Public-Private Partnerships in the Water Sector: A Comparison between Poland and Portugal

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Abstract: Public-private partnerships (PPP) have gained their position in today’s markets as one of the main tools to allow for private cooperation in projects that otherwise would only be of the public domain. However, their use and implementation still differs in different areas of the world, including Europe, either due to the laws that rule those countries or to their level of penetration and acceptance in a given market.

This paper aims to compare the PPP development in two distinct European countries: on one hand, Portugal, with its 30 years of experience dealing with all kinds of PPP projects, and a significant number of successful (and unsuccessful) cases. On the other hand, Poland which has recently entered the PPP sector, with just a few years of practice and a considerable shorter list of documented cases, trying to join the European PPP train.

The main focus of this work will be on the development of PPP projects in the water and wastewater sector in which both countries have implemented projects in recent years. The purpose of this analysis will then be the comparison of this procurement model in both countries and the discussion of key issues and virtues associated with it, in particular concerning the access to the market, risk sharing and risk transfer and contract management. The limitations of this type of projects within the water and wastewater sector will also be identified and good practices will be highlighted. Two cases will be provided for better understanding the implementation of the projects.

Keywords: Public-Private Partnerships, Water Utilities, Poland, Portugal, Comparative Analysis.

I. INTRODUCTION

In today’s competitive international market PPP projects have become one of the most popular and challenging methods of cooperation between the public and private sectors. They started to be widely used as a way of procuring and maintaining the public sector infrastructure, especially in sectors such as transportation, social infrastructure, public utilities as well as government offices, accommodation and others.

In general, PPP arrangements refer to agreements between public authorities and private partners where part of the services or works under the responsibility of the public sector are being provided by a private partner. Between partners there is always a clear agreement which exactly determines the responsibilities of each party and clearly allocates risk, which is borne by those best able to control it. PPP projects recognise that both partners have certain advantages in relation to each other in the performance of particular tasks. By allowing each sector to do what it does the best, public services and infrastructure can be provided in the most economically efficient way.

The term “public-private partnership” has been widely used around the world for many years; be it for the Suez canal's construction in the XIX century or the private financed construction of roads and railways in Europe and the US, PPP type arrangements have more than often proven themselves and showed their added value to public-private cooperation’s. In Europe the last twenty years have witnessed an exponential appearance in this kind of cooperation between public entities and private companies, there is, however, no universal definition widely accepted of what truly is a PPP arrangement, not even at the European Union legislation level.

This article will be divided into seven main sections. Section two presents the PPP arrangements in the water sector, introducing the two main models of private sector participation in the provision of services. Later, on sections three and four, the PPP market in Poland and Portugal will be described showing their unique features. Section five will focus on the comparative analyses of the water utilities sector in the both countries, and afterwards section six will present and compare two case-studies regarding the water sector in each country, based on different PPP models. Finally the last section offers a conclusion of this paper.

II. PPP ARRANGEMENTS IN THE WATER SECTOR

The management systems of the drinking water and wastewater services can be really diversified. However there are four dominant arrangements which can be pointed out, depending on the separation level between the responsible and management entities [1]:

- Direct Public Management – the responsible entity takes full responsibility for the services supply and execute management by itself;
- Delegated Public Management – the responsible entity choose another entity to execute the management of water utilities services on its behalf, management remains in the public hands;
- Delegated Private Management – the responsible entity choose a private company to manage the tasks on the basis of contract;
- Direct Private Management – the responsibilities, tasks and ownership are in the hands of private entity, public authority only control and regulate.
It can be said that Poland represents a rather direct public management, in which most of the sector management is held by public hands with no regulation authority. However, the Polish system is, by nature, also similar to the delegated private management such as in the French case. Portugal on the other hand fits better in the group where the delegated management is used and a regulation authority exists.

There are a few existing models of private sector participation in the supply of the drinking water and wastewater. According to Golvan, Y., and Bréant, P. the two main out of three are the so-called English and French models and they correspond to the different types of privatisation.

**English Model**
As the name partly indicates, the origins of that model come from England and Wales. This model represents the full privatisation. That means that all the public assets designed to provide the water utilities services are permanently sold to a private investor. Another characteristic of this model is that even though all the companies are in private hands, the sector remains tightly monitored through the regulating authority [2]. Moreover, since “everything is sold” to the private partner, there is no written contract between public and private side for providing services. Presently, this model is an exceptional way of private sector participation and is mostly used only in England. It is relevant to clarify, that full privatisation represents the private sector involvement; nevertheless it is not the type of PPP arrangement.

**French Model**
This model presents the situation when the management of drinking water and wastewater supply is delegated to the private entity while the assets remain in the public ownership. The popular forms used in this model are:

- Management contract – the private operator becomes responsible only for running the system. Investments are financed and carried out by the public sector. Duration: 4-7 years;
- Lease contract – assets are leased to the private operator who usually bears higher commercial risk than under a management contract. Investment is fully or mostly financed and carried out by the public sector. Duration: 10-15 years;
- Concession – the private partner is responsible for running the full system including financing and carrying out the investment and later on managing it. Duration: 20-30 years.

