

**Promoting the Use of Performance-Based Contracts
between Water Utilities and Municipalities in EECCA**

**Case study no. 2: Armenian Water and Wastewater
Company**

SAUR Management Contract



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предприятиями ВКХ и муниципалитетами в странах ВЕКЦА*

*Ситуационное исследование №2: Армводоканал
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FOREWORD

This report presents the results of a review of a management contract awarded to an international operator to manage the Armenian Water Supply Company service area. This management contract was signed between the Armenia Water and Wastewater Company (AWWC) and SAUR, a French operator, in August 2004 for a period of four years.

The findings and conclusions of this report aim to support the Armenian government in its efforts to further improve the design and implementation of future performance-based contracts in the country in the water sector in line with international best practices. The report provides an objective analysis of the most important aspects of the contract (legal and financial aspects, performance indicators, etc.), identifies its strengths and weaknesses and proposes a set of recommendations for improvements. The *OECD Guidelines for Performance-Based Contracts* served as a benchmark to assess the management contract.

The recommendations from this review could be used as a basis for discussion and consensus-building among key stakeholders in Armenia on the future design of performance-based contracts.

The report was prepared in the framework of the Task Force for the Implementation of the Environmental Action Programme for Central and Eastern Europe (EAP Task Force), whose secretariat is located in the OECD's Environment Directorate. The project was managed by Nelly Petkova, with support provided by consultants Guy Leclerc and Francois Thueux (from PricewaterhouseCoopers) and Arsen Karapetyan from Armenia. The preparation of this report was financially supported by the EU Tacis.

The report is based on available documents and data, as well as on inputs provided by the Armenian partners on the project. The authors would like to specifically thank Gagik Khachataryan from the State Committee of Water System for his support throughout the project, Patrick Lorin (AWWC General Director, SAUR) and Hayk Petrosyan (Advisor to AWWC General Director, SAUR) who kindly agreed to spend time with the review team and share their views with us. We are also grateful to all other Armenian experts for their support for and contribution to this project (see Annex V for the list of people interviewed).

The report has been reviewed by Peter Borkey from the OECD. Carla Bertuzzi helped with collecting and verifying statistical data. Claire Condon and Ecaterina Diderich provided administrative support to the project. The report was translated into Russian by Yuri Bostian and edited by Natasha Chumachenko. All these contributions are gratefully acknowledged.

The views expressed in this report are those of the authors and do not necessarily reflect those of the OECD or its member countries.

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List of abbreviations

AWWC	Armenia Water and Wastewater Company
CEE	Central and Eastern Europe
CIPC	Contract Implementation and Procurement Committee
CMB	Company Management Board
CMU	Contract Monitoring Unit
EAP TF	Task Force for the Implementation of the Environmental Action Programme for Central and Eastern Europe
EECCA	Eastern Europe, Caucasus and Central Asia
EU	European Union
IBT	Increasing block tariff
ICEA	Ingénieurs Conseils et Economistes Associés (French consultancy company)
IDA	International Development Association of the World Bank Group
IFI	International financing institution
IIP	Immediate Investment Programme
MWWP	Municipal Water and Wastewater Project
MC	Management contractor
MFE	Ministry of Finance and Economy
NGO	Non-governmental organisation
O&M	Operation and maintenance (costs)
OECD	Organisation for Economic Co-operation and Development
PIC	Performance incentive compensation
PIU	Project Implementation Unit
PSRC	Public Services Regulatory Commission
SCWS	State Committee of Water System (State Water Committee)
USAID	US Agency for International Development
USD	US Dollar
WSS	Water supply and sanitation
WSUP	Water System Use Permit
WUP	Water Use Permit
YWSC	Yerevan Water Supply Company

Exchange rates

In the conversion of financial data presented in this report, the following annual average exchange rates were used:

Table 1. Exchange Rates, Dram/USD, and Dram/EUR, Yearly Average

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Drams/ USD	490.8	504.9	535.1	539.5	555.1	573.4	578.8	533.5	457.8	416.0
Drams/EUR	556.3	565.8	570.8	498.5	497.2	541.8	654.0	662.7	568.7	522.0

Source: Data derived from: EBRD *Transition report updates*; 2007, OECD *National Accounts Database*, 2007.

Map of Armenia



EXECUTIVE SUMMARY

Objectives of the review

This report reviews the performance-based contract for the Armenia Water and Wastewater Company and provides a set of recommendations for its improvement. These recommendations can be considered by the Armenian government either within the framework of the existing contract (to the extent possible) or in designing future contracts for the water supply and sanitation sector.

The contract assessment was based on international good practices, such as those contained in the OECD's *Guidelines for Performance-Based Contracts*. The second major objective of this review was to identify good practices in the design and implementation of the contract, use these practices in updating the Guidelines and make them more relevant to the EECCA context.

Background

To arrest the significant deterioration of the water supply and sanitation sector, at the end of 1990s, the Armenian government embarked on an extensive reform programme for the water sector. The current legal and regulatory framework of water resources and water infrastructure management in Armenia reflects sound principles. The main objective of this reform was to commercialise the water sector over the period 2001-2008, to eliminate the dependence of water utilities on budget subsidies through loans from international financing institutions (IFIs), to increase revenue from billing collections and to restructure the debt accumulated by the water utilities.

One of the major steps in this reform was the involvement of the private sector in the management of the water infrastructure in the country. The year 2000 saw the first management contract for the Yerevan water utility, followed by a lease contract six years later. Both contracts were signed with international water companies (ACEA, Italy and Veolia Water, France). A second management contract was launched in 2004 for the Armenia Water and Wastewater Company.

Under this second management contract, the Armenian authorities selected SAUR S.A. (France), a private international contractor, to manage the company's operations. The management contractor was selected in 2004, through an international tender procedure and the contract was signed in August 2004 for a period of 4 years (the contract may be extended for two additional years). The contractor is paid a fixed fee and an annual bonus based upon the achievement of performance targets. The contractor's main responsibilities include management, operations and maintenance of the utility. The bulk of the commercial risk and all the capital and investment risks remain with the government.

The overall conclusion of the review is that this management contract is generally well-designed and balanced and meets most of the international standards for such contracts. The main elements that need to feature in such contracts are in place. After three years of implementation, a great deal of lessons can be learned from the experience with this contract. This report has identified and highlighted a number of good practices. It has also pointed out to certain challenges that have emerged during the contract implementation stage.

Good practices in contract design and preparation

The first experience with a private operator in the water sector in Armenia (the management contract for the Yerevan water utility) was particularly valuable as it allowed the Armenian government to learn from it and use this knowledge in preparing and negotiating the second management contract for the Armenian Water and Wastewater Company¹ (AWWC), five years later. Experience shows that the existence (or the planned implementation) of a performance-based contract helps attract significant external funding. In Armenia, the World Bank provided loans to support investments related both to the lease contract and the management contract for AWWC. There is a general understanding within the government that these resources are made available because of the existence of performance-based contracts in the country and as a result of the reform efforts of the government.

The major good practices identified with regard to the contract preparation phase are highlighted below:

- The contract was designed with the help of an international consultant supported by a team of local consultants, which has improved the overall quality of the contract;
- The performance of the contractor is assessed on the basis of a limited number of indicators (25 versus 125 in the previous management contract for the Yerevan water utility) and its bonus is calculated taking into account 4 indicators only (against 11 in the first management contract). This ensures the smoother monitoring of contract implementation;
- The contract requires the appointment of an independent technical auditor to monitor the achievement of some of the main performance indicators;
- The contracting authority has made efforts to improve the company's financial performance at the start of the contract. In AWWC's case, a new company whose role was to manage AWWC's unusable assets and long-term customer debts was created for this purpose. The actual implementation of this solution, however, has turned out to be extremely difficult;
- The tariff-setting methodology divides the tariff into three parts: tariff for water supply, for wastewater collection and for wastewater treatment. Each level of service is invoiced separately in order to avoid hidden cross-subsidisation;
- The contractor has been given full responsibility for managing the company's personnel, with no undue influence from the contracting authority. This shields the contractor from political and external interference in its operational management;
- The contract includes a well-designed dispute arbitration procedure.

¹ Because of differences in the English translation, the name of the company appears differently in different documents: Armenia Water and Wastewater Company, Armenia Water and Sewerage Company, Armenia Water and Sanitation Company. All these names are interchangeable. For the sake of consistency, in this report, we have chosen to use Armenia Water and Wastewater Company (AWWC) as this is how the company is identified in the management contract.

Challenges to contract implementation and related recommendations

Despite the good intentions and the good practices identified above, some challenges have emerged during the contract implementation stage. The main issues identified in the review and subsequent recommendations are related to:

- Inconsistencies between the law in force and the contract and in particular with regard to the exemptions of the payment of water pollution charges:
 - ✓ Recommendation 1: The contract requirements should be better harmonised with the country's legal and regulatory acts. A legal consultant (a firm or an individual) with sufficient qualifications and good reputation could be hired to carefully review the contract and identify any potential legal contradictions before the contract is actually signed.
 - ✓ Recommendation 2: If the operator is granted exemptions or postponement of the payment of certain charges or taxes, the contract should spell out the conditions under which such derogations are made. If payments have to be made anyway, the contract should clearly specify whose responsibility these payments should be. As a matter of principle and to the extent possible, exemptions should be avoided as they may create perverse incentives.
 - ✓ Recommendation 3: Building all costs in the tariff is the only sustainable long-term solution. Investment, operating and maintenance costs for reducing pollution, should be gradually built into the water tariff. This should go hand in hand with increased investments in wastewater treatment facilities.
- Unreliability of baseline data (used to assess the operator's performance and thus its bonus):
 - ✓ Recommendation 4: Whenever possible, the baseline values should be determined in close cooperation with the previous operator. As the previous operator has the best knowledge of the technical and economic situation of the company prior to the start of the new contract, it should be able to advise on the most appropriate methodology that should be used to determine the baseline values.
 - ✓ Recommendation 5: To minimise some of the problems related to both baseline values and further calculations, the performance indicators should be more carefully selected. Two major selection criteria may be applied: easy measurement and the existence of sufficiently reliable data for the calculations (in terms of completeness, accuracy, consistency of data).
 - ✓ Recommendation 6: The methodologies used to calculate the baseline values and the performance indicators at a later stage should be exactly the same in order to avoid any methodological discrepancy.
- Development of a mechanism to help prepare a sound financial basis for the new contractor (through creating a new company with the sole responsibility to manage bad debts and unusable assets) which has actually resulted in havoc in the customer database and led to problems with accounting. Related to this is the lack of robust evaluation of assets and in particular, customer debts, before the start of the contract:
 - ✓ Recommendation 7: Before a contract is signed, an inventory of all assets and liabilities should be carried out. The valuation of assets should be as accurate and comprehensive as possible. Such a review could be financed with donors'/IFIs' support. This task is

particularly important to implement as it can also be beneficial for determining investment needs.

- ✓ Recommendation 8: With regard to unusable assets, the government should aim to set up a public commission (consisting of representatives of different relevant public institutions) which will decide which assets to classify as unusable (including the selection criteria for defining such assets) and their selling price. This will ensure the transparency of the process.
- ✓ Recommendation 9: The split and transfer of customer debts to a new company should be carefully considered against all potential costs that will be incurred by the operator, the contracting authority and the public purse. The creation of a new company is more appropriate in lease contracts than in management contracts.
- Accumulated operational deficit of the contractor as a result of not being fully compensated by the Ministry of Finance and Economy (in accordance with the contract):
 - ✓ Recommendation 10: In order to cover initial operational expenses (salaries, energy expenses, etc.) at the start of the contract, the government should create an “Initial Costs” Fund. This fund could be financed by IFIs/donors involved in the financing of the investments. Part of this fund could be allocated to the payment of initial operational costs as in the case of salary arrears. Alternatively, other donors’ support could be sought.
 - ✓ Recommendation 11: In order to reduce the company’s operational deficit and ensure access of socially vulnerable people to water services, the government could put in place a targeted programme for poor families who cannot afford water tariffs. The issue of water tariff increases should not be confused with the issue of social protection. The two issues should be dealt with separately.
- Performance of the contract monitoring function by a Project Implementation Unit instead of a Contract Monitoring Unit (CMU) (in accordance with the contract) which has led to confusion over the responsibilities of different stakeholders involved in the procurement process and related delays with the implementation of the investment programme:
 - ✓ Recommendation 12: The Government and the World Bank should work jointly to seek to improve the efficiency of the procurement procedures when performance-based contracts are involved. They should ensure that the CMU comply with the relevant contractual obligations.
- Slowdown of the contractor’s operating activities due to administrative obstacles:
 - ✓ Recommendation 13: In general, in cases of disagreements which are largely caused by administrative contradictions, the Company Management Board should be actively involved in the solution of the problem. The Board is a very useful body which can and should provide support in resolving administrative conflicts.

