PRIVATIZATION OF SOCIAL POLICY OF WATER SUPPLY IN THE SOUTH CAUCASUS: A BOOSTER TO REGIONAL DEVELOPMENT OR "STEALING WATER FROM THE POOR"?

1. Introduction

It is axiomatic that water development projects, by their very nature, will have impacts in and around the regions they are located. The question, thus, is not *whether* water management projects can affect regional development, but rather *how* a water development project can be planned, implemented, and managed from the very beginning in order to maximize net benefits for regional development (Biswas et al. 2004).

Provision of reliable and clean water supply (WS) to domestic, commercial, and industrial consumers is an important issue since the world is rapidly becoming more and more urbanized. It is particularly relevant to the South Caucasus region, which consists of three former soviet countries: Armenia, Azerbaijan and Georgia.

At a certain stage, industrial growth and the attendant employment opportunities may become constrained, unless the consumers receive the appropriate quantity and quality of water they need (Biswas et al. 2004). If adequate water supply is not available to consumers they will face the following problems:

- Increased monetary costs for those who lack access to piped water. This refers to the money paid to private vendors, or the costs of sinking, equipping and maintaining a well.
- Increased time and physical effort needed in collecting water. The burden of fetching water the source of which is frequently located outside of the house, in some cases 200 meters afar may goes to the expense of income-generating activities or education for school-aged girls.
- Reduced water consumption levels. The more time, effort and money is spent to get water the less is its consumption.
- Increased health burdens. Inadequate water quality and under-provision of water incurs great public health danger whereas the absence of collection and treatment of sewage is the primary source of infectious diseases in the town.

- Economic costs in terms of lost productivity. As a result of disease the labor productivity drops, resulting in less GDP produced and less income generated (Mukhtarov 2005).

Precisely due to the above mentioned effects the poor municipal WS services are among the major obstacles to regional development in the South Caucasus. The infrastructure is in a dire need for reconstruction and expansion, and the policy has proven to be inappropriate (ADB 2004).

As a solution International Organizations, led by the World Bank have been actively promoting the policies oriented at private sector participation (PSP) in the sector. However, PSP policy applied in Africa, Asia and Latin America has proven controversial and has induced social conflicts sometimes with violence and victims, as it happened for example in Cochabamba (Bolivia) in 2000. The main concern associated with PSP in related to so-called "commodification" of water likely to occur after privatization. "Commodification" means treatment and allocation of water like any other good – only to those who can afford it (Barlow and Clarke 2001, Hall 2000). That is why the opponents of PSP in water supply sector have labeled it "stealing water from the poor".

This study aims to analyze prospects for PSP in the South Caucasus, whether it would have positive impact on regional development, and if yes, what the key factors are that would ensure PSP to be a booster to regional development rather than "stealing water from the poor". The finding of the study are highly important not only for the countries in the South Caucasus, but also for other Newly Independent States[1] and countries in the Central and Eastern Europe which consider PSP as a means of urban WS sector reform.

2. PSP Involvement in WS services: argument for and against

One of the most hotly contested issues in the contemporary Public Sector discourse is about the role of the private sector in the management of public goods, to which water supply belongs.

[1] These are the states that gained their independence after disintegration of the Soviet Union in 1991.

The main argument for PSP stems from the currently observed failure of the public sector to effectively manage the WS infrastructure mostly due to the following problems (Johnstone and Wood 2001):

- Gamekeeper-poacher problem. With the government as both owner and provider, the manager of the utility is subject to a number of conflicting influences, which it may not be able to balance if clear priorities are not established.
- Flexibility and autonomy. At the level of operations, bureaucracy is one of the main constraints in the public sector, while it is not the case to the same extent in the private sector.
- Absence of competitive discipline. Since public utilities are not subject to the disciplines of the market they have less incentives to minimize costs (and maximize tariff collection rates), and provide services in a manner that consumers demand.
- Access to capital. Private companies can mobilize capital cheaper and faster than the public. They may also be better placed to access technical skills, such as human capital (Johnstone and Wood 2001, Nickson 1996, Ingram and Kessides 1994, Idelovitch and Ringskog 1995, and Mody 1996).

However, there are serious social and environmental concerns related to PSP in WS sector. The main social concerns are rooted in an inherent conflict of private interests (maximization of profits) with social and ecological considerations in water development projects (Faruqui 2003). For example, with costs and prices of water provision higher and demand lower in poorer neighborhoods, private companies are unlikely to have sufficient incentive to improve access in these areas (Johnston and Wood 2001). The other concern is related to affordability of water after privatization (Blatter and Ingram 2001).

