ANNEX 5

Case studies on selected infrastructure PPP transactions

This annex provides the following selection of case studies on infrastructure PPP transactions with the aim of highlighting key lessons about what makes a specific project succeed or fail.

Water and sanitation

Maynilad Water Services, Philippines

Dar es Salaam Water Distribution, Tanzania

Omdurman Water Treatment Plant, Sudan

Point Lisas Desalination Plant, Trinidad and Tobago

Transport

Kenya-Uganda Railways, Kenya and Uganda

Murtala Muhammed Airport Two, Nigeria

Panagarh-Palsit Highway Project, India

Cross-Harbour Tunnel, Hong Kong

Energy

Meghnaghat Power Project, Bangladesh

Tala Transmission Project, India

Other

National Referral Hospital, Lesotho

Maynilad Water Services, Philippines

Sector			
Transport		Energy	
Water and sanitation	X	Other	
Sub-sector: Utility			
Type of PPP			
Concession	X	BOO	
BOT		Lease contract	
Management contract			
Status			
Financial close		Construction	
Operations		Cancelled	X
Distressed		Other	

Project concept

The project involved the concession of Metro Manila's Metropolitan Waterworks and Sewerage System (MWSS). For the purposes of the project, the city was divided into two service areas: West Zone and East Zone, with populations of 6.3 million and 4.5 million respectively at the time of the bidding. While the East Zone concession has been a highly publicised success story, the failed West Zone concession, which is the focus of this case study, has received far less attention. The private company was responsible for the management, operation and maintenance of, and investment into, MWSS's West Zone service area.

Procurement details

The bidding procedure was structured in such a way that the interested consortia had to bid for both the East and West Zone concessions, but could only win one. In addition, each bidding consortium was required to cap foreign shareholding at 40 per cent. The bid criterion was the lowest tariff. Four pre-qualified bidders submitted proposals for both zones. While the consortium led by Ayala offered the lowest bid for both the East and West zones, it was granted the East Zone concession only. The West Zone concession was awarded to a consortium led by Benpres.

The concession was granted for 25 years and the concessionaires took over in August 1997. However, the West Zone concession was terminated in 2005. The Philippine contracting entity was the Philippine Government.

Details of sponsor/ company

Maynilad Water Services, the private consortium that won the initial West Zone concession, was a partnership between the Philippine company Benpres (60%) and the French company Lyonnaise des Eaux, fully owned by Suez (40%).

Financing and funding structure for the project

The project was expected to cost US$4.5 billion (payments to the government accounted for US$846 million and the balance comprised investment commitments in physical assets).

The contract also contained a price adjustment mechanism that shared the exchange rate risk between the operators and customers. The operators were required to bear the costs of exchange rate fluctuations upfront, but could recover them from customers over the course of the concession. After the onset of the Asian financial crisis, the operators renegotiated the agreement and established a new mechanism called the Foreign Currency Differential Adjustment, which allowed full and immediate recovery of exchange rate losses from customers.

Other stakeholders

The project received multilateral support from the EIB and ADB. The EIB provided a loan of US$55 million and the ADB's total contribution was US$171 million. In addition, the IFC advised and assisted MWSS and the government on bidding procedures.

Review of the outcome of the project/VfM assessment

The concession was cancelled in 2005 after a long struggle by Maynilad with serious financial difficulties which arose due to the following factors:

- Maynilad took over the West Zone services in August 2007, a month after the onset of the Asian financial crisis. As the concessions were structured in such a way that the West Zone concessionaire would assume most of the foreign currency debt of the former public utility, the severe depreciation of the Philippine peso (PHP) greatly increased Maynilad's debt burden.
- In the first two years of the concession, the revenues generated were not enough to cover the concession fee payments. By end-2000, the company managed to increase revenues sufficiently to cover the fee payments, but still did not have enough left over to cover the operational and capital expenditures.
- In the first year of operations, the El Niño phenomenon led to a 35 per cent reduction in water supply.

In terms of operational performance, the Maynilad consortium yielded mixed results:

- Access to piped water increased from 67 to 86 per cent in the West Zone, whereas the national urban average for water coverage grew

only modestly. However, the coverage improvements in the East Zone were even more notable, jumping from 49 to 94 per cent.

- Sewerage coverage actually declined from 14 to 10 per cent in the West Zone, compared with a marginal increase from 7 to 10 per cent in the East Zone.
- By the end of 2005, the regulator had allowed tariff adjustments which meant that tariffs in both zones were pushed above pre-PPP levels. However, the tariff was 250 per cent of pre-PPP levels in the West Zone, much higher than the 23 per cent increase in the East Zone.

Key lessons learned

- The Maynilad case highlights the value of the competitive tendering process to the community. The eight tariff bids received by the government ranged from 26 to 70 per cent of the prevailing MWSS tariffs, and the winning bids were substantially below the rates charged by the public entity.
- It may be relevant to consider factors other than tariffs when setting the appropriate bidding criteria. While lower tariffs benefit consumers, they may have a detrimental effect on the environment. There is some justification for the notion that in a city like Manila, where there is much wastage of water, it might have been preferable to have a higher tariff structure. It might have been possible to achieve this if the companies had bid on the concession fees and accepted a predetermined tariff structure.
- The case study also highlights the extent to which the operational success of a project depends on the financial position of the consortium. Most of the coverage improvements in the West Zone came early on; progress stagnated after 2001 as Maynilad's financial situation deteriorated.
- The case study points to the fact that despite the presence of capable advisers, unintended consequences can arise from structuring the bidding process in a particular way. In this case, the structure mandated that there must be a separate concessionaire for each zone. Since the Ayala consortium provided the lowest bid for both zones, but could only be awarded the East Zone concession, customers in the West Zone ended up having to pay tariffs that were twice those in the East Zone. (Maynilad's winning bid was PHP4.97 compared with Ayala's winning bid of PHP2.32.) This difference in tariffs for customers in different parts of the city was a politically contentious issue. In addition, had Ayala's bid for the West Zone been accepted, the customers would have ended up facing a tariff of PHP2.51, almost half the tariff that resulted from Maynilad's winning bid.

