

Ensuring Value for Money in Infrastructure in Africa



REPORT 2

Financing Infrastructure Projects

November 2010

CABRI 

CONNECT • SHARE • REFORM

About CABRI

The Collaborative Africa Budget Reform Initiative (CABRI) is a professional network of senior budget officials in African Ministries of Finance and/or Planning. CABRI was officially launched on 14 May 2008 in Maputo, Mozambique. On 3 December 2009, CABRI became a legal and independent membership-based organisation.

CABRI's main objective is to promote efficient and effective management of public finances, which fosters economic growth and enhances service delivery for the improvement of living standards of African people. Specifically, the network seeks to:

- support senior budget officials in the management of public finance systems by developing appropriate approaches, procedures and practices;
- advance the development of member states by building capacity and promoting training and research in the field of public finance management, in particular from a practitioner's perspective; and
- develop and promote common African positions on budget-related issues of interest to Africa.

About the infrastructure dialogue

The three-day CABRI dialogue on financing and managing infrastructure projects brought together senior officials from the budget office and ministries of infrastructure from 12 CABRI countries. The objective of the dialogue was for senior officials to find better ways to plan and evaluate public investments, to discuss alternative ways for governments to finance these projects and to establish ways to manage expenditure on these projects during implementation to achieve value for money.

The dialogue was articulated around six case studies that investigated key decision-points in large infrastructure projects:

- wastewater public-private partnership in Egypt;
- hospital public-private partnership in Lesotho;
- the Maputo Port Concession in Mozambique;
- hydroelectric project in Sierra Leone;
- urban sanitation project in Guinea; and
- the Songo Songo Gas Project in Tanzania.

The Dialogue used case studies as learning tools to apply the approaches, concepts, frameworks and tools presented in the main papers to real-life situations. Participants analysed these case studies and came up with recommendations with regard to a course of action to resolve the problem presented.

Those case studies were supported by keynote papers with a particular focus on the following areas:

- the pre-contracting phase with a focus on appraisal;
- the financing of infrastructure projects with a focus on the use of public-private partnerships; and
- managing the implementation of projects from the government's side through monitoring and review.

The infrastructure dialogue was the first in a series of three dialogues on the financing and management of expenditure in sectors.



Ensuring Value for Money in Infrastructure in Africa

Report 2

Financing Infrastructure Projects

November 2010



Contents

Acknowledgements	2
PART 1	
Infrastructure financing and public-private partnerships in Africa	3
1. Introduction	4
2. Traditional approaches to infrastructure finance	5
Financing through the budget	5
Concessional financing for public projects	6
3. Overview of public-private partnerships	7
Definition of PPPs	7
<i>Different types of PPP project</i>	7
Project finance	9
4. Core principles of public-private partnerships	10
Risk transfer in PPPs	10
Value for money in a project	12
Ensuring affordability	14
Infrastructure funding facilities	15
5. Practical issues in public-private partnership execution	16
Selecting appropriate projects	16
Legal and regulatory framework	16
Tender process	16
6. African experience with public-private partnerships	18
Hospitals	18
Energy	18
Ports	18
Railways	19
Wastewater treatment project	19
7. Conclusion	19
References	20
Appendix A: Basic elements of a law on public-private partnerships	21
A. Defining the scope and nature of PPPs	21
B. Specifying key procurement procedures	21
C. Elaborating the content of PPP agreements	21



PART 2

The New Cairo Wastewater Treatment Plant	22
Background	23
<i>PPPs in Egypt</i>	23
<i>The financial sector in Egypt</i>	24
<i>The legal framework</i>	24
<i>The institutional framework</i>	24
The New Cairo Wastewater Treatment Plant	25
<i>The partnership</i>	25
<i>Developing and implementing the WWTP</i>	26
Phase I: Project initiation and screening	26
Phase II: Advisers and consultants	26
Phase III: Risk assessment, VFM analysis and the PSC	26
Phase IV: Tendering and procurement	27
Phase V: Bidder selection	27
Phase VI: Contract signature and financial closure	28
Phase VII: Post-award PPP performance monitoring and contract compliance	29
Inflation and exchange rate risks	29
<i>Exchange rate and inflation risks</i>	29
<i>Inflation risk</i>	30
<i>Exchange rate risk</i>	30
Exhibit A: The role of the PPP Central Unit	31
Exhibit B: The Partnership Structure	32
Exhibit C: Timetable for procurement	32
Example of case-study questions	33



Acknowledgements

This publication draws on the keynote papers and case studies developed for use in the Collaborative Africa Budget Reform Initiative (CABRI) Dialogue on Ensuring Value for Money in Infrastructure. The papers were commissioned by CABRI.

The research was led by Mr Taz Chaponda and Mr Tony Milanese. Case-study research was conducted by Ms Clara Picanyol, Mr Matthew Smith and Ms Geraldine Baudienville.

The team and CABRI would like to thank the governments of Egypt, Guinea, Lesotho, Mozambique, Sierra Leone and Tanzania for their openness, support for the project and time given. Special thanks are due to Ms Mathuntsane Mohapi and Mr Matthew Dingué for reporting on the dialogue findings at the sixth CABRI annual seminar. We would also like to thank Dr Mandla Gantsho and Mr Tumisang Moleke for collaborating with CABRI at the dialogue and the annual seminar. The team is grateful to Alta Fölscher, Yacine Bio-Tchane and Helene Ba for their valuable guidance, input and comments.



Part 1

Infrastructure financing and public-private partnerships in Africa

Taz Chaponda



1. Introduction

There is an unprecedented drive towards infrastructure development across the African continent. National and international public agencies are beginning to work together more and more to fund vital projects. Private sources of finance are supporting public infrastructure initiatives as better infrastructure leads to win-win outcomes for all parties by opening up the continent's vast economic opportunities.

Total commitments by bilateral and multilateral members of the Infrastructure Consortium for Africa (ICA) reached \$12.4 billion in 2007, an increase of 61% over the previous year. In the same year, China committed \$4.5 billion, Arab countries \$2.6 billion, and India \$700 million (Synge 2009). However, private sector financing for infrastructure, at \$20 billion, exceeded all official flows, suggesting that the private sector is becoming the main investor in African infrastructure. The World Bank's Private Participation in Infrastructure (PPI) Database shows that from 2000 to 2009, total investment in projects with private participation amounted to \$79 billion, pointing to the recent acceleration in private financing.¹

Another World Bank study, the Africa Infrastructure Country Diagnostic (AICD²), confirms this: 'private finance for infrastructure in Sub-Saharan Africa has come from almost nowhere to become a source of finance comparable in magnitude and importance to ODA'.³ Admittedly, a few sectors (such as telecommunications, power-generation and ports) have benefited disproportionately from private investment. In spite of the recent increase in investment for infrastructure, the financing gap still stands at \$31 billion a year,⁴ and Goldman Sachs (2008) has estimated a total infrastructure demand of \$1 trillion for a sample of 12 African countries.⁵

Within the realm of private finance for infrastructure, the public-private partnership (PPP) model has gained currency. Increasingly, African countries are adopting PPPs as an alternative form of procurement for infrastructure assets and related services. Starting in the mid-1990s, South Africa began a concerted effort to implement PPPs, while other countries like Mauritius, Egypt, Nigeria, Botswana and Rwanda have followed in recent years. Although less structured than the South African approach, some Francophone countries (notably Ivory Coast) have been applying PPPs for several decades.⁶

This paper looks at different ways of financing infrastructure, with a particular focus on PPPs, and discusses the core principles common to many international programmes:

- achieving 'value for money' (VfM) for the public sector;
- achieving 'optimal risk transfer' to the parties best able to manage different risks; and
- ensuring overall 'affordability' of the project within the broader budget constraint.

These principles are viewed as the foundation for any sound public infrastructure project involving private sector participation. A few country examples are discussed, highlighting, in particular, the financing issues for Egypt's New Cairo Wastewater Treatment Plant pilot project, which was financed entirely by the private sector, and Lesotho's new national hospital project, which received significant grant funding to address affordability concerns.

1 The figure represents 238 new infrastructure projects, as well as the expansion of existing projects.

2 <http://www.infrastructureafrica.org/aicd/flagship-report>

3 Official development assistance (ODA) refers to financing of private sector infrastructure as well as private finance for public infrastructure.

4 This estimate assumes significant efficiency improvements in infrastructure spending, without which the gap is \$93 billion.

5 Angola, Democratic Republic of the Congo, Ethiopia, Gabon, Kenya, Nigeria, Senegal, Sudan, Tanzania, Uganda, Zambia and Zimbabwe.

6 The PPP for the national water utility in Ivory Coast is the oldest and largest in the developing world, having been established in 1960. The PPIAF holds this up as a successful 50-year-old PPP.



2. Traditional approaches to infrastructure finance

As noted above, PPPs and other forms of private sector participation are gaining in popularity across Africa. Nonetheless, traditional forms of infrastructure financing continue to dominate. Even in advanced economies that have been using PPPs since the early 1980s, PPPs account for only 10% of the total public infrastructure programme. In a country like South Africa (which has the most advanced PPP market in Africa) PPPs still account for less than 5% of the total. Therefore, although traditional forms of procurement and financing of infrastructure will remain the dominant channel for a long time, PPPs can play a strategic role for governments seeking to accelerate infrastructure delivery in a sustainable and cost-effective manner.

Financing through the budget⁷

Traditionally, governments have paid for infrastructure development through their budgets. Funds are allocated from the treasury to the ministry or agency that is responsible for delivering a particular infrastructure service/function. For instance, the Ministry of Transport will receive an allocation to build and/or refurbish roads. Where a country has adopted multi-year budgeting, an allocation will be made to the line ministry for each of the next three years of the medium-term expenditure framework (MTEF) period. Normally, only the first-year budget figure is 'guaranteed', as the outer-year budget allocations can change depending on a range of factors such as macroeconomic developments.

Several problems arise in financing capital projects exclusively from state resources. To begin with, the Ministry of Finance allocates funds to the first few years of the project, but there is a level of uncertainty as to whether funding will be available in future years. Large capital projects can take anything from two to five years to develop and, during that time, the economy could deteriorate or new priorities could emerge, both of which would impact on the availability of resources for capital funding. Such uncertainty hampers proper planning for infrastructure, as departments are wary of investing too much time in the planning stage if they are unsure that funds will be available for their sector or project.

Another limitation with traditional public funding for infrastructure is that there is an excessive focus on the capital portion of the budget, given the focal period of the MTEF. Naturally, programme managers are focused on the three-year period, when the project will be under development, so less effort is made to get finely detailed costing for the operating expenses five to ten years out. As a consequence, public institutions the world over tend to underfund operations related to the upkeep and maintenance of infrastructure assets, and the assets steadily fall into disrepair. The delinking of capital budgets, and the associated recurrent expenditure of infrastructure assets, is exacerbated when governments have separate capital and recurrent budgets (as is the case in many African countries).

