



Uzbekistan and Tajikistan May 2016

# HOW TO ESTABLISH A FULL COST RECOVERY WATER SUPPLY SYSTEM ? WHAT ARE THE KEY FACTORS FOR SUCCESS AND REPLICATION ?

Based on the experience of the “Rural Water Supply and Sanitation” project led in Uzbekistan and Tajikistan, financed by the Swiss Development and Cooperation Agency (SDC) and implemented by the International Secretariat for Water (ISW)



## THE CONTEXT

Following the dismantlement of the USSR, many existing structures of communal services collapsed as the institutions ensuring their operation and maintenance disappeared. This concerned in particular the drinking water and sanitation services, most severely hit in the rural areas.

Many villages no longer have easy access to safe and affordable drinking water, impacting mainly women and children who have to dedicate an important share of their time fetching water in difficult conditions.

An improved access to water is primordial for social and economic development, improving overall health and living standards, and allowing the growth of diversified economic activities.

In many villages of both Tajikistan and Uzbekistan, people often only have access to dirty water from irrigation canals or water sold by truck vendors (with a price which can be as high as 15 USD/m<sup>3</sup>). Both are unreliable in terms of quality and quantity, and can be a real financial burden for the households.

The need to improve the situation for the rural population is therefore high in both countries.

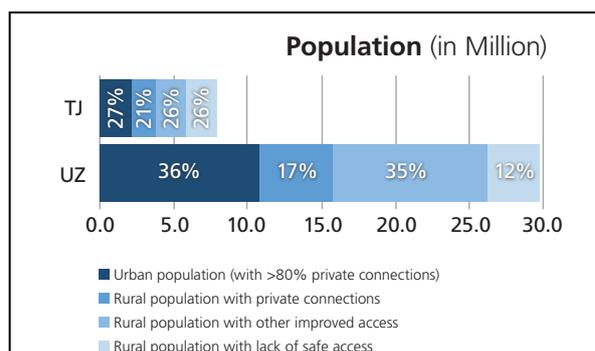


Figure 1: Access to drinking water in Uzbekistan and Tajikistan (2012, source: [www.wssinfo.org](http://www.wssinfo.org) ; <http://databank.banquemondiale.org/>)

## WHAT HAS BEEN ACHIEVED

The results presented here are based on more than 15 years of experience in both Tajikistan and Uzbekistan.

### Sustainable access to safe drinking water through functional local water governance

By the end of 2015, more than 160,000 people in 32 villages have benefitted from a sustainable access to drinking water. 32 Drinking Water Organisations (DWO), management structures established at the community-level for each village, have been legally registered. Thanks to the technical, managerial and financial training provided by the project to their staff, these DWOs are daily and independently ensuring the operation & maintenance of their water supply systems.

These Drinking Water Organisations have been set up through the strong involvement of all the villagers gathered in a General Assembly, to ensure as participatory an approach as possible:

The first constructed water systems built under the project have been successfully working for more than 10 years, and out of the 32 existing DWOs, 7 have gone further and planned, financed and implemented the extension of their water network with their own funds.

### An approach integrating health concerns

Access to drinking water is essential but not sufficient to achieve significant improvement in the health situation of the rural population. Together with the access to drinking water, the project organises hygiene campaigns and trainings, targeting individual and collective hygiene behaviour improvements using tools such as the Participatory Hygiene and Sanitation Transformation (PHAST) method. Through these activities, the prevalence of water-borne diseases has been considerably reduced in the targeted villages, with a recognised lasting effect.

In Uzbekistan, the Ministry of Health was convinced by these campaigns, and has recently been supporting their nationwide dissemination, targeting the overall population.

### Transparent and participatory methodology for implementation

Based on the experience and lessons learned acquired over the years, a methodology has been identified for the successful implementation of an independent water supply system in villages. This methodology, tested, fine tuned and approved, is presented in the figure 2 below.

