

Advantages of Public-Private Partnerships in the Management of Water Supply and Sanitation Systems

Khazhimetova Mavluda Mamasolievna

Senior Lecturer «Jizzakh Polytechnic Institute» Jizzak city, Republic of Uzbekistan

ABSTRACT: Today, the problem of water resources and their efficient use is topical in many countries of the world. Due to the geographical features of the country, this problem has a serious impact on the economy of the country. The Decree of the President of the Republic of Uzbekistan dated November 30, 2018 № PP-4040 "On additional measures for the development of drinking water supply and sanitation systems in the Republic of Uzbekistan" was published.

The essence of this decree determines the consistent implementation in our country of projects of construction and reconstruction of water supply and sewerage networks within the framework of state programs. In this regard, it was decided to further improve the quality of services in the sphere of water supply and sanitation, efficiency of the sector enterprises, attracting foreign direct investment, creating reliable sources of funding through the development of public-private partnerships.

KEY WORDS: Water supply, sewerage, implementation, investment, reconstruction, efficiency, current issues, public-private partnerships.

Water management and service organizations are divided into 3 types.

- Public organizations;
- Public-private partnership organizations;
- Private companies.

Despite measures taken, there is still a number of unresolved problems that hinder implementation of planned activities in the sphere of drinking water supply and sanitation. In particular, absence of unified system that provides input, storage, regular update and online monitoring of all necessary information related to metering devices of drinking water consumption as well as facilities of water supply and sanitation system is one of the reasons of increased water losses and costs. Inefficient use of water supply networks and facilities, as well as unreliable financing of modernization projects and drilling of fixed assets locally, leads to rapid failure of equipment and machinery. In the settlements, due attention is not paid to the construction of sewage systems and the connection of apartment buildings under construction to them. Insufficient introduction of modern forms and methods of management, low staff capacity does not allow effective management and operation of water supply and sanitation facilities. Today, the effective use of public-private partnership (PPP) relations in solving problems in such areas as water supply, domestic waste management, wastewater disposal is particularly evident as a solution.

In Uzbekistan, a number of works are carried out to improve the living standards of the population and develop local infrastructure. At the same time, the gradual introduction of the system of public-private partnership, based on global experience, allows to achieve the expected results. That is, the public-private partnership becomes the financial support of the government. This, in turn, makes it possible to improve the quality of services provided. Accumulation of large capital investments allows to provide large integrated structures in the sphere of water supply. Guarantees the manufacturability of the

process of production of drinking water and wastewater treatment, purchase, operation of energy-saving equipment, etc. Concession activities at water supply and sewerage facilities on the basis of PPP is one of the priority aspects of the targeted management of water resources of the world. The structure of public-private partnership companies includes the following structures:

- Complex of water supply facilities (water intakes, water treatment facilities, fresh water reservoirs, water towers, pumping stations, water supply networks).
- Complex of sewage facilities (sewage networks, pumping stations, treatment facilities, systems of treated wastewater return to water bodies).

Thus, as far back as in Ancient Rome, the construction and operation of the water supply system was carried out at the expense of the city administration, since meeting public needs and achieving the public good, the main goal of their public utilities. Today, in most developed countries, due to the increasing state budget deficit, growing demand for drinking water quality, industrial financing and urbanization, the functions of water services are transferred to private specialized companies. Below, as an example, is a table of the results of the 16 largest private companies in the world in terms of revenues and the number of consumers served in the last 2020.

Table 1 Performance of the 16 largest private water companies in the world by revenue and number of customers served

| The companies | The countries | Gross income (million U.S. dollars) | | Number of consumers (persons) | |
|---------------------|----------------|-------------------------------------|---------|-------------------------------|------------|
| | | 2019 y. | 2020 y. | 2019 y. | 2020 y. |
| SABESP | Brazil | 3 747 | 3 892 | 24 560 000 | 25 780 000 |
| SUEZ | France | 4 694 | 4 786 | 24 000 000 | 24 500 000 |
| Thames Water | Great Britain | 2 625 | 2 901 | 15 000 000 | 15 400 000 |
| COPASA | Brazil | 996 | 1 037 | 14 550 000 | 15 010 000 |
| American Water | USA | 2 879 | 3 011 | 14 000 000 | 15 000 000 |
| Grupo Agbar | Spain | 2 219 | 2 403 | 13 000 000 | 13 381 141 |
| Lyonnaise DE | France | 2 146 | 2 209 | 12 000 000 | 12 000 000 |
| ManilaWater | Philippines | 360 | 370 | 8 400 000 | 8 870 000 |
| Odebrecht Ambiental | Brazil | 646 | 646 | 13 200 000 | 13 200 000 |
| SANEPAR | Brazil | 846 | 932 | 10 406 000 | 10 830 000 |
| ACEA | Italy | 867 | 1 184 | 8 463 002 | 8 783 002 |
| Maynilad | Philippines | 382 | 415 | 8 400 000 | 8 870 000 |
| Severn Trent | United Kingdom | 2 227 | 2 306 | 8 000 000 | 8 400 000 |
| FCC Aqualia | Spain | 1 017 | 1 026 | 7 296 656 | 7 300 000 |
| Acciona | Spain | 532 | 440 | 7 294 373 | 7 346 227 |
| Groupe Saur | France | 1 319 | 1 319 | 7 000 000 | 7 000 000 |