A private company being primarily interested in cost savings and maximization of sales could cut spending on maintaining good quality of water (Faruqui 2003).

Among environmental concerns there is lack of incentives of private suppliers to conserve water, as they are interested in increased consumption rates and sales of their services. For example, excessive abstraction took place in China, South Africa, England and Wales and caused in some cases drying up of the streams (Faruqui 2003).

Probably disappointing for the participants in the debate, the problem is rooted not in *who* owns and operates, but in *how one* owns and operates the system. Efficient utilities

are those that are run as self-sustaining commercial enterprises accountable to people. Whether ownership is public or private is less important (Faruqui 2003, Johnestone and Wood 2001).

There is a list of universal principles of WS that have to be adhered to. Gleick et al. (2002) describes these principles as follows:

- *Continue to manage water as a social and environmental good.* This means that all population within the scope of a contract should be provided with basic water requirements of 50 l/capita/day (Johnstone and Wood 2001); natural ecosystems should be protected, and subsidies provided for the poor to afford minimum water requirements (Faruqui 2003).
- *Use sound economics in water management.* This means that the price of water should reflect all costs and be designed to encourage water conservation. Subsidies should be provided primarily to the poor without altering water price not to decrease conservation incentives. At the same time it is important to permanently revise the subsidies system to ensure that they reflect needs of the poor and other goals of urban water policy.
- *Maintain strong government regulation and oversight.* Governments should retain or establish public ownership or control of water sources. Public agencies should monitor water quality. Responsibilities of each partner should be precisely determined. Clear dispute-resolution procedures should be developed prior to privatization. Independent technical assistance and contract review should be standard. Negotiations over privatization contract should be open, transparent, and include all affected parties.

If these principles are respected in the process of reform PSP arrangement will be successful. However, the main problem is that with increase in regulation and environmental and social standards of policy, the attractiveness of the sector for private investors drops. Therefore the right balance of combination of these principles is required in each specific place with respect to the general principles outlined above.

3. Water supply sector in the South Caucasus and prospects for PSP

General characteristics of the WS sector in the South Caucasus

As a heritage from the Soviet Union all three countries in the region (Armenia, Azerbaijan and Georgia) have had quite a developed system of WS services coverage in comparison with other countries with similar level of GDP per capita (WB 2000). Nevertheless, water system coverage does not mean access to water because settlers living on higher floors in apartment blocks have to invest in pumps and water tanks due to the low water pressure and availability of water only for 2 to 4 hours a day, and sometimes even not at all. Moreover, for more than 20 years the infrastructure has not been renovated and currently is in a dire need of replacement (ADB 2004). As for management techniques – a centralized system inherited from the soviet past dominates the sector and utilities are mostly publicly owned and operated. The section below discusses the specific features of each country in the region:

Armenia

Drinking water coverage is 85% on average, whereas it is 99% in Yerevan, and 56% in the small cities. All urban and about 20% of rural areas are equipped with wastewater collection and treatment systems. In contrast to other countries in the region, there is metering of consumption in almost 50% of connections, whereas it is 80% in Yerevan. Nevertheless the physical state of the infrastructure had degraded to the level of unaccounted for water to reach 65% as an average for the country.

The sector structure is quite different from the other two countries: the capital Yerevan has its separate municipal water company, which has been under a management contract funded by a World Bank loan since 1999 with a consortium of Acer and Company Armenian Utility (led by ACEA s.p.a with C.Lotti and Associati and Wrc.) The MC expired on April 30, 2005 and the new loan is prepared to continue the management contract experience. As for the 34 municipalities and 490 rural communities outside the capital – they are managed by the state company Armvodokanal. Armvodokanal has been under management contract with Saul since December 2004. Recently one utility from the Armavir region (Nor Akunk) split from Armvodokanal in order to pursue the loan from KfW.

The government is interested in development of the sector and in attracting foreign expertise to sector management. The entire sector is now managed through management contracts, although financed by subsidized loans (World Bank/IDA and KfW with zero interest and 40 year repayment schedule). It is unlikely that water tariffs will be increased dramatically in the near future; however, the tendency to cost recovery of water operations will be maintained (Global Water Intelligence 2005).