Additionally, in the case of management contract, a private operator is remunerated by a fixed fee. On contrary in the concession and lease contracts it is remunerated directly from the tariff income earned by the water utility [3].

**III. PPP Market in Poland**
In Poland the first projects connecting public entities and private partners on a similar base to the current PPP arrangements took place in the 90s. The project that is especially worth of attention is a drinking water supply and sanitation system project in Gdańsk City by Saur Neptun Gdańsk S.A. Company (SNG) which was contracted in 1992 for a period of 30 years [4].

In the early stages of PPP projects introduction in Poland, the bigger barrier was clearly the lack of guiding entities and good information centres. The first organizations created especially for this problem were the Institute for Public-Private Partnerships (IIPP) in 2003 and the Public-Private Partnership Centre (PPP Centre) in 2008. These independent foundations provide trainings, advice and promote the concept of PPP arrangements in Poland as well as abroad. Additionally both of them cooperate in a strong way with public institutions as well as the government itself. Their nature is very similar, with the only visible difference being the fact that a plan to create a formal agreement between government and the PPP Centre exists, which does not happen in the case of IIPP.

The concept of PPP arrangements in Poland was formalized through the polish Act of law On Public-private partnerships from 28 July 2005. It was the first document of its kind in the polish legislation. However, shortly after its adoption the voices of criticism appeared. The biggest objections related to the law were the over formalization and too detailed regulations in the project preparation. Instead of helping PPP projects take their first steps, the law was making even more barriers. Because of this a revised law was published in 2008 which is more easily understandable and provides improved usability in the implementation of PPP projects. In the same period another law was created, the Act of law on Concession for work and services from 9 January 2009. These two new regulations created the base of the PPP arrangements use.

**Market in numbers and sectors involvement**
As an effect of all the changes the PPP market began to develop faster, opening the door to several new projects.

In 2009 the total amount of announced projects was 41, where one project was announced under the old act of PPP law; in 2010 the number of announced project was equal to 61 and in 2011 to 42. Due to the cancellation of certain projects or their re-publication the actual number of projects in 2009 was 34 and in 2010 year 51. A major part of those projects was announced by the municipalities (the smallest entity of local government). In 2009 the number of projects announced by municipalities was 22 while one year later this number rose to 45 [5]. From the IPPP it is know, that in the end of February 2012 there were 27 valid agreements of PPP type [6].

The sector in which PPP projects were developing the fastest was the sector of sport and recreation, being the number of announced projects by far the highest. Other very common projects were for the construction of parking lots in municipal infrastructures.

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1 Reports for years 2009-2011, Investment Support.
Value of Projects

According to the report of the polish PPP market in 2011, the value of 33 projects from the 42 announced was around €370 million\(^2\) and the value of the market for the years from 2009 to 2011 (where the value of the project was public) was estimated for 1,25 thousands of million euros [5]. It is the value of the announced projects, so it includes also value of projects which later on were cancelled or changed.

The value of the contracted project for the years from 2009 to 2011, which are still valid, was 190 million euro [6]. Additionally, the contracts which dominate are the ones with small value.

IV. PPP Market in Portugal

Portugal is a country where the tradition of PPP arrangements can be dated back several decades, all the way to the 1970s.

The list of successful projects is extensive, but best example is the Vasco da Gama Bridge, located on the Tagus River in Lisbon. This contract was signed in 1995 with the Lusoponte Company for a period of 35 years under a concession agreement [7]. An almost 20 km long bridge was built during the period of three years, in the same time becoming one of the longest bridges in Europe. It was one of the first PPP contracts in Portugal which was funded by international private shareholders [8]. Nevertheless, also some problems could be noticed in that project. In that project during the negotiations and also after the signing the contract the Government’s orientation changed. It led to the situation that in a particular moment the Lusoponte Company had to deal with the two Ministries at the same time, without having a common orientation. It was a very difficult situation for the private company, as if it had to deal with several partners instead of one [9].

In Portugal there are two main legislations which deal with the PPP arrangements. First of all the Decree Law no\(^{°}\) 86/2003 should be pointed out. This law defines the general rules of interaction of the State with PPP model, from definition and conception to supervision. Those principles have to be followed by all the public entities at the national level. Later on, this law was improved by the Decree Law no\(^{°}\) 141/2006. Another important document is the Code of Public Contracts (CPC), which was approved under the Decree Law no\(^{°}\) 18/2008. The CPC is a single legal document which concentrates on national and community legal contexts which relate to public procurement. The rules of the CPC apply to the matters related with the purchase of services, public work contracts, and many others as well as they provide a more concise definition of the PPP arrangement [10].