- An independent regulatory body is essential for the appropriate monitoring and enforcement of PPP agreements. In the Manila case, it was decided that since no national water regulator existed, a regulatory office would be established within MWSS through the concession agreement. The office was to be managed by five members, including a chief regulator, all of whom were to report to the MWSS Board. This set-up not only raised questions about the independence of the regulatory office, but also prevented the agency from building on the skills of other regulatory undertakings of the Philippine Government.

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Dar es Salaam Water Distribution, Tanzania

Sector

Transport		Energy	
Water and sanitation	X	Other	
Sub-sector: Water utility with sewerage			

Type of PPP

Concession		BOO	
BOT		Lease contract	X
Management contract			

Status

Financial close		Construction	
Operations		Cancelled	X
Distressed		Other	

Project concept

The project involved the leasing of Dar es Salaam's Water and Sewerage Authority's (DAWASA) infrastructure for water distribution to a private consortium for operation. The private company was responsible for billing, collecting revenues for the customers, making new connections and performing routine maintenance. Ownership of the infrastructure remained with DAWASA.

Alongside the lease contract, there were two ancillary contracts to install or refurbish pumps at treatment plants, repair transmission mains, supply customer meters and manage 'delegated capital works'.

Procurement details

Initially, there were three bidders for the project – two French companies and the winning bidder, City Water. The bid criterion was that the contract would go to the company that would charge the lowest tariffs. The two French companies did not submit their final tender and therefore City Water was awarded the contract.

The contract was awarded for a period of ten years, commencing 1 August 2003. However, it was terminated within two years of the start of operations. The Tanzanian contracting entity was the United Republic of Tanzania, represented by DAWASA.

In addition to the main lease contract, ancillary contracts for priority works were also awarded to City Water; the works included refurbishment of pumps at treatment plants and repairs of transmission mains.

Details of sponsor/ company

The private consortium was led by Biwater, a UK-based water company with 26 a per cent share, together with the Tanzanian local company Super Doll Trailer Manufacturer Company (SDT) with 49 per cent and the German company H.P. Gauff Ingenieure GmbH Co. with 26 per cent.

Financing and funding structure for the project	US$8.5 million of investments was to be made in physical assets and payments to the government under the lease contract. Significant further investment was to be undertaken under the ancillary contracts.
Other stakeholders	The project received multilateral support from the World Bank, AfDB and EIB (total loan amount of US$140 million). DFID also provided support in the form of funding for a consultancy contract to publicise the project.
Review of the outcome of the project/VfM assessment	The contract was cancelled after two years, followed by complex arbitrations between the Government of Tanzania and City Water under the lease contract, and between the Government of Tanzania and Biwater Gauff (Tanzania) under international law. The lease contract arbitration was awarded in favour of the Government of Tanzania; Biwater's claims for damages under the UK-Tanzania Bilateral Investment Treaty were dismissed. City Water did not perform adequately. Project outcomes included: • Revenue collection targets were not met, with City Water collecting less in revenues than its state-run predecessor. At the same time water bills rose. • Improvements to the water distribution system (e.g. introduction of a new billing system) were not introduced. • City Water stopped paying its monthly fee for leasing DAWASA's piping and other infrastructure in July 2004, less than a year into the contract. • There were also internal management problems, with SDT refusing to put in more equity unless it was given a greater share in the management. • City Water had a social obligation to contribute to a fund for first-time connections that was never created.
Key lessons learned	• The City Water example highlights the difficulty of structuring, developing and implementing PPPs in developing countries, particularly in the water sector, where increasing water tariffs to improve the financial viability of projects can be very difficult, as this is a big political issue.[1] • One of City Water's primary contentions was that it was provided with flawed assumptions from DAWASA in structuring its financial model, which led to the drop in revenue collections. However, the Tanzanian Government claims that City Water submitted a poorly structured bid and had not anticipated the difficulties

involved in the contract. The overall lesson is that given a difficult operating environment, considerable care and attention to detail needs to be applied in structuring a PPP transaction, with appropriate risk mitigation measures in place, to ensure financial viability and the success of the transaction.

- DAWASA's monitoring capacity was very poor – this was not underwritten by the donors that supported DAWASA in the project. The importance of a good monitoring capability so that preventive action can be taken in good time cannot be overemphasised.
- This case study also highlights the disadvantages of non-competitive bidding. With only City Water submitting a proposal at the final tender stage, there was no comparator to evaluate bids on a least-cost basis.
- Another emerging lesson is the problems associated with donor organisations providing support that is conditional on privatisation or higher levels of private sector participation.
- Related to the above two points is that the reality of the contract needs to be viewed in the light of available private expertise to successfully implement the contract. In the case of this contract, there were assessments that Biwater did not have previous experience of running a huge management operation and that the project team was inexperienced.
- Faced with upcoming elections in Tanzania, the government was also under pressure to 'resolve' this contract appropriately. Thus broader political issues can have a significant impact on the outcomes of a transaction.