Georgia

The water supply coverage is 86% of the population (99% for Tbilisi, 82% for large cities and 56% for small towns. Unaccounted for water[2] is 45%. The water sector is in deep financial crisis, but at the same time, the new government is reluctant to increase tariffs, fearing social unrest. Most finance comes from international donors and subsidized loans.

A limited liability company/association of the Georgian water utilities, Gruzvodokanal is the primary organization in the Georgian water and sewerage sector and provides technical and advisory assistance to all municipal utilities and minor water suppliers in small towns and large villages. There are 85 municipal water utilities in the country, and 41 cities have wastewater collection systems. Municipalities are fully in charge of establishing water tariffs (Global Water Intelligence 2005).

The WS sector is in public hands and the government is hesitant to agree to management contracts for communal services after the failure of the AES-led management contract for Tbilisi's electricity system. According to predictions of Global Water Intelligence (2005) there will be no significant projects undertaken in the country in the near future due to a reluctance to borrow and a fear of a complex water tariff reform. Donor assistance will dominate the development of the sector. The sector is centralized; cross-subsidization is very common and cost-recovery is not even formulated as a policy goal. There is no long-term vision that would articulate the direction of sector development or would connect it with other water resources issues, policy is short-term and emergent or "blind wandering" as I would call it. The WS sector is absolutely

[2] Unaccounted for water is the index used to measure water lost in the pipe-lines due to various reasons (leaks, stealing etc.)

unattractive for private investors/operators, whereas the government is hesitant to give the green light to PSP as mentioned above (Global Water Intelligence 2005).

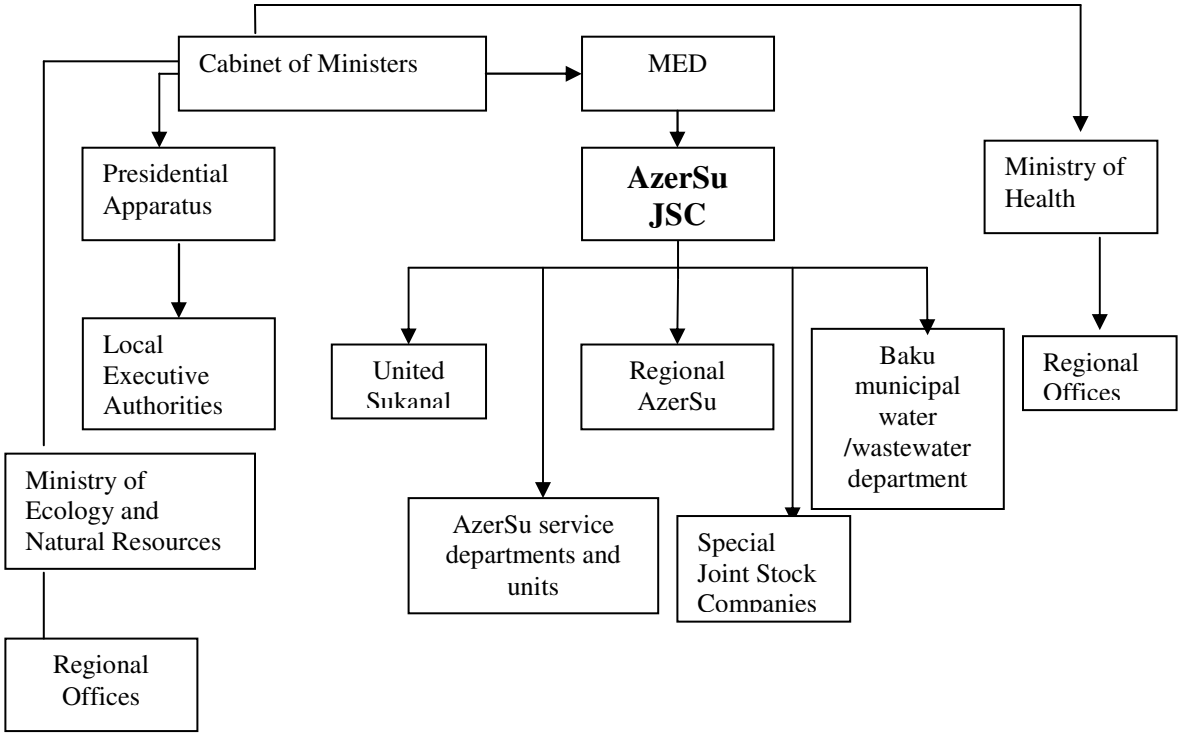
Azerbaijan

Water supply coverage is 80% of the population (piped connections 70%, Baku 96%, areas outside Baku 56%) but most of the infrastructure is in a dilapidated state and needs to be renovated. According to different estimates unaccounted for water is 65 to 75%. As for sewerage connection, the country average is 44%, whereas it is 86% in Baku, and 36% elsewhere (Global Water Intelligence 2005).

