

**THE ROLE OF PUBLIC PRIVATE PARTNERSHIP IN INFRASTRUCTURE
DEVELOPMENT: LESSONS LEARNT FROM THE NEW CAIRO WASTEWATER
PROJECT IN EGYPT**

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ABSTRACT

The development of infrastructure facilities using private capital has become a common practice in the GCC and many other Arab countries including Egypt. Despite such a commonality, the implementation of PPP projects in the area of infrastructure development has taken different forms in different countries. Additionally, the analytical results of the implemented infrastructure projects provide a mixed bag of success and failure stories. In this context, the paper argues that, the differences in PPP models and implementation techniques among the GCC and Arab countries allow for lessons drawing and policy learning among the countries of the region. The paper provides a case-study analysis on Egypt's first Public Private Partnership infrastructure project to Build, Operate and Transfer (BOT) a 250,000 m³/day treatment plant in New Cairo City. The aim is to assess the process of awarding the concession for the establishment of the wastewater treatment facility in addition to underlining the major challenges that might face this relatively new model in practice. The analysis of the case study has underscored several lessons and policy implications, which can be beneficial for the GCC governments. Chief among those lessons is the importance of developing an overall enabling PPP environment in terms of providing the legal, regulatory, and administrative frameworks required for the success of the infrastructure projects. Such frameworks should be a reflection of the country's social, economic, political and legal contexts. Furthermore, given the institutional complexity of the PPP governance arrangements and the growing role of the private capital in developing infrastructure facilities the paper has concluded that, despite the potential positive impact of PPP projects in the area of infrastructure development, the PPP institutional arrangements should mirror the core values of good governance including transparency, accountability and due process.

Keywords: Public Private Partnerships, BOT, Infrastructure Development

Introduction

The Government of Egypt (GoE) has embarked on an ambitious plan in order to increase the participation of private sector investments in designing, building, and operating infrastructure facilities (Salvador, et al., 2016). Such a policy orientation has been materialized on the ground in the form a Public Private Partnership (PPP) program aiming at improving and modernizing the archaic infrastructure in different infrastructure sectors including the water industry. In this context, the mobilization and introduction of private capital was essential for the GoE to reach its policy goals. Additionally, using PPP projects as a new method for delivering public services has called for drastic changes in the traditional policy model and delivery techniques previously used by the GoE. The long-term nature of the PPP contracts alongside the impact of those contracts on future generations has raised crucial questions with regard to the allocation or roles, responsibilities and risks between the government on the one hand and the private investors on the other. At the same time, the question of accountability has come to the forefront of the debate about the role of the private investors in service delivery. The fundamental issue from this angle is that which party has to be held responsible for wrong doings and misconducts.

In an attempt to respond to the challenges posed by the new mode of service delivery and the new requirements that the partnership with the private sector calls for, the GoE has developed a policy framework aiming at organizing and regulating the process of the private sector's involvement in infrastructure development and service delivery projects. The PPP policy framework allows the GoE to use performance-based contracts as the base for long-term contractual agreement with the private sector in order to capitalize on private investment for building and operating new facilities such as water treatment plants. The compensation for delivering the required outputs is paid to the private counterparts either by the end-user or by the government for the full duration of the contract. Given the importance of the infrastructure sectors including water and wastewater services the PPP regulatory and policy framework has indicated that during the period of the contract, the GoE is having a strategic control up until the ownership of the newly established facilities is fully transferred to the public sector. This is not to say that the role of the private sector is marginal as the new PPP framework allows private

participation in all phases of projects developments and implementation including the design, finance, build, operate, manage, and maintain of new facilities.

2. Public Private Partnerships and Infrastructure Development: A Theoretical Framework

When it comes to specific industries such as infrastructure sectors, particular PPP approaches and techniques are needed (Guislain, 1997). This section will concentrate on the PPP of infrastructure sectors, and will try to address some important issues related to transferring these industries to the private sector or opening them up to the participation of private investors. The meaning and the characteristics of these sectors will be discussed, followed by an analysis of different approaches to private sector participation. The section will be concluded by addressing some strategic and policy issues regarding infrastructure PPP.