Another shortcoming of budget funding is that there is no real appreciation of the cost of funds when budget resources are used. Although one cannot specifically tie the budget deficit to a given project, it is common practice for governments to borrow extensively for capital development. Yet, project managers fail to relate the expected project returns with the cost of the government's borrowing. Regardless of the source of funding, all projects should be required to compare the project cost of capital against the expected returns, to ensure that the investment is adding value and, thus, contributing to growth. Failure to carry out such analysis consistently has resulted in 'white elephants' that actually destroy economic value.

⁷ 'Funding' of infrastructure refers to payments for the use of infrastructure services, whereas 'financing' of infrastructure refers to debt and equity for the construction and development of the infrastructure.



Concessional financing for public projects

Project funding from development partners is a major source of finance for developing countries, including African countries. Indeed, the development budgets of some are majority-funded by development partners.⁸ This funding takes the form of either soft loans or development grants. The grants tend to be directed at social infrastructure like hospitals, schools and water services. Infrastructure that directly supports economic activity tends to receive project loans, either from multilateral agencies or from bilateral partners. Historically, this type of development assistance to Africa has come from western nations. More recently, eastern nations, China in particular, have stepped up the level of technical and financial assistance to African countries. China's assistance has often been linked to the country's search for rights to access natural resources.

The pros and cons of development aid have received a great deal of attention recently, with poignant criticism from several quarters (see, for example, Moyo 2009; Easterly 2006). Without getting into the broader debate surrounding aid, it is possible for properly targeted and managed project aid to lead to accelerated delivery of infrastructure projects. In practice, the record is mixed, depending on which sector or country one looks at. The overarching weakness of an aid-dependent financing framework for infrastructure is that it fails to address systemic problems that the public sector faces in delivering services regardless of the source of finance. These problems include weak implementation and management capacity, non-transparent procurement practices and inadequate attention to maintenance and operations after the asset has been commissioned.

Over the years, development partners have recognised these weaknesses, and have tried to come up with specific responses. For example, project assistance will provide not only financing for a project but also technical assistance and administrative support, which might be housed in a project-management unit (PMU). In addition, donors have insisted more and more on using their own procurement procedures rather than those of the beneficiary country. Such measures do help to improve project planning and execution during the construction phase. However, the project invariably comes to an end once the asset has been procured and is handed over to the responsible line ministry. Not surprisingly, the asset then faces an inadequate budget for maintenance and operations, and will begin to deteriorate like many other publicly managed projects.

Direct project financing in the form of grants or concessional loans will continue to play an important developmental role in Africa. Apart from external funding, regional development banks can fill the gap where commercial banks are unwilling to do so because of risk perceptions. The Development Bank of Southern Africa (DBSA) finances projects within southern Africa and even beyond. The DBSA provides project finance, technical assistance and post-implementation support to good effect. The African Development Bank also has a growing infrastructure portfolio across the continent. However, other regional banks (such as the East African Development Bank) have fared less well and have been plagued by governance problems. As with other public institutions, the mandate and scope of development banks need to be clearly defined. It is equally important to have a strong management team and to curb political interference in project funding.

Development partners and multilateral agencies can also offer various guarantees to enhance governments' chances of attracting other funding sources. A good example of this is the political risk guarantee that is available from the World Bank through the Multilateral Investment Guarantee Agency (MIGA). Such instruments help to reduce the risk perception of projects,

⁸ This is true of many countries in sub-Saharan Africa, including Malawi, Zambia, Uganda and Rwanda.



thereby raising the overall bankability of the project and attracting more commercial sources of finance.⁹ Increasingly, development partners are looking for co-financing arrangements with the private sector and development banks where credit-enhancement instruments play a vital role. Such hybrid models are possible within PPPs.

3. Overview of public-private partnerships

Many countries have used PPPs as an alternative to public procurement in a variety of sectors. PPPs have been used in sectors as diverse as transportation (road, rail, bridges and tunnels), education (schools, museums and libraries), health (hospitals and clinics), water resources (sanitation plants, irrigation systems and pipelines) and public administration (courts, police stations and prisons).

PPP appear to be particularly well suited to providing economic infrastructure, primarily for three reasons:

- sound projects that address clear bottlenecks in the road, railway, ports, power and other key sectors are likely to have high economic rates of return and, therefore, to be attractive to the private sector;
- the private sector can be made responsible not only for construction but also for service provision; and
- to the extent that these services are supplied directly to final users, charging is both feasible and, from an efficiency standpoint, desirable.

Definition of PPPs

PPP refer to arrangements in which the private sector supplies infrastructure assets and services that have traditionally been provided by the government. Although there is no clear-cut definition of a PPP, most definitions include three key characteristics:

- private execution and financing of public investment;
- an emphasis on both investment and service provision by the private sector; and
- risk transfer from the government to the private sector.

The typical PPP takes the form of a Design-Build-Finance-Operate (DBFO) scheme, but there are variations. Under a DBFO, the government specifies the services it wants the private sector to deliver, and then the private partner designs and builds a dedicated asset for that purpose, finances its construction, and subsequently operates the asset and provides the services deriving from it. This contrasts with traditional public investment where the government contracts with the private sector to build an asset that is designed and financed by the government.

Different types of PPP project

- *Service provision contract.* A private operator, under contract, operates a publicly owned asset for a specified term. Ownership of the asset remains with the public entity. For example, specific customer services or operation and maintenance.
- *Management contract.* A private entity contracts to manage a government-owned entity, and manages the marketing and provision of services. >

⁹ Partial risk guarantees from development finance institutions can also help to increase the amount of commercial debt.



Different types of PPP project (continued)

- *Lease and operate contract.* A private operator contracts to lease and assume all management and operation of a government-owned facility and associated services for a fixed term, and may invest further in developing the service.
- *Design-Build-Finance-Operate (DBFO).* The private sector designs, finances and constructs a new facility under a long-term lease, and operates the facility during the term of the lease. The new facility is transferred to the public sector at the end of the lease.
- *Build-Operate-Transfer (BOT).* A private sector entity receives a franchise to finance, design, build and operate a facility, and to charge user fees, for a specified period, after which ownership is transferred back to the public sector. This has been used in telecommunications service contracts.
- *Buy-Build-Operate (BBO).* Transfer of a public asset to a private or quasi-public entity, usually under contract that the assets are to be upgraded and operated for a specified period of time. Public control is exercised through the contract at the time of transfer.
- *Build-Own-Operate (BOO).* The private sector finances, builds, owns and operates a facility or services in perpetuity. The public constraints are stated in the original agreement and through ongoing regulatory obligations.
- *Operating licence.* A private operator receives a licence or rights to build and operate a public service, usually for a specified term. Similar to a BBO arrangement, this is often used in telecommunications and IT projects.
- *Finance only.* A private entity, usually a financial services company, funds a project directly or uses various mechanisms such as a long-term lease or bond issue.

Source: Ministry of Finance, Singapore (2004)

However, some PPPs exclude functions that characterise DBFO schemes. Most common in this respect are schemes that combine traditional public investment and private sector operation of a government-owned asset. Such an arrangement sometimes takes the form of an operating lease, although in cases where the private operator has some responsibility for asset maintenance and improvement, this is also described as a concession. Typically, operating leases and similar arrangements are regarded as PPPs.

The public sector pays only when services are delivered, which accentuates the performance incentive for private contractors. In a PPP, government payments only begin when the private party starts to deliver the services. If the private party is late, the government does not pay, which means that the taxpayer does not carry the cost of a service that is not being provided. The method of payment is carefully linked to the quality of services provided. If services are not delivered to the government's satisfaction, in line with the PPP agreement, the private party may also be liable to pay penalties. So it is in the private party's interest to deliver quality services on time, which, in turn, benefits the end-user.

PPP's force the public sector to focus on outputs and benefits right from the start of the planning process. When a government is working out what it needs to deliver and is considering a PPP as a possible vehicle, it has to specify the outputs of a service, and not concentrate so much on how the service is going to be delivered. The government, therefore, focuses on service levels, and the successful private party bidder is responsible for designing the details of the project.

PPP's encourage the injection of private sector capital into public assets by creating a project structure that is familiar to lenders and that creates the types of checks and balances that the



private sector seeks. The use of borrowed private sector capital for a project means that the lenders of the capital will apply rigorous measures to make sure that the project is viable and stays on track. These measures include project due diligence, and rigorous monitoring and control mechanisms throughout the project. In addition, returns on debt and equity are only secured if a project is completed successfully and is operating properly. This provides an incentive to the private party to implement and manage the project well.

Project finance

PPPs come in various forms, meaning that PPP contracts differ in terms of project scope, project duration, level of private sector involvement and financing model. However, for large infrastructure projects that are structured in the form of concession agreements, the 'project finance' model has been adopted in many countries. Project finance, a distinct commercial model that has been in wide use in the mining and oil-extraction industries for many decades, is useful in PPPs where there is a high level of debt financing from private lenders who want to have the first rights on the project's cash flows, and may be defined as follows:

Project financing is the financing of a project (or a commercial endeavour) in which the lenders, relying on the assessment of the project feasibility, look to the cash flow generated by the project as the source of funds for the repayment of their loans and to the assets of the project as security for the repayment of those loans.¹⁰

It should be noted that what differentiates project finance from other financing models (such as corporate finance) is the reliance on the project's future cash flow and on its demonstrable ability to generate sufficient cash to cover the debt. To demonstrate project viability, detailed feasibility studies are undertaken to convince financiers that the project will be able to perform under various adverse scenarios.

Once the project's technical, economic and financial viability have been tested, lenders to the project will 'ring fence' the future cash flows, meaning that they will have first claim on project cash flows before other project sponsors. Because the project has a finite life, the future cash flows must be able to cover both the principal and interest portions of debt comfortably. An important feature of the project finance model is that the lenders have limited recourse to the project sponsors. Instead, they have direct access to the project's cash flows and its assets.

A common way of securing the project cash flows is to create a separate company that is dedicated to the new project. This is called a special purpose vehicle (SPV). The SPV is a legal entity that is distinct from the project sponsors, lenders, contractors and sub-contractors. All relevant parties involved in the project delivery have direct contractual relationships with the SPV.

Figure 1 shows a typical PPP project structure in stylised form. The advantage of this model for the public sector is that there is one point of interaction with the private sector – the SPV. The complex financing arrangements are largely between the SPV and its lenders/sponsors, and payments from the public sector are channelled through the one point. Similarly, on the operations side, there can be several layers of main contractors and their sub-contractors, but the public sector does not have to deal with them directly. The PPP agreement serves as the main tool for managing the relationship between the private consortium and the government.