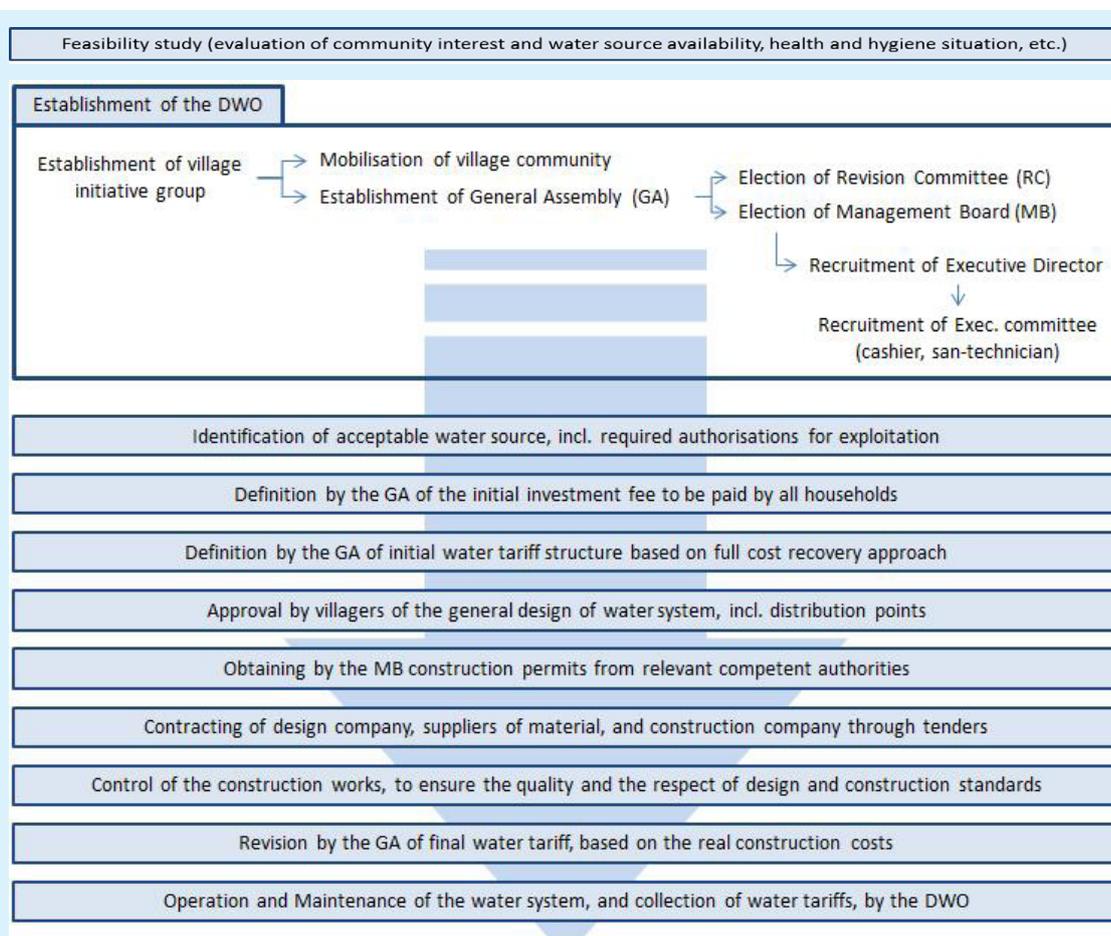


Figure 2: Methodology developed by ISW for transparent and participatory implementation of DWOs

### A full cost recovery approach

One of the main features of these Drinking Water Organisations is that they collect a tariff per m3 of water provided. This tariff is agreed upon by the population through a fully transparent procedure, independently for each village, which is then presented to the local Antimonopoly Agency / Committee for approval.

The tariff includes not only the running costs of the water system (electricity for the pump, maintenance services, salaries of the staff and technicians, etc.) but also the depreciation for amortisation, through the funds saved and kept at the bank.

