electricity		$45 million	Alston and Symbion

[126] http://www.bkpdevelopment.com/attachments/article/302/SwazilandPPPFinal%20Proceedings_approved.pdf
http://www.commonwealthgovernance.org/countries/africa/swaziland/public-private-partnerships/
[127] http://www.infrapppworld.com/news/megaproject-1031-swaziland-rail-link-gets-green-light

2006	Dowans Rental Power (terminated)	Electricity		$5.3 million	Dowans, Richmond Development Company, TANESCO
2004	Mtwara Energy Project	Electricity			Artemus Tanzania Jersey Limited (ATJL), Government of Tanzania and Tanzania Petroleum Development Corporation
2007	Tanzania railway PPP (terminated)	Transport	25 year concession	$134 million	Tanzania Railways Ltd and RITES
2003	Dar es Salaam Water Supply and Sanitation (terminated)	Water		$8.5 million	City Water Services (CWS) and Dar es Salaam Water and Sewerage Authority (DAWASA)
2000	Dar es Salaam Port Concession	Transport	BOT	$27.69 million	Tanzania International Container Services (JV between Hutchison Port Holdings Harbour Investment Limited)

**"Terminated" refers to a project in which the contract was terminated before its expiration.*

Relevant Legislation

- National Public-Private Partnership Policy (2009)
- The Public Private Partnership Act (Amended, 2014) (Forthcoming amendment, 2018)
- Public Procurement Act (2011) (Amended, 2016)
- The Public Private Partnership Regulations (2011) (Amended, 2015)

The PPP Act defines a PPP as an "investment through private sector participation in a project undertaken in terms of this Act." The 2015 PPP regulations detail the following types of PPPs: (a) Service and Management contracts; (b) DBT; (c) DBO; (d) DBOM; (e) BOT (f) BFO; (g) DBFM; (h) BOOT; (i) BLT; (j) BTO; (k) Operation and Maintenance; (l) Operation, Maintenance and Management; and (m) Lease Develop and Operate.

The PPP process is managed by contracting authorities, i.e. any ministry, government department, local authority or statutory corporation. The Act establishes both a PPP coordination unit within the Tanzania Investment Centre and a PPP Finance Unit within the Ministry of Finance, tasked with coordination of PPPs and risk assessment and financial matters, respectively.

2014 amendments to the Act replaced the coordination unit and finance unit with a PPP Centre and PPP Technical Committee. The amendment also establishes a facilitation fund to both finance feasibility studies and support projects which may not be financially viable but have economic benefit. It also allows for the option of unsolicited bids to be procured competitively.

The 2018 amendments make a number of changes, important ones include: ensuring that PPP projects are aligned with national development plans, giving the PPP technical committee mandate to manage feasibility and procurement processes, extending the period of review for PPP proposals from 15 to 21 days, allowing for unsolicited proposals for certain unique projects (i.e. which align with priority sectors, require no guarantee from government, etc.), allowing for local content to be considered in the procurement process, and increasing the penalty amount for non-adherence to the Act.

Priority Projects and/or Sectors

- Tanzania's Finance and Planning Minister indicated in 2018 that the following PPPs will be prioritized: Mwambani Port, Standard Gauge Railway line, Mchuchuma/ Liganga (coal) and Tanga-Arusha-Musoma railway line.
- Kinyerezi III & IV are thermal power plants to be constructed by Shang Tan Power Generation Company (JV between Shanghai Electric Power Company and TANESCO) and Poly Group (China), respectively.

Additional Information

A controversial issue which has surfaced with regards to the new PPP regulations which potentially will favour the use of local courts in favour of international arbitration.[128]

In 2001 (well before the time of most PPPs on the continent) Tanzania Railways Limited began negotiations for a concession of an aged Central Corridor Railway. Due to the limited public sector experience in negotiating PPPs and also in ensuring the viability of a private partner, the negotiation period took 10 years, and eventually failed as the railway continued to deteriorate. Another example is the 1995 electricity PPP project in Tanzania, where the state-owned company, Tanesco, signed a power purchasing agreement with the Independent Power Tanzania Limited in 2002, which resulted in massive financial constraints for the Tanzanian economy. The deal was highly contested owing to its cost, choice of technology and projected demand for power. Together with poor procurement processes and allegation of corruption amongst government stakeholders, the plant ended up functioning at less than 10% capacity and the project cost Tanesco $3 million per month.[129]

- **Zambia**

Table 16 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
Current	Chingola-Solwezi-Lumwana-Jimbe railway line	Transport		$1 billion	North-West Rail Company and Government of Zambia
Current	Kafue Gorge	Electricity	Build operate transfer	$1.5 billion	Sinohydro, China EXIM and Government of Zambia
2017	Bangwelu Solar PV	Electricity	PPA, Build Own Operate	$59 million	Bangweulu Power Corporation Limited (comprised of Neoen/First Solar Inc. and Zambia's Industrial Development Corporation)
2016	Itezhi Tezhi hydro power project	Electricity	25 year Build Own Operate Transfer		Tezhi Power Corporation (Tata Power and ZEZCO)
2016	Kaluba-Mwenda Road	Transport	25 year design, build, financing, operation and maintenance	$25 million	Groupe European De Development (GED) Projects Africa Zambia Limited and Government of Zambia
2015	Maamba Coal Fired Power Plant	Electricity	Build Own Operate	$830 million	Maamba Collieries Limited (MCL) (comprised of Nava Bharat (Singapore) Pte. Limited and ZCCM Investments Holdings Plc)
2012	Kabompe Gorge	Electricity	Build Own Operate	$210 million	CEC-KHPL and the Zambian government
2011	Kasumbalesa border post	Transport	BOT	$25 million	Baran Trade and Investment Limited and the Government of Zambia
2003	Zambia Railways *(terminated)*	Transport	20 year concession	$750 million	New Limpopo Bridge Projects and Government of Zambia
2000	Mpulungu Harbour Corporation *(terminated)*	Transport	25 year concession	25 year concession	Agro Fuel Zambia and Government of Zambia

Relevant Legislation

- The Public Procurement Act (2008) (Amended, 2011)'

[128]http://www.thecitizen.co.tz/News/PPP--Why-government-wants-local-arbitration/1840340-4757416-11tmrii/index.html
[129] Farlam P (2005) op. cit.

- The Public-Private Partnership Act, 2009, (Amended 2018)

The Act defines a PPP agreement as "a contractual arrangement between a contracting authority and a concessionaire, made in accordance with this Act, in which the concessionaire— (a) undertakes to perform or undertake any infrastructure project or infrastructure facility as specified in the First Schedule or as prescribed; (b) undertakes to provide or provides such social sector services as may be prescribed; (c) assumes substantial financial, technical and operational risks in connection with the performance of the institutional function or use of State property; and (d) receives consideration for performing a public function or utilising State property."

The Act considers a range of PPP models, including BT, BLT, BOT, BOO, BOOT, BTO, Contract Add and Operate (CAO), Develop Operate and Transfer (DOT), ROT, ROO, Build Own Operate and Maintain (BOOM) contract, lease management contract, management contract, service contract, Supply Operate and Transfer (SOT).

The PPP Act establishes a PPP Unit, PPP Council and PPP Technical Committee. The PPP Unit's responsibilities relate to PPP guidance, identifying appropriate projects, and implementing projects, while the latter two organs deal more with high level and technical guidance and oversight (the PPP Council's members are from the Presidency and Ministry of Finance, while the Technical Committee's members are from specialist departments and organisations such as land, engineering and the environment). The PPP process managed by a contracting authority, which includes any ministry, department, local authority or statutory body, with oversight from the PPP Unit. The two stage procurement process is competitive but open to unsolicited bids in certain circumstances, which are then subject to a competitive bidding process.

No regulations have been passed to accompany the Act.

Priority Projects and/or Sectors

- In 2017, the Zambian Minister of Transport and Communications indicated that railway developments by PPP is a government priority.[130]
- There are currently also many road projects out for tender seeking PPP participation.

Additional Information

Though the PPP Act is thorough, criticisms of the PPP Act Amendment (2018) from the Committee on National Economy, Trade and Labour Matters are that the Act is primarily focused on increasing regulations for what is an already bureaucratic process. Rather, the focus should be on improving institutional capacity to adhere to the legislation and implement PPPs.[131] These concerns regarding implementation capacity were echoed in a study by the Elliot School of International Affairs.[132]

The PPP Unit has been moved at least three times, demonstrating both capacity challenges that it has faced and lack of adherence to the PPP legislative framework.[133]

- **Zimbabwe**

Table 17 – Overview of PPP projects

Year	Name	Sector	PPP Type	Project Cost	Partners
2017	Kariba South Expansion	Electricity	PPA/JV	$533 million	Sinhydro and Zimbabwe Power Company

[130]http://www.parliament.gov.zm/sites/default/files/images/publication_docs/MINISTERIAL%20STATEMENT%20ON%20THE%20STATE%20OF%20RAILWAY%20TRANSPORT%20BY%20HON%20MUSHIMBA.pdf
[131] http://www.parliament.gov.zm/node/7576
[132]http://www.academia.edu/28079105/Zambias_Infrastructure_Public_Private_Partnerships_Policy_Steps_to_Strengthen_the_Framework
[133]http://www.academia.edu/28079105/Zambias_Infrastructure_Public_Private_Partnerships_Policy_Steps_to_Strengthen_the_Framework

2016	Chisumbanje Ethanol Plant	Electricity	Build own operate transfer	$600 million	Green Fuel and Government of Zimbabwe
2013	Plumtree-Bulawayo-Mutare Highway	Transport		$206 million	Infralink (JV between Group 5 and Zinara)
2011	Newlands bypass	Transport	Build Operate Transfer		
2007	Beitbridge-Bulawayo Railway	Transport	30 year Build Operate Transfer	$85 million	New Limpopo Project Investment Limited (comprised of Nedbank, Old Mutual and Sanlam) and Government of Zimbabwe
1998	New Limpopo Bridge	Transport	20 year Build Operate Transfer	$18 million	New Limpopo Bridge (PVT) Limited and Government of Zimbabwe

Relevant Legislation

- Public Private Partnership in Zimbabwe Policy (2004)
- Public Private Partnership Guidelines (2004)
- PPP Bill (awaiting confirmation, last update 2013)
- Joint Ventures Act (2016)

Zimbabwe's Joint Ventures Act covers certain types of PPPs, including BT, BLT, BOT, BOO, BOOT, BTO, CAO, DOT, ROT, BOOM contract, Lease management contract, Management contract, Service contract, Contract for services, SOT.

Zimbabwe has no specific PPP Unit; PPPs are implemented by Ministry of Finance and line ministries. The Zimbabwe Investment Authority has implemented incentives for PPPs outside of legislation, including tax and customs benefits.[134] Under the Joint Ventures Act, a Joint Ventures Unit is established to oversee joint ventures. Unsolicited bids are referred to the Unit, who can either accept or reject the bid.

Priority Projects and/or Sectors

With reforms and renewed business confidence expected from Zimbabwe's new president, attracting private investment into infrastructure is a priority.[135] Unfinished projects earmarked for PPP investment in 2018 include: dualisation of the Harare-Masvingo Highway, Harare-Chitungwiza Railway, Gwanda Solar Project, Gwayi-Shangani and Kunzvi dams, Batoka Gorge Hydropower project and upgrades to all border posts linking Zimbabwe to the region.[136] Batoga Gorge Hydropower project (as a part of PIDA) is also another PPP on the list of priority projects.

[134]https://www.kwm.com/en/ae/knowledge/insights/ppp-zimbabwe-considers-alternative-development-funding-mechanisms-20150316#id-here
[135]http://www.engineeringnews.co.za/print-version/infrastructure-africa-2018-to-highlight-opportunities-for-stakeholders-in-zimbabwe-infrastructure-development-sector-2018-09-21
[136] https://www.newsday.co.zw/2018/06/why-ppps-are-evading-zimbabwe/

Chapter 3: Examples of PPP projects within SADC region

1. Namibia: New Goreangab Water Treatment Plant

- **Project description and historical background (project company, location, historical process, outline, total amount)**

The New Goreangab Water Treatment Plant was constructed in 2002. It was constructed after the first Goreangab Water Treatment Plant, built in 1968, became out of date. The City of Windhoek signed a Performance Management Agreement (PMA) with WINGOC (Windhoek Goreangab Operating Company), a consortium made up of Veolia (34%), Berlinwasser International (33%) and WABAG (33%), to improve water treatment processes and increase Goreangab's production capacity.[137] WABAG is an Austrian water technology company, Veolia is a French resource management company and Berlinwasser International is a German wastewater management company. The PPP is an Operation & Maintenance model. The plant now satisfies 35% of the drinking water needs of Windhoek and its suburbs, supplying nearly 300 000 people with 21 000 m^3 per day, by converting sewage to drinking water.[138] It is the only Direct Potable Recycling (DPR) plant in the world.

- **Relationship with National Development Plan and government/development stakeholders**

The sustainable use of natural resources is protected in Article 95 (i) of the Constitution, which calls for:

> "Maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future; in particular, the Government shall provide measures against the dumping or recycling of foreign nuclear and toxic waste on Namibian territory."[139]

Namibia's National Development Policy 5 (2015-2025) recognises that water demand for economic use and consumption will rise from 416.1 million m^3 in 2015 to 572.5 million m^3 in 2025.[140] It advocates for increased water infrastructure development by PPP to improve management efficiency. Water strategies for 2017-2022 include the use of innovative technologies to recycle wastewater, with a focus on Windhoek, Swakopmund and Walvis Bay. The Policy outlines specific targets for rural and urban access to water for each year. Overall, by 2022, the Policy sets a target for every rural constituency to have access to water above 50%.[141]

The Water Resources Management Act, 2013 (Act No. 11 of 2013) governs the management, development, protection and conservation of water resources. It outlines the license processes for wastewater management and also allows the Minister to set standards and regulations for wastewater use.[142]

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[137] Goreangab Water Plant, *Private Participation in Infrastructure* http://ppi.worldbank.org/snapshots/project/goreangab-water-plant-2913, accessed 8 December 2018

[138] "One decade and still running strong," *Veolia,* http://www.veoliawatertechnologies.co.za/medias/Newsletter-Articles/goreangab_one-decade.htm, accessed 7 December 2018

[139] "The Constitution of The Republic of Namibia," Government Gazette 24, December 1998, https://www.gov.na/documents/10181/14134/Namibia_Constitution.pdf/37b70b76-c15c-45d4-9095-b25d8b8aa0fb, accessed 7 December 2018

[140] Namibia's 5th National Development Plan (2017/18-2021/22) (NDP5), *Republic of Namibia,* https://www.npc.gov.na/?wpfb_dl=294, accessed 6 December 2018

[141] Ibid

[142] No. 11 of 2013: Water Resources Management Act, 2013, http://www.lac.org.na/laws/2013/5367.pdf, accessed 6 December 2018

Namibia's Water Supply and Sanitation Policy (2008) guides the tariff structure for wastewater treatment, states that wastewater should be used in an environmentally sound manner, and advocates for an education campaign on wastewater treatment/usage.[143]

- **Project terms – funding, preparation and implementation**

Funders included the European Investment Bank (55%), the City of Windhoek (COW-5%) and the German Development Bank, KfW (40%). Consultants included GFJ (South Africa), Multi Consult (Namibia) and Fichtner (Germany).[144] The construction contractor consisted of a consortium of DB Thermal (at that stage representing WABAG Technology in Southern Africa) and Stocks Structures.

Breakdown of project costs:[145]

- Plant: €12.5 million
- Electrical and mechanical equipment: €8.3 million
- Civil works: €4.2 million.
- Water production costs (2002/3): €0.63/m^3 of which €0.25/m^3 constituted capital costs and €0.38/m^3 operational costs

The Operation & Maintenance PPP entrusts WINGOC with responsibility for plant maintenance and replacements in addition to the PMA requirements. Given that this is the only DPR project in the world, the operation of the plant relies heavily on the PMA as there are no national/international standards or guidelines. The PMA governs plant operations, mandates water quality assessments; and "levies financial penalties applicable to water quality after each unit process should quality guidelines/standards be breached based on online instrument readings and laboratory analyses."[146] A stringent monitoring and sampling process is applied, both manually and automatically, given the concerns around sewage water.

Maintenance by WINGOC "has included work on the main pump sets, the replacement of membranes, VSDs (variable speed drives), and the related control systems."[147]

- **Applied machinery and equipment**

N/A

- **Role of international/ national DFIs and applied financial arrangements**

As indicated above, the construction of the plant received funding from KfW and EIB.

- **Environmental impact and local community assessments**

The project is over 10 years old and no project documents/EIAs could be obtained from a desktop literature review.

- **Status quo of project**

[143] Water Supply And Sanitation Policy, *Ministry of Agriculture, Water and Forestry,* July 2008 http://portal.unesco.org/fr/files/47370/12670872251Namibia_wsaspolicy.pdf/Namibia_wsaspolicy.pdf, accessed 6 December 2018.
[144] Lahnsteiner J and Lempert G "Water management in Windhoek, Namibia," *Water Science & Technology Vol 55 No 1–2 pp 441–448, IWA Publishing,* 2007, https://pdfs.semanticscholar.org/7771/cec6bbb429c9a792dabba5a820af493b211e.pdf, accessed 7 December 2018.
[145] "Project Report Global Potable Reuse Case Study 4: Windhoek, Namibia," *Australian Water Recycling Centre of Excellence*, November 2014, http://legacywater360.server309.com/wp-content/uploads/2015/07/WQ-Case-Study-4-Windhoek-Namibia-100815.pdf, accessed 8 December 2018.
[146] Ibid.
[147] *Veolia* op. cit.

The plant has been successful in achieving the water quality standards set out in the project design. Given it is the only DPR plant in the world, it is seen as a model for other countries, and receives many international visits.[148]

- **Crucial success and challenge factors**

One of the biggest challenges to DPR implementation is public acceptance. The concept of recycling wastewater for drinking purposes is inherently alarming and there is a need to understand the intensive quality control processes in order to provide assurance. In both South Africa and Australia, similar plants were not followed through due to public resistance.[149]

In part, the urgency and public awareness of Namibia's water crisis allowed for public acceptance of the plant and DPR technology. However, Goreangab plant has instituted an extensive public education/awareness programme. This includes class tours in school, and the country's curriculum also includes environmental education classes.[150]

Sources also point to the structure of the PMA which incentivises the private consortium to meet the highest quality standards, which are essential from a public interest perspective for the plant to continue its operation.[151]

2. Tanzania: Dar es Salaam Port container terminal

- **Project description and historical background (project company, location, historical process, outline, total amount)**

The Dar es Salaam Port is managed by the state-owned enterprise (SOE) Tanzania Ports Authority (TPA). It is the principal port of Tanzania, handling 90% of the country's cargo traffic and is divided into two parts, the Tanzania International Container Services (TICTS) and TPA. The Port also provides a vital transit point for cargo from multiple neighbouring landlocked countries. The TPA was created by the Ports Act of 2004 in order to facilitate the transformation of port operations to a landlord port model. It also manages vessel traffic in the port while ensuring safety and security. TPA operates a system of ports serving the Tanzania hinterland and the landlocked countries of Malawi, Zimbabwe, Zambia, Democratic Republic of Congo (DRC), Burundi, Rwanda and Uganda.

The container terminals (berths 8–11) were leased in a concession to Tanzania International Container Services (TICTS) in 2000. Until recently TICTS also ran the two inland container depots. TICTS is a joint venture with 70% ownership by Hutchison Port Holdings (HPH, a private holding company operating from the British Virgin Islands) and 30% ownership by Tanzania's Harbour Investment Ltd. HPH operates 48 ports across 25 countries. Under the landlord port model, TICTS is responsible for operating the terminal and upgrading the equipment, while the TPA maintains overall authority. The initial project investment was $27.69 million, according to the World Bank Private Participation in Infrastructure database.[152]

- **Relationship with National Development Plan and government/development stakeholders**

[148] Gross D *PRI.org,* "Recycling sewage into drinking water is no big deal. They've been doing it in Namibia for 50 years," December 2015, https://www.pri.org/stories/2016-12-15/recycling-sewage-drinking-water-no-big-deal-theyve-been-doing-it-namibia-50-years, accessed 7 December 2018.
[149] "Windhoek shows the world how to recycle sewage water," *Mail & Guardian,* March 2016 https://mg.co.za/article/2016-03-10-windhoek-shows-the-world-how-to-treat-water, accessed 7 December 2018.
[150] Ibid.
[151] Australian Water Recycling Centre op. cit.
[152] Interview, Tanzania International Container Services Representative(TICTS), 17 May 2016.

Tanzania's national development plan is the Tanzania Development Vision (TDV) 2025, developed in the late 1990s to guide the transition to a market-based economy.[153] In 2011, the Long-Term Perspective Plan (LTPP) was developed to implement the TDF, with three Five-Year Development Plans (FYDPs). Infrastructure is one of the five core priorities of the first FYDP (2011/2012–2015/2016). The FYDP highlights that weak transport infrastructure is a bottleneck to leveraging Tanzania's potential in regional and global trade. It includes PPPs as an innovative source of finance which should be used to bridge the infrastructure gap.