Value of projects and sectors involvement

Starting from 2005 the general growth of the value of investment can be noticed each year. Between 2005 and 2011 the value of projects has increased reaching the amount of €20 thousands of millions just for the concession type contracts. Nevertheless, the value of the investment in the last years is at the similar level, with a slight increase.

In the years 2008 and 2009 almost 50% of investment in the PPP projects is assigned to the road sector making it the most popular one. Next in line is the energy sector, where the decrease in investment can be noticed. Another significant sector is the environment one. It includes areas such as water, sanitation and waste collection and treatment.

The Portuguese PPP market is developing rapidly. In just a period of 10 years starting from 1997 there has been built around 1,830 km of highways, a great improve from the previous 700km. Thanks to the faster and safer connections the number of fatal accidents on roads decreased by 50%. Additionally during the last 10-15 years there were several PPP projects launched in the environment sector, thirty of them which are already in operation are serving 20% of the Portuguese population, involving investments in the order of €4,5 billion [8].

Nowadays, Portugal can be considered one of the most affected countries by the global financial crisis. Its effects can be also felt on the development rhythm of the PPP projects in the country due to the lack of funds from bank systems. To improve the situation of the country Portugal prepared the reform programme. In the official Letter of Intent from May 2011 prepared by the Portuguese Government addressed to the International Monetary Fund, Portugal is asking for support in the amount of €78 billion for the period of 3 years [11]. According to this agreement, one of the areas in which Portugal has to work more intensively is the area of PPP projects. Speaking in detail, Portugal obliged in May 2011 to undertake a wide review of at least 20 the most significant PPP projects, renegotiate possible contracts and suspend the implementation of all new PPP arrangements including the construction of the New Airport in Lisbon until the special studies will be done.

Portugal is a country which provides a lot of examples how to develop PPP arrangements, how to run successful projects and delivers the possibility to learn from its past mistakes in the area. The rich past of Portugal on the subject of PPP projects cannot and should not be forgotten, but analysed and studied so that even in the present state of stagnation on this area that the country finds itself in, we can still learn from its previous and present cases.

V. Water Utilities Sector – Comparative Analyses

1) Administrative division

The general structure of both countries is almost the same. The deeper differences between these countries start in the administrative division of the countries. Portugal is divided into 18 districts (plus 2 autonomous regions) and 308 municipalities, here only the last ones have mayors. In Poland the local government consists of three levels – 16 provinces, 379 districts and 2479 municipalities and each of the units has its own governor. Poland has a much more complex structure of local governments than Portugal. However, for both countries,
in the case of the management of the drinking water and wastewater sector, the municipalities are the most important units of local government, containing most of the decision making power regarding the sector.

2) Institutional framework

In Poland the tasks of the water management are being performed by the President of the National Water Management Authority under the guidance of the Minister of the Environment. According to the polish Act of Law “Water Law” from 2001, this is the central government administrative body competent for water management issues.

Under the National Water Management Authority there are 7 Regional Water Management Boards. They were created in 1991 and they are set to carry out tasks in the hydrographical water management system [12].

Urban drinking water and wastewater management in Poland are the responsibility of the municipalities, and it is not included in the structure of the national water management. The reason of this is that there is no central regulatory body responsible for the sector, even though some higher governmental institutions are involved in it.

In Portugal the drinking water and wastewater services are being delivered the same as in Poland, by the municipalities However, the administrative structure of water management is a completely different story. In Portugal there are a high number of public institutions directly responsible for the water sector. The most important are [13]:

- The Water Institute (INAG) created in 1993, became responsible for the management of water resources and taking care of the national policies in the field of water resources;
- The Portuguese Environmental Agency (APA) created in 2007 through the connection of several institutions, including the previously described INAG. The mission of APA is to achieve a better effectiveness in the management of environmental policies as well as a sustainable development;
- The decentralized bodies of administration, CCDRs. Their focus is in the area of water collection and wastewater disposal, mostly connected with the environmental regulation.

The most important distinction nowadays between both countries in the field of drinking water utilities sector management is that in Portugal there is the Water and Waste Services Regulation Authority named ERSAR, this does not occurs at all in Poland. ERSAR’s predecessor, IRAR (Institute for the Regulation of Water and Solid Waste) [14] was created in 1997 under the Decree-Law noº 230/97. Upon its creation it became responsible for controlling the drinking water supply, wastewater management and municipal waste management in Portugal. A few years later, the Decree Law noº 277/2009 from 2nd of October 2009 converted IRAR into the present ERSAR [14]. Under this new law, ERSAR would have a broader focus area; it allowed for the control all operators of services, no matter what management model they were using. It is also allowed to control contracts, to analyse the bidding processes and monitor legal and contractual guarantees of the operators.