These remaining funds can then be used either to repay a loan contracted to build the initial water system, or to build extensions of the network and/or replacement of the heavy equipment.

This share set aside for amortisation can account for as much as 30% of the water tariff. When the drinking water system is new, the share of spared funds represents an important amount. Over the years, the money set aside is less important since the water system needs more maintenance. Experience shows that after five years, maintenance expenses increase significantly.

In other words, the cost of all the investment is reflected in the tariff and amortised over 5, 8 or 25 years, depending on the type of equipment and its lifespan.

### An affordable tariff

The tariff currently elaborated with the help of ISW for each village puts the m3 at approximately 40 cents, which can be up to 35 times cheaper than what people pay from truck vendors. This tariff reaches its breakeven point if 85% of the population pays its water, thus leaving room to accommodate poor populations that would not be able to afford the price of water.

The experience developed over the past 15 years shows that, after a transition period, the collection rate can be as high as 90 to 95%, and remains at that level as long as people continue to receive water and are satisfied with the work of their DWO.

For a cost per capita of around 50-60 USD, the initial investment fee remains affordable, as demonstrated by the amount of systems successfully set up and running. The model proposed can supply water through shared tap-stands, or to private household connections fitted with water meters. It can also work for multi-village systems where several villages depend on a single source of water, be it underground water or surface water.