Tanzania's National Transport Policy (2011-2015) aims to expand Tanzanian ports' handling capacity to 20 million tonnes by 2020 (from 10 million tonnes in 2010), strengthening the capacity of institutions that implement PPPs, and providing efficient transport corridors for international trade. The Transport Sector Implementation Plans (TSIPs) (first phase from 2007/2008–2011/2012 and second phase from 2012/2013–2016/2017) outline a 10-year plan for investment in the transport sector in Tanzania.[154]

The Big Results Now Initiative is aimed at better service delivery, modelled off Malaysia's Big Fast Results Initiative, with an incremental approach to implementation. Transport infrastructure is one of its six National Key Results Areas. One of the key targets is the current Dar es Salaam Port upgrade.[155]

- **Project terms – funding, preparation, implementation, etc**

The initial agreement between TICTS and the government was a 10-year lease that allowed TICTS the operation of handling services at the Port's container terminal and its four berths. In 2005, the lease was extended from 10 to 25 years, and granted TICTS operation of an additional berth and an inland container depot (ICD). This effectively gave TICTS a monopoly over container handling.[156]

Concerns over public interest led the Ministry of Transport to engage TPA and TICTS in talks for a contract renegotiation. In 2017, TICTS and the Tanzanian government negotiated a new agreement which doubles TICTS' rental fee and institutes a 4% yearly increase. It also returns the ICD operation to the government.[157] Companies are now beginning to bid for the newly available container terminal contracts.[158]

It is reported TICTS has a desire to remain on good terms with the government given their significant investment and was satisfied with the agreement.[159]

Given the project was a rehabilitate, operate and transfer PPP, there was no initial investment as a part of the agreement. However, TICTS has made several investments throughout the lifespan of the concession. These included:[160]

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[153] United Republic of Tanzania, Planning Commission, 'The Tanzania Development Vision 2025', 1999.
[154] Moshi HPB 'Tanzania's Development Vision 2025 and Long Term Perspective Plan', Presentation at Post-2015 Consultation Workshops, 2015, http://ncp2015.go.tz/docs/TDV_2025_AND_LONG-TERM_PERSPECTIVE_PLAN.pdf, accessed 15 June 2016; United Republic of Tanzania, Prime Minister's Office, 'Big Results Now', http://www. pmoralg.go.tz/quick-menu/brn/, accessed 25 September 2016. Mbashiru K, 'Tanzania: Second Five Year Development Plan unveiled', 21 April 2016, http://allafrica.com/stories/201604210396.html, accessed 25 September 2016, United Republic of Tanzania, Ministry of Communications and Transport, 'National Transport Policy', 2003
[155] United Republic of Tanzania, Prime Minister's Office, 'Big Results Now', http://www. pmoralg.go.tz/quick-menu/brn/, accessed 25 September 2016.
[156] "TICTS now to pay double rental fee to TPA under new lease deal," *IPP Media,* July 2018, https://www.ippmedia.com/en/news/ticts-now-pay-double-rental-fee-tpa-under-new-lease-deal, accessed 28 November 2018.
[157] Ibid.
[158] "Dar es Salaam container cargo terminal handling monopoly to end." *The New Times,* 2009, https://www.newtimes.co.rw/section/read/93131, accessed 5 December 2018
[159] IPP op. cit.
[160] Kamagi D "Container Handling to Rise By 20% This Year," *AllAfrica.com* https://allafrica.com/stories/201807060114.html, accessed 7 December 2018.

- 2000-2008: investment in 11 RTG (rubber-tyre gantry) cranes, four reach stackers, two mobile harbour cranes, 17 terminal tractors and two empty handlers ($21 million)
- 2012: Investment in a new terminal operating system, rehabilitation of a container terminal ($6.5 million)
- 2014: Investment in six cranes
- 2016: investment in two cranes ($ 10 million each)
- 2017: introduction of a new shipping line, new data centre, new e-payment system in partnership with Ecobank, upgrade of the terminal operating system, investment in new cargo handling equipment.[161]

Traffic at the Port is projected to increase from a throughput of 13.5 million tonnes in 2013 to 28 million tonnes in 2028, with container throughput increasing from 577 047 Twenty-Foot Equivalent Units (TEUs) handled in 2013 increasing to 1 138 000 TEUs in 2018 and 3 226 000 TEUs in 2028.

Table 1 – Project summary

PROJECT NAME	CONSTRUCTION OF A DRY DOCK FACILITY AT DAR ES SALAAM
Implementing Authority	Tanzania Ports Authority
Short description	According to the PMP final report published in February 2009, "the existing docking facilities in Dar es Salaam port are outdated and not suited for maintenance of the Marine Services Fleet. Currently, the practice is to use the docking facilities in Mombasa, Kenya. The situation is not optimal as high costs are involved and additional operational time is being lost. A new local dry docking facility is therefore advised to maintain the TPA Marine Services Fleet." In view of the above, TPA has planned to construct a dry dock that can be along the DSM coastline, which can be offering services to marine vessel fleet operating to several TPA sea ports, which include Tanga/Mwambani, Mbegani-Bagamoyo and Mtwara ports.
Project Benefits	• The largest vessel in the future TPA Marine Services Fleet is a tug with a length of 46m, beam of 11m and a draft of 5m. The docking facility should be able to accommodate at least two of these vessels simultaneously in view of required flexibility and capacity. • The regional coastal fleet is also a potential customer for the new docking facility as there is a shortage of maintenance facilities in Tanzania. These coastal vessels could well provide additional turnover to make the dry dock more feasible. Therefore, the dry dock should have the ability to handle coasters. • TPA's philosophy of increasing capacity ahead of demand will bring tremendous opportunity by accommodating more clients and bringing ultimately more revenue to Tanzanian ports. Having a well-functioning docking facility, is not only going to attract private vessels (i.e. orders from third parties' vessel fleet), it will also increase the number of ship calls at TPA's ports. • Moreover, from a long-term planning perspective of port expansion, TPA should opt on constructing the dry dock as suggested in the PMP, as it will reduce the high dependency of getting similar services at the neighbouring and competing port of Mombasa and at unreasonably high costs. The project will have direct and indirect benefits to Tanzania and the rest of the world through ships calling at DSM, Tanga and Mtwara Ports.
Financing Model	PPP/Development Partners financing model adopted
Contribution to Income generation/or poverty eradication	• Reduction of maintenance costs to TPA vessels and increase in revenues; • Creation of direct and indirect employment from construction to operation; • Contribution to the national GDP; and • Promotion of small and medium scale enterprises through feeder manufacturing plants.

Source:

[161] Staff M "Expansion is the First Port of Call," *Africa Outlook*, February 2018, https://www.africaoutlookmag.com/outlook-features/tanzania-international-container-terminal-services-ticts-feb2018, accessed 6 December 2018.

- **Applied machinery and equipment**

N/A

- **Role of international/ national DFIs and applied financial arrangements**

The project did not involve participation from any international or national DFIs. There is a Trademark East Africa, DfID and World Bank port expansion underway, but it is concerning berths which have not been handed over to TICTS as a part of the PPP arrangement.[162]

- **Environmental impact and local community assessments**

No public information is available regarding EIAs or other assessments for TICTS upgrades to the port. However, TICTS engages in training to equip middle management for eventual succession to higher management roles, with short, medium and long-term staff development plans. TICTS also engages in personnel exchanges to TICTS head offices abroad.[163]

- **Status quo of project**

The TICTS concession is largely considered a success story: TICTS has helped to target some of the port's bottlenecks and greatly increased the efficiency of the container terminal.

Some of TICTS investments have focused on improving efficiency through the implementation of automated processes at their container terminal (i.e. electronic gates, scanners). Since the TICTS concession, throughput has increased by 20%, to 500 000 20-foot equivalent units (from 120,000 when it began operation in 2000), and transit time has been reduced by approximately five days.[164]

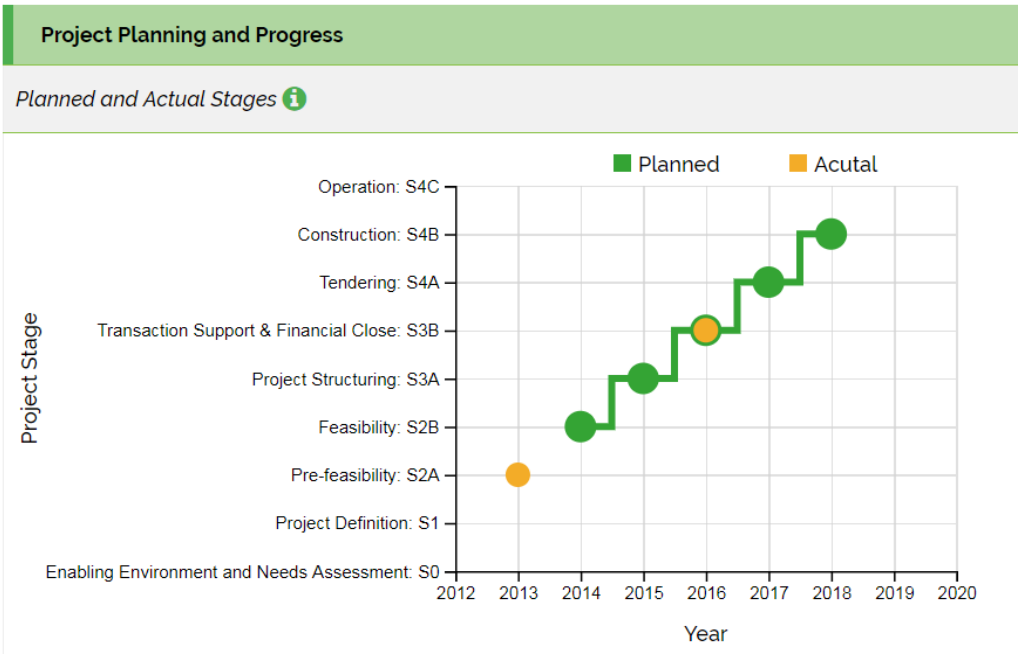
Presently at the Dar es Salaam Port, the average dwell time is still 9 days, compared to 5 days at the Mombasa port (which has more berths).[165] In 2017, the port handled 15 million tonnes, with total capacity to handle 18 million.

Space is a major constraint in further reducing congestion and dwell times. In 2017 the port introduced 24 hour operation times to help target this challenge.

Planned developments for next year include removing old quay cranes; identifying additional space outside the Port; improving the gate process, and further streamlining the landside operations.[166] The project is currently under construction with project progress reflected as per Figure 1 below.

Figure 1 – Project progress

[162] "Tanzania Receive USD60.1m Grant to Transform Dar es Salaam Port" *Tanzaniainvest.com,* February 2017 https://www.tanzaniainvest.com/transport/dar-es-salaam-port-grant-tmea-tpa
[163] TICTS interview op. cit., Staff M op. cit.
[164] TICTS interview op. cit.
[165] Ibid.
[166] Staff M op. cit.



Source: PIDA (Programme for Infrastructure Development in Africa) http://www.au-pida.org/view-project/914/, accessed on 12 December 2018.

- **Crucial success and challenge factors**

The extension of the TICTS contract in 2004 based on good performance does indicate the overall success of the PPP, especially compared to many concessions on the continent which are ultimately cancelled.

However, many challenges with this project and other PPPs in Tanzania are in part caused by a general distrust prevailing between the government and private sector, with both viewing the other as engaging in corrupt/anti-competitive practices. Political interests often interfere with concession agreements and the project was on the drawing board for five years. Designs for the port also had to be started from scratch, because the old contractors did not leave any documents behind.

One interview likened the initial TICTS/TPA agreement to a forced marriage, without significant effort devoted to creating mutual understanding among both parties, which has led to some of the current challenges.[167] Primary concerns gathered from interviews and media reports include the management of the port SOE (TPA), political involvement in the TICTS, and the efficiency of port operations.[168]

Recently, concerns regarding TICTS management of the port have surfaced among government and industry bodies, leading to the aforementioned renegotiation of the contract in 2017. Specific issues included inefficient handling of cargo, failing to implement the 24/7 port operation arrangement, delays in verification process by the revenue authorities, and unavailability of payment facilities.[169]

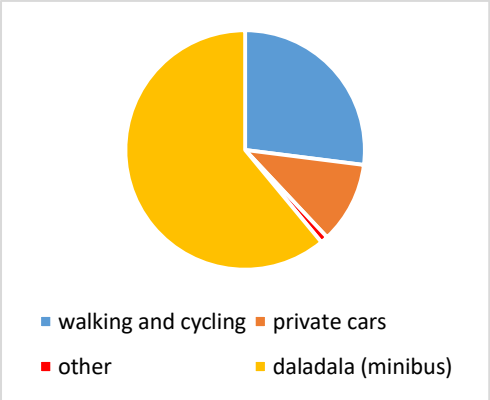
[167] Interview, Tanzanian infrastructure planning consultant, 17 May 2016.
[168] Interview, UK Department for International Development (DFID) Tanzania representative, 18 May 2016, Interview, World Bank Tanzania representative, 17 May 2016.
[169] "Shippers up in arms at Dar port", *container-news.com,* http://container-news.com/tanzania-shippers-arms-dar-port/, accessed 7 December 2018.

3. Tanzania: Dar Bus Rapid Transit (Phase I completed)

- **Project description (project company, location, historical process, outline, total amount)**

Despite its status as a rapidly urbanising city (5.8% per annum on average), Dar es Salaam itself is characterised by aging transport infrastructure with frequent accidents and congestion, unable to keep up with its growing population.

Figure 2 – Transportation mode usage in Dar es Salaam



Source: Mchomvu Y (2018) *The Dar es Salaam Bus Raid Transit (BRT) System*. Presentation at the SSATIP Annual General Meeting, 3 July 2018, Nigeria.

Therefore, in 2007 the Tanzanian government approved an integrated Bus Rapid Transit (BRT) network that would be implemented over several phases, the first of which was 2008 to 2016, for which construction was completed in 2015. The BRT commenced operations on May 2016, covering 20.9 km and the total distance for the entire project is 130.3km.[170]

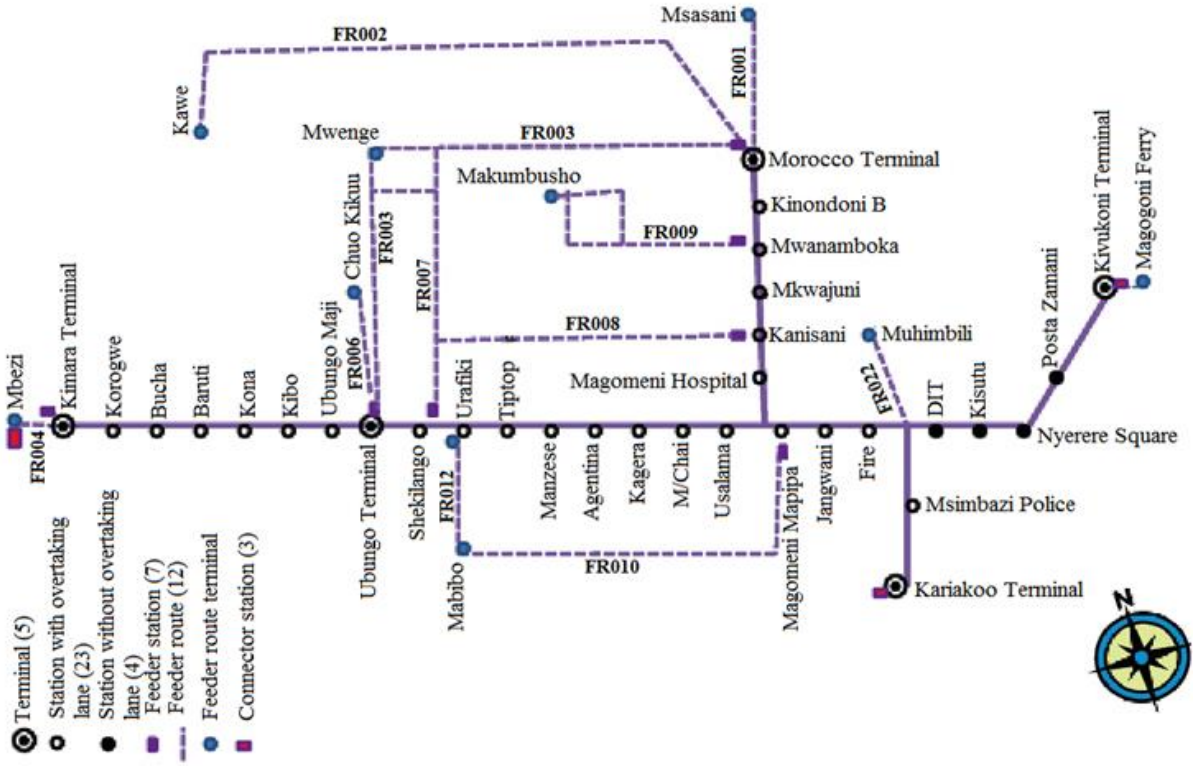
Table 2 – BRT construction phases in Dar es Salaam

Phase 1	Morogoro -Kawawa North- Msimbazi-Kivukoni	20.9km
Phase 2	Kilwa-Kawawa South	19.3km
Phase 3	**Uhuru Street-Nyerere-Bibititi-Azikiwe Street**	**23.6km**
Phase 4	Bagamoyo-Sam Nujoma	16.1km
Phase 5	**Mandela Road**	**22.8km**
Phase 6	Bagamoyo Road	27.6km

Source: Chengula D & Kombe K (2017) 'Assessment of the Effectiveness of Dar Es Salaam Bus Rapid Transit (DBRT) System in Tanzania.' *International Journal of Sciences: Basic and Applied Research.*

Figure 3 – Map of BRT phase 1

[170] Chengula D & Kombe K (2017) 'Assessment of the Effectiveness of Dar Es Salaam Bus Rapid Transit (DBRT) System in Tanzania.' *International Journal of Sciences: Basic and Applied Research.*



Source: Chengula D & Kombe K (2017) 'Assessment of the Effectiveness of Dar Es Salaam Bus Rapid Transit (DBRT) System in Tanzania.' *International Journal of Sciences: Basic and Applied Research.*

- **Relationship with government and development stakeholders**

The Ministry of Transport is responsible for setting the strategic goals for the sector as well as overseeing the performance of the institutions under its mandate including the regulatory and operator institutions.[171] The truck and regional roads are under the responsibility of the Tanzania National Roads Agency (TANROADS), a semi-autonomous body, which is responsible for the road infrastructure sub-sector. Responsibility for regulating the road transport industry (i.e. licencing and regulating passenger fares) lies with the Surface and Marine Transport Regulatory Authority (SUMATRA) Act 9 of 2001.[172]

The Dar Rapid Transit Agency (DART) operates under the Prime Minister's Office, Regional Administration and Local Government through the Ministerial Advisory Board to establish and operate the BRT. DART came fully into force on 16th June 2008, established by government notice 120 of 25 May 2007, under the Executive Agency Act 30 of 1997.[173]

- **Relationship with the national development plan and other legislation**

Driving Tanzania's policy framework on sustainable development and poverty reduction is its Development Vision 2025 and the second Five Year Development Plan (FYDP), which replaced the first FYDP and the National Poverty and Reduction Strategy II (Mukuta II). Mukuta II, effective from 2010 to 2015, focused on achieving the

[171] Oumarou A et al (2012) *Tanzania Transport Sector Review*. Abidjan: AfDB.
[172] Oumarou A et al, op. cit.
[173] Kyong Dong Engineering Co. Ltd & Ambicon Engineering Ltd. *Environmental and Social Impact Assessment Report, Final Report January 2015*. Dar es Salaam: Prime Minister's Office, United Republic of Tanzania.

country's MDGs and reducing poverty through three broad outcomes: (i) growth and reduction of income poverty; (ii) improved quality of life and social well-being; and (iii) good governance and accountability.[174]

Three policies that more narrowly focus on transport infrastructure are the National Transport Policy (2003) and the two five-year Transport Sector Investment Programmes (TSIPs) (first phase from 2007/2008–2011/2012 and second phase from 2012/2013–2016/2017).[175] The TSIPs outline a 10-year plan for investment in the transport sector in Tanzania. The first TSIP was not fully implemented due to limited financial resources (with 40% coming from donors), and deficiencies in implementation and management capacity. TSIP I was criticised for (i) failing to look at transport infrastructure holistically and (ii) adopting separate and uncoordinated approaches for different modes of transport, which the TSIP II seeks to rectify.[176] Lastly, the Tanzanian government has an Implementation Strategy of the Transport Sector Policy of 2011 to 2015.