3) Management of water and wastewater sector

A) Legislation and management models

In Portugal the local municipalities are responsible for their own drinking water and wastewater services. Until 1993 when the reform of the sector started, municipalities could not delegate the task of providing services to any other institutions. It could only to be delivered by the local administrations. This situation has changed under the Law noº 372/1993 which allowed for the operation of those services through the other companies outside the local administration. It was the time when private-sector companies could finally participate in the sector. Another important law is the Law noº 53-F/2006. It sets special rules for the providing of services in the local corporate sector.

In Portugal there are a few management models available to use in the provision of the drinking water and wastewater services [14]:

- Direct management occurs when services are provided directly by the municipality or by the association of municipalities;
- Delegation of the services can be provided by the company established in a partnership with the State, municipal owned company, established under the commercial law or by delegation the task to parishes;
- Concession type includes cooperation between municipality or municipalities and other private sector as a contractual PPP.

Looking at the polish case, municipalities are responsible for the drinking water and wastewater management only since 1990. Before that responsibility was in the hands of the Central Government. Because of the Act of Law on Local Government from 1990 that situation changed. According to this law the municipalities became legal entities in charge of the management of all their utilities, including the drinking water and wastewater services [15].

The next great change in this process was the Act of Law on municipal management from 1996. It also affects the management of drinking water and wastewater services stating that public utilities may be delivered by:

- Local authorities especially in the form of local government budgetary establishments;
- Commercial companies;
- Internal tasks related to municipal management, delegated by the local government to different units.

Thanks to that legislation the task of water utilities services can be delegated to outside companies, allowing for the PPP arrangements in the sector.

Nowadays the most important legislation which defines the rules and conditions in the drinking water and wastewater sector in Poland is the Act of Law on collective water supply and collective wastewater disposal from 2001. It presents policies for the municipal companies;

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3 Budgetary establishment (exists in polish system) - an organizational unit of the public finance sector, which carries out, for a fee, separated tasks and covers the costs of its activities from its own revenues.
sets the rules to ensure continuity of supply and the drinking water quality and reliable sewage collection and treatment. It also describes the process of setting tariffs.

B) Tariffs
In Poland all the tariffs are being set for just one year, even if there is private sector participation. The process of establishing tariffs is described in the Act of Law on collective water supply and collective wastewater disposal from 2001. Also important in polish system is that the Minister of Infrastructure is involved in the process of setting the tariffs. He is responsible for determining specific rules for it, like preparing the application model for tariffs approval and defining the conditions on which the tariffs for the drinking water and wastewater supply should be calculated. Such a situation does not occur in Portugal.

In Portugal, the municipalities are approving the tariffs and ERSAR does not have any power to influence them. However it can be requested to issue opinions about the proposed tariffs systems. Moreover according to the Decree Law nº 194/2009 in the case of the institutional PPP projects in Portugal the tariffs can be set for five years, what does not happen in Poland.

C) Institutions
In Poland unfortunately there are not many supporting institutions in the analysed sector. The only one worth of attention is the Economic Chamber “Polish Waterworks” [16] which is the only self-regulatory organization in the drinking water and wastewater sector in Poland; it was created in 1992 and presently brings together 450 enterprises from the sector. Representatives and experts of the “Polish Waterworks” interpret and monitor the legislation changes in the sector, participate in the creation of laws and implementation of new solutions. They represent the interests of the members on the national and local forum, as well as deliver trainings or offer advices.

By the contrary, in Portugal there is a wider array of institutions of that type. Firstly, there is the National Association of Portuguese Municipalities (ANMP) [17]. It is the representative structure of the local units (municipalities and parishes). Created in 1984 its main aim is to promote, protect and represent the local governments, especially on a national level, to obtain the best solutions for the local problems. Another organization worth attention is the Portuguese Association for Water Distribution and Wastewater (APDA). This entity created in 1986 represents and defends the interests of all the players in the drinking water and wastewater sector.

4) Situation in the market – players

A) Portugal
In Portugal the drinking water and wastewater services are supplied as bulk or retail services. The bulk services are provided by the regional systems which are controlled by the Águas de Portugal Group (AdP), which is responsible for the management of multi-municipal systems and its main priority is to fulfil the infrastructural gaps of the country utilities sector. It is also the main player in the market.

In 2006, the AdP supplied drinking water services to 200 municipalities through only 14 companies and wastewater services to 186 municipalities through 16 companies. For better comparison it is important to notice that in total there are 405 operators in the water services and 315 in the wastewater services [13]. In the case of the retail system the most popular way to serve the users is through municipal services. In 2008 there were 229 companies from 300 in the water sector and 244 from 305 in the wastewater sector, without including parish operators [13].

In the year 2009 in the drinking water services, the bulk services using the concession model cover more than two-third of the population, even though the number of operators in that particular management model is only 20% of the total number. In the retail services case, the direct management is the most broadly used model in about 80% of the cases, supplying more than half of the population [14]. As for the wastewater bulk services, the concessionary management model is used by 21% of the operators and covers over two-thirds of the population, along the same lines as the water bulk services. Also, for this sector, 65% of the population is covered under the direct management model, where most of the operators are concentrated [14].

