CABRI Collaborative Africa Budget Reform Initiative

Briefing paper
2010 | 3

Ensuring value for money in infrastructure

Lessons from studying six large African infrastructure projects

Value for money in infrastructure projects starts at the level of project preparation and appraisal, and is generated throughout the project cycle. This was the key lesson highlighted by participants in the December 2009 CABRI Dialogue on Value for Money in Infrastructure Projects.

The Dialogue was arranged as part of CABRI's ongoing engagement with members' practices in capital budgeting and infrastructure development. Ensuring value for money in infrastructure projects is a challenge for African states if they want to bridge the infrastructure gap and deliver basic public services to their citizens. In many African countries, infrastructure projects represent a substantial portion of the annual budget. Weaknesses such as difficulties in appraising projects, access to financing and low execution rates have plagued the management of public infrastructure projects.

The Infrastructure Dialogue brought together senior officials from the budget offices and ministries of infrastructure of ten CABRI countries: Guinea, Kenya, Lesotho, Mali, Mauritius, Mozambique, Senegal, Sierra Leone, South Africa and Tanzania. 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 how to manage expenditure on these projects during implementation to achieve value for money. The Dialogue used keynote papers and six case studies as learning tools to apply the approaches, concepts and frameworks to real-life situations.

Significant further lessons highlighted by the participants were:

- the importance of appraisal processes in ensuring that projects are feasible and represent cost-effective solutions;
- the value of private sector contributions in terms of financing and managing large infrastructure; and
- the value of a risk-based approach to managing the implementation of infrastructure.

This brief discusses each of these in the context of the presented case studies. The keynote papers and case studies can be found on the CABRI website (www.cabri-sbo.org), following the links to the Infrastructure Dialogue pages.

THE INFRASTRUCTURE GAP

A study recently conducted by the Africa Infrastructure Country Diagnostic (AICD)1 in 24 African countries shows that the poor state of infrastructure in sub-Saharan Africa – its electricity, water, roads, and information and communications technology (ICT) – cuts national economic growth by 2 percentage points every year and reduces business productivity by as much as 40%. The report estimates that US$93 billion, more than twice what was previously thought, are needed annually over the next decade to address the gap. The study also found that existing spending on African infrastructure, US$45 billion a year, is much higher than previously known. The fact that most of this is domestically financed by African tax-payers and consumers was also surprising. There is, however, considerable wastage to address; efficiency improvements could potentially expand the available resources by a further US$17 billion, according to the study. However, even if major efficiencies are gained, there is still a funding gap of US$31 billion every year, much of it for power and water infrastructure in fragile states.

Key finding: The importance of appraisal

The appraisal keynote paper highlighted that the function of thorough appraisal processes is to ensure that, when projects are approved for financing and the procurement of service providers, the proposed project is financially sustainable, technically feasible and will provide a positive economic return. In fact, the twin concepts of feasibility and desirability can be applied in the various dimensions of project appraisal (for example, whether the project is financially, technically, economically, institutionally and environmentally feasible and desirable). Looking at project desirability systematically, over and above feasibility, allows governments to make choices between projects that are financially, technically and economically feasible. Participants were presented with sample criteria that would determine whether a project is feasible and desirable.

Feasibility criteria

Is the project consistent with government policies and plans;

can the design requirements be met; is the technical capacity of management and the workforce adequate; will the project, at all times, have a positive cash flow that allows it to meet its obligations; is the project acceptable in relation to existing social norms and laws; do implementing bodies have the authority and motivation to drive the project; are all negative environmental effects below the legal/acceptable limits; does the internal rate of return to equity exceed the real interest rate; do the economic benefits of the project exceed the economic costs (i.e. will the project have a net benefit to the economy); are other applicable measures of net worth (such as net present value, internal rate of return and benefit-cost ratios) positive? Are all risks acknowledged and mitigated?