2.1. The Concept and Characteristics of Infrastructure sectors

The term ‘infrastructure sectors’ covers a wide range of industries such as water, gas, telecommunications, electricity, railways, and many others. Until recently, infrastructure sectors were considered natural monopolies, usually under state ownership, with universal access obligations and cross-subsidies built into their tariffs (Nestor and Mahboobi, 1999). There is no clear-cut definition of what can be considered as a natural monopoly or infrastructure industry. Despite the difficulty of defining infrastructure sectors, Nestor and Mahboobi have used this term to refer to network infrastructures that provide a range of essential goods and services to households and firms via a fixed network of pipes, wires or other facilities. Ernst (1994) has identified the main characteristics of infrastructure industries as follows: essentialness, non-substitutability, inelasticity of demand, natural monopoly, and externalities. Among those characteristics, ‘natural monopoly’ seems the most prominent. According to Sharkey (1982: 54), natural monopoly is defined in terms of a single firm’s efficiency relative to the efficiency of other combinations of firms. Therefore, for claiming that there is a natural monopoly there should be a single firm that can produce the desired output at a lower cost than any other combination of two or more firms. Natural monopolies are often contrasted with coercive monopolies, in which competition would be economically feasible, but potential competitors are barred from entering the market by law. In this regard, some scholars make natural monopoly

and unnatural or artificial monopoly because the first is justified by economies of scale and economies of scope, while the second is not justified by their absence (Foster, 1992:4).

As such, infrastructure sectors are considered highly idiosyncratic and sensitive sectors of the economy for several reasons. First, their benefit often accounts for a significant share of the GNP. Second, infrastructure investments account for larger portion of total investment. Third, in contrast to the tradable sector, where a general regulatory legal framework for the protection of competition and consumers is sufficient, the provision of essential infrastructure services retains an important public interest component, because it might remain monopolistic in certain respects. Fourth, the importance of the monopolies is, however; mostly due to their pervasive role as an input to all other industries (Nestor and Mahboobi, 1999).

2.2. PPPs in Infrastructure sectors

Ernst (1994) has noted that PPPs in utility infrastructures take governments into uncharted water. It overturned key dimensions of the 1940s settlement and directly challenged beliefs, built over 40 years, about the role of government in strategic areas of the economy and about the immutability of public control of the infrastructure industries (Gamble, 1989; Veljanoveski, 1994). Traditionally, the general understanding was that infrastructure sectors should be financed, owned, and operated by the state. The justification of this was that infrastructure sectors are by nature 'natural monopolies'. Therefore, these sectors would be better managed under state ownership. Additionally, infrastructure sectors are very important to a wide spectrum of people who benefit from their services and they need so much capital that the private sector could not provide (Savas, 2000:237). This argument has been contested on the ground that because infrastructure sectors represent important industries they should be encouraged to attract new investment and viable projects. They also should be priced according to supply and demand rather than political considerations. Infrastructures need also to be managed efficiently, and maintained in a good condition. This can be done more efficiently and effectively via private sector participation in developing, managing, and providing these services. As Guislain(1997) notes, the paradigm of the monopolistic public enterprise has been losing ground and relevance since the early 1980s because of technological progress, advances in economic research, and lessons from successful PPP programmes in different countries.

2.3. Forms of Private Sector Participation in the Provision of Infrastructure Services

A wide variety of models, techniques, and approaches are available for PPPs in infrastructure sectors. The general framework that governs PPPs includes situations where the private sector invests in infrastructure and provides related services to the government, or where the government retains responsibility for the delivery of core services. Such PPP arrangements are bound by long-term contract (Webb and Pulle, 2000). Within such general frameworks, scholars have identified different PPP models, methods, and techniques. Heymann et al., (2006) differentiated between three main methods: formal, functional and material methods. Williams identifies three different models of PPPs: the traditional, the Design-Build, and Build-Operate-Transfer models. In the traditional model, the infrastructure, which includes many different types of facilities, is controlled by government agencies.

In a more detailed account, Savas(2000:244) tried to cover the different possibilities of private sector participations in infrastructure services provision. According to him, such participations can take numerous shapes with different mixes of risks and responsibilities between public and private partners. The spectrum of private sector participation extends from utilities entirely controlled by the private sector, at one end, to those almost entirely controlled by governments, at the other. Considering risks allocation, Thomsen(2005) has differentiated between service contract, delegated management contracts, and construction support. The choice among these models is a matter of practicality. It depends on factors such as the government's objectives, the nature of the project, the availability of finance, and the expertise that the private sector can bring (Webb and Pulle, 2000:6).