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Omdurman Water Treatment Plant, Sudan

Sector			
Transport		Energy	
Water and Sanitation	X	Other	
Sub-sector: Treatment plant			
Type of PPP			
Concession		BOO	
BOT	X	Lease contract	
Management contract			
Status			
Financial close		Construction	X
Operations		Cancelled	
Distressed		Other	

Project concept	The project involved the turnkey construction of the Omdurman water treatment plant and the optimisation of the works in Khartoum, Sudan. The private company was responsible for the construction of the plant, transmission mains, booster pump station, storage reservoirs and the implementation of an integrated network management system.
Procurement details	Instead of using a competitive and open bidding procedure, the government decided to award the contract through direct negotiation. As a result of this procedure, Biwater secured the contract. The contract was awarded for a period of 13 years, commencing in March 2007. The Sudanese contracting entity was the Federal Government.
Details of sponsor/ company	Biwater is a UK-based water company that has designed and constructed water treatment plants, provided consultancy services and run water systems in over 90 countries.
Financing and funding structure for the project	US$120.7 million of investments in physical assets. The financing incorporates a significant grant component. The project was supported by Dutch, Malaysian and South African lenders.
Review of the outcome of the project/VfM assessment	• The delivery of the project is still at an early stage. The treatment plant is currently under construction and is expected to be completed in 2010. • The water treatment plant is projected to supply clean water to 1.5 million people and will be an important step towards the achievement of the Millennium Development Goals in Sudan.

	• The project was one of the four candidates shortlisted for the 'Sustainable Water Award' as a part of the 2009 Global Water Awards.
Key lessons learned	• For BOT contracts, it is particularly important to make sure that the public sector is equipped with the skills needed to maintain the project once the contract comes to an end. In the Omdurman case, incorporating an asset management program into the project is likely to improve the long-term sustainability of the project. • The lack of transparency in the bidding process is a serious impediment to evaluating whether or not the process was a fair one. In a PPP scheme, such lack of transparency may also frustrate the owners of the losing contracts and make them reluctant to take part in any future bidding. • Water projects generally require substantial support from international agencies, including credit enhancement and grants.
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Point Lisas Desalination Plant, Trinidad and Tobago

Sector

Transport		Energy	
Water and sanitation	X	Other	
Sub-sector: Utility			

Type of PPP

Concession		BOO	X
BOT		Lease contract	
Management contract			

Status

Financial close		Construction	
Operations	X	Cancelled	
Distressed		Other	

Project concept	The project involves the financing, construction and operation of an 110,000 m^3/day capacity desalination plant to service the industrial park at Point Lisas on the west coast of Trinidad. Trinidad's Water and Sewerage Authority (WASA) is the sole purchaser of the treated water. WASA on-sells most of the water to industries located in Point Lisas and pumps the excess into the potable supply.
Procurement details	In 1999, a selection committee acting on behalf of the government awarded the contract for the plant to a joint venture, the Desalination Company of Trinidad and Tobago (Desalcott). The contract was awarded for a period of 20 years.
Details of sponsor/ company	Desalcott is a joint venture between the local company Hafeez Karamath Engineering Services Ltd. (60%) and Ionics Inc. (40%), a US-based company specialising in desalination, water re-use and recycling, and industrial ultrapure water services. Ionics was bought by General Electric (GE) in 2004.
Financing and funding structure for the project	The estimated cost of the project is US$120 million.
Other stakeholders	Initially, Desalcott attempted to raise financing for the project through the Overseas Private Investment Corporation (OPIC), a US government agency that helps US businesses invest overseas. Eventually, OPIC dropped out of the project as a result of the difficulties securing government guarantees for the project.

Review of the outcome of the project/VfM assessment	• The plant became fully operational in 2002 and was subsequently expanded in 2004. • Water from the plant accounts for more than 10 per cent of the total water production in the country. • It is the largest seawater reverse osmosis system in the western hemisphere. • The plant was originally designed for 50 per cent overall recovery, but by 2006 it was already operating at around 62 per cent recovery, with significantly lower than expected chemical consumption. The plant operates extremely reliably with an availability of over 95 per cent. • Despite the positive operational performance, public opinion on the desalination plant has been mixed. The water supply system in Trinidad is quite unreliable and even though the plant has made significant improvements in the supply of water to the industrial area, there is a widespread conviction that WASA is giving foreign-owned companies preferential treatment at the expense of the general public. • Desalcott's financial situation throughout the first five years of the project was also in contrast to the operational performance of the plant. After winning the contract, it faced significant challenges raising financing and had to start construction without a long-term financing agreement in place. Long-term finance was finally secured in 2003, but this required keeping a significant sum in a reserve account, which left little free cashflow to service Desalcott's obligations to Ionics. • The project has also been subject to allegations of corruption. The probe began in 2002 after the new government promised an investigation into the contract entered into by the previous administration. It is claimed that the bid process was rigged and that payments to certain Trinidadian officials were made to ensure that Desalcott would win the contract. In 2006, Desalcott's executive chairman Hafeez Karamath was arrested on fraud charges and released on bail. • There has also been at least one dispute between WASA and the plant owners regarding a proposed escalation in the wholesale price of the water produced. The underlying cause of the disagreement in 2006 was the government's refusal to allow an increase in tariffs according to the formula in its agreement with WASA.
Key lessons learned	• This case shows that operational success does not necessarily guarantee public support, and that it may be beneficial to undertake an effective public relations campaign to inform the general public of the benefits of the project. In the Point Lisas case, corruption

allegations reinforced public perception that the project was undertaken to benefit foreign companies, as opposed to benefiting the general public.

- As the dispute between WASA and Desalcott shows, implementing PPPs in water sectors in developing countries may be particularly difficult, as increasing water tariffs is a highly political issue. The inability to increase tariffs may put a serious strain on the financial viability of the project.
- The government's reluctance to grant the tariff increase in its agreement with WASA also highlights the difficulty of enforcing the rule of law in some developing countries. The political risk of such violations is likely to deter international companies from taking part in further PPP projects.
- During the tender process, significant attention should be paid to the ability of the private sector to raise financing for the project. While Desalcott did manage to obtain a bridge loan from a local bank after winning the tender, its inability to lock in long-term financing put significant strain on its finances and threatened the viability of the project in its early stages.

