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Central Asia and Caucasus

UNEP Collaborating Centre on Water and Environment
UCC-Water

Speedup of the Integrated Water Resources Management Objectives-2005 Implementation in Central Asia

PROGRESS REPORT
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This publication is the summary sub-regional report on activities carried out over the period from November 2005 to November 2006 within the framework of the Central Asian component of UNEP support for achieving the Johannesburg Plan of implementation target of *"Integrated Water Resources Management and Efficiency Plans by 2005, with support to developing countries"*

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INTRODUCTION

At the World Summit on Sustainable Development in 2002, a need for efforts aimed at improvement of water use efficiency was admitted as one of the most important factors of water deficiency reduction. In the Plan of implementation of the world summit on sustainable development, the part that is relative to development of integrated water resources management and water efficiency plans by 2005, with support to developing countries, specifies as one of the essential measures:

Paragraph 26(c): *"Improve the efficient use of water resources and promote their allocation among competing users in a way that gives priority to satisfaction of basic human needs and balances the requirements of preserving or restoring ecosystems and their functions, in particular in fragile environment, with human domestic, industrial and agriculture needs, including safeguarding drinking water quality".*

The UNEP for assistance and aid to developing countries in achieving the Johannesburg Plan is designed for sub-regions. However, as a part of the sub-regional working program, assistance for development of the IWRM national road maps and working programs by 2005, is provided to the selected countries (in particular in the Central Asian region these are: the Kyrgyz Republic, the Republic of Tajikistan, and the Republic of Uzbekistan).

So, the main results of this program include the road maps for the IWRM planning. Apart from this, improvement of public awareness, capacity building in the area of the national IWRM plans development and implementation, and increase of water use efficiency are envisaged.

The Central Asian component of this program has been developed by the UNEP and UCC-Water in close cooperation with the GWP CACENA[1] and SIC ICWC[2] . Its program has been coordinated with the UNDP and UNECE[3]. The DANIDA[4] agency sponsors this program.

The program envisages cooperation with the National Groups on Coordination and Support to the Integrated Water Resources Management (NGCS IWRM) created in the Kyrgyz Republic, the Republic of Tajikistan, and the Republic of Uzbekistan at the end of 2005, within the framework of "IWRM-Fergana" project (SIC ICWC – IWMI[5] under the SDC[6] sponsorship).

The long-term objective of the sub-regional working program is: *"Speedup of IWRM – 2005 Objectives Implementation in Central Asia".*

The short-term (essential) objectives are as follows:

- Assistance to development of the IWRM plans in those countries which are ready to start this process
- Promotion of the IWRM in dialog about water policy through initiatives for awareness improvement with involvement of the ministers of water resources
- Capacity building in the area of the IWRM plans development; and
- Analysis of the IWRM problems at the national level.

Planned Outputs:

- The sub-regional report on progress with implementation of the IWRM 2005 objectives and the IWRM planning

[1] Global Water Partnership in the Central Asia and Caucasus.
[2] Scientific and Information Center of the Interstate Commission for Water Coordination.
[3] UN European Economic Community.
[4] Danish International Development Agency.
[5] International Water Management Institute.
[6] Swiss Development Cooperation Agency.

- The accomplished national road maps/working plans for implementation of the IWRM objectives (for three countries: the Kyrgyz Republic, the Republic of Tajikistan, and the Republic of Uzbekistan)
- Capacity needs assessment for support to implementation of the IWRM reforms, as identified in the "road maps" and working plans
- The managerial capacity building in the IWRM planning for the key water managers and decision makers.

A certain experience in regard to some elements of the IWRM and understanding of this method as a whole has been acquired in the region of Central Asia. The hydrographic principle of systems management was successfully used without real interference of the administrative authorities as far back as during the Soviet period (1926 – 1959), e.g. in the ZERDOLVODKHOZ (Zerafshan Valley Water Authority), UPRADIK (Irrigation and Drainage System Management), the Kirov Canal (now it is called "Dustlik" Canal) for inter-oblast and even interstate water management on the area of many hundred thousand ha. Later on (1956 - 1972) the IWRM was reflected in the Master Plan for Land and Irrigation Development of the Golodnaya Steppe in irrigation system management in this region. Then it was applied in the Karshi and a number of the other systems (1973 - 1990).

Drawback of the integrated approaches in these Master Plans was lack of democratic principles in management, lack of water users' participation in management, orientation on state financing only, lack of water charge, etc.

The first steps towards wide-scale development of basin management of water resources were made by the water users associations that replaced former large collective and state farms. A part of operation and maintenance functions of the former on-farm irrigation and drainage systems of these farms was transferred to WUAs. The water user associations were established in Kazakhstan right after independence (1995 – 1999) and later on in Uzbekistan in 2000 – 2003. However, this experience can not be considered to full extent as transition to the IWRM. This is only its initial elements.

In accordance with the main provisions of the IWRM concept that was developed by the GWP and adapted to the specific conditions of the Central Asian region by the SIC ICWC, an approach that we adopted to the IWRM concept envisages the system of managed based on: (i) use of all possible sources of water, (ii) coordination of the intersectoral interests and all levels of water use hierarchy, (iii) hydrographic method, (iv) broad involvement of water users in management process and rational use of water for ensuring stability of water supply for population and ecological safety at the national and regional levels.
On this basis, the fundamental provisions of the IWRM are formulated as follows:

- The fundamental objective of the IWRM implementation is an efficient integration of measures on development and management of water resources and conservation of environment in the context of socio-economic development through the gradual achievement of the potential land and water productivity
- The long-term task of IWRM is sustainable, stable, equitable and equal distribution of water resources amongst water users and environment
- The key principles are as follows:
    - water management is carried out within the hydrographic boundaries in accordance with the morphology of each specific basin (Such water management allows to adopt the timely decisions and provide water services without interference of administration. The Government should switch from the direct management of water delivery to regulation of water sector: water management organizations should have the explicit mandate for execution of the certain management functions with the clearly specified jurisdiction);

  - ensuring of public participation not only in water managing, but also in financing, supporting, planning and developing water management sector.

- The integrated management envisages use of all types of waters (surface, underground, return) taking into account the climatic features (precipitations and evaporation)
- Ensuring of environmental water demands should be one of priorities for water management bodies
- Ensuring the close coordination of water use amongst all stakeholders in water using sectors of economy (horizontal coordination) and vertical coordination amongst levels of water use hierarchy are essential for minimizing the managerial water losses
- Information provision, openness and transparency of water management are the main conditions of this process
- The water management bodies and water users should be always aimed at water saving, rational water use, and control over water losses, which may be facilitated through establishment of the advisory services and timely and proper maintenance of infrastructure in the good operational conditions.

The IWRM is called to establish interrelation between such elements of integration as impact, control and harmonization of multilevel, multi-sectoral and multipurpose processes of water use which ensure multilateral interests of stakeholders (Dukhovny and Pereira, 2005)[7]. This mechanism comprises several tools:

- Organizational – basin and hydrographic approach with active participation of water users
- Legal – protection of each water user rights to the equal, equitable and guaranteed access to water, but upon compliance with the certain obligations
- Technical – water saving as a basis for achievement of maximum water productivity; introduction of the advisory services network
- Managerial – management of not only water, but also infrastructure and water demands
- Informational – openness, accessibility and feasibility of projects.

Due to the SDC support with participation of IWMI the pilot IWRM project was initiated by the ICWC in the Fergana valley on territories of four oblasts in three republics: Kyrgyzstan, Tajikistan and Uzbekistan. As of now the tree-year experience of the IWRM implementation in the Fergana valley is available. This experience should be replicated in the other zones. The current initial attempts of introduction of this approach within the framework of the "IWRM – Fergana" project (SDC – IWMI – SIC ICWC) show that this is really achievable task. The material presented in this report has been developed on the basis of the project experience and with support from the heads of national water management bodies (Annex A).

[7] Dukhovny V.A. and Pereira L.S. *The Aral Sea Basin: Past, Present and Future.* // Pereira L.S., Dukhovny V.A., Horst M.G. (Ed.), Irrigation Management to Combat Desertification Processes in the Aral Sea Basin. Assessments and Tools. Publisher Vita Color, Tashkent – 2005, p 22-41.

1. REGION'S WATER RESOURCES MANAGEMENT: MAIN OBJECTIVES, PRIORITIES AND PROBLEMS

The main objectives of water sector in the Central Asian countries are stable and equitable distribution of water resources between water users and environment through the efficient integration of measures aimed at development and management of water resources and environment protection with the sustainable and reliable execution of the following functions:

- Provision with water the economic development and social needs on the basis of equality of rights to access to the reliable systems of water delivery and disposal
- Ensuring conservation of the natural water bodies (rivers, lakes, ponds, deltas) as the elements of landscapes and natural habitat
- Prevention of catastrophic and emergency situations associated with water (floods, mudflows, droughts, etc.).

However, the region's countries did not fully assess economic and ecological capacity for the joint actions in the area of water saving at this stage of their socio-economic development.

The main priority directions of water resources use: drinking water supply, irrigated agriculture, and ecology are accompanied by a number of problems that require the step-by step solution, namely:

- Compliance with ecological requirements to water resources quality
- Improvement of water supply system efficiency through water saving at all levels of water hierarchy
- Elimination of water distribution non-uniformity amongst irrigation systems and canals, increase of water availability and stability of water delivery
- Restoration of irrigated agriculture productivity level.

These problems should be resolved in the integrated manner for each user, and irrigation system with focusing on water saving, increasing of water and land productivity, and improving of water quality, including:

- objective and transparent estimation of the available water resources for years and cycles with the various water supply probability (the current status and perspective)
- joint use of river flow, return and underground waters
- elimination of technical drawbacks in water resources management
- compliance with the precise rules of water distribution at the interstate and national levels, introduction of water rotation and reduction of the managerial water losses
- reasonable revision of the priorities in selection of crops and crop rotations
- verification of water use/consumption norms.

Solution of the above problems at this stage is complicated by:

- growing deficiency of water resources and their pollution
- progressive ageing of previously created water infrastructure, deterioration of the technical conditions of dams, waterworks, pumping stations and the other structures
- lack of sufficient support to the proper maintenance of many structures and water management objects of the former on-farm and now the inter-farm network
- aggravation of problems associated with the proper quality dinking water supply for population (especially in the lower reached of the Amudarya river)
- significant reduction of irrigated lands productivity due to incompleteness of establishment of the private and dekhkan farms and Water User Associations
- growing deficiency of water resources in the conditions of remaining irrational use of water and its significant unproductive losses
- inadequate normative and legal basis
- lack of the sufficient financing of measures and activities in water sector

- deterioration of the fixed capital assets of water management enterprises and aged production base that is practically not being renewed
- poor equipping of water management organization and enterprises with the office equipment, vehicles, modern communication and metering devices
- inability of majority of water users to pay the full price for use of water resources and water delivery services in the current conditions
- insufficient attention to the system planning in development of water sector of economy
- lack of harmony between the multidimensional, complicated, and important tasks and problems in water sector of economy and the necessary functions of the authorized body in the area of water resources management that currently is not vested with the appropriate power for implementation of the unified water management policy. After independence in 1991, each country in the Central Asia selected its own way of development, causing the differences in the water management policies that mainly associated with the following aspects[8]:

- Different approaches to the relationship "governance – management" evinced in various aspects, but most of all in distribution of income from the agricultural production between farmers and state budget which in combination with subsidies to agriculture identify efficiency and interest of farmers, solvency of Water User Associations and individual farmer, possibilities of investments in land improvement and amelioration (the best situation in this regard is in Kazakhstan and Kyrgyzstan)
- Various degree of state participation in reconstruction and development of irrigation and drainage systems and support to the WUAs (level of this support varies in Kyrgyzstan, Kazakhstan, and Turkmenistan)
- Various forms of privatization and restructuring in water and agriculture sectors with farm irrigated area in the range from 0.2–1 ha in Kyrgyzstan to 5–100 ha and even more in Kazakhstan and Uzbekistan
- Retention of cooperative and collective farms in Tajikistan and Turkmenistan.

The common aspects for the Central Asian countries are:

- IWRM is recognized as a tool and means for improvement of water use efficiency
- Water User Associations are being established in all republics (apart from Turkmenistan)
- Insufficient attention is paid to drainage resulting in deterioration of its conditions and breakdown, increase of soil salinity degree, reduction of crop yields and land productivity
- Very low capital investments in improvement of irrigation application methods and rehabilitation, and operation and maintenance of irrigation and drainage infrastructure
- Over 50 – 60 years of Soviet time the strict centralized water management system was responsible for precise and guaranteed water delivery to the large state and collective farms. There are now the thousands of small private farms created as a result of decentralization which turned out to be at the bottom of the huge hierarchy steps "basin – sub-basin – system – canal – WUA – farmer". Water management decisions should pass through all these steps in order to get down to a farmer.

From assessment of survival possibilities for the Central Asian countries on the basis of available water resources it is obvious that along with a need for increase of technical level of water use the improvement of water resources management system is equally essential. Very often deficiency of water is caused by mismanagement. Water losses caused by poor management and lack of

[8] Based on review of water management situation and trends presented in the articles: Dukhovny V.A. and Pereira L.S. *The Aral Sea Basin: Past, Present and Future. Future Aspects of Water Management in Central Asia* // Pereira L.S., Dukhovny V.A., Horst M.G. (Ed.), Irrigation Management to Combat Desertification Processes in the Aral Sea Basin. Assessments and Tools. Publisher Vita Color, Tashkent – 2005, p.22-41 and 401-420.

coordination of managerial decisions at various levels of water hierarchy (so called "managerial" losses) very often exceed those caused by the technical level of irrigation systems.

The decision makers gradually get to understanding that the majority of these drawbacks may be eliminated through the wide-scale introduction of the integrated water resources management principles in the region. At the same they recognize that the main objective of management is to achieve the guaranteed and stable water delivery to users at the right time with the proper quality simultaneously meeting environmental water requirements, and ensuring the equitable and equal distribution of water in case of its deficiency.

Soundness of the state water policy is based on recognition by society of the fact that water is the limited and exhaustible resource, as well as on the necessity for water saving and conservation, taking into account the environmental needs. Amongst others, the following measures facilitate development of the appropriate water policy (Pereira *et al.*, 2002)[9]:

- Formation of legislative and organizational basis of the IWRM
- Involvement of water users in management process
- Development of incentives for water conservation and saving
- Capital investments in water sector development
- Creation of infrastructure and advisory services that essential for the rational water use
- Formation of the extensive network for educating and training of specialists in water management issues.

It is necessary to take into account that establishment of the IWRM is not restricted to transition to hydrographic management only. Success of the IWRM implementation depends on involvement of broad public in this process, social mobilization of water users and specialists of water management organizations for the joint participation in activities of the WUAs, Canal committees, Councils of water management systems and Water Management Councils of the country.

2. ACTIVITIES UNDERTAKEN WITHIN THE FRAMEWORK OF THE UNEP CENTRAL ASIAN COMPONENT

The main activities on the UCC-Water project have been concentrated on the following main directions:

- Managerial capacity building, including representatives of the key ministries and institutions from the water sector
- Monitoring of the IWRM process at the national levels
- Organizing and holding the national and regional seminars, including various aspects of the IWRM planning and training in the specific issues associated with development of "road maps" (Annex B)
- Development and approval of the "road maps".

During the first phase of work the sub-regional and national working plans of activities on the UCC-Water project were developed. These plans were addressed to the IWRM 2005 objectives and aspects.

Assistance to the national experts of UCC-Water project in organization and implementation of this work has been provided by the National Groups on Coordination and Support to the Integrated Water Resources Management (NGCS IWRM) created in all three republics at the end of 2005, within the framework of "IWRM-Fergana" project (SIC ICWC –IWMI under the SDC sponsorship). Experience of these specialists in introduction of the IWRM principles on the pilot

[9] Pereira, L.S., Cordery, I., Iacovides, I., 2002. *Coping with Water Scarcity*. UNESCO IHP VI, Technical Documents in Hydrology No. 58, UNESCO, Paris, 267 pp (http://unesdoc.unesco.org/images/0012/001278/127846e.pdf).

objects of the "IWRM-Fergana" project and lessons learned allowed them to develop draft "road maps" and rationale of the essential (short-term) measures.

15 representatives of the ministries and organization from the Kyrgyz Republic, the Republic of Tajikistan, the Republic of Uzbekistan, and SIC ICWC participated in the working meeting on 28.01.06, in Fergana (Uzbekistan). At this meeting the first results of activities, lessons learned from "IWRM-Fergana" project and issues associated with ensuring uniformity of the methodological approaches were discussed. The national project consultants presented their reports on accomplishment of the first stage "Assessment of the National Status of Water Resources Management from the IWRM principles viewpoint and the main provisions of the National Program for water resources development in the long-term perspective".

The booklet with the brief overview of progress towards transition to the IWRM in the Central Asian Countries was prepared for presentation at the 4th Word Water Forum. The bottlenecks requiring the staged solution for managerial capacity building were identified in this overview.

In April 2006, the seminars on the "Issues of Intersectoral Interaction in Water Use and Transition to Integrated Water Resources Management" were conducted in all the three republics.

The Kyrgyz Republic

The first national seminar within the framework of the component was held on 21 April, 2006, in Bishkek. 30 representatives from the departments of the Ministry of Agriculture and Water Resources, and Food Processing Industry, the Kyrgyz Integrated Hydro-Geological Expedition, the Ministry of Health, the State Agency for Environment Conservation and Forestry, Opened Joint Stock Company "Electric Stations", the Main Administration on Hydro-Meteorology of the Ministry of Emergency Situations, the Kyrgyz Department of SIC ICWC, the Center for Support and Regulation of WUA, the State Water Inspection, Basin Water Management Authorities, the projects which are being implemented in the republic with support from the international agencies participated in this seminar. The Regional Consultant, Coordinator of the sub-regional program participated in the seminar as well.

In the reports and presentations of the members of the National Groups on Coordination and Support to IWRM at this seminar the following issues were reflected:

- IWRM objectives and tasks and the planned approaches to their implementation
- Tasks of the National Group on coordination and support to the IWRM
- Problems and conflicts in water resources management and their possible solutions
- Problems in reformation of water resources management and use
- Problems in the state support to WUAs
- Problems in conservation of the aquatic ecosystems
- Role and place of the hydro-meteorological service in the IWRM system.

The main provisions of draft "Water Strategy of the Kyrgyz Republic" were presented to participants of the seminar. This paper is now under approval of the ministries and agencies concerned. The participants were informed about the decree on establishment of the National Water Council, adopted in February 2006. This council is headed by the Prime Minister of the Kyrgyz Republic. In the adopted on the results of seminar decision, it was offered to assign the UCC-Water national consultant together with the National Coordination Group to prepare the draft national "road map" of activities aimed at transition to the IWRM for its subsequent presentation at the regional seminar #1.

The Republic of Tajikistan

The first national seminar within the framework of component was held on 29 April, 2006, in Dushanbe. 53 representatives of the Ministry of Amelioration and Water Resources, the Ministry of Agriculture, the Ministry of Energy, the Ministry of Economy and Trade, the Ministry of Finance, the Ministry of Justice, the Ministry of Foreign Affairs, the State Committee for Environment

Protection and Forestry, the Scientific and Production Associations and the Scientific and Educational Institutions, the local Executive governmental authorities, the Non-governmental organizations, the President's apparat, the Parliament of Tajikistan, the Executive Committee of the International Fund for Saving the Aral Sea, the Tajik Department of Scientific-Information Center of ICWC, oblast water management organizations, the international projects, media and public relations participated in the seminar.

In the reports and presentations of the members of the National Groups on Coordination and Support to IWRM at this seminar the following issues were reflected:

- IWRM objectives and tasks and the planned approaches to their implementation
- Problems in establishment and the state support to WUAs
- Perspectives of water resources development from the IWRM viewpoint
- Water legislation in the light of implementation of the IWRM principles
- Strategy and priorities for development of water sector
- Role of information system, capacity development, and public awareness campaign in the IWRM process
- Technical, managerial, ecological and social aspects of the IWRM.

The following papers were presented to the participants of seminar:
- The main provisions of the "Strategy for development of water sector in Tajikistan" that is under preparation now, and

- Draft law on "Water User Associations", submitted for consideration to the Parliament of the republic. Adoption of this law is expected in the current year.

On the results of seminar it was adopted the decision (similar to the one adopted at the Kyrgyz seminar) on preparation of the draft national "road map".

The Republic of Uzbekistan

The first national seminar within the framework of component was held on 29 April, 2006, in Tashkent, at the conference hall of the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan. 42 representatives of the Ministry of Agriculture and Water Resources, the Ministry of Economy, the Ministry of Justice, the State Committee for Nature Protection, the Joint Stock Company "Uzbekenergo", the Agency "Uzkommunkhizmat", the Scientific and Research, Design, and Educational Institutes, the Basin Irrigation System Authorities participated in the seminar. The Chairman of GWP CACENA, Regional coordinator from the UCC-Water and Regional Consultant to the program, representatives of the UNDP, JICA, and the projects, which are being implemented in the Republic of Uzbekistan with support from the international agencies, participated in the work of seminar as well.
In the reports and presentations of the members of the National Groups on Coordination and Support to IWRM at this seminar the following main issues had been reflected and discussed:

- Further development of the on-going in the Republic reformation in the area of the water management and use sector and the hydrographic principle of water management
- Transition to the chargeable water use in the irrigated agriculture of Uzbekistan
- Integration of the energy sector priorities with the IWRM system
- Legal basis for establishment and state support to WUAs
- Conservation of the aquatic ecosystems
- Provision of the IWRM system with the reliable hydro-meteorological and environmental information.

The report of the National Consultant to UCC-Water about current situation in water sector and progress with the IWRM implementation in Uzbekistan was presented to the participants. The preliminary content of the "road map", compiled with consideration of the specific conditions of water management sector in Uzbekistan, was offered to the participants of seminar for review and

subsequent discussion. After discussion it was adopted decision offering to the National Consultant to UCC-Water jointly with the members of the National Group on Coordination and Support to the IWRM to prepare draft national "road map" for subsequent approval by the key ministries and agencies.

Regional Seminar #1

The regional seminar with participation of the key water resource managers and decision makers in the Region of Central Asia (from the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Uzbekistan, and Turkmenistan) was held in Bishkek (the Kyrgyz Republic) on 27-28 July, 2006. The objectives of this seminar are: Information and consultation with the stakeholders about development of the National "road maps" of planned actions aimed at transition to the Integrated Water Resources Management (IWRM).

In the course of this seminar the following tasks were accomplished:

- Assessment of the actual status of transition to the IWRM, including lessons learned from the "IWRM-Fergana" project and experience of Kazakhstan associated with development of the National Work Plans on IWRM
- Identification of concept and content of the "road maps"
- Identification of problems that required the special attention, arising during training of the stakeholders in the IWRM principles.

The joint session of participants of the regional and the "Tool Box Dissemination" seminars was conducted on 30-31 July, 2006, in Cholponata (the Kyrgyz Republic) within the framework of program for managerial capacity building, prepared by the GWP CACENA and UCC Water.

24 specialists representing ministries and institutions of the region, as well as representatives of the international organizations participated in this seminar.