The poor state of WS infrastructure has its roots not so much in deficient design and use of poor materials as in inappropriate water policy, paying little attention to maintenance and rehabilitation of the systems (WB 2000).

In June 2004 the structure of WS sector in Azerbaijan was changed by the Presidential Decree# 252 (PD). If in the past WS of Absheron Peninsula (Baku and Sumgait cities) was separated from WS of small cities and rural areas, then now they have been consolidated within a newly created organization called AzerSu JSC. In addition before the PD water supply function was separated from wastewater collection and treatment, whereas after the PD these functions have also been consolidated. Structurally, however, AzerSu is an agglomeration of the Absheron Regional Water Company (established in 1995) and Azersukanal, an agency that used to serve water everywhere else in the country. Rural water provision is delegated to community level, but AzerSu is in charge of development of large investment schemes and development programmes for community water services. While AzerSu is an operator of the facilities, the assets are owned by municipalities and are to remain in municipal ownership according to the national Water Code.

Graph 1. WS sector structure in Azerbaijan (Mukhtarov 2005).



Any water supply policy should be based upon a comprehensive strategy, which would a) formulate the needs of the water sector in a given situation; b) set the goals of water supply; c) prioritize goals; d) show how to reach the goals under certain constraints. Currently Azerbaijan lacks a conceptual approach to water supply and (Mammadzadeh, Abiyev, Mammadov pers. comm., SECO 2003, WB 2000). It is not clear how to improve allocation of responsibilities in the sector and which principles should govern such an allocation. The government insists on maintaining a state monopoly on water services in the country through the Azersu JSC. The functions of AzerSu are essentially concentrated around the provision of water and sanitary services, and performing maintenance, repairs and associated minor construction works using its own personnel and materials.

Based on a review of policy documents and interviews it can be argued that the current water policy in Azerbaijan is being implemented according to the following principles:

1) "Blind wandering" when, in the absence of a strategic vision, the Government of Azerbaijan (GoA) responds only to urgent needs of the systems, being unable to foresee and prevent problems (WB 2000, SECO 2003).
2) Centralized management when water utilities are subordinated to and dependent on LEA and AzerSu. Municipalities and local communities do not participate in the management of WS services (WB 2000);
3) Supply-based management when there is ignorance of the population demand, wishes and needs (SECO 2003). Metering and conservation incentives are largely absent in Azerbaijani domestic water supply (ADB 2004).
4) Cross-subsidization of domestic water users at the expense of commercial and public organizations. Tariffs remain a politically determined issue (Mammadzadeh per. comm.).

After the PD in 2004 for centralization of the sector structure and the failure of the Management Contract for 25 years with Barmek Holding in the electricity sector (June 2006) both private sector and the government of Azerbaijan are reluctant to go for PSP in the near future. There are however, several previously designed projects, which stipulate PSP, however the hard process of negotiations over the institutional design of these projects has been on its way for several years (pers. comm.)

It is impossible to say beforehand whether conditions for successful PSP might be established unless a pilot study is made. Particularly for this purpose the German Development Bank (KfW) decided to carry out a pilot project with passing water supply services provision to the private company BerlinWasser in the Azeri town of Imishli. Analysis of this pilot project is of utmost importance both for academic and practical purposes of regional development in the South Caucasus. The next section presents the results of this analysis.

4. Case study of Imishli (Azerbaijan)

The town of Imishli is situated in the central part of Azerbaijan 250 km to the South-West of Baku (Figure 1). The main source of drinking water is the Araks river and the water supply infrastructure was built in 1968 for 10 000 people. In 2004 the population reached 36 000 and only 35% of the town dwellers had access to piped water supply before the project.

Graph 2. Imishli rayon (Mukhtarov 2005)

In 1997 the German Government signed with the Government of Azerbaijan (GoA) the Program on Assistance to Infrastructure Utilities of Azerbaijan. The assistance was supposed to be financed by a KfW soft credit. As the first stage of the program the water infrastructure needed to be rehabilitated and certain institutional changes undertaken in one of the secondary towns. The Second stage of the Program included rehabilitation of infrastructure and institutional changes in two bigger cities of the Kura-Araks Lowland: Sheki and Ganja, a project which already started in spring 2005 (SECO 2005).

