Kyrgyzstan: Program Taza Suu for improvement of rural water supply and sanitation conditions (# 360)

1. Introduction

Until 1990, rural water pipelines belonged to collective farms. After breaking up of those farms, the rural water pipeline service system, Kyrgyzaylsuu has been liquidated. Most existing systems of rural water supply needed capital repairs, deterioration of water mains exceeded 40% of their total length, 191 pipelines had not sanitary protection zones and water treating facilities, 111 pipelines were not subjected to water disinfection, and 8940 of 36768 water-pumps were out of operation. Lack of access of rural population to safe drinking water under conditions of poor sanitation caused epidemiological tension in terms of acute enteric infections and helminthism. There are records of typhoid related to poor-quality water (Zhalalabat, Osh, and Batkent provinces). In 2002, people in 608 villages (more than 700 thousand) had no access to drinking water sources and had to use water from irrigation canals, aryks and rivers. This aggravated gender relations and increased poverty. Low level of access to clear drinking water and better sanitation is a factor of poverty in the Kyrgyz Republic.

The primary goals of on-going projects “Taza suu” (“Rendering infrastructure services at settlement level” and “Rural water supply and sanitation”, as well as of the project “Hygiene and sanitation in rural area” under DFID grant) are: a) improving access to drinking water in most villages using community approach, i.e. where local communities own, operate, maintain and manage water supply system on sustainable basis; b) improving hygiene, sanitation and water use at individual, family and institutional levels.

2. Relevance of the matter or initiative

Limited access to water in the households complicates use of water for personal and family hygiene, washing, bathing, cleaning, washing up, etc. Moreover, women and children bear heavier burdens in searching for water sources and fetching water. In addition, this hampers fostering of personal and public hygiene skills and, thus, makes it more difficult to prevent diseases that have mitigated effect in case if the above hygienic procedures are followed.

Economic costs related to water contamination lead to reduced property value, business opportunity losses, less job places, lower tax proceeds, decreased agricultural productivity; less income from recreation and tourism, additional costs for drinking water treatment and searching new sources, and public health costs (hospitalization, income losses, deaths).

About 30% of schools and 20% of kindergartens are not supplied with water from the centralized systems. In combination with poor hygienic skills, this causes high level of children parasitic diseases. According to research conducted under DFID project

"Hygiene and sanitation in rural area", 60% and 50% of younger and school children, respectively, were affected by one or more intestinal parasites in pilot villages in the northern region. About 45 thousand parasitic diseases are recorded annually in the Kyrgyz Republic. The annual economic damage from those diseases is about 100 thousand US$ only according to official statistics.

WHO's data show that 80% of all diseases are caused by poor-quality water. It is well-known that death and diarrhea incidences decrease by 15% when water quality is improved and by 55% in case of better sanitation in settlements and higher water quality and quantities. According to the data of Kemoniks Inc and Finnish Environmental Institute, the water-borne diseases result in about 125 M$ of annual losses for the Kyrgyz Republic. While estimating the economic costs related to water supply, health recovery costs are not taken into account usually. The costs of typhoid episode mitigation amounted to more than 5 million soms in Osh province in 1998. Typhoid episodes were registered also in Aravan, Karasu, Nooken, and Nookat districts and in Osh and Mailuusu towns.

3. Research

In order to solve drinking water supply problems, a law about drinking water was adopted upon initiative of the National Ministry of Health in 1999 and new drinking water standards (GOST P 512 32-98, SanPinN 2.1.4.002-03) were introduced. A long-term rural water supply and sanitation strategy was elaborated. Given the great importance of water supply, the Republic takes measures to ensure financing of centralized and local water-supply infrastructure. The Government of the Kyrgyz Republic made a decision about the free transfer of rural water pipelines to rural communities of drinking water users (RCDWU) that directly would be responsible for receipt and repayment of credits, operation and maintenance of water-pipes and would set water tariffs and water-pipe operating schedules.

By the Kyrgyz Government's Decree No. 418-p of 07.11.2001 the Coordinating Committee for Water Supply and Sanitation under umbrella of the Government and the Steering Committee for WB Project "Rural Water Supply and Sanitation" were established.