The experience of Armenia with management contracts shows that this is not an easy and straightforward process. Implementation of performance-based contracts requires strong political consensus and support from the whole government. Altogether, the experience with these contracts is particularly valuable and has helped the Armenian government to improve the quality of every new performance-based contract it has launched.

CHAPTER 1. INTRODUCTION

Since its independence in 1991, Armenia has undergone significant political and economic changes. Along with macroeconomic stabilisation, the government agenda focused on accelerating Armenia's institutional transition toward a modern market economy. This involved a comprehensive water sector reform, including private sector participation in managing the water supply and sanitation infrastructure.

With two performance-based contracts managed by foreign private companies, Armenia is setting an example for many countries. Armenia is further ahead in this process compared to other countries from Eastern Europe, Caucasus and Central Asia (EECCA). The Armenian government has already accumulated significant experience with managing such contracts and their knowledge is particularly valuable. The government is willing to share its experience. The review of the management contract for the Armenia Water and Wastewater Company was conducted for the purpose of improving future contracts.

1. Objectives of the review

The major objective of the Review was to conduct an independent and objective evaluation of all important aspects of the management contract signed between SAUR S.A. (France) and the Armenia Water and Wastewater Company in line with good international practices, such as those contained in the OECD's *Guidelines for Performance-Based Contracts*. The report analyses the strengths and weaknesses of the contract and proposes a set of recommendations for further improving the contract's effectiveness and efficiency. These recommendations are particularly relevant given the government's intentions to arrange other performance-based contracts in the future. Thus, the review aims to support the Armenian Government in its efforts to improve the design of such contracts. These recommendations do not pretend to be comprehensive; instead they are focused on selected issues which were identified as particularly important with regard to the smooth implementation of the contract.

Through this analysis, the review also seeks to identify good practices and draw conclusions which can then be used to further improve the relevance of the Guidelines with regard to specific EECCA experience. This experience was largely missing in the first version. In this context, the Armenian experience is extremely useful and it demonstrates how other EECCA countries can implement performance-based contracts in the water sector.

2. Performance review process and methodology

In March 2007, the State Committee of Water System, jointly with the Armenia Water and Wastewater Company, including SAUR and the World Bank CMU agreed to participate in this project and have the management contract reviewed by the OECD/EAP Task Force Secretariat. The EU Tacis provided financial support for the project. The project was implemented under the supervision of the OECD and with the support of a team of consultants from PricewaterhouseCoopers.

The methodology developed to evaluate the contract is based on the good practices identified in the Guidelines. It consists of a detailed questionnaire coupled with direct interviews. The questionnaire was sent to all major stakeholders involved in the process. The review involves three stages: preparatory activities, review and drafting mission, and preparation of the final report.

A comprehensive set of background documents concerning and relevant to the management contract were examined by the review team prior to and after the review mission (see the Section on References). The review mission took place from 15 to 18 September 2007 when the team visited Yerevan. During that time the team engaged in extensive discussions with the operator's staff, the State Water Committee, the World Bank CMU, experts from other ministries and state institutions, who were all directly or indirectly involved in the preparation of the contract (See Annex V). The results and recommendations presented in the report were discussed at a meeting with the participation of major stakeholders in December 2007 in Yerevan. In addition, the main lessons learnt from this review will be presented at other international fora and will be disseminated through other meetings and mechanisms.

This report provides an opportunity and is a basis for discussion within the Armenian Government to further strengthen the design of such performance-based contracts.

Box 1. Major good practices identified in the Guidelines for Performance-Based Contracts

1. Project scope

(i) Definition of contractual objectives and responsibilities

The contract should define as precisely as possible the objectives to be achieved; establish the rights, obligations and responsibilities of each contractual party as well as joint responsibilities; identify a clear, reliable and efficient mechanism allowing the parties to quickly and efficiently respond to any new circumstances that may arise in the course of contract implementation.

(ii) Service area

The service area should be clearly identified early in the process and preferably before Due Diligence is conducted. The extent of the service area has a direct impact on the costs and revenues of the operator. A proper evaluation of the costs and revenues should be carried out in order to establish adequate contractual objectives and consequent performance indicators.

2. Legal and institutional framework

(i) Legal framework

Before entering into a performance-based contract, the applicable legal framework, including all relevant laws and regulations should be carefully studied and assessed. Based on this analysis (as part of the Due Diligence process), the best contractual model should be selected. If changes in the law are needed, these should be made before the contract is finalised. The selected type of contract should be tailored to the needs of the utility while making the best possible use of the legal framework.

(ii) Institutional framework

The institutional set-up should provide for proper regulation and monitoring of the contract implementation. The regulatory authority should be given a sufficient level of independence in order to ensure that all the parties' interests are well balanced and protected.

3. Performance indicators

(i) Initial evaluation

Before selecting the performance indicators, the parties to the contract should conduct detailed evaluation of the technical and financial conditions of the water utility in order to fully assess its pre-contractual performance. Such an evaluation will allow the parties to agree on realistic performance indicators given the existing state of the utility.

(ii) Selection of performance indicators

The contract should clearly specify all performance indicators that will be monitored during contract implementation and the mechanisms for their adjustment. If the operator's remuneration is based on the achievement of selected indicators, these should also be clearly identified. Performance indicators could be linked to the financial performance of the utility (e.g. operating ratio, collection efficiency), efficiency of operations (unaccounted-for-water, pipe breaks), operating performance (average hours of service, population served). The performance indicators should be few, simple, realistic and easy to measure to be able to properly monitor their achievement.

4. Tariffs and financial obligations of the contracting authority

(i) Tariffs setting and adjustment

A sound tariff policy should balance considerations related to the utility's financial viability, its social objectives and economic efficiency. The contract should allow for tariffs to be adjusted over time (tariff revision mechanisms) both in relation to inflation and improvement of services as well as in response to force majeure events or changes in the legal regime. Cross-subsiding should be avoided and replaced, if necessary, by transparent subsidy schemes targeted at well-identified poor households.

(ii) Financial obligations of the contracting authority

When public authorities are fully (e.g. service or management contracts) or partially (e.g. lease contracts) responsible for financing the investment programmes of the water utility, these obligations should be clearly defined in the contract, both in terms of amounts and timeframe of investments. In order to avoid conflicts during the implementation phase, the contract should draw a clear distinction between maintenance works, replacement works and emergency situations.

5. Financial penalties, bonuses and incentives

(i) Financial penalties

In the context of EECCA water utilities, which often face significant financial difficulties, penalties should be used with utmost prudence. In order to avoid putting at risk the general financial health of the utility, and consequently its operational capacity, penalties should be used only when utilities are operated by private contractors. Imposing a penalty would directly affect the ability of the utility to meet the performance levels specified in the contract.

(ii) Bonuses and incentives

If properly designed, bonuses and incentives could contribute significantly to the achievement of the level of services provided by a contractor. When the utility is run by a publicly-owned contractor, bonuses should be provided directly to individuals and not to the utility because no individual will benefit directly from higher performance levels of the utility. When the utility is run by a private operator, incentives should reflect the productivity gains of the utility.

6. Monitoring

Setting an effective system to monitor contract implementation is crucial for evaluating if parties meet their obligations and achieve specified targets. Monitoring provisions should focus on the contractor's success to meet the targets rather than on how it meets these targets. In countries where governments face limited monitoring and regulatory capacity, the monitoring function should be outsourced to an auditing company. The government should then reconfigure its task as monitoring the auditor.

7. Contract enforcement / Contract resolution mechanisms

Performance-based contracts should include formal dispute resolution procedures (e.g. judicial, quasi-judicial, administrative, arbitral). Arbitration should be the preferred dispute resolution mechanism in contracts that include a foreign private entity. The main advantages of arbitration include confidentiality (as it relates to commercial secrets); expertise (arbitrators are selected on the basis of their technical expertise); neutrality (arbitrators are chosen from among individuals unrelated to the parties in the dispute); integrity (arbitrators are chosen from among individuals of high moral repute).

8. Risks

Any long-term contractual relationships involve risks such as: operation and maintenance risks, revenue risks, regulatory risks, political risks. The allocation of key risks should be carefully considered when designing performance-based contracts. Risks should be fairly allocated among parties. The risks should be allocated to the party that is best suited to assume them both in terms of technical expertise and the possibility to mitigate the risk at least cost.

9. Costs

In considering implementing performance-based contracts, the public authorities should be aware of all costs, both direct and indirect, that such contracts may entail to the public sector. Apart from traditional "costs", (overheads or expenditures inherent to the project), there are costs incurred due to indirect "losses" (e.g. costs of hiring consultants to prepare the contract, un-monitorable performance targets). Usually, the contract does not include provisions related to indirect costs. However, during the negotiation stage, the parties should always consider all actual and potential costs inherently and indirectly associated with performance contracting.

CHAPTER 2. THE CONTEXT

This chapter briefly introduces the current developments in the water supply and sanitation sector in Armenia. It looks at the legal and regulatory framework for managing water utilities in the country. In addition, it describes the main premises of the current management contract.

1. Current developments of the water supply and sanitation sector

Available water resources in Armenia are not scarce but remain limited. The level of water resources, in the amount of 10.5 km³/year or about 2 780 cubic meters per capita per year, is average compared to international benchmarks. This calls for more rational and efficient use of water in the country. About 69 percent come from surface water sources and 31 percent from underground sources. Ninety-six percent of potable water comes from underground sources and more than 55 percent of it is delivered by gravity flow. Historically, the underground water has been of high quality and has required only light chlorination treatment.

Due to rapid economic changes in the 1990s, the level of water demand declined. Since 1985, the total demand dropped by 60 percent. The most substantial decrease was in the demand for irrigation, as a result of the deterioration of irrigation infrastructure and increase in prices for water and electricity. Subsequently, this decrease also affected the industrial and domestic sectors (which represent 20% of the total water consumption). Domestic demand decreased due to supply shortages and increase in water prices.

Ninety-two percent of the Armenian population has access to water supply: 80% in rural areas and 99% in urban areas. Eighty-three percent of the population has access to sanitation: 61% in rural areas and 96% in urban areas. However, about 41% of industrial and domestic wastewater is discharged without full treatment (mechanical plus biological treatment). All 20 wastewater treatment plants (WWTPs) in the country were built before 1990 and due to insufficient maintenance over the 1990s and high operation costs, most of them are in poor operating conditions².

In order to improve the management of the water sector, the Armenian government launched a comprehensive water sector reform. The main elements of the reform were consolidated in the Water Code (adopted in July 2002, and amended in 2003). The Water Code introduces a number of modern concepts and mechanisms for managing the water supply and sanitation sector, such as river basin management, private sector participation, different types of performance-based contracts; confirming the polluter-pays and user-pays principles as major policy principles.

The reform includes two key actions:

² All numbers in this section are taken from the International Benchmarking Network for Water and Sanitation Utilities web-page: <http://www.ib-net.org/en/search/datasheets/ARM.php>

- The regulatory reform: this reform was carried out with the aim of separating the regulatory aspects, the standards setting, and the operational functions of water management and allocating them to different independent bodies. This led to the creation of a number of new institutions, including the National Water Council, the Public Services Regulatory Commission and the Dispute Resolution Commission. Responsibilities for managing the water resources were clearly separated from the responsibilities for managing the water supply and sanitation (WSS) infrastructure. The former were assigned to the Water Resource Management Agency (under the Ministry of Nature Protection), whereas the latter were given to the State Committee of Water System (SCWS or State Water Committee) (under the Ministry of Territorial Administration). In addition, all irrigation infrastructure was also assigned to the State Water Committee.
- The financial reform: the main objective of this reform was to commercialise the water sector over the period 2001-2008, to eliminate the dependence of water utilities on budget subsidies through loans from IFIs, to increase receipts from billing collections and to restructure the debt accumulated by the water utilities. To achieve this, the Government adopted the “Reform Programme to Improve the Financial Sustainability of the Companies Responsible for the Provision of Drinking Water Supply/Wastewater and Irrigation/Drainage Services”.

