



Improving Water Utility Performance Through Local Private Sector Participation

Lessons Learned from the Micro-PSP in Madaba, Jordan

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List of Abbreviation

BOO	Build-Own-Operate
BOT	Build-Operate-Transfer
DBO	Design-Build-Operate
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit GmbH (German Technical Cooperation)
ISNIE	International Society for New Institutional Economics
IWA	International Water Association
JOD	Jordanian Dinar
KfW	Kreditanstalt für Wiederaufbau (German Bank for Reconstruction and Development)
MENA	Middle East and Northern Africa
M	Million
MEN-REM	Middle East and Northern Africa network for water, wastewater and solid waste
MWI	Ministry of Water and Irrigation
NIE	New Institutional Economics
NRW	Non-revenue Water
OECD	Organisation for Economic Cooperation and Development
OED	Operations Evaluation Department
OMS	Operations Management Support
PMU	Program Monitoring Unit
PPI	Private Participation in Infrastructure
PPIAF	Public Private Infrastructure Advisory Facility
PSP	Private Sector Participation
TA	Technical Assistance
TAC	Transaction Costs
ToR	Terms of Reference
UK	United Kingdom
USA	United States of America
USD	US Dollars
WAJ	Water Authority of Jordan
WEDC	Water and Engineering in Developing Countries Institute at Loughborough University

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In addition, many thanks to all persons that were interviewed at the beginning of the pilot case in 2006 – your opinions shaped large parts of the process analysis for the Madaba case.

0 | Preface



This Discussion Paper presents the so-called Micro-PSP approach to the Jordanian water sector. Micro-PSP implies the use of local private sector expertise to improve the service delivery of the Jordanian water sector institutions and has been introduced in Jordan as a part of the Operation and Management Support (OMS) Component of the German-Jordanian Programme – Management of Water Resources. OMS is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by the German Technical Cooperation (GTZ) and the Water Authority of Jordan (WAJ) with support from Dorsch Consult Water and Environment.

The paper is based on research undertaken by the author and published in a variety of forms, particularly in a report of the European Delegation to the Hashemite Kingdom of Jordan. In addition, the up-to-date information and data about the process and the results of the Micro-PSP Pilot Case in Madaba enhances the analysis and provides a powerful example of the opportunities Micro-PSP can offer to both the Water Authority of Jordan (WAJ) and the private sector.

This Discussion Paper is the first of a new series the Water Programme will be producing over the next few years. The intention of the series is to combine theoretical background knowledge with field experiences from the Jordanian water sector and hence contribute to the knowledge management system with regard to water issues in Jordan.

I hope that you will enjoy this paper and that it will provide you with an informative account of one of the most innovative PSP approaches in the Middle East region.

Andrea Joras
Country Director of GTZ Jordan

1 | Executive Summary



PSP is often perceived as a way to tap new financial resources for the rehabilitation and expansion of plants or networks, or for improving operational efficiency, since conventional economic analysis states that production efficiency is lower in the public sector than in private enterprises. However, experience gained in recent PSP projects around the world shows that this argument is too general to guarantee high quality water services in the long term. Conventional analysis tends to neglect the costs and benefits of the institutional setting, i.e. the regulatory framework or the allocation of responsibilities.

Especially in the water and sanitation sector with its long-term investment plans, institutional frameworks are extremely important to ensure high quality and reliable service provision. When opting for a PSP contract the decision should be based on full cost considerations, i.e. include additional costs for searching for the right transaction partner, elaborate and agree on the contract terms, monitor performance and intervene in case of contractual failure. These so-called "transaction costs" can make up a considerable share of the overall costs of the introduction of a new institutional setting.

The choice of the PSP-option has a clear impact on the level of transaction costs: the more specific the required investments, the longer the duration, the more comprehensive and the lower the competition for the contract, the higher the transaction costs. A number of examples have shown that high transaction costs e.g. for renegotiations of long-term and complex contracts are a major problem of PSP processes.

Thus, it seems that short-term and easily defined contracts with lower risk, but also lower potential for efficiency improvements, are an appropriate way forward in PSP, as a first step towards the improvement of public service providers' performance. This means that commercialisation processes combined with decentralisation and outsourcing activities like micro scale PSP, service contracts or management contracts are becoming more appropriate than long-term lease or concession contracts.

This is one of the reasons for the increased use of local private expertise when outsourcing some or all operational tasks of the water utilities. These new private operators were mostly engineering or construction companies, but also from other sectors, with little or no operational experience. International studies on Micro-PSP and outsourcing found that a wide variety of activities are being outsourced in a wide range of countries, and that this generally delivers better quality services at lower cost. However, clear limitations of the local private sector to deliver the required services were often perceived.

The Micro-PSP approach has been introduced in Jordan as a part of the Operation and Management Support project (OMS) within the framework of the German-Jordanian TC Water Programme, funded by the German Federal Ministry for Economic Cooperation and Development (BMZ). OMS is being implemented by the German Technical Cooperation (GTZ) and the Water Authority of Jordan (WAJ), with support from Dorsch Consult Water and Environment. Micro-PSP means the outsourcing of clearly identified business processes in operation and maintenance of water supply and wastewater disposal to support commercialisation and efficiency of service delivery in WAJ by local private companies. An initial pilot was started in Madaba, with the clear objective (in addition to efficiency improvements) to test the concept and to create a market for local private companies to support the reform process in the water sector. After two years the results are very encouraging.

1 | Executive Summary

The private partner managed to decrease considerably the high NRW and, by collecting additional cash, to significantly improve the financial situation of WAJ. The billed and the collected amounts, compared to the base year 2005, increased by 80% and 84% respectively, while the outstanding invoices (or amounts receivables) as a percentage of the billed amount decreased by more than 45%.

The billed and the collected amounts, compared to the base year 2005, increased by 80% and 84% respectively, while the outstanding invoices (or amounts receivables) as a percentage of the billed amount decreased by more than 45%.

The additional cash collected during the implementation of the Micro-PSP is more than 1.7 million JOD. This creates a stronger financial position for WAJ and costs the government less in subsidies to WAJ Madaba. The break-even point for the contract, i.e. when the total costs for WAJ equalled the accumulated additional cash, was after 1.75 years. After deduction of the costs for the services by the private company, the net benefit for WAJ is almost 1 million JOD. With an average of approximately 440,000 JOD per quarter, this would accumulate to additional revenue for WAJ of more than 2.2 Million JOD – the equivalent of two years revenue before the Micro-PSP started.

The pilot project has also shown that the major obstacle is the availability of competent local private companies to take on the task. Considerable capacity development has to be undertaken to change this. This holds especially for more complex Micro-PSP approaches, involving more operational knowledge.

In conclusion, the Micro-PSP in Madaba proved to be very successful. Based on this success, WAJ intends to award various new Micro-PSPs contracts in the country. This up scaling includes the replication of the Madaba Micro-PSP in other Governorates, but also seeks to broaden the tasks for which Micro-PSP is used and include fields like the refurbishment and operation of pumping stations or the improvement of household connection

and leakage repair services. Interestingly, also the autonomous Public Water Company in charge of the water and wastewater services in Amman (Miyahuna) shows great interest in using Micro-PSP to improve its performance in some fields. As a result of its success the Micro-PSP contract in Madaba will not only be extended in terms of duration, but also expanded in terms of outsourced tasks. Finally, the up scaling might also take place regionally – already some water sector authorities of other countries in the Middle East and the Gulf States are investigating the Micro-PSP pilot study in Madaba to learn from it for their own reform processes.

2 | The Rationale for PSP in the Water Sector

Lack of access to clean water and safe sanitation systems are major obstacles to economic and social development in developing countries. In particular, the poorer population in rural areas and in peri-urban areas often suffer from inadequate or non-existent services. Often water must be purchased at great expense from a tanker truck or carried over long distances. This bears health risks due to the poor quality of the water and reduces the possibility to develop personal economic strategies. Accordingly, the extension of infrastructure is a fundamental requirement in the fight against poverty, for an improvement in living conditions as well as for a lasting economic development.

The enormous need for investment in order to improve the infrastructure by far exceeds the capabilities of developing countries, and also of the international donor community. Often resources are not even sufficient to assure sustainable operation and maintenance, let alone the required renewal and expansion.