In the water sector, which is directly related to national security of the state, the water supply and sanitation system (W and K) is the most important system in the water sector in terms of the scope of tasks set out in the competent state management body and development strategy. Strategic directions of energy saving, along with electricity and heat, in recent years are one of the areas that require a special approach to improving the management system. At the same time, the lack of a unified urban water management body in our country leads to the fact that water management enterprises do not have their own design nomenclature (or do not have their own face). In developed countries, there is a

need to move to strategic, environmental, economic, organizational and financial problems in water supply, mainly for faster solution of technical problems. In the absence of financial resources (budget subsidies) for the development of engineering infrastructure, the task of increasing the efficiency of water supply management system of cities (districts) is of particular socio-economic importance in order to provide the population with quality drinking water supply.

According to the UN Social Development Research Center, in 2006, 90 percent of the world's population was supplied with water and sanitation by public water companies. In 2017, the figure was 52 percent. This means that the task of providing water and sanitation services to the population is being transferred from public enterprises to private companies. Analysis of the development of public water management in the global economy shows the need for further implementation of existing water management models in PPP companies. The distinguishing feature of public-private partnerships and the provision of public services from the municipal form is that contracts are concluded between the parties and the distribution of risks and responsibilities is achieved.

Table 2 Description of some privately authorized forms of government

| Parameters | Management Agreement | Lease | Concession | SVUP (construction, ownership, management, privatization) |
|------------------------------------|----------------------|------------------------|----------------------|---|
| Engineering | State (municipality) | State (municipality) | State (municipality) | Private company (construction, maintenance) |
| Infrastructure Owner | Private company | Private company | Private company | Private company |
| Operation and maintenance | State (municipality) | State (municipality) | Private company | Private company |
| Investments in fixed assets | State (municipality) | Private company | Private | Private company |
| Investments in working capital | State (municipality) | Public-private company | Private company | Private company |
| Responsibility for investment risk | No | Below | Medium | Higher |
| Construction risk | Below | Medium | Higher | Above |
| Operation Risk | Below | Medium | Higher | Above average |
| Need for regulator | 3-5 | 8-15 | 15-30 | 20-30 |

The above table shows that decentralization of water infrastructure, improvement of all services and tariff policy, improvement of quality of construction and maintenance, attraction of foreign investments and right to receive specific group of organizations - which is responsible for everything. In addition, such organizations enter into long-term contracts to prevent any negative changes in public health and, if necessary, to compensate for them. This means that the creation of PPPs and part companies, gives a higher efficiency.

CONCLUSIONS

Summarizing all the above information and comments, the following conclusions can be made.

1. based on the experience of the U.S., UK, France, Germany, Sweden, Finland given in the example of the above-mentioned developed countries, it is theoretically important to have a public-private partnership organization and part of the organization, which works responsibly.
2. such organizations have much more opportunity to improve the quality of drinking water and maintenance of sewage systems, as well as to achieve economic efficiency through accurate calculations.
3. the world's clean drinking water resources are shrinking every year.

Water economy in many countries of the world - continues to be used without accounting and without control. Unfortunately, Uzbekistan, which is our Motherland, also is not free from such mismanagement.

BIBLIOGRAPHY (REFERENCES):

1. Кутлимуродов У. М. Решения для эффективного использования водных ресурсов в регионах Республики Узбекистан //Символ науки. – 2021. – №. 3.
2. Seydullaev, Etc. The R. (2020). Application of Information Systems in effective use of water. . Science and Education, 1(7).
3. Кутлимуродов У. М. Решения проблемы очистки сточных вод г. Джизака от ионов тяжелых металлов // conf2021@tstu.uz. 2021/4/23. Том-1. с. 92-95.
4. Khazhimatova, M. M. (2021). Some hydrodynamic effects exhibited by bubble and projectile modes of gas-liquid mixture flow. *Science and Education*, 2(4), 257-264.
5. Qutlimurodov U.M. Ko'cha va avtomobil yo'llarini atmosfera-yog'ingarchilik oqava suvlaridan tozalash usullari. // conf2021@tstu.uz. 2021/4/25. Том-1. С. 55-58.
6. Кутлимуродов У. М. Загрязнение атмосферы вредными веществами и мера притяжения по его сокращению // Экология: вчера, сегодня, завтра.–2019. С.-249-252.
7. Saydullaev, S. R. (2020). Decision-making system for the rational use of water resources. *Journal of Central Asian Social Studies*, 1(01), 56-65.
8. Кутлимуродов У. М. Некоторые аспекты экологических проблем, связанные с автомобильными транспортом // European Scientific Conference.–2020.– С. 50-52.
9. Obidovich, S.A. (2020). The use of Modern Automated Information Systems as the Most Important Mechanism for the use of Water Resources in the Region. *Test Engineering and Management*, 83, 1897-1901.
10. Ergashev, R., Azimov, A., Kholbutaev, B., & Mavlonov, L. (2021). Influence of cavitation on pressure pulsation through impeller of large pumps. In *E3S Web of Conferences* (Vol. 264, p. . . 03004).EDP Sciences.
11. Султонов А.О. Методы рационального использования воды в орошении сельскохозяйственных культур//Современная экономика: актуальные вопросы, достижения и инновации 2019. – С. 207-209..