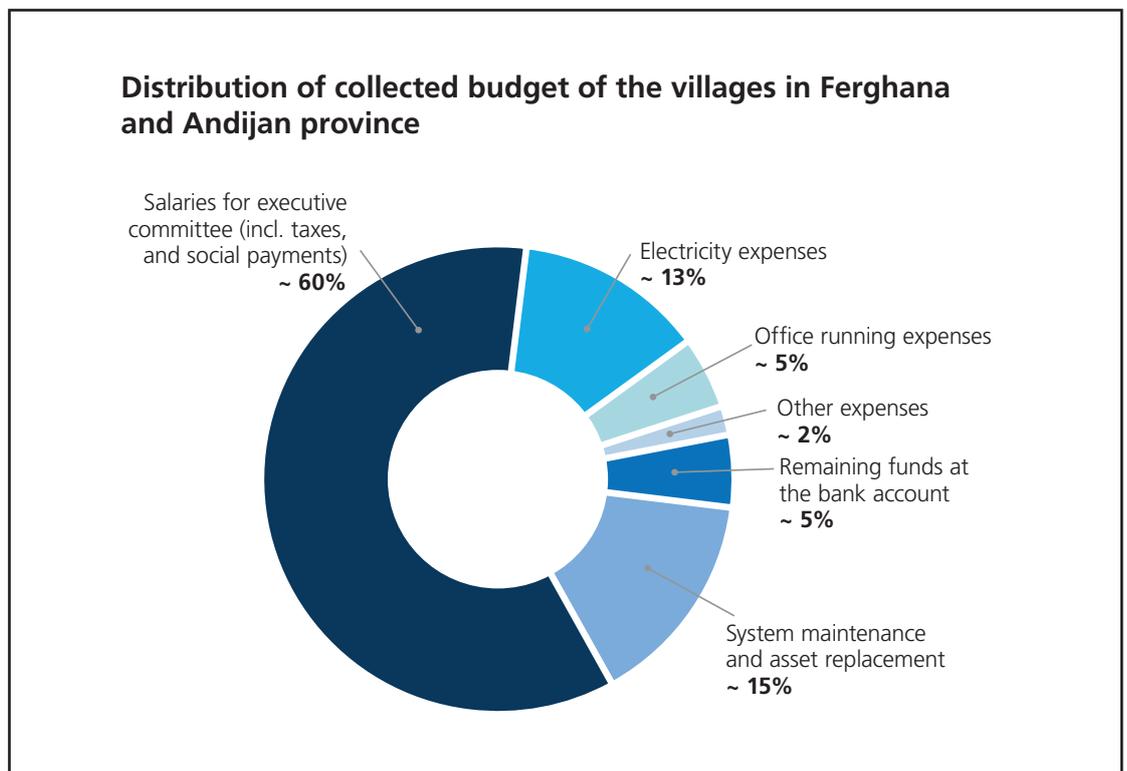


Figure 3: Structure of a water tariff after 5 years

---

## KEY ELEMENTS TO TAKE INTO ACCOUNT FOR APPLYING THIS FULL COST RECOVERY MODEL

### A. In Central Asia

#### Political and legal enabling environment

As for any project, a minimum interest and participation from central and local government is required as well as the necessary work conditions to implement the activities.

#### A strong and long lasting commitment

Introducing a new approach, which has to be accepted by the authorities at different level, is not an easy task. Proofs of success need to be given, capacities need to be developed and trust built, which takes time and persuasion. The initial phase is crucial and requires a strong commitment from the developing agency. In Uzbekistan for example, the successful model started to emerge only in 2009, although the project had been initiated in 1998 with the support of the Dutch Cooperation.

#### Identification of suitable villages

This identification is directly related to the framework conditions of this model.

##### - *The water resources availability:*

The village should have access to a renewable water source within a reasonable radius, able to provide enough water in quantity and quality, in order to keep the investment costs affordable. The project has been using very often borehole for their water systems.

##### - *The demographic applicability:*

The village should ideally range from 2,000 to 10,000 people, though the model is flexible enough so that it can supply water to bigger villages with a single source of water. For smaller villages, the investment cost per capita might be higher depending on engineering solutions proposed, and the water tariff would increase accordingly. For bigger villages, in addition to a potentially more complex system, social cohesion might be looser and the management of the water system by a population with diverging interests might be more complicated.

#### A population mobilised for water supply

Before deciding to set up a communal water supply system, there has to be a general consensus of the whole community to adhere to the principle. For full ownership of the systems, the full engagement of and by the population is required for:

- Mobilising resources for the water supply system (direct financing of the system in cash and/or kind)
- The design and construction work
- Defining the tariff structure (agreed by them through the general assembly)
- Transparent management and control from population, accountability of executive bodies on the technical and financial situation of the system

#### Getting and keeping consumers ready to pay

To ensure the sustainability of these rural water systems, collecting the tariff is a crucial element. The readiness to pay can be achieved through:

- Simple marketing principle of costs comparison presented at the initial stage of the project. A cost-benefit analysis should be presented, also taking into account non-direct costs such as health issues and lost time collecting (often) unsafe water
- A transparent and participatory elaboration of the tariff structure
- Transparent management, regular reporting on the technical and financial situation of the system
- Ensuring that the service is available and satisfactory
- Agreeing to a policy of gradual fines or penalties in case of non-payment of the water to the DWO.

#### Competent and skilled DWO members

For the water system management to be fully operational, the DWO members should be trained on:

- The functioning of the governance structure,
- Basic technical maintenance of the water system,
- Financial management,
- The training should be followed by a learning-by-doing phase under the mentoring of the developer.

## Affordable construction

The construction costs of the water systems can be optimised through:

- Developing the appropriate design: the national construction norms, standards and rules, defined under the Soviet times, are constantly resulting in over-projection of needs and therefore in over-dimensioning of the water supply systems, unnecessarily increasing the costs.
- Involving the local small and medium enterprises (SMEs), ensuring participatory and transparent procurement procedures and constant supervision and control by the communities

## Organisation Status

The experience shows that DWOs are more successful when they operate their systems being legally registered as **non-commercial organizations** (NCO). Additionally, NCO status helps DWOs to be exempted from certain taxes, which are not reflected in tariffs then.