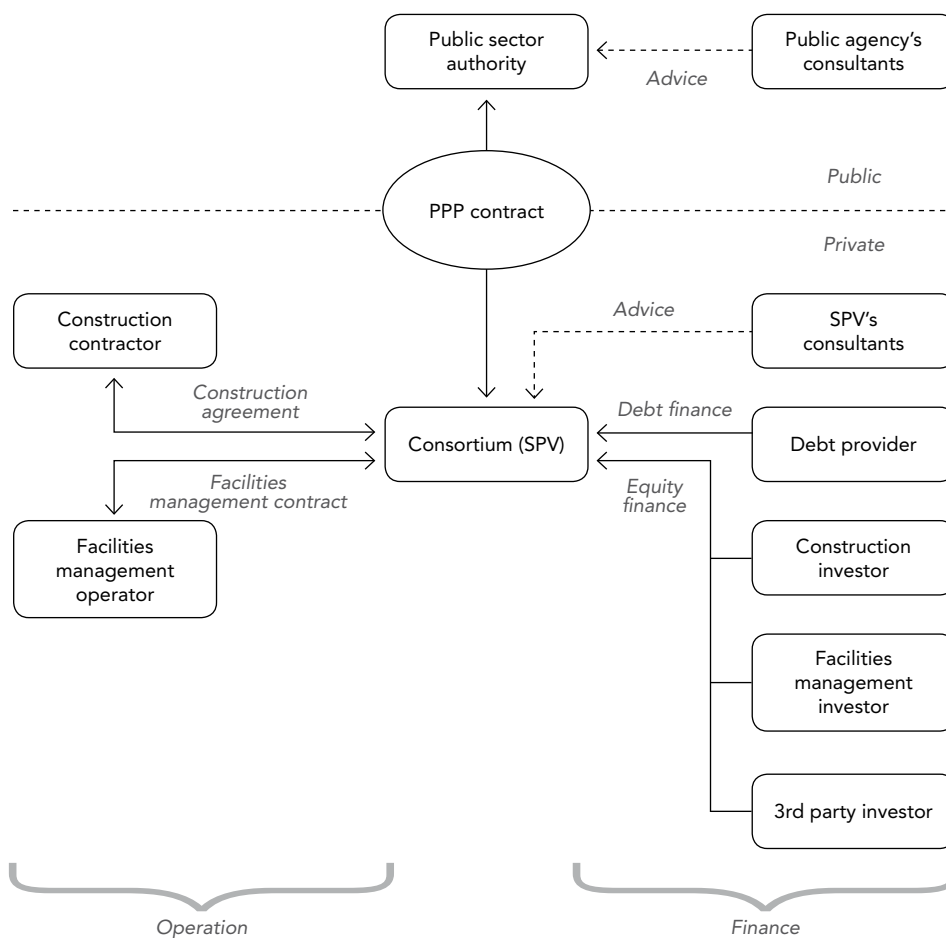
Another important feature of project financing, which is central to the PPP model, is the manner in which project risk is identified and managed. Anything that might jeopardise project viability

¹⁰ An Introduction to Project Finance. Training manual by the Development Bank of Southern Africa.



(and thus debt repayment) is viewed as a risk factor in project finance. As part of the feasibility study, much time is dedicated to developing a project risk matrix, which identifies all significant risk factors, calculates the probability of their occurrence, and then allocates each risk item to the party best able to mitigate that risk. This reduces the likelihood of project failure and makes the project more attractive to investors. The appropriate allocation of complex risks underlies the creation of value that can be shared between the various parties through a negotiated process.

Figure 1: Typical structure of a project finance PPP



Source: Ministry of Finance, Singapore (2004)

4. Core principles of public-private partnerships

Risk transfer in PPPs

Risk analysis and mitigation lies at the heart of the PPP value proposition. PPPs are believed to offer superior VfM compared to traditional procurement, because the private sector has skills and systems to better manage complex risks in project development and execution. The public sector in many countries has shown a poor ability to manage complex risks, particularly in large capital projects. These large and complex projects are well suited for PPP procurement, because the private sectors' management and technical skills help to better manage risks, resulting in lower costs to the government. The difficult part for the government is knowing which risks to transfer to the private sector, and at what cost.



Table 1: PPP risk types

Risk category	Description
Development/planning risk	This refers to risks arising from planning or preparing for PPP projects. The institution or private party may invest substantial amounts of money to develop a project (through payment for several scoping, feasibility and structuring studies) but bear the risk of the project being unfeasible.
Financial risk	This includes unavailability or inadequacy of private finance, the project proving to be financially unviable, or changes in the financial parameters that may alter the bid price before financial close. It also includes the risk of exchange rate appreciation/depreciation, changes in interest rates and tax-rate changes, which could substantially impact on costs and revenues.
Force majeure risk	This refers to the risk of events that are beyond the control of either party (either natural or man-made) that may have a catastrophic effect on either party's ability to perform its obligations under the contract.
Market, demand or volume risk	This includes the risk that demand for, or the price of, a service will vary from initial projections (for example, due to a decrease in the need for the service or competitors entering the market), hence impacting the revenue derived from the project.
Legislative and political risk	The possibility of government actions that adversely affect the expected return or service, or otherwise result in increased cost to the private party. It also includes risks that arise from wars, civil disturbances, terrorism, currency transfer restrictions, breach of contract and expropriation or nationalisation of the private party's assets.
Project risk	This refers to uncertainties in relation to project design, construction, completion and operation (i.e. activities undertaken in implementing the PPP project) and financing that result in adverse consequences in respect of cost and/or service delivery. These can be split into start-up risks (such as capital cost overrun and completion delays) and ongoing risks (such as operating performance, operating costs and life-cycle costs).
Regulatory risk	Regulatory risks arise from the lack of a suitably developed regulatory system, which, for example, would ensure regulatory independence from the government, regulations for the participation of the private sector in infrastructure and appropriate periodic reviews of tariffs. This can result in considerable uncertainty for lenders and investors in PPP projects.

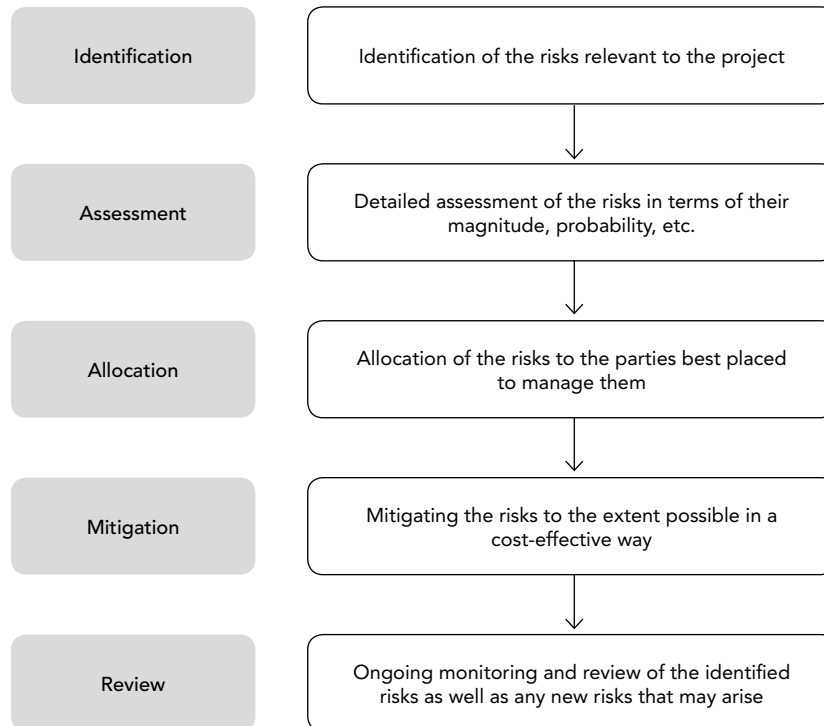
Source: Ministry of Finance and Economic Planning, Rwanda (2009)

Drawing from the project finance approach, PPPs emphasise the need to allocate each risk to the party best able to manage that risk. Typically, for example, regulatory risk is best handled by the government partner in a project, since it is the government that is responsible for setting and enforcing regulations. On the other hand, financial risk might be better managed by a specialised financial institution that has developed appropriate instruments to manage risks related to the project's financing structure.

Figure 2 shows the process for identifying risk and allocating it amongst the various partners in a project. The core principle is to appreciate the risk drivers behind each category of risk and to understand which party would manage that risk at the lowest cost. This points to the fact that different parties have different 'appetites' for a particular risk factor. For example, an experienced construction company's pricing of 'construction risk' would be very different from that of a financial investor, because the former has a deep pool of expertise in managing this type of risk.



Figure 2: Risk-management and review process



Source: Commonwealth Secretariat (2009)

By accurately and rigorously applying this process, overall project costs should be minimised, and the challenge becomes how to share the cost savings thus achieved. The biggest cost savings can be realised during the 'operations and maintenance' phase of a project rather than the initial construction phase. Therefore, getting a good operator for the asset is crucial, while tying in sensible maintenance contracts ensures that the asset remains in good condition.

Value for money in a project

A PPP project will generate VfM if it results in a net benefit to the public institution, in terms of quality, quantity, cost and risk transfer over the life cycle of the project. This is gained through the realisation of the private sector's efficiency and effectiveness, and the appropriate allocation of risk. The VfM potential of a PPP project will inform the decision on whether or not to undertake it.

Generally, PPPs can generate VfM in several ways, including:

- *Reduced costs.* Cost reduction is achieved through private sector innovation in design, efficiencies from integrated infrastructure design, construction and operation, and improved maintenance.
- *Effective risk allocation.* Cost-effective transfer of risk to the private sector allows efficiency benefits to be generated across the term of the contract.
- *Faster implementation.* The transfer of design and construction risks, together with the principle of no payment until the commencement of service delivery, provides significant incentives for the private sector to deliver projects within short construction time frames.