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Kenya-Uganda Railways, Kenya and Uganda

Sector		
Transport	X	Energy
Water and Sanitation		Other
Sub-sector: Railways		
Type of PPP		
Concession	X	BOO
BOT		Lease contract
Management contract		
Status		
Financial close		Construction
Operations	X[2]	Cancelled
Distressed		Other

Project concept

The project involves the concession of the railway networks in Kenya and Uganda in order to improve management, operation and financial performance. The concessionaire is responsible for the rehabilitation, operation and maintenance of the railways, which were previously run by the government (Kenya Railways Corporation and Uganda Railways Corporation), as well as providing freight services in both countries for the duration of the contract. The private company is also obliged to run passenger services in Kenya for at least five years.

Procurement details

While the two concessions for the Kenyan and Ugandan parts of the rail network are legally separate, the tendering process was undertaken jointly by the two governments and the contracts are substantially identical. The concession was awarded as a result of an international, competitive bidding process and the bid criterion was the highest price paid to the government. Two groups bid for the project and the Rift Valley Railways (RVR) Consortium was awarded the concession. The concession was granted for 25 years and the concessionaires took over in December 2006. The Kenyan and Ugandan contracting entities were the countries' two governments.

Details of sponsor/ company

When RVR was first awarded the concession, it was led by South Africa's Sheltam Rail Company (61%), with the remaining participants being Prime Fuels (Kenya, 15%), Comazar (South Africa, 10%), Mirambo Holding (Tanzania, 10%) and CDIO Institute for African Development Trust (South Africa, 4%).

In order to overcome the substantial operational and legal difficulties the project has encountered since 2007, the private consortium has been restructured so that Sheltam owns 35 per cent of RVR, while TransCentury of Kenya has a share of 20 per cent and Centum Investment and Babcok and Brown Investment each control 10 per cent. In March 2009, ongoing difficulties forced the parties into a further restructuring of the consortium, whereby Sheltam's share will be diluted from 35 to 10 per cent, and the balance will be taken up by TransCentury and its partners.

Financing and funding structure for the project

The project was expected to cost US$404 million, of which US$4 million was made up of payments to the governments and the rest was for investment commitments in physical assets.

Of the US$404 million, US$111 million was estimated to be the cost for the first five years of the project, of which US$47 million was to be contributed by the consortium in the form of direct equity and internal cash generation. The balance was to be funded by loans from international organisations.

Overall, the debt-to-equity ratio of the project was envisaged to be about 70:30.

Other stakeholders

The original deal envisaged IFC and KfW providing loans worth US$32 million each.[3] IFC/DevCo and Canarail acted as advisors to the governments of Kenya and Uganda, respectively. PwC provided assistance to the concession operators. PIDG provided support to DevCo, and additional grants were also obtained through the Technical Assistance Facility. (These funds had not yet been disbursed when this report was written.) In addition, the World Bank provided PRGs of US$45 million for Kenya and US$10 million for Uganda.[4] An IDA credit for US$44 million was made to fund labour retrenchment in Kenya.

Review of the outcome of the project/VfM assessment

The Kenya-Uganda railway concession is a flagship transport sector PPP in East Africa and won Euromoney's Project Finance Africa Transport Deal of the Year award in 2006. Since then, the project has run into considerable operational and legal difficulties, which have seriously hampered its likelihood of success. Below is a brief list of the issues encountered so far:

- Contrary to the conditions governing the concession, the consortium has not undertaken any significant investment in structures or rolling stock. As a result, the US$64 million in loans from the IFC and KfW have not been released in full.
- The overall operational effectiveness of the project has also been debatable. For example in Uganda the percentage of freight from Mombasa has not increased as was envisaged. In Kenya, the freight

traffic increases stipulated in the concession agreement were not met in the first 12 months of the concession; instead of increasing from 1.5 billion to 1.88 billion net tonne kilometres, freight traffic fell to 1.4 billion kilometres.

- There have also been allegations that the operator failed to make quarterly fee payments to the governments.
- Substantial funds need to be spent on labour retrenchment in both countries. While Kenya received donor funding in order to finance the retrenchment of 6,200 employees, the cost of retrenching 1,000 workers in Uganda was borne directly by the government.
- The Kenyan Government required the consortium to pay US$40 million as proof of investment capability and threatened the cancellation of the contract should the payment not be received on time. In January 2009, RVR won a court order blocking the termination of its contract, which was overturned by the High Court of Kenya. However, the parties seem to have reached an out of court settlement whereby RVR will continue to be the concessionaire in exchange for the dilution of Sheltam's shareholdings from 35 to 10 per cent.

Key lessons learned

- This case study highlights the importance of attracting competent private companies to ensure the successful implementation of the contract. In this case, there were concerns that Sheltam lacked the experience of running a complex railway network and therefore was not in a position to enhance cash flows sufficiently to generate the required investment resources. Indeed, the position of Sheltam as the lead investor became a serious impediment to the consortium's ability to raise further funds. In order to dilute Sheltam's share, an agreement was reached in March 2009 to change the terms of the contract and scrap the requirement that the consortium have a lead investor with a minimum shareholding of 35 per cent. While this may make it easier to raise funds, it is also bound to make it more difficult for the Kenyan and Ugandan governments to designate which member of the consortium should assume responsibility for performance.
- While the concessions for the Kenyan and Ugandan parts of the rail network were legally separate, in practice they were dependent on each other for operational and logistical reasons. The efficient implementation of the contract demanded that the two governments take similar positions on issues. As problems arose, the Ugandan Government took a more lenient approach, while the Kenyan Government was more eager to terminate the contract. This experience points to the political dimension of running a

cross-border PPP contract and the difficulties that may arise in achieving co-operation between the governments involved.