12. Хажиматова М. М. Некоторые гидродинамические эффекты, проявляемые при пузырьковом. и снарядном режимах течения газожидкостной смеси//Science and Education–2021–Т.2.–№.4.. – С. 257-264
13. Хажиматова М. М. Сооружение для забора подземных вод //Символ науки.–2021.– №. 4.– С.21-24.
14. Хажиматова М. М., Саттаров А. Экологик таълимни ривожлантиришда инновацияжараён. лари //Ме' morchilik va qurilish muammolari. – 2019. – С. 48.
15. Мусаев Ш.М. Ишлаб чиқариш корхоналаридан чиқадиган оқова сувларни механик услублар билан тозалаш самарадорлигини ошириш тўғрисида //Science and Education. – 2021. – Т. 2. – №. 5. – С. 343-354.
16. Мусаев Ш. М. и др. Насос агрегатларини ҳосил бўладиган гидравлик зарблардан химоялаш усуллари тадқиқ этиш //Science and Education. – 2021. – Т. 2. – №. 3. – С. 211-220.
17. Махмудова Д. Э., Мусаев Ш. М. Воздействие промышленных загрязнителей на окружающую среду //Академическая публицистика. – 2020. – №. 12. – С. 76-83.
18. Мусаев Ш. М., Саттаров А. Умягчение состав воды с помощью реагентов //Ме' morchilik va qurilish muammolari. – 2019. – Т. 23.
19. Сайдуллаев С. Р., Саттаров А. Б. Ананавий қозонхона ўчоқларида ёқилғи сарфини таҳлил қилиш ва камчиликларини бартараф этиш //Научно-методический журнал “Uz Akademia. – 2020. – С. 198-204.
20. Сайдуллаев С.Р. Система принятия решений по рациональному использованию водных ресурсов // Вестник центральноазиатских социальных исследований. - 2020. - Т. 1. - №. 01. -С. 56-65.
21. Сайдуллаев С. Р. Сувдан самарали фойдаланишда ахборот тизимларини қўллаш //Science. and Education. – 2020. – Т. 1. – №. 7.
22. Саттаров А., Сайдуллаев С. Эски турдаги қозонхона ўчоқларида ёқилғи сарфини таҳлил. қилиш //Меъморчилик ва қурилиш муаммолари” ОАК тасарруфидаги илмий-техник журнал Самарқанд. – 2020.
23. Мусаев Ш. и др. Свойства кристаллов кварца //Science and Education. – 2021. – Т. 2. – №. 10. – С. 201-215.
24. Бобомуродов, У.С., & Султонов, А.О. (2016). Методы улучшения реагентного умягчения. . воды в осветлителях. Молодой ученый, (7-2), 51-53.
25. Султонов А.О. Информационная система водных ресурсов сельского хозяйства //Проблемы научно-практической деятельности. Перспективы внедрения. – 2019. – С. 197.
26. Sultonov A.O. Problems of optimal use of water resources for crop irrigation //Journal of Central Asian Social Studies. – 2020. – Т. 1. – №. 01. – С. 26-33.
27. Sultonov A. Water use planning: a functional diagram of a decision-making system and its mathematical model //International Finance and Accounting. – 2019. – Т. 2019. – №. 5. – С. 19.
28. Султонов, А.О. (2021). Саноат корхоналари оқова сувларинитозалашнинг долзарблиги. *Science and Education*, 2(6), 299-306.

29. Karimovich, T. M., & Obidovich, S. A. (2021). To increase the effectiveness of the use of Information Systems in the use of water. *Development issues of innovative economy in the agricultural sector*, 222-225.
30. Qutlimurodov U.M. Laboratory Equipment of Overpressure Determination on Standard. *International Journal of Development and Public Policy*. 1 Issue: 5 in October-2021. sector, 138-143.