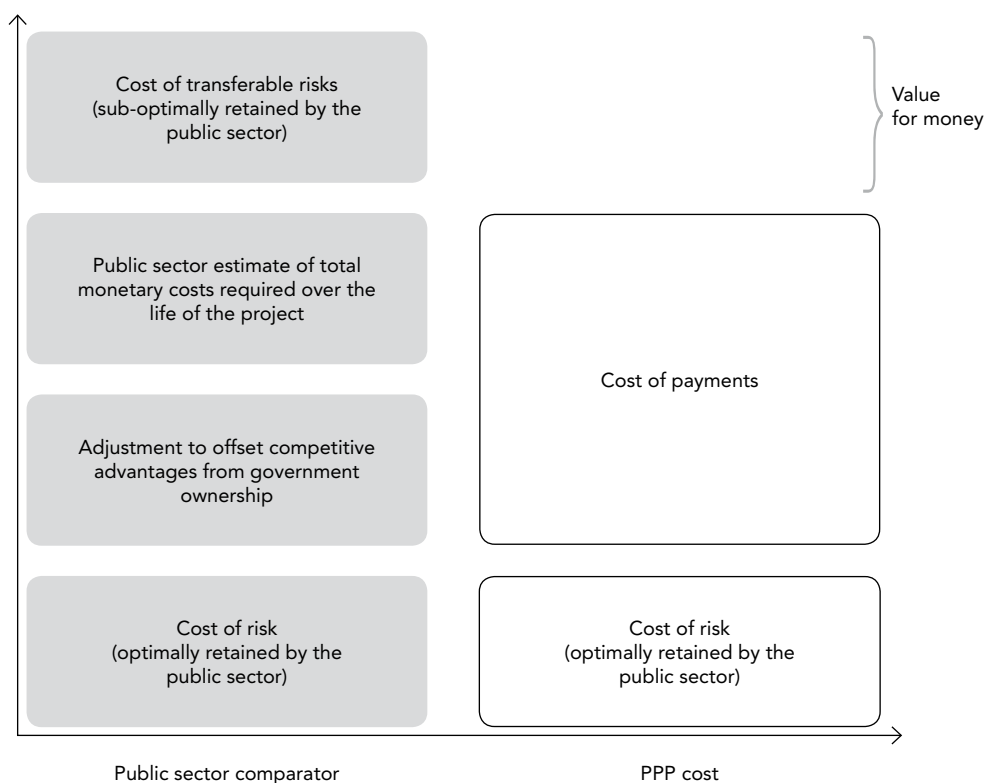
- *Improved quality of service.* This results from better integration of services with supporting assets, improved economies of scale, introduction of new technology, innovation in design, and the performance incentives and penalties included in a PPP contract.
- *Generation of additional revenue.* This is achieved by the more intensive exploitation of assets (for example, the shared use of facilities or the sale of surplus assets).

During the project-planning phase, the procuring institution carries out a feasibility study to assess the potential VfM by comparing the Public Sector Comparator (PSC) with the best-cost estimate of what the private sector could deliver under a PPP.¹¹ The actual VfM test is assessed only when the bids from the private sector are submitted and reviewed during the procurement phase.

The institution should be required to provide a preliminary indication of what VfM the project is likely to yield if it were to be procured through a PPP. The calculation involves comparing the total cost of procuring the services through the public sector with the projected PPP cost. The estimate of PPP cost provides a critical benchmark for evaluating PPP bids during actual procurement.

Different sectors yield different VfM potential. However, given that the calculations done during planning are estimates, it is important for the VfM gap shown in Figure 3 to be significant, probably at least 10% of the total costs estimated under the PSC.

Figure 3: An illustration of value for money



Source: Commonwealth Secretariat (2009)

¹¹ The PSC is a theoretical construct that estimates how much it would cost the public sector to deliver the required service if it were to proceed with conventional procurement. The concept is being increasingly overlooked as a practical tool, but it does serve as a useful benchmark for decision-makers.



Ensuring affordability

Together with risk transfer and VfM, the concept of 'affordability' is central to the PPP model. The idea is to ensure that any PPP project in the planning phase is designed to stay within the government's affordability limits. There are two aspects to this. First, it must be considered whether the existing budget (or expected budget allocation) of the ministry is adequate to fund annual commitments arising from the PPP. Second, a broader macroeconomic perspective must be employed that seeks to ensure that national or sub-national debt ratios are not jeopardised by the proposed financing arrangements.

When considering a multi-year project that has the potential to generate third-party revenue, and also when there is scope to access debt finance, the question of what is truly 'affordable' becomes more complex, because governments can and do borrow for capital investments. In fact, while borrowing for recurrent expenditure is typically frowned upon, borrowing for capital expenditure that will yield positive returns (above the cost of capital) should be encouraged. The challenge associated with debt financing is that it introduces a future commitment to repay the capital plus interest over the debt term. If not well managed, such repayments could crowd out other projects.

The first place to look when considering affordability is the current budget allocation of the institution. Under MTEF budgeting, one can determine the funding that has already been set aside for the project, at least over the next two years. This allocation should be compared with the expected 'unitary payment' for the new project.¹² If the unitary payment is significantly greater than the budget allocation, the institution must either find additional funds from other programmes or revisit the project design to reduce the specifications. Yet, looking at the budget allocation might be misleading, because the budget allocation may not take into full account all operating expenses, such as maintenance.

The fact that many public sector services across Africa are underfunded means that budget forecast figures on their own may underestimate the true cost requirement. A good way to determine the appropriate project cost is to define the minimum acceptable service delivery standards in a particular sector. Usually, these service standards are defined by legislation. Having determined the minimum standards, one can cost what it takes the public sector to deliver the required level of service, and this becomes the PSC that the private sector must beat. However, it is important that the private sector is given exactly the same service standards to deliver and not a more expansive output specification.

In some cases, especially in small resource-poor countries, the national budget might not be able to support even the minimum service standards specified by legislation. Indeed, many public sector facilities, such as hospitals and schools, are run down and poorly maintained. So the project, if properly specified, would be 'unaffordable' under current budget allocations. This is when external funding in the form of soft loans or grants are useful in lowering the cost to the public sector, and ultimately to the users.¹³ Introducing donor funding into PPP structures is becoming increasingly common in developing countries, especially in sectors where the poor are largely the beneficiaries of the final service or where the services are considered essential (for example, health services or water and sanitation). Below, we review some of the donor-funding facilities for infrastructure projects.

¹² The unitary payment is the annual amount paid by the government to the private party over the lifetime of a PPP project that is being financed through the state budget. It is also referred to as the annual 'service payment', and is comprised of the project input costs.

¹³ Given the long-term nature of these projects, the financing component is typically very large if debt is sourced purely from commercial lenders. Donor grants and concessional loans, therefore, reduce the cost of financing.



Infrastructure funding facilities

As discussed above, a constraint faced in many developing countries is the limited affordability of much-needed infrastructure services, rendering infrastructure projects unsustainable. Two types of subsidy may be provided to project sponsors, either by donors or by the government itself. These are upfront capital subsidies, or operating subsidies for the duration of the project:

- *capital subsidies*, or subsidies for the funding of the capital costs of the infrastructure, are typically once-off, but sometimes consist of multiple payments to reduce the costs of capital provision to the sponsors; and
- *operating subsidies*, or funding for the subsidisation of the use of the infrastructure services, often comprise a series of payments to support operating costs, and are used to fund public or merit goods where it is either difficult or inappropriate to charge users the full cost of service provision.

Donor support for infrastructure funding can be provided indirectly through budgetary and other support, whether through grants or concessionary lending. Several multilateral development banks including the World Bank, the African Development Bank and the DBSA provide such support to infrastructure projects across Africa.

In addition, donor facilities targeted at infrastructure funding include output-based aid (OBA) facilities such as the Global Partnership for Output-Based Aid (GPOBA) and the Private Infrastructure Development Group (PIDG) Technical Assistance Facility. OBA is a strategy for using explicitly performance-based subsidies to support the delivery of basic services, where policy concerns would justify public funding to complement or replace user fees. OBA facilities help fund economically desirable but commercially unbankable projects, where the price paid for the infrastructure service is below cost or risks are too high for the private sector to bear.

The Lesotho PPP referral hospital is a good example; here, the GPOBA provided US\$6.25 million in grant funding to render the project more affordable in the light of the government's social objectives. The project comprised several elements including the construction of a new hospital as a PPP in the Maseru district (the hospital's catchment area) and the nation's main referral hospital for secondary (and limited tertiary) services. Aside from supporting the design, construction and operation of this hospital, the project also supports two filter clinics.

The main objective of the Lesotho New Hospital PPP Project is to assist the new referral hospital in increasing access, value of spending for healthcare services, and leveraging private sector expertise for the operation and management of medical facilities. The GPOBA will provide the operator with a grant, which will be used to finance the filter clinics in advance of the hospital opening and the first unitary payment being made. The subsidy will allow more patients to be seen at a higher level of service at the filter clinics, and more patients to be seen at the new hospital, also at a higher level of service.

The lead financier, the DBSA, will finance 85% of the funding requirement through loans. The remaining 15% will be financed through equity. For the locally owned consortium members, much of the equity investment is made possible by shareholder loans from the DBSA and Netcare Ltd. The equity share of the Lesotho-based consortium members will increase progressively through the purchase of Netcare Ltd shares.



5. Practical issues in public-private partnership execution

Selecting appropriate projects

One of the first challenges a practitioner will face is choosing a project that is well-suited to PPP procurement. In fact, starting with the 'wrong' project could seriously hamper the prospects of a new PPP programme, because the project is likely to have a mixed outcome, which would strengthen the case of sceptics in the country concerned. It is wiser to start with a project that has the inherent characteristics of successful projects found elsewhere. From international experience, a good candidate for PPP procurement should:

- have clear boundaries and measurable performance in terms of output;
- be of a scale and value that is of interest to private sector contractors;
- have a significant element of service or operating content;
- have scope for the cost-effective allocation of risk to the private sector;
- have scope for innovation;
- have scope for the generation of additional third-party revenue; and
- involve assets and services that can be costed on a 'whole-of-life' basis.

In spite of ample evidence supporting these features for successful PPP procurement, governments starting out infrastructure projects still fall into the trap of trying to apply the PPP model to practically all projects in the pipeline. PPPs are not a panacea for infrastructure development. Indeed, many projects in the planning phase for new programmes will not fit the bill. They are either too small in scale, or have insufficient scope for risk transfer, or do not attract sufficient demand to sustain the high operating costs that come with running a PPP.

Legal and regulatory framework

One of the important reforms that countries must embark upon during the early phase of their PPP programme is the adoption of a legal framework governing PPP procurement. Due to the long-term nature of PPP agreements, the interests of both the public and private sector must be protected by law. One approach is to rely solely on the PPP contract that is entered into by the two parties. However, investors will be more confident about investing in a country that has a strong legal foundation for PPPs, in the form either of a dedicated piece of legislation or of regulations that are issued in terms of the country's procurement law (see Appendix A).