All water resources in Armenia belong to the state. The state-owned water systems can be under state or private management. The two largest water and wastewater utilities in Armenia are the Armenia Water and Wastewater Company and Yerevan Djur. The Armenia Water and Wastewater Company is owned by the State Water Committee and managed by the French company SAUR under a management contract. Yerevan Djur has signed a lease contract with the SCWS. Three other small utilities are operating in rural areas (financed by KfW, a German government-owned development bank). They are owned partially by local municipalities and partially by the State Water Committee. Finally, around 600 villages operate their water services independently.

2. Regulatory context

Apart from the Water Code there are a number of other legal acts that directly shape the regulatory basis for the management of the water sector in Armenia in general and the performance-based contracts enforcement in particular. Below is a summary of the main regulations:

1. Regulations on drinking water and drinking water quality monitoring

- The *Law on Fundamental Principles of National Water Policies* (May 2005) aims at ensuring accessibility to water resources in required amounts, mode and quality to ensure human welfare, development of the country’s social and economic systems and to meet the environmental needs at present and in the future. It includes several main goals related to Article 15 of the Water Code: stable management of water resources; metering and evaluation of water resources; formation of the water resource demand and supply; relationships associated with river basin management.
- The *Law on Securing Sanitary-Epidemiological Safety of the Population*, enforced by the State Hygiene and Antiepidemic Inspectorate of the Ministry of Health, regulates the quality and safety of supplied drinking water.
- The drinking water quality standards are established by the Ministry of Health Order No. 876 of 25 December 2002. The standards are set in the document entitled: *Drinking Water. Hygienic Requirements on Water Quality of the Centralised Water Supply Systems. Quality*

Control, Sanitary Regulations and Norms, No. 2-III-A 2-1. This document defines the frequency of control of bacteriological and organoleptic pollutants that has to be made within the distribution networks.

2. Regulation on contracts with consumers

- **Government Resolution No. 130-r of 22 January 2004** adopted new rules for the use of water supply and sanitation infrastructure as well as the types of contracts to be concluded with various groups of consumers. These contracts create the basis of the legal relationship between key entities in the WSS sector and establish their respective rights and responsibilities.

3. Regulation on water use and wastewater discharges

- The **Law on Environmental and Natural Resource Payments** defines the type of nature protection payments (including payments for discharges of pollutants into water and the payments for the placement of production and consumption waste in the environment) as well as the types of payments for the use of natural resources (including payments for water use). This law is administered by three main government agencies: the Ministry of Nature Protection (which designs/introduces the economic instruments and controls the volumes of pollution and natural resources use); the Ministry of Finance and Economy (which proposes the charge rates and allocates the charge revenues) and the State Tax Service (which collects the payments).

3. Institutional context

There are three main institutions in Armenia with direct responsibilities for the management of the water sector in the country. These include:

1. The State Water Committee (SCWS):

The SCWS was created by **Government Decision No. 92 of 9 February 2001** to implement national water policies by optimising the management of water resources and increasing the effectiveness of reforms in the WSS sector, as well as improving tariff policy. The SCWS was further reorganised and restructured by **Government Resolution No. 440 of 17 May 2001**.

2. The Public Services Regulatory Commission (PSCR):

The PSCR was established by the **Law on the Regulatory Body for Public Services (17 January 2004)**. The PSCR is responsible for the regulations of the public utility sector, including the balancing of interests between consumers and the entities operating in this sector. It aims at contributing to the formation and development of competitive markets and encouraging the effective use of resources. With regard to WWS, the PSCR is mostly in charge of issuing of and monitoring compliance with the Water System Use Permit requirements (see below).

3. The Water Resources Management Agency (WRMA):

The Water Resources Management Agency was created in 2002. With regard to contractual arrangements in the WSS sector, the WRMA has two main functions: issuing the Water Use Permit (WUP) (see below) and monitoring the compliance with the WUP requirements.

The two permits mentioned above are crucial for the smooth operations of a WWS company. Both of them are specified in the Water Code and in complementary government resolutions. These permits are described below.

1. The Water Use Permit (WUP):

WUPs regulate the extraction and discharge of water. The WUP requirements are based on *Government Decision No. 864 of 30 December 1998*. All WWS companies must hold a number of permits: one for each raw water source and one for each wastewater discharge point. The taxes on raw water depend on the origin of the water and on the operator's ownership. The WUPs are issued for a period of 3 years. There are currently discussions on extending this period.

WUPs are issued on the basis of opinions made by the Geological Fund of the Ministry of Nature Protection and in relation to the category for which the water will be used: drinking water, irrigation, industrial water, energy, fisheries. The waste water discharge requirements are defined in terms of quantity discharged, quality of the waste water, definition of the discharge point, and timing of the discharges.

2. The Water System Use Permit (WSUP):

The WSUP sets the tariff for water supply and wastewater collection. The tariff requirements are set in the PSRC *Resolution No. 33 on the Approval of the Tariff Setting Methodology for Drinking Water Supply, Wastewater Collection and Waste Water Treatment Services* (April 2005). The PSRC monitors the quality of the service and the tariffs applied to consumers. The permit is issued for a period of 10 years. The AWWC holds permit № 0005, issued by the PSRC on 5 October 2005 (Resolution No. 140A). On 21 June 2006, the WSUP validity was extended to 1 January 2011.

If the operator does not meet the WSUP requirements, there are three main types of penalties that can be imposed on the operator. These include: notification, suspension of the permit (the operator should continue its work until the issue is solved or a new permit is issued, or a new operator is selected), termination of the permit (termination of the operator's activities).

4. History and current status of the contract

During the Soviet times and the first years of independence of Armenia, water companies were owned and operated by the state. Over the past several years, the Armenian Government, with the World Bank's support, has made efforts to improve both the financial and technical state of the Armenian water companies. These efforts have been aimed at rehabilitating the water supply and wastewater infrastructure, by improving utilities' financial discipline through better cash generation and expenditure management and improved water and wastewater services. In AWWC case, one of the ways to achieve these goals was to invite an experienced international operator to manage the company under a management contract. Under a management contract, the public authorities appoint a private contractor to manage all or part of the company's operations. Under such contract, the bulk of the commercial risk and all capital and investment risks remain with the government.

The management contract for the Armenia Water Supply Company Service Area was signed in August 2004 between the Armenia Water and Wastewater Company and the French company SAUR SA for a period of four years. The contract is now in its third year of implementation. There is a provision in the contract that allows, in principle, for its possible extension for two additional years. The contractor is paid a fixed fee, on a monthly basis, out of a World Bank loan. In addition, a bonus (called "performance incentive compensation" in this contract) can be granted according to the level of achieved performance. Given the World Bank's involvement, the basic investment strategy has to be coordinated with and approved by the Bank.

The Company managed by the contractor covers the ten regions supplied with water by AWWC before the start of the contract plus 4 cities that were added at the start of the contract. This represents around 260,000 households or 700 000 people.

The main responsibilities of the management contractor are clearly defined in the contract, which include the following:

- Improving the standard and efficiency of the water and wastewater services of AWWC (particularly the continuity, reliability and bacteriological safety of the water supplied);
- Increasing the consumer willingness to pay for water and wastewater services through a higher quality and a more consumer-responsive service;
- Improving the financial performance of the company and achieving a more financially sustainable operation;
- Training and developing the company's staff to enable the improvements in management, operation and financial performance to be sustained beyond the term of the contract;
- Procuring operations and maintenance equipment and repairing, rehabilitating and modernising the facilities and infrastructure operated by the company under the Municipal Water and Wastewater Project Fund Programme (this programme is discussed in Chapter 3, Section 5 of this report);
- Preparing and maintaining investment programmes for the disbursement of available capital funds during the term of the contract and assessing the longer term investment needs.

The main actors and their respective tasks are listed below:

- AWWC is the Company managed by the contractor. The assets are AWWC's property. The staff also remain AWWC's employees.
- The Company Management Board (CMB) is appointed by the Company. Its responsibility is the coordination and supervision of all aspects of the activities related to contract implementation. The Board has the powers and rights to administer the contract on behalf of the company. The CMB consists of the Chairman (who is also the Chairman of the State Water Committee), the Director of the Contract Monitoring Unit, a representative of the Ministry of the Environment and the Ministry of Finance and Economy as well as AWWC's General Director.
- The CMU is a body of technical experts appointed by the government of Armenia to supervise contract implementation and advise the Company Management Board. CMU monitors the implementation of the World Bank loan used to support this contract.
- The World Bank initiated the project. Through the International Development Association (IDA), it funded the project preparation phase and finances the management contractor's fixed fee, the performance incentive compensation and the Contract Monitoring Unit. It also finances the procurement of goods, services and works needed for the company's operations as well as investments in the networks and facilities.

- SAUR S.A. is the management contractor. It has full responsibility for the management, operations and maintenance of the water and wastewater system. It is also responsible for designing the works to be implemented with the World Bank funds and managing the related procurement process.
- An independent auditor is appointed and financed by the CMU to audit the management contractor's performance achievements and calculate its performance incentive compensation (bonus).

CHAPTER 3. ANALYSIS OF THE CONTRACT AND CONTRACT IMPLEMENTATION

This chapter aims at analysing the SAUR management contract with regard to good international practices such as those described in the OECD's *Guidelines for Performance-Based Contracts*. First, we discuss the preparation of the contract. Then, various implementation issues related to legal and institutional matters, tariff setting, contract monitoring, and measurement of the performance are analysed. Challenges identified at each step, as well as good practices, are highlighted.

1. Preparation of the contract

Presentation and analysis

The Armenia Water and Wastewater Company (AWWC) is the second Armenian company to benefit from a major international financial support. The first performance-based contract in the water sector in Armenia was awarded to an Italian company (ACEA) to manage the Yerevan Water Supply Company, for a period of five years, between 2000 and 2005.

The second management contract was granted to SAUR to cover the area serviced by AWWC which includes 10 regions covering around 700 000 inhabitants or 260 000 connected households. This project, funded by the World Bank, aims at increasing access to safe water by improving the quality of service (production and distribution of water). Under the contract, this objective can be achieved in two ways: first, by strengthening the company's management by granting a management contract to an international company with long experience in the sector and second, by making new investments in the company.

1.1. Selection of the management contractor

At the end of 2003, the State Water Committee and the Contract Monitoring Unit launched a competition for a management contract for AWWC. The Request for Proposal was prepared by an international consultant (ICEA, France). There were two main selection criteria: technical capacity and price. To qualify, bidders needed to score a minimum note of 75% on the technical capacity criterion. Two bidders met this requirement. The final decision was made on the basis of the lowest price proposed.

1.2. Lessons learned from the first management contract for the Yerevan Water Utility

The implementation of the first management contract helped the Armenian government and the World Bank to better design AWWC management contract and select the contractor. The main lessons from the first contract were:

A. The need to identify better selection criteria: the selection process of the Yerevan Water Supply Company (YWSC) management contractor was based on the sole criterion of price which led to the selection of a company with limited international experience in the water sector. For example, the Italian contractor had only limited experience in countries facing serious water

supply and sanitation challenges. In addition, no expatriate staff were sent to Yerevan, the management staff included local people only.

In contrast, AWWC management contractor was selected on the basis of both price and technical experience. This includes international experience. Indeed, by that time SAUR had had long experience in Poland and in some African countries where water supply and sanitation are challenging issues.

B. The need to reduce the number of performance indicators: the first management contract required too many performance indicators to be monitored (125 performance indicators were defined and the bonus was based on 11 of them). More importantly, the definitions of a lot of these indicators were not sufficiently precise. This led to conflicts between the contractor and the contracting authorities, particularly with regard to the calculation of the performance incentive compensation.

The AWWC contract defines only 25 performance indicators and only four indicators are actually used for the calculation of the performance incentive compensation. This simplification should allow a better monitoring of the company's performance and a quicker approval of the performance compensation.

C. The need to increase the time for preparing plans for restructuring the company: the time limit to prepare a report on the complete restructuring of the company, as specified in the first management contract, was extremely short (two weeks only). This was too short to allow the management contractor to develop a good understanding of the company's needs and to prepare a relevant plan.

In contrast, the time limits for different deliverables under AWWC contract are much more realistic. For example, the first investment programme, the so-called "Immediate Investment Programme" (IIP), has to be delivered 3 months after the starting date of the contract. This allows the contractor to assess more precisely the company's investment needs. A first draft from the international consultant ICEA and the CMU defined the IIP. This initial draft was amended by SAUR.