Furthermore, existing facilities are often operated inefficiently and unprofessionally, the institutional and organisational structures are complicated and lack transparency. The national budget of many developing countries is heavily burdened by the deficits of inefficient utilities. The following Graph 1 depicts the annual losses incurred by inefficiencies in the infrastructure sectors, with a focus on mispricing (unwanted subsidies) and technical inefficiencies. These two factors account

for losses at almost the same level as the annual investments. Obviously, this was a major reason for the lack of funds to tackle maintenance and expansion of the systems.

Donors' experiences with the support of public utilities in the 1970s and 1980s have shown that investment in supply systems that are operated inefficiently and ineffectively is neither technically nor economically sustainable. These experiences led to a huge disenchantment with state-owned and other public utilities, and the conclusion was, that "Bureaucrats should not be in Business" (World Bank 1995). Hence, the involvement of private companies in so-called Private Sector Participation (PSP) projects was seen as a way of addressing these issues.

The following chapter briefly describes various options of PSP.

3 | Objectives and Forms of PSP

3.1 | Objectives

The main objective of PSP is to increase efficiency in the water and sewerage service delivery and to make infrastructure services available to a wider group of people, with improved quality and accessible at affordable prices.

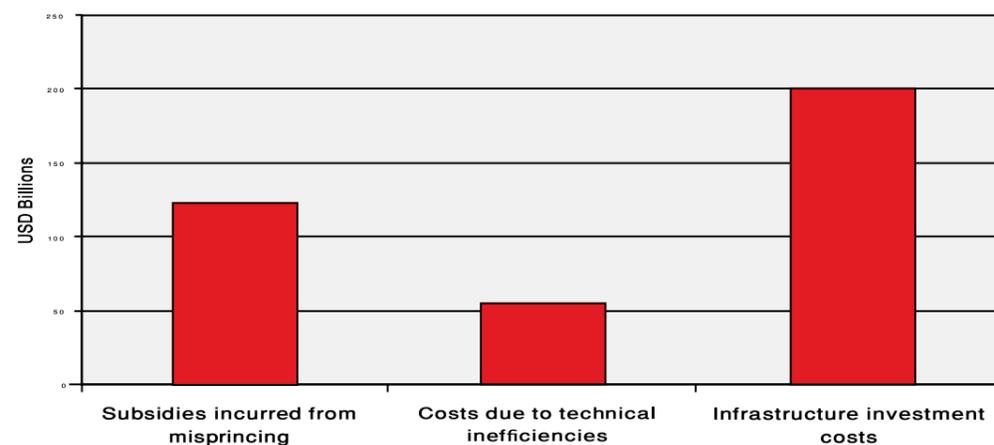
First of all, the aim of private sector involvement is to bring about an improvement in the efficiency of utilities through the introduction of private sector management methods. This often results in a substantial improvement in crucial performance parameters such as the collection of outstanding debts or the reduction in technical losses, allowing the economic situation of the utilities to stabilise and in some cases even generating resources for new investments to be made. A cooperation with a private partner can thus enable public utilities to have access to private financing, e.g. loans from private banks, which were previously denied to them. In addition, PSPs can also entail the direct mobilisation of resources from the private partner in order to finance the construction, repair or expansion of infrastructure.

Furthermore, the participation of the private sector can often trigger urgently required structural reforms in the water sector that had previously been put on a back burner. The emergence of private "competition" can also lead to an unexpected revival of public utility operations in the region or in the country.

3.2 | Forms

PSPs in the infrastructure sector are nothing new – they have been in use for more than 20 years, and in some countries (such as France) for considerably longer. PSPs are based on the delegated management concept, i.e. the state delegates the provision and management of certain services to a private company by entering into some kind of a performance agreement. The state retains influence and control since it remains the owner of the facilities and defines the obligations and the discretion accorded to its private partner.

PSP models range from service contracts via management contracts that provide for private operations management, to the award of long-term concessions for the assurance of overall utility supply; including infrastructure financing. Table 1 provides a summary of the various forms of PSP. However, efficiency increases via PSP also come at a price, which the New Institutional Economic theory describes as transaction costs. These can often have a major influence not only on the overall cost savings, but also on the performance of a PSP process. Therefore, the next chapter briefly describes PSP from the viewpoint of the New Institutional Economics theory.



Graph 1: Estimated annual losses from inefficiencies in the infrastructure sectors. Source: World Bank (1994), in: Harris (2003: 4).



3 | Objectives and Forms of PSP

Table 1: Overview of the various PSP options

Type of Contract	General Characteristics	Achievable effects	Allocation of responsibility and risk	Financing the services of the private sector
Service contract	Private sector provides a clearly defined service that only forms part of the overall operation. Investments by the state. Contractual term: 0.5 – 2 years.	Improvements in a precisely defined area; possibly the first step towards a more complex PSP.	Private sector has little responsibility and little risk; public partner remains service provider and contact partner for the customer. Ownership of infrastructure: public.	Normally fixed payment for the service
Management contract	Private sector provides key staff for all operational management areas: technical, financial and human resources management. Investment by the state. Contractual term: 2 – 5 years.	Improvements in the overall management; knowledge transfer of private expertise by means of training on the job.	Private sector has little responsibility and little risk; public partner remains service provider and contact partner for the customer. Ownership of infrastructure: public.	Normally fixed payment for management services with performance related components.
Lease contract	Private sector takes over total responsibility for management and maintenance. Investment by the state. Contractual term: 5 – 15 years.	As in case of management agreement, but also improvements in investment planning and in financial management.	Private sector with high entrepreneurial risk, as it takes over the provision of the service and must finance its operations through the revenues. Ownership of infrastructure: public.	Refinancing through the tariffs; public sector receives a leasing charge, which should also guarantee investments.
Concession contract	Similar to a lease agreement, but in addition the private sector is responsible for investment in the installations. Investment by the private sector. Contractual term: 15 – 30 years	As in case of lease agreement, but additional capital for expansion and renewal investments.	As by lease agreement, but also risk of the tied investments made. Ownership of infrastructure: public.	Full refinancing (investments as well) by means of the tariffs.
BOT models ¹	Private sector builds and operates (in most cases) a specific new installation, e.g. a power station or a treatment plant (Greenfield approach). Private investment. Contractual term normally 15–30 years.	Capital for the construction of a new installation. Professional operation of the installation, but normally no improvement in network operations.	High risk for the private company, which bears all the planning and investment costs. Ownership of infrastructure: during the contractual term private, thereafter transfer. Mutual dependence concerning the output (production / purchase).	Refinancing through transfer contracts from public partner; normally no direct relationship with end customer.
Full divestiture (privatisation)	The private sector acquires all assets and is fully in charge for all operational, financial and strategic activities. Private investment. Contractual term: indefinite.	As with concessions, but additionally also major capital influx to the state budget from the sale.	Private sector with full entrepreneurial risks, including investment. Ownership of infrastructure: private	Full refinancing (investments as well) by means of the tariffs. Capital can be raised from the capital market or the stock market (if listed).

Source: own table, adapted from Rothenberger and Truffer (2005: 86)

¹ BOT (Build-Operate-Transfer) is shown here as an example of all the variations such as BOT, B00, DB0, etc.

3 | Objectives and Forms of PSP

3.3 | New Institutional Economics viewpoints

A specific branch of economics, the so-called New Institutional Economics (NIE), has increasingly obtained attention since the mid 80s. It deals explicitly with the analysis of transaction costs that occur in alternative institutional settings.

The basic question for PSP is: Why should a water utility procure services from the market (i.e. involving the private sector) instead of doing it by itself?

Basically, there are two options for a company which requires a certain service: doing it yourself by employing workers who receive orders to do so ("in-sourcing" with hierarchy) or buying it from the outside ("outsourcing" from the market). Classical economics say that the market is the superior mechanism for the exchange of goods and transactions. This would mean that everything is better produced "by the market" than in-house, which would imply that vertically integrated companies (as opposed to individuals or single companies buying and selling goods and services at every stage of production) are not necessary.

