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ВАЗОРАТИ КОРХОИ ХОРИҶИИ
ҶУМҲУРИИ ТОҶИКИСТОН

MINISTRY OF FOREIGN AFFAIRS
REPUBLIC OF TAJIKISTAN

2-1.2(3564)

Министерство иностранных дел Республики Таджикистан свидетельствует свое уважение Посольству Японии в Республике Таджикистан и имеет честь направить уважаемому Посольству заявку Правительства Республики Таджикистан на получение гранта Правительства Японии на проект «Система снабжения питьевой водой управляемая общинами в южной части Хатлонской области».

Министерство пользуется случаем, чтобы возобновить Посольству уверения в своем весьма высоком уважении.

Душанбе, 23 апреля 2004 года

ПОСОЛЬСТВО
ЯПОНИИ
Душанбе

APPLICATION FORM FOR JAPAN'S DEVELOPMENT STUDY PROGRAM

Date of entry: **Year**

Applicant: Government of Republic Tajikistan

1. Project Digest

(1) Project Title: Community Managed Potable Water Supply System in the Southern Khatlon Oblast

(2) **Location (province name):** Khatlon Oblast

District Name: Beshkentshkiy, Vakhshskiy, Dzhilikulskiy, Kabodiyonskiy, Kalkhozododskiy, Kumsangirskiy, Pyandzhskiy, Shaarttuskiy

From the Dushanbe: About 2～3 hours by vehicle

(3) **Implementing Agency**

Name of the Agency: Ministry of Melioration and Water Resources of Republic Tajikistan

Number of Staff in the Agency: 72 staff (At Headquarters)

Budget Allocated to the Agency: US$1.68 million in 2003

(4) **Justification of the Project**

- **Present conditions of the sector**

Tajikishan is endowed with enormous amount of surface water as well as groundwater that become main water resources in the Central Asia. The biggest body of water is Amudarya River which supplies 75% of water to the whole country. In addition, there are many reservoirs to supplement the supply in the country. Among the CIS Countries, Tajikistan is the second to Russia in terms of volume of water resources, i.e., its annual water production is 13,000 cubic meters per person which is the highest in the world. About 90% out of all water supplies in the country comes from surface water and 13-14km^3 of it are collected. In this amount, 90% is supplied for irrigation and remain is for industry usage.

In general, the piped water connection used to be common in the era of the Soviet Union. Before the civil war, it is reported that 95% of urban population were supplied piped water connection. However, in 1997, while the urban is said to be the same level, only 40% can have piped water connection in rural area. Meanwhile, 57% are reported to have access to safe drinking water, but there is a big gap of accessibility between urban and rural areas, as the former is 93% and the latter is just 47%. Also it has to be remembered that the number of population connected to piped water supply does not necessarily mean the same level of access to safe drinking water because the water is often supplied with imperfect chlorination and frequent interruption. In this regard, it is presumed that actual population

who obtain safe drinking water should be much lower than the official figure of population connected piped water supply.

The national average rate of water supply is 58%. Only Dushanbe city is above average, and the Direct Rule District (DRD) is on the national average (56-58%), but others such as Sughd, Khatlon Oblasts and Gorono Badakshan Autonomous Oblast (GBAO) are under average (56%)[1]. In the national average according to the type of water supply, about 40% of households get piped into yard, plot or house, 8% from public tap, 6% from tubewell/borehole with hand pumps, 33% from river or spring. But this proportion differs from each region. For example, while 72% of GBAO get from rivers and ponds, 73% in Dushanbe get private piped water supply in which 25% get piped into their houses.

- **Sectoral development policy of the national government**

The Sectoral Development Policy is especially articulated in the Poverty Reduction Strategy Paper (PRSP) endorsed in October 2002. It aims at increase of the access to safe drinking water in the whole country from 51.2% in 2001 to 58% in 2006 and 80% in 2015 respectively. Furthermore, it also intends to provide reliable and quality services with affordable charge. Specifically, the focus must be put on the facility improvement in urban area, and higher accessibility of supply services in rural area. In the costing for the water sector during the period of 2002-2006, US$40,105,000 from external resources and US$4,205,000 from domestic ones, totally US$44,310,000 are estimated as the requirement to achieve the target by 2006.

- **Problems to be solved in the sector**

After the collapse of the Soviet Union followed by the civil war and economic difficulties combined with the transition of the country from a central planned economy to a market economy, the water supply facilities have not properly been repaired or maintained due to the economic stagnation and government budget constraints. As a result, it is reported that currently 30% of the system are not functioning. Even if it is functioning, there are problems of maintenance or insufficient disinfection by chlorine in many areas.