In the Portuguese market a company worth special attention is the EPAL case, due to its size, history and importance. It is a water company with only public capital, where 100% of shares are held by AdP. EPAL acts in the city of Lisbon, serving directly more than half million inhabitants and indirectly the 26 surrounding municipalities with 2.6 million of people [13].

Except for AdP and EPAL, the leaders in the sector, there are also some private companies which play a significant role and deserve attention. The first one is the AGS Company, responsible for 8 companies and for supplying 670,000 people. There is also the Veolia Corporation responsible for four companies and supplying 270,000 inhabitants. Lastly we have the case of Indaqua, serving more than half a million of users and cooperating with 5 companies.

B) Poland
In Poland the drinking water and wastewater services can also be delivered by "wholesale" companies and directly to the “end-users”. However there is no special system like in Portugal. Usually, the first type of system appears in bigger cities, supplying also the surrounding municipalities. A good example is the private company Aquanet from Poznań City, providing services to 770,000 inhabitants from Poznań as well as to 14 of the surrounding municipalities.

The number of operators in this sector in Poland is quite high. According to the report about “Structural changes in groups of economic entities, 2011” prepared by the Central Statistical Office, there are the following numbers of companies responsible for [18]:

- Abstraction, treatment and distribution of water – 1767;
• Wastewater disposal and treatment – 2600.

Due to data from 2010, in Poland most of the drinking water and wastewater services are operated in the form of municipal companies. This is almost 85% from the group of all operators. Furthermore, over 93% of those companies are owned by the municipalities. Lately, more and more private entities are interested in operating water utilities, especially in rural areas [19].

The last years brought a very fast development of the drinking water and wastewater sector, partly caused by the commitments made by Poland in the accession Treaty to the EU for the implementation of the Council Directive 91/271/EEC. For this reason in 2003 the National Program for Municipal Wastewater Treatment was created and approved by the Polish Government. This program defines what actions should be completed out to improve the drinking water and wastewater management until 2015. It covers hundreds of places and predicts to reconstruct and build of many wastewater treatment plants and thousands kilometres of the pipe lines.

5) Private sector participation

A) Poland

In Poland the private sector participation in the drinking water and wastewater services is still not as popular as in other countries. Presently this participation is estimated to be only around 2% [20]. Poland is definitely far behind other countries in allowing for private funding in the sector. There are opinions that the private participation in the management of drinking water and wastewater services is something positive, that can bring clear rules with the benefits for everybody. Additionally, the bad financial situation might soon reach also the local municipal companies, and then the private sector will be used more and more [20].

After the structural changes in Poland in the 90s, private participation has been very limited, and until 2003 only five municipalities had allowed for substantial private involvement in their drinking water and wastewater services [21]. In two out of those five cases private companies have the majority shares in the partnership. Even though, there was no formal law yet about PPP arrangements in Poland at that time, the five examples can be considered as PPP projects.

Except of Saur Company the most popular private investor in Poland is Veolia Company. It has shares in two big cities – Tarnowskie Góry and Bielsko-Biała. In the case of Bielsko-Biała, Veolia Company became the shareholder only in 2010 by 33% of the shares. Additionally, in the case of Głogów City the Regional Fund for Environmental Protection and Water Management from Wrocław has 3% of shares in exchange for a loan for building the new wastewater treatment plant [22].

In the period between 2009 until the beginning of 2012 only a total of three PPP agreements were signed in the drinking water and wastewater sector, all of them as concessions for services [23]. There was only one from those projects which can be considered large scale, it was signed for the period of 15 years with an estimated value of € 4,5 million. The other two projects play rather small role in the market, signed for 1 and 3 years with the total value of both being less than € 1 million.

In total there were less than 10 PPP projects announced (including the three signed), all of rather smaller scale. There were only two big scale projects, but both of them are still in the tendering process, with estimated values for each exceeding € 80 million.

B) Portugal

In Portugal in the past the drinking water and wastewater services has been connected only with the public sector. The private management was allowed only after 1993 when the new legislation was created. After that date the situation has started to change very fast and in 2007 the private sector participation covered almost 20% of the total population. Additionally, at the beginning of 2008 there were 18 municipal companies which were supplying 1,6 million inhabitants and three of them were institutionalized PPPs with the private partners involvement [13]. All those three projects were contracted in 2005 year, the next PPP projects of that type has been signed only in 2008 and 2009.

Until the end of 2009 there were 40 announced public tenders for the management and maintenance of the drinking water and wastewater services under the PPP scheme. From those projects 32 were signed with the private partner, where five of them have an institutional nature and 27 are purely contractual PPPs [24]. The biggest amount of projects signed in one year is equal to four, and the average number of projects during that period is two projects per year.