However, as the Nobel-prize-winning Institutional Economist Ronald Coase explained in the 1930s, the reasons for vertically integrated companies are imperfect information and the need to minimize so-called transaction costs (Coase 1937). Transaction costs occur in every economic transaction. In order to identify a suitable firm which could supply a particular service, a costly and time-consuming process of evaluation and negotiation becomes necessary, which in every case adds to the pure production costs of the service which might be outsourced. Faced with high transaction costs, the companies preferred to do most activities themselves and hence became vertically integrated. On the other hand, also in a vertically integrated firm these transaction costs apply if in-house production takes place. The orders to deliver certain services and the quality of these services produced within the company also need to be monitored, structures need

to be established, etc. Similarly the question of available competence within the company is crucial, and often leads to the desire to outsource certain functions, but rather on the base of a performance contract and not pure market delivery. This third option, establishing a contract-based relationship for certain activities, is called a "hybrid" form of service provision by New Institutional Economists (Williamson 1991).

The factors discussed above also influence any decision as to whether or not to involve the private sector in the delivery of water and sewerage services. An involvement of the private sector is normally contract-based, and this relationship can take all forms, from a Micro-PSP to a long-term concession contract.

For a PSP process, transaction costs are costs incurred in searching for the right transaction partner, developing and agreeing on the contract terms, monitoring performance and intervening in case of contractual failure. These costs can make up a considerable share of the overall costs of the introduction of a new institutional framework or even offset the savings in production cost (Vining and Globerman 1999: 79, Wilson 1999: 38). Hodge states that for service contracts, which are relatively easy to define and monitor, the transaction costs are between 2 and 10% of the contract volume.

3 | Objectives and Forms of PSP

Transaction costs are directly linked to the existence of information asymmetries: the more serious the effects of asymmetric information (i.e. one party has better information about the process or the result of the process) the greater the potential for opportunistic behaviour, which means that the contract partner deviates from the originally foreseen tasks or commitments. In this case, safeguards that protect both sides from losses are extremely important. The need to write more complete agreements on which transactions are based, and to monitor these agreements more closely produce higher transaction costs. The importance of these transaction costs depend on (see e.g. Vining and Globerman 1999; Ashton 1998; Williamson 1990)² :

- the specific investment required to fulfil the tasks, i.e. assets which can only be used for this one transaction, like water treatment plants or network investments);
- the uncertainty about the context in which the task has to be completed, i.e. the soundness and availability of information about the current and future technical, legal or financial conditions;
- the uncertainty about the complexity of the overall setting, i.e. only one task needs to be performed which can be monitored easily, or a whole range of tasks are outsourced, with a much higher complexity (such as “managing the whole water system in Amman for the next 30 years”);
- the contestability, i.e. if there is sufficient competition between firms eager to provide the service – as well before the contract is signed or afterwards (in case of a failure of the company which originally won the contract).

The selection of a particular PSP contract has a clear impact on transaction costs: the more specific the required investments, the longer the duration and the more comprehensive the task, the higher the additional transaction costs. Table 2 summarises the aspects related to transaction costs.

Thus many authors argue that, in situations where high specificity, complexity and uncertainty are combined with low contestability, outsourcing under long-term contracts is often less satisfactory than in-house (public sector) provision (Lane 2000: 133), perhaps with short-term outsourcing or service contracts in the case of water services. On the other hand, long-term concession contracts are normally used to attract private investment and to reap major operational improvements. As a consequence, there is a clear trade-off between minimisation of transaction costs and the mobilisation of private capital to achieve the production efficiency gains envisaged with lease or concession contracts. The next section provides some findings which support the importance of taking into consideration the transaction costs, but also presents some interesting results of PSP processes.

3 | Objectives and Forms of PSP

Table 2: Summary of contractual options for PSP analysed from NIE viewpoints

Contract Type	Information Asymmetry	Asset specificity	Uncertainty/ complexity	Contestability	Level of Transaction Costs (TAC)
Service contract	Negligible	no investment, low reputation effects	short term, clearly defined contract; fixed pay-per-service, low complexity	very high (contracting out to locals or former employees)	very low TAC; easy to handle
Management Contract	moderate importance	low, rather unspecific investment; medium reputation effects	short-medium term; fixed pay-per-service; medium complexity	moderate to high (greater number of experienced operators; no investment required)	moderate TAC; renegotiations possible
Lease Contract	high importance: private operators benefit from investment in expansion, but do not have to invest	co-ordinated investment required; high reputation effects	high; medium-long term; remuneration from customers' payments; complex contract	low (few companies with sufficient experience)	high TAC; often renegotiations; often contracts too long (low investments); Lock-in
Concession contract	very high importance: renegotiation on cost and investment require sufficient information	high investment from private sector, very high reputation effects	very high; long term; remuneration from customers' payments also for investment; very complex contract	very low (few companies with sufficient experience and prepared to invest)	very high TAC; very long contracts, often renegotiations and underinvestment; Lock-In

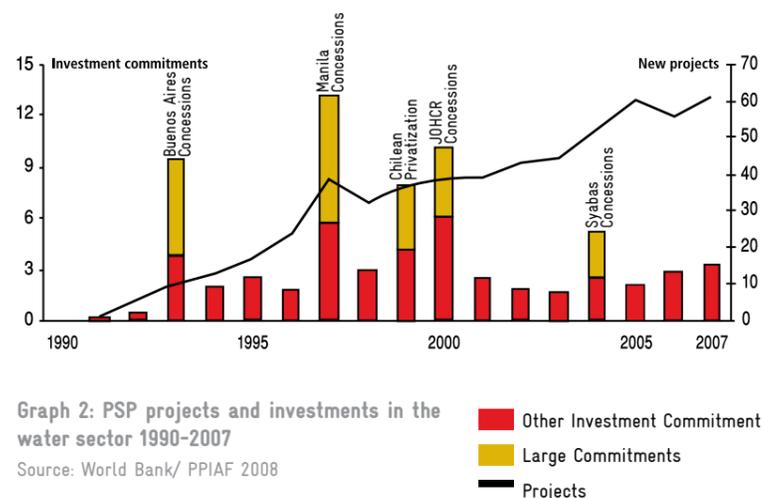
Source: taken from Rothenberger and Truffer (2005).

² For a detailed discussion of these factors, see Rothenberger and Truffer (2005).

4 | Trends with PSP in the Water Sector since the 90s

4.1 | Number of projects and investment by the private sector

As can be seen in Graph 2, the number of new projects in the water sector with some form of PSP has steadily increased, however the new investment commitments went down considerably after 2000 and recovered only after 2004.



Graph 2: PSP projects and investments in the water sector 1990-2007

Source: World Bank/ PPIAF 2008

This trend highlights two things: firstly, the considerable reluctance of the private sector to engage in large projects with own investment between 2000 and 2004. However, PSP in general was still developing in terms of new contracts signed. Secondly, a closer look reveals that the growth in PSP, and especially the growth in investment after 2004, is concentrated in a few countries. Most of the investment took place in China, Mexico, Brazil and Georgia representing 79% of the total investment in 2007; China and India alone accounted for 73% off projects in 2007 (World Bank/PPIAF 2008).

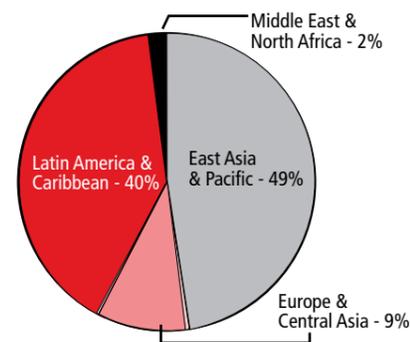
Hence, while the figures indicate a revival of PSP projects and investments, it should be noted that there are certain effects (for example economic growth and hence the need for water and wastewater treatment plants in China, Brazil or India) which fuelled this revival.

4.2 | PSP in the MENA region

The MENA region has a relatively small share of the overall number of water sector PSP projects: only 3% of all PSP projects take place in the region. 46% of all projects can be found in East Asia and a third in Latin America and the Caribbean. Europe and Central Asia take another 14%, and even Sub-Saharan Africa with 4% accounts for a larger number of PSP projects than MENA.

