There was a big outbreak of Typhoid in 1997, but the number of incidence has gradually been decreasing since then. Meanwhile, Malaria incidence in Khatlon is extremely high compared with the one in other regions/Oblasts because of its proximity to Afghanistan. For example, in 1999, 471 per 100,000 people in Khatlon was infected with Malaria, 126.6 in DRD, 48 in Sughd, 93.6 in GBAO and 102.1 in Dushanbe. The recent number of water borne communicable diseases in Khatlon is shown in Table 2 below.

Table 2 Incidence of Water borne Communicable Diseases in Khatlon

	2002 (10months)	2003 till October
Typhoid	273	582
Paratyphoid	54	31
Malaria	3,093	3,599
Hepatitis A	1,115	627
Dysentery	509	453
Diarrhoea	26,273	22,918

Source: Ministry of Health, SES in Khatlon Oblast

The situation of hygiene and sanitation is not as good as it should be. Especially in the hygiene facilities, most of households have their own simple pit latrine, but it is not properly developed or used. A simple pit is made by woods, but does not have latrine slab of wood or concrete and pit lining, so some of them are almost collapsing. Also, there is no appropriate shelter or ventilation system, it creates uncomfortable smell. The pit is covered when it becomes full, and after a while when the excreta is dried, most of people use it for manure. However, there are some communities and schools which are starting the improved pit latrine by appropriate technology funded and supported by donors/NGOs. For solid waste disposal, most of households bury it under the ground at their backyard. Generally, especially in rural areas, there is no collecting system for solid waste disposal in a community.

(2) Necessity/Justification of the Japanese Technical Cooperation:

Since Japan has abundant experience of potable water supply and management on community basis in other countries, it is expected that its technical cooperation in this speciality could improve the conditions of water supply in the country and enhance the capacities of the government and communities in terms of appropriate technologies and efficient and effective water management system.

(3) Objectives of the Study

a To develop the overall blueprint for improved potable water supply system by the year 2015.

b To establish models of community managed water supply system and health/hygiene education according to the conditions and capacities in the individual community.

c To propose the measures to strengthen the institutional capacities in planning, implementation, operation and management/maintenance for water supply system of both the community

organisations and the government.

d To raise awareness of the issues for health and hygiene, water consumption behaviour, and cost recovery of communities.

(4) Areas to be Covered by the Study

- **Target Districts**

  The Study shall target 8 districts of the Southern Khatlon Oblast, which are Beshkentshkiy, Vakhshskiy, Dzhilikulskiy, Kabodiyonskiy, Kalkhozododskiy, Kumsangirskiy, Pyandzhskiy, and Shaarttuskiy.

- **Population Size**

  Total population of the 8 districts is 687,400. The population size in each district is shown in Table 3 below.

Table 3. Population Size in the Target Area

District Name	No. of Settlements	Population (Thousand)
Beshkentskiy	15	23.1
Vakhshskiy	81	120.4
Dzhilikulskiy	56	83.2
Kabodiynskiy	73	108.3
Kalkhozododskiy	81	120.7
Kusangirskiy	59	87.1
Pyandzhskiy	57	84.9
Shaarttuskiy	47	59.7
Total	469	687.4

Source: Ministry of Water Resources and Land Acquisition

(5) Scope of the Study

Scope of the Study consists of 4 major elements such as Basic Study, Pilot Project, Development of Master Plan and Feasibility Study. The Master Plan shall be developed based on the results and lessons leaned by the pilot projects, and accordingly, more detailed and prioritised plan shall be formulated in the Feasibility Study. The detailed work plan and procedure are listed below.

a Basic Study

Initially it is necessary to conduct situation analysis in the targeted 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

- Data collection and analysis
  (Includes: socio-economic conditions, physical features, on-going water supply projects/programmes within and/or outside target areas, water supply plans and studies, national socio-economic plans, topographical, geological and hydrological maps/data, existing institution/organisation for water supply management and maintenance, gender, health and hygiene situations, KAP surveys, existing health services and education in the target areas, review on water supply projects by JICA in the past)

- Study on existing water supply schemes
  (Includes: review of design criteria, review and analysis of capacity, function and performance of existing facilities, operation and maintenance, tariff collection)

- Study on water resources
  (Includes; hydrological analysis, hydrogeological analysis, examination of new ground water sources for each town and village, water quality analysis)

  After this basic study, about 8-10 sites shall be selected for the pilot projects according to the potentiality and availability of water resources, community's capacities and willingness to develop the system.

b Pilot Project

The process of development for the Master Plan includes the pilot project to figure out the impacts, validity, efficiency and sustainability by newly established water supply system. Approximately, 8-10 sites (water supply system) from 8 districts shall be selected for implementation on pilot basis. Also, 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. Based on the results of the pilot project, several models of community managed water supply system shall be formulated according to the conditions and capacities of the individual community.