The project aimed at both physical rehabilitation and institutional changes in management. The objectives of the project were stated in the Foundation Contract 2000, and the Lease contract, 2000 as follows:

1) reach water supply level when the main part of the population in Imishli (35 000) would have minimum supply of 50 l /d. This implies rehabilitation and expansion of the system and application of innovative approaches such as public standpipes and water trucks.

2) reach WHO standards of supplied drinking water (irrespective of whether piped water or truck delivered water)

3) reach 80% of collection rate

4) decrease technical water loss (leakage) to 30 %

5) reach recovery of operation costs (100%)

Strengths and failures of the project

As a result of the project 60% of the whole pipe network (21.6 km from 34 km) has been replaced by new cast iron and plastic pipes imported from Germany. The water coverage was extended from 850 households in 1998 to 1630 in 2005. Two mains that deliver water from the intake to the town have not been replaced, but washed. The chlorinating and pump stations have been built and two new wells drilled. However, the sewage system has not been dealt with in this project. Apart from physical renovation of the infrastructure, one of the project's main strengths is that it introduced the full pricing of water, and established metering.

It is possible to argue that the scope of the project was not sufficiently wide to cover all citizens for water supply and priorities have not been applied to investment allocation process as the result of which neither water coverage (objective 1), nor water quality (objective 2) were achieved.

However, the project failed to address 2 important issues: affordability of water to all and compliance of water supply services and drinking water quality to the WHO standards.

Affordability of the water supply services

Two tests have been made to check affordability: so-called macro-affordability and micro-affordability tests.

M*acro-affordability study* is calculated by dividing the average income of an Imishli dweller by the average amount he/she spends on water. This indicator equaled 1.4% which is well below the limit of 4% (set by OECD). Therefore, on the scale of average water price was perfectly affordable.

However, at the household level water proved to be unaffordable to all. This has been found as the result of a *micro-affordability study* which is a percentage of individual households' income spent on water expenditures. Those users that had no piped water supply and had to purchase it from trucks mostly (8 income decals out of 10) could not

afford water in necessary amounts. Plus, there are also users who have neither piped supply, nor trucks supply, those have to buy from local private vendors, and this appears to be unaffordable to all users.

Drinking water quality

Water quality appeared to be another important issue. Being outside of the strict regulatory control, the Imishli Water Company did not invest in the microbiology laboratory in Imishli and does not carry out routine monitoring of the microbiological quality of water. This heavily contradicts the WHO Guidelines (2003) since the most common and most dangerous source of water-borne diseases are microorganisms.

Naturally, it is easy to blame the Imishli Water company for the failure to ensure safe water according to WHO standards. However, there are deeper reasons for failure, which are as follows: 1) weak regulatory capacity of the Azeri Government, 2) inherent risks associated with the private company taking over monopoly of WS provision, 3) incomplete feasibility and assessment studies before the project and weak oversight of the investor - the KfW.

Lessons learned from the Imishli case study

There are three main lessons that have to be learned from the Imishli experience with PSP for further application in the Caucasus and FSU municipal water supply. These are as follows:

1. A private water company, even if managed by an experienced operator does not have enough incentives to provide good quality water and has a tendency to cut costs on it. There is an outcry for a strong regulator which can a) make information available to it and b) enforce the regulations.

2. Capacity of regulators, such as AzerSu (State Water Agency), Local Executive Authorities and Ministry of Health as regulators should be strengthened. AzerSu proved unable to ensure affordability of services to all, service delivery to all consumers, and the Ministry of Health failed to enforce water quality legislation and the contractual obligations of the company.

3. The role of donors should be more than simply financing, as sponsors they have a leverage that could be used for regulation.

The project in Imishli had a pilot character and was aimed to test a set of new principles of water utility management in the context of Azerbaijan. In the absence of consensus on the water sector strategy and the ways to implement the reform process it would be too optimistic to expect a project that was successful in all aspects.

However, the specificity of WS sector is that pilot experiments cannot pursue only the aims of capacity building and "testing hypotheses" as the stake of water supply is too high for this. Therefore, apart from piloting new approaches, improving WS services was aimed in the project. This aim, however, has been only partially accomplished within the project.