Not only the share, but also the type of contracts in the MENA region is interesting. While on a global scale, concession contracts and BOTs account for almost 80% of the contracts, this is very different for the MENA region. Of the 18 contracts which are active in the region, 9 contracts (equalling 50%) are management contracts, and BOTs and concessions jointly account for the other half, while to date there has been no full divestiture.

This relatively low number of concessions and BOTs also has an impact on the share of private investments being made in the region. The countries in the Middle East and Northern Africa account for 3% of all water PSP projects, but only for 2% of all investment flows, see Graph 3, suggesting that there is a degree of underperformance in terms of attracting private capital to the water sector in the MENA region.



Graph 3: Regional allocation of private investments in the water sector (in %)

Source: own compilations, based on World Bank PPI project database.

4 | Trends with PSP in the Water Sector since the 90s

4.3 | Cancellations and renegotiations of PSP contracts

Many of the PSP contracts projects that were signed in the 90s encountered difficulties, for various reasons. Firstly, contracts were frequently launched without adequate preparation time, which is especially true for concession contracts. These require, due to the greater risk being undertaken by the private operator, a reliable information and base data, which often can only be established through a difficult and lengthy process. Since many concession contracts have been developed under severe time pressure, an in-depth information collection was often not possible (Rothenberger 2005: 28). The second problem was the lack of a proper regulatory framework, both for independent contract regulation or dispute mediation and settlement. There is clear evidence that countries with dedicated regulating agencies have had fewer problems in the implementation of PSP contracts (e.g. Guasch et al. 2002 or Henisz and Zelner 2003). A third major issue responsible for creating problems, particularly for the long-term concessions and BOT contracts, were macroeconomic shocks, since such contracts provided investments and were refinanced via local water tariffs. Bradbaart (2005: 340) points out:

“The investment part of concessions turned out to be very sensitive to macroeconomic shocks. Capital was frequently sourced from international financial markets and denominated in US dollars. Contracts contained clauses that placed currency exchange risk with the government by pegging the exchange rate of a local currency against the US dollar for the entire contract period of 20 or more years. The underlying financial forecasts made no allowance for economic shock. When these occurred, as happened in many countries, rapid currency devaluation burdened governments with sizeable dollar-denominated debts. The theory was that governments would pass these obligations on to users in the form of higher water charges. But governments understandably hesitated to double the water charge at the onset of an economic crisis.”

In addition, the roles and responsibilities were often not sufficiently defined, and the fact that a PSP is a contractual relationship in which both partners need to cooperate to a certain extent has often been neglected, mainly from the public side. Since long-term contracts with a lot of uncertainty require flexible cooperation, a lack of the will for cooperation is a major obstacle to achieving the targets.

Thus, renegotiations became very common in long-term contracts. A study by Guasch (2004) analysed more than 1,000 long-term contracts (which encompass concession contracts, lease contracts and BOTs) awarded between 1985 and 2000 in Latin America and the Caribbean in various infrastructure sectors. For the water sector, the study found that about 74% of all long-term contracts were renegotiated. This is a much higher figure than for all other sectors with a renegotiation rate in electricity contracts of 10% and in transport contracts of 57% (Guasch 2004: 13). In addition, the water contracts were renegotiated much earlier than contracts in other sectors, with only 1.6 years on average between award and renegotiation. A further analysis of the contracts found that contracts with a high share of private investment are more likely to be renegotiated (70% renegotiation rate), while short-term projects and contracts based on performance targets and not on investment requirements were more stable with a renegotiation rate of 12% (Guasch 2004: 16).

Renegotiations were often not the end of the line – early terminations indicate the failure of projects. And, as with renegotiations, the water sector had also higher rates in terms of project failures than other sectors, see Graph 4.

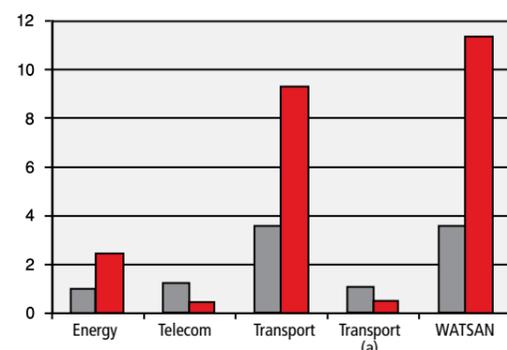
There might be two different sets of reasons behind the higher cancellation ratios in the water sector: Firstly, due to specific features of the sector, (e.g. the health implications

4 | Trends with PSP in the Water Sector since the 90s

of inadequate water quality and quantity), PSP processes in the water and sanitation sectors cause intense scrutiny and highly emotional debates. Thus, the set-up of water PSPs might be quite complex and prone to major disruptions. Beside this, it should also be taken into account that the other sectors might have started earlier with PSP and have developed a more sophisticated mechanism for implementing the process.

Graph 4: Cancellation ratios in infrastructure projects with PSP (1990-2001)

Source: Rothenberger (2005: 14) based on Harris et al. 2003: 4. (a): Transport sector without Mexican toll road projects, which had a general flaw in design.



A World Bank analysis shows that 3.5% of all PSP projects in water and sewerage projects reaching financial closure between 1990 and 2001 were cancelled (Harris et al. 2003: 4), accounting for more than 11% of the investment value of all PSP projects in water and sewerage. The average time before cancellation was four and a half years (Harris et al. 2003: 3). More recent figures derived from the World Bank PPI Database indicate that 9% or 55 out of 608 PSP projects in the water sector were cancelled or under distress in 2007 – nonetheless, they account for almost 30% of the total investment within PSP projects. All these figures indicate that while PSP projects and investments are still on the rise, the larger projects bear a considerable risk of being cancelled or under distress – which is in line with the findings of the New Institutional Economics theory as discussed in Chapter 3.3.

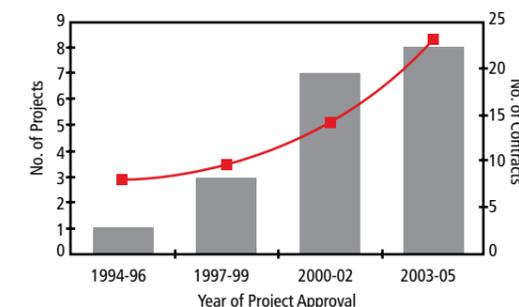
4.4 | The trend towards local private sector companies

While in the 90s the market for PSP projects in the water sector was for the most part dominated by a few global operators, the pattern has been changing since 2000. Local companies with little or no operational experience entered the water business. An example of this is the successful bidder for the lease contract for the water utility in Siberia's Perm City, the Russian investment conglomerate Interros. Also in Chile local investors were successful and won five of the six water contracts awarded in 2004. The same holds true for Colombia where local construction and engineering companies won contracts for small cities in 2001–04. In addition to the success of local firms in their home countries, the companies from developing country also expanded within their regions, for example in China, where Malaysian firms won five contracts awarded in 2001–04 (Izaguirre and Hunt 2005: 4).

While companies from developed countries still accounted for a large share of investment flows up to 2004 (due to the contracts of the previous periods), they limited their activities to selected developing countries and sought to exit underperforming contracts. Interestingly, the companies defined different focal areas: While RWE Thames announced that it would focus on Central and Eastern Europe, Veolia Environnement intends to concentrate on selected Asian countries and Suez announced that it would pull out of Asia and Latin America. (Izaguirre and Hunt 2005: 4).

The trend that local companies are getting more and more involved in water sector PSP is also shown in Graph 5. Since 2000 there has been a steep increase in both the number of contracts as well as the number of projects with local private sector involvement. The figures include companies active at the national level or at the local level as well as small-scale entrepreneurs.