In rural area where 73.5% of total population live, on top of the limited number of water facilities compared with urban area, the pipelines of water supply were destroyed by the civil war. Consequently, people in those areas are now forced to fetch and drink the contaminated river or irrigation water which caused water borne infectious diseases such as diarrhoea, typhoid, hepatitis A and even outbreak of malaria.

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[1] In the geographical structure in Tajikistan, the country is divided into 5 regions which are Dushanbe City, Sughd Oblast (Oblast means region or province), Khatlon Oblast, Gorono Badakshan Autonomous Oblast (GBAO), and the Direct Rule District (DRD). In each region (or Oblast), there are several districts called Rayon.

Also, a serious constraint affecting the improvement in the sector is the level of water consumption. For instance, it is estimated that water use in Dushanbe is as much as 1,400 litres per person a day which are about ten times the amount in Western Europe. Even in rural area, it is estimated that water for cotton irrigation is used twice as much as is necessary. The reason of this phenomenon is said that the utility charges in the Soviet Union were particularly low, so water (same as gas and electricity) was not used in a thrifty manner. Thus, excessive consumption increases the strain on water system and give pressures to responsible organisations for proper function. Under this situation, a behavioural change is needed in consumption both at home and in the field.

In summary, the facts that the water facilities, pump stations and pipelines have not yet been repaired or restored due to the lack of fund, and water is so much consumed caused the lack of safe potable water and health problems. This situation creates a critical dilemma despite the abundant water resources in the county. Therefore, the alternative supply system such as establishment of borehole in deep well, or rehabilitation of existing pipeline in rural community level, especially where needy people are living, should be considered and explored urgently. Also, water consumption behaviour and the health concerns should be emphasized by awareness building, and sanitation and hygiene education/promotion.

- **Outline of the Study**

The development study primarily aims at the formulation of a Master Plan and Feasibility Study for potable water supply in the Southern Khatlon Oblast. The main outline of the Study is explained below.

a Targeting

One of the poorest/backward and most affected areas by the civil war is Khatlon Oblast. Therefore, the Study will focus on this Oblast with special emphasis on the conditions that the areas are relatively poor and backward and have little potable water supplied. Also it is prerequisite that the areas should have high potential and availability of clean groundwater resources.

b Basic Study

Initially it is necessary to conduct situation analysis in the target areas. It includes on-going water supply system/projects, water resources, topographical, geological and hydorological data/maps, existing local technology, socio-economic conditions, organisational and financial capacities in the communities, water usage of community, and health & sanitation conditions through existing literature review, collection of data and statistics, interviews, focus group discussion with related people/organisations, household survey, and necessary field survey.

c **Pilot Project**

- Priority for Potable Water and groundwater

The Study shall focus only on the potable water which is urgently needed as this is constantly required all year long. Although there are several options of water resources, groundwater shall be prioritised in the pilot project because it usually does not require the treatment. The potentials for the rehabilitation of the existing pipelines from the spring or the surface water could be examined and identified only in the Master Plan which maps out the long term development in the water sector.

- Community Managed System

In light of long-term sustainability, it is suggested to establish middle/small scale of water system rather than large scale one. In rural or remote villages, as the supports by government or donors are often limited, the water system needs a strong reliance on local initiatives and sense of ownership, so the community plays a leading role in planning, implementation and operation & management/maintenance. Moreover, the awareness raising for cost recovery of the water and water consumption should be built up.

- Institutional Building and Strengthening

In order to sustain the operation and management/maintenance, the appropriate organisation should be established. In Tajikistan, the Jamoats and Mahallas are the formal and authorised community organisations supported and supervised directly by the Hukumats. Below them, the newly established group or organisations specifically for the potable water supply system shall be explored and arranged as needed. This organisation is responsible for initial planning, construction, repair (if necessary), operation and management/maintenance.

- Sanitation & Hygiene Education/Promotion

For the safe and hygienic operation of water supply, it is necessary that community people have the correct knowledge about sanitation and hygiene. Providing facilities alone, without change in hygiene behaviour, cannot achieve the significant health improvement. Therefore, it is important to see and change people's 'Knowledge, Attitude and Practice (KAP)'. Standing on this point, the participatory sanitation and hygiene education/promotion should be introduced in parallel with water supply facilities.

- Establishment of models for community managed water supply system

After the implementation of the pilot project, it is envisaged that there will be several models of community managed water supply system and health/hygiene education according to the conditions and capacities in the individual community.

d Development of Master Plan

The Master Plan shall include the overall development plans for water resources, water supply facilities, water demand projection, operation and management/maintenance, institutional building, health and hygiene education, cost estimate, and monitoring and evaluation. The Master Plan shall cover the planning of the potable water sector by the year 2015.

e Feasibility Study

Based on the Master Plan, the Feasibility Study examines and develops more detailed and prioritised projects. It also looks at the feasibility or viability in terms of technical, economic, financial, social and environmental aspects, and explores the possibility, validity and investment effects of the projects.