The legal framework must define clearly what arrangements are considered to be a PPP in that country, as well as identifying the 'rules of the game' in terms of procurement stages, regulatory bodies and eligibility for participation in the tender process. In addition to a PPP law, some countries have issued standardised provisions setting out common legal clauses for dealing with different scenarios that could occur under a conventional PPP project. The standardised provisions help to shorten the length of time it takes to negotiate a deal, since the governments' position in respect of certain common risks is known in advance.

Tender process

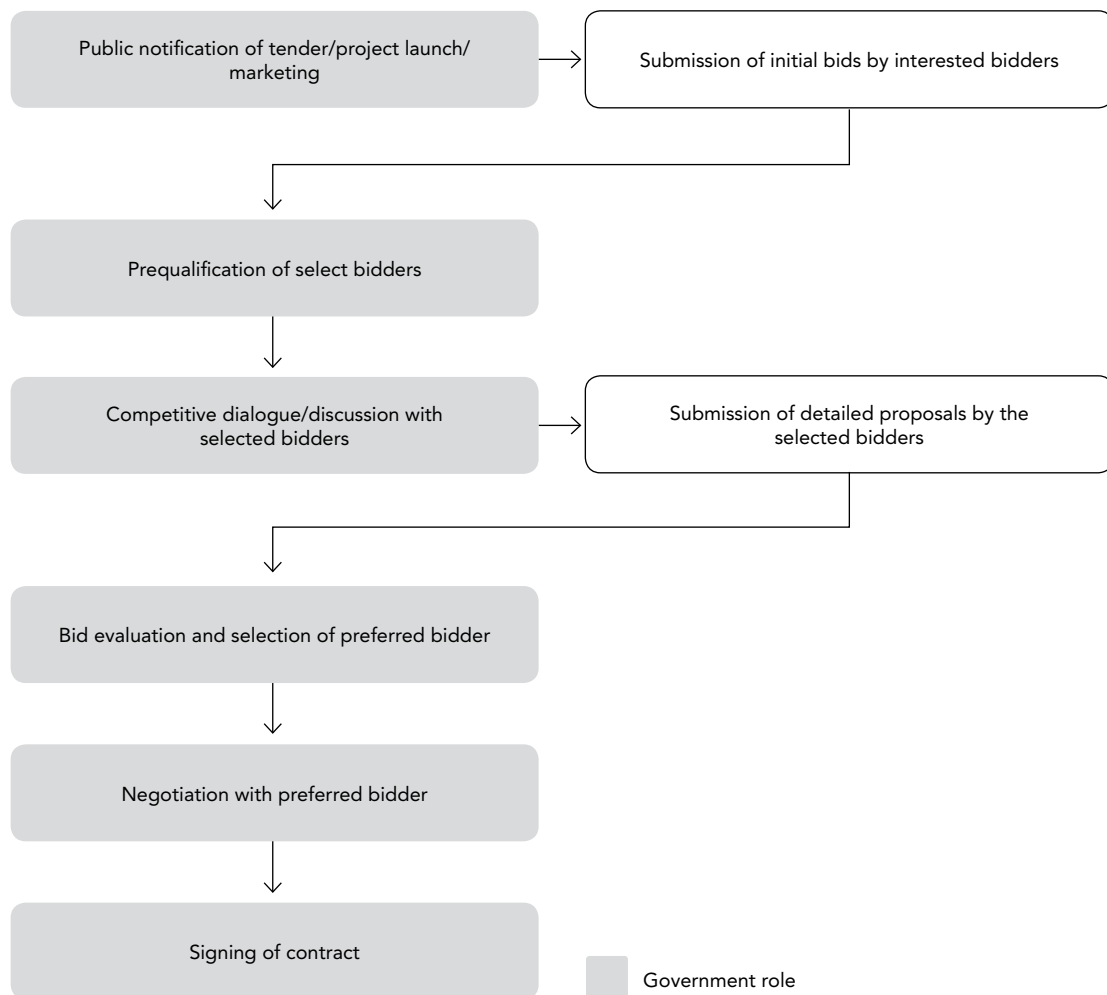
VfM is more likely to be realised where the tender process is competitive, transparent and fair to all bidders. Surprisingly, many newcomers undermine this central principle because of their determination to speed up the procurement process. For a long-term investment, it makes



little sense trying to save a few months up front only to find years later that the project is in trouble. PPPs do take a long time to structure, negotiate and deliver. This fact is often in opposition to the short-term horizon of political principals, who might be motivated by the electoral cycle, thereby putting bureaucrats in a real quandary.

An extreme manifestation of this practice is the 'unsolicited bid', where a single developer or investor approaches the procuring authority with a PPP project to deliver public services. There are some circumstances where an unsolicited bid might be appropriate, such as when the project developer has a unique solution or technology and, thus, would be the natural partner for the government. In other words, there really would be no serious competitor for the provision of the services, and certainly not at a more competitive price. However, the government might not be able to determine if this is the case without carrying out a formal market test, in which other bidders are invited to prove their mettle, without jeopardising the intellectual property of the original proponent. In general, countries that have only just launched their PPP programmes are discouraged from 'sole sourcing', because competition is the best determinant of value.

Figure 4: An illustration of value for money



Source: Commonwealth Secretariat (2009)



6. African experience with public-private partnerships

This section begins with a broad survey of PPP experience across the African continent, and across different sectors, with a view to showing the wide application of the PPP model.

Hospitals

The government of South Africa has closed five PPPs successfully in the health sector. All of the hospital projects were driven at the provincial level, and one project, namely the State Vaccine Institute PPP was procured at the national level. The hospital PPPs range from very large and complex projects like the Inkosi Albert Luthuli Central Hospital (IALCH) to smaller projects like the Limpopo Renal Dialysis Project. The IALCH is a state-of-the-art central and tertiary hospital that includes an on-site residential village. The Renal Dialysis Project required the private sector to design, construct, upgrade and operate the renal dialysis unit at Polokwane Hospital, treating 80 patients per month over a ten-year project term. By way of shareholder loans, 100% of the financing for the latter project was provided by the private sector, while the IALCH was financed through a typical project-financing model.

Energy

In Botswana, the government is procuring an independent power producer (IPP) on the Mmamabula coalfields. The project is a major, two-phase integrated coal mine and power station. The first phase will develop a coal mine that is expected to supply about 8 million tonnes per annum. This phase will also develop a power plant producing up to 2 500 MW using super-critical technology and flue-gas desulphurisation. The electricity generated by the power station will be sold to Eskom of South Africa and the Botswana Power Corporation under long-term power-purchase agreements (PPA). The completed project will include road upgrades, a dedicated railway link, high-voltage transmission lines, residential housing, water delivery and treatment facilities, medical facilities and an airfield. The feasibility study for this project was completed at a cost of about US\$80 million and was performed by more than ten specialist service providers. The first phase of the project will cost in excess of US\$9 billion. The project sponsors negotiated a favourable regulatory framework in Botswana, including various amendments to existing legislation, to facilitate the project-financed PPP.

Ports

Several African countries including Nigeria have procured private sector operators to manage aspects of their ports' operations. Until recently, Nigeria's ports were plagued by high inefficiency due to excessive centralisation, overstaffing and widespread corruption. Moreover, the bundling of both regulatory and operational functions within the Nigerian Ports Authority (NPA) created incentives for it to raise tariffs instead of improving efficiency. In 2004, the authorities began promoting private sector participation. Since then, 24 concession agreements have been signed with private parties for the management of ports. These concessions have increased the productivity of ports and reduced cargo rates. The rates declined by 50% for containers and 25% for bulk goods. Most private operators have undertaken new investments in accordance with their agreements. However, the envisaged legal and institutional framework has not been put in place, limiting the effectiveness of the reform.



Railways

Railway concessions across Africa have been characterised by difficulties such as those seen on the Nacala railway line in Mozambique. The Nacala railway line interlinks the Port of Nacala with the railway systems of northern Mozambique and Malawi. The foreign partner in a PPP for the rehabilitation and operation of the Nacala railway line secured credit from the Overseas Private Investment Corporation under guarantee by the government of Mozambique, and put itself in charge of managing the railway. However, the investment was not made as planned, and the private partner was considered not to have managed the railway effectively. Traffic volume declined and the concessionaire started to accumulate arrears on the concession fee payable to the state-owned railway and ports company. Independent analysis of the problems behind this PPP concluded that non-competitive bidding allowed an underqualified operator to secure the PPP contract. In addition to the fiscal risks related to the government guarantee, the railway infrastructure assets are not being rehabilitated as anticipated, creating future costs for the government.

Wastewater treatment project

The New Cairo Wastewater Treatment Plant project is the first PPP pilot project in Egypt. The project is being procured by the Ministry of Housing, Utilities and Urban Development through the New Urban Communities Authority. The objective is to treat domestic wastewater within New Cairo City, Madinaty and El Mostakbal, producing secondary treated water and sludge to reuse in agricultural areas.

The service provider (Orasqualia) will design, finance, construct, own, operate and maintain the treatment plant. The new asset will be transferred to the government after 20 years. Orasqualia will provide the services, the working capital and the long-term finance. Due to social considerations, the user fee that the service provider can charge is not sufficient to sustain the required outlays of capital and operating expenses. To bridge the difference, the government of Egypt will supplement user fees with an operating subsidy. The private sector will receive the subsidy on top of the income it generates from the user charges (set by the regulator) and the profit made by selling the sludge to the market.

A key consideration in the planning of the project was how to deal with foreign currency risk. This issue arises often, as African sponsors may want to take advantage of the lower interest rate structure in the developed economies, especially following the 2008 financial crisis. The Egyptian authorities chose to avoid foreign exchange risk by requiring sponsors to draw only on debt denominated in local currency. Where foreign debt instruments are permitted, a suitable mitigation strategy must be agreed to by the parties to minimise the impact of adverse foreign currency movements that could reduce project cash flows. (Part 2 provides a detailed case study of the project.)

7. Conclusion

An increasing number of African countries are establishing programmes to promote PPPs as an alternative form of procurement for large infrastructure projects, particularly in the transport, energy, health and water sectors. This is a welcome development, as PPPs have the potential to improve the quality and consistency of infrastructure services. As in other regions of the world, African governments are generally not adept at managing the procurement of large and complex capital projects. In such cases, it makes sense to consider the participation of the private sector to assume specific risks that can be managed better by them.



In this paper, the core principles of risk transfer and VfM are shown to be two sides of the same coin. Where the private sector can manage specific project risks better, compared to public sector delivery, value can be generated for the project as a whole. The PPPs should be able to achieve the same outputs or services at a lower cost relative to the traditional public sector solution, the PSC. Although there has been much debate around the usefulness of the PSC, it remains a worthwhile tool for establishing an analytical benchmark against which to compare private sector bids.