GUINEA THE EFFECT OF INADEQUATE APPRAISAL IN GUINEA'S THIRD WATER SUPPLY AND SANITATION PROJECT

The Third Water Supply and Sanitation Project – to extend access to water supply and sanitation in Conakry – initially based its planned activities on the hypotheses of the appraisal that the existing sewage network could be rehabilitated and extended. However, in September 1998, following the approval of credit (US$8.4 million) by the World Bank to finance the sanitation component of the project, preliminary design studies revealed that: (i) the option of rehabilitating the sewers was not technically valid, as 95% of the relevant sewage system was out of order; and (ii) as the diameter of the pipes that remained functional was too narrow for the estimated flows, they needed to be replaced. This increased the cost of the sanitation programme as identified at appraisal stage to a much higher sum than expected (US$55 million). In addition, inadequate consideration of the risk of currency fluctuations meant that lack of funding caused significant delays in construction and completion of the project. Another issue arose when it was found that the pre-financing studies had identified a site with high environmental risks, which were not properly assessed during appraisal. The negotiation of a new financing agreement, therefore, also had to include provision for reducing the pollution of the marine ecosystem from waste water discharge and sewage dumping as a result of the project. A final issue was that the project ran into institutional difficulties when operations were shifted from a private sector operator to a public sector utility. It can be argued, therefore, that the appraisal phase did not deal adequately with technical feasibility, environmental feasibility and institutional feasibility and desirability.

Source: CABRI Infrastructure Dialogue case study: Third Water Supply and Sanitation Project (Component II: Urban Sanitation), Republic of Guinea.

Desirability criteria

Different desirability criteria would apply in different countries, depending on policy priorities and context. Examples of such criteria are: where relevant, do the financial profitability projections satisfy all parties; will the distributed project costs and benefits contribute to government objectives; are all negative environmental effects minimised and potential positive effects maximised?

Many issues can arise from the poor appraisal and assessment of risk and uncertainty. The case study of the Third Water Supply and Sanitation Project (Guinea) was acknowledged by participants to share aspects of troubled projects in their own countries.

Participants also appreciated the definition of the appraisal process as not merely a choice between having a project and not having a project (which is related to project feasibility), but as the means to ensure that the project that is developed presents the most cost-effective means of achieving the project objectives (i.e. in ensuring that different options are considered and compared, relative to project feasibility and project desirability). Participants supported the idea of vetting projects early for feasibility through a preliminary appraisal, and then proceeding to a full appraisal of different options available to achieve the project objectives, including the proposed project. This, of course, would require a proper statement of project objectives and thorough prior assessment of the needs that the project is intended to fulfil.

Finally, with regard to appraisals, participants highlighted the need for clear rules in undertaking appraisals, and a dedicated capacity in finance ministries to commission and manage appraisals. The danger of potential beneficiaries or financiers of projects driving appraisals without proper engagement by finance ministries was discussed. Participating officials suggested that conflicts of interest in the appraisal of projects should be avoided by making sure that the shareholding structures of beneficiary companies do not leave scope for conflicts of interest.

Key finding: Involving the private sector in financing and managing infrastructure can unlock value for money

Traditional approaches to infrastructure financing are insufficient to fund investment needs, and present many disadvantages. Often, projects financed through the government budget are undermined by uncertainty over the funding commitment, by an excessive focus on the capital portion and neglect of the operating expenses, and by a weak appreciation of the cost of the financing in relation to the project's returns. On the other hand, concessional financing from development partners frequently comes with strings attached, and they fare no better in ensuring that the operating costs of infrastructure are provided for. Private sector participation in financing deals is usually limited, due to shallow local capital markets and a perceived high risk.