- **Project terms – funding, preparation and implementation**

Phase 1 cost 134 million euros, which was funded by the African Development Bank, the World Bank and the Tanzanian government. The BRT is operated by UDART (Usafiri Dar es Salaam Rapid Transit) under the surveillance of the SUMATRA. Since April 2015 DART signed a contract with UDART, a specially formed company intended to provide interim services of the DBRT system – namely to provide training to future operators and build up local capacity.[177]

The BRT system is operated as a $40.9 million PPP arrangement with two private bus operators. The operators, fare collectors and fund managers were competitively hired in April 2018.[178] Project implementation is undertaken by the City Council through municipal roles. All aspects of project management, including procurement, contract management, financial management, and social and environmental safeguards, will be fully executed or overseen by TANROADS.[179] TANROADS is responsible for road infrastructure and DART responsible for operations: DART will be responsible for (i) procurement and management of contracts for capacity strengthening; (ii) transaction advisory services; and (iii) managing capacity for public transport operations.[180]

- **Role of international/ national DFIs and the applied financial arrangement by stakeholder**

The World Bank's transactional advisers have been involved in the project. For the specific improvement of the Ubhongo Intersection and complementary road safety infrastructure of Phase 1, the World Bank valued the project at $99.9 million including $2.4 million contingencies.[181]

- **Applied machinery and equipment**

Unlike more traditional bus systems, the BRT system uses dedicated bus lanes separated from other vehicle traffic and station platforms, with on-board fare collection systems to reduce slowdowns and to promote traffic

[174] Parshotam A (2017) *Harnessing Investment in Tanzania's Agricultural Sector: where to from here?* SAIIA Occasional Paper 260. Johannesburg: South African Institute of International Affairs.
[175] According to the AfDB, the National Transport Policy was under review in 2012, but no further updates have been found online.
[176] Markowitz C (2017) *Tanzania's Transport Hub: What Prospects for Regional Trade and Local Economic Development?* SAIIA Occasional Paper 262. SAIIA: Johannesburg.
[177] Chengula D & Kombe K op cit.
[178] Mchomvu Y (2018) *The Dar es Salaam Bus Raid Transit (BRT) System*. Presentation at the SSATIP Annual General Meeting, 3 July 2018, Nigeria. See also http://www.worldbank.org/en/news/press-release/2013/01/15/additional-financing-tanzania-bus-rapid-transit-system-benefit-300000-commuters-create-80000-jobs, accessed on 6 December 2018.
[179] World Bank (2017) *Project Appraisal Report, Dar es Salaam Urban Transport Improvement Project*. Report No: PAD1464 Washington DC: World Bank.
[180] Ibid.
[181] Ibid.

flow.[182] A BRT system costs less to implement compared to metro or light rail, but still provides the same capacity and speed, making it an ideal mode of public transportation for developing countries.[183] Currently Phase 1 of the BRT corridor is serviced by 140 golden dragon busses providing express services from 5am to 11pm daily and consists of 20.9 km of trunk road, 57.9 km of feeder roads, 5 main terminals and 27 stations.[184] The entire 20.9km will be provided with tree-shaded bicycle and pedestrian ways on both sides of the road with an average distance of 500 meters between bus stops and is designed to carry more than 300 000 commuters daily.

- **Environmental impact and local community assessments**

A comprehensive environmental and social impact assessment[185] was undertaken prior to the construction of Phase 1 of the BRT in accordance with the requirements for an environmental impact assessment in terms of the Environment Management Act 20 of 2004. The Social Impact Assessment study was intended to ascertain the socio-economic and environmental impact implications likely to result from the proposed BRT road project.

A full report of the environmental and social assessment (ESA) was released in 2015, highlighting that the project was characterised by developed residential buildings, industrial buildings and high concentrations of trade, manufacturing and other social services along the proposed BRT route. The ESA revealed that community concerns, inter alia, were centered on soil erosion and disturbances; poor air quality from the construction; and displacement of people and properties in the line of the BRT route; and the rise of HIV/AIDs in the community through the presence of construction workers.

Scoping was done through consultation with various relevant stakeholders, reviewing various reports, studies and literature relevant to the environment and road developments in Dar es Salaam. Additional information to augment the data obtained from project scoping was acquired through field studies. Public participation was done through broad consultations that involved public meetings and focus group discussions, with key ward officials and sub-ward leaders.

In the end the ESA established that the gains from the BRT outweighed potential losses that could ensure and that most of the project's negative impacts could be mitigated with appropriate measures. The ESA also built in the costs from the proposed mitigation measures, compensation of assets and cost of relocation of utilities were also catered for in the costs of the project.

- **Status quo of project**

The project has moved into its second phase, which includes constructing 20.3km of road, including two flyovers and 29 bus stations along Kilwa Road. Total costs for the project, disbursed as loans by the AfDB and the Africa Growing Together Fund (Chinese trust fund managed by the AfDB), and from the Tanzanian government is $159 million. Project activities should be completed by December 2019 and the project closing date is projected to be December 2020. TANROADS will be the executing Agency for the project that will procure and manage the BRT infrastructure contracts. The DART Agency will be responsible for procurement of services, bus operators (private), the fare collection system and Intelligent Transport Systems and overseeing the operations of the BRT system.[186]

The implementation of the third and fourth BRT phases will be supported by the Dar es Salaam Urban Transport Improvement Project.[187]

[182] Cascardi E (2017) Paving the Way for Transport Evaluation in Tanzania. LSE International Development.
[183] Cascardi E op. cit.
[184] Chengula D & Kombe K, op cit
[185] Kyong Dong Engineering Co. Ltd & Ambicon Engineering Ltd, op. cit.
[186] AfDB (2015) Dar es Salaam Bus Rapid Transit System Project – Phase 2, Appraisal Report. AfDB: Abidjan.
[187] World Bank op. cit.

Table 3 – sources of financing for Phase 2 of the BRT

Finance source	Amount
AfDB	$ 63 218 689
Tanzanian government	**$ 11 424 400**
Co-financier	$ 28 741 443
Delta	**$117**
Total	$103 384 648

Source: https://www.afdb.org/en/projects-and-operations/project-portfolio/p-tz-db0-021/, accessed on 5 December 2018.

- **Crucial success and challenge factors**

Although the BRT is widely regarded as a success story, this is not to say that the BRT was not without its challenges. In 2004 and 2007 the project's implementation was promised but failed to take off, until construction finally began in 2013 and completed by the end of 2015.[188] Rizzo identifies three main causes for the slow start to the BRT construction:[189]

(i) the use of the Ubungo station, for which the city council and the DART had conflicting agendas;
(ii) Compensation as a result of the lack of support by the Tanzanian institutions executing the BRT: managing the compensation of business tenants for their loss of profit was complicated by the fact that most of the tenants formally renting from the council had sub-leased, and this disagreement was only settled late in 2014; and,
(iii) The location of a BRT terminal in Gerezani, an area that hosted 53 twin houses with a total of 106 owners. Twenty-nine owners accepted the proposed compensation, while the rest brought a court injunction against it. Eventually the court judged that the occupiers of these Gerezani houses had no right of occupancy and ordered their demolition.

Delays in implementing the Resettlement Action Plan, flooding along the trunk line and inadequate engineering designs, such as unmapped ground utilities and weak supervision engineers, together with infrastructure cost overruns, highlight further challenges.[190] However, in addressing these challenges, a number of solutions were implemented, such as providing additional technical assistance, restructuring the project to create a steering committee; engineering redesign to minimise land take and a splitting of the work packages.[191]

The challenge of delays in the PPP procurement of the operator(s) that led to complications of interim service operations in the BRT phase 1 will be addressed by recruiting Transaction Advisers and issuing requests for qualifications for BRT phases 3 and 4 before commencement of BRT trunk corridor works and ensuring that the potential bus operators are shortlisted within one year of commencement of works.[192] Moreover, there are also

[188] Rizzo M (2014) 'The Political Economy of an Urban Mega Project: The Bus Rapid Transit Project in Tanzania.' *African Affairs*, Vol 144.
[189] Ibid.
[190] Mchomvu Y (2018) *The Dar es Salaam Bus Raid Transit (BRT) System*. Presentation at the SSATIP Annual General Meeting, 3 July 2018, Nigeria.
[191] Mchomvu Y. Establishment of the Dar es Salaam Bus Rapid Transit System. Presentation at the Global Development Initiative annual Conference, 20 March 2018, Addis Ababa.
[192] World Bank, op. cit.

plans to support the transformation of existing daladala[193] operators to help them become companies and cooperatives that can participate in phases 3 and 4 of the BRT.[194]

However, as a time-saving, cost-effective public transport system the BRT definitely has achieved major successes, and is the first African country to win the Sustainable Transport Award, in 2018.[195] A survey conducted by Chengula and Kombe based on 200 questionnaires found that:[196]

(i) The waiting time for passengers at stations/terminals was reduced by more than 50%;
(ii) Delays in the journey-time reduced to 60% (compared to other transportation modes) and fare savings amounted to 28% compared to the previous daladala mode;
(iii) The schedule adherence is usually within 0 to 5 minutes of the schedule time-table, which means the BRT runs on time; and
(iv) About 67% of the respondents benefiting from the presence of DBRT operation in Dar-es-Salaam regarded the fare price of Tanzanian shillings 500 as affordable, which allows low and medium income earners to use the system.

4. Mozambique/South Africa: Central Termica de Ressano Garcia

- **Historical overview of Mozambique's energy sector**

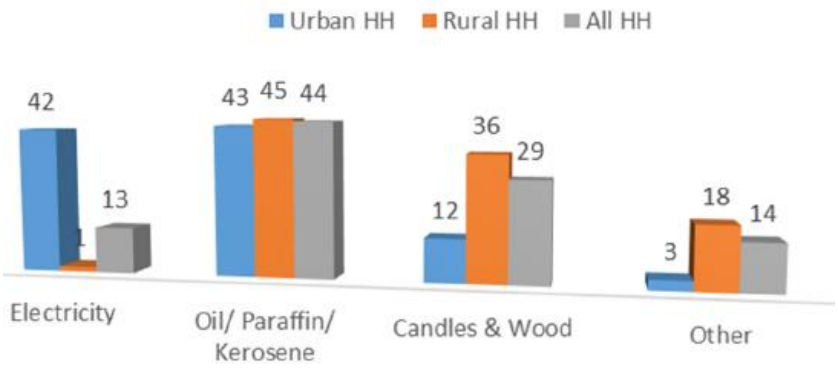
Mozambique has traditionally had low levels of electrification despite the country having up to 187 gigawatts of untapped coal, hydro, gas, wind and solar resources – the largest power generation potential in Southern Africa.[197]

Hydropower currently accounts for about 81% of installed capacity and natural gas and renewable energy are growing as part of Mozambique's energy mix. The country has a small electricity system (approximately 680 MW installed capacity normally supplying the system) that has developed on the margins of important regional projects such as the Cahora Bassa hydropower plant (1977), the Mozal aluminium smelter near Maputo (2000) and the Sasol-run Pande/Temane gas processing and pipeline project (2004).[198]

Unfortunately only 29% of Mozambicans (rural 15% and urban 57%) have access to electricity, due to limited transmission and distribution networks, and unfavourable market conditions for new generation.[199] The electricity sector's physical condition is poor and suffers from frequent breakdowns and high electricity losses. Mozambique suffers from difficulty in expanding its generation and transmission capacity and providing access to electricity to the vast majority of Mozambicans.[200] Electricidade de Mocambique (EDM), the parastatal power utility, is criticised for not being credit-worthy and not transparent, which has made reforming the energy sector difficult.[201] Lastly, an absence of technical and human resources within EDM and poor government coordination have also made it difficult to formulate Mozambique's Energy Policy.[202]

Figure 4 – percentage of households using different fuels for lighting

[193] A Tanzanian matatu or share taxi.
[194] Ibid.
[195] https://www.itdp.org/2017/07/07/dar-es-salaam-wins-2018-sta/, accessed on 5 November 2018
[196] Chengula D & Kombe K, op cit.
[197] USAID Power Africa Factsheet, November 2018
[198] Hussain M et al (2015) *Republic of Mozambique: Mozambique Energy Sector Policy Note*. Report No: ACS17091. Washington DC: World Bank.
[199] Power Africa Factsheet, November 2018
[200] Hussain M et al, op. cit.
[201] USAID Power Africa Factsheet, November 2018
[202] Ngugulo S. *System Planning Directorate at the Electricded de Moçambique*. Presentation on Energy Policy, 3 July 2017

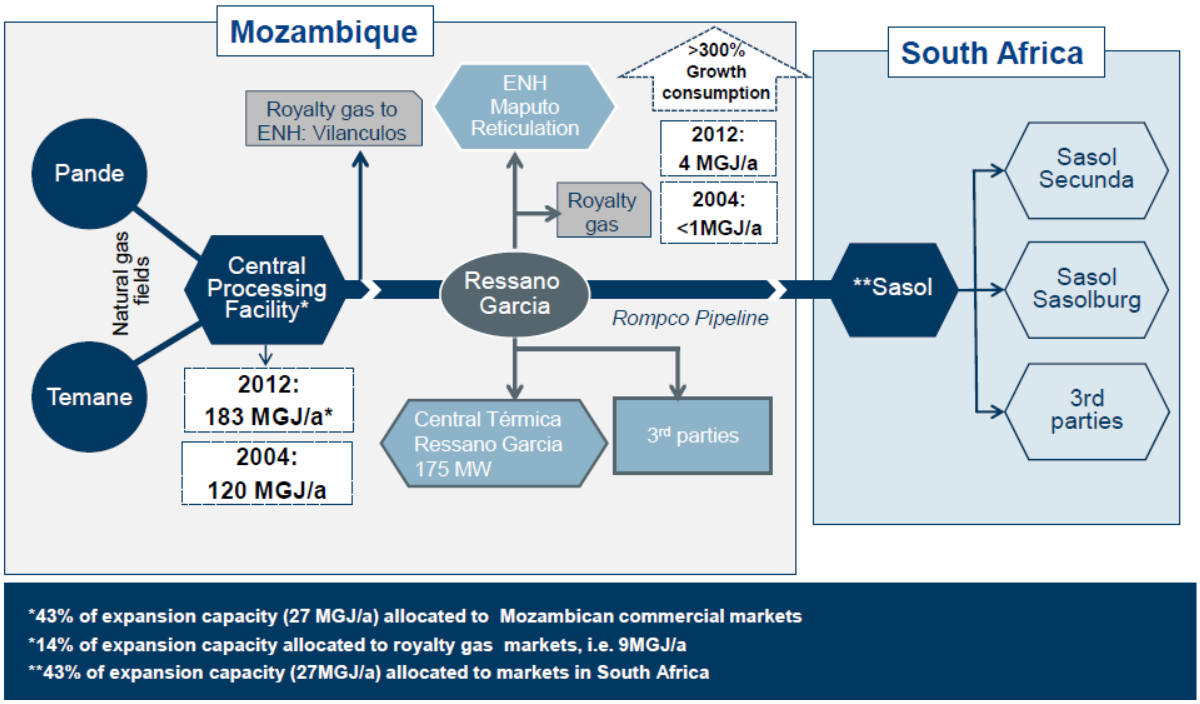


Source: Hussain M et al (2015) *Republic of Mozambique: Mozambique Energy Sector Policy Note*. Report No: ACS17091. Washington DC: World Bank.

- **Project description (project company, location, historical process and amount)**

The Mozambique-based Central Termica de Resssano Garcia (CTRG) is a joint venture between the Sasol Energy Group (Sasol), a South African company, and EDM. CTRG is located approximately 100km from Mozambique's capital Maputo, close to the South African border, and is the country's first gas-fired power plant to reach commercial operation.[203] Natural gas is sourced from the Sasol-operated Pande and Temane gas-field concession and supplied to the plant through a new 1.2 km pipeline branch from the existing main gas pipeline, owned by Republic of Mozambique Investment Company, which exports gas from Mozambique to South Africa.[204] Sasol provided an anchor offtake to facilitate the development of the gas fields in Mozambique.

Figure 5 – description of Sasol's off-take



[203] https://www.esi-africa.com/ifc-invests-mozambique-gas-fired-power-plant/, accessed on 7 December 2018.
[204] http://www.engineeringnews.co.za/print-version/central-termica-de-ressano-garcia-project-mozambique-2014-08-08, accessed on 10 December 2018.

Source: van Loggerenberg E 'Gas Monetisation: Providing the basis for a strong and sustainable economy.' Sasol Presentation at the Mozambique Gas Summit, 4 December 2014.

- **Project terms (financing, formation, preparation, implementation, construction) and stakeholders in PPP**

The project will be developed on a build, own, operate and transfer ("BOOT") basis by CTRG (the Project Company), jointly owned by EDM (51%), which is responsible for the generation, transmission and distribution of electricity in Mozambique, and Sasol (49%). The Engineering, Procurement and Construction (EPC) contract was signed on 12th December 2012 (project start date) between the Project Company and Wärtsilä Finland Oy and Wärtsilä Mozambique Lda.[205] EDM has a twenty-year power purchase agreement with CTRG and all electricity produced is contracted to EDM. Together with its partners, Sasol has expended approximately US$3 billion in capital investments, which include the development and expansion of the CPF and natural gas fields in Southern Mozambique, the construction of a cross-border pipeline, and the completion of the CTRG gas-to-power project.[206] EDM and Sasol financed the plant's construction with a combination of equity and a bridging loan from Sasol, with the intention of refinancing the bridge loan with bank debt.[207] The Emerging Africa Infrastructure Fund (EAIF), managed by Investec Asset Management, was invited to join the lending group too. The EAIF itself is a PPP that provides long-term debt or mezzanine financing on commercial lending terms, and contributed financing to the value of $20.8 million to the CTRG project.[208]

- **Applied financial arrangement between stakeholders**

Valued at $189 million, the project was approved in 2014, became operational in February 2015 and reached financial close in 2017. Project financing was arranged by Absa Bank and comprises of A and B loans from the International Finance Corporation (IFC) (contributing $55 million), a direct loan from Société de Promotion et de Participation pour la Coopération Economique, and a political risk covered loan from Absa.[209] The lending group has applied for a World Bank MIGA (Multilateral Investment Guarantee Agency) guarantee of up to $90 million for a period of up to 16 years against the risks of expropriation, war and civil disturbance, and breach of contract.[210] There is also a syndicated loan of $42 million from the Emerging Africa Infrastructure Fund and FMO. Proparco and ABSA Bank have provided parallel loans, and a club of lenders disbursed debt facilities amounting to a total of $189 million.[211]

Table 4 – Overview of project financing

Debt provider	Type	Local/international	Amount
Agence Francaise de Developpement	Bilateral	International	$46 million
Barclays Bank	**Commercial**	**International**	**$46 million**
EAIF	Multilateral	International	$21 million

[205] United Nations Framework Convention on Climate Change (UNFCCC) Project Design Document, October 2016 https://cdm.unfccc.int/filestorage/O/B/T/OBTR15K3HPJAWICFU7VQ68XDYGEZS9/Ressano%20Garcia_PDD_v5_Clean.pdf?t=R3h8cGppamZifDB_99XYNwoHnzElpFwo4Fo4, accessed 10 December 2018.

[206] https://www.sasol.com/media-centre/media-releases/sasol-edm-inaugurate-new-gas-power-plant-mozambique, accessed on 7 December 2018.

[207] https://www.avca-africa.org/newsroom/member-news/2018/investecs-eaif-backs-power-station-refinancing-in-mozambique/, accessed on 10 December 2018.

[208] https://www.eaif.com/projects/, accessed 10 December 2018.

[209] http://www.engineeringnews.co.za/article/ctrg-reaches-financial-close-with-lenders-2018-01-17, accessed on 7 December 2018.

[210] https://www.miga.org/node/2018, accessed on 7 December 2018.

[211] https://ifcextapps.ifc.org/ifcext/pressroom/ifcpressroom.nsf/0/14DB6F60CD4A20088525821D003EB091?OpenDocument, accessed on 7 December 2018.

FMO	Bilateral	International	$21 million
IFC	Multilateral	International	$55 million

Source World Bank Private Participation in Infrastructure Database. https://ppi.worldbank.org/snapshots/project/central-termica-de-ressano-garcia-9363, accessed on 7 December 2018.

- **Relationship with regional and national development plan and other legislation**

The Ministry of Mineral Resources and Energy (Ministério dos Recursos Minerais e Energia, MIREME) is responsible for national energy planning, policy formulation and overseeing the operation and development of the energy sector.[212] Mozambique's goal towards greater electrification ties in with the Estratégia Nacional de Desenvolvimento (National Development Strategy 2015 to 2035), which is focused on improving livelihoods through industrialisation, transforming the economy and diversification – all of which requires electricity to implement.[213] In addition, Mozambique has a number of regulations and policies in place towards improving the country's energy sector.

Table 5 – Overview of energy sector legislation in Mozambique

Name of the legislation	Description
National Energy Strategy 2011- 2025[214]	• Renewable energy installed capacity objectives: 200MW in small and mini-hydro; 150MW wind; 50MW solar and 50MW biomass until 2023. Promote the large hydropower project adding 3.5GW of new large hydropower.[215] • Other focal areas include a feed-in tariff and a new tariff methodology settlement.
Energy Policy of 1998 and Energy Sector Strategy, 2000	• The Energy Policy is focused on building capacity and improving management in the electricity sector, thereby increasing exports and efficiency. • The Energy Sector Strategy focuses specifically on the means for implementing the Energy Policy, concentrating on increasing the role of the private sector, developing more competitive markets and the need for regulation.
Electricity Act 21 of 1997	• Designed to facilitate private participation in the electricity sector under a concession system, as well as maintaining a special position and responsibilities for EDM. • However, private sector participation through Independent Power Producers (IPPs) has been limited thus far.
Integrated Master Plan for Electricity Infrastructure 2018 - 2043[216]	• Approved by the Mozambican government in October 2018 aimed at increasing the country's capacity to generate, consume and export electricity over the next 25 years. • Expected to cost approximately $34 billion of which $18 billion will be invested in energy generation, while the balance will be directed towards transmission and distribution.
National Energy Fund (Fundo de Energia, FUNAE), the rural	• FUNAE is tasked with developing, producing and using different forms of low-cost power and promoting the conservation and rational, sustainable management of power resources.