2.4. The Impact of PPP on Infrastructure sectors

Despite the fact that the impact of PPPs on infrastructure sectors is debateable, the general line of argument among many scholars is in favour of more PPPs. Parker (1995) argues that private capital is often seen as being necessary to fund badly needed investment. Heracleous (1999:435) has underlined the direct and indirect benefits of PPP. At the direct level, PPPs can result in debt reduction, fund provision, alongside efficiency and quality improvements. Indirectly, PPPs may help in attracting new investments, accelerating capital market development, and enhancing liberalization processes. In the same vein, Savas (2000:240-241) argues that the participation of

the private sector in infrastructure industries is welcomed because it helps governments address utilities' needs in several ways. These voices in favour of PPP have been supported by the results of some empirical studies that show the positive impact of PPPs on many aspects of performance in several infrastructure sectors (Galal, et al. 1994; Megginson, et al., 1998). Given these considerations, there is a strong case for infrastructure PPPs, as the participation of the private sector will enhance the performance of these sectors financially, technologically, and managerially.

2.5. Strategic and Policy Issues in Infrastructure PPP

Because of the very specific nature of the PPPs in infrastructure sectors, some strategic and policy issues should be taken into account when policy-makers consider the implementation of PPP models. Discussing these issues in detail goes beyond the scope of this paper, so it would be sufficient to touch upon the most important ones.

2.5.1. *Choosing the private partner:* Choosing a qualified private partner is a crucial issue for the success of infrastructure PPPs. The selection process goes through many technical procedures, and includes four stages. Firstly, the government issues a Request for Expressions of Interest (RFEI) or Request for Qualifications (RFQ) or both depending on government's knowledge and understanding of the issue at hand. Secondly, the government evaluates the submitted RFQ and RFEI according to specific criteria to be sure that the needed qualifications are found in the interested parties. Thirdly, the government issues an RFP, in order to provide clear guidelines for submissions resulting in innovative and cost-efficient proposals. Finally, the presented proposals are evaluated by a selection panel, which chooses the most appropriate (Ministry of Municipal Affairs, British Columbia, 1999).

2.5.2. *Identifying roles, risks, and responsibilities:* Roles, risks, and responsibilities of the involved parties should be clearly identified in the PPP contract. The function of the state is primarily a regulatory one, aimed at ensuring that the strategic contribution of infrastructure sectors is directed at constructive economic and social ends. In addition, the state has a vital financing role to play aimed at securing equity of access to infrastructure services (Ernst, 1994). In all cases, the PPP contract should state clearly, which party is owning assets, providing capital

financing, providing working capital, making additional capital investments, operating and maintaining the facility, exercising day-to-day management, and bearing risks

2.5.3. Introducing competition: Competition involves rivalry among firms across all dimensions of the services such as price, quality, and innovation (Baldwin and Cave, 1999:210). It can be introduced before, during, or after PPP of infrastructure sectors (Nestor and Mahboobi, 1999). Scholars argue that the long-term success of the PPP will stand or fall by the extent to which it maximizes competition (Moore, 1986:92). The scope of competition depends upon a variety of considerations, such as cost conditions in the industry, technological factors, and social and economic considerations (Baldwin and Cave, 1999:212-215; Skoufa, et al., 2001). The process of introducing competition in infrastructure sectors requires in most cases restructuring of the industry to create competition for the market.

3. PPP and Infrastructure Development: The Case of New Cairo Wastewater Treatment Plant

This section focuses on the role of PPP in developing infrastructure projects and facilities in Egypt. A contextualization of the analysed case study is provided first followed by an in-depth analysis of the New Cairo Wastewater Treatment Plant project.

3.1. PPP and infrastructure Development in Egypt: Contextualizing the Case-study

In line with the overall strategic orientation of the GoE to increase private sector participations in water infrastructure development and service provisions, the PPP programme was formed and put in place. At the official level, PPP is perceived as “a long-term contractual relationship between the public sector and the private sector for having the private sector deliver a project or service traditionally provided by the public sector”(Ministry of Finance, 2009:6). Accordingly, and as per the PPP law, administrative authorities may enter into PPP contracts pursuant to which a Project Company shall be entrusted with any of the following tasks (Law No. 67, 2010, Art. 2):

- Financing, constructing, equipping and operating infrastructure projects;
- Rehabilitating infrastructure projects with an obligation to maintain what has been constructed or rehabilitated;

- Providing services and facilities necessary for the project to be capable of production or service provision regularly and progressively throughout the PPP contract duration.