5. Conclusions and recommendations

Factors that determine success or failure of a PSP

The research has shown that a PSP involvement is a controversial tool heavily debated in the literature. The main concerns of PSP in WS are associated with the "monopolistic position of WS supplier" risks of negative social and environmental effects. In order to ensure the sustainability of a PSP involvement three main principles (factors) should be applied:

1. Continue to manage water as a social and environmental good;
2. Use sound economics of WS;
3. Apply strong regulatory oversight;

Even though it is quite difficult for governments to regulate PSP in WS, particularly those in the region of South Caucasus as well as Central and Eastern Europe, the literature review showed that it is also difficult to attract the private sector with long-term investment in these countries. This is because of the extremely high investment risks that can be classified as follows: economic (commercial risks), financial risks, political risks, environmental risks and capacity risks. All these risks need to be overcome in order to attract the private sector.

Current state of the WS in the South Caucasus in relations with PSP

Currently the WS sector of the South Caucasian countries suffers from two main problems: 1) deteriorated infrastructure and 2) institutional and managerial weaknesses. There is no conceptual approach to WS and it is unclear how responsibilities should be effectively allocated in the sector. This impedes adoption of an appropriate legislative and regulatory framework and creation of attractive investment climate for private sector investors/operators.

Recommendations

As the result of the study it has been identified that the models that would assist long-term goals of the WS sector of Azerbaijan, Armenia and Georgia are *concessions* and *BOOT contracts*. They offer both investment and institutional changes, ensure political autonomy of a utility and usually are 25 or more years in duration. However, due to the following risks neither concession nor BOOT contracts are possible at the current stage of the South Caucasus's development:

- the sector structure does not allow for economy of scale which is necessary for concessions;
- the absence of a sector strategy in Azerbaijan and Georgia creates unpredictability of future policy;
- uncertain legislation does not ensure investors' security rights and does not articulate tariff-setting mechanism;
- high political, financial, and environmental risks.

Currently the most urgent need is to elaborate WS sector strategies and agree upon the reform goals and instruments. The next priority is the development of an appropriate legislative and regulatory framework, with subsequent municipal capacity building and involvement of municipalities in decision-making of the water utilities.

A set of recommendations proposed for the particular case of Azerbaijan are given in the table below. These recommendations, being tailored for Azerbaijan, however, are highly relevant to Armenia, Georgia as well as to the Newly Independent States and countries in Central and Eastern Europe:

Table 1. Recommendations on the further reform of WS sector with the PSP prospects (Mukhtarov 2005).

Party / Recommendation	Municipalities/ Local users/ Local entrepreneurs	National Government	International Financial Institutions	National Non-Governmental Organizations/ Mass Media
1. Determine sector strategy	Intensify the dialogue between the stakeholders and learn from the experience collected and shared by the IFI-s; Find an optimal allocation of risks between the stakeholders through "trial and error" method.			
2. Target decentralization of the sector and build municipal capacity	Capacity building in order to take over water utilities in future	Commit for decentralization; Promote Public-Public Partnerships ; Create national forums for sharing experience	Organize regional workshops, design special training courses for municipalities	Promote the awareness of population about the importance of local participation
3. Sector structure that allows economies of scale	Creation of Municipal Unions To create economies of scale			
4. Explanatory work with the central officials			Through projects; Through special training in two areas: 1) raising awareness about the modern WS sector structure; 2) about appropriate management tools	
5. Development of an epistemic community (long-term)		Set new departments in Scientific Institutes; Address this issue in higher education curriculum;	Help in learning experience across the countries.	Provide communication of academia to public
6. Legislative reforms		Adopt a conventional "concession" law, include tariff-setting mechanism in legislation; indicate performance standards in legislation;	Promote guidance in legislative reforms.	
7. Build regulatory framework	Regulate utilities through access to	Set a multisector regulator that would be independent,	Regulation as a financing organization	Carry out monitoring of the

	participation and information	transparent and accountable to public;		WS projects and publish the results in press
8. Strengthening of regulatory capacity of the Government	See municipal capacity building	Public-Public Partnerships, experience technical equipment.	Help with training and Public-Public Partnerships.	
9. Ensure public acceptability of transition to cost-recovery and financial autonomy of water utilities	Provide information for targeted subsidies	1) Targeted pro-poor subsidies (innovative approaches) 2) Transition subsidies 3) Tariff increases should follow service improvements 4) Awareness raising among population on water as a commodity	Awareness raising campaigns	Awareness raising campaigns
11. Obligatory demand and WTP[3] studies for WS projects		Enforce as a regulator	Provide methodology	Monitor and spread
12. Share transaction costs for project design		Share costs/ provide guarantees	Share costs/provide guarantees	
13. Integrated River Basin Management System (long-term)	Coordination between agencies, joint planning and finding a mechanism for allocation of water resources for different needs with consideration of future demands.			