D. The need to ensure better personnel management: the previous management contractor had difficulties in efficiently managing the company's staff (that is employees working for the Yerevan Water Company). Hiring and firing of employees were decided by the Project Implementation Unit only (PIU), which was in charge of monitoring the contract implementation). The contractor could suggest adjustments in the Company's personnel structure but the final decision was PIU's. This arrangement was quite rigid and resulted in a lower efficiency in the personnel management.

This issue was taken into consideration when designing the second management contract. The current contract specifies that the management contractor should be the sole person responsible for the hiring, firing, lay-off, demotion or disciplinary action of staff members. This shows that the contractor has full responsibility for managing the company's personnel, with no undue interference from the CMU or the Company Management Board.

1.3. *Initial financing of operational activities*

Until 2004, the company managing AWWC service area had accumulated debts both to their suppliers (mainly the electricity provider) and their own employees (salaries were not fully paid). At the same

time, customer debts to the company amounted to more than AMD 10 billion (around Euro 15 million). To solve these problems, the government used two main approaches:

- First, part of the World Bank USD 3 million fund allocated for assistance to AWWC was used to cover unpaid salaries. This allowed to quickly and successfully solve the unpaid salaries issue.
- Second, in order to create a sound financial basis for the new management contractor at the start of the contract, the existing AWWC was divided into two entities: the new company named Water and Sewerage CJSC received a substantial amount of AWWC debts. The debts were split into short-term and long-term debts. The long-term debts were transferred to the new company, while AWWC kept the short-term debts. This separation and transfer of debts were organised on the basis of two legal acts:
 - ✓ **Government Resolution No. 1458-A of 10 October 2004** which establishes the new “Water and Sewerage” CJSC Company. The resolution defines the amount of the material assets (mostly unusable³) that are transferred to the new company, i.e., AMD 3.3 billion. Under the Resolution, the Water and Sewerage CJSC can sell the assets transferred to it, using the revenue earned to cover its payable debts. It also specifies that most of AWWC debt payables and receivables (around AMD 5.2 billion) are transferred to Water and Sewerage CJSC for their management. However, customer debts totalling AMD 800 million were recorded in AWWC’s books. This debt was mostly of short-term nature. The money from collecting this customer debt was envisaged to be used to pay back different suppliers (some of them have already received a down payment).
 - ✓ **State Committee of Water System Order No. 280–A of 13 December 2004** which requires the management contractor to ensure the transfer to the new company of AWWC payable and receivable debts existing as of 1 November 2004 as well as the assets defined in Resolution No. 1458 on Water and Sewerage CJSC.

The company’s restructuring was not defined in the contract; it was implemented after the contract’s signature. Its purpose was to ensure that the management contractor would not be burdened by debts previously incurred, thereby enabling it to have a clean start and focus on its main tasks (improving the water supply and sanitation services). This shows the government's willingness to create good enabling conditions for the operator and facilitate the execution of the contract.

However, the implementation of this solution was not as smooth as initially intended and had some negative effects for the contractor’s operations. First, according to the management contractor, the valuation of the assets (both usable and unusable) was not sufficiently precise. It was also not very clear on what basis some assets were classified as unusable. It seems that some good assets were also included in this list. Due to the lack of time and financing, an accurate and comprehensive assets valuation was not possible.

Second, the transfer of receivable and payable debts was a complicated and time-consuming process for the management contractor. This transfer created a lot of confusion in AWWC’s internal management and its relationship with clients. The company had to divide its customers into groups in

³ Unusable assets are defined as old assets which cannot be used in the operations of the company, such as old pumps, pipes, cars out of order, old buildings and any other equipment that belonged to AWWC but for one or another reason could not be used any longer and could only be sold (e.g. as scrap metal) in order to generate some revenue.

the database to separate long-term from short-term debts. This task was extremely difficult for the commercial services to carry out, given the nature and poor state of the customers database.

The new company, which had the task to recover the long-term debts of the worst customers and sell the unusable assets, had only very few staff members. The new company's staff simply neither had the capacity to carry out these tasks effectively in order to recover the debts nor the tools available to the management contractor to collect the debts (e.g. the old company had the power to disconnect delinquent customers, impose penalties, take such customers to court which is not possible for the virtual new company). In addition, asking customers to pay to a new company which has not provided any services to them may be considered illegal.

Dividing the customers into groups in the database also resulted in difficulties with accounting. For instance, the management contractor could not show any bad debts for the next two years and these debt re-calculations changed the initial balance of receivables and payables. More importantly, with regard to debt owed to suppliers, the debts were transferred without requesting the approval of individual creditors for such an action (e.g. electricity company, telecommunications company, banks). There is thus the risk that some suppliers may refuse the transfer of their debts to another entity without their written consent. This risk has already materialised as some legal actions have been taken against the company.

Based on its experience with this contract and the difficulties identified above, the management contractor does not favour the separation of debts and the creation of a new company. In addition, these practices have been also identified and criticised by the company's financial auditor.

At the same time, the government claims that it has carried out similar debt restructuring in three other water utilities before offering them to private operators. Unlike with SAUR, this approach worked well in these three other cases. A possible explanation for this positive experience is that the three other water utilities were rather small with only a small number of customers and their debts were not comparable to AWWC debts. It should be noted that transferring assets to a new company is a standard practice with lease contracts. Creating a new company is a legal mandatory requirement in this case. However, creating a new company under a lease contract has nothing to do with old bad debts. In the case of a lease, all assets are transferred to the new company for the period of the lease contract.

New company vs keeping all debts in the existing company

This situation is a classical example of how good intentions can go wrong. The debts were split and a new company was created to manage some of the debts with the best of intentions to create a healthy financial environment for the new contractor. But the lack of experience with operations of this scale and the fact that certain legal issues were overlooked created other problems. In general, there are a lot of good elements in this approach that are worth considering but in certain cases other approaches could be used.

First, if splitting the debts and creating a new company is the preferred option and in order to avoid future possible legal disputes:

- The government should check that national legislation allows debt transfers (for both suppliers and customer debts);

- Even if legally possible, the government should aim to agree this option in advance with the company's creditors. International experience shows that this is best done when a panel of creditors is convened to discuss and agree on this approach;
- Even if legally possible, the government should consider how technically feasible this option is in relation to both debts and assets:

- With regard to debts: given the potential problems with the management of the customers database, it can be time and resource-consuming to implement such a split. Therefore, the government should carefully audit the existing customers database in order to assess the feasibility of splitting the debts into long-term debts (to be transferred to the new company) and short-term debts (to be managed by the existing company);

- With regard to assets: in order to make the process of assets inventory and valuation more transparent, a comprehensive inventory of the assets and customers should be carried out before a new company is created. International experience shows that the best way is to set up a public commission (consisting of representatives of different relevant public institutions) which will decide which assets to classify as unusable (including the selection criteria for defining such assets) and their selling price.

In cases similar to AWWC's (where the utility covers an extended network in rural areas), the cost of such an inventory is estimated in the amount of at least Euro 2 to 3 million. This is a task that can be allocated to the contractor as long as the contractor has the expertise and the capacity to do so and is paid for this work. Alternatively, this work can be done by a qualified local consultant.

To cover some of these initial costs, the government will need to create a kind of "Initial Costs" Fund. The Fund is funded by revenue from the state budget or by international grants. In AWWC's case, the World Bank or the USAID may be in a position to provide support to technical consultants for such type of work.

- If legally and technically feasible, and when dealing with initial financial problems, the government could consider:
 - Covering the company's short-term debts;
 - Asking the management contractor to be responsible for selling the unusable assets throughout the duration of the contract;
 - Ensuring that there are sufficient and sufficiently qualified staff members in the new company who will be in a position to recover the debts. Altogether, this option should be considered against the costs of maintaining such staff members over a period long enough to achieve the objectives of this approach (maybe one or two years).
- Dividing the company into 2 entities is not recommended even if it is legally possible, as it is technically unfeasible. It can be technically feasible for small contracts but not for contracts that cover larger service areas. In such case, it can be done as part of the Due Diligence process before the contract is finalised and signed. Alternatively, this option, including all potential consequences, should be clearly stated in the contract.

- With regard to management contracts, the government should aim to keep all payables and receivables within one company. In such case, the management contractor should take a short-term bank loan to cover the initial debt. The operator could then be reimbursed through the state budget or through the tariff.

Even if the creation of a new company was not completely successful in AWWC's case, this solution could be studied in other contexts provided that the principles are applied properly.

Recommendations

The lessons learnt from the previous management contract were duly taken into account when the second management contract was prepared. Several **good practices** have been identified in this process:

- The contractor's performance is assessed on the basis of a limited number of indicators (25) and its incentive compensation is calculated taking only 4 indicators into account.
- The time limit for the delivery of the first investment programme initially designed by ICEA and the CMU has been extended to allow for a more precise evaluation of the company's investment needs.
- The contracting authority has tried to create conditions to ensure the company's sound financial position at the start of the contract. In AWWC's case, a new company whose role was to manage AWWC's unusable assets and long-term customer debts was created for this purpose. The actual implementation of this solution was however extremely difficult.
- The contractor has full responsibility for managing the company's personnel, with no undue influence from the contracting authority. It protects the contractor from political and external interference in its operational management.
- The contract was designed with the help of an international consultant and a team of local consultants which helped improve the design of this contract.

However, a number of challenges arose during the preparation stage. Some of the main recommendations to deal with these challenges are:

- In order to cover initial operational expenses (salaries, energy expenses, etc.) at the start of the contract, the government should create an "Initial Costs" Fund. This fund could be financed by IFIs/donors involved in the financing of investments as in the case with the USD 3 million fund allocated for assistance to AWWC. Part of this fund could be allocated to the payment of the initial operational costs as this was done to cover salary arrears. Alternatively, other donors' support could be sought.
- Before a contract is signed, an inventory of all assets and liabilities should be carried out. The valuation of assets should be as accurate and comprehensive as possible. Such a review could be financed with donors'/IFIs' support. This task is particularly important to implement as it can also be beneficial for determining investment needs.
- With regard to unusable assets, the government should aim to set up a public commission (consisting of representatives of different relevant public institutions) which will decide which

assets to classify as unusable (including the selection criteria for defining such assets) and at their selling price. This will ensure the transparency of the process.

- The split and transfer of customer debts to a new company should be carefully considered against all potential costs that will be incurred by the operator, the contracting authority and the public purse. In AWWC's case, this transfer created havoc in the customers database and led to problems with accounting. The creation of a new company should be favoured in lease contracts rather than management contracts.

2. Legal and institutional issues

Presentation and analysis

As a result of inconsistencies between the contract and the law in force, the contractor faced certain challenges in implementing the contract. One particular issue concerns the payment of water pollution charges imposed by the Ministry of the Environment. There has been a disagreement over the payment of these charges between the Ministry and the management contractor.

The calculation of and the procedures for paying environmental pollution charges are specified in the Law "On Environmental and Natural Resource Payments" enforced on 1 January 1999. The Law was further detailed in subsequent government decrees on pollution charges. In addition, and in accordance with the law, between 1999 and the end of 2002, the Armenian water supply and sanitation companies were temporarily exempted from paying water pollution charges. This was done with the view of helping these companies to improve their financial health and upon the requirement to spend this money on improving the wastewater infrastructure. Normally, if these charges were paid, the water companies would have included them in the water tariff and passed them on to consumers. The exemption has allowed the Armenian government to indirectly keep low water tariffs for households. In addition, the pollution charges due between 2003 and 2005 were further rescheduled to be paid during the period 2006 - 2009.

In AWWC's case, the company was exempted from paying pollution charges due between 1 January 2003 and 31 December 2005 while the charges due for the period 2006 – 2008 were postponed to the 2009 – 2012 period. This debt amounts to an annual AMD 35 million (Euro 70 000). Legally, due to the postponement, the management contractor is not responsible for paying the charges as they go beyond the current contract. In any case, it is AWWC that is responsible for paying penalties and not the management contractor.

Despite the legal exemptions, however, the Ministry of the Environment is currently claiming these payments from the contractor on the basis that the operator should comply with the law in force. But the law in force is in contradiction with the decrees granting charge exemptions. The difference in the understanding of the law in force has led to a serious disagreement between the two sides.

The management contractor has expressed concerns about the burden of these charges. The contractor argues that the poor state of the wastewater collection networks and treatment plants and the long time needed to actually make necessary investments to bring the system in compliance do not allow to achieve significant water pollution reduction within the contract lifetime (as compared to the contract start date). More importantly, the current investment funding (which is a government responsibility) is mainly oriented towards the water distribution infrastructure and facilities (95% of the subsidies) and very little is spent on wastewater collection and treatment.