4 | Trends with PSP in the Water Sector since the 90s



Graph 5: World Bank projects with Local PSP companies in the water sector

Source: Kariuki et al. (2005)

Large foreign companies demonstrated a limited interest in the small-scale infrastructure and small service contracts, leaving a niche for local private sector companies. There are various reasons for this, for example insufficient project volume to finance international expertise or the even larger role of local expertise and understanding of local culture in smaller towns. The concessionaires also soon discovered that revenue collection was a local issue and required local knowledge. In addition, the mainly foreign concessionaires were often slow to adapt to local political realities and engage civil society. Expanding access to the poor in smaller towns under these concessions has proven slow and expensive. It became obvious that local companies are often better placed to extend services to the poor, since they have better local knowledge and a different perception of local risk. They act as formal or informal extensions of the general water distribution system. Their appearance ranges from (informal) micro-enterprises delivering water to the households by the bucket (or water tanker) to water kiosk operators and companies running independent grids or sub-grids connected to the public water supply and include private operators taking over some or all management functions of a water utility. Another issue was that the complex concessions, but also the less complex lease and management contracts required considerable preparation time. A study by GTZ found that the time between the decision to introduce PSP and the finalisation of the tender documents (i.e. not the signed contract!) took between one and more than 3 years (Roth-

berger 2005: 22), and even after signing more time was needed before initial successes became apparent.

In many cases after the first few months it was discovered that the database that had been provided during the tender process was highly inaccurate; this led to renegotiations, which were time consuming and reduced the trust between the partners.

Here, the local companies can engage in smaller, more easily manageable contract types to improve the operation and maintenance of parts of or the whole public water supply system. Depending on the range of required tasks, outsourcing, service or management contracts are used. Especially for the former two the Operation and Management Support (OMS) Project of GTZ in Jordan has used the term "Micro-PSP" (OMS 2003b: 7).

Table 3 summarises the various types of local private sector participation in the water sector. While all four types are of relevance for the improvement of connection ratios, only the fourth type deals directly with the improvement of the existing water system within a more limited contract than the standard large concession with an international operator. Due to the particular circumstance that most people in Jordan are already connected to the public network, the focus of local private sector involvement is on efficiency improvement within the existing system. Therefore, only the fourth type is of relevance in Jordan and hence will be looked at in more detail.

4 | Trends with PSP in the Water Sector since the 90s

Table 3: Typology of Local PSP in the water sector

No.	Type	Description
1	Mobile distributor	Operators with carts/ tankers buying water (directly or indirectly) from a utility network;
2	Point/ Retail outlet	Providers who install standpipes or water kiosks connected to a utility network
3	Independent piped networks	Providers who buy water in bulk from utility networks and developing sub-networks to houses or stand posts or who run own networks supplied by own boreholes.
4	Service providers to public networks/ Micro-PSP	Providers running some or all processes of a public water system of a town on a contractual base on behalf of the (local) government and/ or the local water utility.

Source: Own table based on Kariuki and Schwartz (2005: 14)

5 | Micro-PSP/ Outsourcing

5.1 | Definition

The term "Micro-PSP" has been introduced in Jordan by the Operation and Management Support Project (OMS 2003b: 7), implemented by GTZ with support from Dorsch Consult Water and Environment on behalf of the German Federal Ministry of Economic Cooperation and Development (BMZ). OMS has used the following definition for Micro-PSP:

"Private Sector Participation in operation, maintenance and management of selected business activities and smaller business units of WAJ, enabling local private companies to support commercialisation and efficiency of service delivery in WAJ ... It includes outsourcing of clearly identified functions/ business processes in operation and maintenance of water supply and wastewater disposal..." (Abu Shams and Kachel 2003).

The concept of Micro-PSP should provide rapid improvements and deliver better data on which the development of a large, long-term PSP can be based. As can be seen from the definition, Micro-PSP also covers outsourcing or contracting out. The main difference is that the remuneration for the private company in a Micro-PSP is normally performance-related, and depends on the achievement of specified targets, while outsourcing or contracting out are rather fixed-fee contracts. In its other aspects outsourcing is very similar to Micro-PSP.

5.2 | Utilisation of Micro-PSP

Micro-PSP is increasingly being used by infrastructure utilities, since it can be used for the optimisation of many different processes within a water utility, amongst others:

- Billing and revenue collection;
- sewerage connections or water service connections replacement;
- leak repairs service;
- IT and customer management, customer surveys and GIS services;
- operation of special plants and equipment;
- vehicle repairs and maintenance.

Box 1: Outsourcing in industrialised countries

Chartwell (2005) found that in industrialised countries the percentage of utilities that now outsource certain business processes, e.g. in Customer Information Systems (CIS) and billing has surpassed the percentage of utilities which do not involve external private companies. The biggest growth in outsourcing has been in bill presentment and payment, where 70% of utilities now outsource some portion of their billing and payment cycle (Chartwell 2005: 7). The main motive for these outsourcing activities is cost reduction and the need for expertise not found in-house (Chartwell 2005: 4). However, utilities outsource certain processes where it makes sense, but most often keep the bulk of customer care activity in-house.

In Chile, a middle-income country, the utility companies have sub-contracted a very wide variety of activities, including the operation, management and capital investment of whole systems, as well as maintenance of all aspects of the networks, meter reading and billing. Contracting out has reduced the numbers of workers per connection. The public water utility in Santiago, EMOS, uses outsourcing in meter reading and other functions, and had with 2.04 employees per 1,000 connections in 1993 a labour productivity about three times the regional average' (Lee, 1998). However, obviously, there are also risks of underperformance of the external service providers which need to be taken into account.

Table 4: Possible benefits and disadvantages of Micro-PSP

Advantages	Disadvantages
Cost effective if true competition, prudent procurement procedures and qualified supervision exists.	Demands qualified preparation of tender documents and close supervision.
Puts pressure on the own labour organisation for efficiency improvements.	Risk stimulating fraud and corruption in the procurement process and during supervision.
Increases flexibility to cope with seasonal variations and respond according to real needs instead of work force and equipment at hand.	May lower quality of service to the public because contractors may tend to be less sensitive to the authority's objectives and public demands.
May reduce the authority's management burden, personnel administration and training.	May displease civil servants and consequently meet resistance from unions.
Can limit the authority's needs for new capital investment in maintenance and equipment.	May result in delays if procurement procedures are cumbersome.
Can develop useful benchmarks in terms of cost and performance of O&M tasks.	Increase vulnerability to non-completion of works due to contractors' financial problems or strikes etc.
May provide special skills and innovative methods of work and management.	Low bids may lead to inferior quality of work.
Supports the development of the local contracting industry, particularly small-scale entrepreneurs.	May lead to deterioration of in-house capabilities since lower hands-on experience in the own labour force.

Source: Own table based on Sansom et al. (2003b: 22)

5.3 | Benefits and challenges

Keefer (1998) points out that outsourcing or Micro-PSP can not only lead to lower costs due to reduced inefficiencies, but also to higher quality and greater innovation. New opportunities for the local, often smaller-scale private sector can be achieved, which have wider positive economic effects. However, there are also risks that in some cases these benefits may not be experienced. If poorly monitored and regulated, and due to insufficient competition, quality may be reduced or the companies may be less innovative. Yet, he concludes, that the experiences in OECD countries show the huge cost saving potential (see also Box 1) and hence "justify serious consideration of contracting out across a wider range of government functions and settings" (Keefer 1998). The following Table 4 depicts some key benefits and challenges of outsourcing/ Micro-PSP.

Other advantages and risks, as pointed out in Abu Shams and Kachel (2003) for Jordan, are:

5 | Micro-PSP/ Outsourcing

Advantages

- The faster and cheaper implementation compared to large PSP approaches, which also brings short-term improvements;
- the familiarity of the target companies with the local conditions;
- the greater flexibility with a targeted contract which is adaptable to available budgets, number and qualification of WAJ personnel, etc.;
- the applicability as a first step in a large-scale PSP approach as well as in a public company or a WAJ internal unit.

Risks

- Lack of reliable business data and asymmetric information about hidden problems;
- depending on the type of service the qualification of the local companies might be questionable, due to the lack of experience;
- the required delegation of power, e.g. concerning the collection of fees and taxes or the operation of facilities with high importance for the success of the contract, might be politically sensitive.

5.4 | Enabling environment for Micro-PSP processes

If private sector participation is to be developed on a substantial basis, it will be necessary for a government to develop an enabling environment that addresses key constraints. This also holds true for Micro PSP and outsourcing. The following paragraphs provide details on some key components of such an enabling environment.