- **Purpose (short-term objective) of the Project:**

To establish models for sustainable and safe potable water system by community participation in the target areas and to draw a comprehensive water supply plan in target areas.

- **Goal (long-term objectives) of the Project**

To improve health and hygiene conditions by supplying safe potable water (in response to the PRSP target – 58% in access to potable water by 2006 and 80% by 2015).

(5) Desirable or Scheduled time of the Commencement of the Project:

Month: July Year: 2004

(6) Expected funding source and/or assistance (including external origin) for the Project:

Japan's Grant Aid is expected after the completion of Development Study.

2. Terms of Reference of the Proposed Study

(1) Necessity /Justification of the Study:

a General

As stated in 1 (4) above, since the Soviet Union period, piped water supply has been the main source in Tajikistan. However, this system is not functioning properly now due to the aftermath of the civil war and economic stagnation. Currently, many rural potable water supply systems are not operational or working much below the normal capacity.

The main implementater in the rural water sector is the government authorities, mainly the Ministry of Water Resources and Land Acquisition and the Rural Water Authority. Some donors, NGOs and communities also contribute and develop the system on their own, but main actor still remains the

government. In this regard, the government needs to bear a huge burden to maintain all activities such as increasing the number of systems, operation and maintenance, distribution of pipe line, rehabilitation and replacement of old systems, prevention of leakage and system loss, regular monitoring and overall management. However, as seen in many other counties, government is not able to carry out all activities with full responsibilities due to lack of funds, time and manpower. Also the outreach services for technical support by the government and donors are very limited if a community is located in remote area.

Thus, communities should be more responsible for and self-reliant of operation, management and maintenance, and accordingly small and medium size water supply options that can be handled by community itself should be considered. For this, it is prerequisite to form appropriate organisation for water and provide management training for effective and efficient implementation. Furthermore, to tackle water borne communicable diseases, it is important to enable people to change their hygiene behaviour together with the provision of improved water supply facilities.

To sum up, it is important to combine appropriate hardware and software, i.e., providing reliable, effective and small/medium size hardware while building up community's capacity and applying health principles of hygiene and sanitation promotion. And sustainable water supply system can be achieved by participation and mobilisation of community people/organisation. But community involvement needs the consideration of so many factors and complicated process, such as mobilising participation, institutional building/strengthening, gender, operation and management/maintenance. Therefore, the government of Republic Tajikistan believes that careful design and planning should be made through the Master Plan by the Development Study of JICA.

b Present Conditions of Target areas

① Present Water Supply System

The current state of the domestic water source for daily use in the target areas is as shown in Table 1. Each district central town has piped water supply facilities and the Rural Water Authority also supplies the domestic water by the long pipeline (148 km) from Sangtuda to Kolkhozobod in the target areas. The main reason for establishing the long pipeline on large scale was to increase the access to both domestic and irrigation water up to 90%, and to lower the cost for maintenance and tariff, etc. And this used to be a national policy in the era of a centrally planned economy. While most people are obtaining water from small stream running from irrigation, 10-21% of population are supplied from the pipeline in the target areas. People who do not reside near the appropriate water resources usually draw and carry water by the carts or donkeys for a long distance.

Table-1 Present status of drinking water and water supply system in development study area

Name of Areas	No. of settlements	Population thousands of people	Area of the farms in ha.	Available facilities in the villages			Whole length of water lines		Means and delivery and transportation of water to the residents %.			Percentage of providing of drinking water %.
				water lines %	Hot water lines in %	Sanitary piping %	Main water lines km.	Supplementary inside the farm km.	By water lines %	By aryks %.	By vehicle %	
Beshkentskiy	15	23.1	1,090	6	0	0	6	21	12	70	18	12
Vakhshskiy	81	120.4	3,228	8	0	0	9.6	27.8	21	75	4	21
Dzhilikulskiy	56	83.2	1,729	14	0	0	11.6	30.3	15	80	5	15
Kabodiyonskiy	73	108.3	3,094	17	0	0	18.4	37.4	20	75	5	20
Kalkhozododskiy	81	120.7	3,881	16	0	2.7	21.4	50.2	20	71	9	20
Kumsangirskiy	59	87.1	6,011	9	0	0	7.8	18.8	10	83	17	10
Pyandzhskiy	57	84.9	1,889	7	0	0	8.9	27.4	12	78	10	12
Shaarttuskiy	47	59.7	3,368	15	0	0	21.3	47.2	10	70	11	19
Total	469	687.4	24,290				105	260.1				