- Institutional setup and formation
  (Potable water association, or Water committee, etc, if there is no existing structure in the targeted communities)
- Drilling exploratory well
  (Identify drilling locations, Aquifers, Geology and well structure, Yield and constants)
- Construction of water supply facilities
  (Construction of borehole, hand pump, tap, elevated tank, pipeline shall be constructed based

on the population size and well production capacity)

- Management training for community organization
  (Provide community organisations for training in terms of management capacities, leadership, accountings, decision-making, conflict resolution, mobilisation of participation, etc)
- Health and Hygiene Education/Promotion
  (Organise health & hygiene group/committee, TOT for health volunteers, participatory health and hygiene promotion, outreach service and counselling for households)
- Development of guidelines or manual for O&M and health & hygiene education/promotion
- Establishment of models for community managed water supply system
- Evaluation of the results

c 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. In the Master plan, the water demand for surface water and ground water in the target area are estimated and the perspective of water utility in the target areas shall be identified by considering the potentials of other donors' interventions. Also, the role and function of the biggest pipeline, Vakhsh pipeline, should be clarified

- Water demand projection in each area by the year 2015
- Water supply volume in each area
- Basic plan for water supply system and basic design of a model water supply system
- Formulation of institutional building and operation and management/maintenance
- Designing of participatory health and hygiene education/promotion
- Rough Cost estimate
- Recommendations of water supply scheme
- EIA (Environment Impact Assessment)
- Selection of priority projects

d Feasibility Study

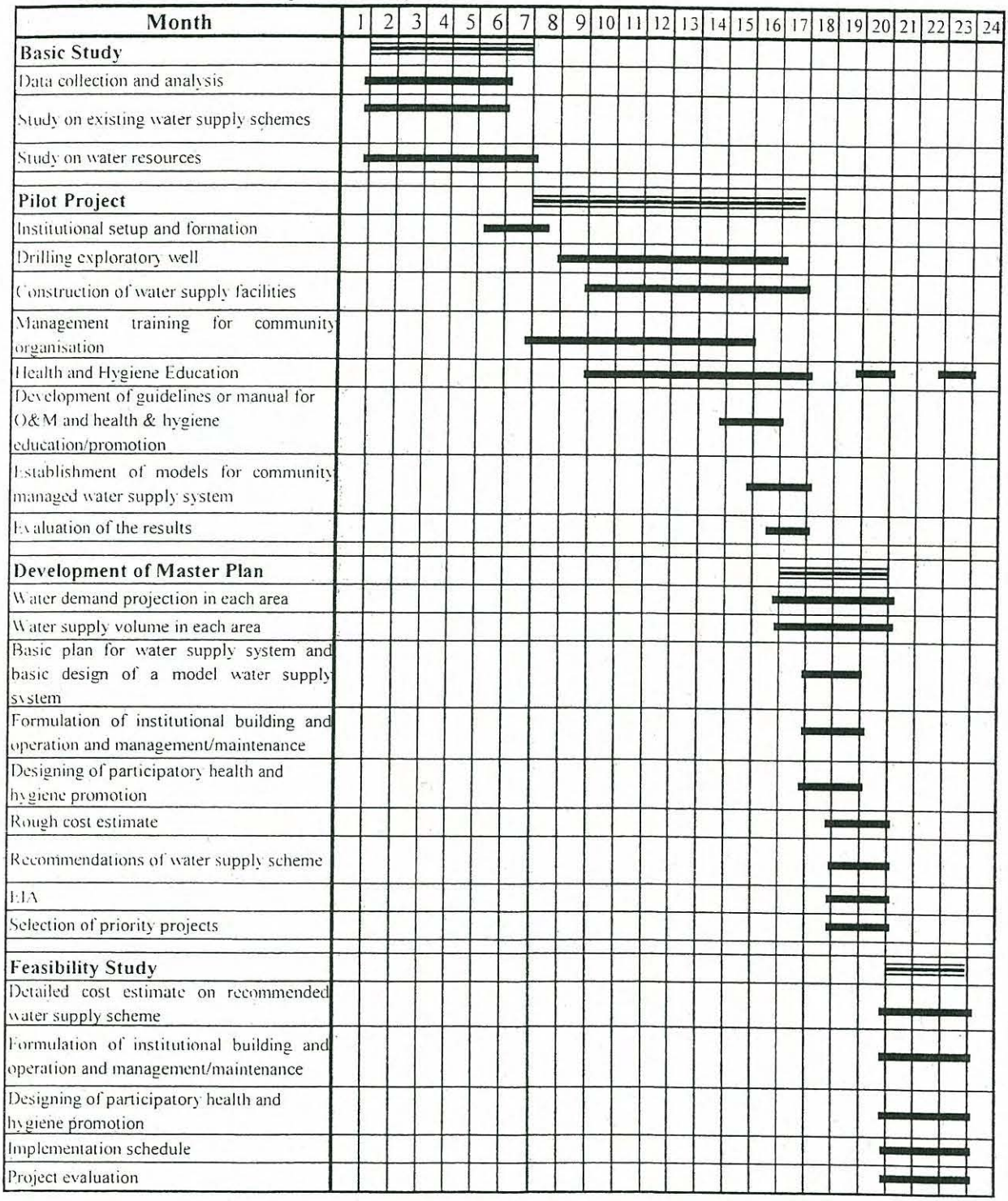
Based on the Master Plan, the Feasibility Study examines and develops more detailed and prioritised projects. It also looks at the feasibility or viability in terms of technical, economic, financial, social and environmental aspects, and explores the possibility,