- In addition, the governments faced increasing political pressure to build a new gauge railway from Mombasa to Uganda, which may have made them more eager to terminate the current concession contract rather than see it succeed. The lesson that can be learned from this is that larger political issues may influence the priorities of the parties involved and negatively impact on the outcome of a transaction.

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Murtala Muhammed Airport Two, Nigeria [5]

Sector		
Transport	X	Energy
Water and Sanitation		Other
Sub-sector: Airports		
Type of PPP		
Concession		BOO
BOT	X	Lease contract
Management contract		
Status		
Financial close		Construction
Operations	X	Cancelled
Distressed		Other

Project concept

The project involves the design, construction and operation of a new domestic terminal and ancillary facilities at the Murtala Muhammed Airport in Lagos, following the destruction of the old domestic terminal in a devastating fire in 2000. The new terminal, Murtala Muhammed Airport Two (MMA2), has a land area of 20,000m^2. The project comprises an airport terminal building, a multi-storey car park and an apron.

Procurement details

In 2003, the Ministry of Aviation advertised for bids for the project. Among the bidders were Royal Sanderton Ventures Limited and Bi-Courtney Limited. Initially, Sanderton was awarded the contract. However, after no significant construction had started six months after the signing of the contract, the government decided to revoke Sanderton's mandate and award the contract to Bi-Courtney after direct negotiations with the company.

The contract was awarded for a period of 35 years. The Nigerian contracting entity is the Federal Government.

Details of sponsor/ company

Bi-Courtney Limited, a Nigerian firm, is the parent company of Bi-Courtney Aviation Services Limited.

Financing and funding structure for the project

The estimated cost of the project is US$200 million of investments in physical assets. The project was part-financed by a loan of US$150 million from a consortium of six banks – Oceanic Bank International PLC, Zenith Bank PLC, GT Bank PLC, First Bank PLC, First City Monument Bank PLC and Access Bank PLC.

Other stakeholders

n/a

Review of the outcome of the project/VfM assessment

MMA2 is the first major BOT infrastructure project completed successfully by a Nigerian company. While the airport has been in operation since 2007, the project has encountered various difficulties:

- After being awarded the contract, Bi-Courtney faced significant challenges in securing financing and had to start construction without a long-term financing agreement in place. The company proceeded with the project with support from Oceanic Bank International PLC. It was only in March 2007 that it secured a US$150 million part-financing agreement from a consortium of six banks for the completion of the project.
- On the operations side, there has been considerable difficulty convincing the airlines to move from the old terminal, General Aviation Terminal (GAT), to the new terminal, making it difficult for Bi-Courtney to start recovering its investment. The major attraction of GAT, which is run by the Federal Airports Authority of Nigeria (FAAN), is the lower cargo charges FAAN imposes on the airlines.

Key lessons learned

- The MMA2 case highlights the importance of having long-term financing available on favourable terms and conditions. While Bi-Courtney did manage to obtain financial support from a local bank after winning the contract, its inability to lock in long-term financing until 2007 appears to have put pressure on the project at its early stages.
- The initial bidding process also points to the importance of managing politicians' expectations and setting realistic goals regarding timelines. The initial winner had its contract revoked within six months of signing, as the government was unhappy that no significant construction had taken place by then. Revoking the contract and re-awarding it to a different company not only delayed the project, but also caused the private participants to suspect that the changes were the result of political rather than economic considerations.
- The MMA2 case also shows the difficulty of enforcing contractual agreements in some developing countries. While the contract contains a clause that assures that all scheduled domestic flights in and out of FAAN's airports in Lagos will operate from the new terminal during the concession period, FAAN continues to operate the old domestic terminal. In addition, by charging lower cargo fees, it provides an incentive for the airlines to continue their

operations at GAT. The conflict of interest faced by the government has put significant pressure on the ability of the private sponsor to recover its investments and has thus placed the financial viability of the project at risk. This reluctance to abide by the terms of the contract will also deter private companies from taking part in future PPP projects.

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Panagarh-Palsit Highway Project, India

Sector		
Transport	X	Energy
Water and Sanitation		Other
Sub-sector: Roads		
Type of PPP		
Concession		BOO
BOT	X	Lease contract
Management contract		
Status		
Financial close		Construction
Operations	X	Cancelled
Distressed		Other

Project concept

The project involves the design, construction, operation and maintenance of a 63km four-lane carriageway between Panaragh and Palsit, which forms part of the Delhi-Kolkata section of the Golden Quadrilateral Project, a highway scheme linking the major cities of India.

Procurement details

Initially, the National Highways Authority of India (NHAI) short-listed six bids from a mix of international and domestic companies – Larsen & Toubro, Kvaerner Construction, Road Builder, IJM Berhard Corp, Reliance Industries and Gamuda-WCT. The bid criterion was the lowest annuity amount that would be paid semi-annually by the NHAI to the private sponsor.[6] However, the NHAI found that the annuity amount quoted by the lowest bidder was too high and decided to call for fresh bids from all six parties in a second round of bidding.

Only Larsen & Toubro, Road Builder and Gamuda-WCT participated in the second round. Gamuda-WCT emerged as the lowest bidder and won the contract.

The contract was awarded for a period of 15 years, and the agreement between NHAI and Gamuda-WCT was signed in November 2001.

Details of sponsor/ company

Gamuda-WCT is a joint venture between Gamuda (70%) and WCT (30%), two Malaysian engineering and construction companies.

Financing and funding

The project's estimated cost is US$69 million. The financing package has a debt-equity ratio of 2:1. As the annuity payments are

structure for project

considered to be a secure and stable source of funding by the financial community, annuity-based models tend to be financed with higher debt-equity ratios than typical toll-based projects.