TANZANIA ENABLING INFRASTRUCTURE DEVELOPMENT THROUGH MANAGED PRIVATE SECTOR INVOLVEMENT

The Songo Songo Gas Development and Power Generation Project (Songas) is an example of how involvement of the private sector in the construction and management of infrastructure has enabled the government of Tanzania to reach economic objectives while minimising negative social and environmental impact. The project includes two subcomponents: the Songas gas-to-electricity facility, and the environmental and social management plan. Since July 2004, Songas has been a key provider of essential electricity to the people of Tanzania, particularly within the Dar es Salaam region. By utilising the country's own natural resources, the Songas facility provides an alternative to hydroelectricity, which depends on regular rainfall to replenish the region's water supplies and heavy fuel generation (which is expensive). Songas is a limited-liability, majority privately owned and managed company that has been established to develop, construct, own and operate the Songo Songo gas-to-electricity project. Under the project, a private sector joint-venture consortium has been established between Pan African Energy Tanzania Limited (PAT) and the Tanzania Petroleum Development Corporation (TPDC). It is responsible for developing and marketing gas from the Songo Songo gas field to commercial and industrial users and for exploiting opportunities for its export to neighbouring countries. Songas has also prepared environmental and social assessments, which synthesise the environmental and social impacts of the project, and provide a detailed environmental and social management plan (ESMP) for eliminating or mitigating and monitoring these impacts.

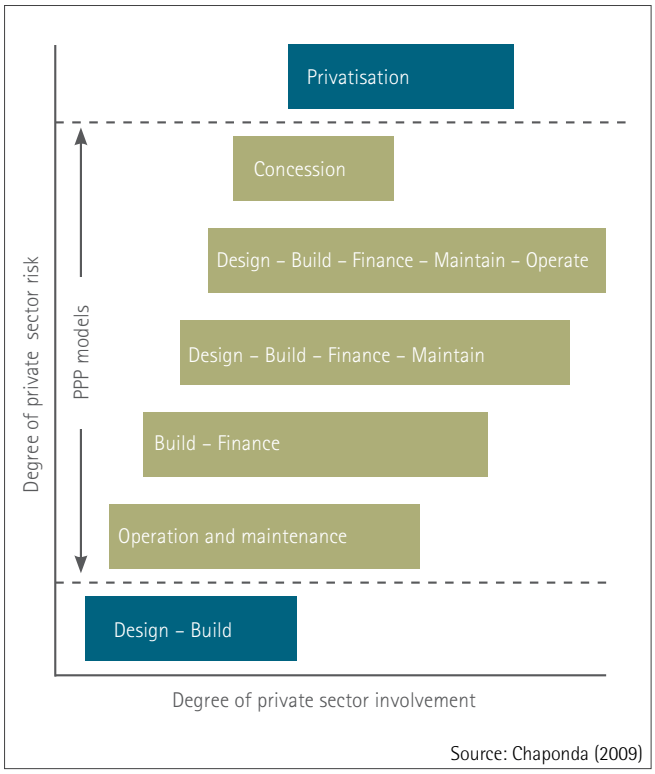
Types and advantages of PPPs

In recent years, public–private partnerships (PPPs) have become more common in Africa as a means of bringing private sector money and skills into the provision of public sector infrastructure. PPPs are usually characterised by three core principles: private execution and financing of public investment; an emphasis on both investment and service provision by the private sector; and the transfer of risk from the government to the private sector.

There are different types of PPP, which concern different levels of risk transfer to the private sector, as illustrated in Figure 1.

PPPs present a range of advantages. Firstly, value for money can be gained through efficiencies in procurement, construction and operation. In other words, the cost of transferable risk that is retained sub-optimally by the public sector is cut. Secondly, service quality and innovation are improved through the use of private sector expertise and performance incentives. Thirdly, PPPs enable the development of new infrastructure services despite short-term fiscal constraints.

Figure 1: Different types of PPPs



Source: Chaponda (2009)

What makes a good PPP?

CABRI Dialogue participants observed that PPP projects faced many challenges in their countries, beginning with a lack of capacity within ministries to understand the approach. Other challenges concerned attracting enough bidders to ensure a competitive process that resulted in value for money and the contracting of competent PPP service providers.

In response to these challenges, participants stressed the lessons learnt with regard to the following:

- The need for political support, a legal framework, a strong central PPP unit and clear and transparent PPP procurement processes before embarking on any PPP project.
- The need to undertake thorough due diligence on PPP bidders prior to awarding the bids.
- The need to be clear on the implications of the government's affordability limits in terms of a subsequent contract when setting out PPP requests for proposals. A key consideration is to consider first whether the existing budget (or expected budget allocation) of the project-sponsoring ministry, department or agency is adequate to fund annual commitments arising from the PPP. A broader second consideration from a macroeconomic perspective is to assess whether debt sustainability at a national or sub-national level will be jeopardised by the project.
- The need to assess risks for each project and to allocate the risks to the party most able to bear it. Typically, development,

financial, market and project risks are allocated to the private sector, while legislative, political and regulatory risks are borne by the public sector.