- Detailed cost estimate on recommended water supply scheme
  (land acquisition, water rights, construction cost, management training for community, health education/promotion, operation and management cost)
- Formulation of institutional building and operation and management/maintenance

(tariff collection, repair/spare parts provision, cleaning, security, allowance for staff)

- Designing of participatory health and hygiene promotion
  (formation of health group/volunteers, TOT for volunteers, health and hygiene promotion, counselling for household)
- Implementation schedule
- Project evaluation
  (financial, socio-economic institutional and environmental evaluation)

Table 4 Schedule of Development Study



(7) Expected Major Outputs of the Study

The Study Team shall report to the Ministry of Water Resources and Land Acquisition. All reports should be written in English and Russian languages. Those periodical reports shall be prepared as follows:

- Inception Report (IC/R)
- First Progress Report (PR-1)
- Second Progress Report (PR-2)

- Inception Report (IC/R)
- First Progress Report (PR-1)
- Second Progress Report (PR-2)
- Interim Report (IT/R)
- Draft-Final Report (DF/R)
- Final Report (F/R)

(8) Personnel

The Team shall consist of specialists of both areas in hardware and software. In principle, the team leader is responsible for all implementation and management. Below is the expected team with different specialities and background.

a Team Leader (Water Supply System)
b Senior Hydrogeologist
c Community Participation and Institutional Strengthening Specialist
d Public Health and Participatory Hygiene Promotion Specialist
e Geologist
f Civil Engineer
g Mechanical Engineer
h Survey Engineer
i Economic and Financial Expert
j Water Quality Specialist
k Well-drilling Specialist

(9) Collaborating Agency

In line with the concept and objectives of the Study, the Study Team shall implement the pilot project in special collaboration with the Ministry of Health, specifically the State Republic Centre of Sanitation and Epidemiology (SES) and the Healthy Life Centre. Those centres specialise in water quality monitoring and health & hygiene promotion. The close linkage with these organisations intends not only to facilitate the project implementation but also to build up the systematic network among relevant agencies for achievement of comprehensive water and sanitation programme.

(10) Possibility to be Implemented/Expected Funding Resources

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

(11) Other Relevant Information

- Donor Coordination

  Since there are so many multi and bilateral donors and NGOs working in the water and sanitation sector, particularly in Khatlon Oblast, it is suggested to maintain frequent contact with them by attending, for example, the WES (Water, Environment, Sanitation) coordination meeting for information and experience exchanges, and donor coordination in order to avoid any overlapping and duplication. Also it is recommended to submit periodical report/contact to OCHA (Office for the Coordination of Humanitarian Assistance) under the UN that develops database of all donors' programmes and activities in each sector.

3. Facilities and Information for the Study

(1) Assignment of Counterpart Personnel of the Implementing Agency for the Study (Number, Academic Background, etc)

- Project Director/Manager
- Hydrogeologist
- Community Development Specialist
- Geologist
- Water Supply Planner
- Public Health Specialist
- Civil Engineer
- Mechanical Engineer
- Typist/Secretary

(2) Available Data, Information, Documents, Maps, etc, related to the Study

- Demographic data in the target area
- Maps of the target areas
- Financial/Budget statement
- National standard of water quality
- Water quality in the target area
- Donors and NGOs' relevant documents/reports
- Other data can be offered upon request

(3) Information on the Security Conditions in the Study Area

The areas around the boarder of Afghanistan should be avoided. When moving and surveying around in the villages, it is preferable that Team Members accompany with the local partners such as government/Hukumats, Jamoats, etc.