Source: Ministry of Melioration and Aquatic Economy
aryk: small stream

Many remnants of piped water supply facilities still remain and work partially even if most of infrastructures were destroyed by the civil war after the collapse of the Soviet Union. The largest one in operation is the Vakhsh Pipeline managed by the Rural Water Authority, but the construction work was disrupted after the Soviet Union collapse. As a result, despite that an original plan of pipeline capacity was supposed to be 384,800m^3/day, only 30,000-40,000m^3/day are now supplied. 90% of water production is supplied to Kurgan-tube town, and 10% is for rural area. The total length of pipeline is 148km. Water is supplied to the vicinity by setting up a temporary pump facility that got damaged or superannuated.

Though there are piped water-supplying facilities in the district centre and others, majority of them are more or less destroyed so that water is supplied to the very limited area. As a result, only 10-21% of population have access to piped water supply now, whereas about 50% of them used to have access to it in the past. Although the piped water supply facilities are believed to be safe for drinking, chlorination is actually imperfect and the maintenance of the pipeline is also insufficient.

The groundwater level is high, so lots of districts where the hand pump system can be applied exist in the target areas. UNICEF, ACTED and other donor agencies promote the hand pump system with relatively shallow well which needs chlorination can be managed by the cheaper maintenance cost in the target areas. However, as groundwater in a shallow layer does not always meet the standard of bacteria, there are some districts where drilling down to the layer around 40-60 meters is required. Moreover, there is a district where pollution of a chemical material such as DDT, (some areas have the farms with agricultural chemicals sprayed) was detected, therefore, there is a gradual tendency in this country that hand pump system attempts to dig deep stratum down to around 100 metres. Other than the long pipeline (148km), the current water resources of the piped water supply in the target areas have various ones such as spring water, groundwater and surface water. The water supply system also includes both long pipeline system and hand pump one.

The target of 80% of population who have access to safe potable water by 2015 in the National Policy (PRSPs) can not be achieved only by the rehabilitation of the existing piped water supply facilities. It is necessary to develop the new water resources in parallel with rehabilitation. As for the new water resources, the first priority should be given to groundwater because it does not need treatment and less costly. Thus, in the Development Study, only after investigating the potential development of groundwater in the target areas, it can be recommended to consider the long distance pipeline system or other alternative options especially in the districts in need (a task for Formulation of Master Plan).

② Poverty and Economic Situation (Khatlon Oblast)

According to the '1999 Tajikistan Living Standards Survey (TLSS)', almost three out of every four people live in rural areas, which has a higher proportion of very poor (23.4%) than the urban population (18.6%). The regional breakdown of the very poorest shows that 45.7% reside in Khatlon Oblast, 26.1% in Sughd Oblast, 19.2% in Direct Rule Districts (DRD), 6.9% in the Gorno Badakhshan Autonomous Oblast (GBAO) and only 2.1% in Dushanbe city. Thus, Khatlon Oblast has highest poverty incidence in the country. Among 8 districts in the target areas, Beshkentskiy is the poorest and hardest place to live both economically and in water supply service.

The areas are located on the fertile land of Vakhsh, Suhorob, and Pyandji valleys where the subtropical crops are grown. The main economic activity is agriculture, in which most of population is involved, such as cotton growing, animal husbandry, plant growing, but industry like ferrous metallurgy, mining and processing industry are also being developed.

Average monthly wage of Khatlon Oblast in 2001 was 17.14 somoni (US$5.91)[2]. More than 59% of workers get less than 15 somoni, 11% from 15-30 somoni, 22% from 30-45 somoni and only 6% more than 45 somoni. In addition to this low income, farmers are able to get substantial income only for cotton season from April to December, but some are involved only in cotton picking from September to December. Therefore, winter is the hardest time for all farmers to survive physically and financially. Some farmers have kitchen garden at their backyard to grow vegetables for subsistence life, but others who do not have it get the humanitarian assistance like food aid by the UN or NGOs.

③ Health and Hygiene Conditions (Khatlon Oblast)

Regarding health indicators in Khatlon Oblst, birth rate per 1,000 was 43.0 in 1999, infant mortality per 1,000 was 21.7 and maternity mortality rate per 100,000 was 43.0 in 1999 respectively.

Khatlon has higher incidence of water borne communicable diseases compared with other regions/Oblasts, because 60% of residents are reported to take the drinking water from irrigation or canal. The typical diseases related to water pollution are Hepatitis A, Typhoid, Malaria and Diarrhoea.

[2] The exchange rate is US$1=2.9 Somoni as of December 2003