Deputy Minister, Director General of the Department[10] of water resources, member of the ICWC, Mr. Baratali Koshmatov addressed to the participants of seminar with the welcoming speech. In his speech he stressed the importance of strengthening cooperation of the Central Asian countries for the efficient water resources use on the basis of transition to the Integrated Water Resources Management (IWRM) and thanked the UNEP for assistance in initiating preparation of the national IWRM plans.

During the first day of seminar the general presentations the "National priority interests, objectives and visions of water resources management in the environmental context and their coordination with the Regional limitations" were made by the leaders and specialists of the key water resources ministries and institutions from the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan, and the Republic of Uzbekistan. The main problems of the region's water resources management in the conditions of reformation and restructuring of water management and agricultural sectors (the main water consumer in the countries of the region) and ways for coordination of the national and regional interests in the environmental context of water resources management were presented in these national reports.

Following these reports the presentations were made by Dr. P. Lindgaard-Jørgensen, Regional Coordinator of UCC-Water Program, Dr. Vadim I. Sokolov, Chairman of the GWP CACENA, Dr. Yusup Kh. Rysbekov, legal consultant to the project, Mr. Michail G. Horst, Sub-regional coordinator of program, and Mr. Alexandr Nikolaenko, Manager of UNDP project the "National IWRM Plan and Water Saving in Kazakhstan":

- Methodological approaches to development of the "road maps"

[10] Department of water resources of the Ministry of Agriculture and Water Resources and Food Processing Industry of the Kyrgyz Republic

- Review and analysis of the political and legal basis of the transboundary watercourses management in the region
- Review and analysis of the current status of managerial capacity for the IWRM planning in the Kyrgyz Republic, the Republic of Tajikistan and the Republic of Uzbekistan
- Experience and problems associated with development of the National IWRM Plan in the Republic of Kazakhstan.

The next set of reports was devoted to the establishment of the Water User Associations (WUAs). Because the major part of the region's water resources is used in irrigated agriculture, this level of water hierarchy is very important from the viewpoint of improvement of water use efficiency and water consumption productivity, and involvement of farmers in the processes of water resources management. The reports on the "Experience and problems associated with establishment of WUA, as the element of transition to the IWRM" were presented by: Mr. Erkinbek I. Kozhoev (Head of the Center for support and regulation of WUA, the Kyrgyz Republic), Dr. Rakhmankul Rakhmatilloev (Leading specialist of the Center for support of farms privatization, the Republic of Tajikistan), and Mr. Normukhammad I. Sheraliev (Head of Department of the Main Administration of Water Resources, MAWR of the Republic of Uzbekistan)

Then the draft "road maps" developed by the national groups on support to transition to the IWRM, were presented to attention of the seminar participants. These presentations were made by: Mr. Abdybay Sh. Djailoobaev (Director of Kyrgyz Branch of SIC ICWC, the National expert to UCC-Water), Dr. Yarash Pulatov (Director General of the TajikNIIGIM, the National expert to UCC-Water), and Mr. Normukhammad I. Sheraliev (Head of Department of the Main Administration of Water Resources, MAWR of RUz, assistant of the National expert to UCC-Water).

During discussions (they were continued on 30-31 July at the UNEP and GWP joint session on methodology of managerial capacity building) constructive comments and proposals on the presented draft national "road maps" were given, including the necessity to stress the improvement of water use productivity, social mobilization of stakeholders, and, especially in irrigated agriculture, training for stakeholders of various levels of water hierarchy in the IWRM principles and tasks. The presented draft road maps were recommended to supplement with the explanatory notes and rationale for the essential (short-term) measures (2007-2009), including cost estimation. Participant of discussion supported and endorsed the objectives and tasks of the project at its final stage of implementation and scope of the planned activities.
The draft "road maps", improved in accordance the above comments, and rationale were considered and endorsed during discussions at the final national seminars #2 "Draft Road Map of the Staged Transition to IWRM and the Necessary Actions". These seminars were held:

- On 22 September, 2006, in Bishkek (with participation of 33 heads and specialists from ministries and institutions of the Kyrgyz Republic, non-governmental organizations and representatives of the international organizations and projects)
- On 28 October, 2006, in Tashkent (with participation of 35 heads and specialists from ministries and institutions of the Republic of Uzbekistan)
- On 31 October, 2006, in Dushanbe (with participation of 45 representatives from ministries and institutions of the Republic of Tajikistan and the international organizations).

Following these seminars the "road maps" and rationale were officially approved by the heads of the key ministries and institutions of Kyrgyzstan, Tajikistan, and Uzbekistan.

The further steps envisage presentation of the "road maps" with rationale to the international agencies at the final regional seminar #2 "Speedup of the Integrated Water Resources Management Objectives Implementation in Central Asia" (29-30 November, 2006, Tashkent). Based on the results of discussions at this seminar these documents along with the protocol of seminar and letters of approval from the key ministries and institutions will be submitted to the respective Governments for decision making on the practical implementation of these activities.

3. ACTUAL STATUS OF THE IWRM PROCESS

Although the specific Action Plans for transition to IWRM are not envisaged directly at the present moment in any of the three republics (the Kyrgyz Republic, the Republic of Tajikistan, the Republic of Uzbekistan), the necessary conditions for the IWRM implementation (enabling political environment, institutional framework and management instruments) are appeared in the national and sectoral programs.

Practically all the national development plans (on reduction of poverty level or improvement of living standards for achievement of the Millennium Development Goals, agriculture and energy sectors, nature protection sphere and the others) are integrated one and include the main IWRM principles to one or another extent.

The specific action plans are envisaged and being implemented by all three republics within the framework of pilot irrigation systems of the "IWRM-Fergana" project. This project allowed specialist to precisely identify ways for practical implementation of the IWRM principles taking into account the specific features of the Fergana valley. At this project stage activities aimed at replication of the IWRM principle on the scale of the whole Fergana valley are carried out.

The decision makers and specialists of water management organizations to full extent recognize that the managerial aspects of IWRM envisage fulfillment of the following requirements:

- transition from management within the administrative boundaries to management within the hydrographic ones
- transition from the sectoral water management to the integrated (system) one
- water demands management instead of the traditional supply management
- introduction of the cooperative forms of water resources management instead of the administrative and command ones
- replacement of the "closed" institutions by the open (transparent) water resources management structures
- use of the system for water resources management with the active participation of stakeholders ("bottom-up" approach) instead of the existed previously the "top-down" one.

The basin water resources management principle is stated in the legislation of the Kyrgyz Republic and the Republic of Uzbekistan. The relevant reorganization of water management bodies has been accomplished (Box 1). The Ministry of amelioration and water resources of the Republic of Tajikistan has prepared the proposals for transition to the basin water management principle.

BOX 1[11]

Current water management structure of the **Kyrgyz Republic** includes the following levels:

1. National: the Department of Water Resources (DWR) of the Ministry of Agriculture and Water Resources and Food Processing Industry (MAWR FPI) of the Kyrgyz Republic (МСВХиПП);

1.1. Oblast (basin): 7 basin water administration (BWA), with zones of responsibilities which practically coincide with administrative oblast boundaries;

1.1.1. Rayon: 40 rayon water administrations (RWA) within the BWA structure.

The DWR structure also comprises:

- Administrations of the large reservoir of the republican importance (Kirov, Papan, Ortotokoi reservoirs);
- Administrations of Inter-rayon Canals in Chu and Talas river valleys;
- Administration of the Chumush waterworks and the Lower Ala-Archa reservoirs;
- the specialized subdivisions (i.e. Construction Administration "Selvod zashita" within the DWR. This administration is dealing with protection of rural settlements and agricultural lands from mudflows and floods).

Current water management structure of the **Republic of Tajikistan** includes the following levels:

[11] Reports of the National Experts of the UCC-Water Project, Bishkek – Dushanbe - Tashkent, 2006.

1. National: the Ministry of Amelioration and Water Resources (MAWR);
1.1. Oblast:
- two oblast State Water Administrations (SWA);
- five territorial State Water Administrations (SWA);

1.1.1. Rayon: 42 rayon and inter-rayon Water Management Administrations (WMA).

The Ministry of amelioration and water resources of the Republic of Tajikistan has prepared the draft recommendations for change of water management organizational structure that envisages the following levels of hierarchy:

1. National: the Ministry of Amelioration and Water Resources;
1.1. Basin (river basins level): Basin Water Administrations (BWA) by the main rivers of republic: Syrdarya, Zarafshan, Karatag-Shirkent, Kafirnigan, Vakhsh, and Pyandj rivers;
1.1.1. Enlarged rayon basin (irrigation systems level): Irrigation system administration (ISA), and Canal Administrations (CA), in particular: **1.** the Khodja-Bakirgan ISA; **2.** the Samgar ISA; **3.** the Aksu ISA; **4.** Isfara ISA; **5.** the Big Asht ISA; **6.** the Northern Fergana ISA; **7.** the Golodnostep ISA; **8.** the Dalverzin ISA.

Current water management structure of the **Republic of Uzbekistan** includes the following levels:

1. National: the Main Administration of water resources (MAWR) of the Ministry of Agriculture and Water Resources (MAWR);

1.1. Basin (at the level of large river basins):

The Basin irrigation systems management (BISM):

Within the Syrdarya river basin: **1.** the Naryn-Karadarya BISM; **2.** the Naryn-Namangan BISM; **3.** Syrdarya-Sokh BISM; **4.** the Lower-Syrdarya BISM; **5.** Chirchi-Akhangaran BISM, and also: **6.** Administration of Main Canals System with the joined dispatch center for the Fergana valley,

Within the Amudarya river basin: **1.** Amu-Surkhan BISM; **2.** Amu-Kashkadarya BISM; **3.** Amu-Bukhara BISM; **4.** Lower Amudarya BISM; **5.** Zarafshan BISM.

1.1.1. Basin (at the level of irrigation systems):

Three Main System Administrations (MSA); seven Main Canal Administrations (MCA), and 52 Irrigation System Administrations, as well as the specialized departments: 14 territorial Administrations of Pumping Stations, Energy and Communication (APSEC), 13 Hydro-Geological and Amelioration Expeditions (HGAE).

Establishment of the National Water Council (03.02.06) under the Government and headed by the Prime-Minister was the important step undertaken by the Government of the Kyrgyz Republic for realization of the National Water Code provisions. This Council comprises members of the Parliament of the Kyrgyz Republic, governors of oblasts, heads of the key ministries and institutions. There is no doubts that this decision adopted at the highest level will facilitate coordination of actions of all the parties concerned in use of water resources taking account the needs of Kyrgyzstan's population.

4. RESULTS OF MONITORING OF CAPACITY NEEDS FOR IWRM PLANNING. MANAGERIAL CAPACITY AT NATIONAL LEVEL

At the beginning of any process, and especially in so complicated and multifaceted one as the IWRM, first of all there is a need to identify with the sufficient degree of objectiveness "where we are now" in order to move in accordance with the national and regional visions to the point "where we want to be". This assessment allow us to get more soundly to the interim stage of the IWRM planning – development of the "road maps". For this purpose early this year the national experts were asked to assess the real situation in the specially developed questionnaire format[12] . More detailed information is available in the national reports, submitted by the experts (Annex C). In this paper we will discuss only those assessments which reveal common for all three countries problems associated with status of managerial capacity, organizational limitations and human resources.

If to assess how far the countries have come towards a realistically attainable and essential institutional capacity building for water resources management based on the IWRM principles, currently no one out of 17 functions (Table 1) characterizing the institutional capacity operates at

[12] GUIDE AND QUESTIONNAIRE for Country Reports on IWRM (DHI Water and Environment in cooperation with UNEP Collaborating Centre, 14/12/2005)

the realistic goal level. As the functions that have many large gaps in quality and coverage the national experts specified the following ones:

- Collecting water resources information and operating databases
- Preparation of water resources assessments
- Monitoring of aquatic ecosystems
- Monitoring of water use
- Planning resource use, protection and conservation.

Table 1. Managerial Capacity at the National Levels

Management Functions		**Kyrgyzstan**	**Tajikistan**	**Uzbekistan**
1.1	Policy formulation	Many Gaps	Many Gaps	Some Gaps
1.2	Drafting of laws and associated regulations	Some Gaps	Many Gaps	Many Gaps
1.3	Recovery of cost of water resources management	Some Gaps	Some Gaps	Function is not Identified
1.4	Collecting water resources information and operating databases	Many Gaps	Many Gaps	Many Gaps
1.5	Preparation of water resources assessments	Many Gaps	Many Gaps	Many Gaps
1.6	Preparation of environmental assessments	Some Gaps	Many Gaps	Some Gaps
1.7	Preparation of socio-economic assessments	Some Gaps	Many Gaps	Some Gaps
1.8	Monitoring of water availability	Many Gaps	Many Gaps	Some Gaps
1.9	Monitoring of ambient water quality	Many Gaps	Many Gaps	Some Gaps
1..10	Monitoring of aquatic ecosystems	Many Gaps	Many Gaps	Many Gaps
1.11	Monitoring of pollution loads	Some Gaps	Many Gaps	Some Gaps
1.12	Monitoring of water use	Many Gaps	Many Gaps	Many Gaps
1.13	Planning resource use, protection and conservation	Many Gaps	Many Gaps	Many Gaps
1.14	Facilitating water demand management	Some Gaps	Many Gaps	Many Gaps
1.15	Water allocation	Some Gaps	Some Gaps	Some Gaps
1.16	Conflict mediation	Some Gaps	Many Gaps	Some Gaps
1.17	Cooperation on internationally shared watercourses	Many Gaps	Many Gaps	Some Gaps

Such situation with actual status of these important IWRM components is associated first of all with sharp reduction of financing of water sector institutions, hydro-meteorological services, nature protection agencies and lack of real ability of irrigated agriculture, the main water user, to pay full price for water delivery services. Reduction of world market prices for agricultural production along with growth of prices for energy carriers, fertilizers, plant protection chemicals and other agricultural inputs make abilities of majority of farmers to pay for water delivery services very problematic.

It's quite clear that *the proper level of management is only possible if you can measure and estimate professionally the subject (resource) of management.* Unfortunately in regard to the above listed elements we face with the apparent regress versus the previous period of the region's development.

Even during the period of its maximum development the hydro-meteorological network in the Aral Sea basin has lower density as compared with other regions. According to assessments provided by the Deputy Director of Uzhydromet, Mr. Myagkov S.V.[13] since 1980s the number of hydrological

[13] Myagkov S.V. "Role and Place of the Hydro-Meteorological Service in the Integrated Water Resources Management System" Report to the Regional Seminar #1 "Speedup of IWRM – 2005 Objectives Implementation in Central Asia" (Bishkek, 27-28 July, 2006)

gage station and meteorological stations was reduced by 25-40% and 23% respectively. This led to reduction of river flows forecast accuracy or water availability.

The insulated databases on water resources maintained by various institutions with use of different methodological approaches provide assessments that significantly differ from each other. These assessments impede decision making in planning of use, protection and conservation of water resources.

Water use monitoring at the level of former on-farm irrigation and drainage network that in the past was not at the proper level, became even bigger problem with reorganization of agriculture. A number of water users were increased by two-three orders (10^2 – 10^3). At the same time the majority of these users do not equipped with water metering devices even in the conditions of chargeable water use. So, water distribution is carried out "by eye".

By the Environmental Performance Index of the world countries, officially presented at the World Economic Forum in Davos on 26 January, 2006 (rating of 133 countries was prepared by the Center for Environmental Law & Policy at Yale University and the Center for International Earth Science Information Network (CIESIN) at Columbia University)[14], the Central Asian countries took the following places: Republic of Tajikistan is 117-th in the world (with rating 48.2) and the last one amongst the CIS countries

- The Kyrgyz Republic is 80-th (with rating 60.5)
- The Republic of Uzbekistan is 105-th (with rating 52.3)
- The Republic of Tajikistan is 117-th (with rating 48.2)

This rating confirms the fact mentioned by the expert from the Kyrgyz Republic, Mr. A. Sh. Djailoobaev (Annex) that in Kyrgyzstan, as in all the other republics of the former Soviet Union, use of the natural resources, and first of all water resources, for economic activities only was the dominating approach. In this approach water resources were and are being considered only from the viewpoint of possibilities to provide consumers with water. The ecological role of water resources, including water requirements for sustainability of the nature landscapes and ecosystems were practically ignored.

5. "ROAD MAPS" OF STAGED TRANSITION TO IWRM

The "road map" is a chronology of the planned stages and objectives of activities aimed at development of the IWRM in the short-, mid-, and long-term periods. Basically the "road map" is an outline of the detailed IWRM plan that should be developed by each republic in accordance with proposal made at the World Summit on Sustainable Development (Johannesburg, September 2002).

As was mentioned earlier, a process of the national "road maps" was initiates at the first national seminars in April, 2006. The national experts and members of the National Working Groups on Coordination and Support to IWRM had to assess:

- At what stage is the country in the IWRM planning cycle?
- What are the constraints on the planning process?
- What actions should be undertaken for realization of the IWRM plan?
- What will be required for implementation of these actions?

Based on status of the IWRM processes in each republic, the list of activities, planned period of their performance, and resources required for realization of the essential (short-term) activities vary, but they are grouped by the following directions:

[14] http://www.washprofile.org/ru/node/4431 (Each country was rated on the basis of 16 criteria, combined into 6 groups: "Ecological Health", "Air Quality", "Condition of Water Resources", "Biological Diversity", "Productivity of the Natural Resources" and "Sustainable Energy Development". Ratings were given on the 100 score scale, where 100 is the highest score and 0 the lowest one. Rating has showed that the ecological policy, carried out by the governments, has the significant impact on the environment conditions).

- Managerial capacity building
- Creation of legislative and political environment for IWRM
- Technical and technological measures.

In development of the "road maps" along with solution of tasks which are specific for the water management policy in each country, the activities aimed at the staged solution of the key problems existing at the various levels of water hierarchy in all republics were envisaged. These are as follows:

1. Practical ensuring of jurisdiction of the water management organizations within the hydrographical boundaries that corresponds to the IWRM principles and will allow making timely decisions on water management and provide water services without interference of the administrative and territorial bodies;
2. Integrated water resources management in all types of water use within the hydrographical boundaries on the basis of the hydro-meteorological data analysis in the real time mode taking into account water supply dynamics and use of water in various sectors of economy. Provision of this information in the user-friendly format for all water users;
3. Strategic planning of water use and consumption taking into account needs of the agricultural production, municipal and rural water supply, industry and environment, as well as the other water consuming sectors;
4. Practical decentralization of solutions on water management with transfer of management functions to the possibly lowest level (WUAs and their federations, Canal Councils), based on the countries' legislation and with assistance from the Governments to establishment and formation of the WUAs and their federations;
5. Gradual transition from the direct state management of water delivery towards it regulation by water sector, as well as its relationships with the other sectors of economy;
6. Gradual transition to management of the WUAs activities and then water sector organizations by the elective Councils with authorization to carry out water policy, establishment of rules and procedures on their respective water systems within the countries' legislative basis;
7. Ensuring the necessary conditions that will allow farmers to pay full costs of operation and maintenance, as well as minor repair and improvement of all irrigation and drainage system within the WUA boundaries through adoption of measures on improvement of land and water productivity;
8. Ensuring of actual participation of Canal Councils, WUAs and their federations in formation of water policy and establishment of rules for water resources management.

The first versions of the "road maps" were discussed at the regional seminar on 27-28 July in Bishkek. Along with comments of participants on the necessity to stress the improvement of water use productivity, public participation, social mobilization and training of stakeholders in the IWRM principles and need for concrete definition of planned outputs of activities, the presented draft "road maps" were recommended to supplement with the explanatory notes and rationale for the essential (short-term) activities aimed at the national IWRM planning.

The "road maps", amended and improved in accordance the comments were discussed during the second round of national seminars and then submitted to the key ministries and institutions of Kyrgyzstan, Tajikistan, and Uzbekistan for their official approval. The final versions of "road maps" and rationale together with the lists of the ministries and institutions, which provided the official approvals are presented in Annex D.

After consideration of the "road maps" at the final regional seminar #2, the further step is to submit them to the respective Governments for decision making on the practical implementation of these activities.

ANNEXSES

ANNEX A

Annex a1

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН
АЙЫЛ, СУУ ЧАРБА ЖАНА КАЙРА
ИШТЕТҮҮ ӨНӨР ЖАЙ
МИНИСТРЛИГИ

**СУУ ЧАРБА
ДЕПАРТАМЕНТИ**

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СЕЛЬСКОГО, ВОДНОГО ХОЗЯЙСТВА И
ПЕРЕРАБАТЫВАЮЩЕЙ
ПРОМЫШЛЕННОСТИ
КЫРГЫЗСКОЙ РЕСПУБЛИКИ

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№ 01-2/1342
«2» ноября 2005 ж.г.

UNEP Support Programme to Achieve IWRM Implementation Plans in Central Asia

Dear colleagues,

Department of Water Management of the Ministry of Agriculture, Water Management and Processing Industry of Kyrgyz Republic supports completely efforts and contents of a project initiated by UNEP for Central Asia and considers that its implementation along with IWRM-Fergana project (Swiss Agency for Development and Cooperation, SDC), in particular with its national component, would be expedient.

Working out a programme for expansion of the IWRM-Fergana project's achievements from the territory of Aravan-Akbura Canal to other regions of the country taking into account their specificity, which will be implemented by National group for support of IWRM, may serve as quite effective approach to the project implementation in Kyrgyz Republic. This program will enable to prepare "Principal Provisions of National Plan for IWRM Implementation in Kyrgyz Republic" with involving national experts and by conducting training seminars and roundtables.

J.B. Bekbolotov

**Director General
of the Department of Water Management
of the Ministry of Agriculture, Water Management
and Processing Industry of Kyrgyz Republic,
National Leader of
IWRM-Fergana Project**

Annex a2

ВАЗОРАТИ МЕЛИОРАТСИЯ ВА ХОЧАГИИ ОБ ЧУМХУРИИ ТОЧИКИСТОН

МИНИСТЕРСТВО МЕЛИОРАЦИИ И ВОДНОГО ХОЗЯЙСТВА РЕСПУБЛИКИ ТАДЖИКИСТАН

734064, ш. Душанбе, куч. Шамси 5/1 тел. 35-35-66, 35-35-54 факс.21 20 31 734064, г. Душанбе ул. Шамси 5/1

Аз 10.11.05 № 1-1266

От №

UCC-Water Program

Dear colleagues,

Ministry of Water Resources and Land Reclamation of Tajikstan supports completely efforts and contents of a project initiated by UCC-Water for Central Asia and considers its implementation along with "IWRM-Fergana" project (funded by Swiss SDC), in particular with National Component, would be expedient.

Working out a program for expansion of the IWRM-Fergana project's achievements from the territory of Hodjabakirgan Canal to other regions of the country taking into account their specificity, which will be implemented by National group for support IWRM, may serve as quite effective approach to the project implementation in Tajikistan. This program will enable to formulate "Principal Provisions of Nation Plan for IWRM in Tajikistan" with involving national experts and by conducting training seminars and round tables.

Minister of Water Resources and Land Reclamation of Tajikistan

Nazirov A.A.

Annex a3

O'ZBEKISTON RESPUBLIKASI
QISHLOQ VA SUV XO'JALIGI
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Fax: 8-37-12 41-26-20
Telex: 116229 «Колос»

10.11.2005. № 04/8-441

дати №

Dear colleagues

Ministry of Agriculture and Water Resources of Uzbekistan supports completely efforts and contents of project initiated by UCC-Water for Central Asia and considers its implementation along with "IWRM IWRM-Fergana" project (funded by Swiss SDC), in particular with National Component, would be expedient.