This is not an easy issue to resolve as all the parties seem to have good arguments. However, it seems that the root cause stems from miscommunication within the government, mostly between the Ministry of the Environment and the State Water Committee. On the one hand, there are government decrees which exempt the contractor from paying the pollution charges for a certain period of time. On the other hand, the Ministry of the Environment requires the contractor to pay the charges. Given the division of responsibilities with regard to the contract and the existence of a Company Management Board which consists of government representatives, including a representative of the Ministry of Environment, the Board seems to have the right competence and to be the right forum where an agreement on this issue could be reached. Board members have access to all the information on the contractor's operations and are in a best position to reach consensus on how to proceed. It is clear however, that the contractor has operated on the assumption that it will not have to make these payments within the framework of this contract.

This situation however can be further aggravated if the contractor obtains an extension of the contract to 2009 and beyond when some of the payments may be enforced. This problem will remain even if a new performance-based contract is granted to a new operator. Even if there is a new operator, it is highly unlikely that the new operator will agree to pay these old debts. In any case, if this situation persists, the debts will become unsustainable.

There are no magic solutions to this problem. The debts will have to be either fully or partially cancelled or fully or partially covered by the state or passed onto consumers through the tariff. The first two options are a matter of political choice (if the government's objective is to keep low tariffs for the population). Alternatively, this solution may be specified in lower pollution reduction targets for the company for a certain period of time. The third option can only be feasible if investments in the wastewater infrastructure are made (it is also a fairness issue), which may largely remain a government responsibility. To mitigate the adverse effect of significantly increasing the tariff or reducing the water discharge standards, the government may instead consider a gradual phase-in of this cost into the tariff.

Building the pollution charges into the water tariff may be one possible option. Under current conditions, applying this option may have both positive and negative effects. The negative effect is that although the operator is protected by the tariff, the collection rate is still too low which means that the tariff will not fully recover the losses of the company related to the pollution charge payments. As a result and in order to make these mandatory payments, the company will have to reduce other operating expenses. One option to solve this issue is to extend the exemption period for another 4 to 5 years until the collection rate reaches, for example, 95% and higher. As evidenced by previous experience, the risk is that this period may be longer than 4 or 5 years, which creates a perverse incentive and the expectation that the solution of this problem may be forever postponed. In addition, reducing operational expenses may additionally exacerbate health and environmental problems.

The positive effect is that customers will start getting used to paying a higher tariff for wastewater discharges. This is important if the government needs to ensure a gradual rehabilitation of the wastewater treatment plants and thus, an increase of operating expenditure. In any case, this is a contentious issue that needs to be resolved as soon as possible and preferably before a new contract is in place. This situation provides one more example why a "legal clearance" is absolutely necessary before the implementation of a donor financed project.

However, when building pollution charges into the water tariff, attention should be paid to ensuring that the operator has sufficient incentives to reduce pollution.

Recommendations

Experience from other countries shows that, in general, exemptions (or long-lasting postponement of payments) rarely bring sustainable solutions, as they create perverse incentives and wrong expectations. In addition, if water companies are treated differently, this will create unfair competition and discriminate against existing operators. Exemptions should be avoided as a matter of principle. The only sustainable long-term solution would be to include all costs in the tariff. While all agree on the principle, this principle is not easy to implement in practice. Given AWWC's specific situation, the following recommendations can be made:

- In cases of disagreement which are largely caused by administrative contradictions, the Company Management Board should be actively involved in the solution of the problem. The Board is a very useful body which can and should provide support in resolving administrative conflicts.
- If the main purpose of the management contract is to help improve the operational management of the water company, the management contractor's actions and energy should be oriented towards operations, maintenance and repair. Less time should be spent on administrative matters. In cases such as those identified above, the contract should clearly specify that either derogation on pollution reduction targets should be granted to the contractor or the payment of charges should be the government's responsibility.
- If another exemption is granted, this should be linked to an increased collection rate (95% and higher) for a strict period of time (4-5 years). This can be turned into a performance indicator.
- In either case, pollution charges or even better, investment, operating and maintenance costs for reducing pollution, should be gradually built into the water tariff. This should go hand in hand with increased investments in wastewater treatment facilities. The issue of increasing tariffs should be separated from the issue of poor people not being able to pay their water bills. The two issues should be dealt with separately.
- In case a decision is made to incorporate pollution charges into the water tariff, the government may consider channelling the proceeds from such charges to a special fund for the rehabilitation of the existing wastewater treatment facilities for a certain period of time (6-7 years). This would create some incentives for the water company to improve these facilities as well as help reduce the dissatisfaction of customers who will be forced to pay higher water bills. In such a case, however, the government should agree with the company on a clear investment programme to spend these resources and should closely monitor their disbursement in accordance with an agreed plan.

3. Performance indicators

3.1. Definition of the baseline

Presentation and analysis

All parties consider that the baseline data prepared by the management contractor were not sufficiently reliable. These data are used to calculate the performance indicators and thus the variable fee paid to the contractor.

The management contractor must “*submit to the Contract Management Unit and to the independent auditor the baseline values of the performance indicators [...] as they can be realistically assessed considering the Company Information System*⁴.” The contractor’s performance achievement is determined by comparing the situation each year to the base year conditions. Thus, determining accurately the base year data is fundamental as the annual performance incentive compensation (i.e. the contractor’s variable fee) is calculated on the basis of the achievement of performance indicators. However, in light of the information available at the start of the contract, it was not possible to build strong baseline values. Some data were missing, others not sufficiently accurate. As a consequence, the data proposed by the contractor were the source of strong criticism.

Recommendations

In order to minimise some of the problems identified with regard to data quality, two major recommendations are proposed.

- First, whenever possible, the baseline values should be determined in close cooperation with the previous operator. As the previous operator has the best knowledge of the technical and economic situation of the company prior to the start of the new contract, it should be able to advise on the most appropriate methodology that should be used to determine the baseline values. Thus, at the end of the management contract, the operator should be required to prepare another baseline report, as precise as possible, which can then be used as a basis for the design of future performance-based contracts.
- Second, the indicators should be more carefully selected; the following selection criteria could be applied:
 - ✓ Easy measurement (as regards particularly the continuity of service measurement. The number of daily hours with respect to drinking water services was difficult to assess and was the source of a conflict between the contractor and the independent auditor).
 - ✓ Existence of sufficiently reliable data for the calculations (in terms of completeness, accuracy and consistency of data).

The choice of such indicators could help avoid further conflicts between the management contractor and the other parties.

⁴ Contract, Appendix 6, Article 3, page 3.

3.2. Monitoring of performance indicators

Presentation and analysis

The management contractor is required to monitor a set of performance indicators in the contract and to report on these to the CMU and the Company Management Board. There are 25 indicators altogether specified in the contract (see Annex IV for the complete list of indicators). Four of them are particularly important as they are used to calculate the performance incentive compensation for the management contractor. These four indicators are:

- Weighted average number of daily hours of drinking water services;
- Percentage of individual subscribers billed on the basis of metered consumption;
- Weighted average water bacteriological safety compliance;
- Company's working ratio.

Compared to the first management contract for the Yerevan water utility, the number of performance indicators has been drastically reduced from 125 to 25. This is already an achievement which allows a far easier monitoring of the global contractor's performance. In addition, the indicators have been well selected to allow for the evaluation of the operator's overall performance as they reflect different aspects of its management practices. Some of these include:

- Level of service for the customers (e.g. number of daily hours of drinking water services, average water bacteriological safety compliance, share of cities with minimal daily hours of drinking water services);
- Tariff collection performance (e.g. collection ratio, percentage of subscribers with debts longer than 4 months, growth of the total collected revenue);
- Operational performance (e.g. working ratios, electricity consumption).

The role of the independent auditor

Another positive aspect of the contract is the appointment of an independent auditor to monitor the achievement of some of the main performance indicators. The auditor has been appointed by the Contract Monitoring Unit following an open tender procedure. The auditor is paid by the CMU (with funds provided by the World Bank). The first task of the auditor is to validate the baseline values at the start of the contract as calculated by the management contractor and submitted to the CMU. His second task is to assess the achievement of the four main performance targets used to calculate the contractor's compensation and if necessary to propose adjustments to these criteria for each subsequent year. The review of the performance criteria starts at the end of the second year of the contract. However, the contract does not specifically mention that the independent auditor has to monitor the other performance indicators.

Altogether, the independent auditor has very strong powers particularly with regard to the performance incentive compensation. The decision of the independent auditor with respect to the calculation of the performance incentive compensation for the contractor is final and is not subject to the settlement of the disputes resolution procedures identified in the contract.

Over the past couple of years, serious tensions have arisen between the contractor and the independent auditor with regard to two main points:

- The assessment of the performance indicators used to calculate the performance incentive compensation for the contractor (the bonus). The methodologies used by the technical auditor to assess the value of the performance indicators were not agreed upon with the management contractor. This concerned mainly the following indicators:
 - ✓ The measurement of coliforms concentrations (used for the “weighted average water bacteriological safety compliance” indicator). For this indicator, the management contractor considered that no or too few analyses had been made by the auditor to be able to realistically assess the contractor’s performance.
 - ✓ The number of daily hours with drinking water services (used for the “weighted average number of daily hours of drinking water service” indicator). For this indicator, the contract specifies that “*the Independent Auditor shall carry out campaigns of measures in each community [...], in locations and at customers premises (sample points) approved by the CMU and providing a representative weighted average of the number of daily hours of service per day in each community*”⁵. In this case, the independent auditor and the management contractor disagree on the level of reliability and representativeness of the measurements taken by the auditor. For example, the management contractor’s concerns are that the major part of the assessment has been made on the basis of few interviews only and in a limited number of locations.
- The contents and the review of the reports prepared by the management contractor: it seems that the management contractor and the independent auditor have different understandings of the contract requirements with regard to the contents of the annual reports. For example, the auditor considers that the annual reports prepared by the contractor are too centred on the rehabilitation and repair works undertaken by the operator. On the other hand, the level of communication between the independent auditor and the contractor is rather poor and some letters/comments remain unanswered by the other side (e.g the contractor has not provided answers to the comments of the auditor on the last annual report). At the same time, the management contractor considers that the inputs of the auditor are rather general and “formal” and concern mostly presentational issues and sometimes lack focus on actual substantive matters.

While both these disagreements are important, they are mostly technical in nature. It appears that most of these issues could have been solved technically if there had been a real willingness between the parties to cooperate. For example, with regard to the evaluation of the annual report, a clear discussion as from the first year on the issues that the management contractor should include in this report would probably have helped solve the misunderstandings. As for the performance indicators assessment by the independent auditor, a reflexion on the assessment methodologies jointly with the contractor could have helped the auditor to take the measurements properly. Thus, problems related to personal relations should not be underestimated as they can impede the smooth implementation of the contract and the achievement of its objectives.

Another issue linked to the conflict on the assessment of the performance indicators is the lack of financing for the technical auditor. The limited measurements made by the auditor could simply be

⁵ Contract; Appendix 9: Performance incentive compensation, page 8.

due to the lack of funding to perform them properly. This may be the case of the measurement of the coliforms concentrations as the auditor does not have sufficient resources to sample extensively the networks and to have the samples analysed. In addition, the work methodologies for calculating the performance indicators were not included as a selection criterion for choosing the auditor. Thus, the auditor's technical capacity is not necessarily guaranteed. This is a sensitive point as the auditor is strongly involved in the monitoring of the contract. If, for one or another reason, the auditor cannot perform his duties properly, this may lead to significant problems between the parties, as evidenced in this case.

Recommendations

While the technical auditor plays a key role in contract monitoring (especially with regard to the performance evaluation of the management contractor), the selection process should be carefully carried out. In this context, it is recommended as follows:

- The technical background and the methodologies proposed to evaluate the contractor's performance should be at the heart of the selection process. In addition, the contract should require that these methodologies be agreed upon by all major parties involved in the monitoring of the contract.
- Most importantly, the methodologies used to calculate the baseline values and the performance indicators at a later stage should be exactly the same in order to avoid any methodological discrepancies during the implementation stage.

4. Tariffs and financial obligations of the contracting authority

Presentation and analysis

4.1. Tariff setting and annual tariff revision

Armenia operates a unified volume-based pricing system for municipal water. The tariff is identical for all customers. Currently, it is set at AMD 140, all taxes included (AMD 115 for the water supply service and AMD 25 for sanitation). The tariff has been increased by about 40% since the start of the contract in 2004, by 27% once in 2005 and by 10% in 2006. According to the contract, the three stakeholders are involved in the tariff review:

- the management contractor who has to make tariff proposals;
- the Company Management Board which has to review the tariff proposed by the management contractor and obtain the approval of the tariffs by the relevant authority; and,
- the Public Services Regulatory Commission (PSRC), responsible for approving any tariff adjustments in the water sector.

