12. IMPROVING PPP STRUCTURES

12.1 Introduction

Chapter 10 on contractual recommendations discussed the conventional methods of private sector entry into the water and wastewater sector. As a result of the many issues identified with conventional models and as discussed in the proceeding chapters of this book, my research has identified two prospective new models for allowing private sector participation in the water and wastewater sector. This chapter will analyze these new models in relation to the issues that affect conventional models and I will seek to highlight some recommendations.

This research’s previous chapters have each attempted to identify some of the critical issues and mistakes made by policymakers and Developers when pursuing reforms of their water and wastewater sectors through the introduction of private sector participation. Often, these issues contend with the inability of a Developer to recover its costs or fund operations and maintenance (O&M) or expansion plans because tariffs may be set too low or subsidy levels are insufficient. In Chapter 6 I have explored the ‘conventional’ models of PPPs in the water and wastewater sector and shown how critical it is to develop a PPP structure that allocates responsibilities correctly and allows lenders and Developers a suitable environment in terms of stability and predictability where investments can be made. Furthermore, Chapter 9 on Key Contract Provisions demonstrates the need for a pragmatic approach to contract development, the need for variation provisions and how the economic sustainability of the PPP arrangement can be maintained.

At the heart of PPP arrangements is a balance between expanding access to water and improving quality of service with concerns over possible tariff raises, job cuts and suspicions over whether access and efficiency will truly be improved under private management.

This research has shown that Government’s strategies to involve the private sector have not always been successful or have met with questions or resistance for various stakeholders. At the same time a variety of PPP type contracts have been developed to ease the worries of risk averse Developers. For example, medium-term management and lease/affermage contracts have been implemented as a compromise to ease the financial and foreign exchange risks of long-term PPP agreements (typically concession type contracts). However, under these types of contracts, the Developer bears substantial commercial risk as it has to generate an operating surplus sufficient to cover its operation and maintenance costs. My research suggests that problems arise when issues fall into the grey area of either being operational or investment issues. If these issues cannot be dealt with under the terms of a PPP agreement there is likely to be conflict between the parties and most likely the PPP agreement will fail. As the decision making process on operation and investment decision are shared between the Grantor and the Developer, neither side has incentives to incur the costs of undertaking the improvements the system may require. Concession contracts place all responsibility for capital and O&M costs

173 To illustrate this point for example, if underground assets are determined to be in poor conditions, a new network may need to be constructed. Reducing non-revenue water by fixing leaking pipes could also be a
onto the Developer, eliminating this as a potential area of conflict. Integrating operating and capital expenditure decision-making occurs most effectively through a concession type PPP arrangement. However, long term PPP arrangements following the traditional ‘concession type’ structure are not always appropriate for Grantors or in areas with high regulatory and political risk.

For this reason, part of this research provides some specific recommendations for the development of new models of public private participation in the water and wastewater sector. My approach is to tackle the issue of cost recovery and financing sources, as these appear to be at the heart of most issues with private sector operations with contracts. It should be made clear that cost recovery and financing issues are not linked and must be solved individually. My suggestions outlined in this chapter are a first step in identifying areas in which new models can improve existing systems and whether further subsidization is required.

Figure 19: Simplified representation of a Standard PPP agreement (Concession type)

solution. The Grantor may argue, under the terms of the lease/affermage agreement, that repairing pipes is the optimal solution and would classify it as an O&M issue, and therefore the responsibility of the lessee. The lessee might argue the other side, preferring the construction of a new network, which would require capital expenditure and therefore would fall under the responsibility of the Grantor.

Cost recovery refers to the ability of an Operator/Developer to recoup its operational and capital costs. This is normally achieved through subsidies and tariffs. Financing refers to sources for capital expenditures required by the Operator/Developer to fund spending above the amounts received in revenues and subsidies.
12.2 New Model: Output-Based long term PPP agreement

Under this structure the use of an output based arrangements is incorporated into the structure. Output based aid or OBA\textsuperscript{175}, is a financing strategy whereby the use of public funds can be used to support the delivery of basic service where policy concerns would justify public funding to complement or replace user fees. Typically payment is only made once a pre-agreed output has been reached. In the proposed model, the Grantor enters into a PPP agreement with the Developer. The Developer commits to performance targets specified in the PPP agreement and receives financing for capital expenditure from commercial capital markets. Tariff revenues provide the Developer’s source of cash flow. These are used to cover O&M expenditure, debt repayment, capex financing and any remainder is retained as profit. Tariff revenues are supplemented by funds payable by a Subsidy Fund which is to pay on an output basis.