Contractor development

One of the biggest challenges in Micro-PSP approaches is to encourage local companies to develop into effective and competitive operators, since in most cases originally all activities in the water sector have been undertaken by the public authorities. In order to do so, the following strategies might be considered (Sansom et al. 2003a: 73-74):

- Involve companies in the sector reform process through workshops, study tours and preparation of consultancy reports.
- Encourage the formation of consortia, particularly for larger contracts.
- Encourage former public sector staff to bid for new contracts as independent experts, with newly founded companies or with capable local private companies.
- Provide clear and comprehensive tender documents that will assist each bidder in understanding precisely what the client is seeking in terms of the bidding process, and in the technical and financial proposals it must submit.

Once the local private sector sees a potential market in the provision of water and sanitation services, the companies are likely to be more proactive in the water sector. This can contribute to sector development, provided other aspects of the enabling environment are addressed.

5 | Micro-PSP/ Outsourcing

Commercial approaches

There is a greater chance for successful Micro-PSP contract outcomes if an effective commercial orientation is established on both sides, within the water utility as well as with the contractor/operator. This includes in particular (see for details Sansom et al. 2003a:70-73):

- creating separate water and sewerage budgets, balancing expenditure with income and using management information (e.g. financial ratios);
- setting water and sewerage tariffs at sustainable levels so as to generate sufficient funds for maintenance and reinvestments;
- developing and implementing comprehensive training plans for all staff, based on detailed training needs analyses;
- increasing delegation of duties and staff authority, linked to new goal orientated job descriptions, and redeploying staff where necessary;
- implementing staff appraisals using agreed formats and linking this process to organisational objectives;
- developing staff incentives, including measures such as promotion on merit and bonus schemes;
- completing the decentralisation of responsibilities from state/central government and agencies to municipal corporations or utilities;
- establishing clear 'service provider' and 'enabling agency' or regulator roles for specific organisations and providing support and resources to enable them to fulfil those roles;

- support from politicians and senior government officials for the changes and the transfer of selected powers to the water authority managers.

In their comprehensive case study report Sansom et al. conclude (Sansom et al. 2003b: 32):

"The results of the study show that a wide variety of activities, of business processes, are being contracted out in the water and sanitation sector in a wide range of countries. Even in countries where there is strong political resistance to more complex PPPs, contracting out is seen as relatively acceptable.

Overall, the studies demonstrate that contracting out generally delivers better quality services at lower cost, with competition for the market being a vital driver to reduce costs. Because of this competition and subsequent normal contract monitoring there has not been any requirement for specialised regulation of public private partnerships. However some of the cases show that benefits are not being obtained, usually through lack of competition at the initial stages."

However, the clear limitations of the local private sector to deliver the required services were often perceived, at least in the early stages of outsourcing programmes. Strategies to overcome these problems include using companies from other infrastructure sectors, highly specialised companies (e.g. IT consultants) or international providers on a short-term basis in joint ventures with local companies.

6 | Micro-PSP Experience in Jordan – The Case of WAJ Madaba³

6.1 | General introduction

Micro-PSP is a relatively new concept in Jordan. After some experience with the time consuming processes for Management Contracts in Amman and for the Northern Governorates (NGWA), the Micro-PSP approach was proposed as a fast-track option to achieve service improvements (OMS 2003a: 2). Yet, it was also clear that due to the limitations of the Micro-Scale PSP approach, this had to be seen rather as a complementary, preparatory stage for all kinds of PSP in the operation and management of water and wastewater systems in Jordan.

The objective of exploring the concept Micro-PSP is a goal in itself in Jordan: in addition to the objectives of cost reduction, management innovation and performance improvements the creation of a market for local private companies to support the reform process in the water sector was perceived as a crucial economic issue (OMS 2003a: 3).

6.2 | The Madaba Micro-PSP

The Micro-PSP approach currently implemented in Madaba provides valuable information about the possibilities, but also the challenges of Micro-PSP in Jordan. The following paragraphs contain a summary of the process and the lessons learned.

6.2.1 | The situation before the Micro-PSP

The total number of water customers in the Madaba Governorate is 19,500, of which 94% were household customers. Large consumers play only a minor role in Madaba.

Before the implementation of the Micro-PSP, the situation of WAJ Madaba was dominated by severe problems in the customer management areas: customers were lost due to faulty application processes, the billing was often incorrect due to estimations, bills were not distributed due to poor information systems and the collection was ineffective. This led to very high Non-revenue water (NRW) ratios: The 10 years before the Micro-PSP started, NRW ranged from 49-66%. A total revenue improvement potential of approx. 1.9 Million JOD was estimated (WAJ 2005: 56).

Hence, the goals to be achieved are defined in WAJ (2005: 41) as:

- Improved water and wastewater revenue;
- reduced customer outstanding amounts;
- improved customer management efficiency;
- installation of computer aided customer management;
- technical and administrative development of Madaba customer management organisation.

³ The following information is based on information from reports and presentations of the Micro-PSP implementation, on interviews taken in 2006, and on the documentation of two workshops on Micro-PSP held in Jordan in 2003 and 2004.

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6.2.2 | The process of developing the Madaba Micro-PSP

In June 2003 the first Micro-PSP workshop took place in Jordan, organised by OMS and WAJ/PMU. Participants of this workshop mainly included senior staff from MWI, WAJ and PMU, NGWA, Amman Governorate, JVA, LEMA and various donors. The purpose of this workshop was to introduce Micro-PSP as a new and complementary approach to conventional PSPs with the objectives of:

- accelerating/ improving efficiency of WAJ service delivery within a short term horizon of less than 2 years;
- enabling the participation of Jordanian small/ medium sized private sector companies in the operation of water and wastewater systems of WAJ.

This workshop supported the generation of general outlines and specific ideas about how Micro-PSP might be implemented in Jordan. In this workshop, the Madaba Governorate was presented as the area where the Micro-PSP pilot programme should start. Madaba was chosen as a pilot region for several reasons. These included but were not limited to:

- The improvement potential was seen as relatively large;
- the customer base is relatively small, so that task complexity is more easy to handle;
- the proximity to Amman makes cooperation with WAJ Headquarters and general transactions and logistics easier;
- there was a strong interest from the local stakeholders in Madaba.

In spite of that, it was obvious that it would be difficult to involve a competent private sector company, due to the limited knowledge base in the tasks relevant for the contract. Therefore it was seen as absolutely necessary to have a very detailed preparatory workshop in which interested and competent companies could participate to support the transfer of know how and a better understanding of the expected activities:

“As the Jordanian private sector does not have sufficient experience related to Micro PSP in customer services, the group confirmed that an orientation workshop is highly recommended...the business fields which partially include this needed know-how have to be defined in order to identify local companies for pre-qualification process or workshops to build up the local know-how. In this respect, the Micro PSP project time horizon should consider the time needed to transfer the know-how up to the final pre-qualification” (OMS 2003a: 10).

On December 11, 2003, the intention to implement Micro-PSP for billing and revenue collection in Madaba was advertised by WAJ in the local newspapers. Interested companies were invited to submit company profiles and information about their relevant experience. Based on this information, companies were invited for the preparatory workshop, which took place in February 2004. This two days workshop was attended by representatives of four companies. In total eleven very detailed and extensive presentations were given and a substantial amount of time allocated for discussion, which it was hoped would help to inform the companies about the contract, improve their understanding of WAJ water and wastewater customer business procedures and reduce uncertainty and fears. In addition to providing information via this workshop, the companies were also invited to digest the topics discussed after the workshop and formulate questions that they could forward to the PMU Governorates Support Director.

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The draft and the final Terms of Reference (ToR) were produced by the OMS project. The draft was the basis of the presentations given during the preparatory workshop in February 2004 and refined afterwards.

6.2.3 | The contract

The contract was awarded to Engicon on November 9, 2005, and the contract started on January 1, 2006, so more than two years after the first announcement in the local newspapers and 2.5 years after the first workshop on Micro-PSP.

The services required under this Micro-PSP are:

“The Management of water & wastewater billing and revenue collection including the implementation of Geographical Information System based tools, implementation of Customer Information System and implementation of Sewerage Database within Madaba Governorate.” (WAJ 2005: 41)

Detailed activities include:

- Conducting digital mapping and base data surveys as preparatory measures;
- water meters reading, billing and collection;
- leak detection and repair;
- procurement and installation of required equipment;
- business re-engineering of the customer services;
- training of staff.