Working out a program for expansion of the IWRM-Fergana project's achievements from the territory of South-Fergana Canal to other regions of the country taking into account their specificity, which will be implemented by National group for support IWRM, may serve as quite effective approach to the project implementation in Uzbekistan. This program will enable to formulate "Principal Provisions of Nation Plan for IWRM in Uzbekistan" with involving national experts and by conducting training seminars and round tables.

Deputy Minister of Agriculture and
Water Resources of Uzbekistan
Head of Water Resources Department Sh.R. Khamraev

ANNEX B

Annex b1

NEWSLETTER

May 15, 2006

UNEP Support to Central Asian Countries in Achievement of IWRM 2005 Objectives. "Accelerating the Process"

The Central Asian component and its organization

This Central Asian component of the program had been developed by UNEP and UCC-Water in close cooperation with GWP CACENA[15]. Development of this component was commenced in October 2005, and would be continued up to October 2006.

The regional coordinating and consulting group had been formed from representatives of the GWP CACENA, the Kyrgyz Republic, the Republic of Tajikistan, the Republic of Uzbekistan and the UCC –Water agency. At the end of 2005, the National groups for coordination and support of IWRM were formed in all three republics. These groups had comprised representatives of the key ministries and agencies concerned in progress and Intersectoral interaction in water resources management.

The planned activities of this component envisage the different phases of progress:

- *Sub-regional reporting on progress in achievement of the IWRM 2005 objectives and the structure of IWRM with concentrating of attention on the Kyrgyz Republic, the Republic of Tajikistan, and the Republic of Uzbekistan*
- *Development of the National road maps/plans for the IWRM 2005, in the Kyrgyz Republic, the Republic of Tajikistan, and the Republic of Uzbekistan*
- *Creation of managerial capacity of the senior water resources managers for the IWRM planning and its issues with the aim to "speedup" progress in the IWRM planning.*

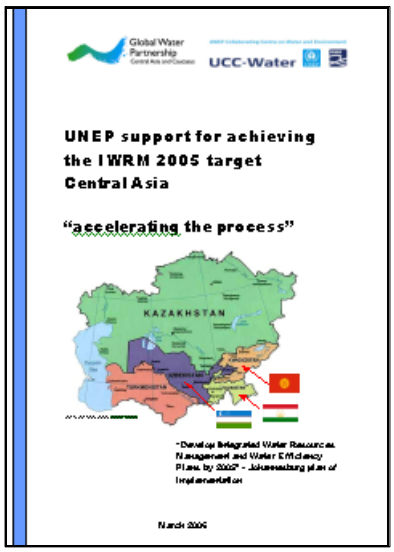
The sub-regional and national working plans addressed to the IWRM 2005 objectives were prepared during the first stage of activities on this component.

Progress at the regional level

15 representatives of the ministries and organization from the Kyrgyz Republic, the Republic of Tajikistan, the Republic of Uzbekistan, and SIC ICWC[2] had participated in the working meeting on 28.01.06, in Fergana (Uzbekistan). The presentations were focused on the objectives, tasks, and planned approaches to the project implementation and monitoring of progress in activities aimed at transition toward the IWRM. The National project consultants had submitted reports on implementation of the first stage "Assessment of the National Status of Water Resources Management from the IWRM principles viewpoint and the main provisions of the National Program for water resources development in the long-term perspective".

[15] Global Water Partnership Central Asia and Caucasus
[2] Scientific Information Center of Interstate Commission for Water Coordination

The booklet with the brief overview of progress towards transition to the IWRM in the Central Asian Countries had been prepared for presentation at the 4th Word Water Forum. The progress towards IWRM and bottlenecks requiring the staged solution for managerial capacity building had been identified in this review.



Progress on National IWRM Roadmaps

In April 2006, the seminars on the "Issues of Intersectoral Interaction in Water Use and Transition to Integrated Water Resources Management" were conducted in all the three republics.

Kyrgyz Republic

The first national seminar within the framework of the component was held on 21 April, 2006, in Bishkek. 30 representatives from the departments of the Ministry of Agriculture and Water Resources, Food Processing Industry, Kyrgyz Integrated Hydro-Geological Expedition, the Ministry of Health, the State Agency for Environment Conservation and Forestry, Opened Joint Stock Company "Electric Stations", the Main Administration on Hydro-Meteorology of the Ministry of Emergency Situations, the Kyrgyz Department of SIC ICWC, the Center for Support and Regulation of WUA[3], the State Water Inspection, Basin Water Management Authorities, the projects which are being implemented in the republic with support from the international agencies participated in this seminar. The Regional Consultant, Coordinator of the sub-regional program participated in the seminar as well.

In the reports and presentations of the members of the National Groups for Coordination and Support to IWRM at this seminar the following issues were reflected:

- IWRM objectives and tasks and the planned approaches to their implementation
- Tasks of the National Group for coordination and support to the IWRM
- Problems and conflicts in water resources management and their possible solutions
- Problems in reformation of water resources management and use
- Problems in the state support to WUAs
- Problems in conservation of the aquatic ecosystems
- Role and place of the hydro-meteorological service in the IWRM system.

The main provisions of draft "Water Strategy of the Kyrgyz Republic" were presented to participants of the seminar. This paper is now under approval of the ministries and agencies concerned. The participants were informed about the decree on establishment of the National Water Council, adopted in February 2006. This council is headed by the Prime Minister of the Kyrgyz Republic.

[3] Water User Association

In the adopted on the results of seminar decision, it was offered to assign the UCC-Water national consultant together with the National Coordination Group to prepare the draft national "road map" of activities aimed at transition to the IWRM for its subsequent presentation at the regional seminar (July, 2006). The final, agreed with the stakeholders, version of this "road map" will be presented at the closing national seminar (August 2006).

Republic of Tajikistan

The first national seminar within the framework of component was held on 29 April, 2006, in Dushanbe. 53 representatives of the Ministry of Amelioration and Water Resources, the Ministry of Agriculture, the Ministry of Energy, the Ministry of Economy and Trade, the Ministry of Finance, the Ministry of Justice, the Ministry of Foreign Affairs, the State Committee for Environment Protection and Forestry, the Scientific and Production Associations and the Scientific and Educational Institutions, the local Executive governmental authorities, the Non-governmental organizations, the President's apparat, the Parliament of Tajikistan, the Executive Committee of the International Fund for Saving the Aral Sea, the Tajik Department of Scientific-Information Center of ICWC, oblast water management organizations, the international projects, media and public awareness participated in the seminar.

In the reports and presentations of the members of the National Groups for Coordination and Support to IWRM at this seminar the following issues were reflected:

- IWRM objectives and tasks and the planned approaches to their implementation
- Problems in establishment and the state support to WUAs
- Perspectives of water resources development from the IWRM viewpoint
- Water legislation in the light of implementation of the IWRM principles
- Strategy and priorities for development of water sector
- Role of information system, capacity development, and public awareness campaign in the IWRM process
- Technical, managerial, ecological and social aspects of the IWRM.

The following papers were presented to the participants of seminar:

- The main provisions of the "Strategy for development of water sector in Tajikistan" that is under preparation now, and
- Draft law on "Water User Associations", submitted for consideration to the Parliament of the republic. Adoption of this law is expected in the current year.

On the results of seminar it was adopted the decision (similar to the one adopted at the Kyrgyz seminar) on preparation of the draft national "road map".

Republic of Uzbekistan

The first national seminar within the framework of component was held on 29 April, 2006, in Tashkent, at the conference hall of the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan. 42 representatives of the Ministry of Agriculture and Water Resources, the Ministry of Economy, the Ministry of Justice, the State Committee for Nature Protection, the Joint Stock Company "Uzbekenergo", the Agency "Uzkommunkhizmat", the Scientific and Research, Design, and Educational Institutes, the Basin Irrigation System Authorities participated in the seminar. The Chairman of GWP CACENA, Regional coordinator from the UCC-Water and Regional Consultant to the program, representatives of the UNDP, JICA, and the projects, which are being implemented in the Republic of Uzbekistan with support from the international agencies, participated in the work of seminar as well.

In the reports and presentations of the members of the National Groups for Coordination and Support to IWRM at this seminar the following main issues had been reflected and discussed:

- Further development of the on-going in the Republic reformation of the water management and use sector and the hydrographic principle of water management
- Transition to the chargeable water use in the irrigated agriculture of Uzbekistan
- Integration of the energy sector priorities with the IWRM system
- Legal basis for establishment and state support to WUAs
- Conservation of the aquatic ecosystems
- Provision of the IWRM system with the reliable hydro-meteorological and environmental information.

The report of the National Consultant to UCC-Water about current situation in water sector and progress with the IWRM implementation in Uzbekistan was presented to the participants. The preliminary content of the "road map", compiled with consideration of the specific conditions of water management sector in Uzbekistan, was offered to the participants of seminar for review and subsequent discussion. After discussion it was adopted decision offering to the National Consultant to UCC-Water jointly with the members of the National Group for Coordination and Support to the IWRM to prepare draft national "road map" for subsequent approval by the key ministries and agencies.

Regional Seminar in July, 2006

The regional seminar is to be held in the third decade of July, 2006, in Cholponata, the Kyrgyz Republic. The key water resource managers and decision makers in the Region of Central Asia (from the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Uzbekistan, Turkmenistan) will participate in this seminar.

The objective of the regional seminar is: Information and consultation with the stakeholders about development of the National "road maps" of planned actions aimed at transition to the Integrated Water Resources Management (IWRM) and water saving in pursuance of the commitments adopted at the World Summit on Sustainable Development (Johannesburg, 2002). In the course of this seminar it is planned to:

(i) Assess status of the IWRM implementation at the sub-regional level, including lessons learned from the "IWRM-Fergana" project and experience of Kazakhstan associated with development of the National Work Plans on IWRM and water saving
(ii) Identify concept and content of the IWRM strategy and the "road maps"
(iii) Identify problems that required the special attention, arising during training of the stakeholders in the IWRM principles.

It is also planned to conduct joint session of the program participants and participants of the seminar "Tool Box Dissemination", that is included in the framework of program, prepared by the GWP CACENA.

Annex b2

Global Water Partnership Central Asia and Caucasus

UNEP Collaborating Centre on Water and Environment

UCC-Water

NEWSLETTER

15 August, 2006

UNEP Support to Central Asian Countries in Achievement of IWRM 2005 Objectives.

"Speedup of Process"

Central Asian Component of Program and Its Structure

This Central Asian component of the program is being developed by UNEP and UCC-Water in close cooperation with GWP CACENA[16]. Development of this component was commenced in October 2005, and would be continued up to October 2006.

The regional coordinating and consulting group had been formed from representatives of the GWP CACENA, the Kyrgyz Republic, the Republic of Tajikistan, the Republic of Uzbekistan and the UCC – Water agency. At the end of 2005, the National groups for coordination and support of IWRM were formed in all three republics. These groups comprised representatives of the key ministries and agencies in water resources management.

The planned activities within the framework of this component envisage the following phases of progress:

- *Sub-regional reporting on progress in achievement of the IWRM 2005 objectives and the structure of IWRM with concentrating of attention on the Kyrgyz Republic, the Republic of Tajikistan, and the Republic of Uzbekistan*
- *Development of the National "road maps"/plans for the IWRM 2005 objectives in the Kyrgyz Republic, the Republic of Tajikistan, and the Republic of Uzbekistan*
- *Creation of managerial capacity of the senior water resources managers for the IWRM planning and its issues with the aim to "speedup" progress in the IWRM planning.*

The progress up to July 2006 was reported in the first Newsletter of this project.

Regional Seminar within Framework of UNEP Program (Bishkek, 27-28 July, 2006)

The regional seminar with participation of the key managers and decision makers on water problems in the Central Asia (the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, the Republic of Uzbekistan, and Turkmenistan) was held 27-28 July, 2006, in Bishkek (the Kyrgyz Republic). The objectives of this seminar were to inform and consult with stakeholders on the development of the national "road maps" of planned actions on transition to IWRM in pursuance of the commitments assumed at the World Summit on Sustainable Development (Johannesburg, 2002). In the course of this seminar the following was presented and discussed:

(iv) Assessment of the actual state of activities on the way towards transition to the IWRM, including lessons learned from the "IWRM-Fergana" project and experience of

[16] Global Water Partnership, Central Asia and Caucasus

Kazakhstan in regard to development of the National Work Plans on IWRM and water saving

(v) Identification of concept and content of the "road map"

(vi) Identification of problems which require the special attention during training of stakeholders in the IWRM principles.

On 30-31 July, 2006, in Cholponata (the Kyrgyz Republic) within the framework of program, prepared by the GWP CACENA and UCC Water, a joint capacity building session with participants of the regional seminar and the "Tool Box Dissemination" seminar was held..

24 specialists representing ministries and institutions of the region, as well as representatives of the international organizations participated in this seminar.

Deputy minister, Director General of the Department of water resources[2], member of the ICWC[3], Mr. Baratali Koshmatov addressed the welcoming speech. In his speech he stressed the importance of strengthening cooperation of the Central Asian countries, for an efficient water resources use on the basis of transition to the IWRM. He thanked UNEP for assistance in initiating the process of preparation of the national IWRM plans.

During the first day of seminar the heads and specialists of the key water managements ministries and institutions of the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, the Republic of Uzbekistan, and Turkmenistan made their general presentations the "*National priority interests, objectives and visions of water resources management in the environmental context and their coordination with the Regional limitations*".

The main problems of the region's water resources management in the conditions of reformation and restructuring of water management and agricultural sectors (the main water consumer in the countries of the region) and ways for coordination of the national and regional interests in the environmental context of water resources management were presented in these national reports.

In the next set of reports and speeches, made by the Regional Coordinator of UCC-Water Program, Dr. P. Lindgaard-Jørgensen, chairman of the GWP CACENA, Dr. Vadim I. Sokolov, project consultant on the legal issues, Dr. Yusup Kh. Rysbekov, the sub-regional coordinator of UCC-Water Program, Mr. Michail G. Horst, and manger of UNDP project in the Republic of Kazakhstan, Mr. Alexandr Nikolaenko, it was presented:

[2] Department of water resources of the Ministry of Agriculture and Water Resources and Food Processing Industry of the Kyrgyz Republic

[3] Interstate Commission for Water Coordination of the Central Asia

- Methodological approaches to development of the "road maps",
- Review and analysis of the political and legal basis of the region' transboundary water courses management,
- Review and analysis of the current conditions of the managerial capacity for the IWRM planning in Kyrgyz Republic, the Republic of Tajikistan, and the Republic of Uzbekistan,
- Experience and problems associated with development of the National IWRM plan in the Republic of Kazakhstan.

The next set of reports was devoted to one of the actual problems for the region – establishment of the Water User Associations (WUAs). Because the major part of the region's water resources is used in irrigated agriculture, this level of water hierarchy is very important, in the improvement of water use efficiency and water consumption productivity, and involvement of farmers in the processes of water resources management. The reports on the "Experience and problems associated with establishment of WUA, as the element of transition to the IWRM" were presented by: Mr. Erkinbek I. Kozhoev (Head of the Center for support and regulation of WUA, the Kyrgyz Republic), Dr. Rakhmankul Rakhmatilloev (Leading specialist of the Center for support of farms privatization, the Republic of Tajikistan), and Mr. Normukhammad I. Sheraliev (Head of Department of the Main Administration of Water Resources, MAWR of the Republic of Uzbekistan[4]).

This was followed by a presentation of the draft "road maps" developed by the national groups for support to transition to the IWRM. These presentations were made by: Mr. Abdybay Sh. Djailoobaev (Director of Kyrgyz Branch of SIC ICWC, the National expert to UCC-Water), Dr. Yarash Pulatov (Director General of the TajikNIIGIM, the National expert to UCC-Water), and Mr. Normukhammad I. Sheraliev (Head of Department of the Main Administration of Water Resources, MAWR of RUz, assistant of the National expert to UCC-Water).

During discussions (they were continued on 30-31 July, at the joint UNEP and GWP ToolBox seminar capacity building seminar) comments and proposals on revisions of the presented draft national "road maps" were given by the participants. This comprised e.g. the necessity to stress the improvement of water use productivity, social mobilization of stakeholders, and, especially in irrigated agriculture, training for stakeholders of various levels of water hierarchy in the IWRM principles and tasks. It was proposed along with the revisions of the presented road maps to attach to them the explanatory notes/rationale for the planned short-term (2007-2008) activities and to estimate the budget to undertake the short term activities. Participant of discussion supported and endorsed the objectives and tasks of the project at its final stage of implementation and scope of the planned activities.

[4] Main administration of water resources of the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan

Further Plans within the Framework of Project

The schedule of works, approved at the regional seminar, envisages the following:

- Follow-on/revision of the national "road maps" and their approval by the key ministries and institutions
- Carrying out the 2. round of national seminars in September 2006
- Development of the final sub-regional report on the project activities
- Preparation and carrying out (in November 2006) the final regional seminar with participation of the potential sponsors to the next stages of activities outlined in the national "road maps".

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ANNEX C

Annex c1

THE KYRGYZ REPUBLIC

NATIONAL REPORT

Within the framework of UNEP support for achieving the Johannesburg Plan of implementation target of "Integrated Water Resources Management and Efficiency Plans by 2005, with support to developing countries"

BISHKEK – 2006

General Information

Geography and the Natural Resources: *The Kyrgyz Republic* is the landlocked State. It occupies the North – Eastern part of the Central Asian region (the Aral Sea basin) between the latitudes of 39° and 43° north. The country borders on Kazakhstan in the north, on Uzbekistan in the west, on Tajikistan in the south, and on China in the east.
Area: The territory of Kyrgyzstan is 199.9 thousand km^2. *Relief:* 89.7% of territory are mountains (Alai, Tien Shan, and Pamir) with highest point the Pobeda Peak (7,439m), 10,3% are plains: the Western Pamir-Alai (up to 4,643 m above mean sea level)in the south, the Western Tien Shan (up to 4,482 m above mean sea level) in the east, and the intermountain troughs (Fergana, Chu, Talas, Issyk Kul).
Climate of Kyrgyzstan is classified as a clearly expressed continental, and arid one on the major part of the country.
Land Resources: There are 10,713 thousand ha of agricultural lands, including: 1,348 thousand ha (13%) of the arable land (including 1,043 thousand ha of the irrigated arable lands), and 9,365 thousand ha (87%) of pastures and hayfields. There are also 2,833.6 thousand ha of forests and perennial plantations, and 4,855.9 thousand ha of the National parks, nature reserves, refugiums and the "Issyk Kul" biosphere territory. The highly productive husbandry is only possible on the irrigated lands, which comprise around 2/3 of total arable land area.
Water Resources:
Surface waters: There are more than 3,500 rivers, with the largest ones the Naryn and Karadarya rivers (tributaries of the Syrdarya river). Flow of these rivers is 27.4 km³/year. The total average annual surface flow is 47.23 km³. There are 1,923 lakes (with the total area of 6,836 km²). The largest ones are: Issyk Kul (6,236 km²), Son-Kul (275 km²), and Chatyr-Kul (175 km²). There are 12 reservoirs with the total area of 375.2 km², and capacity of 26.39 km³. There are 525 glaciers with the total area of 154 km².

Underground waters: There are 357 fresh water aquifers with the total reserve of 21.5 km³/day, including 10.5 km³/day of water suitable for drinking purposes. Out of this number 267 aquifers are in use with extraction of 8.5 km³/day. There are also 100 aquifers of the mineral and thermal waters and 30 thousands of wells.

Population and Labour Resources: Population of Kyrgyzstan is 5,065 million people (as of 2004), including 35% of urban and 65% of rural inhabitants. The average *density of population* in the country is 25.3 person/km². *The age pattern is* as follows: 0-14 years – 34.5%, 15-64 years – 57.0%, 65 years and over – 8.5%. *The average age* is 26.62 years. *Population growth rate* is 1.1% a year. *Life expectancy* is 68.2 years. *Birth rate* is 20.9 births/1,000 peoples. *Death rater* is 7.1 deaths/1,000 peoples. *Migration rate* is 16.72 migrants/1,000 peoples. *Sex ratio* is 0.978 male/female. *Infant mortality rate* is 20.9 deaths/1,000 live births (2003). *Nationalities*: there are more than 90 nationalities, including: 67.4% of Kyrgyz, 14.2% of Uzbeks, 10.3% of Russians, and 8.1% of the others. *Religion*: 75% are Muslims; 20% are Orthodox Christians; 5% are the others. *Languages*: the state language is Kyrgyz, and the official language is Russian. *Literacy rate* of the adult population is 98.7%. 10% of population has higher education. *Employment:* 65.3% (in the age 15-59 years) of population has permanent employment. Employment structure: 44% of population work in agriculture and forestry, 20% in industry, and 36% in the sphere of services. *Registered unemployment* is 180,000 people. *Population poverty rate* is 16-44.5 % (by the various indices).

According to the UN classification the republic is attributed to the category of countries with the average level of human capacity development. In 2000, Kyrgyzstan was the 102-nd country in terms of the human development index out of 173 countries of the world where this index was calculated.

Political and Administrative Structure: *Administrative division:* There are 7 oblasts, 40 rayons, and 24 cities. Bishkek is the capital city. *Independence day* is 31.08.1991. *Constitution* was adopted on 5.05.1993 with the subsequent amendments on 10.02.1996, 17.10.1998, 24.12.2001, and on 18.02.2003. *Suffrage*: 18 years of age, universal. *Head of the state* is the President. *The legislative power* is exercised by the unicameral Parliament Zhgorku Kenesh with 75 members. *The executive power* is exercised by the Government. The Prime-minister is the Head of the Government. *The supreme judicial power* is exercised by the Supreme Court, the Constitutional Court. *The international relations*: There are the diplomatic representations in more than 70 countries. Kyrgyzstan is the member of more than 30 International Organizations.

Economy: Industry: mining, textile, food processing. *Agriculture:* Production of various field crops: cereals, grain legumes, tobacco, cotton, vegetable, melons and gourds, horticulture; Livestock production: mainly sheep breeding. *GDP* is $4.3 billions (2003). *The foreign trade turnover:* export is $581.73 millions, import is $717.0 millions. *The economic entities number* is 430.222 thousands (including: 98.4% of private enterprises, and 1.6% of the state-owned ones), and 266 thousands of private farms.
The majority of population and economic activities are concentrated in the fertile Chu and Fergana valleys. However, the highland areas of the country possess the considerable economic potential.

Water Fund of the Kyrgyz Republic

Kyrgyzstan possesses the considerable supply of water resources presented by the rivers flow, underground water reserves and water accumulated in the glaciers and lakes. In the average water availability year the total volume of water resources is 2,458 km^3, including: 47.23 km^3 of the surface rivers flow (according to various sources the long-term average annual river flow is in the range from 44.509[17] to 51.9[18] km^3), the potential reserves of underground water is 13 km^3, volume of lake waters is 1,745 km^3 and 650 $км^3$ is water equivalent of glaciers.