As such, the responsibilities of each stakeholder for the tariff adjustments are well defined in the contract. However, no tariff adjustment methodology is proposed in the contract. It is the PSRC Resolution⁶ No. 33 of 5 April 2005 that defines the methodology for the tariff review.

⁶ Resolution No. 33 of 5 April 2005 on approval of the tariff setting methodology for drinking water supply, wastewater collection and waste water treatment services.

This Resolution defines the principles for developing the tariff system and calculating the tariff rates. It applies to all utilities that provide drinking water supply, wastewater collection and treatment services except for those for whom other principles of the revision and tariff setting are established by the water system use permit issued as a result of a water system use right transfer⁷. The Resolution defines three phases for the tariff system development:

- Calculating annual revenue requirements of utilities;
- Calculating the cost of services provided to customers and groups of customers;
- Developing tariff structures and calculating tariff rates.

Three types of costs are included in the tariff structure, as defined in the above Resolution, namely:

- Fixed costs (expenses irrespective of the water quantity delivered);
- Variable costs which vary depending on the amount of water supplied, wastewater collected and treated;
- Consumer services costs: expenses directly associated with servicing of consumers (mainly water meter data reading, billing and collection costs).

In addition, the tariff setting methodology divides the tariffs into 3 parts: tariff for water supply, for wastewater collection and for wastewater treatment. This is a good practice. Each level of service (water supply, wastewater collection and sanitation) is invoiced separately. This avoids the “cross subsidy” issue (e.g. customers not connected to sewerage but paying for the service and then subsidising the customers connected) and in most cases resulting in a sounder management (the costs for each service are clearly defined and separated).

4.2. Challenges to tariff collection⁸

The operator is responsible for collecting the tariffs. There are a number of challenges related to tariff collection facing the operator. Some of the major challenges include: low tariff rate, low collection rate related also to the culture of non-payment and the poverty of the population, a large number of illegal connections.

During the interviews, the management contractor raised the issue of the current tariff level. The operator argues that given the current collection rate and operational cost level, and in order to balance its costs, the tariff should be twice the current level. Some studies commissioned by the Armenian government show that there is some room for increasing the tariff rate while remaining within the range of the affordability constraint of 4-5% on disposable households income.

A particular issue concerns the collection rate for domestic and industrial consumers. Despite the huge progress since 2004 (an increase from 48% to 70% at the end of the first 6 months of 2007, that is a 46% increase altogether) the tariff remains quite low compared to the collection rate achieved by

⁷ Idem, page 2.

⁸ All data in this section are quoted from the 2007 second quarterly report prepared by SAUR.

Yerevan Djur (88%). The increase of the collection rate in the Armenian water utility was mainly due to two factors⁹:

- An increase of 45% of the percentage of water meters installed (from 40% in 2004 to 58% at the end of the first six months of 2007);
- The way the bills are recovered: 95% of the payments were made in cash before 2004 against 80% by postal or bank transfers in the first months of 2007. This allows for a more direct transfer of the amounts due to the company, with fewer intermediaries.

However, there is yet another challenge to the operator: the high level of illegal connections to the network. This issue is particularly acute during the irrigation period (summer months). For example, in the second quarter of 2007, around 1 200 illegal connections were identified representing an AMD 12.5 million loss. Identification of these illegal connections remains a priority for AWWC's commercial department and legal actions have been taken against those found guilty of fraud.

To improve the collection of payments due, the management contractor has divided its customers into several groups based on customers' ability and willingness to pay, including a rough estimate of the percentage of customers that belong to each of the categories:

- Regular payers (3 to 7%);
- Irregular payers (20 to 30%);
- Quality-oriented payers (15 to 25%);
- Regular non-payers (30 to 40%);
- Poor households (5 to 10%).

Income-based or tariff-based measures

Currently, regular non-payers represent the largest group. The mentality of non-payment inherited from Soviet times is still strong in the regions outside of Yerevan. Poor households which cannot afford paying the water tariff are not supported in Armenia. There are currently no public water programmes to support low-income and socially vulnerable customers in the country. There is a Family Benefit Programme but it provides support for a broad range of needs and it is not sufficient to help poor households cope with water bills.

Different countries use different approaches to support socially vulnerable customers. The most common are income-based measures (i.e. direct subsidies) and tariff-based measures (e.g. increasing block water tariffs (IBT)). Both have their advantages and disadvantages. An increasing block water tariff is a price structure in which water is priced at a low initial rate (usually below the cost price of the service) up to a specified volume of use (block), then at a higher or several increasingly higher rates for additional blocks used. This is a form of cross-subsidisation where the subsidy is provided by large customers (in the higher blocks) to small customers (who are in the first block). The main advantage of this option is that there is no need to identify socially vulnerable customers. To have an

⁹ The figures below are taken from the second quarterly report prepared by SAUR in 2007 and transmitted to the CMU and CMB.

effective IBT there is a need to have a critical mass of large customers (which is not the case of AWWC). This may lead to very high rates for such customers which in turn may look for other water sources. This situation may also exacerbate the collection rate. In addition, IBT requires meter-based billing, i.e. there is a need to have a widespread installation of meters. The cost of installing, maintaining and reading meters can in some cases be large compared to the average annual water bill of households and may therefore not always be justified..

In contrast, the main advantage of income-based measures, that is a direct subsidy to poor households to support their basic needs, is that unlike tariff-based measures, they do not distort the price signal. The tariff can be effectively raised to cost-recovery levels for all consumers, while ensuring protection of the poor through targeted subsidies. Hence, the social objective to help poor customers on the one hand and to make the water utility financially viable, on the other, can be dealt with in a transparent and objective manner.

Experience from other countries shows the importance of having a social programme in place to support poor customers. This solution has been implemented in poor districts in some countries of South America (such as Chile). The main disadvantage of this method is the additional administrative costs required to identify the poor customers and to calculate the subsidy level per person. Given the existing database of the Ministry of Social Protection relating to socially vulnerable families, it may be useful to consider the opportunity to further upgrade the database to include data relevant to the water utilities. It seems that in the case of Armenia, a direct subsidy programme may be a more appropriate mechanism to support poor households.

4.3. Covering the operational deficit

The low collection rate is one of the main reasons for the significant operational deficit faced by the operator. In the case of an operational deficit, the contract provides compensation to the company. The contract specifies that “*the Ministry of Finance and Economy (MFE) shall provide funds required by the Company for operating subsidies to cover all cash needs which cannot be covered by collected revenues [...]*”¹⁰ This is intended to protect the contractor from a low tariff collection rate and to allow sufficient maintenance works on the networks and facilities.

However, this compensation mechanism does not seem to have been always implemented properly. Given the low collection rate (around 70% in mid-2007, as discussed above), it was pointed out that since the start of the contract, only half of the required compensation has been actually transferred to the operator by the MFE (representing AMD 135 to 150 million or Euro 230 000 to 275 000). The main consequence of this under-funding is a decrease of the financing for the basic maintenance and repair works which can threaten the improvement of water distribution services. The management contractor has had to cut down the operational costs and in particular the repair and maintenance costs which leads to a quicker deterioration of the networks. This is a serious problem that needs to be addressed urgently. The review team has not been able to obtain a clear explanation of the reasons for this situation but it seems that part of the problem lies in the lack of communication between the parties.

¹⁰ Attachment 2 to Appendix 2 – Company financial management. Article 1: Operating revenues & expenses and coverage of the operational deficit, Page 19.

Recommendations

The challenges facing the contractor related to the low tariff collection and subsequent operational deficit are significant. It is commendable that the contract provides a mechanism to compensate the contractor in the case of a serious operational gap. It is equally important however that the contractual obligations are respected by each of the contracting parties, including the contracting authorities. This is crucial for the success of the contract. In this context, the main recommendations are:

- If the parties can not reach consensus on such sensitive issues as the coverage of the operational deficit, the arbitration procedure described in the contract should be enforced. If not enforced, such a situation may endanger the achievement of the contract objectives.
- In this case, and before making a final decision, both parties should have consulted with the independent auditor and obtained its opinion on the accuracy of the amounts requested by the management contractor.
- If the auditor's opinion is not acceptable for the parties, another (international) arbitrator can be sought.
- In addition, to reduce the operational deficit of the company, the government could develop and put in place a programme for poor families who cannot afford paying their water bills.

5. Monitoring of contract implementation

Presentation and analysis

The contract requires that the management contractor prepare monthly, quarterly and annual reports, including information on performance indicators. To allow better monitoring of the progress with contract implementation, these reports should be submitted to the CMU. There is a clear procedure for commenting and accepting the reports.

5.1 Monitoring of investments by the contracting authority

A major challenge identified during the interviews in Yerevan is the slow implementation of the investments in the company's water supply and sanitation facilities. Only around 50% of the available World Bank investment funds have actually been disbursed in the first three years (70% should have been disbursed). One explanation of this situation could be the confusion that exists in the definition of each stakeholder's responsibility, particularly with regard to the procurement process.

The Municipal Water and Wastewater Project (MWWP) Fund

Two types of procurement procedures are defined in the contract. The first one concerns all goods, services and works related to the company's day-to-day activities and financed by the company's own income (tariff, loans and government subsidy to compensate for the operational deficit). The second procurement procedure deals with investments financed from the Municipal Water and Wastewater Project (MWWP) Fund.

This Fund is financed by a World Bank loan and by counterpart funds provided by the government of Armenia. The Fund amounts to at least USD 15.7 million (tranche 1) but can reach USD 29.9 million (tranche 1 plus additional USD 14.2 million), exclusive of tax. Tranche 2 will be financed only if

tranche 1 has been fully used within the timeframe of the management contract and if additional funds are available (from the World Bank and by the Armenian government).

This Fund is divided into two parts - “Part B” and “Part C”. Part B of the Fund provides assistance to the company for works related, among others, to purchase of office and communications equipment, training and re-qualification of AWWC staff, financing of the water meter testing laboratory and chemical and bacteriological laboratories, assistance to condominiums to install water meters and conduct technical evaluation of internal networks.

Part C of the Fund is intended to finance investments mainly in water supply facilities and, to a limited extent, in sanitation facilities. Two steps were defined to implement these investments, as follows:

- An “**immediate investment programme**” designed to allow a fast start of the investments. This programme was prepared by the CMU prior to the start of the contract for an immediate implementation by the management contractor. This programme amounts to USD 3 million (plus possible USD 0.75 million if the second tranche is made available).
- A “**branch integrated investment programme**” aimed at the design, implementation and supervision of rehabilitation and reconstruction works of the facilities and infrastructure of the company. The investments have to be designed and scheduled by the management contractor in coordination with the branch directors (AWWC managers at the local level) and the CMU. The investments should be completed in 6 years (the maximum duration of the contract). This programme amounts to USD 15.7 million (plus possible USD 13.5 million if the second tranche is made available).

It is important to highlight the decision to distinguish between an “immediate investment programme” and a “branch integrated investment programme”. This is a valuable point in the contract as the immediate investment programme allows starting works and launching design studies as early as the start of the contract. At this early stage of the contract, the management contractor does not have full understanding of the company’s needs. So, having the priority works and studies defined in advance by the CMU, which is familiar with the company’s technical and financial situation, is crucial at the start of the contract.

However, the actual implementation of these investments has not gone as smoothly as expected. Until now, only 50% of the planned funds have been spent (instead of the scheduled 70%). This delay could be due to confusion in the responsibilities of the major stakeholders involved in the investment implementation process.

CMU or Project Implementation Unit: Clarifications

The contract specifies that its implementation should be monitored by a CMU. However, in reality such body has never been created and the CMU’s functions have instead been performed by a “Project Implementation Unit”¹¹ (PIU) which is, by nature, a different structure. The PIUs are bodies established to monitor the implementation of projects supported with grants and loans provided to Armenia by different states, international organisations and IFIs. PIUs are not designed to monitor the implementation of performance-based contracts. The first PIUs in Armenia were created soon after the

¹¹ The PIU responsibilities are defined in a Government Resolution No. 765 of 22 December 1999 on the activities of project implementation with the proceeds of loans and grants provided to the Republic of Armenia by foreign states and international lending institutions.

1989 earthquake when international grants were provided to Armenia to help the country overcome the catastrophe.