VI. THE PORTUGUESE AND POLISH CASE-STUDIES

1) Overview

This section will present two different projects which take place in the water and wastewater sectors in Poland and in Portugal. In this work the case-studies aim is to show how the PPP arrangements can be used in practice in analysed sector, showing both, easies and difficulties of this cooperation. Analyses of real situations are the best way to draw conclusions. This part will show the PPP cooperation from a more practical side, by describing who are the public and the private partner, what agreement was signed between them, how the project is being managed and many other aspects. The structure and methodology applied to describe both case-studies, as well as their comparison are both fruit of the author of this work own elaboration and choice.

2) Portuguese case-study

The Portuguese case study corresponds to a concession contract, one of the forms of a contractual PPP. In this model all the obligations (and rights) of the private partners are carefully described in the contract signed by the both sides.

This is a “Concession contract between the Municipality of Fafe and the private company Indaqua Fafe, regarding the operation and management of the abstraction, treatment and distribution system of water for the Municipality of Fafe.”
3) Polish case-study

The Polish case-study presents an institutional type of the PPP, where the public and private partners are both shareholders in a joint-venture company created for providing the services, by a shareholder agreement which regulates the relationship between them.

This is a “Provision of the water and wastewater services in the City of Gdańsk and Sopot neighbourhood by the joint-venture Saur Neptun Gdańsk Company”.

<table>
<thead>
<tr>
<th>Public authority</th>
<th>Municipality of Gdańsk</th>
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<td>Private partner</td>
<td>Saur International</td>
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<td>PPP model</td>
<td>Service contract, leasing</td>
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<tr>
<td>Operator</td>
<td>Joint-venture Company – Saur Neptun Gdańsk</td>
</tr>
<tr>
<td>Shares</td>
<td>51% - Saur International 49% - Gdańsk Municipality</td>
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<tr>
<td>Date of the contract award</td>
<td>1992</td>
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<td>Duration of the contract</td>
<td>30 years</td>
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<td>Type of services</td>
<td>Retail services</td>
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<td>Scope of operation</td>
<td>Abstraction, treatment and water distribution</td>
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<tr>
<td>Nature of the cooperation</td>
<td>Operation and maintenance</td>
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Main features of the Polish case-study: ⁵

In Gdańsk, there was no tender as such, the city issued an invitation to submit offers. The operator was selected through a direct negotiation process [28]. The services are provided by the specially created joint-venture company Saur Neptun Gdańsk (SN). Its shareholders have made an appropriate contribution to SN: Gdańsk City in the form of fixed assets (not infrastructure) and Saur in the financial way with the purpose of improving the new company’s work quality [29]. The operator got the exclusive rights to deliver the services to Gdańsk and Sopot neighbourhood. Just the Gdańsk has almost half a million inhabitants, in an area of 1800 km².

Tariffs are set and approved by the city of Gdańsk, based on SN proposals and are based on full cost-recovery principles. A key clause in the contract regarding tariffs setting is that the price increase cannot exceed inflation in the previous year [28].

The operator is responsible for management, operation and maintenance, proposing investment programs and advising on investments. The local Government maintains the assets ownership, approaches and proposes investments and finances them.

The contract was amended in 1995, 1999, and 2001 for legal and other reasons. Additionally, in 2004 a separate Gdańsk Assets Holding Company (GWIK) was created, owned by the Gdańsk City. All the infrastructure assets operated by the SN were transferred to GIWK which became its owner. Its aim was to allow the Municipality of Gdańsk apply for the public grants [30].

This led to a division of the original contract into two – a contract for the services management with Gdańsk

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⁴ If not otherwise mentioned, data comes from the source number [25].

⁵ If not otherwise mentioned, data comes from the source number [27].
Municipality and a leasing contract with the GWIK. It is also important to say that between 1992 and 2002 the consumption of water drastically decreased by around 50% in total [28]. This led to prices increase as a way of compensating the losses associated with that situation.

SNQ pays a leasing rent to the city out of customer revenues. However, tariffs proposed to the city do not include the leasing rent [28]. The city provides investment subsidies by funding some of the required investments with its own budgets and loans. In 2005 the Gdańsk City received a grant from one of the EU Fund Programs of € 91 million (75% of the project’s value) [30]. One of the main conditions required for this grant was to make sure that the private operator was not obtaining “undue profits” from this grant. The formal beneficiary of the project is the GWIK.

The revenues of SNG have a rising tendency. The first three years of the cooperation created revenues on rather small level. The only year which did not allow achieving earning was 1995. It was the year when the drinking water consumption and sales decreased by 18% [31].

4) Comparison

Access to the market

In the two presented case-studies the private partners have accessed the market in the same decade, when neither Portugal nor Poland had specific legislation regarding the PPP arrangements. In both countries those projects became basically the first examples of the private sector participation in the water sector. What differentiate them is that in Poland that project was recognised also as the first PPP project in the country at all. This situation places Portugal in the better starting point.