Governments should take care that PPPs are structured optimally. Figure 2 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 special purpose vehicle (SPV). The complex financing arrangements are largely between the SPV and its lenders/sponsors, and payments from the public sector are channelled through this 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.

Finally, as illustrated by the New Cairo Wastewater Treatment Plant example, value for money is more likely to be realised where the tender process is competitive, transparent and fair to all bidders. PPPs do take a long time to structure, negotiate and deliver. For an outline of the tender process, see Figure 3.

Overall, the discussions at the Dialogue pointed to the importance of having a clear legal and regulatory framework to enable alternative private sector options for financing and managing infrastructure services. Building up strong institutional capacity and instruments, together with clear legal and regulatory frameworks, enables countries to develop a track record of successfully managing PPPs, thereby reducing the risk for the private sector and the cost of these options over time.

LESOTHO BENEFITS OF USING A PPP APPROACH TO PROVIDING A NEW REFERRAL HOSPITAL

The Kingdom of Lesotho needed a new referral hospital, the costs of which could not be covered by the government budget. Therefore, an innovative financing solution was chosen – a PPP tender for one operator to design, build, partially finance, equip and operate the hospital, including the full provision of clinical services. Many benefits were derived from that solution: risk of cost overrun was borne by the private sector, and the chosen operator had capacity and experience in the sector. The cost of capital for the private sector provider was reduced by using concessional financing to fund part of the deal; without this, the project would not have attracted bidders. For future projects of this kind in Lesotho to succeed, the establishment of a legal framework for PPPs and a clear protocol to administer service delivery are required.

EGYPT NEW CAIRO WASTEWATER TREATMENT PLANT PPP: ADEQUATE RISK SHARING WITH THE PRIVATE SECTOR

With strong political support from the Egyptian government, the New Cairo Wastewater Plant was contracted recently as a PPP. A robust bidding process encouraged strong competition, backed by a credible information flow between bidders and the project-sponsoring agency together with strong institutional arrangements for preparing and contracting PPP projects. These factors made this flagship project attractive to the private sector: five bidders submitted proposals, allowing the Egyptian government to share risk adequately with the private sector. The performance-based contract stipulates clear outputs and legally binding penalties to ensure that performance standards are met. The government mitigated exchange rate risks by raising funds in the local capital market in domestic currency. The Egyptian case emphasises the necessity for a clear PPP framework and contract to attract competitive private sector operators.

Key finding: Risk management should be central in approaches to managing the implementation of projects

During the implementation phase, infrastructure projects face a myriad of risks. Macroeconomic factors, such as inflation, exchange rates and political context, can affect the success of projects. Community participation and environmental issues are also factors that have the potential to drive the cost up and/or lead to delays.