Other stakeholders

Infrastructure Development Finance Company (IDFC) acted as financial advisor to NHAI. IDFC was established in 1997 as a specialised financial intermediary to lead private capital to commercially viable infrastructure projects in India.

Review of the outcome of the project/VfM assessment

This was one of the first projects undertaken under the BOT-Annuity framework. The construction phase of the project was completed in June 2005, five months behind schedule. The delay was caused by land availability issues and finalisation of change of scope orders.

In 2008 the Comptroller and Auditor General of India (CAG) published its report on the BOT road projects undertaken by the NHAI. Its findings relating to the Panagarh-Palsit section are as follows:

- Cracks and patch repairs were found to be less than 5 per cent, implying good maintenance.
- 132 locations were test-checked for roughness. One location's roughness was within the 'desirable' level and the rest were 'acceptable' under the terms of the concession agreement.
- Deflection values in 10 out of 12 test-checked sections were more than the 'acceptable' level stipulated in the agreement, which indicates that the selected sections of the road are structurally weak and require overlay.
- In two out of the five test-checked pits, the combined thickness of wet mix macadam and granular sub-base layers did not comply with the specifications.

Key lessons learned

- Private sector participants taking part in toll-based road PPPs normally need to bear significant revenue risks. These risks are due to factors such as the difficulty in charging the public for road usage in low-income countries and the scarcity of demand forecasting for roads. Revenue risks create significant uncertainty as to the private sector's ability to recover its investments and may discourage participation in toll-based road PPPs. Under the annuity scheme used in this case, the payments from the government to the private participant were fixed at the beginning of the contract. Thus the annuity method removes the revenue risks for the private sector and makes the deal more appealing to the private sponsor.
- On the downside, the annuity payments reflect a transfer of revenue risk from the private sector to the government. If the

government encounters difficulties setting up toll charges, the annuity payments may put strain on its budget.

- Considerable attention needs to be given to the way in which the PPP agreement is structured in order to ensure that the private participant has sufficient incentives to deliver the project on time. In the Panagarh-Palsit case, the agreement did not stipulate target dates for individual project milestones and impose penalties for the non-achievement of milestones. That said, under the annuity scheme, the NHAI does not begin paying the annuity until the road is constructed, which gives the private operator an incentive to complete the project on time.

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Cross-Harbour Tunnel, Hong Kong

Sector		
Transport	X	Energy
Water and Sanitation		Other
Sub-sector: Tunnel		
Type of PPP		
Concession		BOO
BOT	X	Lease contract
Management contract		
Status		
Financial close		Construction
Operations	X	Cancelled
Distressed		Other

Project concept	The project involved the construction, maintenance and operation of a tunnel connecting Kowloon to Hong Kong Island. The 1.9km Cross-Harbour Tunnel (CHT) was Hong Kong's first underwater tunnel and formed the first road connection between the Island and Kowloon.
Procurement details	The procurement was done via reverse tender, where the bids were evaluated on the basis of the lowest public sector subsidy required. On the basis of this criterion, the Cross-Harbour Tunnel Company Limited was awarded the contract. The contract was awarded for a period of 30 years, commencing in 1969.
Details of sponsor/ company	The company is a Hong Kong-based investment holding company with emphasis on transport infrastructures, such as tunnel operation, tunnel management, operation of driver training centres and operation of electronic toll collection systems.
Financing and funding structure for the project	The financing package had a debt-equity ratio of 64:36. Royalty payments were 12.5 per cent of operating receipts.
Other stakeholders	n/a
Review of the outcome of the project/ VfM assessment	• Construction work commenced in September 1969 and the tunnel became operational ahead of schedule in August 1972. It successfully reached the end of its 30-year concession period and its control was transferred to the government in 1999.

- CHT is the first BOT project that did not need to be renegotiated and is widely considered to be a success story.
- Despite facing competition from an effective and cheap ferry service, the tunnel proved to be very popular. It began to make a profit four years after opening, and had repaid all debt by 1977.
- At the time of its construction, CHT was at the forefront of tunnel engineering. The harbour's deep waters made a conventional underground tunnel impractical, so engineers devised an estuarine tube tunnel that would sit on the seabed. It was constructed on dry land in concrete segments, sealed at the ends and towed out to sea, where it was sunk into a pre-dredged trench, backfilled and the water pumped out. At the time, it was the longest immersed tube tunnel ever constructed.
- Two more cross-harbour tunnels have been built since CHT became operational, but CHT continues to be the most popular, with more than half cross-harbour traffic passing through it.
- The success of the project is due to a number of factors, including:
  - The private company had the necessary skills to undertake the project, as evidenced by the use of the innovative method used to build it.
  - It was the first cross-harbour tunnel, and hence occupied strategically the best location for harbour crossing.
  - The concession period coincided with Hong Kong's rapid economic development.

Key lessons learned

- The CHT case highlights the importance of having strong political support for the successful completion of a project. The tunnel project involved massive effort by the government through the planning and implementation stages. The government started undertaking feasibility studies in the mid-1950s, more than ten years before the contract was awarded to CHT.
- The project also shows the importance of structuring a PPP transaction in an appropriate way, in order to attract capable private sponsors. The construction phase of the CHT project entailed significant engineering challenges and required the use of innovative building techniques to overcome them. Hence, it was vital for the project's success to have capable private sponsors on board.
- In the CHT case, the government did not provide any guarantees to the private participant regarding revenue generation. The government was able to transfer much of the operating risk to the

private company by choosing a central location for the tunnel and hence ensuring a steady flow of traffic. This shows that the government does not necessarily have to provide direct guarantees to sweeten the deal for the private sector, and that alternative incentives can be found that make the deal attractive to the private participant without increasing the risk incurred by the government.