If these recommendations are followed in a flexible and adaptive way, there is a high chance that PSP policy in WS sector of the South Caucasian republics will significantly contribute to regional development and will not be labeled as "stealing water from the poor".

[3] WTP is an acronym for "willingness to pay"

References

Asian Development Bank, 2004. Report and recommendations of the president to the board of directors on proposed loans and technical assistance grant to the republic of Azerbaijan for the urban water supply project. (on-line) URL: http://www.adb.org/Documents/RRPs/AZE/rrp-aze-35087.pdf (consulted 19 of April, 2005).

Barlow, M. and Clarke, T. 2001. *Blue Gold*. New York: The New Press.

Biswas, A., Unver, O. and Tortajada, C. 2004. *Water as a focus for regional development.* New Dehli: Oxford University Press.

Blatter, I. and Ingram, H. 2001. *Reflections on water : new approaches to transboundary conflicts and cooperation.* Cambridge : MIT Press.

Bosch, C., Hommann, K., Sadoff, C., and Travers, L. 2001. Water, sanitation and poverty. In *Poverty Reduction Strategy Sourcebook: Water and Sanitation*. Washington D.C.: World Bank.

Brook-Cowen, P. 1997. The private sector in water and sanitation: how to get started. Washington D.C.: World Bank. Cited in *Private Companies and public water,* ed. Johnstone, N., Wood, L. 13. Massachusetts. Edward Elgar Publishing Inc. Birmingham. University of Birginham.

Faruqui, N. Balancing between the eternal yesterday and the eternal tomorrow: economic globalization, water and equity. In *Rethinking water management: innovative approaches to contemporary issues*, ed. C. Figueres et al. 41 – 69. Gateshead: Earthscan, 2003.

Figueres, C. 2003. Let's pump money in the water sector! In *Rethinking water management: innovative approaches to contemporary issues,* ed. Figueres, C., Tortajada, C., and Rockstrom, J., 199-228.Gateshead: Earthscan.

Finnerty, J. 1996. Project financing: Asset-Based Financial Engineering. New York: John Wiley and Sons. Cited in Figueres, C. Let's pump money into the water sector! In *Rethinking water management: innovative approaches to contemporary issues,* ed. Figueres, C., Tortajada, C., and Rockstrom, J., 199-228.Gateshead: Earthscan.

Foundation Contract 2000. Internal document of ImishliSu. Available in ImishliSu office in Imishli.

Gleick , P., Wolff, G., Chalecki, and L.,Reyes, R. 2002. *The new economy of water: the risks and benefits of globalization and privatization of fresh water.* Hayward: Alonzo Environmental Printing Co.

Global Water Intelligence. 2005. *Water Market Europe*. Oxford: Oxford University Press.

Gray, N. 1994. Drink*ing water quality: problems and solutions.* West Sussex: John Wiley and Sons Ltd.

Hall, D. 1999. Water and Privatization in Latin America (on-line). URL: http://www.psiru.org/reports/9909-W-Latam.doc (consulted 13 April 2005)

_____.2000. Water Partnerships: Public-public partnerships and "twinning" in water and sanitation (on-line). URL: www.psiru.org (consulted 10 May, 2005).

_____.2003. *Public services work* (on-line). URL: http://www.psiru.org/reports/2003-09-U-PSW.pdf (consulted 12 April 2005)

Hall, D. and Lobina, E. 2001. Water privatization in Africa: lessons from three case studies. (on-line). URL: http://www.psiru.org/reports/2001-05-W-Africases.doc (consulted 15 of April, 2005).

Hall, D. and Popov, A. 2005. Privatization and restructuring of water supply in Russia and Ukraine (on-line). URL: http://www.world-psi.org/Template.cfm?Section=Home&CONTENTID=5023&TEMPLATE=/ContentManagement/ContentDisplay.cfm (consulted 23 of April, 2005).

Idelovitch, E, and Ringskog, K., 1995. *Private sector participation in water supply and sanitation in Latin America.* Washington DC: World Bank.