[212] RECP Africa-EU Renewable Energy Cooperation Programme. Mozambique Governmental Framework https://www.africa-eu-renewables.org/market-information/mozambique/governmental-framework/, accessed on 10 December 2018.
[213] AfDB (2018) *Mozambique Country Strategy Paper 2018 – 2022*. Abidjan: AfDB
[214] Some dates are conflictual on this – while the EU lists this as 2011 to 2023, other sources indicate the Strategy running from 2014 to 2023.
[215] *EU Factsheet Mozambique November 2015*. EuropeAid/134039/C/SER/Multi – The EU's Technical Assistance Facility for the Sustainable Energy for All initiative– Eastern and Southern Africa.
[216] https://www.esi-africa.com/mozambique-approves-integrated-master-plan-for-electricity-infrastructure/, accessed on 10 December 2018.

electrification body created in 1997[217]

Source: RECP Africa-EU Renewable Energy Cooperation Programme. Mozambique Governmental Framework https://www.africa-eu-renewables.org/market-information/mozambique/governmental-framework/, accessed on 10 December 2018.

- **Applied machinery & equipment**

The gas power station functions as an IPP operating a 175 MW plant comprising of 18 Wärtsilä gas engines.[218] The plant consists of the following support systems: gas engines/generator systems, water treatment systems (potable , human wash, engine wash, fire and irrigation waters), compressed air system, instrument air system, lubrication oil system, engine control system, firefighting system, sewage treatment system, evaporation system, low/medium/high voltage systems, electricity evacuation system, air intake system, engine cooling system, engine exhaust system, engine haul air conditioning system, frequency and voltage control systems and gas transportation and conditioning system.[219]

- **Environmental and social impact assessments**

An environmental impact assessment report was undertaken by Nemus and published in May 2014. The EIA is in Portuguese and is accessible here: http://www.nemus.pt/wp-content/uploads/2014/07/t13038_01_VolI_SumarioExecutivo_draftCP.pdf

- **Present situation in operation**

CTRG has been operational since February 2015.

- **Crucial successes and challenges**

The CTRG is regarded as a successful PPP owing to good risk allocation, project financing and its timely processes. The CTRG has helped to meet 23% of Mozambique's demand for energy and the various gas PPPs between South African businesses (predominantly Sasol) and Mozambican companies have also resulted in gas royalties growing by 33%.[220] This is also Sasol's first project-financed IPP and the first major investment in a Mozambican domestic infrastructure project since the beginning of the country's economic crisis in 2016.[221]

Key contracts were signed in December 2012 and January 2013 and the Mozambican government had a concession agreement with Sasol. Site construction activities commenced in January 2013 – importantly, Sasol's provision of the bridge financing helped ensure that the project construction could commence on an expedited basis, removing delays from the project. CTRG is one of the first investments for DFIs in Mozambique that is solely reliant on revenues generated by a domestic purchaser.

Gas development has served as a catalyst for socio-economic growth through revenue generated from equity investment, tax revenues and spin-offs from secondary industries. There have been some positive socio-economic developments arising from Sasol's engagement in Mozambique's gas sector and through its various PPP operations in the country:

- Local communities were engaged, 500 temporary job opportunities created during the construction phase and intensive training programmes were offered.[222]

[217] EU Factsheet Mozambique November 2015.
[218] http://www.engineeringnews.co.za/article/ctrg-reaches-financial-close-with-lenders-2018-01-17, accessed on 7 December 2018.
[219] UNFCCC op. cit.
[220] van Loggerenberg E 'Gas Monetisation: Providing the basis for a strong and sustainable economy.' Sasol Presentation at the Mozambique Gas Summit, 4 December 2014.
[221] http://www.globallegalchronicle.com/central-termica-de-ressano-garcias-development-and-financing/, accessed on 10 December 2018.
[222] Govender K 'Successful Gas to Power Plant Development – CTRG, Mozambique' Sasol presentation at Africa Utility Week, Cape Town, 13 May 2015.

- Efforts were made to target the skills development of Mozambicans to sustain the oil and gas industry at various levels and bursaries and technical vocation training were also offered to Mozambican locals.[223]
- Preferential procurement was prioritised giving preference to Mozambican businesses wherever possible without compromising safety and quality standards.[224]

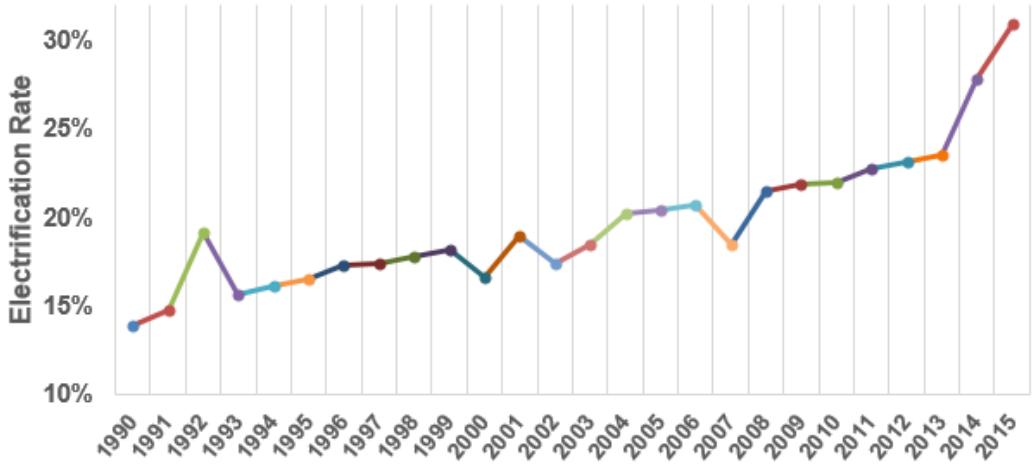
5. Zambia: Kafue Gorge Lower Hydropower project

- **Historical overview of Zambia's energy sector**

Zambia has traditionally relied on hydropower for electricity generation. However, increasingly erratic rains and declining water levels in the Kariba Dam have resulted in Zambia experiencing severe deficiencies in electricity supply since June 2015. This has affected the cost of living and the country's economic development negatively, particularly the mining sector, which has traditionally driven 70% of the country's electricity demand.[225]

Electricity demand has grown at an average of 4% per year but generation capacity has been unable to keep up with demand. As of 2016, Zambia had an electrification rate of 2.7% in rural areas and 62% in urban areas.[226] However, Zambia continues to face challenges in transforming its energy sector, which includes, *inter alia*, low investment in the sector (resulting in power deficits); lack of diversity in generation sources; lack of available funding for alternative energy sources; and low transmission capacity.[227] Electricity tariffs in Zambia remain among the lowest in Sub-Saharan Africa: in 2016, it was estimated that the Zambian power sector loses approximately $300–-400 million due to under-pricing.[228] This under-pricing has resulted in insufficient revenues to cover operations, maintenance and capital refurbishments required for power plants.[229]

Figure 6 – Current electrification rate in Zambia, 1990 to 2015



Source: Electricity Access in Zambia (2017) Energy Access- Africa. https://energyaccess-africa.com/2017/08/11/electricity-access-in-zambia/, accessed on 11 December 2018

[223] van Loggerenberg E op. cit.
[224] Ibid.
[225] Africa-EU Renewable Energy Cooperation Programme (RECP). Zambia Energy Sector, https://www.africa-eu-renewables.org/market-information/zambia/energy-sector/, accessed on 11 December 2018.
[226] World Bank Data indicators, https://data.worldbank.org/indicator?tab=all, accessed on 11 December 2018.
[227] Zulu C (2015) 'Hydropower Projects and Investment Opportunities in Zambia.' Presentation to the 7th Germany-African Energy Summit, April 2013, Germany.
[228] World Bank (2017) *Project Appraisal Document: Electricity Service Access Project, June 2017*. Report No: PAD2303. Washington DC: World Bank.
[229] Ibid.

- **Project description (project company, location, historical process, outline, total amount)**

The majority of Zambia's power supply is provided through hydropower operations along the two primary rivers, the Zambezi and the Kafue. The Kafue River is 1500 km long and the area of the Kafue River Basin measures about 156 000km^2, making the Kafue River a suitable location for a new hydro power plant.[230] The Kafue River Basin plays an integral role in Zambia's economy – the majority of the country's mining, industrial and agricultural activities are based in the region, and approximately 50% of Zambia's total population is concentrated within this vicinity.[231]

The Kafue Gorge Lower (KGL) Hydropower plant is located in the Chinkankata district, 90km away from Lusaka, and is valued at $1.5 to $3 billion. The hydropower plant has the capacity to generate 750kW of power, 7 km downstream from the existing 900 MW Kafue Gorge Upper hydroelectric power station, and seeks to address Zambia's existing electricity deficiencies. The plant is located about 65 km upstream of the confluence of the Kafue and Zambezi rivers, and features a 120 metre high dam, an underground powerhouse and a tailrace channel that will discharge back into the river.[232] The KGL hydropower plant is currently implemented through a PPP and will be the third-largest hydropower station in the country upon completion.[233]

Zambia currently has an installed capacity of 1948MW although it has the potential to produce approximately 6000MW of hydro power.[234] Therefore the KGL hydropower plant offers an opportunity for positive spill-over effects through the completion of infrastructure (such as roads) to facilitate the transportation of equipment to the completion site, and has also resulted in the completion of a road between Chikankata and Chirindu. The creation of the hydropower plant also affords Zambia the opportunity to consider exporting electricity throughout the region via the Southern African Power Pool to countries like Namibia, Malawi, Zimbabwe and South Africa where there is greater demand.[235]

Figure 7 – Kafue River Basin

[230] Stenek V et al (2001) *Climate Risk and Business Hydropower: Kafue Gorge Lower Zambia*. Washington DC: International Finance Corporation.
[231] Godet F & Pfister S (2007) *Case study on the Itezhi-tezhi and the Kafue Gorge Dam*. Swiss Federal Institute of Technology, Zurich.

[233] Power Technology https://www.power-technology.com/projects/kafue-gorge-lower-kgl-power-station/, accessed on 10 December 2018.
[234] Ibid.
[235] https://www.esi-africa.com/wp-content/uploads/Janus_Basson.pdf, accessed 23 November 2018

Source: Basson J, Feasibility Study of the Kafue Gorge Lower Hydroelectric Project. MWH Global & BKS Consulting Engineers. Presentation for Hydropower Africa 2010, 18 August 2010.

- **Project terms – funding, preparation and implementation**

The KGL hydropower plant is a Build Operate and Transfer PPP and is valued at approximately $1.84 billion to $2 billion, including financial costs. This includes engineering, procurement and construction costs of $1.58 billion, financing costs of $43 million, insurance cost of $100 million, and capitalised interest of $312 million.[236] About 70% of the financing for the project will be in the form of loans from the two contractors, Sinohydro and the CADFund, and the remainder will be provided by ZESCO.[237] Two Chinese companies are contracted to build the power plant, and the International Finance Corporation (IFC) is provided financing, together with the CADFund, Sinohydro and ZESCO (who are all co-financiers).

A site selection report was undertaken by MWH Engineers in August 2006 for ZESCO for the purposes of selecting the site for the KGL hydropower plant.[238] However, the report for ZESCO came under criticism, and an independent, new study identified technical difficulties with the chosen site, resulting in delays as the project site was shifted and a new site had to be chosen.[239]

The engineering, procurement and construction (EPC) contract for the project was awarded to Sinohydro Corporation, in October 2015, while CPCS Transcom was appointed as the lead advisor to provide all transaction advisory services for the project.[240] However, according to Norconsult's annual report for 2017, the company

[236] Power Technology, op. cit.
[237] http://www.engineeringnews.co.za/print-version/kafue-gorge-lower-hydropower-project-zambia-2011-08-19, accessed on 10 December 2018.
[238] MWH Engineers (August 2006) *Site Selection Report for the Kafue Gorge Lower Hydroelectric Project.*
[239] Johnson O et al. (2017) *Catalysing investment in sustainable energy infrastructure in Africa: overcoming financial and non-financial constraints.* Stockholm Environment Institute, Working Paper 2017-03 Nairobi: Stockholm Environment Institute.
[240] Power Technology, op. cit.

has also been appointed to undertake project management, design review and construction management for the KGL hydropower plant project from 2015-2020.[241]

- **Relationship with government and development stakeholders**

In terms of the PPP arrangement, ZESCO represents the Ministry of Energy and Water Development (MEWD). MEWD is responsible for developing and managing energy and water resources, and is tasked with formulating and implementing the National Energy Policy, various energy strategies, and monitoring and evaluation of current policies.[242] The PPP relationship comprises the Zambia Electricity Supply Corporation (ZESCO, the state-owned power company in Zambia, which produces about 80% of the country's electricity), Sino Hydro Corporation and the China-Africa Development Fund (CADFund), and there is hope that the hydropower plant will initiate more rural electrification programmes through ZESCO and the Rural Electrification Authority.[243]

Zambia's electricity generation is dominated by ZESCO, which is wholly state-owned through the Industrial Development Corporation, the holding company for all major parastatals in Zambia. ZESCO owns and operates over 90% of generation, transmission and distribution, and supplies electricity to all grid-connected consumers, with the exception of the mining sector.[244] However, ZESCO has faced financial difficulty in recent years and, together with a lack of an adequate planning and procurement framework, an overall high-risk environment has made new investments in generation difficult until recently.[245] Consequently, no new plants were commissioned between 1977 and 2014 until the 120 MW Itezhi-Tezhi Hydro and 300 MW Maamba Collieries power plants were commissioned in 2016.[246]

- **Relationship with the national development plan and other legislation**

Zambia has a seven-year National Development Plan 2017-2021 (NDP), which operationalises Vision 2030, Zambia's national overarching development framework. The NDP outlines the country's development strategy, recognises the importance of improved energy production and distribution for sustainable development, and emphasises the important role that renewable energy can play in helping to address the country's energy deficiencies. The NDP aims to implement:

> 'Measures to grow and diversify the energy sector to enhance its contribution to economic diversification by expanding power generation and transmission capacities as well as maintaining a stable supply of petroleum products will be implemented. Expand and improve electricity generation, transmission and distribution, as well as encourage the development of small and mini/micro hydro power stations and promote the development and use of renewable and alternative energy sources, such as solar, wind, biomass, geothermal and nuclear as a way of diversifying the energy mix and improving supply.'[247]

Table 6 – Overview of Zambia's energy sector legislation

Name of legislation	Description
Electricity Act, 1995	• Purpose is to regulate the generation, transmission, distribution and supply of energy.

[241] Norconsult Annual Report 2017 https://www.norconsult.com/globalassets/norconsult/about-norconsult/finansiell-informasjon/annual-report-2017.pdf, accessed on 11 December 2018.
[242] RECP Zambia Governmental Framework https://www.africa-eu-renewables.org/market-information/zambia/governmental-framework/, accessed on 11 December 2018
[243] https://www.lusakatimes.com/2011/07/21/rb-commissions-2bn-kafue-gorge-hydroelectric-power-station/, accessed 27 November 2018.
[244] The mining sector is served by Copperbelt Energy Corporation, a private company that purchases bulk power from ZESCO for onward supply to the mines.
[245] World Bank (2017) op. cit.
[246] Ibid.
[247] Ministry of National Development Planning, Zambia Seventh National Development Plan 2017-2021.

Energy Regulation Act, 1995 (amended in 2003) Energy Regulation Board, 1996	• **Formally established the ERB and defined its functions and powers as regulating the energy sector.** • **The ERB is responsible for, *inter alia*, licensing of Independent Power Producers (IPPs), defining petrol prices and electricity tariffs, and developing technical standards.**
Office for Promoting Private Power Investment (OPPPI), 1999	• The OPPPI is part of the MEWD. Its mandate is the promotion of private investment in the generation and transmission of electricity, but works largely with ZESCO as other private investment opportunities have been limited.
Rural Electrification Act (REA), 2003	• **The REA established the Rural Electrification Authority, which is tasked with fulfilling public activities in connection with rural electrification, including management of the rural electrification fund; development, implementation and revision of the REMP.** • **The REA also established the Rural Electrification Fund.**
Rural Electrification Master Plan, 2008-2030 (with support from the Japanese government)	• The plan clusters 1,217 un-electrified Rural Growth Centres into 180 project packages, estimating that over $1.1 billion (or $50 million per year) is required to electrify all packages by 2030. The Plan indicates a target of achieving 51% rural electricity access by 2030. • Official target of achieving 51% rural electricity access by 2030.[248]
National Energy Policy, 2008[249]	• **The NEF's objective is to remove barriers to the development of renewable energy capacity in the country and to create conditions that ensuring adequate and dependable supply of energy from various sources at the lowest economic, financial, social and environmental cost.** • **Responsible for implementing energy efficiency programmes.**

Source: RECP Zambia Governmental Framework https://www.africa-eu-renewables.org/market-information/zambia/governmental-framework/, accessed on 11 December 2018.

- **Applied machinery and equipment[250]**

The project includes the construction of a 140m-high concrete-face rock fill dam with a crest width between 8m and 10m and a length of approximately 378m. A surface powerhouse with a width of 44.5m, height of 58m and length of 127m, and housing five 150MW generator units, will be constructed. The power station will have an environmental release outlet channel, a spillway on the left bank with an overall width of 64m and maximum discharge capacity of 6210m³/s. The right bank will have a flood release tunnel with a maximum capacity of 1018m³/s and a 4.4km-long power tunnel. The dam will also have a floodgate with five 400m-long penstocks. The left bank will feature a 980m-long diversion tunnel with a horse-shoe cross section of 10mx14m.

The power transmission infrastructure at the hydroelectric station will include a 300V switchyard with a provision for two outgoing transmission lines to a new and existing 330 / 132kV substation. The switchyard will also have a provision for one short interconnector to the existing KGU power station and five incoming feeder bays. The power transmission infrastructure at the hydroelectric station will include a 300V switchyard with a provision for two outgoing transmission lines to a new and existing 330 / 132kV substation.

- **Environmental and local community assessments**

Although the construction of a new hydropower plant will help in addressing Zambia's electricity shortage, accounting for environmental and local community needs are equally important. The Kafue Flats are amongst the most biologically diverse ecosystems in Zambia, comprised of the Kafue River, a complex of lagoons, marshes and floodplain grassland that provides a habitat for a wide range of birds and animals, including rare species.

[248] Stenek V et al, op. cit.
[249] National Energy Policy 2008, Ministry of Energy and Water Development http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/laws/4773.pdf, accessed on 11 December 2018.
[250] Power Technology op. cit.

The area also serves as an important tourist destination through the creation of the Lochnivar and Blue Lagoon national parks in the early 1970s.[251]

On 23 January 2018, Zesco awarded Pöyry with an Environmental and Social Impact Assessment (ESIA) assignment for the KGL hydropower plant despite construction already having commenced.[252] The new ESIA will look at the downstream areas of the site and be incorporated into the existing ESIA. Pöyry will also update the environmental and social management plan for the project; review, update and conduct the ESIA for the associated transmission infrastructure; and review and update the resettlement and compensation action plan.[253] However, it is worth noting that ZAMBIA's lead transaction adviser on the project also urged the government to consider downsizing the project capacity from 750MW to 600MW for environmental reasons.[254]

- **Status quo of project**

Project construction commenced in late 2015 and is currently underway.

- **Crucial success and challenge factors**

Although considered to be a success story, the KGL hydropower plant faced numerous and significant hurdles in getting off the ground. Although the project was conceptualised/approved a while ago, it took at least 14 years before the KGL hydropower plant was implemented. The first detailed technical, environmental and economic feasibility studies were carried out in the mid-1990s, but significant shifts in the global financial landscape made investment unlikely, and bilateral/multilateral partners withdrew, confident that the private sector would step in, but this failed to happen. By 2010, negotiations between the government and the China Development Bank to support a $1.5 billion joint venture between ZESCO and Sinohydro to implement the project seemed to be moving ahead: construction was expected to begin in 2011 and commissioned in 2017 but by 2013, the financial arrangements were still not finalised and a transaction advisor was sought to help find additional funds on the international capital market.[255] During this time, the government undertook a review and update of its ESIA and by 2015 a transaction advisor was in place, and full financing was secured, enabling construction to begin in November 2015.[256]

Despite these hurdles, construction of the KGL hydropower plant is finally underway, an important and positive signal for Zambia's future electricity generation capacity to bridge its existing energy gaps. The project is expected to be completed by 2019.