This broad understanding of PPP allows for the incorporation of different types and arrangements between the government and the private sector including the following: corporatization “Ring Fencing”; service and management contracting; Build-Operate-Transfer (BOT) / Build Own-Operate (BOO); concessions; and Private Finance Initiative [Design Finance-Build-Maintain-Transfer (DFBMT)].

The GoE was driven in this regard by different forces, chief among them are the increasing management and operation costs for existing and new water facilities as well as water quality degradation and lack of water and wastewater services (Wahba, 2015). In this context, the GoE have realised the importance of coordinating their efforts with the rest of the stakeholders in the water industry and the urge of involving private capital in developing and establishing new water facilities through partnership agreements with the private water companies. The aim of the GoE was to realize and maximize the potential benefits of the private sector participation in terms of accessing and mobilizing additional resources, providing better water services, improving economic efficiency reduce government sovereign borrowings and allocating risks (Tarek, 2010). It is worth mentioning in this regard that having the private sector on-board with respect to developing and modernizing water facilities does not necessarily requires a shift in responsibilities as the main government water stakeholders are still accountable for the delivery of the service and the quality of the services provided (Marwa, 2012). In that sense, government water institutions are responsible for setting PPP projects’ outputs as well as the delivery technical standards. They are also responsible for monitoring and regulate the performance of the private counterparts to ensure the protection of the public interest.

To ensure the successful implementation of PPP projects and the smooth running of the PPP program the GoE has taken the lead on putting in place the necessary legal, institutional, and regulatory requirements. A specialised central PPP unite was created in June 2006 under the Ministry of Finance in order to provide the needed support and expert advice to the government institutions (Law No. 67, 2010, Art.16). ThePPP Central Unit(PPCU) has also been assigned different duties in relation to identifying pilot projects, setting national guidelines for implementation, standardizing PPP contracts, providing technical/advisory support to

infrastructure ministries and monitoring the implementation of PPP projects (Ministry of Finance, 2009:6).As such, the PPCU acts as a partnership platform between companies and administrations from all over the world where they can further explore the dynamics of public-private partnerships, create guides to good practices and standards and design solutions to the issues facing cities (Salvador, et al., 2016).

Modernizing the overall legal and regulatory environment of PPP has become a top priority for the GoE. A new PPP law known also as the Concession law was promulgated in 2010. The PPP law was drafted in a holistic way that caters for PPP projects in different infrastructure sectors. The reason for this is that the GoE was trying to address the fragmentation in the legal and regulatory environment of the PPP projects and to bridge the legislative gaps that used to paralyze the PPP scheme in the past (EBRD, 2011). Nonetheless, the new PPP law did not allow public authorities from granting concessions; BOTs and BOOs based on the old sector specific laws. Added to the mentioned legal and institutional reforms the GoE have also taken the lead on finalizing budgetary and accounting practices to capture PPP transactions; setting “Best Practice” precedence through pilot projects; arranging for credit enhancement mechanisms; stimulating domestic banking sector to offer longer tenors and competitive pricing and leveraging on international donors assistance (Tarek, 2010).

3.2. The New Cairo Wastewater Treatment Plant

3.2.1. Project Background and Characteristics

In an attempt to alleviate overcrowding in the centre of Cairo, the GoE have established new urban communities and satellite towns including the New Cairo town. As reported by IFC currently the population of New Cairo is 550,000 is expected to increase to approximately 3 million by 2029 (World Bank Group, 2013). Despite the expected population growth, the existing infrastructure facilities have put restrictions on the ability of the government to reach its goals with regard to reducing population density in central Cairo. In the context, the GoE has early realised that for those newly established communities to become attractive major expansions in the current infrastructure facilities are required. To this end, a PPP contract was awarded in in June 2009 to an Egyptian-Spanish consortium in order to establish a new wastewater treatment plant in New Cairo City.The overall goal of the government was to address

the shortage in drinking water by reusing the urban wastewater for irrigation and agricultural purposes.