<table>
<thead>
<tr>
<th>Box 12: Mozambique Water: OBA and the World Bank</th>
</tr>
</thead>
</table>

Access to water in urban areas, currently estimated at 37 percent, has significantly improved through two consecutive national water projects funded by a loan from the World Bank of around US$126 m between 1999 and 2007. They have increased access to water in the five major cities of Maputo, Beira, Nampula, Quelimane, and Pemba, strengthened sector institutions and the regulatory framework, and successfully piloted the delegated management framework. This framework separates assets from operations, contracts out operations management to private sector operators, and has oversight by a regulatory body. The urban water strategy not only provides for increased coverage, it also aims to secure full cost recovery through tariffs for larger cities – but this will not include connection costs.

The OBA component, Water Private Sector Contracts ($ 6 million funded by the Global Partnership on Output Based Aid (GPOBA), is targeted to poor households (with expenditures equal to or below US$1 per day) who cannot afford to pay connection costs which currently are wholly funded by users and not recovered through the tariff. Connection fees range from about US$160 per connection to well over US$240 per connection. Whilst most middle and high income households, industries, and commercial establishments can afford such connection charges, it is often very difficult for low income households. The output-based subsidy is funded by GPOBA and expected to encourage uptake by poor households, and is therefore a critical component to achieve the desired outcomes of the IDA-funded scheme.

\textit{Source}: Interview with Mr Lars Johannes, 12 May 2009, GPOBA, a multi donor trust fund administered by the World Bank

The Subsidy Fund component is financed by an IFI and the subsidy is based on a predefined output which incentivizes the Developer to provide the output. The subsidy is paid into a fund which would be administered as a neutral escrow account, backed by an independent auditor which confirms service provision. The debt incurred by the subsidy fund would be the responsibility of the Grantor.

\textsuperscript{175} What is OBA? OBA is a mechanism that ties the disbursement of public funding to the achievement of clearly specified results that directly support the delivery of basic services. Basic services include improved water supply, electricity delivery, health care and education, communications services (ICT), and roads. In the case of OBA, “outputs” are defined as close to the desired outcome or impact as is contractually feasible. For example, an output might be the installation of a functioning household connection to the water network. In some cases, an “output” might also include a specified period of water delivery demonstrated through billing and collection records. “Subsidies” are defined as public funding used to fill the gap between the total cost of providing a service to a user and the user fees charged for that service, justified by the need to improve basic living conditions or the existence of positive externalities. For more information on OBA schemes and the World Bank, please visit www.GPOBA.org.
The main advantage of introducing OBA subsidies comes in reducing the burden on the Developer of recovering all its costs (O&M expenditure, debt repayment, capex financing and profit) through the tariff itself and connections charges\(^{176}\). Instead tariffs can remain low and the Developer is able to obtain full cost recovery and in some instances, a return on investment. The predefined outputs which are linked to incentives can include:

- The provision of access to service defined as the delivery of working connections demonstrated through a paid water bill. In this case the total or partial cost of a connection is paid by the Subsidy Fund based on each new connection. An additional advantage is the increased accountability that comes with this system as customers can monitor the performance of the Developer on the basis of connection provisions.

- An incentive to improve and extend billing capabilities and reduce unbilled water by having the subsidy paid to the Developer as a proportion of the customer’s bill. In this way the subsidy is paid at the same frequency as a customer is billed, therefore incentivizing the Developer to increase the amount of water that is billed and improve service delivery. Another advantage of this mechanism is the transparency provided to customers who can view the level of subsidy on their bill.

- Assurance is given to commercial lenders cautious about the regulatory and political risks to debt repayment, by linking the subsidy to outputs but paying it directly to the commercial lenders.

- A wastewater incentive is to base the subsidy on the volume of wastewater treated.