The PIUs thus pre-existed AWWC's management contract, whereas the CMU should have been a structure created in the framework of this contract. The World Bank (which has initiated AWWC's management contract project by allocating the funds to implement it) has considered that the CMU role would be provided by the Water Sector Development and Institutional Improvements PIU which was set up to monitor an earlier World Bank loan provided to the State Water Committee¹². However, the definition of CMU's responsibilities, as defined in the contract, is quite different from those defined by the Armenian legislation (Resolution No. 765). This has led to confusion in the actual contract implementation, particularly regarding the procurement process.

Actually, the contract clearly defines the roles and responsibilities of all stakeholders with regard to the monitoring of procurement. In this context, the responsibilities of the CMU are only limited to¹³:

- The verification of the compliance of the procurement request and specification with the "Company MWWP Fund annual plan". The annual plan and budget are prepared by the management contractor and specify the way in which money from this Fund will be used in the framework of this contract.
- Getting the required approval of the World Bank for financing expenditure (mainly the works, goods and services whose amounts exceed USD 200,000).
- The participation in the Company Investment and Procurement Committee whose responsibility is to evaluate the bids and take decisions on the awards of sub-contracts for procurement financed from the MWWP Fund.
- The signing of sub-contracts with selected suppliers (jointly with the management contractor).
- The payment for goods and services contracted out in the framework of the Company MWWP annual plan.

The CMU's responsibilities, as stated in the contract are thus limited to the control of the procurement process, the signing of the contracts and the payments of the goods and services. All other tasks related to the procurement of goods and services financed from the MWWP Fund are a responsibility of the management contractor. These tasks include:

- Preparation of the specifications and procurement request;
- Announcement of the tenders (after approval by the CMU);
- Co-signing of the contract (jointly with the CMU);
- Supervision of work and services delivered under the procurement contracts;
- Final acceptance of the goods and services delivered under the procurement contracts and preparation of the Act of Acceptance.

¹² Updated project information document for Armenia Municipal and Wastewater Project, dated 4 May 2004.

¹³ Appendix 5 – Procurement policies – Attachement 2, Page 6.

The Contract Implementation and Procurement Committee is responsible for the receipt and evaluation of bids and the subsequent award of contracts and the management contractor bears the responsibility for the fairness and transparency of the procurement process.

The tasks assigned to the management contractor are partly in contradiction with the responsibilities of the PIUs (which in this contract acts as the CMU) as defined by the Armenian legislation. Government Resolution No. 765, mentioned earlier, specifies the main tasks of a PIU. These functions include: project coordination, preparation of a schedule and estimation of the financial envelope for the works to be performed within the framework of the project, preparation of the ToR for tenders, organisation of tenders, analysis and evaluation of bids submitted to the tenders, preparation of plans for disbursement of the grant or loan money under the respective project.

In the case of this management contract, it is SAUR, the management contractor that is responsible for carrying out all these tasks. This inconsistency between the contract and the legislation in force results in confusion and overlapping of responsibilities. One main consequence of this overlap is a slower procurement process; some tasks are performed twice, others are still controlled by the PIU although contractually they are a responsibility of the management contractor. These legal contradictions result in delays in the implementation of the investment programme. This is a particularly sensitive issue as the duration of the contract is relatively short (4 to maximum 6 years).

Recommendations

The contradictions between the contract requirements and the national legislation clearly show the need to carefully check the contract for compliance with the law in force. Every discrepancy can be a source of further misunderstandings or conflicts between the parties. In AWWC case, this discrepancy partly explains the delays in the investment programme implementation.

Thus, the main recommendations include:

- Before the finalisation of the contract, a panel of legal experts could be appointed to carefully review the contract and identify any potential discrepancies between the contract specifications and the national legislation.
- The Government and the World Bank should work jointly to seek to improve the efficiency of the procurement procedures when performance-based contracts are involved. They should ensure that the CMU work in accordance with the contractual obligations.

6. Contract enforcement and conflict resolution mechanisms

Presentation and analysis

The contract enforcement and conflict resolution mechanisms are a key point highlighted in the OECD's *Guidelines for Performance-Based Contracts*. This issue is extensively regulated in the management contract. Any dispute arising from the contract will be settled amicably or by arbitration. The procedure to follow in case of significant technical and financial disputes between the parties includes:

- Resolving the conflict by referring to the independent auditor. Within two months after the identification of a problem, the auditor should make a proposal to the parties on how to resolve the problem;
- Involving one or several (a panel of) arbitrators, if the proposal made by the independent auditor does not resolve the conflict. The arbitrator or the panel of arbitrators is selected jointly by the two parties involved, or, if they fail to agree on the nomination, by the International Chamber of Commerce (as a solution of last resort).
- In addition, the contract requires that the arbitration procedure should follow international rules (United Nations Commission on International Trade Law (UNCITRAL)¹⁴.

Recommendations

The inclusion of the disputes arbitration procedure in the contract is an important point. The procedure is designed in line with good international practices. However, given the number of challenges facing the operator, the formal conflict resolution mechanisms are a necessary but not always sufficient condition to effectively resolve conflicts of interest. The willingness of the parties to cooperate and to find solutions is equally important.

7. Personnel management

Presentation and analysis

Matters related to staff management are well regulated in the contract. The management contractor is responsible for the management, supervision and control of the company's staff. This includes the:

- day-to-day direct supervision and control;
- evaluation of the performance of the company's staff;
- hiring, firing, demotion and any disciplinary action of the company's staff;
- determination of the rates of pay, the benefits and merit payments.

In addition, the management contractor is obliged to submit to the Company Management Board an annual human resources plan that describes its personnel management, organisation, remuneration, and supervision policy. Six months after the start of the contract, the management contractor should also propose a training and development programme that has to be implemented throughout the contract duration. However, the current employment contracts do not specify the employees' responsibilities.

The management of the company's staff by the management contractor has led to a reduction in the number of employees (from 2 600 employees at the start of the contract in 2004 to 1 770 at the end of the second quarter of 2007).

¹⁴ The UN Commission on International Trade Law (UNCITRAL) was established by the UN General Assembly in 1966 "to promote the progressive harmonization and unification of the law of international trade." In 1985, it drafted the UNCITRAL Model Law on International Commercial Arbitration. Agreements which cite the UNCITRAL Arbitration Rules may be bound to this form of dispute resolution.

The list above (direct supervision, evaluation of performance, hiring/firing and determination of wages) clearly shows that the management contractor is able to manage the company's staff without any external interference. The fact that the contract allows a complete management of the operations staff without any external interference is valuable as it gives the management contractor the tools to achieve some of the objectives set in the contract (management efficiency).

Recommendations

The management contractor has been particularly successful in improving the financial performance of the company and achieving more financially sustainable operations. This has been partly due to the training of staff in modern management practices. The obligation (specified in the contract) to train the staff helps meet the requirements of maintaining good operating practices beyond the term of the contract. However, the operator should aim at:

- Specifying the employees' responsibilities in their individual contracts as this could contribute to improving the operational efficiency of the staff and of the company.

CHAPTER 4. CONCLUSIONS

1. Major findings

This management contract has been under implementation for 3 years. It is well balanced between the necessity to protect the management contractor from risks (through a fixed compensation) and the need to achieve performance objectives. At the design stage, the contract benefited from the government's experience with a previous management contract for the Yerevan water utility (2000 – 2005). However, the implementation phase has revealed a number of difficulties which can also serve to draw lessons for other countries in the world. Some of these major findings from the review are:

- Challenges to implementing the contract because of inconsistencies between the law in force and the contract and specifically with regard to the exemptions of the payment of water pollution charges;
- Unreliability of baseline data (used to assess the performance of the operator and thus its variable fee);
- Lack of robust evaluation of assets and in particular, before the start of the contract;
- Development of a mechanism to help create a sound financial basis for AWWC which has actually resulted in problems related to accounting and customers management;
- Accumulated operational deficit of the contractor as a result of not being fully compensated by the Ministry of Finance and Economy;
- Performance of the contract monitoring function by a PIU (instead of a CMU pursuant to the contract) which has led to confusion over the responsibilities of different stakeholders involved in the procurement process and related delays with the implementation of the investment programme;
- Slowdown of the contractor's operating activities due to administrative obstacles.

2. Summary of good practices

The experience with a previous management contract with an international operator has been taken into account during the design stage of the current contract. The review identified a number of good practices with regard to both the preparation and implementation phases of the contract. Some of the major best practices identified are:

- The contract was designed with the help of an international consultant supported by a team of local consultants which has improved the overall quality of the contract;

- The performance of the contractor is assessed on the basis of a limited number of indicators (25) and its incentive compensation is calculated taking only 4 indicators into account;
- The time limit for the delivery of the first investment programme, initially designed by ICEA and the CMU, has been extended and made sufficient to allow for a more precise evaluation of the company's investment needs;
- The contracting authority has tried to create conditions to ensure the company's sound financial position at the start of the contract. In AWWC's case, a new company whose role was to manage AWWC's unusable assets and long-term customer debt was created for this purpose. The actual implementation of this solution has turned out to be extremely difficult;
- The contractor has been given full responsibility for managing the company's personnel, with no undue influence from the contracting authority. It protects the contractor from political and external interference in its operational management;
- The contract requires the designation of an independent technical auditor to monitor the achievement of some of the main performance indicators;
- The tariff-setting methodology divides the tariff into three parts: tariff for water supply, for wastewater collection and for wastewater treatment. Each level of service is invoiced separately in order to avoid hidden cross-subsidisation;
- The contract includes a well-designed dispute arbitration procedure.

3. Proposal for improvements

3.1. *Improving the attractiveness of the country for performance-based contracts*

The respect of the provisions of the contract and the rule of law are key in ensuring the country's credibility to private operators. When entering into a public-private partnership, international companies need strong guarantees from national authorities that the contract will be enforced. In AWWC's case, this concerns in particular the payment of the compensation of the operational deficit to the company.

- In general, in cases of disagreements which are largely caused by administrative contradictions, the Company Management Board should be actively involved in the solution of the problem. The Board is a very useful body which can and should provide support in resolving administrative conflicts.

3.2. *Improving the performance-based contract*

a. *Improvements related to the contract preparation stage*

The two major issues identified as part of the preparations of the contract are the improvements related to the legal and regulatory basis and the approaches to creating a sound financial basis for the new management contractor at the start of the contract.

Regulatory context

- The contract requirements should be better harmonised with the country's legal and regulatory acts. Every discrepancy can be a source of misunderstandings or conflicts between the parties. A legal consultant (a firm or an individual) with sufficient qualification and good reputation could be hired to carefully review the contract and identify any potential legal contradictions before the contract is actually signed.
- Whenever possible, the baseline values should be determined in close cooperation with the previous operator. As the previous operator has the best knowledge of the technical and economic situation of the company prior to the start of the new contract, it should be able to advise on the most appropriate methodology that should be used to determine the baseline values.
- If the operator is granted exemptions or postponement of the payment of certain charges or taxes, the contract should spell out the conditions under which such derogations are made. If payments have to be made, the contract should clearly specify who should be responsible for these payments. As a matter of principle and to the extent possible, exemptions should be avoided as they may create perverse incentives for the operator.
- Building all costs in the tariff is the only sustainable long-term solution. If pollution charges are built into the tariff, the regulator needs to ensure that operators have sufficient incentives to reduce pollution. Investment, operating and maintenance costs for reducing pollution, should be gradually built into the water tariff. This should go hand in hand with increased investments in wastewater treatment facilities.
- In case a decision is made to incorporate pollution charges into the tariff, the government may consider channelling the proceeds from such charges to a special fund for the rehabilitation of the existing wastewater treatment facilities for a certain period of time (6-7 years). This would create some incentives for the water company to improve these facilities as well as help reduce the dissatisfaction of customers who will be forced to pay higher water bills. In such a case, however, the government should agree with the company on a clear investment programme to spend these resources and should closely monitor their disbursement in accordance with an agreed plan.
- The issue of increasing tariffs should not be confused with the issue of poor people not being able to pay their water bills. The two issues should be dealt with separately. In order to reduce the company's operational deficit and ensure access of socially vulnerable people to water services, the government could develop and put in place a programme for poor families who cannot afford the tariffs.