However, even when optimal risk transfer and VfM have been clearly demonstrated, the project should remain 'affordable' to the public sector as a whole. In fact, affordability can rightly be considered a precondition for PPP procurement. PPP proponents often make the mistake of pushing a PPP solution without considering the broader implications for the sector budget and, indeed, for the national budget. Where the budget constraint is binding, introducing a large, inflexible charge on the budget reduces fiscal space, and can breed resentment from other project and sector managers as their respective budgets come under pressure. Using soft financing, as seen in the case of the Lesotho hospital project, can help to ease the budget tensions, while promoting high-quality services through PPP procurement.

The wastewater treatment plant in New Cairo provides another good example of a situation where social objectives require an additional source of funding to supplement user fees. On their own, user fees could not cover the full economic cost of recovery without a sharp increase in fees, which would not be acceptable politically or socially. Since the government wants to accelerate service delivery, it decided to introduce an operating subsidy that the operator would receive in addition to user fees and income generated from selling a by-product of the treatment process.

The principles and practice of PPPs have become widespread internationally. Indeed, the project-finance model that serves as the framework for large PPP projects has been around since the 1950s. The challenge for African countries is to identify additional sources of funding to make PPPs affordable and sustainable. Private sector financing will continue to support well-structured PPP projects but, given small national budgets, affordability remains an obstacle. Hybrid financing models that encompass private finance and grant funding (either from development partners or from the government) appear to offer a workable solution, as seen in the case of the new PPP referral hospital in Lesotho.

References

- Commonwealth Secretariat (2009) *The compendium of best practices in public-private partnerships*.
- Easterly W (2006) *The white man's burden: Why the west's efforts to aid the rest have done so much ill and so little good*. New York: Penguin Press.
- Goldman Sachs (2008) *A small price to pay: Financing Africa's infrastructure bill*. Global Economics Paper No. 174.
- Ministry of Finance and Economic Planning, Rwanda (2009) *Public-private partnership handbook*.
- Ministry of Finance, Singapore (2004) *Public-private partnership handbook*. Version 1.
<http://app.mof.gov.sg/data/cmsresource/PPP/Public%20Private%20Partnership%20Handbook%20.pdf>
- Moyo D (2009) *Dead aid: Why aid is not working and how there is a better way for Africa*. New York: Farrar, Straus and Giroux.
- Synge R (2009) Infrastructure: Sustaining the momentum for modernization. *The Africa Report* No.14.



Appendix A: Basic elements of a law on public-private partnerships¹⁴

The core features of a sound legislative framework for PPPs were documented by a multilateral group of experts led by the Organisation for Economic Co-operation and Development (OECD). The group found that PPP legislation should: (a) set the parameters of government authority to enter into PPP arrangements; (b) identify the institutions that are authorised to implement PPPs; and (c) provide guidance on the negotiation and implementation of PPP agreements. Specific guidelines for an appropriate framework law on PPPs are outlined below.

A. Defining the scope and nature of PPPs

The framework law should define and distinguish key concepts involved in implementing PPPs, such as the terms 'concession' and 'infrastructure'.

B. Specifying key procurement procedures

The legislative framework should set clear procedures for: (a) the pre-selection process to identify qualified bidders; (b) requesting detailed project proposals from qualified bidders; (c) compiling a list of special procedures for complex projects; (d) evaluating criteria to assess proposals; and (e) selecting and awarding the PPP agreement.

C. Elaborating the content of PPP agreements

A sound framework law for PPPs should specify the required contents of an acceptable PPP agreement. This includes identifying:

- the nature of the work to be done and the asset to be constructed;
- the duration of the contract;
- the degree of exclusivity in service provision;
- the dates for completion of the asset;
- the payments expected by the government and/or the private partner, and contingencies;
- the environmental protection requirements;
- the rights of the government to monitor performance;
- the conditions for termination of the contract or temporary government takeover of the asset to ensure continuity of service;
- the provisions for force majeure;
- the process for the settlement of disputes; and
- the financial protection for the private partner from changes in legislation.

¹⁴ This appendix has been sourced from the International Monetary Fund (IMF), which has a great interest in ensuring that countries starting a PPP programme have adequate controls to manage fiscal risks and contingent liabilities, in particular.



Part 2

The New Cairo Wastewater Treatment Plant

Clara Picanyol¹⁵

¹⁵ The author wishes to express special gratitude to Mrs Rania G Zayed, Director of the PPP Central Unit and Adviser to the Minister of Finance, and her team, for making themselves available throughout the mission, and for their invaluable comments on a previous version of the case study.



In 2006, the government of Egypt (GoE) adopted a new long-term policy of pursuing partnerships with the private sector to expand and increase the country's infrastructure investments. The New Cairo Wastewater Treatment Plant (WWTP) project is a key public-private partnership (PPP) pilot project. The project, managed by the Ministry of Housing, Utilities and Urban Development (MHUUD) through New Urban Communities Authority (NUCA) is aimed at treating domestic wastewater within New Cairo City, Madinaty and El Mostakbal, and producing secondary treated water and sludge to reuse in agriculture in the area. This project – undertaken with the support of the PPP Central Unit in the Ministry of Finance – will serve as a model for PPP transactions in the area of urban services, which can be replicated in other projects involving the wastewater sector.

Background

To sustain growth prospects of around 7–8% in the future, it is estimated that Egypt should allocate between 5.5% and 7% of its annual GDP to cover its infrastructure needs. This includes new investment and maintenance, and represents a yearly amount of US\$13 billion.

The recent financial crisis has placed additional pressure on public finances, and has increased the need to seek alternative sources of funding for large infrastructure projects. Private developers will be more selective, demanding higher quality, more 'bankable' PPPs and risk-sharing. As an asset class, infrastructure will be preferred to other investments by many investors. PPPs provide a new source of investment capital for required infrastructure projects to bridge the financial gap between the sector's needs and the public sector's funding capacity constraints.¹⁶

PPPs in Egypt

The fundamental aspect of Egypt's PPP policy framework is the use of performance-based contracts, under which the private sector provides public services for the duration of the contract and is paid by the public sector, the user, or a combination of both. While the outputs are specified by the line ministry, how the private sector partner goes about producing the outputs is its responsibility. Under a typical PPP contract, the government retains strategic control over the service, secures the infrastructure (which generally reverts back to the public sector at the end of the contract) and allocates project and performance risk to the parties best able to manage or mitigate these risks.

The private contractor makes the investments in terms of funds, technology, expertise, time and so on, such that risks (including finance risks) are transferred to the private sector. Payments are made in exchange for performance.

PPP policy in Egypt has focused initially on four sectors: schools, health, utilities and transport. A pilot project has been identified in each of these sectors. However, not all of them have been successful. In fact, the pilot schools project was cancelled half way through the procurement process to be re-tendered under different conditions, since there was only one bidder.

The New Cairo WWTP project is the only tender to have been awarded so far. The pilot health project is at an advanced stage and was expected to have received the technical and financial bids by May 2010, while the pilot transport projects are currently under due diligence.

¹⁶ It is worth noting that the utilities sector in Egypt was run by the private sector prior to the revolution in 1952. It was then nationalised and is currently in its initial stages of partial liberalisation.



The financial sector in Egypt

Egypt's financial sector is highly developed and has sufficient lending capacity to fund large infrastructure projects, but there is a limit to the extent to which multiple PPP projects can be financed simultaneously. Egypt has three national banks with state funds and up to 15 commercial private banks. The international financial sector also has the capacity to finance these projects. However, the local banks may have a more limited lending capacity, which constrains their ability to finance multiple PPP projects.

Although the private sector might wish to borrow in foreign currency to obtain better terms, Egypt's experiences of several years ago showed how much foreign exchange fluctuations can cost the public sector. Between 2001 and 2003, the exchange rate depreciated from L.E.3.85/US\$1 to L.E.6.15/US\$1, while there were underway various projects with borrowings denominated in foreign currency. There are no instruments to hedge the Egyptian pound for a period longer than a year.

The legal framework

The GoE realises the importance of an appropriate legal framework to provide a balanced mechanism of duties and obligations between the various parties to a PPP contract, in order to ensure successful project implementation and to allocate the risks to the party most able to manage them (PPP CU 2009).

Currently, PPP projects in Egypt are tendered under Law 89 of 1998 (the Law on Organising Tenders and Bids for Public Procurement). To overcome the legal and procedural impediments that arise under the current legislation related to concessions or public procurement law, the GoE has prepared a draft PPP law. This law will ensure that the selection of investors is made in a transparent, fair and competitive manner; it will also determine the scope of partnership projects and the role of the various government entities (the Central PPP Unit, for example, is not located with the tender authorities, but in the Ministry of Finance). In addition, the law will grant the Minister of Finance the right to issue Executive Regulations in respect of the PPP Law within three months of its enactment.

The institutional framework

The institutional framework related to PPPs in Egypt has its public face in the PPP Central Unit (exhibit A), which acts as the PPP centre for support and expertise, identifies pilot projects together with responsible line ministries, sets national guidelines for implementation, standardises PPP contracts, provides technical/advisory support to infrastructure line ministries and monitors the implementation of PPP projects. In a nutshell, it acts as the gatekeeper of PPP projects in Egypt and provides the guarantee of the government via the Ministry of Finance. This commitment is shown in the budget allocation of the relevant line ministry, in a separate budget line earmarking the funds for the specific project.

Currently, the PPP Central Unit is staffed by 14 people, including 11 core professionals and three support staff. They combine backgrounds in engineering, law, the financial sector and economics, as well as the social services sector. The head of the unit is a former investment banker with wide expertise in project financing and the banking sector. The unit's staff fall outside the public sector salary structure and receive private sector equivalent salaries. However, their pay is not based on performance and has no variable component or bonus depending on the achievements of the PPP policy. The unit has the technical capacity to assess critically the recommendations provided by their advisers (including transaction, legal



and technical advisers). This has enabled the unit to take on the work of their advisers if the outsourced services have failed to deliver as expected.

The PPP Central Unit is building the necessary institutional framework for PPPs, including PPP manuals and guidelines, PPP project development and preparation facilities, long-term service contracts and PPP procurement regulations, financial performance guarantees and PPP contract performance monitoring capacity. The private sector perceives the unit as a well-organised public sector team.

The New Cairo Wastewater Treatment Plant

The partnership

The New Cairo WWTP project is structured through a special purpose vehicle (SPV) (exhibit B) formed by the winning consortium, Orasqualia, which will design, finance, construct, own, operate and maintain the plant, and then transfer it to the government at the end of the contract period (20 years). Orasqualia was formed by Orascom Construction Industries and Aqualia, which will provide the services, working capital and long-term finance, and will receive the net income or cover the net loss. The private sector will own the project assets for the duration of the contract, with the public sector only providing sectoral planning and regulation of the services.