\(^{176}\) Another interesting example of the applicability of OBA schemes can be found in the project for the expansion of Water Services in Low income areas of Jakarta, Indonesia. The objective of the project is to increase piped-water access to poor urban and slum households in Jakarta through the incumbent operator, PT Pam Lyonnaise Jaya (PALYJA). PALYJA, majority owned by international water management group Suez, has a 25 year water supply concession contract for western Jakarta and has been operational since 1997. The project uses output based connection subsidies to connect low income households that are located within larger areas that are already served - the project is not focused on green-field areas, but on areas that are in the proximity of a secondary main. The project is able to provide services to urban poor households that would not be served due to their inability to afford the upfront connection charge. The OBA subsidy is successfully able to transfer the performance risk to PALYJA by paying 75% of subsidy upon successful independent verification of the connection. The remaining 25% is paid after three months of satisfactory service delivery. Construction began in mid-April 2008. A total of 3,324 household connections have been made as of Feb 2009.
It is generally recommended that the OBA Concession model be utilized in situations where Developers are unable to set tariffs to achieve full cost recovery for political or social reason and the political and regulatory risks are not so great as to threaten the project and can be comfortably managed. As can be seen in the figure above, the use of the Independent Verification Agent is crucial to (a) ensure that the pre-defined output has been achieved, (b) provide certainty of revenue to the Developer and thus enhance the bankability of the scheme overall\(^\text{177}\), and (c) avoids dispute between the Grantor and Developer as the Independent Verification Agent is an external party to the PPP arrangement. Nevertheless, as suggested earlier it may be necessary to allow for provisions for contract adaptations and renegotiations to take into account unforeseen changes to the initial assumptions underpinning the PPP agreement; tariff indexations and periodic and emergency reviews.

This model provides a great deal of certainty against Grantor interference through the use of the Independent Verification Agent to monitor the Developer’s performance, ensure performance indicators are being met and appropriate tariff indexation practices are occurring\(^\text{178}\). In addition, the model will also have an *Expert Panel* specially constituted work group that meets for evaluation, made up of independent specialists which will advise negotiation proceedings between the government and Developer on issues related to tariff reviews, contract adjustments and renegotiations. Also, in order to avoid entrenched positions of the Grantor or Developer, the use of an *Independent Arbitrator*, as a judge of last resort, should be introduced should an unresolved dispute fail to be settled by the Performance Auditor or the Panel of Experts.

\(^{177}\) As mentioned previously, significant political and regulatory risks act as deterrents for Developers to engage in long-term investments. This model tackles provides certainty of funding of Grantor obligations through the IFI loan. This also provides a guarantee to commercial lenders that payments to the subsidy fund will be made.

\(^{178}\) In this regard an independent regulator may not be required as ongoing monitoring will be done by the Independent Verification Agent to ensure the Developer is delivering on its contractual obligations and responsibilities. Tariff review processes would be dealt with by the Expert Panel with an Independent Arbitrator should issues not be resolved amongst the parties, as described below.
12.3 New Model: PPP Trust Structure

The PPP Trust Structure builds upon the successful application of similar structures in the cases of Tlalnepantla, Mexico, Tamil Nadu, India and Guayaquil, Ecuador which created reliable financing structures for the water and wastewater sector operations and investments that utilized private sector expertise without equity requirements.

- **Tlalnepantla** — a legal Trust structure was used to issue debt that received a partial guarantee by the IFC ($3m of $9.6m issued) and backed by a letter of guarantee by a Project Finance specialist Bank ($5.3m from Dexia). The Trust used the debt proceeds to make a loan to the Municipality of Tlalnepantla and its municipal water utility to finance water conservation projects. The debt is repaid by user fees and local taxes. Debt holders receive assurance through the Dexia and IFC guarantees in the event of default.

- **Tamil Nadu** — In Tamil Nadu, USAID enabled the creation of a Water and Sanitation Pooled Fund (WSPF) to allow the state of Tamil Nadu to provide investment funds to small and medium sized Urban Local Bodies (ULBs) to finance and refinace water and sanitation projects. The Fund raised bonds on the local market to extend loans to local utilities for expansion and improvement of WSS assets and services. The local utility repayment is based on user fees as well as state and federal transfers. USAID provides a 50% standby guarantee on bond principal if the debt service reserve account (funded through fees and transfers) is exhausted after any 90 day period.