Glaciers. There are in total 8,208 glaciers of various sizes on the territory of Kyrgyzstan. The area of glaciation is 8,169.4 km^2 or 4,2% of the republic's territory. Its main centers are located at the extreme east in the Sary Djaz river basin with the largest valley's glaciers, and at the south in the Zaalai mountain ridge. Fresh water reserves accumulated in the highland glaciers are estimated in the volume of 650 km^3. This is 12 times greater than the resources of river flow of the republic.

Lakes. There are 1,923 lakes in Kyrgyzstan with total area of 6,836 km^2. The largest lakes of Kyrgyzstan are: Issyk Kul (with the surface area of 6,236 km^2), Son-Kul (275 km^2), and Chatyr-Kul (175 km^2).

Rivers. The longest rivers are: the Naryn river with the length of 535 km, the Chatkal river (205 km), and the Chu river (221 km.). More than 3,500 rivers flowing through the territory of republic supply water to the neighboring countries of Kazakhstan, Uzbekistan, Tajikistan, as well the Xinjiang Uyggur Autonomous Region of China.

Swamps occupy 0.5% of the republic's territory in the areas with the high ground water table (troughs of the Issyk Kul and Son Kul lakes, the Chu, Talas, and Naryn river valleys).

Reservoirs. There are 12 reservoirs with the total area of 375.2 km^2, and capacity of 26.39 km^3.
Currently Kyrgyzstan withdraws for its own needs around 8.0-9.0 km^3/year mainly for irrigation. Apart from the closed Issyk Kul lake basin, the rest of water (more than 30.0 km^3 in the average water availability year) flow to the territories of the neighboring countries.
Due to the natural conditions of the republic water from the small mountain rivers is mainly diverted for irrigation of 806 thousand ha of agricultural lands (or 76% of the total irrigated land area). Out of this amount only 86 thousand ha of land are fed by water from the regulated river flow. The rest 720 thousand ha are irrigated from the natural (unregulated) river flow.
Around 262 thousand ha (or 24% of the total irrigated land area) are irrigated from the large rivers, including 154 thousand ha from the rivers with the regulated flow. Thus, out of total irrigated land area of 1,043 thousand ha, 240 thousand ha of land (22.5%) are irrigated from reservoirs.

Water Management Situation in the Kyrgyz Republic

The long-term average annual volumes of the surface water flow (km^3) by river basins, formed on the territory of the Kyrgyz Republic, are given in Table 1.

[17] *M.N. Bolshakov,* Water Resources of the Soviet Tien Shan and Methods of Their Calculation. - Frunze: the Ilim Publishing House, 1974, 306 pages.
[18] *A.A. Ergeshev, I.D. Tzigelnaya, M.A.. Muzakeev.* Water Balance of Kyrgyzstan. the Ilim Publishing House, 1992, 151 pages.

Table 1.

Name of Water Body (Basin)	Long-Term Average Annual Surface Flow (km^3)	
	Total	Including: Formed on Territory of the Kyrgyz Republic
1. Syrdarya River	37.2	27.40
2. Amudarya River	79.28	1.93
3. Chu River	6.64	5.00
4. Talas-Assa Rivers	1.84	1.74
5. Ili- Kar_Kyra Rivers	0.36	0.36
6. Issyk Kul Lake	4.65	4.65
7. Tarim River	6.15	6.15
TOTAL:	**159.10**	**47.23**

The main useful underground fresh water reserves (UUFWR) are concentrated in the intermountain troughs, which are the most economically developed territories. Total volume of the UUFWR is 6,085 thousand m^3/day (2.22 km^3/year). Out of 44 explored and approved aquifers, 20 are suitable for the needs of municipal and drinking water supply, and 24 for irrigated agriculture.

Statistics of the water resources use in the Kyrgyz Republic over the preceding period indicates that the maximum volume of water intake (13.93 km^3/year) and its total use (10.05 km^3/year) were achieved in 1988. After this year the steady trends towards reduction of water volumes consumption are observed. This was caused by the following reasons:

- sharp reduction of the GDP in the conditions of transition to the market relations, including decline of production in the agriculture and industry sectors;
- removal of some part of irrigated lands from the agricultural use;
- change of the cropping pattern with substitution of the hydrophilous crops (perennial grasses) for the less hydrophilous ones (grains);
- deterioration of the technical conditions of water infrastructure in all sectors of economy;
- degradation of the centralized water supply systems;
- reduction of water consumption due to introduction of payments for delivery of water and low solvency of water users, and, first of all, private farmers, as well as population in general.

It is also necessary to mention the low reliability of the official statistical data on water use, especially over the period after 1995.

According to the various expert assessments the actual water consumption/use exceeds the statistical data by 10-15% as a minimum due to the following reasons::

- lack of the proper water metering by the numerous water users of the agricultural sector emerging after disintegration of the former collective and state farms;
- intentional understatement in the reports the actual volumes of water use by the majority of water user categories after introduction of payments for delivery of water;
- technical and managerial difficulties associated with the state control over use of water resources in the conditions of the sharply increased number of the economic entities.

Water and energy resources of the Kyrgyzstan's river are expedient to use in the integrated manner, harmonically combining the demands of various water use sector: municipal and industrial water supply, agriculture, energy, fishery, recreation, sport, etc. Only with such comprehensive approach to use of water and energy resources the highest economic effect can be achieved. The integrated approach allows obtaining the twofold and threefold effect from use of the same water resources and water management structures.

It is difficult to predict the long-term development of water use/consumption in Kyrgyzstan, including the dynamics of the domestic water use, due to unstable conditions of the national economy that are typical for period of transition to the market relationships.

Three scenarios for development of economy sectors in the Kyrgyzstan's part of the Aral Sea basin had been elaborated within the framework of GEF project (Component A 1): minimum changes; low level of development, and high level of development.

The First Scenario envisages development (rehabilitation) of the agriculture and water sectors only through improvement of management without any demands for development of the additional land and water resources. The necessary investments should be allocated only for the proper maintenance of irrigation and

drainage infrastructure and prevention of its further degradation and collapse. In this scenario the managerial measures are important not only for improvement of the processes in rehabilitation and development of agricultural production, but they are themselves the significant element in improvement of efficiency of these processes and, basically, do not require the high expenses for their realization.

The Second Scenario envisages restoration (rehabilitation) of the agricultural production with its increase from the current level up to not lower than the previously (1990-1991) achieved level. At the same time, there is no intention to develop the additional land and water resources. Volumes of their use will remain at the level of 1990-1991. The possible investments into agriculture and water sectors will be mainly directed to restoration of the operational capabilities (designed capacity, efficiency, and reliability) of irrigation systems, improvement of irrigation methods and agronomic practice, selection of new crop varieties and yield increase, and amelioration of agricultural lands.

The Third Scenario envisages the high level of the agricultural production development in the republic's region attributed to the Aral Sea basin. According to this scenario by 2010-2025, all population of this region should be provided with foodstuff and agricultural products in volumes not less than required by the minimum medical norms. Of course, the additional land and water resources, exceeding their maximum volumes used before (in 1990), should be involved in the agricultural production.

Summary of indices of the irrigated agriculture development and water use scenarios in the Kyrgyzstan's part of the Aral Sea is presented in Table 2.

Table 2.

Development Indices	***Development Scenarios***		
	First	**Second**	**Third**
Irrigated Land Area, thousand ha	415.24	416	493
Water Intake/Use	4275/3557	4633/3778	6141/4952
Total, million m^3/year	4275/3557	4633/3778	6141/4952
Including, for developed lands;			708/580
Improvement of water availability for irrigation of new lands			800/594

According to the provisions of the Constitution and Water Code of the Kyrgyz Republic, the municipal/drinking water supply for population is and will remain in future as one of the highest priority. On this basis, perspectives for development of the municipal and rural water supply are considered in the same scenario that will ensure in future as far as possible compliance with the normative requirements of the growing population.

In the overall water consumption balance of the Kyrgyz Republic the share of non-agricultural sectors of economy is currently rather small and will remain at this level in future.

Indices of water use/consumption at the level of 1999-2000, had been adopted as the starting point for preparation of forecast of its use/consumption for the future. In the forecast it was taken into consideration that the actual water consumption over these years has exceeded as a minimum by 10-20% the official statistical data. Such conclusion is confirmed by opinions of the majority of independent experts.

The summarized results of water use/consumption forecasting for perspective by the various sectors of economy and the republic as a whole are given in Table 3.

Table 3. Estimated Indices of the Domestic Water Use/Consumption in the Kyrgyz Republic for 2000-2020

Sectors of Water Use/Consumption	Forecast of Water Use/Consumption, million m^3				% from the Total Water Consump-tion in 2020
	2005г.	2010г.	2015г.	2020г.	
1. Municipal Water Consumption in Cities and Rayon Centers					
1.1. Water Supply for the Urban Population	95-100	105-111	121-126	138-146	1.2
1.2. Water Supply for Organizations, Institutions and their Infrastructure	17-18	19-20	21-22	24-26	0.2
1.3. Water Supply for Industrial Enterprises	(20-40 % from water consumption by population).				
2. Water Supply in Rural Areas					
2.1. Water Supply for Rural Population	97-100	115-120	152-157	175-193	1.5-1.6
2.2. Water Supply for Organizations, Institutions and Settlements Infrastructure	19-20	23-24	30-31	35-39	0.3
2.3. Water Supply for Industrial Enterprises in Rural Areas	(up to 5% from water consumption by population).				
3. Irrigated Agriculture	7500-8500	8500-9500	9500-10000	10000-10600	89-90
4. Industry (Total)	350-400	500-550	600-650	630-700	5.9-6.0
5. Energy	10,5	11	11,5	13	0.1
6. Forestry	20,5	21	21,5	22	0.2
7. Fishery	65	70	75	80	0.6-0.7
8. Total Water Consumption by the Other Sectors of Economy	30	40	50	60	0.5-0.6
Total by the Republic	**8,204-9,264**	**9,104-10,467**	**10,582-11,144**	**11,167-11,879**	**100**

Possibilities for the future increase of water intake volumes are limited by not only the international water sharing quotas. Around 78% of irrigated land area on the territory of Kyrgyzstan use water from the natural (unregulated) small rivers flow. As of now all reserves for increase of water intake volumes from these rivers during vegetation period are already depleted. Further expansion of land area irrigated by the gravity systems, which withdraw water from the large rivers, has also extremely limited perspectives. Apart from increase of the domestic water consumption limits with the corresponding decrease of water supply to territories of the neighboring countries, the alternative options for provision of the necessary volumes of water intake are as follows:

- redistribution of the small rivers' annual flow through creation of the accumulating reservoirs;
- interbasin transfer of water resources (the Tarim and Naryn rivers);
- intensive development of the underground fresh water reserves;
- development of the lift irrigation systems for lands along the large rivers;
- efficient use of return waters.

Realization of each of the above options requires attraction of the significant investments. The wide-scale financing of such projects from the state budget or the other internal sources in the nearest ten years is unrealistic. Thereby, the water saving and improvement of water use productivity should play the important role at all levels of water hierarchy.

Priorities and the Key Problems of Water Resources Management

There are some institutional problems, which will make process of the strategic plans formulation and, especially, their implementation more complicated and less streamlined in some main river basins of Kyrgyzstan. These problems include:

1. Data Availability. Data series about water resources often have some gaps due to mainly the financial difficulties. There is no regularity in the data collection and processing. As a consequence the reliable

assessment of the available water resources is impossible. In particular, there is a lack of information about volumes of return and infiltration waters, which play the significant role in the water balance of river basin. Necessity of investments and lack of the stable financing for restoration of the national water resources database and the basin water monitoring structures are the main constraints to the efficient planning of water resources management.

2. Water Supply Guarantees. Only 22.5% (or 262 thousand ha, including 154 thousand ha irrigated from reservoirs) of irrigated lands in Kyrgyzstan are provided with the guaranteed water supply from the large rivers and reservoirs. The rest 78% or more than 800 thousand ha of lands are irrigated from the small unregulated rivers. Practically all water resources of these rivers are used for irrigation and during two months of peak for irrigation water demands water supply deficiency here is 30-50%. The most critical situation with the water supply for the rural population is observed in the populous regions of the Fergana valley. One of the consequences of the limited water supply to these regions is restriction of the potential for expansion of irrigation, as well rural development and improvement of population living standards. Simultaneously at the sub-basin level it is necessary to undertake measures aimed at regulation of water supply and demands as well as need for attraction of investments.

3. Upper Watersheds. Protection and conservation of the forest and snow covered regions in the upper watersheds are the key measures for formation of water flow and its regulation, control over soil erosion, silting of water bodies, and water quality, prevention of floods, mudflows, droughts, etc.

4. Conservation and Regeneration of Fish Resources. Kyrgyzstan possesses a capacity for fish production on the basis of large water bodies for the internal market and export of fish products and aquacultures. Planning of water use for fishery and ecological purposes should be integrated in order to eliminate problems associated with return water pollution in excess of MAC (maximum allowable concentration).

5. Water Use Planning in the Conditions of Growing Uncertainty. Currently water is shared on the basis of the hydrological forecasts of water availability and water demands for irrigated agriculture and the other sectors of economy. Due to deterioration and reduction of the hydro-meteorological data collection network preparation of reliable river flow forecasts becomes more and more difficult, especially in the condition of uncertainty caused by climate change and the other associated unpredictable factors.

6. Scarcity of Basins' Water Resources and unpredictability of their hydrograph are the main factors that impede introduction of the basin principle of management and planning.

It is obvious that balance between water supply and demand at the basin level, as well as water quality will become critical already in the next 5 – 20 years. Availability of water resources and ecological situation differ by basins in accordance with the following brief assessment:

- *With growing ecological problems situation in the Issyk Kul lake basin will become critical in 2010. Further water intake or disposal of wastes will lead to deterioration of the ecological situation in the lake basin;*
- *With the predicted rapid growth of water intake in the Chu river basin the water resources, including the important additional underground water reserves, will be completely depleted by 2020;*
- *Water resources of the Talas river basin will be completely used already by 2008. With the limited reserves of suitable underground waters in this region it is possible to assume that already in the coming several years limitation and regulation of water use in this basin will be a priority;*
- *In the Alai valley of the Amudarya river basin due to low density of population and limited perspectives for water resources development, the limitations on "water supply demand" balance are not envisaged for the next 20 - 30 years;*
- *There is no threat of water supply limitations in the upper part of the Naryn river basin. However, in the Osh, Batken and Djelal Abad oblasts with growth of population density, intensification of irrigated agriculture and the limited resources of the underground waters, as well as with ever growing social and economic risks, water use is the most critical in the country. Therefore, there is an urgent need to undertake actions aimed at regulation and limitation of water use and improvement of water availability in order solve the problem with development needs.*

7. Possibilities and Limitations of Water Delivery Management. The following possibilities for increasing water availability are limited by the high costs and financial difficulties that may prove to be unrealistic in the current economic conditions:

- Regulation of flow of the small rivers and sub-basins;
- Interbasin transfer of water resources (from the Tarim and Naryn rivers);
- Increasing development of the underground fresh water reserves;
- Development of the lift irrigation systems for lands along the large rivers;
- Reuse of return waters and wastewaters after primary treatment (with additional benefit for environment and agricultural production).

Possibilities for the future increase of water intake volumes are limited by not only the international water sharing quotas. Around 78% of irrigated land area on the territory of Kyrgyzstan use water from the natural (unregulated) small rivers flow. As of now all reserves for increase of water intake volumes from these rivers during vegetation period are already depleted. Further expansion of land area irrigated by the gravity systems, which withdraw water from the large rivers, has also extremely limited perspectives. Apart from increase of the domestic water consumption limits with the corresponding decrease of water supply to territories of the neighboring countries, the alternative options for provision of the necessary volumes of water intake are as follows:

8. Management and Planned Possibilities. In the conditions of imminent quantitative crisis with water resources and frequent emergency situations associated with water, the basin planning is the important mechanism for the optimal water distribution, structural regulations and preventive measures, which are based on the long-term planning.

9. Other Priority Issues of the National Planning Include:
   - Coordination of water use with the progress in rehabilitation of irrigated lands;
   - Transition from the seasonal operative planning of water resources use within the Naryn river basin's cascade of reservoirs with calculation of compensated energy supply on the basis of integrated water – energy models to the integrated long-term one;
   - Management of threats to the surface and underground waters pollution oriented on the future planning of water safety, including control over pollution from industry and use of fertilizers in agriculture, environment protection, modernization of irrigation and drainage systems, and prevention of natural disasters, caused by human activities.

The Main Threats to Water Resources

Trends in the global climate warming lead to the steady intensive process of shrinking the area of glaciers. According to forecasts, by 2025, the area of glaciers will be decreased by 30-40% that in turn will lead to reduction of water availability by 25-35%.

In Kyrgyzstan, as in all the other republics of the former Soviet Union, use of the natural resources, and first of all water resources, for economic activities only was the dominating approach. In this approach water resources were considered only from the viewpoint of possibilities to provide consumers with water. The ecological role of water resources, including water requirements for the nature landscapes and ecosystems from the viewpoint of their sustainability, had not been considered at all. Although attempts to take into account the sanitary water releases for rivers in the total volumes of water intake had been undertaken, but nobody used to be blamed for ignoring these volumes. Such approach to use of water resources dominates up to the present time.

In regard to protection of water fund from pollution and depletion, and monitoring in the upper watersheds there are two problems:
Firstly – there are no practically the purposeful activities in this direction due to lack of the necessary financial funds; and
Secondly – created in the past the hydrometric network that carries out observations of river flows, precipitations and the other climatic parameters was and is being decreased over the recent years due to lack of funds. Reliability and quality of measurements are being reduced due to poor salary of staff and drain of specialist from this sector.

Risks Associated with Water

Analysis of trends over the period of 1992-2005, indicates that the huge water potential of Kyrgyzstan is used less and less efficiently at the country level. Its use at the regional level does not provide any tangible economic benefits for Kyrgyzstan and in addition it is often a source of tension in the interstate relations. Along with the well-known objective reasons for these trends associated with overcoming of economic crisis

consequences, on-going degradation of the technical conditions of the water infrastructure, etc., the main limiting factors up to the recent time were:

- lack of the officially approved basics of the national water policy;
- imperfection of water resources management system in the context of implementation of this policy.

Existence of very complicated problems associated with water resources management and land use is typical for the highland territories and upper watersheds of river basins. Floods, mudflows, waterlogging, soil salinization, pollution of ground waters, and irrational water use system are the factors that negatively affect irrigation, and productivity of agriculture in the upper watersheds. Especially serious are the problems associated with soil erosion, degradation of the highland pastures, landslides, and mudflows. The complicated topographical conditions (rugged relief, steep mountain slopes, high slopes of agricultural lands surface), as well as lack of forest massifs, and anthropogenic activities facilitate development of various types of the erosion processes on slopes.

Appearance of water erosion is aggravated by the mudflow phenomena. Mudflow emergence is facilitated by the storm rainfalls and sharp increase of air temperature, which lead to rapid movement of water along the eroding steep slopes. Lack of vegetation and forest cover facilitate mudflows emergence. Mudflows destroy irrigation infrastructure, settlements, roads, bridges, electric power transmission lines, and the other object of national economy.

Positive features of the forest plantations for control over soil degradation are inarguable in such climatic and geographical conditions. Forests on the mountain slopes play significant role in soil and water protection, water and climate regulation. Thereby increase of forest cover in the upper watersheds may have the positive effect on all river basins, because headwaters of the largest Central Asian rivers (Syrdarya and Amudarya) are located in these mountains. Not long ago forests cover the substantial areas, but due to irrational economic activities, intensive disafforestation, cattle grazing and ploughing of steep slopes area of forests was sharply decreased.

Despite development of scientific knowledge and technologies damage from the natural and anthropogenic catastrophes in the mountains is growing every year. At the end of 20 and beginning 21 centuries direct damage from the various types of disasters and catastrophes was on the average USD 24 millions a year. This indicates that the natural and anthropogenic catastrophes in the mountains undermine the country's economy and force the government in the conditions of scarce budget to allocate its significant part for elimination of the catastrophes' consequences, provision of assistance to population and carrying out of restoration works. Growth of a number of the natural disasters and associated damages makes efforts aimed at elimination of their consequences less and less efficient and bring forward the new tasks as more actual and of high priority ones: prediction and prevention of the natural disasters and catastrophes and big man-made accidents, and implementation of the preventive measures.

Regulation of Water Relationships

Up to the present time sectoral management principles was used in the Kyrgyz Republic under which functions and responsibilities in the area of water relationships were distributed amongst various ministries and institutions. The National Parliament (Zhogorku Kenesh), the Government of the Kyrgyz Republic, the Ministry of Agriculture and Water Resources and Food Processing Industry, the Ministry of Emergency Situations, the State Agency for Nature Protection, the State Agency on Geology and Mineral Resources, the Ministry of Health Care, the National Committee on Statistics, the State Inspection on Standardization and Metrology, the Ministry of Foreign Affairs, and the Ministry of Justice carry out regulation of water relationships. In addition, some other bodies deal with solution of water problems, and in particular the Joint Stock Company "Electric Power Stations", municipal services of cities and rayon's centers, etc.

Local state administrations also participate in water resources management, which carry out on their respective territories the following functions:

- protection of water user rights;
- allocation of land for water fund;
- restriction of water use rights in justified cases.

Thereby the numerous state bodies with their own provisions, norms and instructions deal with water resources management.

The Department of Water Resources (DWR) of the Ministry of Agriculture and Water Resources and Food Processing Industry of the Kyrgyz Republic plays the leading role in water resources management. It carries out operation and maintenance of irrigation systems, delivers water to water users and at the same time is the leading state body that establishes water intake limits from the surface and underground sources for all sectors of economy, including irrigated agriculture, industry, municipal/drinking water supply, hydro and thermal power stations, fishery and the other sectors. In this situation the other sectors of economy (apart from agriculture) are not sure that the DWR acts correctly, and therefore the potential conflict of interests in regard to water may arise between them.

The similar situation is in the State Agency on Geology and Mineral Resources that through its hydro-geological service drills boreholes for water extraction and simultaneously awards the drilling licenses to the independent drillers. There is obviously a conflict of interests in this case.

There were some problems in water resources management even during the soviet time in the conditions of strict governmental regulation. These problems now became more aggravated due to emergence of the numerous water users and consumers with various types of ownership.

The main disadvantages of still operating management system are:

1. The key regulatory body, the Department of Water Resources (DWR), is subordinated to the Ministry of Agriculture and Water Resources and Food Processing Industry. As a consequence, over a number of years the DWR actually serves interests of irrigated agriculture only, thereby violating the basic principle of equality of all water relationship entities.

2. In contempt of the commonly accepted in the world practice ideology of water resources management where the surface, underground, return and other waters are considered as a unit, in Kyrgyzstan management functions in the area of water relationships are assigned to a number of the republican ministries and bodies, but without efficient coordination of interaction between them with simultaneous retention of the duplicated authorities and absence of the concretized norms of responsibility for the final results.

3. Unallowable combination of the regulatory, inspective and control and managing functions and authorities in one and the same the republican management body (official persons).

4. Excessive concentration of the operative management functions of economic activities in the republican management bodies which do not possess the sufficient human capacity and in contempt to the principles of government policy aimed at decentralization of managerial decision making and gradual reduction of the government participation in the sphere of entrepreneurship.

5. Over the long period of time the main direction of activities of the republican and local management bodies was oriented on water infrastructure operation with insufficient attention to the strategic problems of water resources protection from pollution and depletion, regulation of the supply-demand balance, stimulation of water saving and efficient use, development of market mechanisms for water use, improvement of participation of public and natural resources use entities in solution of the above mentioned problems, etc.