6. South Africa: The Durban Water Recycling Project

- **History**

There has always been a concern in South Africa in general, and Durban in particular, of the increased demands on South Africa's limited water resources. The city of Durban treats around 450 million litres of wastewater daily, and in this context, the Council's eThekwini Water Services (EWS) commenced an investigation into the recycling of treated wastewater. In 1993 EWS developed a reclamation process for the production of high quality

[251] Matthews N & McCartney M (2017) 'Opportunities for Building Resilience and Lessons for Navigating Dams: Dams and the Water Energy Food Nexus.' *Environmental Progress & Sustainable Energy*. Vol. 37, No. 1.
[252] The report is unfortunately not yet available in the public domain.
[253] Africa Energy https://www.africa-energy.com/live-data/article/zambia-p%C3%B6yry-undertake-kafue-gorge-lower-environmental-assessment, accessed on 11 December 2018.
[254] https://allafrica.com/stories/200905190363.html, accessed on 11 December 2018
[255] Johnson O et al, op. cit.
[256] Ibid.

reclaimed water and tested it at laboratory and pilot scales in 1994 and 1995. It was envisaged that Mondi Paper, situated in the southern part of Durban adjacent to the Southern Wastewater Treatment Works (SWTW), who had previously approached EWS, would be the main customer for the reclaimed water (eThekwini Municipality, 2011). Table 7 below gives a timeline of this project from conception to commissioning.

Table 7 – DWR Project History

PROJECT HISTORY	
1993	Mondi approached Durban for the provision of additional recycled water
1994	Durban implemented a technical feasibility study
1995	Pilot plant process investigation indicated the technical viability of the project
1996	Durban undertook construction of the secondary treatment plant
1997	Rand Merchant Bank indicated the financial feasibility of the project
1998	Durban invited tenders for a Public Private Partnership
1999	The concession contract was awarded to Durban Water Recycling
2000	Plant construction began
April 2001	Plant commissioning
May 2001	First water sales

Source: eThekwini Municipality

Despite the proven technical success of treating the wastewater, the economic feasibility was in doubt. EWS then approached the Rand Merchant Bank (RMB) in 1997 to assess the project. RMB produced a report indicating that, provided certain guarantees were obtained, the project was economically feasible. The costs, technical complexity and the risks associated with the project lead EWS to recommend to the Council that it would be in the Council's best interests to consider a PPP.

In 1999, after a formal tender process, Durban Water Recycling (Pty) Ltd was awarded a 20-year concession contract for the production of high quality reclaimed water. Construction commenced in 2000 and was completed in 14 months. The R74 million construction phase included upgrading the activated sludge process from 50 to 77 million litres per day, the construction of the tertiary plant, tying in with pre-existing and decommissioned assets, refurbishment of the SWTW high-level storage tank and the installation of the reclaimed water reticulation system.

- **Project Finance**

The project was financed by different stakeholders as demonstrated in Table 8 below.

Table 8 – Project Financing

INVESTOR	AMOUNT
Equity from DWR shareholders	R74 million (Euro 11,3 million)
Development Bank of Southern Africa	**R18 million (Euro 2,8 million)**
Rand Merchant Bank	R24 million (Euro 3,9 million)
French Protocol	**Euro 2,3 million**
Project Value	**R74 million (Euro 11,3 million)**

- **Commissioning of the Plant**

Located in the south of Durban on the grounds of the eThekwini Water Services' SWTW, the plant was commissioned in May 2001. Officially opened by the then Minister of Water Affairs and Forestry, Ronnie Kasrils, the R74m sewage-to-clean-water recycling plant would treat 47.5 million litres of domestic and industrial

wastewater to a near potable standard for sale to industrial customers for direct use in their processes. Understandably the saving of treated potable water is of great benefit to Durban.

- **Project Structure**

Lower Tariffs

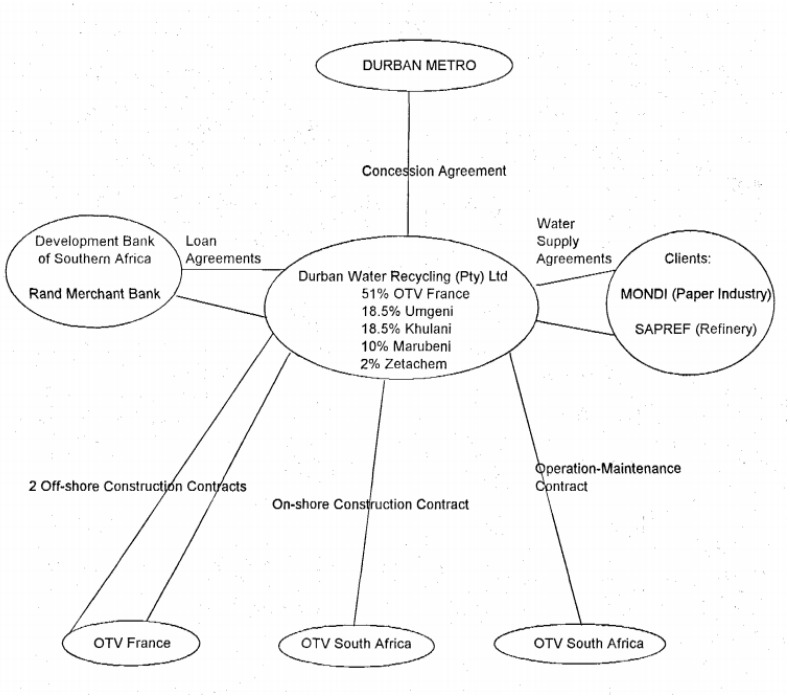
A considerable benefit to industries is the lower tariff when compared to the normal tariff paid by industries for potable water. The two largest customers so far are the Mondi Paper Mill in Merebank and the Sapref Refinery, owned by Shell and BP. The first private water-recycling project in South Africa, this plant is the culmination of a 20-year Build Own Operate and Transfer (BOOT) contract awarded to treat 10% of the city's wastewater. Vivendi Water is the major stakeholder in Durban Water Recycling and its partners are Zetachem, Khulani Holdings, Umgeni Water and Marubeni Europe. Some of the key elements for the success of the project is ETW's vision in initiating the project, Vivendi's ability to provide finance and to implement innovative, tailor-made technical solutions and Mondi's endorsement of the project, by committing its entire paper production at its Merebank Mill to recycled water. Figure 8 below shows the partners in the consortium (Mile, 2018).

Figure 8 – Durban Water Recycling consortium

Source: Mile organization

Figure 9 below illustrates in detail how the contract was structured with the individual shareholding for each partner listed who was involved in construction.

Figure 9 – Project Structure



Source: IRC International Water.

- **Drinking Water**

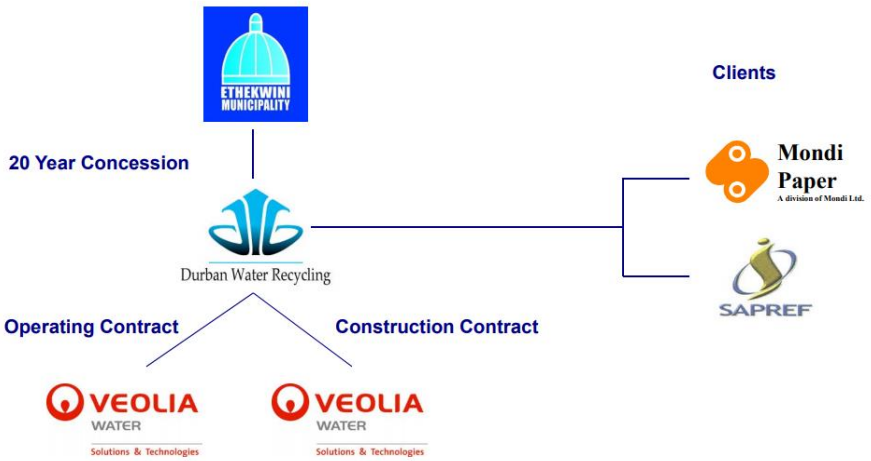
The plant frees up sufficient drinking water for approximately 300 000 people: "This contract has borne many advantages to the city. Apart from the financial investment and world-class technology, we will be recycling effluent. This in turn reduces the demand for potable water, and reduces the quantity of effluent we put back into the environment. Industry will reduce its costs by accessing less expensive water and it will also free-up water to extend services to the impoverished[257]."

- **Technical Aspect**

Veolia has installed a highly specialised water treatment process, specifically tailored to meet the exacting water quality requirements of DWR's main client, Mondi Paper. Mondi Paper uses the recycled water directly for the production of fine paper which is extremely sensitive to the water quality. The recycled water specification includes 22 parameters that are measured in the South African water standard (SABS 241:1999). Apart from Mondi (the paper producer) the other main client is the joint venture, Shell and BP South African Petrol Refineries (Pty) Ltd (SAPREF). SAPREF is the largest crude oil refinery in the country and houses 35% of South Africa's refining capacity. SAPREF processes 24 000 tonnes crude per day and makes 10 main products in 46 different grades. SAPREFSAP produces 2.7 billion litres of petrol per year (SAPREF, 2018). The production of potable quality recycled water to a guaranteed standard continuously and reliably, from domestic and industrial wastewater, is a showcase for water process technology and process engineering (eThekwini Municipality, 2011). The contract is shown in Figure 10 below depicting the main clients and the operators (Mile, 2018).

Figure 10 – Contractual Framework

[257] Ethekwini Municipality, The Durban Water Recycling Project: http://www.durban.gov.za/City_Services/water_sanitation/Services/Pages/durban-recyling.aspx



Source: Mile organisation.

The water produced in the plant has immediate buyers and little goes to waste. Table 9 below shows how much is produced daily and how much is consumed by the main clients.

Table 9 – Water production and consumption

PRODUCER/CONSUMER	QUANTITY PER DAY
Production Capacity	47 500 m^3/day
Mondi (paper Industry) Consumption	**30, 000 to 39,000 m^3/day**
SAPREF (Refinery) Consumption	3,300 to 8,900 m^3/day

- **Project Successes**

The project is hailed as a success from many different quarters.

Table 10 – DWR project successes

CATEGORY	DESCRIPTION
Environment	• At capacity the plant reduces the city's water consumption by 7%. • Extends the life of the city's water catchment resources. • Unused water can be directed to unserviced communities. • Pollution Load Reduction and Waste Minimisation. • Reduction in the sea outfall pollution load by 24%. • The process operates at 97.9% water utilisation efficiency.
Partnerships	• **The 20-year concession is the first PPP of its kind in South Africa.** • **Strong reliance on the relative expertise of the partners.** • **A model of success for PPPs in South Africa.**
Economics	• Delayed capital investment for increased marine outfall pipeline capacity. • Delayed capital investment for future bulk potable water supply infrastructure. • No capital investment for the construction of the recycling plant. • Creation of a long-term revenue stream from a levy raised on the production of recycled water. • Reduction in the city's operating costs. • Consequent reduced cost of water services to Durban's citizens. • Attractive investment opportunity. • Sustainable, long-term project

	• Demonstration of the company's technical capacity. • 52% saving in water tariff • Probable lower escalation of recycled water than potable water. • Significantly enhanced drought supply security.
Technical	• **Treatment of wastewater to a very high quality standard** • **Extensive re-use of existing infrastructure.** • **Compact design.** • **Fast track design and construction.** • **Waste minimisation.**

7. South Africa: The Gautrain Rapid Rail Link Project

- **Background**

The Gauteng province has a high population density and a strong and vibrant economic base. One of the consequences is that the province also faces traffic congestion, especially on the N1 Schoeman freeway which is located between Pretoria and Johannesburg. In the early 2000s (and prior to the Gautrain PPP), the N1 freeway had up to 157,000 vehicles driving on the freeway every day, and was overwhelmed by traffic congestion. With the annual traffic growth rate of 7% for Gauteng province, it was argued that the traffic congestion was bound to get worse. Alternative transport arrangements became a topic of discussion – one such proposal was the revival of a passenger rail network system through the introduction of a rapid transit railway between Johannesburg and Pretoria to alleviate traffic congestion on the N1 freeway.

It was posited that the introduction of the Gautrain-Rapid-Rail-Link would result in one fifth of private car users on the N1 freeway abandoning the use of private car in favour of rail thereby reducing traffic congestion on the freeway. It was also envisaged that the link would carry over 100,000 passengers per day. The project was conceptualised in 1997 and implementation started in 2000 when the proposal for a rapid-rail-link system was put out for tender in 2000. It resulted in the construction of an 80-kilometer rapid rail link with ten train stations connecting Johannesburg and Pretoria; and Johannesburg and Johannesburg International Airport.

The implementation of the Gautrain vision gained momentum through the announcement that South Africa would host the 2010 FIFA World Cup on 15 May 2004, and the Gautrain's project stakeholders sought to have the link between the OR Tambo International Airport and Sandton commissioned in time for the Soccer World Cup. Indeed, with only a few days before kick-off, the first part of the system, between Sandton and OR Tambo Airport, opened to the public on 8 June 2010, in time for the 2010 FIFA World Cup. The route from Rosebank to Pretoria and Hatfield commenced operations on 2 August 2011, while the remaining section from Rosebank to Johannesburg Park Station opened on 7 June 2012.

- **Contract details**

In 2006, a contractual agreement between Gauteng provincial government and the Bombela Consortium was entered into, creating the official Gautrain-Rapid-Rail-Link (Gautrain) PPP. The Gautrain PPP is a 20-year concession contract between the Gauteng provincial government (which is the public sector partner in this PPP) and the Bombela Consortium (which is the private sector partner).

The Gautrain PPP is a DBFOT (build-design-finance-operate-transfer) concession agreement. The Bombela Concession Company is responsible for connecting the City of Johannesburg with the City of Pretoria - with a detour to connect Johannesburg with the Johannesburg International Airport. To enable the operation of the rapid-rail-link, the Bombela Concession Company is tasked with the responsibility to provide and operationalise depot equipment; trains; signaling systems and feeder/distribution buses. The 2002 Environmental Impact Assessment for the Proposed Gautrain-Rapid-Rail-Link between Johannesburg, Pretoria and Johannesburg International Airport Report notes that "feeder bus services transport passengers from points of destination to

the train stations while distributor bus services transport passengers from train stations to their final destinations".[258]

The Gauteng provincial government was tasked under the PPP agreement to provide land for the construction of the track. In addition, the provincial government bears the patronage guarantee obligation which stipulates that regardless of low demand for Gautrain services, the Gauteng provincial government would pay Bombela Consortium patronage fees to cover the capital, maintenance and operational costs of the Consortium.

The Bombela Concession Company is the special purpose vehicle (SPV) set-up with the sole purpose to govern the construction and operational side of the project. The SPV is responsible for managing the operational aspect of the project such as appointing contractors for the building of the actual infrastructure and the actual operation of the project, including associated services. For example, besides the operation of the Gautrain, it also manages the bus service contracts.[259]

- **Gautrain financing**

As explained above, the provincial government is the public sector partner in the Gautrain PPP. It is also the financier of the project. The total development cost of the Gautrain is R26 billion ($1.9 billion) and the costs are spread across five sources of funding, namely: the national budget allocation (through the annual Division of Revenue Act which is channeled through the Department of Transport); an MTEF budget allocation from the Gauteng provincial government; private sector equity; private sector borrowing and provincial borrowing.

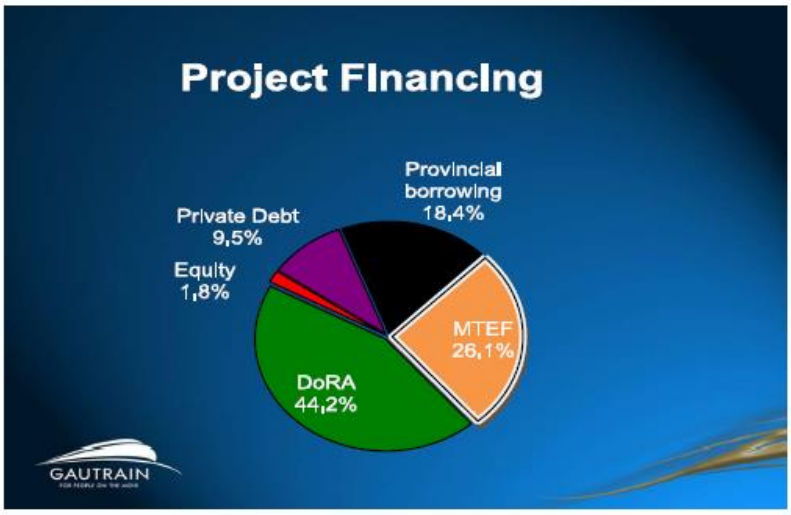
The government contributes 88.7% of the costs of the project while the private party, the Bombela Consortium, only contributes 11.3% to the cost of the Gautrain PPP. It must be borne in mind that this type of PPP is one where government is the financier, and the private sector provides the actual infrastructure. The private partners borrow finance from the government (88.7%) and fund the remaining 11.3% with their own revenue (which could be through their own private borrowing, or equity). Government receives a return on their borrowings through the interest charged to the Bombela Consortium, while the Consortium is awarded the rights to the proceeds of the Gautrain for the duration of the PPP. The risk is shared in that the Bombela Consortium is contractually obligated to provide the infrastructure at the standards agreed to, as well as repay the government loan on the terms set. On the other hand, the government takes a risk in assuming that Bombela can fulfil its contractual obligations.[260]

[258] Edith Wakondiye Chikagwa, A policy analysis of the Gautrain Public Private Partnership in South Africa 2014. http://researchspace.ukzn.ac.za/xmlui/bitstream/handle/10413/12156/Chikagwa_Edith_Wakondiye_2014.pdf?sequence=1

[259] Gautrain Management Agency, 2013: pages 34, 38 and 46. http://gma.gautrain.co.za/uploads/doc/GMA-Annual-Report-2013.pdf

[260] Edith Wakondiye Chikagwa, A policy analysis of the Gautrain Public Private Partnership in South Africa 2014. http://researchspace.ukzn.ac.za/xmlui/bitstream/handle/10413/12156/Chikagwa_Edith_Wakondiye_2014.pdf?sequence=1

Figure 11 – Breakdown of the Percentages that each of the sources makes to the Gautrain



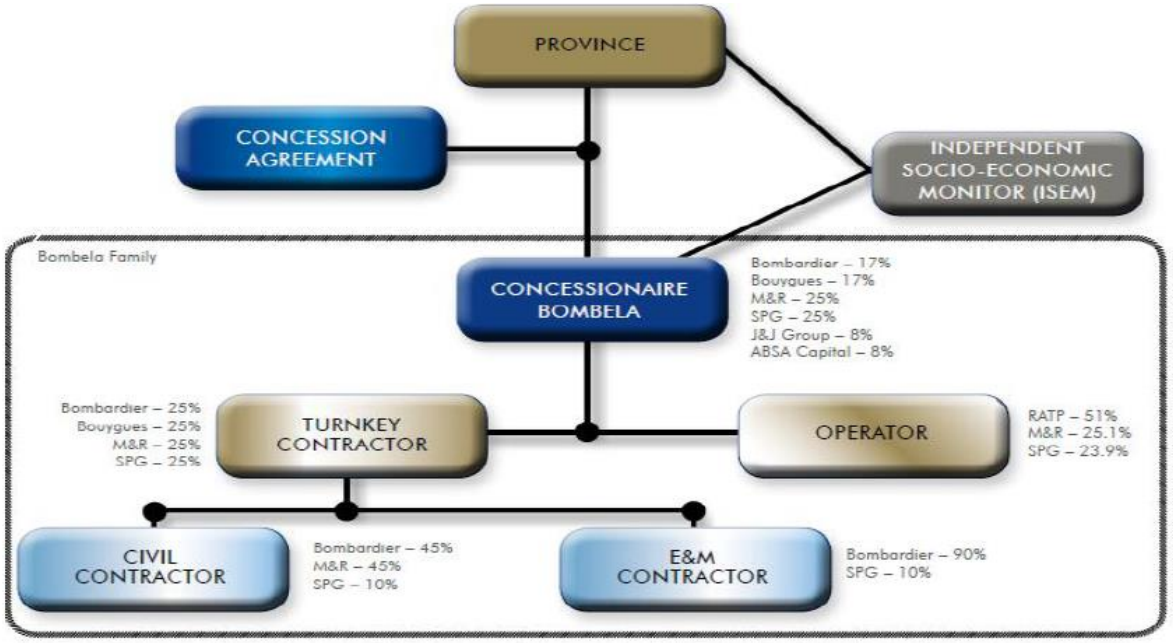
Source: Edith Wakondiye Chikagwa, 2014, page 64. http://researchspace.ukzn.ac.za/xmlui/bitstream/handle/10413/12156/Chikagwa_Edith_Wakondiye_2014.pdf?sequence=1

- **Shareholders and Black economic empowerment**

The successful bidder was the Bombela Consortium. The Bombela Consortium is made up of five shareholders, namely Murray and Roberts (33%), Strategic Partners Group (SPG) (25%); Bombardier (17%), Bouygues Travaux Publics (17%) and the J and J Group (8%). The Gautrain has led to the promotion of BBBEE. The inclusion of SPG as a partner in the Bombela Consortium and the procurement of employees and services from black South Africans has increased the economic prospects of previously disadvantaged people. The diagram below illustrates the extent to which BBBEE has been infused in the Gautrain development.[261]

[261] *Ibid.*

Figure 12 – Partners in the Gautrain



Source: Edith Wakondiye Chikagwa, 2014, page 70. http://researchspace.ukzn.ac.za/xmlui/bitstream/handle/10413/12156/Chikagwa_Edith_Wakondiye_2014.pdf?sequence=1

- **Governance**

As advised by Treasury regulations, the Gautrain PPP is comprised of key governing structures set up for the purpose of managing different aspects of the Gautrain PPP. These are: the Gautrain Management Act (Act 5 of 2006), the Gauteng Management Agency (GMA), and the Bombela Concession Company.