4. Global Issues (Environment, Gender, Poverty, etc)

(1) Environmental components

Fundamentally, there should be no negative environmental impacts by the project. However, special attention should be paid to the decrease of water level by developing the new groundwater resources. The target area has water resources, particularly groundwater which is safe potable water, but it is also reported that surface aquifer in some areas are bacteriologically contaminated, so careful design and plan to select the site should be made. In addiction, it has to be remembered that poor sanitation (facilities) combined with potable water supply system often creates pathogenic organisms.

(2) Anticipated environmental impacts (both natural and social) by the Project, if any

The safe potable water supply system shall protect the source from contamination and pollution through good design and construction of abstraction facilities (from irrigation, canal, etc) and improve community's environmental health and living conditions.

(3) Women as main beneficiaries or not

It is mainly women and girls who fetch and use water for domestic purposes on daily basis. Collecting and carrying water is physically stressful, time consuming especially in rural area where they often walk a long way to collect. Girls are also required to help their mothers with water collection and other domestic tasks, which often hamper their attendance in school and play. In this regard, as women and girls should be the main beneficiaries by the projects of water supply system, the success of project depends on the active involvement of women.

(4) Project components which require special consideration for women (such as gender difference, women specific role, women's participation)

In rural area, many families have migrant labours (mainly men/husbands) to abroad due to unemployment and economic difficulties in the country. Consequently, many women/wives are left behind and have to do all domestic and agriculture tasks, so a special attention should be paid to women's physical, social and economic overburden. Therefore, women, as main water users of the system, should be involved in decision making in terms of technology choice, location, and design of system. Meanwhile, women also play a major role as custodian of water sources and management of environmental hygiene and sanitary services at the household and community level, they have to be consulted and involved in hygiene and sanitation education/promotion.

(5) Anticipated impacts on women caused by the Project, if any

Establishing the safe potable water supply system can improve the women's daily life significantly. For instance, they could fetch sufficient amount of water for drinking, bathing, washing, and laundry, save time for fetching and queuing, and improve physical conditions and

health in the household. Girls can also be released from such a hard work.

(6) Any constraints against the low-income people caused by the Project

Target areas suffer from poverty. Low-income or poorest people often have difficulties in getting enough cash income. This means they may face the problems of paying in the newly established tariff structure. The affordable price should be addressed on a case-by-case basis from the viewpoints of recurrent cost, capital cost, users' willingness to pay, and users' degree of poverty.

(7) Poverty alleviation components of the Project, if any

The Study targets on low-income households by restricting its scope to deprived rural areas. Also, it shall endorse the opportunities of equal participation and empowerment in decision making to poor people through establishing water supply system.

The Study shall support and contribute to develop the national policy framework for water supply, which is articulated in the PRSPs to increase access to safe potable water especially for poor.

5. Undertakings of the Government of the Republic of Tajikistan

In order to facilitate the smooth and efficient conduct of the Study, the Government of the Republic Tajikistan shall take necessary measures:

(1) To secure the safety of the Study Team,

(2) To permit the members of the Study Team to enter, leave and sojourn in the Republic Tajikistan in connection with their assignment therein, and exempt them from foreign registration requirements and consular fees,

(3) To exempt the Study Team from taxes, duties, and any other charges on equipment, machinery and other materials brought into and out of the Republic Tajikistan for the conduct of the Study,

(4) To exempt the Study Team from income tax and charges of any kind imposed on or in connection with the implementation of the Study,

(5) To provide necessary facilities to the Study Team for remittance as well as utilization of the funds introduced in the Republic Tajikistan form Japan in connection with the implementation of the Study,

(6) To secure permission for entry into private properties or restricted areas for the conduct of the Study,

(7) To secure permission for the Study Team to take all data, documents and necessary materials related to the Study out of the Republic Tajikistan to Japan, and,

(8) To provide medical services as needed. Its expenses will be chargeable to members of the Study Team.

6. Study Team and also as coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

7. The Ministry of Melioration and Water Resources will, as the executing agency of the project, take responsibilities that may arise from the products of the Study.

The Government of the Republic Tajikistan assures that the matters referred to in this form will be ensured for the smooth conduct of the Development Study by the Japanese Study Team.

Signed: _____

Title: Minister of Melioration and Water Resources

On behalf of the Government of A. A. Nazirov

Date: 02.02.2004