6. Dominance of the sectoral or personal interests over the national ones is the distinctive feature of all existing system for management of the natural resources use in Kyrgyzstan. This situation is caused by the lack of efficient motivation and concrete responsibilities of officials from the management bodies.

Majority of the above mentioned disadvantages is of the subjective nature and caused by the inconsistency of institutional reforms over the previous period. In particular, measures aimed at reformation were quite often restricted to the mechanical amalgamation of the management bodies and reduction of staff number, or formal replication of the foreign management models that adequate to the conditions of the Western Europe, but do not take into consideration traditions and particularity of water relationships in the Central Asia, including Kyrgyzstan.

Taking into account these conditions, the leading specialists from Kyrgyzstan jointly with the competent foreign experts have prepared the new legal basis for reformation of water resources management system. This document has passed through all the necessary stages of approval and reflected in the “Water Code” of the Kyrgyz Republic. According to the norms of this legislative act the national system of water relationships regulation should be drastically modernized. Since the directions of reformation, envisaged by the “Water Code”, are very comprehensive their realization will require the long period of time and attraction of considerable financial and other resources. Thereby, it was recommended to the Government of the Kyrgyz

Republic to implement a number of the high-priority institutional measures that will not require the significant investments from the state budget, but allow resolving the most urgent for Kyrgyzstan water problems in more efficient manner.

Legal Basis for Introduction of the IWRM Principles on the Scale of the Kyrgyz Republic

The "Water Law", developed at the beginning of formation of the current governmental management structure and market mechanisms in economy, was in force up to 2005. Over the past period it has played certain positive role in development of water relationships.

The Water Code of the Kyrgyz Republic was adopted in January 2005. The objective of the Water Code adoption was establishment of the unified legal basis for regulation of water relationships in the area of water resources use and protection for the guaranteed and sufficient supply of the proper quality water for population and various sectors of economy. At the same time (according to the Item 2 in Article 4 of the Constitution of the Kyrgyz Republic) the Code is aimed at establishment of balance between protection of water resources and ever-increasing economic activities of the legal entities and physical persons.

Being the main normative and legal act on management of water resources use and protection, it provides the basic statement of the governmental principles and policy in regard to water use, as well as rights and obligations of water users and various government bodies responsible for the certain aspects of water resources management. It covers all issues starting from formation of the national water policy and strategy to use of water resources by the various sectors of economy, including also issues associated with protection of water bodies and resources. Established for a long period of time the unified "rules of game" will eventually create the favourable environment for attraction of internal and foreign investments for development of agriculture and water resources management.

The Water Code reflects the natural hydraulic cycle. All water concentrated on land surface, underground, in glaciers and snowfields, and rivers and canals outflowing, flowing by or percolating through such systems is considered in the Water Code as a part of one and the same resource. Water does not recognize administrative boundaries and follows to the physical laws only, freely flowing from one territory into another.

The Code reflects area of responsibilities of the Zhogorku Kenesh (Parliament) and the Government of the Kyrgyz Republic, as well as the other governmental bodies of water resources management taking into account expansion of their authorities as specified in the new version of the Constitution of the Kyrgyz Republic. The Governmental body responsible for water resources management and realization of the Water Code is the State Water Administration. Its competence, as well as competence of the other governmental management bodies associated with regulation of water resources use and protection is given in details in the Code.

Reformation of water resources management within the framework of the adopted Water Code is based on the basin principle. The basin principle considers the hydrological object as the most appropriate area for sustainable management of water activities. With some exceptions, there are specific and clearly defined basin's water systems in Kyrgyzstan that coincide with the oblasts administrative boundaries. At the same time, configurations of some river basins had been and are being changed as a result of the large-scale water management activities in the past and now, especially in the Chu and Syrdarya river basins. These large-scale and integrated irrigation systems comprise the main and interstate irrigation canals, which intake water from the main rivers and also from the small local sub-basins. As a result, the WUAs and municipalities receive water simultaneously from several sources in various sub-basins. Water supply from these unregulated local sub-basins often does not correspond to the norms and schedules and creates problems associated with complete waterlogging.

Traditionally water in Kyrgyzstan had been considered as a social and economic resource. The additional requirements are to use water as the integral part of environment, meet needs in the ecologically clear water, as well as protect environment within the boundaries of basins.

Planning measures are aimed to ensure such mechanisms for participation in water use that would correspond to the norms of current democratic and liberal economy. One of the important aspects of the transition period economy, reflected and realized in the basin planning is gradual transition from the totalitarian governmental control to the concept of end water user rights and obligations that ensures guarantees of ownership rights and facilitates investments, democratic and socio-economic development, and environment protection.

Another objective of water resources management transfer from the central political, regional and sectoral responsibilities to the basin management is broader involvement of public and stakeholders in order to facilitate implementation of water policy reflected in the basin plans. The basin plans are required for ensuring the objective assessment and distribution of the available water resources and as a basis for participation and cooperation in the inevitable competition for water amongst regions and sectors of economy. Basin's plans also envisage assessment and distribution of the total impact on the sanitary conditions along the entire river course for the safety reasons, instead of control over flow by the local authorities at the estuary that is carried out as a measure for environment protection.

The overall objective of the basin planning is improvement of the social, economic and ecological characteristics of water sector within the main river basins of the Kyrgyz Republic. It is expected that the independent basin planning will facilitate attraction of investments, economic integration, improvement of water use productivity and efficiency and structural changes, as well as social security of population and environment protection.

One of the important tasks of the Water Code is establishment of the official mechanisms for coordination of activities and exchange of information amongst stakeholders. For these purposes the Water Code envisages establishment of the National Water Council. This Council will coordinate activities of water users and consumers, develop and submit to the Government of the Kyrgyz Republic the National water strategy, and manage the activities of the State water administration. Such body will represent interests of the entities concerned and in addition it may be entrusted with the specific tasks. Management of water resources use and protection are envisaged to carry out on the basis of hydrographic territories, which should be established by the Government of the Kyrgyz Republic on the basis of proposals of the National Water Council. Coordination of activities in water sector at the level of main basin should be carried out by the Basin Council established in each main basin (river or the Issyk Kul Lake). Activities of the Basin Council are regulated by the Provision approved by the Government of the Kyrgyz Republic.

For the first time in the history of water legislation of the country the Water Code envisages provisions on the minimum ecological rivers flow. In Article 64 of the Water Code this requirement is written as follows: *"On the basis of approved proposals of the authorized state agency for environment protection and the State Water Administration the Government of the Kyrgyz Republic establish the minimum requirements to the ecological flow for the certain rivers and water bodies for conservation of fish resources and the aquatic ecosystems"*

The Water Code envisages establishment of the advisory National Commission on dam safety and the advisory commissions on irrigation and drainage at the levels of republic, main basin and rayon.

Taking into account the world experience in water resources management, provisions on establishment of the licensing water use system had been included in the Water Code. Necessity for establishment of the licensing water use system had been caused by the ill-conceived and hasty abolition of water use licensing envisaged by the law "On amendments of Law of the Kyrgyz Republic "On Licensing" adopted in January 2001. The efficient water resources management is ensured through the system of various regulating mechanisms with the main one that identify the type of activities allowable in the Kyrgyz Republic on the basis of water use licenses awarded in accordance with the conditions and provisions of the Water Code. The conditions and provisions of the licensing water use system are described in details in the Code. They establish the guaranteed rights to water use for a long period and obligations of these right owners to use water resources in efficient manner taking into account the requirements of environment protection. Thereby, possibilities for corruption in water distribution are reduced, the guaranteed supply of irrigation water increased, and crop yields improved leading to poverty reduction in the rural area.

The Water Code envisages public participation in the decision making on management of water resources use and protection and provides right to access to the appropriate information through the water rights licensing system. As admitted by everybody, the Kyrgyz Republic is the leader in the region in establishment of WUAs, their involvement in the water resources management process, and state support to development of these associations. There are currently 430 WUAs in the Kyrgyz Republic.

Actual Status of the IWRM Process in the Kyrgyz Republic [3]

The IWRM concept that emerged as response to the growing water problems in the world is vital for Kyrgyzstan as well. Understanding of necessity for the relevant reforms in the republic's water sector stipulated adoption in January 2005, the main normative act, the Water Code of the Kyrgyz Republic. In accordance with the Water Code the State Water Administration (SWA) is entrusted with the leading role in water resources management. By the decree of the Government of the Kyrgyz Republic the Department of water resources is appointed as an acting State Water Administration. The National Water Council also was established by the Decree of the Government along with approval of its provision and list of staff member.

The majority of integrated water resources management principles are envisaged in the Water Code. Adoption of the Code, approved by the Parliament (Zhogorku Kenesh) and signed by the President of the Kyrgyz Republic has provided the legal basis for introduction of the IWRM principles on the scale of republic. Substantial assistance to this process will be provided by the on-going implementation of IWRM projects in the Fergana valley and Chu and Talas river basins. The concrete steps towards realization of the hydrographical management principle are establishment and operation within the DWR system of the Inter-rayon Canal Administrations (in Chu and Talas oblasts, and within the framework of the "IWRM-Fergana" project), the Aravan-Akbura canal Administration (in Osh oblast) and Water Committee of this canal that comprises representative of water users. Currently this committee is reorganized into the Union of Water User Associations of the Aravan-Akbura canal. Experience of these pilot objects is planned to replicate in the other irrigation systems of the republic.

More precise definition of directions and ways for reformation of water management based on the IWRM principles is also planned to carry out within the framework of the "Improvement of water resources management" project that will be commenced in the second half of 2006, with the World Bank sponsorship.

The long-term strategy for development of WUAs had been developed within the framework of "On-farm Irrigation" project as the important component of the IWRM principles development in the Kyrgyz Republic. This strategy envisages the following:

- completion of denationalization process of the water management bodies and formation on their the operation and maintenance (O&M) enterprises with the various types of ownership: private and mixed ones;
- completion of the WUAs establishment process and their active participation in the water infrastructure management and protection of water fund;
- ultimate differentiation of functions and powers of the water relationship entities;
- participation of the government bodies in the O&M activities financed from the state budget only on the strategically important water systems and structures. Economic entities and their associations will be completely responsible for management, and operation and maintenance of the rest of water infrastructure.

For development of water relationships in the conditions of market economy the government consistently carries out measures aimed at:

- adaptation of water users to the conditions of market economy;
- support to water users through provision of credits and grants, technical and methodological assistance, education and advanced training, information support, assistance in organization of construction, repair, and rehabilitation works, introduction of new technologies, etc.;
- protection of water user rights;
- promotion of establishment of water user associations;
- reduction of water users economic activities risk in the agricultural sector through development of the insurance sector;
- gradual transfer of majority of water infrastructure fixed assets to water users or their association with the management and ownership rights.

Activities of the water user associations are regulated by the current Law "On water user associations" and bylaws being developed in accordance with this law.

[3] Results of monitoring of process for transition to the IWRM presented in ANNEX, are used in this section (monitoring consultant is Dr. Yu. Rysbekov (SIC ICWC)

According to plan for realization of the "On-farm Irrigation" project, departments for WUAs support are being created in the 19 rayons of the republic with the financial support from the project. After completion of the project these department will be joined with the basin and rayon water management administrations. In future the similar departments will be established in the other rayons of the republic.
In perspective for operation and maintenance of the on-farm irrigation and drainage infrastructure around 500-600 water user associations will be established in the Republic, which may voluntarily unite into Water User Federations.

Although the specific Action Plans for transition to IWRM on the scales of the Kyrgyz Republic are not envisaged directly at the present moment, the necessary conditions for the IWRM implementation (favourable political environment, managerial roles and tools) are appeared in the national and sectoral programs. Practically all the national development plans (on reduction of poverty level or improvement of living standards for achievement of the Millennium Development Goals, agriculture and energy sectors, nature protection sphere and the others) are integrated ones and include the main IWRM principles to one or another extent.

The specific action plans are envisaged and being implemented within the framework of pilot irrigation systems of the "IWRM-Fergana" project.

If to assess objectively how far the Kyrgyz Republic has come towards the institutional capacity building necessary for water resources management based on the IWRM principles, currently no one out of 17 functions, characterizing the institutional capacity, works at the level of the real objective:

- There are some gaps in quality and coverage in:
  Preparation of laws and ancillary normative documents, Reimbursement of the water resources management costs, Preparation of the ecological and socio-economic assessments, Monitoring of pollution load, Promotion of water demands management, Water sharing,, Intermediation in resolution of conflicts;
- There are a lot of gaps in:
  Formulation of policy, Collection of information about water resources and development of databases, Preparation of water resources assessments, Monitoring of water availability, use and quality, and the aquatic ecosystems, Planning of water resources use, protection and conservation, Cooperation in use of the international water courses.

The main serious institutional limitations impeding execution of necessary functions by the water management organizations are insufficient: budget, equipment (for maintenance of databases, operative measurements and control over water discharges and quality parameters), material and technical supply (mainly with vehicles and machinery). At the same time the staff number and level of their competence to the acceptable extent correspond to the technical complexity of the above listed management functions. Practically all heads of water management organizations are familiar with the IWRM principles. However, it should be stated that staff is only motivated to some extent to water management based on the IWRM principles.

The decision makers and specialists of water management organizations to full extent recognize that the managerial aspects of IWRM envisage fulfillment of the following requirements:

- transition from management within the administrative boundaries to management within the hydrographic boundaries;
- transition from the sectoral water management to the integrated (systemic) one;
- water demands management instead of the traditional supply management;
- introduction of the cooperative forms of water resources management instead of the administrative and command ones;
- replacement of the "closed" institutions by the open (transparent) water resources management structures;
- use of the system for water resources management with the active participation of stakeholders ("bottom-up" approach) instead of the existing previously the "top-down" one.

Under the "IWRM-Fergana" project department of the Interstate Commission for Water Coordination (ICWC) training center on the IWRM problems was established in Osh. This training center holds regular seminars within the framework of the "IWRM-Fergana" project, as well as independent ones. Under the ICWC aegis at regional level (SIC ICWC Training Center, Tashkent) the special trainings, seminars, round

tables for the representatives of different levels of water sector hierarchy of all the Central Asian countries are being held. Program of the regular trainings is quite comprehensive and covers all the IWRM aspects.

The network of training centers had been established in the Kyrgyz Republic within the framework of the "On-farm Irrigation" project. This network comprises the Training Center of the Department of Water Resources (the best one amongst such centers in terms of computer/office equipment availability), and training centers in the oblast and rayon departments of water management administrations.

ANNEX

Questionnaire [1] (KYRGYZ REPUBLIC)

Note: Answers to the majority of questions are ticked in the appropriate boxes. Since IWRM is the complicated subject, in a number of cases the explanatory comments referring to the number of the question are added.

1. National water policy

1.1	***Does the country have a water policy?***			
1.1a	Existing	☑	Give the date of publishing: **09.01.2005**	Give the title(s) of the document(s): **The Water Code of the Kyrgyz Republic**
1.1b	In progress	☑	Give the expected date of finalisation:	
1.1c	Foreseen	☐	Give the expected period for preparation:	
1.1d	Not foreseen for the time being ☐			
1.1e	Is the policy and the law/regulations harmonised? Yes: ☐ No: ☐ Partly: ☑			

Comment on 1.1a:

Taking into account that:

- The Kyrgyz Republic is the successor of former Kyrgyz SSR that had the water policy
- Succession of the water policy is specified in the Agreement of 1992 (the Agreement amongst the Governments of the Central Asian Countries "On cooperation in the joint management, use and protection of the transboundary water resources")
- The country had adopted the National constitution and Water Code[2], and
- the other provisions, which were outlined in the comments on this questionnaire,

it would be incorrect to deem that the national water policy is absent. Adoption of the Constitution, Laws regulating public relationships in the certain spheres, identification of the authorized body and its power for each sphere etc. are an embodiment of policy.

Besides, the Kyrgyz Republic had adopted and is implementing the following strategies and action plans[3]:

- The long-term strategy "Integrated basis of the Kyrgyz Republic Development up to 2010",
- The Kyrgyz Republic's concept of transition to the sustainable development up to 2010,
- The National strategy for reduction of poverty for 2003-2005,
- The National Action Plan on Environmental Hygiene (NAPEH) (1999),
- The National Strategy and Action Plan of the Kyrgyz Republic on conservation and balanced use of biological diversity (1998),
- The National Sustainable Development Strategy (1997),
- The National Environmental Action Plan (NEAP) (1995),
- The Governmental programs on health protection "Manas", education, environment conservation, and the sectoral programs, etc.

These and the other National Concepts, Strategies, Programs, and Action Plans contain to a variable extent provisions associated with the sustainable management and development of water resources.

There are many "water" projects under implementation. This also indicates not only existence of the policy, but also realization of the relevant policy in the area of IWRM at the national level.

The only problem is how efficiently these projects are being implemented.

Comment on 1.1b:

Policy is a phenomenon. Realization of policy is the continuous process. Dynamism of the public relationships determines the necessity for process of policy change/revision.

Comment on 1.1e:

It is practically impossible to ensure complete harmonization between the policy and legislation. The new public relations emerge, which should be regulated by the normative/legislative acts. Policy, as a rule, goes ahead of legislation, and the latter should "support" the former.

[1] Questionnaire format was developed by the DHI Water and Environment jointly with UNEP Center on cooperation (UCC/DHI – 14.12.2005)

[2] Water Code of the Kyrgyz Republic (09.01.2005г.);

[3] Based on materials from: http://www.eco-portal.kz/modules.php?name=News&file=article&sid=31 and the others.

1.2	***What does the water policy cover?***
1.2a	Water resources management only ☐ Water resources management, water supply and other uses[4] ☑
1.2b	If a water policy document exists, does it explicitly state IWRM (or IWRM principles) as a basis for water resources management in the country? Yes: ☑ No: ☐ Partly: ☐
1.2c	Does the water policy define IWRM? Yes: ☐ No: ☑, but…[5]
1.2d	If Yes (1.2c) write definition, if necessary in an annexed document referring to the number of the question.
1.2e	Does the water policy specify the role of the private sector in water resources management? Yes: ☑ No: ☐
1.2f	If Yes (1.2e) describe the role as specified, if necessary in an annexed document referring to the number of the question. **Comment on 1.2f :** Water Code of the Kyrgyz Republic Article 6. *Principles of Water Resources Management* Water Resources Management is based on the following principles: - principle of participation: all stakeholders should participate in process of planning and decision making;… Article 84. *Ownership of irrigation and drainage systems, and waterworks* 1. The irrigation and drainage systems and waterworks **can be both of the state and private property.** 2. The Government of the Kyrgyz Republic on the basis of proposals from the State water administration approves and revises periodically the list of state owned irrigation and drainage systems and waterworks. 3. The irrigation and drainage systems and waterworks of the inter-rayon, inter-oblast and interstate importance, which serve or may serve more than one water user are exclusively owned by the state 4. The irrigation and drainage systems or their parts (canal, drain, drainage collector or reservoir), as well as lands of water fund occupied by these facilities, which are exploited by the state water management body and serve only one water users association, **can be transferred with ownership to this association in accordance with the procedure** identified by the Government of the Kyrgyz Republic.
1.2g	Does the water policy include the "polluter pays" principle (those causing pollution pay the cost of monitoring and treatment)? Yes: ☑ No: ☐
1.2h	Does the water policy include the "user pays" principle (water users pay the cost of management and provision of water)? Yes: ☑ No: ☐

Comment on 1.2g :

Water Code of the Kyrgyz Republic:
Article 6. *Principles of Water Resources Management*

Water Resources Management is based on the following principles:…
- principle of payment for pollution: those causing pollution of water should pay for disposal as for use of the natural resources;

2. National water legislation

2.1	***What is the situation of ownership of water in your country?***		
2.1a	Is water a common good (i.e. it belongs to everyone)?	Yes ☑	No ☐
2.1b	Is water the property of the State?	Yes ☑	No ☐
2.1c	Is water a private property?	Yes ☐	No ☑
2.1d	Is ownership variable according to the type or location of the water body?	Yes ☐	No ☑

[4] Provided that the current Water Code (of 2005) of the Kyrgyz Republic is understood under water management policy.
[5] The IWRM concept is included into legislation in the form of statement "integrated, rational, efficient use of water resources".

Comment on: 2.1a, 2.1b:

- The Constitution of the Kyrgyz Republic:

Article 4

Land, its minerals, waters, air space, forests, flora and fauna, all the natural resources shall be ownership of the Kyrgyz Republic

- Water Code of the Kyrgyz Republic

Article 4. *Ownership of water resources and lands of water fund*

1. Water resources of the Kyrgyz Republic shall constitute the exclusive and unalienable property of the state. Everybody has a right to use water resources within the state boundaries and in accordance with the provisions of this Code.
2. Lands of water fund, occupied by water bodies or the state-owned irrigation and drainage systems and waterworks shall constitute exclusively the property of the state.

Comment on 2.1c:

Note: In the "Water Law" (1994) of the Kyrgyz Republic it was specified the following (Article 5):

Water resources, withdrawn from water bodies in accordance with the established procedure may constitute the property of juridical and physical persons and stateless persons.

The Water Code of 2005 has no such norm in an explicit form.

2.2	***Does the country have one or more specific water laws, or a water code?***		
2.2a	Existing: ☑	Give the date of publishing: 09.01.2005г. 2001 г.	Give the title(s) of the documents : Water Code of the Kyrgyz Republic The Law of Kyrgyz Republic "On the interstate use of water bodies, water resources and water structures of the Kyrgyz Republic".
2.2b	In progress: ☑	Give the expected date for finalisation:	
2.2c	Foreseen: ☐	Give the expected period for preparation:	
2.2d	Not foreseen for the time being ☐		

Comment on 2.2b:

- The Law of Kyrgyz Republic "On interstate use of water bodies, water resources and water structures of the Kyrgyz Republic" (2001) evoked the ambiguous reaction within the specialist community of the Central Asian region. "Water is commodity", as well as the other natural resources is the principle of this law. This law is invalid at the interstate level
- The Law of the Kyrgyz Republic "On water user associations" (adopted on 15.03.2002) to the great extent is relevant to the sphere of water relationship regulation.

2.3	***Does the water legislation include obligations to take into account the following principles?***		
2.3a	Public hearings	Yes ☐	No ☑
2.3b	Participation of the stakeholders in the water management	Yes ☑	No ☐
2.3c	Management by river basin	Yes ☑	No ☐
2.3d	Management at the lowest appropriate level [6]	Yes ☑	No ☐
2.3e	Financial contribution by the users towards the management of water resources	Yes ☑	No ☐
2.3f	The "polluter pays" (those causing pollution pay the cost of monitoring and treatment)	Yes ☑	No ☐
2.3g	The "user pays" (water users pay the cost of management and provision of water)	Yes ☑	No ☐
2.3h	The particular role of women in water management	Yes ☐	No ☑
2.3i	Separation between resource management and water service provision	Yes ☑	No ☐
2.3j	Water use efficiency	Yes ☑	No ☐
2.3k	Private sector involvement	Yes ☑	No ☐

[6] The water problems should be managed at the lowest appropriate level. I.e. at the level, where the local competences and the capacities make solution to the problems possible and where decision makers are affected by these solutions

Comment on 2.3a:

If the "public" is understood as "governmental", the only answer is **"Yes"** (the state accountability).