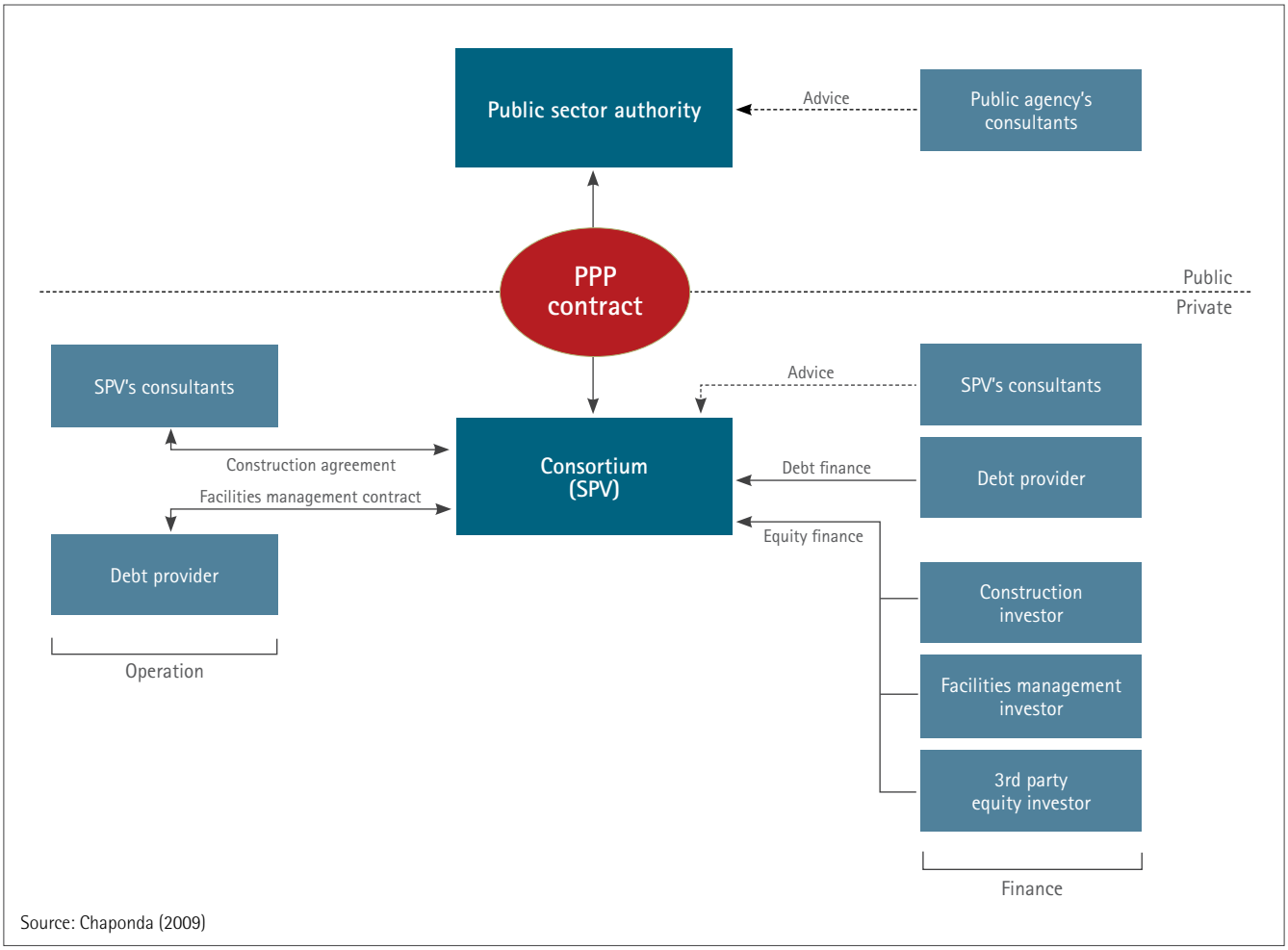
In Africa, risk assessment is often not done rigorously for

MOZAMBIQUE THE MAPUTO PORT CONCESSION: RISK OF DEPENDENCE ON OTHER PROJECTS

In 2006, the government of Mozambique signed an agreement with a private sector consortium granting a concession of 15 years to finance, rehabilitate, operate and upgrade the port of Maputo. The implementation of this agreement met with many challenges, and the private shareholder in the consortium changed. The difficulties arose because the success of the project was dependent on the completion of another project in the transport sector. To solve those problems, the Maputo Port Development Corporation adopted a focused approach to efficiency and pricing.