Creating a sound financial basis for the company

- In order to cover initial operational expenses (salaries, energy expenses, etc.) at the start of the contract, the government should create an "Initial Costs" Fund. This fund could be financed by the public budget or by IFIs/donors involved in the financing of the investments. Part of this fund could be allocated to the payment of the initial operational costs as this was done to cover salary arrears. Alternatively, other donors' support could be sought.
- Before a contract is signed, an inventory of all assets and liabilities should be carried out. The valuation of assets should be as accurate and comprehensive as possible. Such a review could

be financed with donors'/IFIs' support. This task is particularly important to implement as it can also be beneficial for determining investment needs.

- With regard to unusable assets, the government should aim to set up a public commission (consisting of representatives of different relevant public institutions) which will decide which assets to classify as unusable (including the selection criteria for defining such assets) and their selling price. This will ensure the transparency of the process.
- The split and transfer of customer debts to a new company should be carefully considered against all potential costs that will be incurred by the operator, the contracting authority and the public purse. In AWWC's case, this transfer created havoc in the customers database and led to problems with accounting. The creation of a new company should be favoured in lease contracts rather than management contracts.

b. Improvements related to the contract contents

Performance indicators are the heart of the contract. In this contract, a relatively small number of indicators were used compared to the previous management contract. However, there have been problems related to the measuring of the indicators as a result of poor quality of data.

To minimise some of the problems related to both baseline values and further calculations, the indicators should be more carefully selected. To select indicators, the following criteria could be applied:

- ✓ Easy measurement (this regards particularly the continuity of service measurement);
- ✓ Existence of sufficiently reliable data for the calculations (in terms of completeness, accuracy and consistency of data).

The baseline values are critical as they are used to calculate the performance incentive compensation (bonus) of the contractor and, in some contracts, the penalties. When possible, the baseline values should be determined in close cooperation with the previous operator in order to obtain data as accurate as possible. The previous operator has the best knowledge of the technical and economic situation of the company prior to the start of the new contract. In many cases, the previous operator also knows the most appropriate methodologies that should be used to determine the baseline values.

- At the end of the management contract, the operator should be required to prepare another baseline report, as precise as possible, which can then be used as a basis for the design of future performance-based contracts.

c. Improvements related to the contract implementation

Two major issues where improvements to the contract implementation are needed have been identified: (i) with regard to the selection of the technical auditor and (ii) with regard to the monitoring and procurement functions of the CMU.

The technical auditor plays a key role in contract monitoring (especially the performance evaluation of the management contractor). Therefore, the process of its selection should be carefully carried out. The auditor should not be selected on the basis of the "best price" criterion only. The best financial offer does not ensure sufficient technical expertise (mainly because of the lack of financial resources to perform its tasks correctly).

- The technical background and the methodologies proposed to evaluate the contractor's performance should be at the heart of the selection process. In addition, the contract should require that these methodologies should be agreed upon by all major parties involved in the monitoring of the contract.
- Most importantly, the methodologies used to calculate the baseline values and the performance indicators at a later stage should be exactly the same in order to avoid any methodological discrepancies during the implementation stage.

Moreover, the Government and the World Bank should work jointly to seek to improve the efficiency of the procurement procedures when performance-based contracts are involved. They should ensure that the CMU work in accordance with the contractual obligations.

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ANNEXES

Annex I: Socio-economic indicators for Armenia

	2000	2001	2002	2003	2004	2005	2006	2007
GDP (USD mln)	1 912	2 118	2 376	2 807	3 573	4 903	6 387	7 802
GDP (% change, real terms)	5.9	9.6	13.2	13.9	10.5	14.0	13.3	11.1
GDP per capita based on PPP (current international dollars)	1 965	2 607	3 006	3 498	3 936	4 530	5 177	5 769
Population, total (million)	3.80	3.21	3.21	3.21	3.24	3.32	3.39	3.47
Population, urban (% of total)	65.1	64.9	64.7	64.5	64.3	64.1	64.0	..
Consumer price inflation (average, %)	-0.8	3.1	1.1	4.7	7.0	0.6	2.9	3.7
Unemployment (annual average, % of labour force)	11.7	10.4	10.8	10.1	9.4	8.1	7.4	..
Workers' remittances & compensation of employees, received (% of GDF)	4.6	4.4	5.5	24.4	22.7	19.2	18.3	..
Current account balance (USD million)	-278	-200	-148	-189	-162	-204	-290	-242
Current account (% of GDP)	-14.6	-9.4	-6.2	-6.7	-4.5	-4.2	-4.5	-3.0
Trade balance (USD million)	-463	-420	-369	-434	-458	-588	-896	..
Gross capital formation (% of GDP)	18.6	19.8	21.7	24.3	24.9	29.7	30.4	..
External debt (% of GDP)	45.0	42.8	43.2	63.7	52.2	38.0	32.0	..
External debt (% exports of goods and services)	192.5	167.9	147.1	197.9	189.7	140.6	143.9	..
Foreign direct investment, net inflows (% of GDP)	5.5	3.3	4.7	4.3	6.1	5.2	4.5	..
Aid (% of GNI)	11	9.1	11.9	8.6	7.0	3.9	..	..

Source: EBRD, Transition Report 2007; IMF, World Economic Outlook Database, October 2007; World Bank, World Development Indicators Database, 2007.

Annex II: Armenian water sector indicators

	2001	2002	2003	2004	2005	2006
Water abstraction from water resources (million m ³)	1 726	1 733	1 976	2 803	2 342	2 827
Waste water discharge	..	237	349	346	340	363
Total water consumption	1003	1312	1430	1782	1905	1991
% consumption for households	10.0	8.3	6.9	4.4	3.6	5.1
% consumption for industry	9.0	6.6	15.5	9.9	3.7	4.8
% consumption for agriculture	81.0	85.1	77.6	85.7	92.7	90.1
Access to improved water supply (%)	..	92	..	92	..	..
Rural areas	..	80	..	80	..	..
Urban areas	..	99	..	99	..	..
Access to improved sanitation (%)	..	84	..	83	..	..
Rural areas	..	61	..	61	..	..
Urban areas	..	96	..	96	..	..

Source: National Statistical Service of the Republic of Armenia, Yearbook 2007: Natural Resources and Environment: <http://www.armstat.am/Eng/StatData/>; United Nations Statistics Division, Common Database: <http://unstats.un.org/unsd/databases.htm>

Annex III: Contract summary table

General provisions	
Award date	21 July 2004
Type of contract	Management contract
Duration and possible extension	4 years with a possible 2-year extension
Contracting authority	Armenia Water and Wastewater Company
Operator	SAUR
Scope of the contract	
Coverage area	10 marzes (a marz is an administrative region) – 700 000 inhabitants and around 260 000 households (2001 data)
Types of operations	Operations covered by the contract are water supply and wastewater collection and treatment
Service operation and monitoring	
Operator's obligations	The operator has full responsibility for the management, operations and maintenance of the water and wastewater system in the service area
Types of subsidy	Two kinds of subsidy: <ul style="list-style-type: none"> • For covering the Company's operational deficit (financed by the Ministry of Economy and Finance) • For financing of investments (financed by the International Development Association (World Bank) and the Armenian Government)
Maintenance/repair and new investments	
Responsibility and financing of the maintenance/ repair investments	The operator is in charge of the maintenance and repair works. Costs are financed through the tariff and government subsidies
Responsibility and financing of new investments	The operator is in charge of designing and implementing urgent investments. Costs are covered by the Municipal Water and Wastewater Project Fund (financed by the IDA (World Bank))
Financial provision	
Remuneration of the parties	The operator is remunerated through: <ul style="list-style-type: none"> • a fixed fee • a performance incentive compensation (variable fee)
Tariff structure and conditions for revision of the tariff	The tariff adjustment shall be evaluated and proposed by the contractor. The adjustment is then approved by the Company Management Board before submission to the Public Services Regulatory Commission (PSRC). Final approval is made by the PSRC
Control and reporting	
Control by the authority	Control is performed by a CMU (body of technical experts appointed by the government to supervise the contract and advise the Company Management Board)
Reporting by the operator	Reporting deliverables mainly consist of quarterly and annual reports reviewed by the independent technical auditor. The annual reports include information on the performance indicators
Independent technical auditor	An independent technical auditor monitors the company's

	performance indicators and calculates the performance incentive compensation of the contractor
Guarantees and sanctions	
Guarantees	Not applicable
Arbitration	<p>1) The first step is to refer to the independent technical auditor to try to solve a conflict</p> <p>2) If a resolution of the conflict cannot be achieved, the dispute shall be submitted to another arbitrator or an arbitration panel</p> <p>Arbitration is made under the United Nations Commission on International Trade Law (UNCITRAL)</p>
Financial penalties	No financial penalty is planned in the contract. However, the management contractor does not get the performance incentive compensation if it fails to achieve its objectives
Emergency measures	<p>In case of “Force Majeure”, the contract specifies that:</p> <ul style="list-style-type: none"> • the management contractor is not considered responsible of failure to fulfil its obligations • the contract period can be extended • the management contractor must receive its fixed fee during the Force Majeure period
Responsibilities of the operator	
Insurance obligations	Not applicable
Organisation of the service	
Management staff (i.e. operator’s staff)	The management contractor shall provide all administration, accounting, personnel, commercial, economic, financial, technical, design and operations and maintenance expertise needed to perform the service
Company’s staff	<p>The management contractor is responsible for:</p> <ul style="list-style-type: none"> • hiring, firing, lay-off, demotion or disciplinary action of the company’s staff • determining the rates of pay of staff and benefits • day-to-day direct supervision and control of staff, organisational structure of staff, assignment of various responsibilities and tasks to staff
Assets of the service	
Transfer of the assets at the beginning of the contract	<p>No transfer from the company to the operator (management contract)</p> <p>Some assets (unusable) were transferred from AWWC to a new company created to sell these assets in order to reimburse part of the company’s debts</p>
Fate of assets at the end of the contract	Not applicable

Annex IV: Set of performance indicators used in the management contract

1.	Weighted average number of daily hours of drinking water services	14.	Ratio of water volume billed on the basis of metering to the total metered and billed volume
2.	Percentage of individual subscribers billed on the basis of metered consumption	15.	Average daily production per equivalent registered inhabitant at water catchment levels
3.	Weighted average water bacteriological safety compliance	16.	Average daily supply to distribution reservoirs per equivalent registered inhabitant
4.	Company's working ratio	17.	Ratio of metered final consumption (m ³) to water production at water catchment levels
5.	Percentage of cities with minimal daily hours of services	18.	Working ratio for branches with gravity systems
6.	Percentage of block apartment buildings with individual or common block meters	19.	Working ratio for branches with pumping stations or treatment plants
7.	Percentage of block apartment buildings under contractual agreement with the company	20.	Electricity cost as % of revenue collected in systems with pumping or treatment plants
8.	Revenue collected on domestic subscribers per registered inhabitant	21.	Amount of chlorine effectively used per equivalent inhabitant per year
9.	Collection ratio (excluding budget organisations)	22.	Total staff per 1 000 individual subscribers
10.	Percentage of subscribers with debt longer than 4 months	23.	Staff and assignment contractors total costs as % of collected revenue
11.	Average domestic metered consumption per metered registered inhabitant	24.	Electricity consumption
12.	Average price of m ³ metered and billed to domestic subscribers	25.	Percentage of water disinfected
13.	Growth of the total collected revenue (excluding budget organisations) from base year		

Annex V: List of people interviewed

State Committee of Water System, Ministry of Territorial Administration

Gagik Khachatryan, First Deputy Chairman

Ministry of Finance and Economy

Rubik Davtyan, Head of Department for Public Services Sector's Projects

Hrayr Yessayan, Head of Division, Programme on Water Sector

AWWC - SAUR

Patrick Lorin, General Director of AWWC and Contract Manager

Hayk Petrosyan, Advisor to General Director of AWWC

Jean-Philippe Sebe, SAUR, International Department

Arnaud Cochard, SAUR, Director of the Legal Service Department

Project Implementation Unit

Adibek Ghazaryan, Project Manager, Water Sector Development and Institutional Improvements

Technical Auditor

Dr.-Ing. Kajasn Toumanian, Resident Manager, Karl-Ulrich Rudolph

Water Resources Management Agency, Ministry of Nature Protection

Svetlana Vardanyan, Deputy Head

Edgar Pirumyan, Head of Division, Water Resources Policy and Analysis Division

Public Services Regulatory Commission

Mushegh Koshetsyan, Commissioner

Garnik Balyan, Head of Technical Monitoring and Expertise Division

Hrachya Hakobyan, Deputy Head of Legal/Licensing Department

UNDP, Armenia

Armen Martirosyan, Portfolio Manager, Environmental Governance

Independent consultant

Richard Walking