If the "public" is understood as "common" hearing, the only answer is **"No"** (such duty is not imposed on the water management bodies).

Comment on 2.3b:

Water Code of the Kyrgyz Republic:

Article 10. *Basin boards and their authorities*

1. On the basis of proposal from the State water administration the National water council establishes the basin board within each main river basin for coordination and regulation of water relationships.
2. Each basin board includes the representatives of the following organizations: the basin water administration; territorial structures of the state environment protection body; state body on emergency situations; state body on hydro-meteorology; state body on hydrogeology; state body on sanitary; and also the representatives of local state administration, NGOs, and water users, including WUAs. Chairperson of the basin board is simultaneously the head of basin water administration. Deputy chairperson is elected out of the basin board members.

3. Tasks of the basin boards are:

See also the answers to question 1.2e

Comment on 2.3c:

Water Code of the Kyrgyz Republic:

Article 5. *Water resources management and the basin approach*

1. Water resources management is the integrated system of measures, norms and rules established in accordance with the current Code and the other normative and legislative acts to ensure development, rational use and protection of water resources and environment, protection of population health, as well as protection of settlements, industrial territories and all the other types of property from the dangerous impact of water.
2. The basin approach means that management/use and protection of water resources are carried out within the boundaries of main river basins identified on the basis of hydrographic principle (including Issyk Kul lake rivers and the main river basins of the Kyrgyz Republic). The Government of the Kyrgyz Republic on the basis of proposals from the National water council identifies the area of activities for each basin water administration and basin board. The adopted decision is then published in the official press.
3. Within each main basin the relevant basin water administration and basin board are responsible for the certain aspects of water resources management in accordance with the provisions of this Code
4. Decisions of local bodies of the state administration and territorial bodies of the ministries and administrative institutions should be made in accordance with the present article and basin approach to water resources management.

Comment on 2.3d:

Water Code of the Kyrgyz Republic:

Article 16. *Competence of local bodies of the state administration*

1. The competence of local bodies of the state administration for realization of the present code includes:

- approval of location, size and regime of sanitary protection zones;
- participation in the activities of basin board;
- coordination of issues associated with approval and realization of rules relevant to water protection zones;
- adoption of the normative acts on regulation and implementation of activities on the territories subjected to flooding and mudflows.

2. On the basis of proposal from the State water administration the Government of the Kyrgyz Republic identifies local body of the state administration responsible for realization of tasks specified in the present Code.

Comment on 2.3f:

See also the answers to question 1.2g

Comment on 2.3g:

See also the answers to question 1.2h

Comment on 2.3j:

Water Code of the Kyrgyz Republic:

Article 1. *Objective and tasks*

1. The present Code regulates water relationships in the area of use, protection and development of water resources for the guaranteed, sufficient and safe supply of water to population of the Kyrgyz Republic, protection of environment **and ensuring the rational development of the republic's water fund.**

Comment on 2.3k:

See also the answers to question 1.2e

Comment on 2.3.k:

The Constitution of the Kyrgyz Republic (articles 4 and 19) has appropriate provisions for recognition of the various forms of ownership, including the private one.

See also the Comment on 1.2f.

2.4	***Regulations supporting the water law***			
2.4a	How many regulations are required by the water law?			Give the titles and other details of regulations in an annex
Comment on 2.4a: There is no exact answer to this question. It is only possible to tell the number of normative and legislative acts, which are specified in the Law (or in the special Decree of the Government) as to be developed. As a rule, this list covers the minimum number of normative and legislative acts at the level of bylaws that should be adopted in the first place. Since the normative and legislative acts cover all spectrums of legislation and water law in particular, there may be infinitely many of such acts (Decrees of the Government, sectoral acts, etc.)				
2.4b	Among the regulations foreseen, how many have been adopted? If possible mark "adopted" on the list given in an annex			
Comment on 2.4b: According to the provisions of Water Code of the Kyrgyz Republic the adoption of some 28 normative/legislative acts of the bylaw nature is required. Although some 15 drafts normative/legislative acts had been prepared, no one was adopted so far.				
2.4c	Are the regulations effective?	Yes: ☐	No: ☐	Partly: ☑
Comment on 2.4c: Practically every newly adopted normative act is the step forward in the national legislation, i.e. it is more effective as compared with its absence. However, due to a number of reasons (it is in general lack or insufficiency of mechanisms for its implementation) it may be not as efficient as expected.				
2.4d	If "No" or "Partly" for which reason? (tick one or more of the following possible reasons)			
2.4e	Regulations insufficiently known by the users:			☑
2.4f	Regulations insufficiently known by those who shall enforce them:			☐
2.4g	Regulations too complicated to be operational			☐
2.4h	Regulations contradict each other:			☐
2.4i	Regulations conflicts with customary law or cultural traditions of certain users:			☐

Comment on 2.4h, 2.4i :

There is a persistent enough opinion that the various normative and legislative acts very often allegedly "conflict" or not "harmonized" or "contradict" with each other. This is not entirely true.

The general legal force rules of the normative and legislative acts are as follows:

- The state constitution has supreme legal force
- Laws and the other normative and legislative acts are being adopted on the basis and in pursuance of the national Constitution and can not contradict its norms and principles
- The normative and legislative acts of ministries, state committees and agencies are being adopted on the basis and in pursuance of the Constitution and Laws, decisions of the Parliament, President and Government
- The normative and legislative acts of the local state authorities are being adopted on the basis and in pursuance of the Constitution and Laws, decisions of the Parliament, President, and Government, and also decisions of the superior local state authorities.

Correspondence of legal force between the various normative and legislative acts is as follows:

- Normative and legislative act should correspond to the one that has superior legal force
- In case of disagreements between two normative and legislative acts, it should be enforced the one that has the superior legal force
- In case of disagreements between two normative and legislative acts which have equal legal force, it should be enforced the subsequent one
- The normative and legislative act adopted by one ministry, state committee or agency has superior legal force as compared with the normative and legislative act adopted by the another ministry, state committee or agency if institution that adopted such act is specially authorized to regulate the certain area of public relationships.

Thereby, in regard to legal force the normative and legislative acts harmonize with each other in accordance the above mentioned provisions.

Thus, if the State water administration of the Kyrgyz Republic and the State agency for environment protection **adopt normative and legislative act in the area of water resources management and provisions of one normative and legislative act** in regard to water resources management **contradicts to the provisions of the another one,** then **the superior legal force has the normative and legislative act adopted by the State water administration,** because it is the specially authorized institution of the Kyrgyz Republic for dealing with water resources management.

2.4j	Sanctions are not applied in cases of non-compliance:	☑

Comment on 2.4j :

Sanctions are envisaged and applied. However, the size of sanctions for non-compliance with the water legislation (the majority of them is considered as administrative violations) as a rule is inadequate to the caused damage.

2.4k	Monitoring capacity inadequate	☑
2.4l	Institutional enforcement capacity inadequate	☑
2.4m	Other reasons (explain which):	

2.5	***Is the water law harmonised with other national legislation?***			
2.5a	Environmental legislation	Yes: ☑	No: ☐	Partly: ☐
2.5b	Land-use legislation	Yes: ☑	No: ☐	Partly: ☐
2.5c	Agriculture legislation	Yes: ☑	No: ☐	Partly: ☐
2.5d	Health legislation	Yes: ☐	No: ☐	Partly: ☑
2.5e	Other legislation (describe):			
2.5f	If relevant, list key areas of conflict between the water law and other legislation:			

Comment on 2.5:

In accordance with the above **Comments on 2.4h, 2.4i**, disagreements between various normative and legislative acts can be easily resolved even in case if there is no agreement (in text or wording) between legislation of various sectors.

2.6	***Is the national legal framework harmonised with the international agreements which the country endorses?***

2.6a	Yes: ☑	No ☐	Partly: ☐
2.6b	List the water related agreements signed by the country [7] and, if possible, mark those which have been integrated in the national legal framework.		

Comment on 2.6a:

The Constitution of the Kyrgyz Republic

Article 12

Ratified by the Kyrgyz Republic the international treaties and agreements and the other universally accepted principles and normative of international law shall be a constituent and directly effective part of the legislation of the republic.

Comment on 2.6b:

- The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (1998) – **had been ratified**
- The Convention to Combat Desertification (1994) – **had been ratified**
- The Convention on Biological Diversity (1992) – **had been ratified**
- The Framework Convention on Climate Change (1992) – **had been ratified**

Agreements and equated to them the regional political and legal documents signed by the Kyrgyz Republic:

- The Dushanbe Declaration (2002)
- Decision of the Heads the Central Asian Countries of 06.10.2002, "On the main directions of the Program for specific actions aimed at improvement of ecological and socio-economic situation in the Aral Sea basin for period 2003-2010" (ASBP-2)
- The Ashgabad Declaration (1999)
- The Agreement of 1998, amongst the Governments of Kazakhstan, Kyrgyzstan, and Uzbekistan about use of water and energy resources of the Syrdarya river basin (Tajikistan is the Party to Agreement since 1999)
- The Agreement of 1998, amongst the Governments of the Central Asian Republics
- The Issyk Kul declaration about the regional cooperation of the Central Asian Countries
- The Agreement of 1997, amongst the Governments of the Central Asian Republics "On status of the International Fund for Saving the Aral Sea"
- *The Almaty Declaration (1997)*
- *The Nukus Declaration (1995) of the Central Asian Countries and the international organizations on sustainable development of the Aral Sea basin*
- Agreement of 1992 amongst the Governments of the Central Asian Republics "On cooperation in joint management, use and protection of the transboundary water resources"

and the others.

2.7	***Does the legal framework include an obligation to elaborate/maintain an IWRM Action Plan/strategy/process?***		
2.7a	Yes: ☐	No: ☑	

Comment on 2.7a:

Water Code of the Kyrgyz Republic does not directly specify the development/support to the IWRM Action Plan/Strategy (they are not mentioned exactly under this title), but the IWRM process in terms of "integrated, rational, efficient use of water resources" is included in the legal structure.

The projects, which reflect practically all the main IWRM aspects (sustainable development, water saving, public participation, coordination and the others), are presented in the key political document ASBP-2, approved by the Heads of the Central Asian Republics. One of the large ASBP-2 projects (Project #8.3) is entitled **"The Integrated Water Resources Management in the Aral Sea Basin".** As "The expected results" of this project it is in particular envisaged the following:

1. The new managerial structure of the water management bodies with involvement of public for implementation of the IWRM principles within the hydrographic boundaries at the pilot objects…
2. The legal basis for realization of the IWRM principles in the form of regulation documents package.

Development of the Concept of sustainable development in the Aral Sea basin is envisaged by the ASBP-2 as Priority #11. In priority rationale it is said that "the main objective of ASBP-2 … can be achieved only within the framework of policy aiming at sustainable development (SD)".

In the Nukus (1995), Issyk Kul (1995), Almaty (1997), Ashgabad (1999), and Dushanbe (2002) Declarations of the Central Asian countries it was declared transition of the countries to the SD policy, integrated and multi-disciplinary approach, ecosystem and **integrated natural resources management** and water use

[7] Country can sign the international agreement, but not ratify it.

3. Institutional framework for the water sector			
3.1	***Provide the organisation chart(s) for the Institution(s) responsible for water resources management (attach in a separate document or in electronic format)***		
	Water resources management in the Kyrgyz Republic is carried out on the basin principle. Water management structure includes the following levels: **1. National:** Department of water resources of the Ministry of Agriculture and Water Resources and Food Processing Industry of the Kyrgyz Republic; **1.1. Oblast (basin):** 7 basin water administrations with the zones of responsibility which practically coincide with the boundaries of administrative oblasts; **1.1.1. Rayon:** 40 rayon water administrations within the structure of the basin water administrations. Structure of the Department of water resources also includes: - Administration of the large reservoirs of the republican importance (Kirov, Papan, Ortotokoy reservoirs); - Administration of the Inter-rayon canals in the Chu and Talas valleys; - Administration of the Chumysh waterworks and Nizhne Ala-Archin reservoirs; - specialized subdivisions (for example, Construction organization "Selvodzashita" within structure of the Department of water resources. The functions of construction organization include protection of rural settlements and agricultural land from flooding and mudflows..		
3.2	***Water resources management responsibility*** *If the water resources management responsibility is undertaken by a sector institution (e.g. Ministry of Agriculture, Energy, Environment) are there plans to move the responsibility away from the particular sector institution and place it in a cross-sectoral institution.*		
3.2a	Yes: ☑	No: ☐	
Comment on 3.2a: Currently the main agency that regulates water relationships in the country is the Department of water resources of the Ministry of Agriculture and Water Resources and Food Processing Industry of the Kyrgyz Republic. According to the Water Code of the Kyrgyz Republic **the State water administration** should be the agency regulating water relationships. Its organizational form (ministry, state agency, state committee or the other form) will be identified by the decision of the republic's government. There is no such decision so far. Besides, establishment of the National water council is envisaged by the provisions of Water Code (see item 3.3a).			

3.3	***Institutions in the management framework*** *Which institutions are in place being part of a framework for IWRM?*		
3.3a	Is there a national body where cross-sectoral coordination at the overall level can take place?	Yes: ☑	No: ☐
	If Yes, give its name: date of establishment frequency of meetings		
	Comment on 3.3a: At the national level: The Government of the republic and the National Water Council, established by the decree of the Government of the Kyrgyz Republic (of 3 February 2006, #64). On the basis and in pursuance of decisions of the Government, departments of ministries and agencies coordinate their activities at the lower levels: **oblast, rayon, local levels.** The main coordination agency is the state authorities and administrations at the relevant levels. Dates and periodicity of the Government sessions are identified by the Government itself.		
3.3b	Is there a platform where interaction with stakeholders at the national level can take place?	Yes: ☑, but…	No: ☐
	I If Yes, give its name: date of first meeting frequency of meetings		

	Comment on 3.3b: This is a platform where interaction with stakeholders **may take place**: In accordance with the competence, the state authorities and management bodies at the levels from oblast to the lower levels resolve **all issues** on the respective subordinated territories: The Constitution of the Kyrgyz Republic (Article 77): 1. Executive authority in oblasts, rayons and cities is carried out by the local state administration, ruled by the head of local state administration. **2. Executive authority in villages and settlements is carried out by the chairmen of the respective keneshs (councils).** **Note:** The above mentioned bodies are responsible, in particular, for solution of issues associated with water resources management, including issues related with activities coordination and interaction amongst water use entities on their respective subordinated territories. Another issue is poor public control and necessity for establishment of the public Councils at various levels of water resources management: basin, irrigation system or canals of various orders (Basin Councils, Unions and Water User Associations) and their active involvement in the process of Water Resources Management.		
3.3c	3.3c.1. Are there platforms for interaction with stakeholders at the regional/provincial level?	Yes: ☑	No: ☐
	See comment on 3.3b, the part relevant to 3.3c.1.		
	3.3c.2. Are they operational (holding meetings and influencing decisions)?	Yes: ☐	No: ☑
3.3d	3.3d.1. Are there bodies for participation of the users at the local level	Yes: ☑	No: ☐
	See comment on 3.3b, the part relevant to 3.3d.1.		
	3.3d.2. Are they operational (holding meetings and influencing decisions)?	Yes: ☐	No: ☑
3.3e	3.3e.1. Are there bodies for river basin management?	Yes: ☑	No: ☐
	3.3e.2. If Yes, give - number of basin bodies – **7** - organizational structure - **See comment on 3.1.** - key functions – **See comment on 3.3e.2**		

Comment on 3.3e.2:

The Main functions of Basin Water Administrations:

- O&M of reservoirs, waterworks, pumping stations, drainage/water supply wells, electric power lines and transformers, introduction of the new automation and telemechanics facilities, measures on efficient use of all the installed equipment;
- supply of water to water users and collection of payments for services in accordance with the current legislation;
- execution of interstate distribution of water resources;
- construction, reconstruction and modernization of waterworks, nature protection facilities, implementation of measures aimed at elimination of consequences of natural disaster, accidents and situations associated with adverse impact of water on agricultural objects and irrigated lands, and programs on social reconstruction of rural area in terms of water infrastructure construction;
- implementation of modern scientific and technological policy in the area of water infrastructure construction on the territory of Osh oblast;
- improvement of economic management methods, financial and credit relationships, and accounting, establishment of the contract works market, as well as creation of independent auditing service;
- development of construction capability of water management and the other organizations, production of construction materials, machinery, equipment, spare parts, and consumer goods, as well as provision of chargeable services for population;
- cooperation within the Basin Water Administration in supply of industrial products and goods;
- creation of economic, legal, and managerial conditions for development of market structures as the basis for efficiency improvement of enterprises subordinated to the Basin Water Administrations;
- development of ancillary farms, catering facilities, and supermarkets network;
- establishment of integrated use of water resources in various sectors of economy on the basis of rational distribution and taking into account water user requirements, social need of population and economic expedience;
- implementation of the unified technical policy in water sector, introduction of modern achievement of science and technology, and up-to-date experience, ensuring of cost-effectiveness and high quality of amelioration and the other works;
- participation in implementation of the program for protection of water fund;
- scientific, design, survey, construction and the other works associated with irrigation and land amelioration on the territory of Osh oblast in accordance with the relevant agreements;
- creation of the favourable conditions for the social development of staff of the Basin Water Administration's enterprises;
- provision of methodological and technical assistance and services to water users in regard to problems associated with organization of water user association activities, establishment of primary water metering system, improvement of irrigation application, and operation and maintenance of the on-farm irrigation and drainage system;
- organization of staff training, retraining and advanced training.

3.3f	Other institutions (explain)
	• Unions of canal water users, established within the framework of the IWRM Fergana project • Water User Associations, farmers and dekhkan farms (lower level of water resources management), established during the recent years.

3.4	***Institutional Capacity at the national/central level*** *The questions below try to establish how far the country has come towards a realistically attainable institutional capacity for water resources management based on IWRM principles. Imagine a 5 year goal of establishing the management functions below and associated competences. The goal has to be consistent with a realistic water resources management budget and staffing considering the usual or immediately foreseen national budget priorities.* *For each of the functions below, give your assessment of the national/central level capacity using the following scale: 0 = function not established, 1 = function has many large gaps in quality and coverage, 2 = function has some gaps in quality and coverage, 3 = function operates at the realistic goal level.*				
3.4a	Policy formulation	0: ☐	1: ☑	2: ☐	3: ☐
3.4b	Drafting of laws and associated regulations	0: ☐	1: ☐	2: ☑	3: ☐
3.4c	Recovery of cost of water resources management	0: ☐	1: ☐	2: ☑	3: ☐
3.4d	Collecting water resources information and operating databases	0: ☐	1: ☑	2: ☐	3: ☐
3.4e	Preparation of water resources assessments	0: ☐	1: ☑	2: ☐	3: ☐
3.4f	Preparation of environmental assessments	0: ☐	1: ☐	2: ☑	3: ☐

3.4g	Preparation of socio-economic assessments	0: ☐	1: ☐	2: ☑	3: ☐
3.4h	Monitoring of water availability	0: ☐	1: ☑	2: ☐	3: ☐
3.4i	Monitoring of ambient water quality	0: ☐	1: ☑	2: ☐	3: ☐
3.4j	Monitoring of aquatic ecosystems	0: ☐	1: ☑	2: ☐	3: ☐
3.4k	Monitoring of pollution loads	0: ☐	1: ☐	2: ☑	3: ☐
3.4l	Monitoring of water use	0: ☐	1: ☑	2: ☐	3: ☐
3.4m	Planning resource use, protection and conservation	0: ☐	1: ☑	2: ☐	3: ☐
3.4n	Facilitating water demand management	0: ☐	1: ☐	2: ☑	3: ☐
3.4o	Water allocation	0: ☐	1: ☐	2: ☑	3: ☐
3.4p	Conflict mediation	0: ☐	1: ☐	2: ☑	3: ☐
3.4q	Cooperation on internationally shared watercourses	0: ☐	1: ☑	2: ☐	3: ☐

3.5	***Institutional constraints (apart from human resources) at the national/central level*** *Give your assessment of the severity of major negative factors constraining the water resources management institution(s). Use the following scale: 0 = not relevant, 1 = not severe, 2 = severe, 3 = very severe*				
3.5a	Lack of Good Governance (transparency, accountability, integrative, communication, participation)	0: ☐	1: ☐	2: ☑	3: ☐
3.5b	Institutional framework poorly suited to address the key water resources management issues (e.g. mix of regulatory and service provider functions)	0: ☐	1: ☑	2: ☐	3: ☐
3.5c	Institutional mandate poorly defined	0: ☐	1: ☑	2: ☐	3: ☐
3.5d	Responsibilities poorly described for departments/sections	0: ☐	1: ☑	2: ☐	3: ☐
3.5e	Inadequate equipment (laboratory, monitoring equipment, etc.)	0: ☐	1: ☐	2: ☐	3: ☑
3.5f	Inadequate budget	0: ☐	1: ☐	2: ☐	3: ☑
3.5g	Inadequate logistics (e.g. transport)	0: ☐	1: ☐	2: ☐	3: ☑
3.5h	Inadequate office facilities	0: ☐	1: ☐	2: ☑	3: ☐

3.6	***Human resources*** *Development of the water resources management functions requires staff with competences at levels corresponding to the technical complexity of the functions. The questions below address the staff capability compared to the realistic goal level of the functions (ref 3.4)* *Assess the human resource situation in the national/central water resources management institution(s) in relation to the IWRM functions under 3.4a – 3.4q. Use the following scale: 0 = not at all, 1: to some degree, 2: to a reasonable degree. 3: fully*				
3.6a	Is the number of staff adequate for handling the IWRM functions at goal level as outlined above?	0: ☐	1: ☐	2: ☑	3: ☐
3.6b	Is the staff sufficiently qualified for to handle the IWRM functions at goal level as outlined above?	0: ☐	1: ☐	2: ☑	3: ☐
3.6c	Is the staff motivated to handle the water resources management based on IWRM principles?	0: ☐	1: ☑	2: ☐	3: ☐
3.6d	Estimate the number of senior managers in the water sector that are familiar with IWRM principles. Less than 5 ☐ 5 - 10 ☐ 10 – 20 ☐ More than 20 ☑				
3.6e	Are there specific IWRM training activities in your country (if Yes, list them here or in a separate annex referring to the number of the question)	Yes: ☐		No: ☑, but…	
	List of IWRM training activities:				

Comment on 3.6e:

Within the framework of IWRM-Fergana project the branch of Training Center of the Interstate Commission for Water Coordination (ICWC) had been established in Osh. This Center organizes planned seminars on the IWRM problems as a part of the IWRM-Fergana project activities as well as holds its own seminars.

The specialized regional training courses, seminars, and round tables are held under the aegis of ICWC at the Training Center in Tashkent for representatives of the various levels of the Central Asian water hierarchy. The list of training topics on IWRM is quite wide.

Within the framework of "On-Farm Irrigation" project the network of training centers had been established in the Kyrgyz Republic. This network includes: Training Center of the Department of water resources (the best one amongst such center in the republic in terms of the available office equipment), training centers of the oblast and rayon water administrations. The main objective of this training center is to provide the practical assistance to the WUA (there are 439 WUA in the republic) in the organizational issues, financing of rehabilitation of the irrigation and drainage systems, involvement of water users in the joint management of water resources and joint financing O&M of water infrastructure. This network of training centers holds constant planned series of seminars for the staff of water management organizations, WUAs, local authorities, NGOs, and various water users. This seminars are both the training and informational ones.