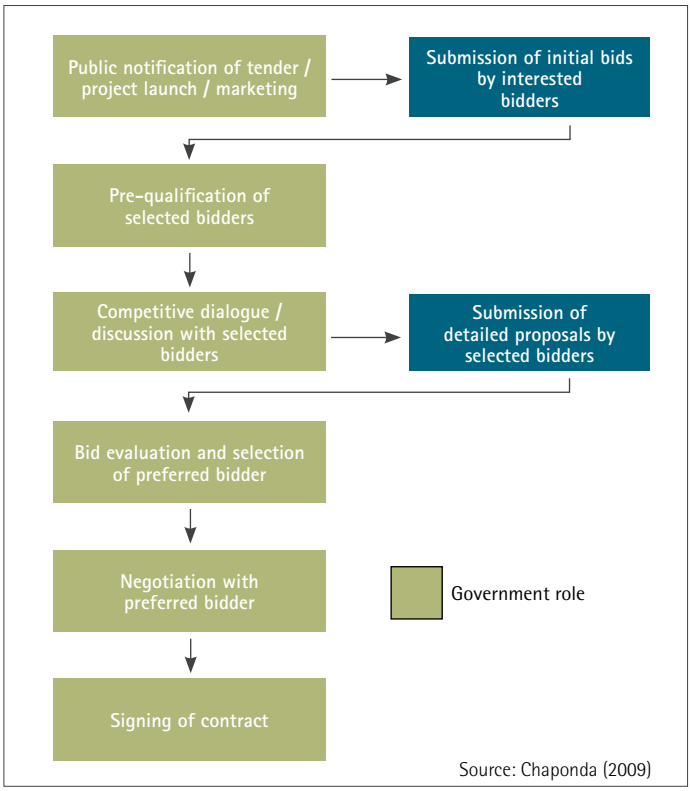
Source: CABRI Infrastructure Dialogue case study, The Maputo Port Concession, Mozambique.

Figure 2: A typical PPP structure



Source: Chaponda (2009)

Figure 3: The tender process



Source: Chaponda (2009)

SIERRA LEONE
POOR MANAGEMENT OF RISK DELAYS THE PROJECT

The Bumbuna Hydroelectric Project started in the early 1970s with the objective of creating a 50-megawatt hydropower station. Over its lifespan, the project has faced many issues, such as lack of consistency in funding, and was stalled over several periods. Many of the issues faced could have been prevented through pre-emptive risk analysis.

Conflict of interest emerged from the reliance on one donor for funding, as a result of which contracts were allocated not to the most competitive firms but to entities tied to the donor.

For the next phases, the project will be divided in different segments, and an institutional and legal framework, and transparent procurement practices, will be put in place to encourage more bidders.

projects financed by the state, resulting in time and cost overruns. Such project-management failures can be avoided with systematic risk-mitigation and monitoring approaches. Improved contingency planning is an efficient way to control costs. Three types of contingency planning can be put in place: special risks contingency planning, to cover risks arising from higher land-acquisition costs and changes in external factors (such as the availability of funds, statutory requirements and force majeure); design contingency planning; and construction contingency planning. Senior budget and sector officials participating in the Dialogue highlighted the importance of integrating political economy issues, quantifying risks and designing institutional frameworks to manage risk. The use of a risk-management matrix that identifies the risk and specifies how it will be monitored and mitigated for every major project was discussed.

Conclusion

The discussions surrounding the case studies stressed the importance of appraisal in infrastructure projects. During this phase, independence and a clear demarcation of roles, responsibilities and accountability are needed. Once the feasibility studies have taken place, the procurement process can start. This process should not be hurried; sufficient time must be allowed to ensure good information flow, due diligence and the negotiation of the contract.

The use of PPPs across Africa is becoming more common, but these can work only if governments have the capacity to run competitive processes and negotiate sound contracts with the private sector, in which all risks are identified and explicitly allocated to the party that is the most able to manage them. Finally, a systematic approach to managing project risk is invaluable in implementing projects within cost and timeline.

Note

1 World Bank (2009). The AICD is being implemented by the World Bank on behalf of a steering committee comprising the African Union Commission, the New Partnership for Africa's Development, the African Development Bank, Africa's regional economic communities and donors investing in African infrastructure.

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CABRI
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Acknowledgement
This publication has been produced with the kind assistance of the German Federal Ministry for Economic Cooperation and Development (BMZ) through the German Technical Cooperation (GTZ).

Commissioned by:
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Federal Republic of Germany
The Federal Government