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Meghnaghat Power Project, Bangladesh

Sector

Transport		Energy	X
Water and sanitation		Other	
Sub-sector: Electricity generation			

Type of PPP

Concession		BOO	X
BOT		Lease contract	
Management contract			

Status

Financial close		Construction	
Operations	X	Cancelled	
Distressed		Other	

Project concept	The project entails the construction and operation of a 450-megawatt, combined-cycle, gas-fired power station. The private company is responsible for building and operating the power plant. The ownership of the plant is also in the hands of the private sector. The project is subject to a Power Purchase Agreement (PPA) whereby the Bangladesh Power Development Board (BPDB) will take or pay for all electricity generated up to a plant load factor of 85 per cent.
Procurement details	As a result of a competitive bidding process, the contract was awarded to AES Meghnaghat Limited for a period of 22 years; it reached financial closure in April 2001.
Details of sponsor/ company	AES Meghnaghat Limited is a subsidiary of AES Corporation, a US-based power company with worldwide generation and distribution businesses. In 2003, as a result of issues in its American operations, AES sold its equity interest in Meghnaghat to Globeleq Ltd. The new project sponsor is owned by CDC Group, which itself is a fund of funds that is 100 per cent owned by the UK government.
Financing and funding structure for the project	The estimated cost of the project is US$300 million. The amount will be spent on investments in physical assets. The financing package consists of 27 per cent equity (injected by the private sponsor), and 73 per cent debt (obtained from multilateral organisations and commercial banks). The Infrastructure Development Company Limited, a government-owned financial institution, provided a US$80 million loan, the largest loan ever made by a Bangladeshi financial institution.

Other stakeholders

ADB provided a US$50 million loan and made available its PRG scheme for the first time for a US$70 million loan from a syndicate of commercial banks. ADB also mobilised its Complementary Financing Scheme (CFS) for a US$20 million loan package from commercial banks.

Review of the outcome of the project/VfM assessment

The project is the first ever competitively-bid power project supported by the private sector in Bangladesh. In addition, it was the first project to benefit from ADB's PRG and to obtain funding from IDCOL. It was awarded the Asia Power Deal of the Year award by *Project Finance Magazine* in 2001.

The plant commenced commercial operations in November 2002. In a country where just over 30 per cent of the population has access to electricity and those that do often suffer from power outages, the Meghnaghat project has increased power reliability at a reasonable cost and is regarded internationally as a success story.

Key lessons learned

- For many investors, doing business in developing countries involves significant political risks. In case of commercial banks, these risks often lead them to refrain from, or charge excessively for, making loans for projects in these countries. For such countries, obtaining partial guarantees, via schemes such as ADB's PRG, is vital to securing affordable funding from commercial financial institutions. In the Meghnaghat project, the private sponsor was able to secure US$70 million of funding from commercial banks (almost a quarter of the total cost of the project) by making use of such guarantee schemes.
- The Meghnaghat project also illustrates the benefits of having an agreement that governs the interaction between the private sponsor and the government entity buying the project's output (in this case the PPA that stipulates that BPDB must take or pay for all electricity generated up to a particular plant load factor). Such an agreement makes the government's willingness to pay less of an issue and thus makes the project more attractive to the private sector.
- This case also shows the benefits of having a competitive bidding process that is deemed to be fair.

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Tala Transmission Project, India

Sector			
Transport		Energy	X
Water and sanitation		Other	
Sub-sector: Electricity transmission			
Type of PPP			
Concession		BOO	
BOT	X	Lease contract	
Management contract			
Status			
Financial close		Construction	
Operations	X	Cancelled	
Distressed		Other	

Project concept

The project is to build, operate and maintain five 400kV and one 220kV double circuit electricity transmission lines of approximately 1,200km, with a maximum load capacity of about 3,000MW. The new transmission system has been undertaken in order to transmit power from the Tala Hydro Project in Bhutan and to carry surplus electricity from north-eastern India to the power-deficient northern Indian belt.

Procurement details

As a result of an international competitive bidding process, Tata Power was awarded the contract. The only other pre-qualified bidder was National Grid of the UK.

The contract was awarded for a period of 30 years and reached financial closure in April 2004. The Indian contracting entity was the Federal Government.

Details of sponsor/ company

The project is undertaken by Tala-Delhi Transmission Limited (TDTL), a joint venture between Tata Power (which owns 51 per cent of TDTL) and the Government of India's Power Grid Corporation of India Limited (PGCIL), which owns 49 per cent of TDTL.

Tata Power's main business is the generation, transmission and distribution of electricity. It is the country's largest private power utility.

Financing and funding structure for the project

The estimated cost of the project is US$269 million. The amount will be spent on investments in physical assets.
The financing package consists of 30 per cent equity and 70 per cent debt.
The State Bank of India and IDFC provided term loans.