ImishliSu, 2001. *Imishli su techizat konsepsiyaya aid hesabat.* (The report on the concept of Imishli water supply). Internal document of ImishliSu JSC. Available from the ImishliSu office in Imishli.

Ingram, G. and Kessides, C., 1994. Infrastructure for development. *Finance and Development,* 18:18-21. Cited in Johnstone, N., and Wood, L. *Private firms and public water,* 27. Massachusetts: Edward Elgar Publishing Inc., 2001.

Johnstone, N. and Wood, L. 2001. Regulation of social and environmental concerns with increased private sector participation n the provision of water and sanitation. In *Private Companies and Public Water,* ed. Johnstone, N., Wood, L. 21-45. Massachusetts: Edward Elgar Publishing Inc.

Lobina, E. 2001. Cochabamba – water war (on-line). URL: http://www.psiru.org/reports/Cochabamba.doc (consulted 16 May 2005).

Mamedov, R. 2000. *Vodniy Faktor: Politika Ustoychivogo Razvitiya* (Water: sustainable development strategy). Baku: Chenlibel Press.

Mammadzadeh, I. 2005. *Layihe Tehlili*. (Analysis of water projects). Baku: ASPI Conulting Engineering Inc.

Mody, A. 1996. Infrastructure delivery: new ideas, big gains, no panaceas. In A. Mody (ed.) Infrastructure delivery: private initiative and a public good. Washington DC: World Bank Press. Cited in Johnstone, N., and Wood, L. *Private firms and public water,* 27. Massachusetts: Edward Elgar Publishing Inc., 2001.

Moss, J., Wolff, G., Gladen., G., Guttieriez., E. Valuing water for better governance (on-line). URL: http://www.unilever.com/Images/Valuing_water_report_tcm3-8572_tcm13-5334.pdf (consulted 18 of April, 2005).

Mukhtarov F.G., 2006. Privatization of Water Supply and Sanitation in the South Caucasus: solution to a problem or "stealing water from the poor"? Caucasus Environment. 2 (15).

Mukhtarov, F.G. 2005. Private Sector Participation in Water Supply and Sanitation of the Secondary Towns of Azerbaijan. Master of Science thesis, Department of Environmental Sciences and Policy, Central European University, Budapest.

Nickson, A., 1996. Urban water supply sector review. Cited in *Private Companies and Public Water,* ed. Johnstone, N., Wood, L. 21-45. Massachusetts: Edward Elgar Publishing Inc. Birmingham: University of Birginham.

Organization for Economic Co-operation and Development, 2000. Global trends in urban water supply and waste water financing and management: changing roles for the public and private sectors (on-line). URL:

http://www.olis.oecd.org/olis/2000doc.nsf/c5ce8ffa41835d64c125685d005300b0/c125692700623b74c1256999005c9298/$FILE/00086209.DOC (consulted 12 May, 2005)

_____. 2003. Social issues in the Provision and Pricing of Water Services.) (on-line). URL: http://print.google.com/print?id=2ybZWCRBC0EC&lpg=17&prev=http://print.google.com/print%3Fq%3DSocial%2520issues%2520in%2520the%2520provision%2520and%2520pricing%2520of%2520water%2520services%26oi%3Dprint&pg=18&sig=ys5Idv0btUmueoyO4bcC-ovu04g (consulted 21 April, 2005).

Organization for Cooperation and Development in Europe/World Bank, 2003. Private sector participation in municipal water services in Central and Eastern Europe and Central Asia: facing a crisis of confidence in private sector participation in the water sector: measures to overcome obstacles to more effective PSP (on-line). Conference proceedings. URL: http://www.worldbank.org/watsan/PrivateSectorParticipationmeeting.htm (consulted 13 April 2005)

Presidential Decree # 252 "On improvement of Water Supply and Sanitation in the Azerbaijan Republic", Baku, 11 June 2005. Available from the Public Library named by Akhundov in Baku, Azerbaijan.

The World Health Organization 2004. Guidelines for drinking water quality, 3rd ed. (on-line). URL: http://www.who.int/water_sanitation_health/dwq/gdwq2v1/en/index2.html (consulted 08 June, 2005.)

_____.2003. Safe piped water: managing microbial water quality in piped distribution systems (on-line). URL: http://www.who.int/water_sanitation_health/dwq/924156251X/en/ (consulted 12 June, 2005.)