The Gautrain Management Act provides for the establishment of the GMA with the mandate to manage and oversee the Gautrain PPP project. The Act also empowers members of the Gauteng provincial Executive Council (MECs) to appoint the Board of the GMA. This ensures that the public partner (the Gauteng province) in this PPP has oversight of the activities of the GMA. Section 14 mandates the Board to monitor the activities of the GMA and ensure compliance with the provisions of PFMA. The section also gives powers to the Board to oversee future contracts with financial implications between the GMA and other institutions.[262]

- **Gautrain Project Cycle**

The lifespan of the Gautrain is divided into two phases: the first phase lasting 54 months and the second, 15 years. The first 54 months were for the designing and construction of the rapid-rail-link system while the remaining 15 years constitute the operational period. The construction phase commenced in 2006 and was supposed to end in mid-2010, while the operational phase would start in the mid-2010 and end at 2026 after which period the rail-rail-link system would be transferred wholly to the Gauteng provincial government, bringing an end to the PPP agreement.[263]

Initial works for the Gautrain started in May 2006 and construction commenced after the signing of the Concession Agreement between the Gauteng provincial government and the Bombela Concession Company on

[262] Gautrain Management Act 5 of 2006. http://gma.gautrain.co.za/uploads/GMA_ACT_5_OF_2006.pdf
[263] Gautrain Management Agency, 2013: pg 38. http://gma.gautrain.co.za/uploads/doc/GMA-Annual-Report-2013.pdf

28 September 2006. Construction took place in two concurrent phases: the first phase involved the construction of the section between Sandton and ORTIA, as well as the Midrand station. The second phase included the remaining seven stations.[264]

The first phase entailed the following: The inception phase began in February 2000 when the project was announced and a project technical team was appointed. It ended in June 2000 with the development of an inception report. Between 2001 and 2002, the following submissions were made to National Treasury which resulted in the first and second PPP Treasury approvals being granted in 2002: a feasibility study, a Request for Qualification (RFQs) submission; issuance, receipt and evaluation of RFQs were completed; a bid evaluation report, and a Request for Proposals (RFPs) documents. The announcement of Bombela and Gauliwe consortia as successful bidders was done in 2002. The evaluation of the latter consortia's proposals was done between 2003 and 2005. The evaluation report on the proposals were submitted to the PPP Unit and thereafter the third Treasury approval was obtained in 2005 which led to the start of negotiations with the Bombela Consortium. The PPP agreement Management Plan was then submitted to National Treasury which resulted in the subsequent announcement of the Bombela Consortium as the preferred bidder in 2005.

Phase 3 of the PPP project was the development phase of the project which began in August 2005 and lasted until June 2012. The main activities include the mobilisation of resources including finances. For example, it was during this phase that R7.1 billion ($536.2 million) was set-aside in the national budget in 2006 and a R3.1 billion ($234.1 million) loan commitment was made by Rand Merchant Bank and Standard Bank to Bombela Consortium in 2007. In addition, the following was also achieved: the relocation of utilities such as water pipes and electricity grids; finalisation of agreements with Bombela Consortium; preliminary design of all sections of the rapid rail link; commencement of construction; dispute settlement and monitoring and receipt of progress reports commenced. Phase 4 is the delivery of the construction which took place in June 2012. The delivery of the operational phase continues as noted earlier until September 2026 along with the exit.[265]

- **Implementation challenges**

A number of issues have arisen in the course of the project cycle which threatened the Gautrain project. The rail system has experienced rampant theft of copper cables which have not only caused disruptions in the schedules for trains but also loss of money from potential train passengers. During the 2010/11 financial year, twelve cases of cable theft were reported.

Strikes by employees of the Bombela Concession Company have also caused problems for the Gautrain PPP. Between August 2011 and February 2012, the Company experienced five employee strikes. Four of the strikes were by bus drivers while one was by security guards. The Bombela Concession Company alleged that the strikes resulted in a loss of train passengers of between 10% and 15%.

Disputes between the Bombela Concession Company and the Gauteng provincial government pose another challenge to the Gautrain's planned project cycle. The 2013 GMA Annual Report notes that despite Bombela Concession Company indicating that it had fulfilled its construction obligations for the construction phase of the project and the Independent Certifier confirming the same in June 2012, the Gauteng provincial government refused to take delivery. According to the Report, the Gauteng provincial government argued that water leakages along some parts of the underground tunnel of the rapid-rail-link were enough evidence that the construction was not satisfactorily done. The matter has since been resolved by the Arbitration Foundation of

[264] Gautrain – our journey to a better Gauteng: Economic impact of the Gautrain system and future expansion on the Province Main Report, November 2014. A KPMG report commissioned by the Gauteng provincial government and the Gautrain Management Agency. http://gma.gautrain.co.za/uploads/doc/Gautrain_Economic_Impact_MAIN_REPORT.pdf

[265] Edith Wakondiye Chikagwa, A policy analysis of the Gautrain Public Private Partnership in South Africa 2014. http://researchspace.ukzn.ac.za/xmlui/bitstream/handle/10413/12156/Chikagwa_Edith_Wakondiye_2014.pdf?sequence=1

South Africa which ordered Bombela Consortium on 23rd November 2013 to conduct corrective works along some parts of the link.[266]

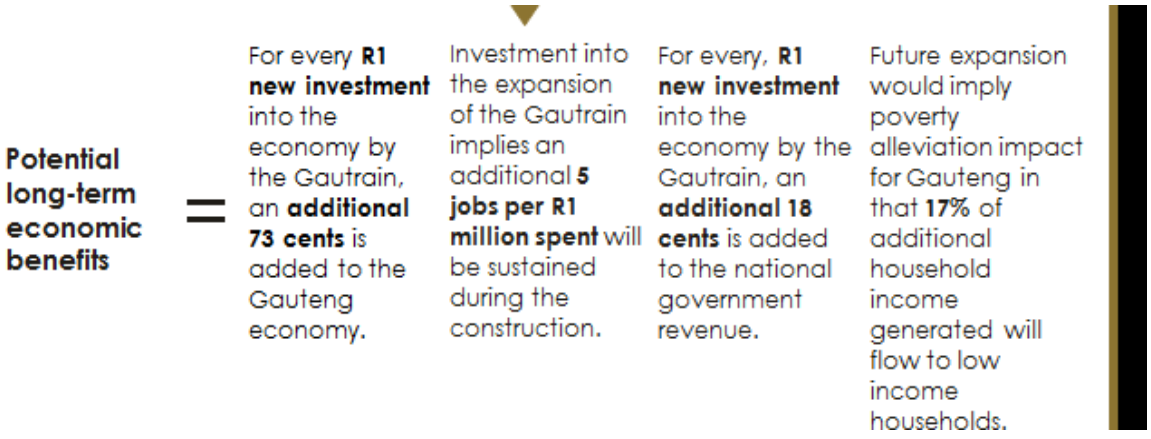
- **Socio-economic impact**

In 2014, the GMA undertook, through the services of KPMG, a Macro-Economic Impact Assessment[267] (MEIA) to determine the impact that the Gautrain system has had on the Gauteng Province – including its economy, job creation, perceptions of users and non-users, lifestyle changes, transport patterns, property values and links to government policy. In addition, this study would support GMA's plans to extend the services of the Gautrain to the eastern and western areas. Some of the findings of the MEIA are summarised below.

Overall, the report concluded that even though the Gautrain was a capital-intensive project by nature, it is still seen as a major facilitator of income and job creation in Gauteng and elsewhere in South Africa. The project provided a number of substantial economic benefits to Gauteng, such as economic growth, the creation of jobs and poverty alleviation. The additional GDP that was created during the construction phase of R20 billion is representative of 1.7% of the province's GDP. The direct impact accounts for 50% if compared to the total GDP impact. This emphasises the importance of the so-called multiplier effects which the construction of the Gautrain has had on the Gauteng economy. The Gautrain's construction sustained 121 800 jobs in Gauteng over the entire 6-year construction period, representing about 2.5% of the total formal employment in Gauteng during 2013. About 34 800 jobs were created directly by construction process. Over the 6-year period, approximately 87 000 jobs were created in those sectors that provided inputs to the construction components of the system.

The total government revenue increased by an estimated R5 billion over the 6-year period due to the construction of the Gautrain. This is through both the collection of direct and indirect tax revenue by Gautrain, as well as the broader fiscal impacts generated through the linkages the Gautrain construction has had with other economic sectors. Although many of the benefits are not quantifiable in monetary values (for example a significant decrease in air pollution), those benefits that can be quantified are already substantial, highlighting the positive economic contribution to the Province stemming from the Gautrain project. These contributions include increased national GDP and improvements in both the government's fiscal position as well as the country's balance of payments (see Figure 13 below):

Figure 13 – Income generated from the Gautrain



Source: KPMG MEIA report

[266] Gautrain Management Agency, 2013:pg 45. http://gma.gautrain.co.za/uploads/doc/GMA-Annual-Report-2013.pdf
[267] Gautrain – our journey to a better Gauteng: Economic impact of the Gautrain system and future expansion on the Province Main Report, November 2014. A KPMG report commissioned by the Gauteng provincial government and the Gautrain Management Agency. http://gma.gautrain.co.za/uploads/doc/Gautrain_Economic_Impact_MAIN_REPORT.pdf

- **Next steps**

According to 2018 media reports,[268] there are serious plans to extend the existing Gautrain system by an extra 150km of rail and 19 stations, marking the Gautrain's biggest build yet. There are further proposed improvements to be made to the Gautrain system in the next two years including upgrading the signalling system to reduce the time (headway) between trains, thereby increasing capacity on the network. The GMA is also looking at adding an additional, fourth power source to enhance the electricity supply to the system. A feasibility study for the proposed Gauteng Rapid Rail Integrated Network Extension Plan has been completed. The feasibility study concludes that the extension project will provide significant economic and transport related benefits to the Gauteng province. However, the decision for the extensions is not imminent and the GMA is engaging with the National Treasury on additional Revenue Models and Demand Studies and has just started with a Preliminary Route Alignment study for the Gautrain extension.

In October 2018, media reports[269] state that the preferred bidder in the race to provide 12 new four-car trains to the Gautrain system should be announced by the end of 2018. According to the CEO of the GMA, Mr. Jack van der Merwe, funding for the project has been secured, however, "the challenge is how to structure the acquisition and use of these new train cars within a concession with a different life cycle"[270]. He explains that the issue in the Gautrain rolling stock contract is the fact that the 48 train cars to be acquired are going to operate significantly longer than the current Bombela concession period which is set to end in 2026. This means the train cars will have to be held in a trust, which will hire the rolling stock to Bombela.

According to a presentation[271] done by Mr. Jack van der Merwe, Gautrain stakeholders (after the completion of the Bombela concession period in March 2026) will have three options to choose from regarding the future of the project, namely: GMA takes over the operations and maintenance of the system; a new PPP contract is drafted to operate and maintain the existing system; or a plan is made for a new design, build, partially finance an extension of the existing system and operate and maintain the current system.

8. South Africa: Dolphin Coast water and sanitation concession, Kwa-Zulu Natal

History

The Dolphin Coast water and sanitation concession is under the Kwa-Dukuza Local Municipality.

The area termed the Dolphin Coast is situated approximately 50 km to the north of central Durban along the North Coast Development Corridor. The BoDC was established by a proclamation gazetted on 1 February 1995.

The BoDC was the first municipality in the country to go the PPP route after the 1994 general elections. However, this is probably not the first water service to be outsourced, as there had previously been the Albert Falls Company in Howick KZN, which had covered a relatively small area.

The decision to look for a private partner for water and sanitation services was taken on 27 November 1996. The involvement of the private sector was anticipated to bring in management efficiencies and access to cheap

[268] Irma Venter, Senior Deputy Editor, Creamer Media, 3 May 2018. "Gautrain rolling stock tender delayed 'by complexities', says Van der Merwe" http://www.engineeringnews.co.za/article/-gautrain-rolling-stock-tender-delayed-by-complexities-says-van-der-merwe-2018-05-03

[269] Irma Venter, Creamer Media Senior Deputy Editor. "Announcement on preferred bidder for Gautrain rolling stock expected by year-end". 25 October 2018. http://engineeringnews.co.za/article/announcement-on-preferred-bidder-for-gautrain-rolling-stock-expected-by-year-end-2018-10-25

[270] *Ibid*

[271] Gautrain – our journey to a better Gauteng: Economic impact of the Gautrain system and future expansion on the Province Main Report, November 2014. A KPMG report commissioned by the Gauteng provincial government and the Gautrain Management Agency. http://gma.gautrain.co.za/uploads/doc/Gautrain_Economic_Impact_MAIN_REPORT.pdf

capital. In December 1996, the BoDC officials found out that it was very difficult to finance new water and sanitation projects without outside assistance. BoDC faced the demand for a large investment program to enable it to take the responsibility to provide water and sanitation services to communities in an efficient manner. The BoDC needed to implement a water loss management system, a telemetry system for reservoirs; to rehabilitate and upgrade pipelines and sewerage treatment works; to install a bulk supply system to cope with the future demands; to create a new customer management system and install diesel generators to act as backup for pumping stations among other tasks.

In 1996, the municipality approached the Department of Constitutional Development (DCD),[272] which brought in the Development Bank of Southern Africa (DBSA) to provide consulting assistance. R1 million ($75 528) was granted by the DCD to carry out feasibility studies on the water and sewerage reticulation system. On 27 February 1997, DBSA asked for a Request for Proposal (RFP) from the Dolphin Coast Municipality. The Borough Engineer developed a data room to gather comprehensive information on all activities such as housing, socio-economic studies, water and sewerage system, etc. This process of preparing the concession took close to two years to complete at a cost of R2.4 million ($181 268) provided by the DCD.[273]

Policy and legislative context

The regulatory framework affecting water and sanitation PPPs is a patchwork of laws consisting primarily of five different pieces of legislation:

- The Constitution of South Africa; Act 108 of 1996 (especially sections 151 - 164),
- The Local Government Transitional Act of 1993,
- The Water Services Act of 1997,
- The Municipal Structures Act,
- The Municipal Systems Act No. 32 of 2000.

Section 10c (7) (a) of the LGTA allows a local government to enter into an agreement with a private partner to 'exercise a power' or 'perform a duty' of the local government, such as the provision of water, removal of waste etc. It leaves the determination of tariffs to the local authority and the recovery of tariff revenues by the private partner. The Water Services Act, 108 of 1997, states that local authorities should provide water services. Section 19 confers on local governments the power to enter into contracts with private partners to provide water and sanitation services. Section 19 (2) states that a local government may only enter into a contract with a private sector water service provider after it has considered all known public sector water services providers that are willing and able to perform the relevant functions. The responsibility for water provision now falls under District Councils after the 1996 local elections, although there was a six-month phase-in period.

Role of the government

The state provided an environment conducive to the participation of different role players, mainly through high levels of official support. Senior government officials supported the involvement of the private sector through visits to the Dolphin Coast as well as through pronouncements in favour of private sector participation at public forums. The close support of the Department of Constitutional Development was mentioned above.

The then South African President, Thabo Mbeki's support for the concession came in August 1999 when the President addressed a BoDC Council meeting and expressed forthright support for the concession. Government support was sealed by this visit to the Dolphin Coast in 1999 at which the President received the freedom of the Borough.

[272] In 1996, the municipality approached the DCD to assist with the water situation in this area believing it's a human rights issue. The government through the DCD exerted strong pressure on all parties to see the concession launched. The former Minister of the DCD, Valli Moosa led the national government support for this project.

[273] David Hemson & Herbert Batidzirai. Public Private Partnerships *and the* Poor: Dolphin Coast Water Concession - Case study: Dolphin Coast, South Africa, 2002. University of Durban Westville. *Series Editor: M. Sohail.* Water, Engineering and Development Centre Loughborough University Leicestershire, UK. http://www.ucl.ac.uk/dpu projects/drivers_urb_change/urb_infrastructure/pdf_public_private_services/W_DFID_WEDC_HemsonPPP_and_Poo_Dolphin_Coast.pdf

Consultants (those of the DBSA, MIIU, Deloitte and Touche, Shepstone and Wylie and Bosch and Associates) have been at the centre of the process leading up to the concession: in writing the tender document, planning, analysis, and implementation.

DBSA was appointed advisor to the BoDC. A strong team of 16 officials from DBSA was assembled to, amongst other things, carry out financial modelling of the water waste water system; conduct a preliminary survey of potential financing options; assist with procurement and contracting procedures.

A Municipal Infrastructure Investment Unit (MIIU) was created to coordinate municipal investment projects involving the private sector throughout South Africa. During negotiations, the BoDC received additional financial and technical assistance from the Municipal Infrastructure Investment Unit. As in the case of the DBSA, MIIU has liaised and coordinated with national level stakeholders, and provided consultancy and financial assistance to the BoDC.

Financing

The project reached financial closure in January 1999 and is for a 30-year period. The project finance structure was as follows: debt of 21%, equity of 18% and government funding of 61%. The project value is R130 million ($9.8 million) and it will utilise the user payment method.

Approximately R30 million in capital investment has been committed by SWC during the first 5 years of the contract. The tender requires that investment be made in the development, maintenance and management of the services for both water and sanitation in the whole area. Direct investment by the concession amounts to R130 million ($9.8 million).

SWC has paid a contract fee of R200 000 ($15 105) and a performance guarantee of R5 million to the Council as defined in the contract. The performance bond acts as a guarantee in the event that SWC fails to deliver or withdraws from its mandate. All debts with respect to the water and sewerage system were transferred to SWC upon takeover of services. SWC pays an average of R2.6 million ($196 374) per annum for the use of the assets for the first 17 years. Thereafter the annual payment will drop drastically as the previous debts related to the water and sewerage works are cleared up. An annual concession fee of R554, 850 ($41 907) to increase with inflation) is to be paid by SWC. This amount was used to set up a monitoring and compliance office.[274]

Key features of the contract[275]

The process of developing and implementing the contract took about two years. The resultant contract document (265 pages) was the product of inputs from various stakeholders including technical, legal and financial experts.

- **Bidding Process**

In April 1997, 15 firms and consortiums submitted proposals to the BoDC. This number was short-listed to four companies, on advice from DBSA, to ease the adjudication process. Detailed bids were then requested from the four and three were received on 31 August 1997, focusing on two areas - financial and technical issues. Umgeni Water had to be withdrawn because of a stated conflict of interest (Umgeni is a supplier of treated bulk water to the BoDC), although it was later reengaged after legal opinion was received. The proposals were in turn sent to the DBSA for evaluation since the BoDC felt it did not have the capacity to undertake the task.

Four companies that were deemed technically capable were short-listed. The DBSA made the final recommendation and in November 1997, a Council meeting announced the preferred bidder based on technical issues. In January 1998, the then Minister of Constitutional Development and Provincial Affairs visited the Dolphin Coast to announce the successful bidder, SAUR International. The announcement was followed by negotiations that lasted a year to prepare the necessary documents.

The concession to manage the local authority's water and waste water services for the next 30 years was led by SAUR Services (the South African arm of SAUR International). The Dolphin Coast Water Concession was signed

[274] *Ibid*

[275] Borough of Dolphin Coast *Concession Agreement entered into between Borough of Dolphin Coast and Siza Water Company, 1999.*

between the Borough of Dolphin Coast and Siza Water Company on January 29, 1999 and implemented on April 1, 1999. The contract is exclusive to the winning bidder.

- **Termination/extension of contract**

At the end of the 30 years, the contract may be terminated or renewed, it may be awarded to another company, or the municipality could take over the provision of services. The Company may terminate the agreement, although a penalty would have to be paid to the BoDC. Provision is made to ensure that there is assured smooth water and sanitation services after the expiry of the contract.

- **The Concessionaire**

The concessionaire was required by law to have local partners as a means of empowerment and to register locally to operate within the confines of South African law.

- **Siza Water Company**

After winning the bid, SAUR International formed a local Company, Siza Water Company (SWC) - a consortium of five partners. SWC has been responsible for the provision of water and sanitation services to the Dolphin Coast since 1 April 1999.

- **Shareholders**

Fifty eight percent (58%) of shares in SWC are owned by SAUR Services, and four South African empowerment partners own the remainder of shares, viz.:

- SAUR Services Ltd. (58% of shares)
- Metropolitan Life Ltd. (23% of shares) - sixth largest life assuror in South Africa with strong financial track record. A major shareholder is the empowerment group New Africa Investment Holdings (NAIL).
- Women's Development Bank Investment Holdings (Pty) Ltd (5% of shares) - established in 1996 for women participation in the economy.
- The Investment Progress Group Holdings (IPG) (5% of shares) - established in 1995. Group of professionals from previously disadvantaged communities.
- NANO Investment Holdings (Pty) Ltd (5% of shares) - young professionals of previously disadvantaged communities mostly MBA.

The concessionaire can only change share ownership upon approval by the BoDC but is compelled to hold not less than 25% of shares. This is designed to ensure that international management expertise is maintained throughout the duration of the contract. Section 70.4 of the contract stipulates that should SAUR fail to maintain its prescribed minimum shareholding of 25% plus one share in the concessionaire, the Council may subject to giving SAUR thirty days' notice to rectify the breach, at its election, terminate the Contract.