According to the awarded contract, the project consisted of the design, finance, construction, operation, and maintenance of a new wastewater treatment plant with a capacity of 250,000m³ per day (World Bank Group, 2014). The contract is awarded for 20 years during which the private sector is responsible for designing, financing, constructing, operating, and maintaining the new facility while the government will pay a sewage treatment charge. The charges paid by the government will cover the investor's fixed and variable costs. Additionally, Egypt's New Urban Communities Authority –the contracting authority- is under an obligation to pay for the electricity costs of the plant in addition to buying services from the private company (World Bank Group, 2013).

3.2.2. The PPP Model and the Bidding Process

As that was the first PPP project in the area of infrastructure, the GoE was keen on having the most commercially and technically viable transaction structure in place. Three main government stakeholders were involved in the process of awarding the first PPP contract: the Ministry of Housing, the Ministry of Finance, and the Ministry of Investment alongside their concerned affiliated units. With regard to the bidding process, an expression of interest request was issued in October 2007 followed by a bidding invitation in December 2008. In February 2009, the final tender documents were published and the contract started in June the same year. In March 2010 and the construction of the new plant started lasted for 26 months, until May 2012. Before the tendering process, a comprehensive set of technical, financial, and legal criteria was developed to select the winning bidder. Private investors were invited to participate in a two-stage tendering process in order to select the award-winning team. In the prequalification phase, the GoE received ten applications but only seven bidders were qualified based on based on financial and technical criteria and five have submitted bids (IFC, 2014). All bidders were ranked according to financial and technical criteria such as the minimum net worth and experience with build-operate-transfer projects, especially similar wastewater treatment plants. A consortium of Egyptian firm Orascom Construction Industries (OCI) and Spanish firm Aqualia was awarded the contract. In this regard, the World Bank Group has reported that the winning bidder was selected based on the lowest net present value of the overall sewage treatment charge throughout

the concession period (World Bank, 2014:14). As put by Salvador J. *et al.*, the winning consortium was selected for two main reasons: firstly, the submitted technical proposal complied with all the requirements of the instructions for bidders; secondly, the Orasqualia consortium presented the lowest financial proposal with a suitable financial structure (Salvador, et al., 2016).

3.2.3. The Project Finance, Risks and Governance

The winning consortium has formed a Special Purpose Vehicle (SPV) company for the project under the name of “Orasqualia”. The shares of the project’s SPV are divided between the two main shareholders: Orascom Construction Industries 50% and Aqualia New Europe 50%. Soon after its creation, the SPV forged links with the main partners. The contracting authority is New Urban Communities Authority, which is obliged as mentioned before to pay the cost for electricity and to buy the services from the contracted private company, “Orasqualia”. The SPV structure also illustrates that the main Operation and Maintenance tasks as well as Engineering, procurement and construction are carried out by the two main shareholders: Orascom Construction and Aqualia New Europe. Additionally, some major financial institutions are taking the lead on lending and facilitating other financial activities. These institutions include National Société Générale Bank SAE (NSGB), Commercial International Bank (Egypt) SAE, (CIB), Arab African International Bank SAE and Ahli United Bank, (Egypt) SAE. The SPV was created with registered capital of \$45,704. The registered capital was increased to \$952,813 on September 17, 2009, and to \$10,871,560 on December 3, 2009, to satisfy the debt-to-equity ratio required by banks as the debt increased. On December 31, 2010, the registered capital was \$13,812,392.43 with profits amounting \$ 57,742.17. In 2015, the registered capital was \$ 140,485.31 USD (Salvador, et al., 2016:12).

As mentioned earlier in the theoretical framework, an accurate risk assessment and mitigation measures are paramount for the success of the PPP in the area of infrastructure development. As a rule of thumb, risks should be transferred to the parties that can better handle and mitigate them. Different types of risks have been identified in the studies case and transferred to the involved partners. The inflation risk was borne by Orasqualia and NUCA as the PPP contract allows for yearly adjustments based on the rate of inflation. At the same time, the interest rates and the ForEx risks are assumed by the SPV. Nonetheless, it worth noting in this regard that the ForEX risk was not perceived as a high risk at the beginning of the project. This perception has

changed with the eruption of the January 25th revolution in 2011 as the risks are considered higher at the time being. Furthermore, the volatile economic conditions and the depreciation of the Egyptian currency has also affected the ability of the SPV to attract international partners who are willing to take risks by investing in Egypt or providing the cutting edge technology and administrative skills. The NUCA bear the risk for creditworthiness, demand, and supply of utilities. According to the PPP agreement, the MoF has to step-in and pay the treatment charges in case the NUCA has failed to do so. Additionally, the risk of utilities supply is minimal because the NUCA pay the bill for the electricity. With regard to demand risk, the NUCA fully assume that type of risks as the private companies have nearly no influence over demand. In addition to the mentioned risks, other types can also be identified including performance, operations and maintenance, design and construction, and financing risks. These types of risks are borne by the SPV, which has to deliver services and outputs in accordance with the PPP agreement as well as the identified technical and quality standards.