4. Processes and Milestones leading towards IWRM

4.1	***Status of Action Plan/strategy for implementation of an IWRM Framework*** *(enabling environment, institutional roles and management instruments)*
4.1a	Not foreseen for the time being ☑, but…
4.1b	Under preparation ☐ Since when : month year Expected to be finalised by : month year
4.1c	Existing ☐ Approved by Date of approval: month year
4.1d	Existing and under implementation ☐ Agency in charge of implementation Date of start of implementation : month year

Comment on 4.1:

Although such Action Plans on the scale of the Kyrgyz Republic are not envisaged right at this moment, the conditions for implementation of the IWRM (enabling environment, institutional framework and management instruments) appear in the national and sectoral programs. Part of these programs is listed in the comment on 1.1a.

Specific action plans are envisaged within the framework of the pilot objects of "IWRM-Fergana" project.

Within the framework of project "UNEP support for achieving the IWRM 2005 target Central Asia" by October 2006, it is envisaged development and approval of the national "road maps", which will be the basis for subsequent development of the detailed Action Plans.

The "round tables" and activities aimed at assistance to elaboration of the water policy and strategy of development at the appropriate levels of water resources management, and support to public awareness campaign on the IWRM principles are being conducted in the republic within the framework of planned activities of the Global Water Partnership of the countries of Central Asian and Caucasus. These activities include organization of seminars on the IWRM concept with participation of the staff of water management bodies, NGOs, and MM, organization of the political dialogs on use of the IWRM at the national level in the form of "round tables" on the topic "Partnership in the hierarchy of water management: state-water management system- water user", as well as managerial capacity building for speedup of the national process of the IWRM planning through holding of training seminars. Organizational work is being carried out for establishment of the National Water Partnership of Kyrgyzstan that is planned for 2007.

The monthly newspaper and web-site of Department of Water Resources, as well as the information materials, distributed through the Training Centers, are used for public awareness campaigns. The monthly newspaper of Department of Water Resources and Council of veteran-irrigators "Water, Land and People" covers the current problems of water resources management and perspective directions of its reformation, publishes all the normative acts associated with water resources management, including decisions and decrees of the Department's board. This newspaper has a circulation of 2,000 copies and is distributed free of charge amongst all the water management organizations from the republican to rayon level, and the rayon and oblast state administrations.

4.2	***If an Action Plan exists (confirmed in 4.1c or 4.1d)***
4.2a	Which government and non-government agencies were involved in preparing the plan? Specify :

4.2b	Is there a portfolio of projects to implement the IWRM Action Plan?	Yes: ☐	No: ☑, but…
4.2c	Is there a programme for capacity building included in the IWRM Action Plan?	Yes: ☐	No: ☑
4.2d	If Yes, is it a recurrent programme?	Yes: ☐	No: ☐
4.2e	Does the action plan have mechanisms for monitoring of implementation?	Yes: ☐	No: ☑
4.2f	If Yes, which agency is responsible for monitoring?		
4.2g	Is there a strategy for financing of the Action Plan implementation?	Yes: ☐	No: ☑

Comment on 4.2b:

There are some projects that include elements of the Action Plan on the scale of pilot irrigation systems (for example within the framework of "IWRM Fergana" project), but not on the scale of the Kyrgyz Republic as a whole.

4.3	***IWRM in other Plans*** *Is IWRM itself or the principles that form the basis for IWRM parts of official documents (policies, plans or strategies) from other sectors that use water or relate to water*		
4.3a	Does IWRM appear in a Poverty Reduction Strategy Paper	Yes: ☑	No: ☐
4.3b	If Yes, provide date and title of document month year title		
4.3c	Does IWRM appear in a National Development Strategy to achieve the MDGs	Yes: ☑	No: ☐
4.3d	If Yes, provide date and title of document month year title		
4.3e	Does IWRM appear in an Agricultural Development Plan	Yes: ☑	No: ☐
4.3f	If Yes, provide date and title of document month year title		
4.3g	Does IWRM appear in an Energy Development Plan	Yes: ☑	No: ☐
4.3h	If Yes, provide date and title of document month year title		
4.3i	Does IWRM appear in a National Environmental Action Plan	Yes: ☑	No: ☐
4.3j	If Yes, provide date and title of document month year title		
4.3k	Does IWRM appear in other national plans development plans	Yes: ☑	No: ☐
4.3l	If Yes, provide date(s) and title(s) of document month year title month year title month year title		

Comment on 4.3:

Each national development plan (on reduction of poverty or improvement of living standards for achievement of the Millennium Development Goals, agriculture, energy sectors, environmental sphere and the others) is **the integrated one** and includes the main IWRM principles to one or another extent.

4.4	***Awareness on IWRM*** *Is IWRM and the inherent concepts known and understood by the major operators in the water sector and sectors relating to water (e.g. agriculture/irrigation, hydropower, health, environment, water supply and sanitation). Use the following scale: 0 = not at all, 1 = to some degree, 2 = to a reasonable degree, 3 = fully*				
4.4a	High level decision makers	0: ☐	1: ☐	2: ☑	3: ☐
4.4b	Professionals in agencies responsible for water resources management	0: ☐	1: ☐	2: ☐	3: ☑
4.4c	Professionals in agencies within water use and water related sectors	0: ☐	1: ☐	2: ☑	3: ☐

4.4d	Major water users (incl. industries)	0: ☐	1: ☑	2: ☐	3: ☐
4.4e	Consultants	0: ☐	1: ☐	2: ☑	3: ☐
4.4f	Non-government organizations (NGOs) in the water sector	0: ☐	1: ☐	2: ☑	3: ☐

5. Narrative descriptions of process towards IWRM	
5.1	Describe in your own words your assessment of the extent to which your country has achieved the target of the Johannesburg Plan of Implementation on IWRM: "…..to develop integrated water resources management and efficiency plans by 2005"
	The IWRM 2005 Plans were not prepared

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Annex c2

Global Water Partnership Central Asia and Caucasus

UNEP Collaborating Centre on Water and Environment

UCC-Water

THE REPUBLIC OF TAJIKISTAN

NATIONAL REPORT

Within the framework of UNEP support for achieving the Johannesburg Plan of implementation target of "Integrated Water Resources Management and Efficiency Plans by 2005, with support to developing countries"

DUSHANBE– 2006

General Information

Geography: The Republic of Tajikistan is situated in the southeastern part of the Central Asia. The territory of republic borders on Uzbekistan in the west and north-west, on Kyrgyzstan in the north-east, on China in the east, and on Afghanistan in the south.

Total Area and Relief: The total area of the country is 143.1 thousand km^2. Tajikistan is the country of mountains. They occupy 93% of territory. More than half of the country's territory lies at an elevation of more than 3,000m above the sea level. The mountain systems of Tyan-Shan, Gissar-Alai and Pamir (with the highest point of the country at 7,495 meters above the sea level) are separated by intermountain troughs and valleys (Fergana, Zerafshan, Gissar, Vakhsh, and the others). Glaciers and snowfields of the high mountains (with the area of 8.5 thousand km^2 or 5.6% of the country's territory) contain the considerable reserve of water resources (around 400 km^2). There are 1,300 natural lakes with the total reserve of fresh water of 50 km^2 and total area of 705 km^2. 780 lakes are located at an elevation of more than 3,500 m above the sea level.

Climate of Tajikistan is classified as continental, but it is distinctly different in highland and plain land parts of the country. The average annual precipitation is 691 mm with the range from less than 100 mm in the south-east to up to 2,400 mm at the Fedchenko glacier in the central part of the country. Distribution of precipitation is non-uniform. During winter snow lies more than 6 months in the mountains, but in the plains it is mostly dry and sunny. At the elevations up to 500 m the average monthly air temperature for January varies from -1^{0}C in the north to +3^{0}C in the south. At the elevations 500-1000 m the average monthly air temperature for January is 20^{0}C, that of for July – 23-28^{0}C.

Land Resources: The country possesses the limited land resources suitable for agricultural use. Area of agricultural lands is 1.57 million ha or 11% of the total country's territory. Area of arable lands is 769.9 thousand ha, including 720 thousand ha of irrigated lands.

Surface Waters: Headwaters of 600 rivers and the ephemeral streams are located in Tajikistan. In regard to hydrography there are four main river basins. The Syrdarya river basin is located in the north-east, where the Khodjabakirgan, Aksu and Isfara rivers form the surface flow in a volume of 0.4 km^3/year, or approximately 1% of the total basin's flow.

The Amudarya river basin is located in the south. It is represented by the Vakhsh, Pyandj, and Kafirnigan rivers. Their share of the basin's water resources is 82.5%. The Vakhsh river is the largest one in the country, crossing it from the north-east to the south-west. Its headwaters are located in Kyrgyzstan, where it is called Kzyl-Su. Its watershed lies in the highest (at elevation more than 3,500 m) part of the country. The Pyandj river designates the border between Tajikistan and Afghanistan almost along all its length. The Kafirnigan river is another large tributary of the Amudarya river, inflowing into it 36 km downstream from the confluence of the Pyandj and Vakhsh rivers. The Zerafshan river basin is located in the north-west. Sometime ago it was considered as the large tributary of Amudarya river, but now its flow is completely diverted for irrigation. The long-term average river flow formed within the boundaries of Tajikistan is 64 km^3. It is necessary to emphasize that out of the total surface water flow formed in the Aral Sea basin (116 km^3) the share of Tajikistan is 55.4%.

The underground water reserves are 6 km^3, out of this volume 3 km^3 are hydraulically connected with the surface flow. On the territory of Tajikistan within the Syrdarya river basin the underground water contribution to formation of river flow is 60%, that of within the Amudarya river is 20%.

There are 19 reservoirs in the country, including 5 and 14 in the Syrdarya and the Amudarya river basins respectively. Total capacity of these reservoirs is 29 km^3 with the total area of 934 km^2. 9 reservoirs are classified as large. Each of these reservoirs has a capacity over 0.5 km^3, and their total volume is more than 25.34 km^3 with the area of 690 km^2. The largest ones are the Nurek reservoir on the Vakhsh river with capacity 10.5 km^3, the Kairakkum reservoir (4.16 km^3) on the Syrdarya river, and the Lower Kafirnigan (0.9 км^3) on the Kafirnigan river. Tajikistan possesses the huge hydropower potential that by the various estimations is around 527-300 billion kWh.

Population and Labour Resources: Population of Tajikistan is 6.920[1] million people (as of 01.01.06). Around 75% of population lives in the rural area. Economically active population is 30,2%[1] from all

[1] http://www.stat.tj/russian/macroeconomic-indicators1/htm
[1] http://www.stat.tj/russian/macroeconomic-indicators1/htm

inhabitants of the republic (67,8% of them are males). Population literacy rate is 97.7%. 55% of them have completed secondary and 7,5% higher education.
Average density of population in the country is 41 person/km^2, with the range from less than 3 person/km^2 in the south-east to 77 person/km^2 in the south-west. The most populous are the Gissar and Vakhsh river valleys and the Khodjent city area. Over 85% of population lives in valley areas (comprising 35% of the republic's territory). The republic is multinational. The majority of population (70%) is Tajiks in all oblasts of the country. Uzbeks, Russians, Tatars, Ukrainians, Kyrgyz, Turkmen, Kazakhs, Baluchi, Arabs, the Central Asian Gypsies, and Jews also live on the territory of Tajikistan. The Gorno Badakhshan is inhabited by the small in size Pamir ethnic groups (often called the highland Tajiks). They speak the language that is attributed to the Pamir group of the eastern branch of the Iranian group of languages.

Language: The state language is Tajik one, and Russian is the interlanguage.

Political and Administrative Structure: Date of establishment of Tajikistan in the current boundaries and form of government were adopted at the extraordinary session of the Supreme Council of Tajikistan on 9-11 September, 1991, when Tajikistan was declared as the independent state. Independence day is 9 September, 1991. The Constitution was adopted on 6 November, 1994. Head of the state is the President. The Parliament (Majlisi Oli) exercises the legislative power, and it is the supreme representative and legislative body. The Majlisi Oli comprises two Majlisies, the Majlisi Milli and Majlisi Namoyandagon. The Government of the Republic of Tajikistan comprises the Prime Minister and his deputies.

Administrative Division: There are currently 2 oblasts and 9 rayons of the central subordination, and also the Gorno Badakhshan Autonomous region in Tajikistan.

Economy: Industry: mining, non-ferrous metallurgy (enterprises in Tursunzade and Isfara), machine building (enterprises in Dushanbe and Khodjent), metalwork, production of construction materials (Nurek), chemical industry (enterprises in Dushanbe, Kurgan-Tube, Yavan). The basis of the non-ferrous metallurgy are plants in Tursunzade (in the Gissar valley) and in Isfara (the Sogdi oblast). Ores of the non-ferrous and rare metals are extracted and enriched, such as lead, zinc, bismuth, antimony, mercury, tungsten, molybdenum, gold. Brown coal is extracted in Shurab (the Sogdi oblast). There is also production of oil (in the northern and southern regions of Tajikistan), and the natural gas (in Gissar and the Vakhsh river valley). The main branches of the light industry are: food processing, ginnery and cotton manufacturing, footwear, silk and carpet weaving manufactures. Energy: According to estimation of the World Hydropower Atlas "HYDROPOWER & DAMS" (1997), Tajikistan occupies the first place in the world by the specific indices of the hydropower reserves, and the eighth place by the absolute indices (300 billion kWh/year). The basis of the electric-power industry is the Nurek hydropower station (2,700 MW), one of 30 the most powerful hydro-electric power stations in the world. Agriculture: production of various crops, cotton, vegetables, horticulture, viniculture, livestock breeding, poultry, and the other branches. Tajikistan's cotton is of a high value in the world. Its fiber has the high breaking load and long staple. After elimination of the state monopoly on cotton market, the cotton growing farms have received the rights to mange their yields independently, i.e. to sell their production on the internal or foreign markets.
The Tajikistan's national currency is somoni. In 2005, the GDP was USD 304.9 per capita [1].

Water Management Situation in the Republic of Tajikistan

Priorities and the Key Problems of Water Sector

Conditions of the water management complex of the country and its efficiency to the great extent depend on the general economic situation.
The following priorities had been identified at the national and basin levels:

At the National Level:

- necessity to ensure the country's energy independence in the situation of insufficient level of the huge hydropower resources utilization;
- ensuring of food security and employment, and reduction of the population's poverty level;

- necessity for rehabilitation of the water sector's infrastructure due to the substantial deterioration of the fixed assets;
- imperfection of the water use economic mechanism and insufficiency of financing from the state budget of operation and maintenance, and rehabilitation of water management infrastructure;
- necessity to provide population with drinking water supply and sewerage systems due to the significant deterioration of the existing infrastructure.

At the Basin Level:

- prevention and resolution of the arising contradictions, especially during dry years, due to imperfection of the existing mechanism for the joint management of water and energy resources;
- necessity for resolution of the interstate problems on the basis of agreed criteria and methodologies for development and conclusion of the bilateral and multilateral agreements;
- necessity of the modern strategy for the interstate water sharing and economic mechanism of water use for all region.

Amongst the destabilizing factors is the issue associated with lack of solution regarding the intestate water relationships on the basis of the international water law. Tajikistan has identified development of hydropower as its priority. The ample hydropower resources of Tajikistan should become the serious factor in the mutually beneficial cooperation amongst the Central Asian countries. However, there are also some unresolved problems here.

The Kairakkum reservoir plays the crucial role in irrigation, and first of all in the interests of Uzbekistan and Kazakhstan. It regulates 5.2 km^3 of water out of 6.0-6.2 km^3 required during the irrigation season. However, the arising costs and damages associated with operation of this reservoir in the irrigation mode fall on Tajikistan side. In addition, 54 thousand ha of the very fertile lands are assigned to the reservoir' bed.

The Nurek hydropower dam on the Vakhsh river is the waterworks of seasonal regulation of water resources in the Amudarya river basin. During Soviet times the "incidental" summer electrical energy generated by this hydropower station was supplied to consumers in all the Central Asian republics. During winter time Tajikistan used to receive electrical energy and the necessary fuel and energy resources in return. Now this situation has drastically changed. Electrical energy generated by the Nurek hydropower station during summer time is unsaleable, but water flows to the neighbors. In winter time Tajikistan has to buy electrical energy for the double price.

The social factor is also very important. Government has identified four strategies for the poverty reduction: the efficient management, support to the poorest groups of population, equitable distribution of the social services, and sustainable development. By 2015, it is envisaged to reduce the number of people living below the poverty line by 23%, increase access to the safe drinking water up to 80% of population, increase share of the private sector in the GDP up to 60%, and increase the annual growth rate of GDP up to 6% on average.

The Main Threats to Water Resources

Trends in the global climate warming lead to the steady intensive process of shrinking the area of glaciers.

In Tajikistan, as in all the other republics of the former Soviet Union, use of the natural resources, and first of all water resources, for economic activities only was the dominating approach. In this approach water resources were considered only from the viewpoint of possibilities to provide consumers with water. The ecological role of water resources, including water requirements for the nature landscapes and ecosystems from the viewpoint of their sustainability, had not been considered at all. Such approach to use of water resources dominates up to the present time.

By the Environmental Performance Index of the world countries, officially presented at the World Economic Forum in Davos (26 January, 2006), the Republic of Tajikistan is 117-th in the world (with rating 48.2) and the last one amongst the CIS countries (rating was prepared by the Center for Environmental Law & Policy at Yale University and the Center for International Earth Science Information Network (CIESIN) at Columbia University [2].

[2] http://www.washprofile.org/ru/node/4431 (Each country was rated on the basis of 16 criteria, combined into 6 groups: "Ecological Health", "Air Quality", "Condition of Water Resources", "Biological Diversity", "Productivity of the Natural Resources" and "Sustainable Energy Development". Ratings were given on the 100 score scale, where 100 is the highest score and 0 the lowest one.

Efficiency of the sewerage water treatment plants does not exceed 40%. Only 23% of population has access to the sewerage system, including 10.1% of inhabitants of the urban-type settlements and rayon central cities.

Situation with protection of water fund from pollution and depletion, and monitoring in the upper watersheds is similar to the situation in the Kyrgyz Republic due to the following reasons:
Firstly – there is no practically the purposeful activities in this direction due to lack of the necessary financial funds;
Secondly – created in the past the hydrometric network that carries out observations of river flows, precipitations and the other climatic parameters was and is being decreased over the recent years due to lack of funds. Reliability and quality of measurements are being reduced due to poor salary of staff and drain of specialist from this sector.

Risks Associated with Water

Amongst these risks is the insufficient degree of research and study of the high-mountain lakes, especially the collapsible ones (i.e. subjected to the dam breakage), such as the Sarez lake that can create the catastrophic impact of the regional scale on the territory of more than 55 thousand km^2 and population of around 6 million people. As of now, 700 families should be urgently resettled due to the natural disasters associated with water. Total number of the potential ecological migrants is 10,037 families.

In 18 rayons of Tajikistan (4 rayons in the Sogdi oblast, 10 in the Khatlon oblasts, and 3 in the rayons of the republican subordination) 142 settlements are constantly waterlogged, and another 490 settlements are periodically waterlogged (during the irrigation period).

Zone of lift irrigation covers almost 300 thousand ha. In a number of regions lands of the whole rayons are the command area of pumping stations. Zones of lift irrigation are the habitat and source of sustenance for around 2 million people and they depend on stability of electrical energy and water supply.

The significant risks associated with water are caused by the more frequent now dry years and droughts, and the other negative processes.

Increase of frequency and duration of high floods and severe droughts may reduce quality of water, biological productivity and habitat of flora and fauna in the river basins, especially small ones. The major part of precipitations will fall in the form of rains, snow accumulation in the mountains during winter time will be reduced, and turbidity of river water will be increased causing reduction of reservoirs' capabilities to regulate river flows.

Territory of the upper watershed and its population are subjected to the active impact of the various natural processes which may lead to disasters. Out of 70 types of the worldwide common dangerous natural phenomena 20 occur in the upper watershed. The most dangerous are mudflows, floods, landslides and the other ones. Amongst the other dangerous natural phenomena mudflows and floods are the most dangerous in the upper watershed due to their extent, occurrence, and caused damages.

Evidences of the above said are the annual catastrophic damages to the national economy caused by mudflows, floods, and landslides during the 90's. Only over the last six years it was replanted 332 thousand ha of various crops, destroyed and damaged 832 km of irrigation canals, 195 km of collector and drainage network, 133 pumping stations and 332 water structures. 376 enterprises and the other objects of the national economy were affected.

Regulation of Water Relationships

The state management in the area of water resources use and protection is based on combination of the basin, territorial and administrative-territorial principles of management and is carried out by the Government of the Republic of Tajikistan, local executive authorities, as well as the specially authorized the governmental bodies for regulation of water use and protection.

The Government of the Republic of Tajikistan has identified four specially authorized state bodies for regulation of water use and protection:

Rating has showed that the ecological policy, carried out by the government, has the significant impact of the environment conditions).

- The Ministry of Amelioration and Water Resources (MAWR of the Republic of Tajikistan) is the republican management body in the area land amelioration, water management, rural water supply and pasture watering;
- The State Committee for Environment Protection and Forestry is responsible for the state control over water resources use and protection;
- The Main Geological Administration under the Government of the Republic of Tajikistan (underground waters);
- The State Committee for Supervision over Safety in Industry and Mining under the Government of the Republic of Tajikistan is responsible for control over the rational use of medical, mineral, thermal and industrial underground water, and also the therapeutic muds.

Along with the above bodies the specially authorized organizations are:

- Agency on Antimonopoly Policy and Support to Entrepreneurship exercises the tariff regulations associated with use of water and the other resources;
- The Ministry of Economy and Trade of the Republic of Tajikistan exercises coordination in the area of planning and prediction of the rational use and protection of water resources

In general, the complicated hierarchical structure with manifoldness of its functions (regulation, prediction, use and protection, planning, analysis, policy, tactics and strategy) in the area of water resources use and protection, as well as multi-sectoral character of water use and inconsistency of requirements to water resources (in terms of quantity, quality, and regime) exist in Tajikistan. Therefore, the serious improvements of water resources management system are required at the national level, because it is mainly based on the administrative method of management.

The system of sectoral supervision over water and hydropower infrastructure and its regular total inspections are not completely restored in Tajikistan. The regular annual editions of the State Cadastre and the hydrological yearbooks are not published yet. Water balances are not compiled and verified.

The payments system for water delivery services has the serious shortcomings due to low qualification of staff and unreliability of data. The system of intersectoral interactions is practically missing because the required for this purpose the Center (Committee, Commission) was not established. Sale of shares and privatization in the water management complex are just started and often conducted formally. Issues associated with change of the ownership type, transfer of the state owned water sector objects to the local and foreign legal entities are the competence of the Government, but the relevant procedure is not approved yet. Denationalization and transfer of the drinking water supply systems to the private companies are prohibited by the Water Code. As a result the drinking water supply systems are in the unsatisfactory technical conditions.

The reservoir beds are on the balance-sheet of the MAWR, but dams are the assets of the Ministry of Energy. The Vakhsh main canal is also subdivided into sections and distributed between these two ministries. Lack of coordination and the financial obligations in regard to these objects aggravate their already poor technical conditions.