In 2002, The Kyrgyz Government introduced the program "Taza suu", which included the projects "Rendering infrastructure services at settlement level" and "Rural water supply and sanitation" supported by WB and ADB. Including co-financing by the Kyrgyz Republic, 70 M$ were allocated for rehabilitation of water supply and sanitation networks in all the regions throughout the Republic. The projects are aimed at rehabilitation and construction of rural water-pipes and improvement of access to safe drinking water, at raising of supplier's responsibility for water quality and no-break operation of water-pipes, at creation of better conditions of life and other social benefits for population. Activities were planned to undertake in 1000 villages and 7 cities during

six years. Implementation also should give an economic effect through decreased incidences of acute enteric infections. The above projects are in their final stage now.
The projects apply the demand-driven participatory approach, as well as extensive mobilization process.

Besides, in 2002-2006, the British Department for International Development (DFID) implemented the project "Hygiene and Sanitation in Rural Area" in three northern provinces in the Republic. The project components included local community mainstreaming and sanitation and hygiene propaganda, as well as construction of aerated toilets and wash-stands in rural schools. By improving sanitary conditions, fostering hygiene and changing water consumption practices, it was to improve people health in 310 project villages: "reduction of diarrhea incidences by 10% and of helminthic invasion by 20%". The above project supported synergies with the projects financed by ADB and WB and was based on an understanding of the inseparable relationship between water supply, hygiene, sanitation, and health.

Education of the local population relied on community mobilization using the principle of participatory modification of hygiene and sanitary practices, through joint approach of the local population to health and hygiene problems.

In 2003, a medical examination of 1289 pupils in primary school was made in Talass, Issyk-Kul and Naryn provinces to control effectiveness of education component. The analysis of examination data showed that lambliosis incidences decreased to 76% in project villages. In 2004, 4171 children were examined also in 24 project villages in Talass province; the lambliosis disease rate was 39% lower there than that in villages outside the project coverage. Since July 2006, an education component "Sanitation" has been implemented within the framework of ADB's project "Rendering infrastructure services at settlement level".

Smaller scale activities are undertaken for rehabilitation and construction of water-supply infrastructure by the Central Asian Water Alliance (CAWA), ARIS within the framework of rural investment program and by Agha-Khan Fund.

4. Outcomes/lessons learnt

What was done and why?

By the beginning of 2008, the ADB's and WB's projects had completed construction and reconstruction of water-pipes in 506 villages enveloping 9 599 thousand dwellers. 504 RCDWUs were established. Those communities have their own management structure, including elected representatives, and deal with planning, implementation or management of their own water-supply systems and collect water tariffs.

To get involved in the project, communities made a contribution (20% of the total project cost), of which 5% is cash contribution and 15% is in in-kind form (earthwork).

Collection of money fees and process of discussion inside the community improved understanding of a need for contribution and collection of water use fees in order to cover water-pipe O&M costs. The projects contributed to decentralization of rural water-supply management system and promoted the establishment of Rural Water-Supply Department (RWSD) to deal with policy development and support RCDWU.

During implementation of the DFID's project "Hygiene and Sanitation in Rural Area" (2002-2006), sequentially about 25000 households and 40000 schoolchildren were educated and more than 2000 trainers were trained to educate the communities. Within the framework of the project, capacity of the Republican Health Promotion Center (RHPC) was developed, water quality monitoring and protection were enhanced and computer quality monitoring was introduced. Safe water-supply plans are developed and implemented, water quality control program, which includes short list of controlled parameters, is developed for RCDWU.

An independent expertise of DFID and WB projects' impacts on people health in 35 villages - where construction and rehabilitation was completed and dwellers were educated in hygiene - has revealed positive impact on health. In order to have an unbiased estimate of Rural Water Supply and Sanitation Project's impact, rural water users were questioned regarding water quality, adequate quantity and regularity of water supply. School directors, teachers, and children were asked about existing conditions for personal hygiene of pupils, the state of drinking water supply and of toilets. In each village, the experts involved representatives of RCDWUs (chairmen, operators) to study the status of water-pipes. In collecting data on morbidity and tap water quality, specialists from 14 district and three province centers of sanitary supervision & disease control (CSSDC) were involved. Those centers have sanitary-hygienic and microbiological laboratories and keep state statistical records of infection diseases. Thus, participation of the above-mentioned groups in the expertise allowed the adequate estimate of the project's impact, based on different opinions.