The Terms of Reference and the contract clearly defined many details about the activities to be undertaken and the performance variables to be used. The contract is divided in two phases. Phase 1 (preparatory phase) was seen as the basis for the re-engineering of the business processes. In Phase 1 the necessary systems and equipments were put in place, the databases were refined and staff was trained. The remuneration for Phase 1 is in effect a fixed fee. Phase 2 is called the Performance Management Period during which the private company takes over the performance based operations, i.e. meter reading, billing, collecting, bill objections handling, technical and financial inspections and follow up, service disconnection and prevention of illegal use (WAJ 2005: 46).

There is an incentive scheme build into the contract, which is based on the additional collected revenue compared to the base year, of which the private operator receives a percentage. This percentage had to be given by the bidders in their bids and was part of the award criteria. The minimum percentage that had to be given was 10%. The winning bidder, Engicon, offered a relatively high percentage with 14% and total costs for the contract estimated to be approx. 900,000 JOD.

Since the contract is a service contract for billing and revenue collection, the contractor brings in only a small number of its own staff. 42 employees, mainly subscriber staff, are seconded by WAJ to the company, but remaining on the payroll of WAJ. However, the contract foresees bonus payments also for the seconded staff, and these bonus payments were part of the bidding variables.

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6.2.4 | Monitoring and cooperation

The regulatory process is a regulation by contract, with clear targets defined in the contract. Monitoring is undertaken by the PMU, with a particular focus on verifying the incentive-relevant revenue collection performance. The regulation and monitoring philosophy is completely different from management or concession contracts. Due to the far more limited involvement of the private sector regulation and monitoring is easier and less involved than in for example the Amman Management Contract. In addition, the fact that a Jordanian company holds the contract that has to lose a reputation with WAJ affects the perception about how strict monitoring needs to be. On the other hand, the more cooperative approach is of course also due to the intentions of WAJ to make this pilot case a success.

“We want to test this concept and make it a success, we do not want to fail the project; even if it is doing some things wrong, we have to be patient and mentor it.” (interview statement)

Hence, the development, implementation and regulation of the Micro-PSP in Madaba were essentially based on partnership and cooperation. Already in the preparation phase the companies received all legally possible information and support they required. After the award of the contract, there has been close and intense cooperation between Engicon, WAJ/PMU and GTZ-OMS.

6.2.5 | Results after 3 years

The private contractor has successfully completed the preparation and the performance period, put new customer service structures in place and undertaken a number of actions:

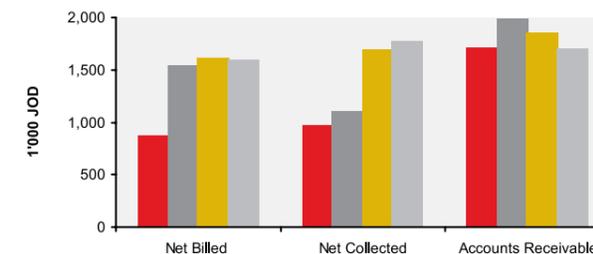
- The surveying and mapping of the subscribers and the digitalising of all surveyed routes for the Governorate has been completed with the support of the GIS unit in Madaba.
- Necessary technical (plotter, server & computer) and electromechanical (air-compressors, welding machines, hand-held test meter) equipment was supplied and training of the staff conducted.
- A new IT-based customer management system has been introduced. The private company transferred for the first time the issuing of the water bills from central WAJ in Amman to the Madaba Water Administration, thus supporting the decentralisation of services.
- A bonus scheme for the seconded staff of WAJ has been developed and remuneration procedures made transparent by publishing monthly a list of payments and bonuses received.
- Training activities for the staff, including computer skills, customer care, data entries training, and appraisal course for the management have been conducted.
- Rehabilitation works of the subscriber department offices and the file-storage rooms have been completed.
- A Sewage Database System has been installed and the transferring of sewerage customers from the files to the system started.

6 | Micro-PSP Experience in Jordan – The Case of WAJ Madaba

As discussed above, the Micro-PSP in Madaba is essentially based on partnership and cooperation. The expectations about what can be achieved and also how WAJ and the private sector need to work together to make the contract a success are realistic. From the beginning, the political will to make this pilot project a success was present, especially since the project was developed deliberately by WAJ and not linked with a donor-funded investment project. The monitoring of the performance is undertaken by the Programme Management Unit (PMU) of the Ministry for Water and Irrigation (MWI). There are regular formal and informal meetings between Engicon, WAJ/PMU and OMS to discuss progress and bottlenecks.

In the beginning, the performance risks of the Micro-PSP were considered to be in the capability of the company itself, since the necessary framework conditions, with regard to the institutional settings, were in place.

Nonetheless, the outcomes of the contract were very positive:



Graph 6: Key Performance Indicators for the Micro-PSP in Madaba

Source: own graph based on WAJ data.

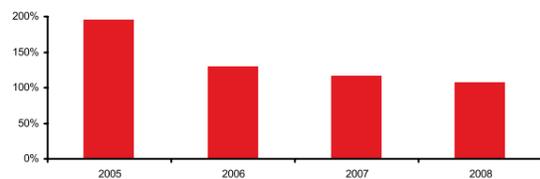
Introduction of an efficient, transparent and reliable billing and collection procedure by mapping and digitalising of routes

Establishment of more professional processes through enhancement of equipment and training of staff, securing the sustainability of results;

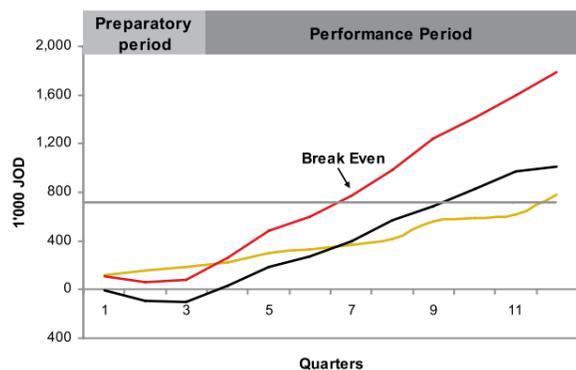
- Increased responsibility and accountability of local staff towards their customers through the new computer-aided billing system and decentralisation of part of the responsibilities from the central WAJ to the Water Administration in Madaba;
- Improved staff motivation due to the incentive system and capacity development activities;
- Better customer care and customer satisfaction as a result of professionalised services;
- Enhancement of reliable customer base by raising customer number and decreased illegal users;
- Reduction of accounts receivable by strict measures against illegal water use;
- Improvement of the reputation of the Water Authority in Madaba.

6 | Micro-PSP Experience in Jordan – The Case of WAJ Madaba

The private partner managed to decrease considerably the high NRW and, by collecting additional revenue, to significantly improve the financial situation of WAJ. As the following Graph 6 indicates, both the amounts net billed and net collected have increased remarkably: the billed amount increased by almost 80% between 2005 and 2008, while the collected amount increased even by 84%. The outstanding invoices (or accounts receivables) as a percentage of the billed amount were cut by almost half, see Graph 7.



Graph 7: Accounts receivables as percentage of billings in WAJ Madaba
Source: own graph based on WAJ data.



Graph 8: Costs and revenues for WAJ in the Micro-PSP Madaba
Source: own graph based on WAJ data.

These financial performance indicators clearly indicate impressive improvements. However, from WAJ's financial perspective: was it worth testing the Micro-PSP approach in Madaba, considering the costs WAJ has to pay for Engicon's support?

Graph 8 shows the costs in terms of payments to Engicon for their services, the additional cash collected during the implementation of the Micro-PSP (compared to the base year 2005) and the accumulated benefit for WAJ, which is the additional cash minus the payments to Engicon.

In 2005, WAJ had collected revenue of less than 1 million JOD. In 2006 about 1.1 million JOD, in 2007 more almost 1.7 million JOD and in 2008 more than 1.75 million JOD have been collected. These figures do not include the additional collection due to tariff increases or new customers. Hence, the accumulated additional cash for WAJ after three years is almost 1.7 million JOD. This creates a stronger financial position for WAJ and costs the government less in subsidies to WAJ Madaba.