- **Guayaquil** — In Guayaquil, a private investor/operator, International Water Services, entered a 30 year concession agreement to upgrade and expand water and sanitation services in the municipality. They were required to post a performance bond and sought and received a MIGA guarantee against wrongful call of the bond and against political risks.

This model builds upon the successes of the above mentioned projects but because of the legal structures and transaction costs is more appropriate for middle income countries and for medium and larger sized water utility companies (yet the model could be adapted for poorer countries and smaller utilities). The key structural elements are as follows:

- Create a financial and contractual structure that is ring-fenced and insured against political manipulation and partially guaranteed against default by using a Trust structure (created as a new entity or legal construct) which is then used to raise the financing for the utility, and also to repay debt which is backed by guarantees. (Debt can be raised on local and foreign capital markets).

- Debt repayment is achieved through a financing structure based on a combination of user fees (tariffs), state transfers, local taxes, donor grants\(^{179}\) and loans and OBA schemes.

- Private sector is engaged through allowing them to bid on the provision of design, build, operate, maintain, rehabilitate and arrangement of financing.

---

\(^{179}\) Donor participation may be in the form of donor grants (ie there is no financial obligation to repay such monies) or through soft or preferential loans in which case, depending on the IFI monies would need to be guaranteed either by the Federal or State government. For example, in the case of the World Bank, funding needs to be guaranteed by the federal entity which then ‘on-lends’ to the state entity. Other financial institutions such as the European Bank for Reconstruction and Development are able to lend directly to sub national entities such as state government which are guaranteed at a sub national level.
In this arrangement, a utility receives user fees through tariffs and in some situations, through local taxes, state/federal transfers and sometimes donor grants/loans.

A Trust\textsuperscript{180} is created which receives funds from local, state and federal government as well as tariffs. The Trust is positioned between the utility and local government. (This is the main structure used in Tlalnepantla and Tamil Nadu). Depending on the national context, in some instances federal funds are mandated through the legislative framework. For example, in Mexico, the Federal Government is obliged to make available monies for the water and wastewater sector every year\textsuperscript{181}. These funds can be easily pledged to the Trust as lenders have full certainty that those funds will be made available. Other main features include:

- Cash flows into the Trust can be pledged against debt raised by the Trust. The Trust helps to mobilize local capital as it can obtain loans from local banks and bonds which are backstopped by a third party guarantee. Cash flows from IFIs to Trust can also be used to be pledged against foreign denominated debt.

- Debt is used to finance capital expansion and rehabilitation of facilities. The debt is repaid through flows into the Trust. The private sector is not encouraged to provide equity in the project.

- Ownership of the utility can be retained by the municipality but the rights to operate, maintain, rehabilitate and expand are ceded to the private Operator/Developer through the contract and debt covenants\textsuperscript{182}.

\begin{itemize}
\item A Trust\textsuperscript{180} is a financial structure which is ring-fenced and insured against political manipulation. In some instances this is similar to an ‘escrow account’ in which funds are only used against specific pre-defined criteria.
\item Mexico and India also have other federal programmes which provide federal funds to the water sector every year based on the level of poverty for each state or region. These programmes also provide for a ‘revenue stream’ which could potentially be pledged into the proposed trust structure.
\item It must be noted however that legal requirements may make it necessary to transfer the rights and responsibilities of the municipality for the utility to the Trust to allow the financial documentation to integrate with the legal documentation.
\end{itemize}
The Trust is likely to find it easier to borrow money than the Local government given the conflicting demands on its unpledged revenue streams. The structure also helps to create a degree of transparency by separating the Local Government, local politics and the financing of the utility.

The Trust can be structured in two ways:
- A legal construct established for the benefit of the debt-holders; or
- An actual institution with responsibilities over financial management and oversight of the utility. The Trust could also act as an investment management vehicle for other utilities and could assist in the identification, preparation, packaging, contracting and structuring of arrangements.

Funds in excess of the required debt service to the Trust can be ploughed back to prepay debt or used for reinvestment. If the Trust is created as a legal entity, it will not likely be able to reinvest the funds. If an investment Trust entity is created, it would be allowed to operate as an investment manager of the funds.