In order to deal with unexpected situations and to supervise the overall performance of the project, the PPP project agreement has established two steering governance committees: the partnership committee and the performance monitoring committee. The partnership committee acts as a dispute resolution mechanism as it comprises in its membership 10 senior officials from the concerned government agencies and the project SPV. The aim is to work on and contain project conflicts before escalating them via formal legal and arbitration mechanisms. The performance monitoring committee checking the performance of the project from different angles and has in its membership representative from the government and the private sector in addition to independent experts depending on the nature of the issue under examination.

3.2.4. The New Cairo Wastewater Treatment Project in the Balance: Key Challenges and Policy Issues

Judged by international experts, The New Cairo Wastewater Treatment Project was a success and this experience has provided a model to be followed for future PPP contracts in the area of infrastructure developments. As reported by the World Bank Group, the deal mobilized \$150 to \$200 million in private investment (World Bank, 2014:14). Added to this, the new plant is expected to benefit 3 million people in New Cairo by receiving better service quality over the life of the project. As reported by IFC, “the transaction has opened up the market for international

investors who are now comfortable to work on PPP projects in Egypt, which will help the country address its growing infrastructure needs by harnessing the strength of the private sector” (IFC, 2014:1).

In spite of the positive impact of the project on improving service quality and the successful signs of the bidding process and project governance in general, the journey to the establishment of the New Cairo Wastewater Treatment plant was not problem free. The project faced several challenges and had to muddle through different areas of uncertainties. One of the first challenges was the novelty of the PPP projects and the absence of similar models in the Egyptian market. The private sector investors have no previous experience dealing with the government bodies in the water sector and for the later, the whole project was a matter of trial and error plus learning from mistake. To address these areas of uncertainties the GoE worked collaboratively with the rest of the stakeholders in order to make sure that the prerequisites for a successful partnership with the private sector are in place. For that purpose, a new policy and regulatory framework has been developed to act as the institutional bases for all PPP contracts. The GoE has coordinated the efforts of water and wastewater stakeholders in order to make sure that the required private funding and expertise need to the project are properly secured. Added to this, the government was also keen on having the input of societal and non-state actors into account when designing the different phases of the bidding process. In that sense, the overall bidding process was of a participatory nature, which allowed the private water companies to express openly their concerns and allowed the government counterparts to address these concerns. Such a collaborative transparent approach has enhanced the trust between the government and the private companies a matter, which influenced the ability of the government to mobilize and secure the required private investments for the project. At the same time, the trust building measures taken by government water entities encouraged private water companies to express their willingness and desire to invest in similar infrastructure projects.

At the operational level, a conflict has arisen between Orasqualia and NUCA with regard to the quality of the outflow. According to the contract, Orasqualia is not permitted to discharge poor quality treated water outside the parameters stated in the PPP contract. Contently, Orasqualia had to construct a 2 km pipe in order to transfer the outflow to the nearest wastewater treatment plant for further treatment. The full cost of construction was covered by Orasqualia. The conflict

between Orasqualia and NUCA alongside the political unrest have resulted in a slight delay in the operation of the New Cairo wastewater plant. Nonetheless, following the operation of the plant in October 2013 Orasqualia was able to meet the legal and technical standards stated in its PPP contract. The conflict and the way it was handled and resolved give a positive indication about the PPP governance in the case of the New Cairo wastewater project. The availability of a conflict resolution mechanism as well as the enactment of such a mechanism on the ground has enabled both the Egyptian water authorities and the private counterparts to handle effectively the situation without endangering the overall project.