In Portugal the private partner was selected through the public competition while in Poland it was made by the direct negotiation between the interested parties. The public tendering procedure creates better competition between private partners and is more transparent for all the interested entities, what does not occur at the same level in the second model. Since Portugal has longer general experience with PPP projects and the society is more prepared for changes that method could work well. At that time in Poland any changes and privatisation of services, even partial was creating mixed feelings among the people and negative comments. Therefore, the direct negotiation with actually the only one properly prepared private partner and permanent participation of the public authority through the mixed company put bigger trust and understanding of the happening changes. In both cases the different methods of private partner selection were used what shows that the selection method should be appropriate to the specific situation. Here, the methods were chosen correctly what effected in good procurement process.

Risk management

Risks assumption and division is the core of the successful PPP project. Since both case-studies represent a similar scope of operation and both private partners were contracted to provide almost the same services they also experience similar risks. In this comparison the following risks were identified and analysed: operation and maintenance; technological; demand; capacity; competition; financial; inflation; legal; public contestation (public cont.) and force majeure (force maj.). After identifying risks it is important to estimate their probability of occurrence and impact level. The scale adopted to evaluate each factor is from 1 to 3, where 1 means – low, 2 – medium and 3 – high. Additionally each risk can be quantified through multiplying the probability of particular risk occurring by its impact. Table 3 presents the risks matrix.

Table 3. Case-studies risks matrix.

<table>
<thead>
<tr>
<th>Risk</th>
<th>Risk allocation</th>
<th>P</th>
<th>I</th>
<th>RQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance</td>
<td>Public</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Private</td>
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<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Operation</td>
<td>Public</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Technological</td>
<td>Public</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Demand</td>
<td>Public</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Capacity</td>
<td>Public</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Competition</td>
<td>Public</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Financial</td>
<td>Public</td>
<td>2</td>
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<td>6</td>
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<tr>
<td></td>
<td>Private</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Inflation</td>
<td>Public</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Legal</td>
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<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Public cont.</td>
<td>Public</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Force maj.</td>
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<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

P – probability of occurrence, I – impact level, RQ – risk quantification

As it can be read from conducted risks matrix there are three main risks: technological, demand and financial. All of them were quantified on the top of scale. It means that partners responsible for those risks should carefully manage them. This work contains just one risk matrix made for the both case-studies, however it is recognised and recommended to do two separate risks matrix. Additionally, one more risk was recognised – the political risk. Since there is a public entity involved in the cooperation, it is one of the most important risks in the PPP arrangements. Nevertheless, due to the lack of access to that information the analysis of this risk was omitted in this analysis.

Contract management

In the both cases between the municipality and the private operator (Indaqua Fafe, SNG) there is a written contract which strictly defines all the rules of the cooperation, duties and rights for public and private side. In the both situations the private partners manage the provision of services; they are responsible for the maintenance and running repairs. They do not invest in the infrastructure, they just cover operation expenses.

In the case of Fafe the local government in the form of the municipality acts both as a grantor and a regulating authority. In the Polish case in addition the public partner is also a shareholder of the joint-venture company. This small difference can affect the cooperation between the private company and the public authority in a negative way, since the public entity plays two roles simultaneously.

It can be summed up that the management process in the case of SNG was much more troubled than in the case of Indaqua Fafe. Just in the 10 years the contract was amended three times for different reasons. Also, its
connection-structure has strongly changed in 2004 when the GIWK was created.

In the Polish case-study when it was decided to start the GWIK both, public and private partners demonstrated high flexibility and patience to the changes, that in the end brought profits in the form of public grant. In the Portuguese case-study the Indaqua Fafe also had to face some structural changes and be open for the new rules. As long as the changes in the contract improve the cooperation they should not be treated as something negative. It is better to modernize the contract than keep it in ineffective form.

Presently, both private partners are financially stable winning high profits and the provided services have definitely better quality and are well managed.

In both projects there were many positive new things implemented to improve contact with clients and the quality of services. However, none of the contract was managed perfectly and always very smoothly. In the case of Indaqua Fafe the services until now were not delivered to one parish. There is a plan to change it soon; nevertheless, it was not done for more than 15 years and situation like that should not take place. First years for the SNG were difficult, because company was generally perceived by people rather negatively. Residents were expecting sudden changes and improvement of services, what of course was not possible just after signing the contract. Additionally, maybe SNG should have led better sensitivity analyses to predict that the volume of sold water might decrease instead of increase.