Orasqualia is to finance the project fully, with an investment of 30% equity and 70% debt, while its member companies have the building and maintenance contract. A total of four banks will be the lenders to the project. At the expiry date or early termination date, Orasqualia is responsible for transferring ownership to NUCA of a new domestic WWTP with a capacity of 250 000 m³/day for domestic wastewater within New Cairo City.

The MHUUD has the responsibility of addressing residential and commercial needs, including the provision of utilities. Within the MHUUD, NUCA is responsible for the new urban area, initially identifying the need for wastewater treatment while developing the strategic plan for the area.

However, NUCA delegated the responsibility of tendering and management of the treatment plant contracts to the Construction Authority for Potable Water and Wastewater (CAPW). This was due to capacity constraints in NUCA, and the institutional knowledge and expertise of the CAPW derived from providing such facilities in the areas under its mandate. The CAPW has extensive experience in the requirements for this type of project, and would have led the process within the MHUUD had the project gone through traditional procurement.

Line ministries often are uncomfortable with PPP policies, as they find themselves playing a secondary role in the procurement process. Although the PPP Central Unit provided continuous support and technical assistance during the negotiation process, line ministries remain the drivers and owners of the project.

Orasqualia has a partnership agreement with NUCA, in terms of which the former guarantees the construction, operation and maintenance of the WWTP, while the latter guarantees payment for the treated water (effluent) and for the inflow of water to be treated (influent).

The government specifies the quality criteria of the treated water that the service provider must deliver, undertaking to buy all the treated water that meets these criteria (provided that the quantity falls between an agreed minimum and maximum per day).



Since the government assumes the demand risk, it wants to avoid overcapacity and the consequent need to pay for the excess treated water. Therefore, the capacity of the New Cairo WWTP was calculated as accurately as possible, and towards the conservative side. In order to do this, population growth in the designated area had to be estimated. This was done by conducting a survey and taking into account the experience of existing urban areas. Local and international consultants assisted in the project.

The CAPW estimated that a capacity of up to 1 000 000 m³ would be required to meet the demand in the area. However, since the population growth was unknown, and to mitigate the risk of this uncertainty, it was agreed that the capacity would be built in phases and would start with 250 000 m³ for the New Cairo WWTP. The additional plants needed to meet the anticipated increase in demand are already marked for development.

The government guarantees the supply of water to be treated, and this water also must meet specific quality criteria. If the government fails to provide water satisfying the agreed criteria, it must pay a penalty and compensate Orasqualia for the additional cost of treating the water.

If the minimum inflow cannot be provided at any given time, the government can use influent water from an existing plant that is in partial operation. In order to be able to do this, the government is building a pipeline to transfer water from the old plant to the new one.

Developing and implementing the WWTP

Phase I: Project initiation and screening

The MHUUD developed a plan for the New Urban Area of Cairo, covering the commercial, residential and service needs (including additional water supply) for the extension of the city. The New Cairo WWTP was among the projects proposed to address these needs. The project cost was L.E.2.6 billion, and would have represented a budget burden if traditional procurement had been used.

In 2007, the New Cairo WWTP project was identified as a candidate for a PPP pilot project. In mid-2007, one and a half years prior to the tendering of the project, the government shared a draft contract with interested private sector parties and potential investors. Such interaction continued throughout the tendering process with all pre-qualified bidders. The government responded to feedback with proposed amendments that it considered favourable for the project.

Phase II: Advisers and consultants

The PPP Central Unit appointed different advisers to assist in facilitating the process. The International Finance Corporation (IFC) was contracted as the transaction lead adviser, Parsons Brinckerhoff were hired as the technical consultants and Gide Loyrette Nouel as legal advisers. With their assistance, the PPP Central Unit analysed the feasibility of the project as a PPP and developed the proposed transaction structure and approach to risk allocation by the MHUUD.

Phase III: Risk assessment, VfM analysis and the PSC

The PPP Central Unit compared the PPP option to normal public procurement. This is done using the Public Sector Comparator (PSC) and served as a value-for-money (VfM) assessment, which confirmed that a PPP project would yield better VfM than comparable public procurement.



An information memorandum was developed, and a shadow model was used to compare the PPP arrangement with the PSC. This showed that VfM was very high, both for the construction and for the operation and maintenance of the project. The fact that there was no feasibility study significantly weakens the accuracy of the estimates, but it was argued that the shadow model clearly showed efficiency gains. Surveys and parallel analyses of the project were undertaken, which saved time but left some uncertainty with regard to the exact measure of VfM.

The shadow model was developed with conservative estimates. As the government would be the only recipient of the service, it had to manage the demand risk. An outline of the measures taken in this respect appears in the section above.

The private sector felt that the government was allocating the risk to the party best placed to handle it.¹⁷ The government analysed supply, demand, inflation and other risks, considering whether there were measures within the contractor's control that could mitigate these risks. By taking these risks away from private sector control, the government increased competition.

Phase IV: Tendering and procurement

The MHUUD, in co-operation with the PPP Central Unit, issued a request for expressions of interest (Eoi) in 2008, to which there were more than 50 responses. This step has now been replaced by a 'market testing' exercise that requires local and international bidders to complete questionnaires.

The request for qualifications (RfQ) was issued in the first quarter of 2008, and applicants were given 60 days to respond. Ten bidders were shortlisted.

The request for proposals (RfP) was issued in December 2008 (see exhibit C), giving the shortlisted bidders access to the necessary data and all related tender documents.¹⁸ Initially, bidders were asked to submit questions related to the project in writing, knowing that, in addition to one-to-one meetings, the answers would be distributed to all bidders.

About 900 questions were received from bidders. The transaction adviser provided draft answers; however, the PPP Central Unit reviewed and supplemented those answers to ensure that all issues were clarified. The capacity of the PPP Central Unit to scrutinise the questions and answers was essential in responding to the bidders with confidence.

Out of the ten shortlisted bidders, only seven purchased the RfP documents. Of these seven, five submitted their bids by the deadline.

Phase V: Bidder selection

Given the limited variation on the technical design, the evaluation criteria of the *technical bid* did not use a scoring system, and there were only two possible results: pass or fail. The bidders had to pass nine evaluation criteria, grouped into four categories: Site Plan, Treatment Process, Construction Timetable and Operations Programme.

The tender documents clearly specified that no bidder could withdraw its bid, either before or after the bid-submission deadline. The bidder could amend its bid prior to the bid-submission deadline by submitting an additional envelope, but no amendments would be accepted after the deadline.

¹⁷ As expressed by the contractor's representatives.

¹⁸ Since it was a pilot project, the preparation of the tender documents took about six months. These are now standardised.



Political pressures often limit the power of the evaluation committee and sometimes can undermine the credibility of the PPP team. In the New Cairo WWTP project, however, political support played an important role in avoiding the favourable treatment of any particular bidder, showing commitment to rules and procedures and the will to carry out the process in a fair and transparent manner.

When the technical bids were opened, one of the bidders was disqualified for designing the plant for a different site.

Given the pass or fail technical evaluation system, the cheapest *financial bid* would be awarded the project. Thus, out of the bidders that passed the technical bid, the successful bidder would be the one whose financial bid resulted to the lowest Net Present Value of Adjusted Annual Sewage Treatment Charge and Adjusted Pass-Through Charge.

Bidders were asked to submit a financial bid that included the Annual Capacity Charge, Annual Fixed Operating Charge and Annual Variable Operating Charge for the duration of the contract. The sum of these three charges would result in the Annual Sewage Treatment Charge. The value of the contract would be calculated from the annual charges from year 3 until year 20.

In addition, the bidders had to provide an amount for Maximum Electricity Consumption, as this was estimated to represent a large proportion of the operating costs, depending on the technology, and would affect the price significantly.¹⁹ At the same time, it would be a technology indicator. Rather than using a scoring system for the technical bid, the PPP Central Unit considered electricity consumption as the only major differential in the operation of the plant, so long as the service provider met the quality specifications for the treated water.

The Evaluation Committee had calculated the maximum acceptable charges, and if no bidder succeeded in offering to provide the service below the maximum charges, the PPP could not go ahead.

Out of the four bidders that passed the technical bid, one was significantly more expensive than the rest, because it used a different technology. Two of the bids had similar charges, which were close to the ones calculated by the PPP Central Unit. The fourth bid was slightly cheaper than those two. Since there was no scoring system for the technical bid, the relative differences between the financial bids did not matter, so long as there was a single one that was cheaper than the rest.

Orasqualia was awarded the project, because they were the cheapest of the four successful technical bids. The financial bid did not include the financial model. This was later verified by an auditor who ensured that the annual charges presented were in line with the model used.

Phase VI: Contract signature and financial closure

The contract was signed on 29 June 2009 between NUCA and Orasqualia for the development of the New Cairo WWTP. The project then entered the condition-precedent stage, with financial closure expected by 29 December 2009. During this period, Orasqualia, the PPP Central Unit and other concerned parties had monthly meetings to address any problems in good time.

Contrary to the experience of other PPP projects, only minor amendments needed to be made before the finalisation of the contract. This is attributed to the efforts aimed at addressing the issues with the interested bidders throughout the procurement process.

¹⁹ Some of the personnel involved in the negotiation estimated electricity to account for 30% of the total cost.



Phase VII: Post-award PPP performance monitoring and contract compliance

The duration of the contract is 20 years, two years for construction and 18 for operation. Construction was expected to start on 1 January 2010, and operations on 1 January 2012. A PPP contract monitoring plan and a performance control committee will be employed to keep track of performance during construction and operations. At the expiry of the 20-year contract period, the service provider will hand over the WWTP to NUCA in good operational condition, as stipulated in the contract, for no payment.

Inflation and exchange rate risks

Although it might not be obvious how some of the key issues highlighted played a role in the decisions taken on the inflation and exchange rate risks, they all contributed towards the credibility of the project and put the government in a strong position to set the rules and attract the necessary investors.

Exchange rate and inflation risks

There were two variables that affect the financial bids significantly, because of their risky nature – inflation and foreign exchange projections.

Inflation: Operating charges would be subject to inflation indexation and, therefore, bidders could incorporate adjustments for inflation in the calculations of future costs and bear this risk. Conversely, the government could specify the inflation index and agree to adjust it retroactively where necessary and thereby bear this risk.

Exchange rate: Exchange rates could play a major role in the financing of the project if debt was incurred in foreign currency, or the construction, operation and maintenance of the project required a large amount of imported goods and services. This would be the case especially for international bidders and for bidders that wished to borrow in foreign currency.