Simply establishing a Trust structure will not be sufficient to dispel private sector concerns about the risks of default on payment obligations by the utility. The Trust fund creates a ring-fence around the revenue flows for the utility but lenders will require greater security that debts will be repaid and this can be achieved through the provision of a third-party guarantee. My research reveals that guarantees formed intrinsic elements to the Tlalnepantla and Tamil Nadu Trust Structures in the form of partial credit guarantees (that pay out only a percentage of the outstanding principle in the event of default). An alternative system would be to provide a guarantee that mimics mono-line insurance products that assure bond holders of complete principal repayment in the event of default. Each country’s utility will require different forms of guarantees to reflect the varied nature in cash flows into the Trust (local or foreign denominated debt, IFI grants/loans).

The way in which this structure would be bid is that private sector is invited to bid for the ability to provide design, build, operate, maintain, rehabilitate and/or provide financial arrangement services. Critically, the private sector is not encouraged to provide equity in the project which is something that many Developers have claimed suits their business models and desired risk exposures. Instead private sector Developer compete to provide a package of services that are specified in bid documents and the Trust structure enables their participation and management expertise in a system designed to provide sufficient incentives without equity participation. Operators can also arrange and structure financing using the Trust structure, allowing them to raise finance against public sector cash flows pledged through the Trust structure and backed by appropriate guarantees. To ensure the commitment to the project by a winning Developer, the bidder would be required to post a performance bond that would assure the debt-holders that the proposed work will be undertaken as specified. The Trust could enlist the services of an independent evaluator to assess the performance of the selected Developer against a set criteria specified in the contract.

The main incentive for the private sector to meet the performance criteria is a share in savings arrangement. This mechanism works in the following manner: if the cash flow after debt service from the utility exceeds a projected rate of return for the investor, then this excess cash flow is divided between the Operator and the Trust. The Trust Structure risk allocation would be as follows:

- **Construction Risk** – private Developer backed by performance bond
- **Tariff Collection Risk** – private Developer within contract-set parameters
- **O&M Performance Risk** - private Developer within contract-set parameters
- **Debt Repayment Risk** – Guarantors (first call for public sector funds which collects against the local and national government) and Creditors for non-guaranteed portions including tariff based financing
- **Regulatory and Contractual Risk** – risk of default by government covered by IFI guarantee, default by private Operator/Developer covered by performance bond

The benefits of this proposed structure is that it enables long-term private sector participation in the water and wastewater sector on a competitive, least cost, highest value basis. It recognises that the existing condition has insufficient tariff levels to cover capital and O&M costs but provides for capital investment and improved O&M efficiency. In addition, this structure reduces cost of accessing finance as no return on equity is required and pledges against public sector flows guaranteed by a third party should reduce perceived structural risk by lenders.

Furthermore, this structure recognizes the decreased private sector appetite in equity investments in the water sector and could assist in the development of local capital markets if the Trust chooses to borrow from local markets using local currency financing. A Trust structure could potentially be converted into an equity investment vehicle provided it is granted a stable institutional platform and is adequately staffed.
12.4 Conclusions

The two proposed schemes are a good step towards developing integrated long term PPP solutions. Whilst they are not totally ‘new’ structures they do focus on particular features which if used would enhance the overall bankability and sustainability of long term PPP arrangements in the water and wastewater sector.

Under an Output Based long term PPP agreement, the Developer commits to performance targets specified in the PPP agreement and receives financing for capital expenditure from commercial capital markets. Tariff revenues supplemented by funds payable by a Subsidy Fund which pays against prescribed results and on an output basis, provide the Developer’s source of cash flow. These are used to cover O&M expenditure, debt repayment, capex financing and any remainder is retained as profit. The main advantage of introducing OBA subsidies comes in reducing the burden on the Developer of recovering all its costs.

The Trust structure on the other hand recognises that equity is expensive and increases the overall perceived risk profile of a long term PPP agreement. By utilising a trust structure, there are no requirements for equity but other financial resources can be effectively leveraged as revenue security is provided through pledges against public sector flows guaranteed by a third party.

It must be noted that none of this structures would by themselves work. The PPP agreements that are developed should also take into account some of the recommendations on how best to deal with imperfect data, termination for convenience by both parties and other key recommendations that have been made in Part III of this research.