At the political level, the revolution of January the 25th 2011 and the subsequent political and social unrest has cast shadows on future of the project and the government commitment towards the contract. Following the social protests in Cairo's Tahrir Square, the protesters were able to topple the regime of Mubarak after 30 year in power in January 2011. Between 2011 and 2013, Egypt has gone through a period of political uncertainty and instability. The post of presidency has been occupied by three presidents and the overall situation was not encouraging for private investors to risk their capital and investment by getting into partnerships with unstable political system. However, when it comes to the PPP project under examination it can be noticed that the government water authorities were keen on completing the project as planned and to minimize the negative impact of the political and social unrest on the progress of the project completion. Having said that, it is worth mentioning in this regard that the political situation in Egypt has resulted in a slight delay in the completion of the project (almost two month). Nevertheless, given the gravity of the political and social events in Egypt since 2011 such a delay is minor.

Added to the above-mentioned issues, one of the major challenges for the PPP project under investigation was the lack of a coherent and well-developed policy and regulatory framework to govern the infrastructure development and the participation of the private sector in utility services provision. In response to this issue, the Egyptian Government has embarked on a project to modernize the existing legal, policy and regulatory frameworks as well as filling the existing gaps in via the new law for PPP. The Law is meant to be a unified act that can cover all PPP contracts in all sectors and areas. Nonetheless, the issuance of the Law has not prevented government authorities from using old methods for granting PPP contracts.

Coordinating the efforts and inputs from involved parties and stakeholders was another challenge that faced the government officials involved in the organization and the awarding of the PPP contract. As indicated earlier, PPP projects involve a complex web participating actors each works in a different capacity and plays a specified role in accordance with the PPP agreement. From this angle, coordination and cooperation of concerned stakeholders normally becomes an issue, which requires a special attention from the project coordinator. The way in which the Egyptian water authorities handled the inputs from the involved parties was successful. The government worked collaboratively and openly with the private counterparts in order to make sure that all operations and procedures are streamlined. Added to this, the government also made sure that the technical and financial assistance received from the international donors are well utilized. It is worth mentioning in this regard that creating the PPPCU as a central platform for coordination of PPP projects has helped in handling coordination issues effectively.

In a country with a long history of socialist political orientations, managing and reducing resistance to the PPP projects in privatization in general becomes an issue. Resistance to PPP projects may appear at different levels. Resistance from the government officials as managing PPP contracts call for new skills that might not be readily available at the disposal of public managers. In this context, some government official may prefer doing businesses the traditional way as they used to conduct their daily affairs via certain methods. The resistance may also come from the people or the end-users who always perceive the private sector as greedy and profit maximizing machine. In this context, charging high prices for water services can become an issue from the users' perspective. Furthermore, there are still some unresolved issues related to accountability for results, which might appear in the future following the operation of the wastewater plant.

4. Conclusion: Lessons Learned and Policy Recommendations

Private sector participation in infrastructure development comes at the heart of the Egyptian government's long-term economic development strategy. Over the past few years, the GoE has taken several steps to develop a PPP framework that helps mobilizing private capital and encouraging private investments in infrastructure development. In this paper, the first PPP project was analysed in an attempt to underline the main success factors and the lessons learned. The analysis of the New Cairo Wastewater Treatment Plant has shown many indicators

of early success. In this concluding section of the paper, the main success factors will be underlined in an attempt to identify some lessons to draw for countries with similar experiences. Before identifying the main lessons, the core success factors of the project can be identified as follows:

- Establishing a new wastewater treatment plant with cutting-edge technology using private investments.
- Releasing financial pressures on the government especially in critically political and social situations.
- Transferring the risks in certain areas of the project to Orasqualia as indicated earlier.
- Transferring the knowledge and expertise to the Egyptian private companies via the project SPV.
- Providing alternative means to irrigate urban green areas by using treated water.
- Reducing the overall consumption and the levels of dependability on the scarce freshwater for irrigation and agricultural purposes.
- Reducing the level of pollution in the River Nile because of the treatment of water before being dumped into the river.
- Creating new jobs on permanent basis for people living in New Cairo.

Focusing on the positive impact of the studied project should not lead to the conclusion that the journey for establishing the examined wastewater treatment plant was problem free. One of the main challenges of this project as earlier indicated is the novelty of PPP methods for the Egyptian policy makers and local private construction companies. For Egyptian policy and decision makers in the water sector the project was a learning process through which they can get better understanding of how to design and put in place a full-scale PPP infrastructure project. Added to this, despite the efforts of creating an encouraging environment for the participation of the private sector, there is still a need for urging all government authorities to follow a standard approach for granting PPP contracts using the PPP law as a legal framework for all PPP projects. In this regard, the lack of a consistent approach may result in inefficient mobilization and utilization of private capital.