The projects had positive impact on:

- better access of rural people to safe drinking water;
- rates of infection and parasitic diseases;
- drinking water quality in microbiological terms;
- changes in hygiene and sanitary skills;
- cooperation in solving the water supply problems;
- sense of ownership and responsibility in RCDWUs;
- sanitation infrastructure;

What did not work and why?

Loan usage did not provided for its prior allocation to the areas with high disease rates caused by the lack of access to safe drinking water sources. Due to increase in the cost of building materials, the cost of the projects rose and, thus, rural water-pipe construction and reconstruction volumes were reduced almost twofold.

A number of rural water-pipe designs were based on unreasonable selection of new water-supply sources and of sanitary protection zone (SPZ) boundaries and lacked feasible plans for establishing SPZ.

The projects' policy was aimed at the transfer from groundwater sources requiring energy inputs for pumping water to gravity flow sources (springs, stream underflows). However, in many cases this did not prove itself. For example, stream underflows froze in winter period and supply of water stopped in Naryn province. Springs were not enough stable sources as well since changed their capacities. Besides, the use of water from the surface sources required chlorination, with regular control over disinfection. The unstable economic position of RCDWUs does not allow them to organize production laboratories or conclude contracts for necessary examination.

Periodical or regular water disinfection was made only in 10 cases among 35 checked chlorination plants at rural water pipelines in Isykkul, Naryn, and Talass provinces. Moreover, the problem related to centralized provision of rural water systems with chlorine-containing substances has not been solved yet.

According to the territorial CSSDC's data, 482 villages (32.2%) with more than 500 thousand dwellers are not covered by centralized public water supply. In order to reduce costs and save electricity, RCDWUs often practice water delivery on hourly basis that has negative effect on water quality (microbial contamination is recorded in 13.4% of examined samples).

It should be noted that in developing centralized water supply systems, the projects did not make adequate provisions for disposal and treatment of wastewater. In rural area, 3% of residential buildings and public places is connected to sewerage system. Project funds allocated per dweller have limited supply of water to houses. Thus, this actually did not change situation regarding access of dwellers to better supply (45% water admission), especially in the resort Preissykkulie area.

Education of people living in south area and Choo province under the ADB's project "Rendering infrastructure services at settlement level" started with big delay since the second half of the year 2006, thus decreasing its positive impact on project sustainability.

5. Key points for knowledge sharing and transferability (to a larger scale)

If the program "Taza suu" is to be extended, the identified shortcomings should be taken into account.

1. Selection of pilot villages should be based on epidemiological conditions and people's access to safe drinking water. The projects did not consider connection of schools to water pipes. As a result, water for nutrition units, wash-stands, coolers and cleaning is fetched from street water-pumps and even from irrigation networks.

2. The Rural Water Supply Department should tackle the issue of centralized supply of disinfectant agents and spare parts for disinfection plants and take measures to organize departmental water quality laboratories and services for rural water-pipe maintenance. Manufacturing of equipment for chlorination plants should be organized and their designs should be approved in Gosstroy (State Committee for Construction and Architecture) of the Kyrgyz Republic.
3. Gosstroy should undertake selected expertise of developed project designs on free basis.
4. Review of relations between CSSDCs and RCDWUs under the Safe Water Supply Program indicated to a need for further use of administrative resources of the Department for Sanitary Supervision & Disease Control for closer partnership, development of appropriate documents and additional training of CSSDC and RCDWU's staff.
5. Timely inclusion of education component in rural water supply construction and rehabilitation projects is essential.
6. RCDWU should be enhanced and further developed.
7. While designing new water-pipes, water sources should be selected upon availability of full package of survey data and with the development of sanitary protection zone designs.

6. Contact information

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7. References or additional sources

- Report «Impact assessment made on the basis of direct and indirect impact indicators, as agreed with Karl Bro company and proceeding from aims and objectives of the Project "Hygiene and Sanitation in Rural Area" and the Rural Water Supply and Sanitation Project, in 35 villages in Issyk-Kul, Naryn, and Talass provinces, Kyrgyzstan.
- Long-term rural water supply strategy (RWSD, Atkins and Karl Bro companies)
- Reports of joint ADB and WB's review missions
- Terms of References for projects