Other stakeholders	The project received support from the IFC in the form of a US$75 million loan. ADB also extended a US$62.24 million private sector loan to the project.
Review of the outcome of the project/VfM assessment	• The Tala transmission project is India's first interstate transmission project undertaken via PPP. • It is also the first BOT electricity transmission line outside Latin America and the Caribbean region. • The construction phase was completed within schedule and the project has been operating commercially since September 2006. In its first year of operation, the transmission line was able to ensure the exchange of about 3,500 million units of surplus energy from the eastern to the northern regions.
Key lessons learned	• The Tala case highlights the importance of structuring the PPP transaction in an appropriate way so as to make the project more attractive to the private sector. In this particular example, interest from private parties was initially limited, as the returns on the project were deemed too low due to the tariff structure adopted by PGCIL. As a result of a petition filed by National Grid, the Central Electricity Regulatory Commission (CERC) of India decided to allow private transmission players a 10 per cent mark-up on equity over that offered to PGCIL, which raised the internal rate of return for the private participants by 4.5 per cent on the Tala project. • The Tala case also points to the importance of having risk mitigation measures in the PPP structure to secure private sector interest. More specifically, as state electricity boards in India have poor payment records, it was necessary for PGCIL to assure 100 per cent payment to the private sponsor for transmitting power to the state boards, making the project financially viable for the private sector. • While the presence of a government-owned shareholder may make it easier to overcome bureaucratic hurdles, it may make private investors worry about potential balance of power issues. In the Tala case, such concerns were mitigated by both the shareholding structure, which gave the majority stake to the private participant, and the way management positions are nominated.[7]
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National Referral Hospital, Lesotho

Sector			
Transport		Energy	
Water and sanitation		Other	X
Sub-sector: Health			
Type of PPP			
Concession		BOO	
BOT	X	Lease contract	
Management contract			
Status			
Financial close		Construction	X
Operations		Cancelled	
Distressed		Other	

Project concept The project involves the replacement of Lesotho's main hospital, Queen Elizabeth II, an ageing facility with derelict infrastructure. The private company is responsible for designing, building, partially financing, fully maintaining and operating the new 390-bed public hospital. The project also features the refurbishment, upgrading and operation of three urban filter clinics.

Procurement details The Government of Lesotho undertook an internationally competitive bidding process for the project and selected Tsepong (Pty) Limited, a consortium led by Netcare, as its preferred bidder. The PPP agreement between the government and the consortium was signed in October 2008, and the contract was awarded for a period of 18 years.

Details of sponsor/ company The private consortium is led by Netcare (40%), a leading private healthcare provider that has operations in South Africa and the UK, and is listed on the Johannesburg Stock Exchange. The consortium also included Excel Health (20%), an investment company for Lesotho-based specialists and general practitioners (GPs); Afri'nnai (20%), an investment company for Bloemfontein-based specialists and GPs; D10 Investments (10%), the investment arm of the Lesotho Chamber of Commerce; and WIC (10%), a Basotho women's investment company.

Financing and funding structure of the project The project is expected to cost US$100 million. 80 per cent of the capital costs will be provided by the government and the remaining 20 per cent will come from the private sector.

The capital structure (excluding the government grant portion) has a debt-to-equity ratio of 85:15. All debt is provided by the Development Bank of Southern Africa. 10 per cent of the equity is in the form of pure equity (40 per cent provided by Netcare and 60 per cent by the remaining consortium members). Ninety per cent is in the form of loans (40 per cent of which is a Netcare shareholder loan and 60 per cent mezzanine loan/bridge finance from DBSA).

Other stakeholders

The IFC acted as lead transaction advisor to the Government of Lesotho. In addition, the government has requested a PRG from the World Bank in order to provide the consortium, at its expense, with partial coverage against the government's failing to make the unitary payment. The World Bank will also provide support to the government in the form of contract management.

The GPOBA provided a grant of US$6.25 million, payable over the first five years of the project, to augment the unitary payment made by the government.

Review of the outcome of the project/VfM assessment

- This is a pioneering social sector PPP in Africa, which if successful will have strong positive demonstration effects for future transactions.
- The delivery of the project is still at an early stage. Construction started in March 2009 and is expected to be completed in March 2011. The hospital is expected to open in September 2011.
- The project was structured in such a way that the operating costs of the new facility will be roughly equivalent to those at the existing referral hospital; it will thus fit in the government's affordability envelope.
- Since the cost of the services remains the same, patients will not need to pay extra to benefit from the higher level of medical services at the new hospital.
- The project won the 2008 Africa-investor Social Infrastructure Deal of the Year award. The prize was awarded because of the pioneering nature of the deal and its potential for replication in other African countries, as well as its commitment to supporting local businesses and communities.

Key lessons learned

- This case study highlights the importance of robust political support for attracting competent bidders to the project. The strong support provided by the Government of Lesotho at the highest level is likely to have had a positive signalling effect for potential bidders. As a result, the government was able to obtain the services of a consortium led by a healthcare provider with international experience of hospital PPP schemes in South Africa and the UK.

- The Lesotho hospital example also points to the possibility of structuring a financially attractive deal for the private sector without increasing the charges imposed on users. In less developed countries such as Lesotho, increases in costs of public services are bound to have a negative impact on welfare and may turn into a political issue. Keeping the charges for the new hospital the same as those at its predecessor was essential in getting strong support from the community.
- As the Lesotho project shows, a financial deal can also be made more attractive to the private sector by securing risk guarantees from various institutions against the failure of payments from the government. This is likely to be particularly important in countries with lower credit profiles.
- There is substantial involvement of local and regional stakeholders in this project, as evidenced by the participation of Lesotho-based GPs and specialists, the local Chamber of Commerce and a Basotho women's investment company in the winning consortium.

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Notes

1. In Tanzania, fewer than 100,000 households have access to safe water (in a population of 3.5 million) – implying that water tariffs can be a very sensitive issue.
2. The project was encountering difficulties, but the latest public information suggests that the contract has been renegotiated and the project is once again operational.
3. This figure includes a quasi-equity product in the form of an IFC C-loan of US$10 million.
4. The PRG could only be triggered as a result of a termination due to a breach of the concession agreements by either government.
5. In the World Bank/PPIAF project database, this project is referred to as 'Murtala Muhammed Terminal One'.
6. Annuity schemes refer to models in which the private participant receives a fixed and periodical payment (an 'annuity') from the government rather than relying on toll charges to recover its investment.
7. There are ten management positions in total: Tata Power and PGCIL nominate four each, and two additional members are appointed by the lenders.