## B. In other regions of the world

To apply this model in other contexts, in addition to what has been mentioned above, one should pay particular attention to the following factors:

- **A strong sense of the community.** Social cohesion is strongly needed to anchor the appropriation of these water systems as well as their maintenance. This plays an important role in the social acceptability of the rules of functioning of a water system, including the definition and the payment of the tariff.
- **Access to local service providers.** Competent and affordable local service providers are important for the construction of the water system, including its extension and repair, making the investment per capita reasonable and contributing to an affordable water tariff. However, in many developing countries, that might not be the case! Service providers of the required level (a drilling company for ex.) might be rare and found only in the capital city, thus increasing substantially the price of the services.
- **Ability to pay according to income level of the community.** The level of income and related capacity to pay a tariff is variable and should be carefully analysed.



### Interest of financial institutions

In 2010, with the successful emergence of this full cost recovery model, talks with World Bank representatives (WB) took place in Tashkent to see how a collaborative mechanism could be set up. The idea emerged that the Drinking Water Organisations could pay back a credit/loan through the share of water tariff set aside every month, which would spare them the burden of managing funds, activity for which they are not prepared and/or equipped. By contracting a loan for their water supply systems, the DWOs would be indebted for a long time, but this is usually the situation of water providers, and also corresponds to the fact that the investments needed are long term ones.

Several mechanisms can be envisaged for the financing of water supply systems in rural areas:

- For instance, a credit line could be negotiated with the WB or the ADB and put at the disposal of villages through local banks. In order to have access to these funds, each village would have to prepare a complete file with the characteristics of the water project envisaged, a bill of quantities, estimated construction costs, a budget plan, etc.
- Another possibility is that the development banks, without providing the funds themselves, could be guarantors to credits which would be granted by local banks.

The details of such financing mechanisms have to be further studied, and both the WB and the ADB have the necessary means for that.

### Support Mechanisms

It would be advisable that donors finance a Technical Assistance Unit, helping the interested villages to build their formal request for financing. This TA Unit would provide assistance on the design of the system, on community mobilisation strategies, on the organisation of tenders and on the calculation of an affordable water tariff permitting full cost recovery. This TA Unit would not be involved in the implementation stage in order to avoid any conflict of interest, but could remain as an external advisor during the construction period.

### Government capacities and willingness

Provided the financial institutions are interested and the support mechanism is in place, the WSS sector development agenda of the government would still have to consider the model as a viable and acceptable solution to provide drinking water in the rural areas. In addition, the national and local administra-

tion should develop their capacities to cope with the model, and be able to accompany the structures in taking over the responsibility of supplying drinking water to the population, ideally without the help of donors.

There are certainly many hindering factors, not the least being the centralised structure of the States apparatus and deciding power. Another important element is the fact that the current low water tariffs, applied in the cities and main towns by the water utilities, are defined at national level. Access to water being considered as a social right, the tariff remains a very sensitive issue for the government, which maintains the price artificially very low.

At this stage, a joint and coordinated effort amongst donors and within the Swiss Federal Department of Foreign Affairs is strongly required to strengthen the policy dialogue with governments on the scaling-up of that successful model in Uzbekistan and Tajikistan. It is essential to overcome the tariff issue and the resistance that can emerge from a heavy centralised past and the belief that at local level things cannot work properly without keeping them under central control.

### FURTHER INFORMATION

#### Videos on the RWSS project in Uzbekistan

[Short version](#)

[Long version](#)

#### International Secretariat for Water (ISW)

[Website](#)

Contact UZ: [rwssp.isw.ferg@gmail.com](mailto:rwssp.isw.ferg@gmail.com)

Contact TJ: [iswkhujand@gmail.com](mailto:iswkhujand@gmail.com)

#### Manual on implementation of drinking water supply system

Vol. I: Guidelines

Vol. II: Administrative tools

Available on [ISW Website](#)

---

### IMPRINT

Federal Department of Foreign Affairs (FDFA)  
Swiss Agency for Development and Cooperation (SDC)  
Commonwealth of Independent States (CIS) Division  
Freiburgstrasse 130, 3003 Bern, Switzerland

[www.sdc.admin.ch](http://www.sdc.admin.ch)

Photo

© SDC