VII. CONCLUSIONS AND FUTURE WORK

A) Summary

The aim of this work was to analyse and compare the development of the PPP models used both in Poland and Portugal, focusing particularly on the drinking water and wastewater sector. Two case studies were analysed highlighting the two different models of PPP projects. The analysis of both markets revealed that both countries are at a different stage of PPP development. Portugal had an early start, having its first projects dated back to the 70s, while Poland started its PPP project development in the early 90s. This gives Portugal around 20 more years of know-how, both in good and bad experiences. However, the Polish late start allowed the country to have a much smoother development of projects when compared to Portugal. Hundreds of successful and unsuccessful examples created strong foundations and guidelines on which Polish could improve upon.

Nowadays the Portuguese PPP market can be considered one of the most developed in Europe, and it is very often looked upon as an example for the start-up countries. Nevertheless, this exponential growth boom did not come without problems. Right know Portugal is entering its highest pick of paybacks since it has entered the PPP market. Additionally, due to the economic crisis that strongly affects the country at the moment, the PPP market has ceased its expansion, all new PPP projects have been stopped and the present ones are under a tight supervision. On the other hand, Poland is a country where the PPP market is still very fresh and where doors have only now started to open. There are more and more institutions appearing and promoting PPP throughout the country in association with the government.

It is understandable that the long experience in Portugal makes people less afraid of committing to PPP projects, which reflects in the number and scale of the projects. In contrast, Poland has started only few years ago dealing with PPP and even though right now there are a lot of international case studies and institutions helping in the field, the opinions about this model have not changed yet. According to the newest market studies, almost 60% of public institutions stated that they are not ready for the cultural and internal changes that PPP schemes bring. Looking only at the drinking water sector, the differences in the involvement level of the private sector become even more visible. The numbers speak for themselves – in Poland the private companies' participation is estimated at 2% while in Portugal more than 20% of the drinking water and wastewater services are supplied by private partners. Additionally, in Portugal bulk services are very popular, big areas are served by just a few companies and are then supervised by the government; on contrary in Poland municipalities usually deliver services to very small regions.

In Portugal the number of PPP projects in the water sector is much higher than in Poland. Starting in 1994, until 2009 there were 32 big PPP projects signed which translates into two PPP projects per year, just in this sector. On the contrary, in Poland, only three PPP projects were signed in the sector in the last 3 years, however their financial scale and period of activity are almost insignificant. There is also no countrywide regulatory body as in the first situation.

While in Portugal the implementation of PPP in the drinking water and wastewater sector can be described as having taken place in a friendly way, in Poland there is no easy way of access to private partners. The sector in Poland is still closed and private partners comment that public institutions are still not willing much to open the water sector to private participation.

The author of this work would also like to give some recommendations and point out some lessons learned from this study. PPP arrangements can be very complex, therefore each municipality should carefully analyse if it is ready for this kind of cooperation, and, if the inhabitants of its region are, since it is them directly going to use the services of private company. From the polish case-study we can learn that the opinion of public is very important and can be strongly negative. According to this, it would be recommended for the municipalities to prepare people well in advance for possible future changes. It could be made in a form of debates, educating actions, leaflets, posters and other, with the aim to make people aware of what will happen. If this people will feel they are part of the project, the probability of success greatly increases.

It is advised for municipalities to take caution while undertaking a PPP cooperation, especially while not having the experience before. In the both analysed countries there is a long list of institutions supporting and helping new entries in the PPP market, therefore the first step for the municipal authorities should be to learn from
them what the PPP model is, what are the possible variants to use, run any needed analyses. And only then when the municipality is ready, even if it would take a couple of years, it can try to apply this method. Very often that institutions offer also special trainings to participate in.

There is one more issue about which the municipalities’ majors should be fully aware. PPP arrangements are known as a “tool” to not pay to the private partner at the specific moment, but only in the future. It might create the illusion for the elected mayors that they can do whatever they want to, since the new project would not overflow the predicted and available budget. These “present” mayors should plan far into the future, to not leave their successors with just debts to pay back and no money available to run new investments, very often necessary ones. The best example here to learn from is Portugal, which might have run to many PPP projects in general in the last years and right now is facing the highest pick of paybacks.

It is also important for the both partners to be flexible during the time of the contract. The polish case-study shows that even if the municipality is cooperating with the private partner it is still possible to get the supporting grant from the another institution (such as EU funds). This lesson draws an advice for municipalities to carefully analyse all possible scenarios, to not miss any good opportunity and to not be afraid to take an effort to try.

B) Recommendations for future studies

In the case of further expanding the work developed in this paper, one of the main areas of focus would be the deeper exploration of the polish situation. The non-existence of a regulatory institution creates a decentralized storage of data related to the sector which makes it difficult to know exactly the full and complete state of all the institutions in the country. The collection and treatment of this data would provide an immense knowledge of the state of the sector and would lead to a further importance of the PPP projects in Poland. Considering the amount of existing PPP projects both in Portugal and Poland, it would also make sense to analyse in higher detail a few of them, providing a wider basis for comparing not only both countries, but also for the projects within each country.

REFERENCES