Graph 8 also shows that already after one year the accumulated additional cash was higher than the accumulated cost, i.e. the contract "paid for itself". If the full costs for the services over the three years contract are considered and are compared with the accumulated additional cash for WAJ, the break-even point for the full contractual costs was in the seventh quarter. The cash collection has almost doubled over the three years, and the net benefit for WAJ, after deduction of all service payments to Engicon, is almost 1 million JOD. Hence, the Micro-PSP proved to be a financial win-win partnership both for the company and for WAJ.

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6.3 | Lessons learnt

The first Micro-PSP pilot project in Jordan can already be described as a great success. The Micro-PSP project provided opportunities for the local private firms to participate and contribute to the water and wastewater services and operation and considerably improved cash flow in the sector. Compared to large-scale PSP models, the required funding is much smaller and the preparatory phase shorter.

Still not all expectations have been met: the start-up period with more than 2.5 years was longer than assumed; dependency on external funding requirements could be reduced but remained important, especially for the preparation time and the back up for both partners. A critical issue is also the availability of competent local private compa-

nies to take over the tasks WAJ intends to outsource via a Micro-PSP. Hence, strong capacity development efforts are required to establish the long-term success of the Micro-PSP concept and to create a competitive market within Jordan.

This can be done in various ways (See Table 5).

While a mix of the different options would be a good way forward, some of the measures might happen as normal market reactions. This holds true especially for the recruitment of WAJ staff, which can currently be seen on such a scale that it already negatively affects WAJ's capacity. There is the threat of an adverse selection from WAJ point of view. Well trained, flexible WAJ staff that might also perform well within WAJ will be tempted by higher salaries in the private sector. They are targeted by private companies and

Table 5: Advantages and disadvantages of alternative capacity development approaches

Capacity Development Approach	Advantages	Disadvantages
Involvement in preparatory workshops of Micro-PSP projects	<ul style="list-style-type: none"> • Clear focus, project oriented 	<ul style="list-style-type: none"> • Danger of being too abstract
General training irrespective of project implementation	<ul style="list-style-type: none"> • create a broader market already before concrete projects are developed 	<ul style="list-style-type: none"> • Selection of target group • lack of focus (companies and content)
Coaching by OMS/ other donor funded TA during project implementation	<ul style="list-style-type: none"> • Clear focus, immediate impact; transfer from experience within Jordan 	<ul style="list-style-type: none"> • Market not broadened • "supporting the strong" might lead to mono- or oligopolies • possibly expensive
Recruitment of WAJ staff	<ul style="list-style-type: none"> • Clear market driven approach • use of WAJ know-how 	<ul style="list-style-type: none"> • Planning time for recruitment might be too short • risk of weakening WAJ
Staff from regional/ international operators as support staff.	<ul style="list-style-type: none"> • Benefit from international experience • less risk for WAJ and less support required • on the job training with clear focus • training could be made basic requirement and linked to bonus. 	<ul style="list-style-type: none"> • Possibly expensive • needs clear phasing-out planning • might be more complicated

Source: Own table.

6 | Micro-PSP Experience in Jordan – The Case of WAJ Madaba

can better handle the risk associated with private sector employments. While in general the staff reduction at WAJ might be helpful to increase efficiency, an unbalanced reduction of high performers is a risk for WAJ.

There is another market reaction: the joint ventures with experienced companies inside and outside Jordan. While using regional or international operators is a very good strategy to quickly overcome capacity gaps, it would contradict the philosophy of employing local companies only. However, clear rules might be set, for example about the roles of the international staff mainly as trainers and backstoppers, the definition of training requirements as part of the contract or the exit strategy for the international provider. Hence, this might only be a temporary and limited deviation from the objective to foster local private sector participation. Another possibility is to promote the formation of Joint Ventures with specialised companies in Jordan or the region, which bring in particular relevant experience, e.g. in IT or customer management. Finally, also companies from other infrastructure sectors, for example JEPCO, could bring in their experience in customer management. Since this is done within a Micro-PSP approach with very limited tasks, the risk of “being taken over” by other sectors is relatively small, compared to the potential benefits, as briefly outlined in Rudolph and Wilkes (2003, p.13). In addition, worldwide experience shows that both providers and customers benefit from shared experience and common responsibility of water and other infrastructure sectors (Rothenberger 2002, p.25).

The other options mentioned in the table are activities in which WAJ has to play a major role. While the workshop participation is easily facilitated, the other options require substantial financial support and initiative by donors. In addition, especially for the support of individual companies within a project, the risk of creating severe market distortions is considerable. Hence, this option should not be seen as a long-term measure to be ap-

plied in many projects, but rather as an exceptional support to enable the testing of the concept.

Lessons reported from the private off-taker

In addition, the private off-taker Engicon has reported some lessons learned that should be considered for further Micro-PSP options. Amongst the most important recommendations is the definition of proper incentives not only for revenue increases, but also for the reduction of administrative water losses, for example illegal water use. The question of incentives for the administrative staff of WAJ that have not been seconded to the private off-taker needs to be considered and instruments introduced that ensure that the integration of the Micro-PSP into the existing structure of the local authority is done well.

7 | Conclusions and Outlook

7.1 | General

The results of the study by Sansom et al. show that a wide variety of activities and business processes are being outsourced in the water and sanitation sector in a wide range of countries. Even in countries where there is strong political resistance to more complex PSPs, contracting out is seen as relatively acceptable.

Overall, the studies demonstrate that Micro-PSP generally delivers better quality services at a lower cost, with competition for the market being a vital driver to reduce costs. Many authors support the importance of a sound relationship to make outsourcing a success:

‘Establishing a trust relationship requires structuring the right risks, rewards, benefits and opportunities in the early stages of the contract negotiation stage.’ (Eggers, 1998)

‘The real difficulties in managing successful outsourcing arrangements lie elsewhere: in specifying the relationship, creating the mutual trust which alone makes it workable, and coping with unexpected shocks.’ (Martin, 2001)

However, Sansom et al. also highlight the importance of not having too high expectations of the impact of Micro-PSP and contracting out on sector reforms:

“Successful contracting out requires, like all management techniques, good clients and good, value-adding contractors. It can be a vital tool, but it is not a short cut. Contracting out is likely to be of most value as water companies become more efficient, effective and sophisticated in their management – i.e. after the process has started, after some momentum for change has been achieved. Contracting out is not, as a single reform activity, delivering significant institutional change. Successful contracting out is a function of being a successful enterprise, not a direct route to becoming one.” (Sansom et al. 2003b, pp.33-34).

7.2 | Conclusions for Jordan

As the results in Madaba show, Micro-PSP can help to improve the performance of public operators because of the more flexible procedures of private companies, e.g. concerning procurement, staffing and salaries. However, the major bottleneck is the availability of competent local private companies to undertake the task. Considerable capacity development has to be undertaken to change this. This holds especially true for more complex Micro-PSP approaches, involving some expert operational knowledge.

Of the various options outlined above, the setting up of joint ventures with regional or supporting international operators, if a clear schedule for on-the-job training service delivery and for the phasing-out of the international support exists, could help to quickly close the gap. In addition, companies specialised in certain processes or from other infrastructure sectors with more experience and better performance in customer management or billing and collection can contribute to the solution. In addition to the capacity building issue, the need to conduct additional institutional reforms and improve the environment for the utilities (tariffs, flexibility, etc.) is apparent, due to the conceptual limitations of Micro-PSP.

7.3 | Outlook

Based on the success of the first Micro-PSP in Madaba, WAJ currently is in the process to award various new Micro-PSPs contracts in the country. This up scaling includes the replication of the Madaba Micro-PSP in other Governorates, but also to broaden the tasks for which Micro-PSP is used, e.g. for fields like the refurbishment and operation of pumping stations or the improvement of household connection and leakage repair services. As a result of its success the Micro-PSP contract in Madaba has not only been extended for another three years, but also expanded in terms of outsourced tasks. And ultimately, the up scaling might also take place in a regional context – already some water sector authorities of other countries in the Middle East and the Gulf States are investigating the Micro-PSP pilot study in Madaba to learn from it for their own reform processes

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