Although various figures are provided in relation to the value of the contract, the precise amount of foreign capital invested is not clear although total capital invested amounted to about R7 million ($528 700).[276] The shareholders mentioned above did not invest in SWC and received shares without adding to its financial equity and appear to be free riders in the Company.

- **Roles and responsibilities of Concessionaire**

As the Concessionaire, SWC was granted the right to possess, use, operate, manage, maintain, rehabilitate, redesign, remove, improve and expand the existing works at its own risk and cost. The Company is also expected to meet prescribed levels of service that are based on affordability and to take full commercial risk by maintaining and developing the infrastructure, providing the service, billing the customers and being responsible for tariff collection. SWC leases existing assets and the new assets. SWC will took over all existing debts pertaining to the service network. However, all fixed assets including new infrastructure invested by SWC will remain the property of the BoDC although they are entrusted to the concessionaire for the duration of the contract.

The Concessionaire is seen as a service provider but investments will revert to the BoDC at the termination of the agreement to enable the BoDC to continue offering services. Alternatively, the BoDC will have gained

[276] *Ibid*

sufficient experience of private participation and could decide whether to retender as an option to ensure efficient service provision or to take over itself.

Job creation
The 30-year period of the concession was considered long enough for the Company to make a profitable return on its investment. During the first 10–15 years, it was anticipated the developmental work would be accompanied by possible losses. The concession agreement placed regulations on staff appointments and retention, security of tenure, leave, salary, benefits, training and union membership.

The preferred bidder is obliged to employ locals preferably and to limit the employment of people from outside the Dolphin Coast area. The undertaking not to terminate employment and to permit continued union activities by workers has been described as the defining moment for the concession. These issues appeared until then to be the main bottleneck for the concession agreement.

Of the original 22 staff from the BoDC who were transferred to SWC, only two resigned, and with additional recruitment there is a staff complement of 37. No one has been retrenched so far and employment has increased by 46% as Siza begun improved maintenance and system expansion. A new Provident Fund has been created for employees and an Employee Benefit Trust has been created that now holds four percent of Siza shares (Leigland, August 2000).

Social investment programme
Section 51.5 of the contract recorded that the concessionaire will establish and implement a fund within six months of which the primary objective will be the uplifting and development of the youth and community within the concession area. Siza Water Youth and Community Development Fund (SWYCDF) was established in September 1999 and is managed by a local committee. Projects that were funded were identified in the community by community leaders. The programme kicked off with R75 000 ($5 664) and saw equipment being donated to schools and funding of small-scale agriculture programmes being implemented among other projects. Scholarships have been provided to each of the eight local schools. Drama skills workshops were held at schools. To date more than 16 Community Development Projects have been funded through the SWYCDF.

9. South Africa: Mbombela water and sanitation concession, Mpumalanga province

Summary

The Mbombela water and sanitation concession is under the Mbombela Local Municipality and the contract is for a period of 30 years. The project finance structure was as follows: Debt of 40%, Equity of 31%, Government funding of 29%. The project follows a user charge principle as a method of payment. The project value is R189 million ($14.2 million).

Background

With the assistance of DBSA, a short-list of eight potential bidders was prepared for the Nelspruit Concession and the Request for Proposals (RFP) was issued in December 1996. A critical item not included in the RFP was a draft contract: instead, a contract term sheet, which identified the main principles to be applied in the future contract, was included. Five companies submitted proposals and the Greater Nelspruit Utility Corporation (now operating under the trading name, Silulumanzi) ultimately was evaluated as the preferred bidder and a contract was signed 30 months later in April 1999. Financial closure of the contract was achieved and various other matters were eventually resolved to allow the concessionaire to begin operations on 1 November 1999.

Mbombela is situated in the Ehlanzeni District of the Mpumalanga Province in South Africa. It serves as the capital of Mpumalanga Province. The original mandated area was the Nelspruit town council in the municipality but after a new demarcation the concession inherited a bid area outside of Nelspruit that formed part of the

previous Kangwane self-governing territory. The number of households to be serviced thus grew and the population served by the concession in the eight areas is about 400,000 and represents about 74,000 households. The increased responsibility placed pressure on the concession to meet the new demand for water services.

Sembcorp Utilities South Africa (Pty) Ltd, trading as Sembcorp Silulumanzi (Sembcorp), is responsible, as concessionaire, for water supply and sanitation within the greater Nelspruit area of Mbombela.

Requirements for local partners

It was a requirement of the RFP that each bidder should include a locally based Black Economic Empowerment (BEE) partner with at least 10% shareholding in the concession company. Each of the five bidders developed separate BEE partners involving various community and politically based organisations. This could have been one of the factors that caused delays to the signing of the contract due to the opposition to the preferred bidder by all the groupings that were associated with the various unsuccessful bidders.

Contract design[277]

- **Concessionaire**

The 30-year concession contract was awarded to the single purpose private company, The Greater Nelspruit Utility Company, with Biwater Capital BV (registered in the Netherlands) having a shareholding of 64%, Biwater Operations (Pty) Ltd (South African) with 26% and local empowerment partner Sivukile with 10%. The contract also required a further 41% shareholding out of Biwater Capital's 64% be available on option for Sivukile for the first two years. Five percent of the total shareholding, from the other shareholders, was to be made available for staff as part of an incentive scheme. Biwater Capital now operates under the name of Cascal.

- **Assets**

The existing fixed assets were leased to the concessionaire for R10 million ($755 287) per year and moveable assets were leased for R582 000 ($43 957) per year for the first 10 years. These amounts approximated the cost to Council of existing borrowings on these assets. In each case the lease fee was set at R50 per year after the 10th year of operation. The proceeds from any disposal of movable assets were to be re-invested in the operation. All assets were to be returned to Council on termination of the contract.

- **Fees and Guarantee**

An annual concession fee of R1.25 million ($94 410), adjusted annually for inflation, was to be paid by the concessionaire until the fifth year. Thereafter the concession fee was to be set at the cost to the Municipality for contract monitoring. A performance guarantee of R7.5 million ($566 465), to be annually increased for inflation, was to be lodged by the concessionaire.

- **Trade Union Involvement**

Initial discussions with the local branches of the two trade unions identified concerns about potential job losses and loss of benefits. These were addressed in the principles that were to be included in the concession contract. However, when these matters were referred to the provincial and national structures of the South African Municipal Workers Union (SAMWU), the debate became more ideological and SAMWU declared their opposition in principle to a concession. Eventually, after major delays, an agreement was reached between the Confederation of South African Trade Unions (COSATU) and the South African Local Government Association (SALGA) on 11 December 1998 - the Framework Agreement for the Restructuring of Municipal Service Provision.

[277] Sugen Chetty and John M. Luiz. The Experience of Private Investment in the South African Water Sector: The Mbombela Concession, ERSA working paper 429, April 2014. Economic Research Southern Africa (ERSA) is a research programme funded by the National Treasury of South Africa.
https://econrsa.org/system/files/publications/working_papers/working_paper_429.pdf

This document acknowledged that Public Private Partnerships (PPPs) were a legitimate option in municipal services provision and committed all parties to seeking optimal social impact if they were to be used. Some of the principles from the framework, such as requiring investigation of internal service delivery options before allowing consideration of external options, were subsequently incorporated into the Municipal Systems Act (MSA).

The Agreement was supplemented by the creation of a Sectoral Forum involving major stakeholders. Due largely to organised labour's influence, this forum challenged various aspects of the Nelspruit contract, arguing that it contradicted the Framework Agreement. Government disagreed with this view and the details of the staff transfers were finally resolved in the Bargaining Council on 5 November 1999.[278]

- **Infrastructure Spending**

The contractual requirement was to efficiently spend the capital funding as follows:

- 1999-2004 – R83.4 million ($6.2 million)
- 2004-2009 – R105.5 million ($7.9 million)

The concessionaire has executed R136 million ($10.2 million) of the R189 million ($14.2 million) of projects required by the original contract and subsequent supplementary agreements.

The concessionaire is directly at risk for R54 million ($4 million or 40%) of the financing through the DBSA loan. R24 million ($1.8 million) of financing is from funds generated by operations, which represents minimal risk for the concessionaire since capital projects are not undertaken if this funding source does not materialise. The rest - Municipal Infrastructure Grant (MIG), other grants and developer contributions - is 43% of the investment and no risk for the concessionaire.

While the concessionaire established a sizeable loan facility with DBSA at the start of the contract, only R54 million was utilised for infrastructure financing. The concessionaire does not plan to take any more DBSA loans or to put any more shareholder investment into the operation. All funding from here on is anticipated to be either government grants, developer contributions for extensions of services into new developments, or from net profits from the concession's operations, the same mix of financing used for the last five years.

Financial performance of the concessionaire

According to a case study[279] for this PPP, for the nine-year period, 2000/1 through 2008/9, sales revenues increased 155%, from R42.7 million ($322 507) in 2000 to R109.0 million ($8.2 million) in 2009 primarily for two reasons:

- Tariffs increases averaged 8.4% annually and increased revenues by 106%, accounting for about 55% of the total revenue increase.
- Total water billed to customers increased 70%, from 5.3 million kl in 2001 to 9.1 million kl in 2009, accounting for most of the revenue increase.

Net revenue, after deducting the annual "provision for bad debts", increased from R38 million ($2.8 million) in 2000/1 to R106.2 million ($8 million) in 2008/9, a 179% increase. The 'accounting basis' collections percentage increased from 89% in 2000/1 to 97% in 2008/9, representing modest improvement attributable to the concessionaire's management, and in line with the improvement in the collections ratio, from 73% to 78%.

The Municipality engaged outside financial expertise to help negotiate the contract, and in the early years of the contract, to help monitor the concessionaire's financial performance and adherence to the contractual terms for return on investment. The Municipality has only recently re-engaged the outside financial expertise as it has

[278] Paul Bender and Stewart Gibson. Case Study for the 10 years of the Mbombela (Nelspruit) Water and Sanitation Concession South Africa, January 2010.
http://www.ppp.gov.za/Legal%20Aspects/Case%20Studies/Nelspruit%20Case%20Study%20Final%2029%20May%202010.pdf

[279] See footnote 5: This case study was commissioned by the World Bank at the request of the Public Private Partnership Unit of the National Treasury of the South African Government and the Mbombela Local Municipality. Funding was provided by the Public-Private Infrastructure Advisory Facility, a multi-donor technical assistance facility, associated with The World Bank. Each of the organisations provided technical support and practical assistance to the study.

no in-house resources who understand how the financial model operates and whether the concessionaire's representations are accurate. Consequently, the concessionaire has been in a very strong position to support their conclusions for operating and capital improvements required to improve service delivery.

An issue that might become problematic is payment of dividends. The concessionaire has not taken any dividends from the operation so far. This makes it much easier for the concessionaire to justify its lack of investment in the operation since 2003 and why resolving the 24-hour service issue and further extensions of services to formerly unserved areas are not financially viable.[280]

Employee Programmes

There were 137 employees transferred from the municipality to the concessionaire in 1999. At the time, there was concern that the concessionaire might reduce the number of permanent employees or substitute temporary workers for full-time, unionised employees. Of the 137 transferred employees, 69 are still employed by the concessionaire, 35 of these have received promotions and 51 of them have received training in respect to Adult Basic Education and Training (ABET) as well as water and sewerage care, plumbing, etc. All transferred staff were operational personnel - no senior management or design and planning staff were transferred.

The concessionaire has added 84 permanent employees since 1999. Of the 221 current staff, 181 are union members split between SAMWU (115), Solidarity (61) and IMATU (5). Staff turnover levels have averaged around 7% over the last four years.

The concession's performance after 10 years

Ten years on, the water and sanitation concession in Mbombela Municipality has been successful in many important areas:

- A stable operator has been established that has exhibited good management and operational capability;
- Virtually every household in the concession area now has some access to water. In 1999 it was estimated that 45% of the then 45,000 households in the concession area did not have access to any water supply. The number of households has now grown to 74,000 of which 94% have some form of access to the formal water system and 88% receive water on a daily basis;
- Water and effluent quality is excellent in the systems operated by the concessionaire. These systems all achieved the Department of Water Affairs' Blue and Green Drop awards;
- There has been continuous investment in extending and upgrading existing infrastructure and the concessionaire has a strong maintenance programme;
- The concessionaire has established very good employee training and development programmes. As a result, personnel are well qualified and competent; and
- Water and sanitation tariffs in the concession area are similar or lower than in comparable municipalities.

Challenges

- There has been no capital investment by the concessionaire of shareholder funds and only R54 million of borrowed funding for which the concessionaire is responsible for repayment. A primary reason for undertaking the concession in 1999 was to access substantial external financing of the estimated R250 million of infrastructure investment needed to extend water and sanitation services to all concession area households. Substantial capital investment will be required to upgrade the Kanyamazane water plant and other areas of reticulation and storage could also benefit from further investment. While there appears to be reasonable and appropriate reasons for changing the investment expectations of the concession in the past, there is still 11 years of the contract remaining that would allow further scope for borrowing and investment. This could create an opportunity for the Municipality and the concessionaire to pro-actively address some of the areas where the concession has not performed to expectations.
- Significant changes have occurred in the contractual arrangements since 1999, with the concessionaire substantially reducing its responsibility for all investment in infrastructure, receiving government grants for operating and capital purposes, and eliminating two significant payments to the Municipality.

[280] *Ibid*

Although the contract remains a concession in name, there is little doubt that the concessionaire has reduced and/or limited its risk and responsibilities through the various renegotiations of the contract. The terms of the contract have been adjusted due to changing external circumstances and perhaps the rate of return on investment should also be re-examined.

- There has been very little progress with improving the non-revenue water performance and collections of billings are far below the levels anticipated by the contract. This is partly the result of the government policy of 'free basic services', which has been used by many customers as a reason to not pay for any services. However, it is also the result of a lack of effort by the concessionaire, until the past few years, to address the issues needed to provide a 24-hour water service.
- The Municipality's contract monitoring function is weak. This issue is entirely under the control of the Municipality. Since regulation only occurs through contract management by the Municipality, and not from an external entity, the importance of a fully capacitated concession monitoring office cannot be overemphasised.

10. Namibia: Mariental Solar Plant

The Namibian economy has a modern market sector, which produces most of the country's wealth, and a traditional subsistence sector. In 2017, the Gross Domestic Product (GDP) in Namibia was $13.24 billion. Although the majority of its 2.5 million population engages in subsistence agriculture and herding, Namibia has more than 200,000 skilled workers and a considerable number of well-trained professionals and managers. Namibia is a higher middle-income country with an estimated GDP per capita of $5 230 per annum but has extreme inequalities in income distribution and standard of living.[281]

- **History of Power supply in Namibia**

The Namibia Power Corporation (NamPower), the national power utility company of Namibia, is located in Windhoek. NamPower was founded in 1964 as the South West Africa Water and Electricity Corporation (SWAWEK) by the government of South Africa, and its early history revolves around the Kunene River hydroelectric project. NamPower operates 3 major electricity generation facilities:

- Ruacana Power Station, a hydroelectric plant on the Kunene River at Ruacana at the Angolan border – 240MW
- Van Eck Thermal Plant in Windhoek, powered by coal – 120MW
- Anixas Power Station in Walvisbay, powered by diesel – 22.5MW

There is also one standby diesel power station in Walvisbay, the Paratus Thermal Plant, which produces 18 MW of output. NamPower is planning a new major hydroelectric facility at Popa Falls, on the Okavango River. However, it is very small expected benefits will have to be weighed up against the environmental and economic costs of situating the hydroelectric facility there and the international distribution of those benefits and costs.[282] The reason for this is that the river traverses the Namibia-Botswana border,[283] and it therefore has to abide by the UN Convention of the Non-navigational Use of International Water Courses.[284] The plant would generate

[281] World Bank Data indicators, GDP per capita in current US$. https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=NA, accessed on 5 February 2019

[282] Colin Christian and Associates CC, Technical Report on Hydro-electric Power Development in the Namibian section of the Okavango River Basin, Winhoek: OKACOM, 2009.

[283] EPA, 'Public Participation Guide: Proposed Popa Falls Hydropower Project, Okavango River, Namibia, 23 August 2018. Available at: https://www.epa.gov/international-cooperation/public-participation-guide-proposed-popa-falls-hydropower-project-okavango, accessed 24 January 2019.

[284] Calabashes, 'PROPOSED POPA FALLS HYDROPOWER PROJECT, OKAVANGO,' 15 October 2004. Available at: http://www.the-eis.com/data/literature/Proposed%20Popa%20Falls%20Hydropower%20Project.pdf, accessed 24 January 2019.

20-30 MW of power.[285] Given the anticipated challenges with this route of power generation Namibia has explored a number of other alternatives.

- **Power Generation Alternatives**

Over the past several years, NamPower has investigated several power generation alternatives as per the projects listed below:

i. The **Baynes Hydro Power Project** is currently being considered. This project is a joint venture that would supply both Namibia and Angola. It is a much bigger project than Popa Falls, and may have much lower environmental impacts and risks because it discharges to the sea and not to an inland delta.

ii. The **Walvis Bay Coal Fired Power Station** is also under consideration. It has the disadvantage of being based on non-renewable resources and therefor has a high carbon footprint. Its location at Walvis Bay may also be contentious in terms of the air pollution that it might cause.

iii. **Power from Slops**: Thermal electric power can be generated from oil waste that is discharged from ships. Because they are not allowed to discharge at sea, this creates an opportunity for this fuel to be purchased and burned to generate power in Walvisbay.

iv. **Orange River Hydro Power schemes**: Several small hydro power projects (e.g. 100MW each) are being considered on the lower Orange River. These would be operated by independent power producers. These could be developed over the next 3 to 4 years. The lower Orange River is already highly disturbed by major dams and irrigation projects in its catchment area, however the Orange River mouth is a proclaimed Ramsar site.

v. **Wind Power: Lüderitz**: In the past NamPower has also investigated the potential of wind power generation, which was found to be uneconomical – the capital costs would not be recovered during the life of the turbines. Furthermore, although Lüderitz is the windiest location in Namibia, there are periods of calm for days at a time when no power can be generated. There is no way to store large amounts of electrical energy to bridge these calm periods. Lüderitz is completely calm for 8% of the time, while the figure 16% is for Walvis Bay.[286]

- **The Introduction of Solar Energy: project description and historical background**

As of 2014 Namibia still benefited from several regional power purchase agreements that augmented its meagre energy resources. 150 MW were imported from the Zimbabwe Electricity Supply Authority (Zesa), 200 MW from Eskom and another 300 MW of off-peak supply from the same South African utility, and 115 MW is being supplied by Aggreko out of Mozambique.[287]

Namibia has managed to improve its energy production significantly over the same period (2010-2016), with 52% of its citizens achieving access to electricity in 2016. It has one of the best electricity infrastructures in the region and a significant level of electrification, but also depends heavily on imported energy, which is why it has made a concerted effort to introduce solar power. NamPower awarded a tender to ALTEN Africa for the development, construction and financing of a 45.45 MW photovoltaic plant, occupying a land area of 100 hectares.

[285] National Geographic, *Sold Up The River? Hydro Power Threat Re-Opens Debate*, Washington, D.C.: National Geographic, 2014.
[286] Mendelsohn J, et al, Atlas of Namibia: A portrait of the Land and its People, Cape Town: David Philip, 2002
[287] ESIAFrica, 'Namibia faces electricity supply challenge until 2018,' 04 June 2014. https://www.esi-africa.com/namibia-faces-electricity-supply-challenge-until-2018/, accessed 24 January 2019.

It is within this context that in 2015 the Ministry of Mines and Energy awarded a tender after a highly competitive bidding process to build a 35MW solar photovoltaic power station near Mariental to the IPP, Alten Renewable Hardap, (comprising Alten Renewable Energy BV and Sashi Investments). The invitation to tender for the pre-qualification of IPPs and request for information was published by NamPower in 2013 for the development of the three Solar PV Power Stations to be constructed in the Erongo, Otjozondjupa and Hardap regions. A total of 50 responses were received, with nine meeting the stringent pre-qualification criteria. The expansion of renewable energy systems and energy efficiency in the energy mix and the inclusion of Independent Power Producers (IPPs) in the power generation in the country is a priority for the government. Figure 1 below shows the town of Mariental where the project is going to be located.

Figure 14 – The Mariental project

Source: Mapio.net

Mariental is a city of 10 000 inhabitants in south-central Namibia, located on the B1 national road 232km north of Keetmanshoop and 274km southeast of Windhoek. Mariental is connected to the TransNamib railway line from Windhoek to Keetmanshoop. The town is located in a hot, arid region. Mariental is the administrative capital of the Hardap Region in an area which has long been a centre for the Nama people. It lies near the Hardap Dam, the largest reservoir in Namibia.

- **Applied machinery and equipment**

The project will be the biggest photovoltaic (PV) solar power plant in Namibia and one of the biggest in sub-Saharan Africa. The $70-million plant's commercial operation was scheduled for September 2018, with installed capacity of 45.5 MWp for an output of 37 MWac. The plant will be one of the most efficient PV solar plants in the world, owing to the area's high solar radiation levels. With an estimated yearly production of 112 GWh and occupying 100 ha, the plant will meet energy needs equivalent to a population of 70 000, representing about 3% of the total population. The plant will have around 140 000 crystalline siliconnels mounted on solar trackers.