Many lessons can be learned from the analysis of the studied case.

Good PPP governance structure: Transparency namely with the procurement procedures has been a key in success of the New Cairo Wastewater Treatment Plant. People normally associate the lack of transparency with corrupt practices. This negative perception may have detrimental impact on the future of the PPP project even through the corruption allegations are not validated. The credibility of the private companies and the overall PPP processes can be put into question and the resistance to the implementation of the project could be higher. Additionally, the risks resulted from the lack of trust in the private sector and the government's intentions can put the entire project in danger because end-users will not be willing to pay for the services provided.

Stakeholder buy-in: it is important to make sure that all concerned parties including customers are on board and their inputs were fully integrated in the design of the project. On the one hand, involving customers in the early stages of project design and development will help creating goodwill and ensuring the required support for the success of the project. On the other hand, mobilizing the required private capital is equally important for the implementation and the completion of the PPP project. From this aspect, having the end-users represented in all phases of project design and implementation will help the private counterparts assessing the degree of willingness of the customers to pay. It will also help the project's SPV to design and structure the project and related services in a way that meets the demands and expectations of the end-users. In other words, securing collaboration between all stakeholders will benefit all concerned parties as it will decrease resistance and increase future financial returns for the private companies. Furthermore, having all interested parties represented in the process of designing the project concept will add to the transparency of the overall project and will help building trust among all stakeholders. Equally important to having all concerned parties represented in the different phases of project design and implementation is the openness of the public agencies and their willingness to take account of the suggestions and views provided by the involved stakeholders. In this regard, it is worth mentioning that NUCA the contracting authority in the New Cairo wastewater project was keen on listening to the inputs from the private companies with respect to the design of the tendering process and the initial tendering documents were amended in the light of these inputs. It is also worth noting in this regard that, involving stakeholders allow water

public authorities to capitalize on the resources they have. For example, leveraging private finance for new water facilities development is important but equally important is the transfer of knowledge and expertise, which might be possessed by other stakeholders rather than private water companies.

Enabling Environment and building institutional capacities: PPPs should not be perceived as a stand-alone strategy to increase the private sector's participation in infrastructure developments. As mentioned earlier, PPP is a method that can help in developing, maintaining, modernizing or managing existing water infrastructures. However, for PPP contracts to be successful, they should form a part of an overall reform agenda aiming at rolling back the frontiers of public water authorities while enabling private water companies to step in and provide water services collaboratively with government organizations. To this end, putting in place the required legal, technical, regulatory, and policy requirements are paramount for the success of PPP contracts. As the studied case indicated, among the major challenges faced by the New Cairo wastewater project were the absence of a unified PPP law at the beginning of the project in 2009 (issued a year after) in addition to the limited experience of the water authorities with regard to negotiating and managing PPP contracts. For reform initiatives to be a success, including PPP projects, there should be a strong political support and commitment to the reform program. In this regard, having the right regulatory institutions in place would help building up trust between government and the private sector as well as sending strong credible policy commitment signals to private investors.

Managing PPP contracts and concession agreements: At a general level, roles and responsibilities should be clearly identified in the contracts and concession agreements. The involvement of the private sector will automatically result in better services and wider coverage if these obligations are not clearly stated in the PPP agreement. Therefore, current and future commitments from public and private counterparts should be included taking account of the plans and developments in the area where the project is implemented. For instance, it is not enough to design the service coverage based on the current population of the city when there is a projection for future expansion. In this case, expansions in service coverage must be stated in

contract. A conflict resolution mechanism should also be in place in case of disagreement between private and public counterparts.

Capacity Building and Public Awareness: Engaging in PPP project is new and unfamiliar territory for the public sector managers. It takes public organization to uncharted waters where their private counterparts may have the upper hands when it comes to issues such as risk assessment and allocation in addition to the managerial, legal, and technical skills required to successfully managing the PPP contracts. In this context, building the capacity of public managers in the mentioned is necessary for the success of the PPP projects. In other words, while protecting the public interests water authorities should also think and act the same way their private counterparts do. Public official and policy-makers should study and learn from the experience of other countries. They should also be modest and humble and learn from their mistakes especially with the first PPP initiatives. In addition to education and capacity building, raising awareness among public officials is crucial in order to secure their buy-in for the projects and reducing their resistance during the implementation.

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