The decisions were taken at the highest level of government prior to the beginning of the project cycle and apply to all the projects currently being considered in Egypt. In this respect, they were not seen as presenting a challenge in this case; rather, they are decisions that must be made in each project in all countries, and are likely to have different outcomes depending on the specific context.

The following decisions were made:

- the annual inflation index will be dictated by the GoE and adjusted annually and retroactively according to the Consumer Price Index (CPI); and
- service providers will bear the foreign exchange risk, and all payments will be in local currency.

In some countries, this could result in some discomfort in the private sector and reduce its participation in PPP projects. However, this did not present a challenge in the New Cairo WWTP within the Egyptian context.



The reasoning behind these decisions and their implications are considered below.

Inflation risk

The government decided that bidders should not include their own inflation projections in their prices and, instead, provided them with an inflation rate based on the CPI and guaranteed that it would be updated annually and retroactively. This meant that bidders had no inflation risk, and variances between the index projected by the government and the actual one would affect the cash flow, but not actual profits.

One may argue that if bidders were to include their own inflation projections in their charges, the government would not need to compensate for any variances with the forecast, and could pass on that risk to the bidder. Needless to say, this would include charges, as the risk would be factored into the price, but the government could elect to 'buy' that risk.

As with the demand risk, since the government was best placed to handle the inflation risk, it assumed that risk and avoided it being included in the charges.

Exchange rate risk

The decision on the exchange rate was in accordance with a policy set by the government before any project was considered. It applies to all PPP projects in Egypt, and is not expected to be reconsidered soon.

Seeking finance in the international market could allow bidders to find better terms and conditions to finance the project. However, the government would not guarantee any debt denominated in foreign currency, and a decision was taken that all payments would have to be made in local currency.

Although this may have caused some displeasure in the private sector, the GoE was still able to attract sufficient interest and to close a successful PPP agreement, and expects to follow the same course with other projects in the pipeline. According to estimates by the PPP Central Unit, this is not believed to be an impediment at the moment and, more importantly, the risks associated with reversing the policy are considered to be too high.

In Egypt, you can hedge the foreign exchange risk of the Egyptian pound for only one year. Therefore, neither the public nor the private sector could have hedged this risk, and it would have made the bid significantly more expensive.

At another time, the international markets might well have come up with innovative products allowing for more favourable results. However, in the current environment, following the financial crisis, these products are unlikely to be developed.

The GoE has faced challenges with fluctuations of the exchange rate in the past while it had affected agreements in place. The Egyptian pound depreciated from L.E.3.85/US\$1 in January 2001 to L.E.6.15/US\$1 in October 2003.²⁰ The repayment of debt became very expensive and drastically changed the expected financial costs.

The decision this time was not about who was best placed to handle the risk. In the case of the exchange rate, the decision was about whether it was worth taking the risk at all if there was a

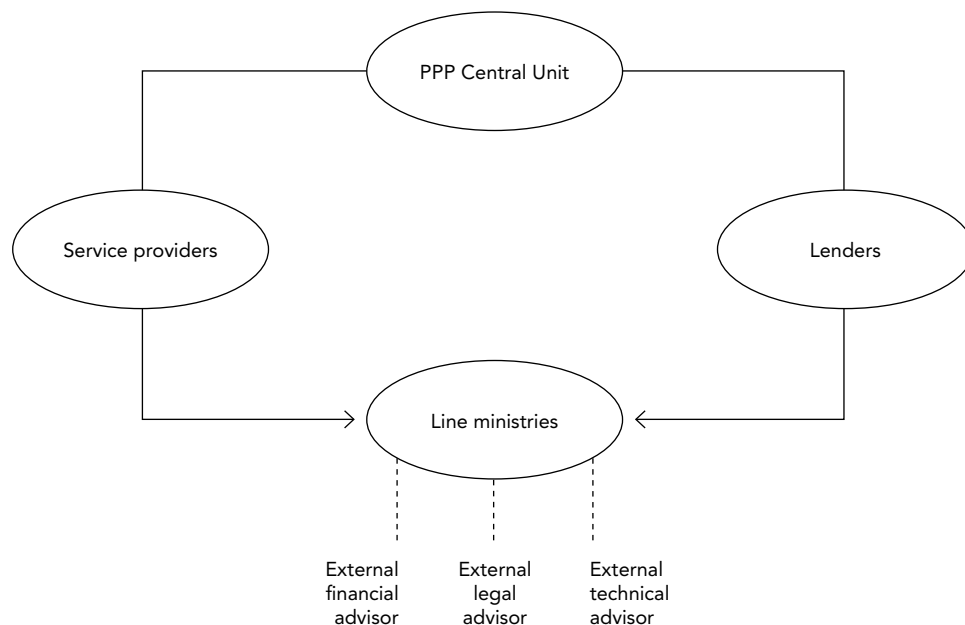
²⁰ See Kamar B & Bakardzhieva D (2003) *Economic trilemma and exchange rate management in Egypt*. Paper presented at the 10th Annual Conference of the Economic Research Forum of the Arab countries, Iran and Turkey, December 16–18. Available at: www.erf.org.eg/CMS/getFile.php?id=638



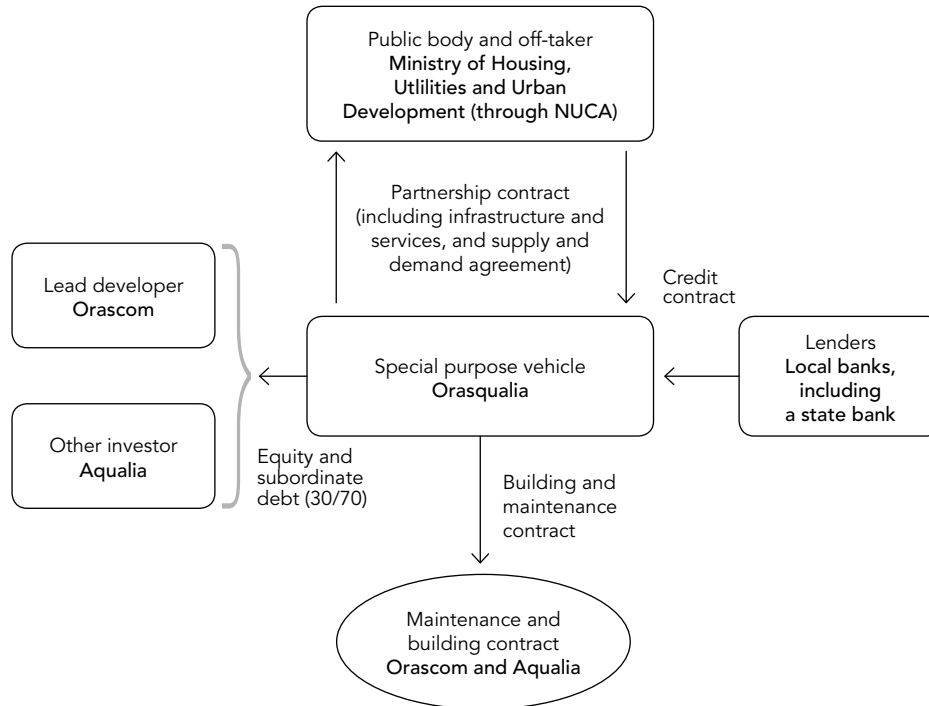
risk-free solution for both the private and the public sector. Some could argue that this was a second-best solution, because it limited the lending market, but reality showed that competition was still strong and terms and conditions satisfactory for all the parties.

Egypt's decision was only possible thanks to the capacity of the country's financial sector and the legal and institutional framework, which contributed to an enabling environment that continued to attract the private sector. The project was bankable in local currency, and the policy can contribute to the development of the local financial sector, which would yield greater benefits in the long run.

Exhibit A: The role of the PPP Central Unit



Source: The National Program for PPP, PPP Central Unit, June 2009


Exhibit B: The partnership structure


Source: Author, based on the PFI structure of Design-Finance-Build-Maintain-Transfer of the PPP Central Unit in Egypt

Exhibit C: Timetable for procurement

Activity	Date
Issuance of invitation for bids, including tender document and draft contract and annexes	1 December 2008
Individual meetings with bidders on bidding documents	26–28 January 2009
Issuance of the amended tender documents	15 February 2009
Bid-submission deadline and date of technical bids opening	31 March 2009
Notification on technical bid evaluation results and announcement of the date of the financial bids opening session	28 April 2009
Financial bids opening session	7 May 2009
Announcement of the successful bidder for the project	11 May 2009
Notification of award of contract for the project	18 May 2009
Submission of performance security and signature of the contract	June 2009
Financial closure	December 2009

Source: 'Amended Tender Document for the Availability and Operation of a WWTP in New Cairo through Public Private Partnership', The Arab Republic of Egypt, 15 February 2009



Example of case-study questions

Please prepare an outline of the advice that you will provide to the finance minister, who has asked you to assess the use of PPPs in Egypt by reviewing the New Cairo WWTP project. Your advice should address the following key issues:

- Why is the use of PPPs suitable for Egypt? Are there any factors that, were they to change, would result in Egypt needing to rethink its commitment to partnerships with the private sector to expand infrastructure investment?
- Should the minister continue to manage projects, by way of a change in legislation? Why?
- How is risk allocated between the government and the consortium in the WWTP project? Is this appropriate? Would risk in other sectors/other projects be allocated along similar lines?
- The allocation of exchange rate and inflation risks is an issue for all PPPs. The minister would like your advice on how to manage these risks in this project and in PPPs in general. Please investigate and advise.
- Can Egypt use this project's process as a model for subsequent projects?
Base your answer on a consideration of the following:
 - What has Egypt done right, which should be replicated for other projects?
 - Are there any decisions made by the government that you would have approached differently?
 - Are there any flaws in the process?

This publication was compiled by the CABRI Secretariat. It contains research papers presented at the CABRI infrastructure dialogue in December 2009, which have subsequently been edited. All errors are those of the authors and editors, and the text does not constitute a shared opinion of or representation by any of the ministries to which the authors are affiliated.

For information on the Collaborative Africa Budget Reform Initiative, or to obtain copies of this publication, please contact:

CABRI Secretariat
National Treasury
Private Bag X115
Pretoria 0001
South Africa
e-mail: info@cabri-sbo.org
www.cabri-sbo.org

Copy-editing by Laurie Rose-Innes
Design and layout by Compress.dsl

This publication has been produced with the kind assistance of the Financial Management Improvement Programme II (FMIP II) which is funded by the European Union and the GTZ. The contents of this publication are the sole responsibility of CABRI and can in no way be taken to reflect the views of the GTZ or the European Union.



gtz



Federal Ministry
for Economic Cooperation
and Development

CABRI 

CONNECT • SHARE • REFORM



REPORT
2