- **Financing arrangements**

South African financial services provider Standard Bank and a subsidiary of Agence Française de Développement, Proparco, have provided about $50-million in funding for the PV plant. Alten Africa has a majority stake (51%) in the investment vehicle, Alten Hardap, with NamPower holding a 19% stake and other local investors, First Place, Mangrove, and Talyeni, the balance. The new PV plant will reduce Namibia's energy dependency on other countries by nearly 5%.[288]

- **Project approach and implementation methods**

Table 11 – Permits required for the project

Aspect of the Project	Permits and Special Requirements Required	Authority Responsible

[288] M. Arnoldi, 'Namibian PV solar plant to start operating in September', Engineering News, 16 March 2018. http://www.engineeringnews.co.za/article/namibian-pv-solar-plant-to-start-operating-in-september-2018-03-16, accessed on 28 January 2019.

Ecology	Permit for removal of protected and unique species.	Required from the Ministry of Environment and Tourism by the IPP Contractor before commencement of construction activities.
Socio-Economic	**Local recruitment and procurement policy; training and skills development, and awareness programmes.**	**Compiled by the project proponent during the planning phase and implemented by the IPP Contractor during the construction, operational and decommissioning phases.**
Traffic and Roads	Obtain permission from Roads Authority to construct access route.	Required from the Roads Authority by the IPP Contactor prior to commencement of construction activities.
Groundwater	**Licence to drill a borehole and to extract groundwater.**	**Licence for water abstraction required from the Ministry of Agriculture, Water and Forestry (MAWF) by the IPP Contractor prior to commencement of construction activities.**

Source: AURECON 2014

- **Feasibility studies: environmental and social impacts**

A number of recommendations were made in the Environmental Impact Assessment regarding mitigation measures for the design phase of the project.[289] These recommended mitigation measures are summarised below.

- Limit development and associated infrastructure in sensitive areas. E.g. ephemeral drainage lines and associated riparian vegetation, rocky ridges (broken terrain).
- Locate access routes and other infrastructure to avoid the removal of bigger trees (i.e. *Acacia erioloba, Boscia albitrunca, B. foetida, Euclea pseudebenus and Tamarix usneoides*) as far as possible.
- Design electric boundary fencing (if required) so that the first 50cm from ground level is not electrified to allow for small burrowing fauna.
- Design overhead transmission lines to include coils/flappers (approximately two coils/flappers within a pylon at equal lengths apart) on new pylon routes longer than 100m (see Figure 2), to increase visibility and reduce bird mortalities. The number of coils and the distances apart shall be confirmed once detailed designs are undertaken.
- Ensure landscape design prohibits the planting of potentially alien invasive plant species (e.g. Tecoma stans, Pennisetum setaceum, etc.) for ornamental purposes (e.g. around offices, etc.) and incorporates indigenous vegetation

Socio-economic impact assessments

- The contractor was required to employ local labour (i.e. from the Mariental area) where possible. The requirement for the employment of local labour was formalised by incorporating it into the contractor's contract. Quotas for local employment were set, and the contractor's contract was required to specify that these positions shall only be filled by non-local persons if it can be demonstrated that no suitable

[289] AURECON, 'EIA FOR A 10MW PHOTOVOLTAIC (SOLAR) ENERGY FACILITY NEAR,' A, 16 June 2014. http://www.the-eis.com/data/literature/NamPower%20EMP_Mariental_%20FINAL.pdf, accessed 20 January 2019.

local persons can be identified (e.g. through local advertising) to fill these positions. Follow-up compliance monitoring must also be undertaken.

- Tender criteria were required to include requirements for training and skills development of the contractor's workforce by the contractor. Where possible, training was aimed at providing skills to employees that might allow them to apply for permanent positions during the operation of the facilities.

- The IPP contractor was required to engage with the relevant regional and constituency committees to encourage and support them in setting up current skills and small-business databases to facilitate local employment and procurement. The databases included documentation (e.g. utility accounts or affidavits) verifying the local resident status of applicants. The development of these databases was designed to be undertaken well in advance of the construction contractor being appointed.[290]

- The offices, structures and site were required to be designed to reduce visual intrusion. The buildings were required to minimise the transmission of noise from the inside to the outdoors. It is a requirement that where possible very noisy activities do not take place at night.

- **Project impact**

While Namibia's renewable energy production is currently mainly supported by Ruacana hydropower plant, this photovoltaic solar power plant, a source of low-carbon electricity, will not only allow the country to forge its energy independence but will also assist the country in structuring its solar industry. The project, which should produce 8.5% of national electricity production, thereby bringing about a significant reduction in electricity imports (68% in 2016), while making power supply more reliable in Namibia. The savings on energy imports thus made could be directed to the development of new infrastructure in a quest to improve Namibia's energy security and independence. In addition, this project should reduce annual CO2 emissions by 9,400 tonnes (235,000 t CO2 over the 25 years of the life of the project).

The social and economic impact of the project will be the creation or maintenance of 1 260 indirect, induced or secondary jobs during the life of the project.[291] It will also theoretically provide over 76 000 people with access to a low-carbon source of electricity. The new job opportunities will alleviate poverty in this region as out of a labour force composition of 6 333 in Mariental, it is estimated that about 2 470 individuals are jobless. This means at 39% unemployment rate Mariental is above the national unemployment rate of 34%.[292] Finally, the project company will pay part of the revenues into a fund destined to set up social programs in the region.[293] The project is now operational since September 2018.

[290] Ibid.
[291] PROPARCO (Groupe Agence Francaise De Development), 'A GUARANTEE TO FINANCE THE CONSTRUCTION OF THE FIRST LARGE-SCALE SOLAR POWER PLANT IN NAMIBIA,' 12 January 2019. [Online]. Available: http://www.proparco.fr/en/hardap, accessed 17 January 2019
[292] Ibid.
[293] Ibid.

Annexure A: The role of traditional donors and China's support for infrastructure development

A.1 Participation from traditional donors

Where traditional donors have engaged in infrastructure development, they have usually provided their support through bilateral development cooperation assistance and Official Development Financing (ODF). ODF consists of Official Development Assistance (ODA), which is concessional, and Other Official Flows, which is non-concessional.[294]

Many donors adhere to the Paris Declaration on Aid Effectiveness principles when working on Africa's infrastructure development by co-ordinating with or contributing to various regional initiatives (for example, PIDA).[295] Aid from the Development Assistance Committee's (DAC) members have traditionally played an integral part in the development of Africa, especially when providing a catalytic role for involving private sector players in need of guarantees.[296] Aid from select European Union (EU) member states has been an important source of infrastructure financing for African recipient countries especially in water supply, sanitation and transport infrastructure.[297] ODF support peaked at nearly US$ 90 billion in 2009 for developing countries as a result of efforts by multilateral agencies to assist developing countries with the onset of the 2008 financial crisis.[298] However, research from the Overseas Development Institute (ODI) highlights that:[299]

(i) ODF from bilateral donors and multilateral organisations was the second largest source of external development finance for infrastructure in sub-Saharan Africa in the 1990s and has since declined over time, resulting in an expansion of private sector financing.

(ii) The composition of ODF from bilateral and multilateral donors has also changed, shifting from bilateral to multilateral sources. Although the early 2000s saw prominence in bilateral assistance, this slowly diminished over time and by 2012, 70% of ODF came from multilateral sources (with the World Bank disbursing $4.3 billion, and the AfDB $2.6 billion) and the DAC's commitments about $4 billion.

The DAC's prominence in ODF is also challenged by China, which has forced traditional donors to think about infrastructure financing and developmental assistance to African countries from a different perspective. This is important in light of the conditionalities centred on governance, democracy and human rights reforms usually attached to ODF by DAC members which, some critics have suggested, China has eroded through its offers of non-conditionality based loans. It is also important to view China's ascent against the 2008 financial crisis that caused many EU donors to impose fiscal consolidation measures, which resulted in (i) diminished aid levels and in donors becoming more selective about the countries they choose to support when directing their aid and financial assistance and (ii) the DAC's increased focus on private sector participation: more members are interested in blending ODA with private or non-concessional financing, and using aid to catalyse the involvement of the private sector.[300]

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[294] Miyamoto K & Chiofalo E (2016) *Official Development Finance for Infrastructure: With a Special Focus on Multilateral Development Banks*. OECD Development Cooperation Papers No. 30, OECD: Paris

[295] AU, OECD & NEPAD, 'Preliminary findings on donor support to Africa's infrastructure' Background document for the 5th NEPAD-OECD Ministerial Conference in Dakar, 26-27 April 2011

[296] World Bank Group (2011) *Supporting Infrastructure Development in Low-Income Countries: Submission to the G20 by the MDB Working Group on Infrastructure*. Interim Report, June 2011

[297] Addison T & Anand PB (2012) *Aid and Infrastructure Financing*. Working Paper 2012/56, UNU-WIDER

[298] World Bank Group (2011) Ibid

[299] D'Orey M & Prizzon A (2017) *An 'age of choice' for infrastructure financing in sub-Saharan Africa?'* ODI: London

[300] Greenhill R & Prizzon A, op. cit.

The EU has provided infrastructure support to African countries through its various funding instruments that utilise private-sector financing. For example, the Infrastructure Investment Programme for South Africa (IIPSA), valued at 100 million euro, is designed to support South Africa's implementation of its National Development Plan and SADC's RIDMP. IIPSA is a grant facility designed to address infrastructure constraints within the region by providing blended financing from participating DFIs (such as the DBSA and European Investment Bank) for cross-border and regional projects.[301] The EU also offers technical assistance, investment grants and financial instruments to African countries through its EU-Africa Infrastructure Trust Fund (EU-AITF), which was established in 2007 and seeks to support projects improving regional integration and cross-border infrastructure. The EU-AITF blends long-term financing from the AfDB with grant resources from the European Commission and individual EU members. Thus far, the EU-AITF has operationalised 8.3 billion euros worth of projects across energy, water, transport and ICT infrastructure within Africa.[302]

A.2 China's growing prominence within Africa

According to UNECA reporting, in 2013 the DBSA provided $1.2 billion; AfDB, World Bank and the European Investment Bank committed roughly $9 billion towards infrastructure financing in Africa, whereas China remained the single largest lender at $13.4 billion to African countries.[303] China's commitment towards Africa's development has grown since the 2000s, with increased financial support provided through successive Forum on China-Africa Cooperation Beijing Action Plan (FOCAC) meetings.

China's international aid can be classified into three types: grants (aid gratis), interest-free loans, and concessional loans, which are used to help recipient countries undertaken medium-sized infrastructure projects that generate social and economic benefits.[304] Chinese financing is channelled primarily through China's Export-Import (Ex-Im) Bank on terms that are marginally concessional, though significantly less than those associated with ODA from traditional donors, which tends to provide a grant element of up to 66% to Africa.[305] However, as the Ex-Im Bank's financing does not constitute a PPP structure, its terms and conditions are agreed on a bilateral basis, with the degree of concessionality depending on the nature of the project.[306]

China has traditionally portrayed its economic cooperation with Africa as pragmatic, 'win-win' though the provision of concessional loans to African countries cooperation characterised by principles of non-conditionality, mutual benefit and common development.[307] In general (and as a positive feature), China's loans offer better repayment terms, namely lower interest rates and longer reimbursement time frames.[308] Countries could also look to China as an alternative funder to the World Bank and the International Monetary Fund (IMF), as China is more likely to provide sufficient financing, while devoting less financing to project preparation and standards.[309] In general, 27% of all loans go towards transport projects (road and rail), while energy projects accounts for 20% of Chinese loans; 10% towards hydropower and 8% towards ICT.[310]

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[301] http://www.sadcppdf.org/?page_id=469, accessed on 12 November 2018

[302] http://reports.eib.org/the-eu-africa-infrastructure-trust-fund-in-2017/the-eu-africa-infrastructure-trust-fund/, accessed on 12 November 2018

[303] UNECA, op. cit.

[304] Omoruyi M et al (2016) 'China's Infrastructure Development and Its Impact on Africa Economic Growth.' *International Journal of African and Asian Studies*, Vol. 23

[305] Foster W et al (2008) Building Bridges: China's Growing Role as Infrastructure Financier for Sub-Saharan Africa. World Bank: Washington DC

[306] Foster W et al, op. cit.

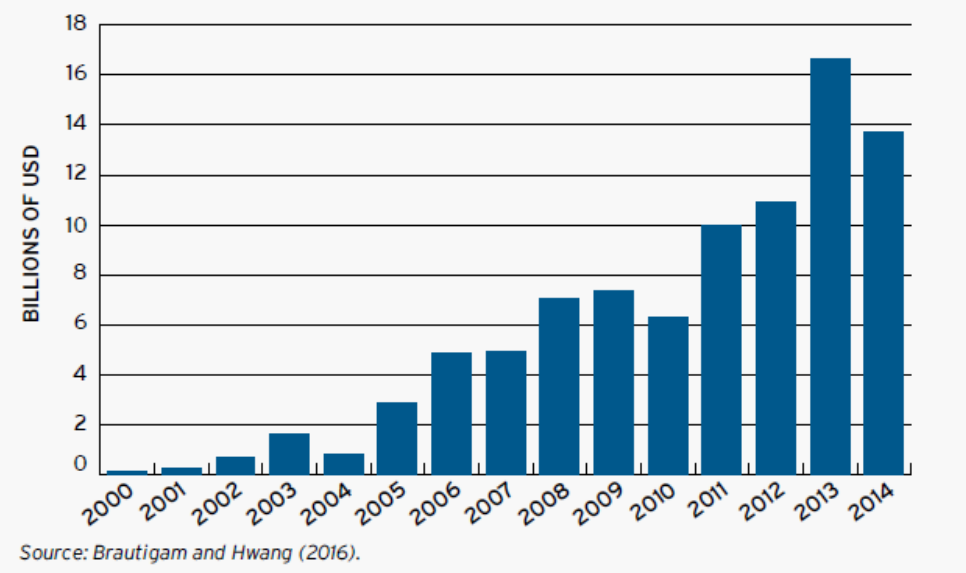
[307] Alves A (2013) 'China's 'win-win' cooperation: Unpacking the impact of infrastructure-for-resources deals in Africa.' *South African Journal of International Affairs*, Vol. 20 No. 2

[308] Alves A, op. cit.

[309] Bertelsmann-Scott T; Markowitz C; Parshotam A (2016) *Mapping Current Trends in Infrastructure Financing in Low-Income Countries in Africa Within the Context of the African Development Fund*. Global Economic Governance Africa Policy Briefing

[310] Dollar D (2016) *China's Engagement with Africa: From Natural Resources to Human Resources*. Washington DC: Brookings Institution

Figure 1 – China's annual committed loans to African countries, 2000 to 2014



Source: Dollar D (2016) *China's Engagement with Africa: From Natural Resources to Human Resources*. Washington DC: Brookings Institution

However, Chinese support for Africa's infrastructure development remains controversial. Beijing's requirements for concessional loans requires a sovereign guarantee, which is often difficult for African countries to satisfy owing to their low creditworthiness. For resource-rich countries, China has solved this problem by locking in proceedings from commodities sales (oils and minerals) and its access to resource supply and assets have earned its deals the nickname of 'infrastructure-for-resources'.[311] Countries such as Congo, Angola, and Zambia have secured electricity, transportation, telecommunications, education, and healthcare infrastructure from Chinese firms in exchange for access to oil and minerals and more efficient (and less costly) means of transporting the resources.[312] For example, Beijing offered Angola billions of dollars' worth of infrastructure in exchange for a decade of tax-free mining.[313]

Chinese financial support has also elicited criticisms for enabling African countries to circumvent the transparency and governance requirements imposed by traditional partners. For example, in 2007 the World Bank's proposal to finance a Nigerian railway required the Nigerian government to implement measures to fight corruption and reform the country's railway system. Instead, the Nigerian government chose Chinese financing valued at $9 billion for this project in terms of which no reforms were required.[314] Further negative repercussions of Chinese engagement in Africa's infrastructure sector extends throughout the infrastructure value chain:[315]

- Construction SOEs enjoy privileged access to Chinese infrastructure deals in African countries, which undermines the participation of domestic companies and transparent procurement processes;
- Strong competitive advantages owing to lower costs in overall prices, access to cheap credit, labour and building materials has hindered developing local construction industries and job creation in many African countries;

[311] Alves A, op. cit.
[312] Trebilcock M & Rosenstock M, op. cit.
[313] https://www.voanews.com/a/china-investment-strategies-africa-partners-face-risks/4478885.html, accessed 6 November 2018
[314] Mlambo C; Kushamba A; Smawu MB (2016) 'What Lies Beneath?' *The Chinese Economy*, Vol 49, No. 4
[315] Alves A, op. cit.

- Poor quality of some of the infrastructure built by the Chinese and lack of maintenance procedures have elicited strong criticisms from government and civil society alike; and
- Chinese infrastructure loans have done relatively little thus far for Africa's economic diversification and helping the continent shift away from resource dependency – raising questions as to whether African governments have really negotiated loan agreements to the true benefit and socio-economic development of their countries.

Lastly, there are also serious questions surrounding Africa's rising debt levels and its links to Chinese-funded infrastructure. China has changed the composition of African debt from primarily concessional financing towards market-based debt with less favourable terms.[316] China has helped finance more than 3000 infrastructure projects, extending $86 billion in commercial loans to African governments and SOEs between 2000 and 2014 (an average of $6 billion per year), and holds 14% of sub-Saharan Africa's total debt stock.[317] However, more than half of Chinese infrastructure projects are reportedly under-performing in Africa, damaging long-term development prospects for African countries and exposing their domestic economies to a debt burden they cannot shoulder.[318]

Over the past five years, two-thirds of sub-Saharan African countries witnessed a 20% increase in debt-to-GDP ratios. Although not solely caused by Chinese loans, China's further financing of African infrastructure on market debt terms is real cause for concern: Zambia, Mozambique, the Gambia and the DRC are all classified as high risk for debt distress by the World Bank. China is Kenya's largest bilateral creditor (66% of Kenyan debt is Chinese-owned),[319] and in 2017 Chinese lenders accounted for more than 40% of all infrastructure financing in sub-Saharan Africa.[320] Famous infrastructure projects financed by the Chinese in SADC included the Medupi coal-fired power station in South Africa and the Kafue Gorge Lower Hydro Power Plant in Zambia (both valued at $1.5 billion respectively).[321] Nevertheless, is not always guaranteed that Chinese financing is the best or most cost-effective option for African countries.[322] For example, instead of refurbishing the Mombasa-Nairobi Standard Gauge Railway, a far cheaper option, Kenya paid China a hefty $3.2 billion in 2017 to construct a new line, at three times more than the industry standard price – not to mention the fact that the railway cuts through the Tsavo National Park.[323]

Therefore, while DAC and China's engagement in Africa's infrastructure development can be utilised for good, there is clear need that both relationships need to be managed and driven by the African stakeholders themselves and both partners' engagement on the continent has not been without challenges. Existing research shows that while DFI and ODA financing is being leveraged together with private sector support, more needs to be done in order to ensure that PPPs are successful and that ODF/ODA is used to its full potential. Notwithstanding the welcomed diversified funding offered by China, China's engagement in sub-Saharan Africa requires cautious engagement. There is need for African countries to exert proper ownership over the processes, and to clearly understand terms of engagement with China in order to avoid entering into precarious agreements that heighten their debt levels or result in the implementation of PPPs that do not work towards local labour recruitment, job creation and poor quality infrastructure. While China can be a welcomed partner in the roll out

[316] Campbell J (2018) *China Pledges $60 Billion in Financing to an Increasingly Debt-Distressed Africa*. Council on Foreign Relations, https://www.cfr.org/blog/china-pledges-60-billion-financing-increasingly-debt-distressed-africa, accessed 7 November 2018
[317] Were A (2018) *Debt Trap? Chinese Loans and Africa's Development Options*. SAIIA Policy Insights 66
[318] Patey L (2018) 'The Chinese model is failing Africa.' *Financial Times*, https://www.ft.com/content/ca4072f6-a79f-11e8-a1b6-f368d365bf0e, accessed on 6 November 2018
[319] Were A, op. cit.
[320] Mining Review (2018) 'Chinese financing casts long shadow over Africa.' https://www.miningreview.com/chinese-financing-casts-long-shadow-over-africa/, accessed 16 November 2018
[321] Ibid.
[322] World Bank Group *Africa's Pulse* April 2018, Vol. 17 World Bank: Washington DC
[323] The World Weekly (2018) *Nairobi to Mombasa: the controversial railway through Kenya's national park.* https://www.theworldweekly.com/reader/view/16040/nairobi-to-mombasa-the-controversial-railway-through-kenyas-national-park, accessed on 16 November 2018

of infrastructure PPPs throughout the continent, the onus lies with African governments to ensure that PPPs do not fall foul to traditional failures and that African governments have an equal footing and voice in their relations with China. Lessons learning from such experiences, together with appropriate management of private sector engagement, is equally important to ensure that PPPs and donor-funded infrastructure services the developmental needs of Africa.