The financial mechanisms of water resources management are also far from being perfect.
There is a single tariff for delivery of irrigation water irrespectively of the natural and economic factors (gravity or lift irrigation, plain or highland regions) that can not provide enough funds for the proper operation and maintenance of the irrigation and drainage systems. The similar situation is observed in the hydropower and municipal and drinking water supply sectors.

The governmental water management organizations simultaneously exercise the functions of “water supplier” and “inspector” and they have low interests in reduction of the water structures operation and maintenance costs, as well as water saving.

There is a lack of water relationships regulation at the regional/interstate level, and in particular, the economic mechanism for water use, associated with the operation of reservoirs of the interstate importance. Currently the former Soviet Union’s water sharing principles are in force, but the previously existing mechanism of compensations is missing. In accordance with this mechanism Tajikistan used to receive fuel and energy resources that ensured the equal social security of population. As a result, the water energy exchange had been disbalanced and therefore, the former water sharing became inequitable. Due to lack of water regulations amongst the region’s republics the current water sharing is the source of tensions.

Legal Basis for Introduction of the IWRM Principles on the Scale of the Republic of Tajikistan

The main provisions of the national program for water sector development of the Republic of Tajikistan are based on:

- Constitution of the Republic of Tajikistan that envisaged the exclusive state ownership of waters and guarantees of the government for their efficient use and protection for the benefit of nation;
- Water Code, and the Law on nature protection that regulate water relationships for the rational water use and protection, strengthening of lawfulness and protection of rights of the physical and legal entities in the area of water relationships;
- Concept of the rational use and protection of water resources in the Republic of Tajikistan;
- Strategy for the poverty reduction;
- Law on energy;
- Program for the economic development of the Republic of Tajikistan for the period up to 2015;
- Concepts of the fuel and energy complex development of the Republic of Tajikistan for the period 2003-2015;
- Program for the first priority measures on improvement of the ameliorative conditions of irrigated lands in Tajikistan for the period 2005-2009;
- Mid-term program for overcoming of crisis in the agro-industrial complex of the Republic of Tajikistan and priority directions of the strategy for development of its sectors for the period up to 2005;
- State ecological program of the Republic of Tajikistan for the period up to 2008;
- Millennium Development Goals (estimation of financial expenses) for the Republic of Tajikistan;
- Program "Clear water and sanitation of Tajikistan" and other documents.

Currently the "Strategy for development of water sector of Tajikistan" is being elaborated (MAWR of the Republic of Tajikistan, UNDP, EC IFAS). Objective of the water strategy is not integration of all sectors of the water management complex into the single economic complex, but the efficient interaction amongst them, carrying out the unified policy, adoption and implementation of decisions ensuring the greatest economic and social benefits with the minimum damages to environment.

The strategy includes the following provisions:

- ensuring the optimal water requirements for all categories of water users and consumers taking into account the interstate water sharing;
- rehabilitation of the existing water sector's infrastructure and its facilities;
- ensuring the total reimbursement of the water delivery costs, and incentives for water users to save water;
- development of lands suitable for irrigation;
- introduction of the new economically efficient technologies;
- realization of the program for efficient water saving;
- gradual transition to the systemic management method within the hydrographical units instead of administrative ones, countrywide establishment of WUAs, introduction into practice the water demands management, ensuring differentiation of payments for water and its delivery in accordance with the specific conditions, development of the diversified forms of private, collective, and joint-stock water use on the basis of market-oriented water management activities;
- implementation of the staged program for rehabilitation, expansion and construction of new water supply and sewage water treatment plants, staged introduction of the modern technical devices and water metering facilities on the water supply and sewerage systems;
- development of hydropower, completion of construction of the Rogun and Sangtuda hydropower stations and the other hydropower stations and reservoirs;
- staged solution of problems in environment protection associated with water (floods, waterlogging of territories and engineering structures, liquidation of mudflow impacts, land salinization, collapsible lakes (subjected to dam breakage), surging glaciers, etc);
- protection of the national interests on the basis of market relationships and the interstate agreements.

In general, the necessary legislative base for implementation of the market reforms in the water management complex exists, but it requires further development (elaboration of bylaws, decrees, instructions, rules, recommendations, etc.).

The on-going reforms in the water management complex require speedup of the decentralization process and active public participation in management. Public participation, collective/public form of control over water distribution will ensure realization of principles of openness, transparency and equity due to better awareness of water users, and material incentives.

Actual Status of the IWRM Process in the Republic of Tajikistan [3]

The document of the Government of the Republic of Tajikistan "Progress in achievement of the millennium development goals in the Republic of Tajikistan" (2003) amongst the main of sustainable development goals specifies also introduction of the integrated water resources management. This is the favorable political environment for introduction of the IWRM principles in Tajikistan.

The Water Code of the Republic of Tajikistan adopted in November 2000, envisages possibilities to change type of ownership in the water management complex in accordance with the procedure established by the Government.

As of now the Ministry of Amelioration and Water Resources of the Republic of Tajikistan has developed and agreed with the ministries and bodies concerned the "Changes and amendments to the Water Code of the Republic of Tajikistan". In Section 1 of this document, submitted to the Madjilisi Oli (the Parliament of the Republic of Tajikistan) for approval, the following points were additionally included:

- In Chapter 2 (*Articles 16-23*) "Right to ownership and the other rights to water management objects" for the first time it was declared that water management objects may constitute the private property;
- Chapter 3 "Basin administration in the area of use and protection of water fund" was amended by the *Article 24 "Tasks of the basin water management organization (administration)"* and и *Article 25 "Basin Council*, that will be charged with duty to approve the annual plans for integrated water use and protection.

Developed in 2001, the "Concept for the rational use and protection of water resources in the Republic of Tajikistan" has identified the ways for further development of the water management complex of the country. According to this "Concept…." the following measures were envisaged:

- fulfill the gradual transition to the systemic method of management within the hydrographical boundaries instead of administrative ones;
- speedup countrywide establishment of WUAs;
- introduce into practice the water demands management;
- ensure differentiation of payments for water and its delivery in accordance with the specific conditions;
- develop the diversified forms of private, collective, and joint-stock water use on the basis of market-oriented water management activities;
- introduce water saving technologies, and in the zones of lift irrigation, in particular.

The important direction of reforms in the agriculture and water sectors in the market conditions is the countrywide establishment of the water user associations (WUAs).

The Law of the Republic of Tajikistan "On water user associations" prepared by the Ministry of Amelioration and Water Resources was recently adopted by the Government and Parliament after approval by the ministries and bodies concerned.

For introduction of the IWRM elements in the republic the consistent and systemic measures/activities are carried out, namely:

- Process of restructuring of the irrigation and drainage infrastructure and its management is going on;
- Canal administrations (CA) were established for two main canals (Chubek and Gulyakandoz), Councils of the canal water users are being established;

[3] Results of monitoring of process for transition to the IWRM presented in ANNEX, are used in this section (monitoring consultant is Dr. Yu. Rysbekov (SIC ICWC)

- The "Department for WUAs Support" within the Ministry of Amelioration and Water Resources is being created;
- Chargeable water use is transferred to development of the differentiated tariffs;
- Process of transfer of management rights to water users and privatization of some elements and structures of the irrigation systems is going on;
- Mechanisms for transition to IWRM through preparation of the new bills and normative/legislative acts are being developed with support from the international institutions (UNDP, FAO, and the others).

For introduction of principles and transition to the IWRM system adoption of the following new laws is envisaged: "On water charge", "On water resources monitoring", "On drinking water supply", "On drinking water".

The successive steps towards reformation of water sector, including introduction of the IWRM principles and approaches in Tajikistan were in general identified by the Document "Poverty Reduction Strategy" (PRS) that was approved by the Government in June 2002. This document envisages development of a number of legislative, normative/legal acts, programs, etc. Currently, the intersectoral working group develops terms of references for realization of the PRS provisions.

The poverty reduction strategy envisages development of a number of documents on the issues associated with water resources management and its reformation:

1. Legislation on water sources and procedure of operation of the independent water distribution organizations, as well as Water User Associations;
2. List of the priority objects of water management system that should be rehabilitated;
3. Tariffs for water delivery services that correspond to the increasing tariffs for electrical energy supply with the aim to cover completely the operation and maintenance costs of irrigation systems.

The specific Action Plans for transition to the IWRM on the scale of the Republic of Tajikistan are not envisaged, but the necessary preconditions for the IWRM realization (enabling political environment, institutional roles, and management instruments) appear in the national and sectoral programs. Practically all the national development plans (on reduction of poverty level or improvement of living standards for achievement of the Millennium Development Goals, agriculture, energy sectors, environmental sphere and the others) are the integrated ones and include the main IWRM principles to one or another extent.

The specific action plans are envisaged and being implemented within the framework of the pilot irrigation systems of the "IWRM-Fergana" project.

Assessment of the actual progress of the Republic of Tajikistan towards capacity building required for water management on the basis of the IWRM principles shows that currently no one out of 17 functions, characterizing the institutional capacity, works at the level of the real objective:

- <u>There are some gaps in quality and coverage in:</u>
  Reimbursement of water management costs, Water sharing.
  <u>There are a lot of gaps in:</u>
  Formulation of policy, Preparation of laws and ancillary normative documents, Collection of information about water resources and development of databases, Preparation of water resources, and ecological and socio-economic assessments, Monitoring of water availability, use, quality, the aquatic ecosystems, pollution load, Planning of water resources use, protection and conservation, Promotion of water demands management, Intermediation in resolution of disputes, Cooperation on the international water courses.

The main serious institutional limitations impeding execution of necessary functions by the water management organizations are insufficient: budget, equipment (for maintenance of databases, operative measurements and control over water discharges and quality parameters), material and technical supply (mainly with vehicles and machinery). At the same time the staff number and level of their competence to the acceptable extent correspond to the technical complexity of the above listed management functions. Practically all heads of water management organizations are familiar with the IWRM principles. However, it

should be stated that staff is only motivated to some extent to water management based on the IWRM principles.

The decision makers and specialists of water management organizations to full extent recognize that the managerial aspects of IWRM envisage fulfillment of the following requirements:

- transition from management within the administrative boundaries to management within the hydrographic boundaries;
- transition from the sectoral water management to the integrated (system) one;
- water demands management instead of the traditional supply management;
- introduction of the cooperative forms of water resources management instead of the administrative and command ones;
- replacement of the "closed" institutions by the open (transparent) water resources management structures;
- use of the system for water resources management with the active participation of stakeholders ("bottom-up" approach) instead of the previously existing the "top-down" one.

Due to shortage or lack of funds the special national trainings in the IWRM are not carried out, with the exception of the National Trainings within the framework of the "IWRM-Fergana" project.

At the same time all the on-going investment projects in the Republic of Tajikistan (ADB, IDA, IDB, etc.) aimed at restructuring and rehabilitation of water management complex include the "awareness improvement" component. The "National Training Center" had been established within the framework of the project aimed at support to reorganizations of agricultural production. Training programs of this center are developed for the broad audience of specialists: top level (decision makers), medium and low levels (labors, machine operators, etc.), as well as students and post graduates. Around 3,600 people were trained in these courses only in 2005.

The sectoral newspaper "Obu-obodoni" is regularly published. This newspaper discusses all the touchy issues associated with the water resources management.

Representatives of Tajikistan actively participate in the special training programs, seminars, and round tables, conducted under the ICWC aegis at the regional level for specialists from the various levels of the Central Asian water sector hierarchy.

ANNEX

Questionnaire[1] (REPUBLIC OF TAJIKISTAN)

Note: Answers to the majority of questions are ticked in the appropriate boxes. Since IWRM is the complicated subject, in a number of cases the explanatory comments referring to the number of the question are added.

1. National water policy				
1.1	***Does the country have a water policy?***			
1.1a	Existing	☑	Give the date of publishing: **29.11.2000**	Give the title(s) of the document(s) : **The Water Code of the Republic of Tajikistan**
1.1b	In progress	☑	Give the expected date of finalisation:	
1.1c	Foreseen	☐	Give the expected period for preparation:	
1.1d	Not foreseen for the time being ☐			

[1] Questionnaire format was developed by the DHI Water and Environment jointly with UNEP Center on cooperation (UCC/DHI – 14.12.2005)

1.1e	Is the policy and the law/regulations harmonised? Yes: ☐ No: ☐ Partly: ☑

Comment on 1.1a :

Taking into account that:

- The Republic of Tajikistan is the successor of former Tajik SSR that had the water policy
- Succession of the water policy is specified in the Agreement of 1992 (the Agreement amongst the Governments of the Central Asian Countries "On cooperation in the joint management, use and protection of the transboundary water resources")
- The country had adopted the National constitution and Water Code[2],
- The other provisions, which were outlined in the comments on this questionnaire,

it would be incorrect to deem that the national water policy is absent. Adoption of the Constitution, Laws regulating public relationships in the certain spheres, identification of the authorized body and its power for each sphere etc. are an embodiment of policy.

Besides, the Republic of Tajikistan had adopted and is implementing the following strategies and action plans[3]:

- The mid-term program for withdrawal of the agro-industrial complex of the Republic of Tajikistan from crisis and priority directions of development strategy of its sectors for period up to 2005,
- The State Ecological Program of the Republic of Tajikistan up to 2006,
- The National Action Program to Combat Desertification,
- The Strategy of the Republic of Tajikistan for protection of population health up to 2005,
- The National Program "Clear water and sanitation of Tajikistan ",
- The State Ecological Program,
- The National Action Plan on Environmental Hygiene (NAPEH) (1999),
- The National Program for reduction of threats of the natural disasters and emergency situations,
- The Program for development of cotton production in the Republic of Tajikistan for 2002-2005,
- The National Action Program to Combat Desertification (2000)
- The Strategy of EBRD on Tajikistan for 2003 - 2005,
- The National Action Plan for mitigation of climate change impact; **and the others.**

These and the other National Concepts, Strategies, Programs, and Action Plans contain to a variable extent provisions associated with the sustainable management and development of water resources.

There are many "water" projects under implementation. This also indicates not only existence of the policy, but also realization of the relevant policy in the area of IWRM at the national level.

The only problem is how efficiently these projects are being implemented.

Comment on 1.1b:

Policy is a phenomenon. Realization of policy is the continuous process. Dynamism of the public relationships determines the necessity for process of policy change/revision.

Comment on 1.1e:

It is practically impossible to ensure complete harmonization between the policy and legislation. The new public relations emerge, which should be regulated by the normative/legislative acts. Policy, as a rule, goes ahead of legislation, and the latter should "support" the former.

1.2	***What does the water policy cover?***
1.2a	Water resources management only ☐ Water resources management, water supply and other uses [4] ☑
1.2b	If a water policy document exists, does it explicitly state IWRM (or IWRM principles) as a basis for water resources management in the country? Yes: ☐ No: ☐ Partly: ☑
1.2c	Does the water policy define IWRM? Yes: ☐ No: ☑, but… [5]
1.2d	If Yes (1.2c) write definition, if necessary in an annexed document referring to the number of the question.
1.2e	Does the water policy specify the role of the private sector in water resources management? Yes: ☑ No: ☐

[2] The Water Code of the Republic of Tajikistan (29.11.2000г.)

[3] Based on materials from: http://www.eco-portal.kz/modules.php?name=News&file=article&sid=31 and the others.

[4] Provided that the current Water Code (of 2000) of the Republic of Tajikistan is understood under water management policy.

[5] The IWRM concept is included into legislation in the form of statement "integrated, rational, efficient use of water resources".

1.2f	If Yes (1.2e) describe the role as specified, if necessary in an annexed document referring to the number of the question. **Comment on 1.2f:** The Water Code of the Republic of Tajikistan Article 13. *Participation of juridical and physical persons in implementation of measures aimed at the rational use and protection of water resources* The juridical and physical persons, regardless of their ownership forms, functioning on the territory of the Republic of Tajikistan shall have opportunity to participate in the measures aimed at the rational use and protection of water resources. Article 43. *Water User Rights* In accordance with the purpose of provided permission for the specialized use of water object, water users shall have rights, as established by procedure, to: - create water user associations. Water user associations are established for operation and maintenance of the on-farm irrigation and drainage systems both **of individual and collective ownership,** ensuring equitable, efficient and timely distribution of water amongst dekhkan and private farms, collection of payments for water delivery and resolution of disputes arising amongst their members in regard to issues associated with distribution and use of water.
1.2g	Does the water policy include the "polluter pays" principle (those causing pollution pay the cost of monitoring and treatment)? Yes: ☑ No: ☐
1.2h	Does the water policy include the "user pays" principle (water users pay the cost of management and provision of water)? Yes: ☑ No: ☐

Comment on 1.2g :

The Water Code of the Republic of Tajikistan:
Article 142. *Responsibilities for violation of the water legislation*

Those responsible for committal of actions specified in the article 124 of the present Code, as well as for:
- pollution and contamination of waters;
- commissioning of industrial enterprises, public utilities and the other objects without structures and facilities preventing pollution and contamination or their adverse impact on waters;
- violation of water protection regime at watersheds causing their pollution, water erosion and the other harmful phenomenon;
- violation of normative, technical, sanitation and metrological requirements to procedure for control and inventory of water use;
- unsatisfactory performance of water treatment plants, excessive (above normative) disposal of pollutants into water objects;
- violation of operational regime of water objects and structures causing their pollution, water erosion and the other harmful phenomenon;
- disposal of polluted sewage waters into aquifers,

incur liability in accordance with the legislation of the Republic of Tajikistan.
The legislation of the Republic of Tajikistan can impose liability for the other types of the water law violations.

2. National water legislation

2.1	***What is the situation of ownership of water in your country?***		
2.1a	Is water a common good (i.e. it belongs to everyone)?	Yes ☑	No ☐
2.1b	Is water the property of the State?	Yes ☑	No ☐
2.1c	Is water a private property?	Yes ☐	No ☑
2.1d	Is ownership variable according to the type or location of the water body?	Yes ☐	No ☑

Comment on 2.1a, 2.1b:

1. Constitution of the Republic of Tajikistan

Article 13

The earth, its mineral resources, water, atmosphere, flora, fauna, and the other natural resources are the exclusive property of the state, and the government guarantees their effective utilization in the interests of the people.

2. The Water Code of the Republic of Tajikistan

Article 5. *The State Ownership for Waters*
In accordance with the constitution of the Republic of Tajikistan water resources shall exclusively constitute the state property and the state guarantees its efficient use and protection in the interests of people.

Actions of the juridical and physical persons, which directly or indirectly violate the state water ownership rights and contradict the state interests of the Republic of Tajikistan are prohibited and entail liability in accordance with the legislation of the Republic of Tajikistan.

2.2	***Does the country have one or more specific water laws, or a water code?***

2.2a	Existing:	☑	Give the date of publishing: **29.11.2000**	Give the title(s) of the documents : **The Water Code of the Republic of Tajikistan**
2.2b	In progress:	☑	Give the expected date for finalisation:	
2.2c	Foreseen:	☐	Give the expected period for preparation:	
2.2d	Not foreseen for the time being ☐			

Comment on 2.2a:

The draft law of the Republic of Tajikistan "On Water User Associations" is to the great extent relevant to the sphere of water relationships regulation.

2.3	***Does the water legislation include obligations to take into account the following principles?***		
2.3a	Public hearings	Yes ☐	No ☑
2.3b	Participation of the stakeholders in the water management	Yes ☑	No ☐
2.3c	Management by river basin	Yes ☐	No ☑
2.3d	Management at the lowest appropriate level [6]	Yes ☑	No ☐
2.3e	Financial contribution by the users towards the management of water resources	Yes ☑	No ☐
2.3f	The "polluter pays" (those causing pollution pay the cost of monitoring and treatment)	Yes ☑	No ☐
2.3g	The "user pays" (water users pay the cost of management and provision of water)	Yes ☑	No ☐
2.3h	The particular role of women in water management	Yes ☐	No ☑
2.3i	Separation between resource management and water service provision	Yes ☑	No ☐
2.3j	Water use efficiency	Yes ☑	No ☐
2.3k	Private sector involvement	Yes ☑	No ☐

Comment on 2.3a:

If the "public" is understood as "governmental", the only answer is **"Yes"** (the state accountability).

If the "public" is understood as "common" hearing, the only answer is **"No"** (such duty is not imposed on the water management bodies).

Comment on 2.3b:

According to the provisions of the Constitution of the Republic of Tajikistan: All citizens shall have the right for associations, participation in the management of state affairs, both directly and through representation, and the other rights and freedoms. Therefore, any stakeholder can participate in water resources management in accordance with the procedure established by legislation.

See also the answers to question 1.2e

Comment on 2.3c:

The Water Code of the Republic of Tajikistan:
Article 9. *The State management in the area of water resources use and protection*
The State management in the area of water resources use and protection is based **on combination of basin, territorial and administrative-territorial management principles** and is carried out by the Government of the Republic of Tajikistan, local governmental executive bodies, as well as by the specially authorized state body for regulation of use and protection of water resources in accordance with the legislation.

The Water Code of the Republic of Tajikistan:
Article 7. *Competence of local governmental executive bodies in the area of water relationships regulation*

The local governmental executive bodies in the area of water relationships regulation are responsible for:
- identification of the main directions for use and protection of water resources at their respective territories;
ensuring of law and order in the area of regulation of water resources use and protection;
- inventory and assessment of the water object conditions, and control over use and protection of waters, compliance with the established limits of water consumption, and maintenance of water use records by water users;
- implementation of measures aimed at protection and improvement of water object conditions, prevention and elimination of the adverse impact, as well as water pollution, and rehabilitation of objects damaged by accidents, flooding, mudflows, and the other natural disasters;

[6] The water problems should be managed at the lowest appropriate level. I.e. at the level, where the local competences and the capacities make solution to the problems possible and where decision makers are affected by the solutions

- supply of drinking water, protection and development of the centralized and decentralized systems of drinking water distribution amongst consumers within the competence identified by the legislation of the Republic of Tajikistan;
- approval of location and commissioning of enterprises and water structures, and organization of works within the coastal, water protection zones;
- regulation of the other issues, specified by the legislation.

Comment on 2.3f:

See also the answers to question 1.2g

Comment on 2.3g:

See also the answers to question 1.2h

Comment on 2.3j :

The Water Code of the Republic of Tajikistan:
Article 1. *Tasks of the Water Code of the Republic of Tajikistan*

The tasks of the Water Code of the Republic of Tajikistan are: **regulation of water relationships for the rational use of water** for needs of population, sectors of the national economy and environment, protection of waters from pollution, contamination, and depletion, prevention and elimination of the adverse impact of waters, improvement of water object conditions and protection, enforcement of law, and protection of rights of juridical and physical persons in the area of water relationships.

Comment on 2.3k:

The Constitution of the Republic of Tajikistan (article 12) has appropriate provisions for recognition of the various forms of ownership, including the private one.

See also the Comment on 1.2f.

2.4	***Regulations supporting the water law***	
2.4a	How many regulations are required by the water law?	Give the titles and other details of regulations in an annex

Comment on 2.4a:
There is no exact answer to this question. It is only possible to tell the number of normative and legislative acts, which are specified in the Law (or in the special Decree of the Government) as to be developed. As a rule, this list covers the minimum number of normative and legislative acts at the level of bylaws that should be adopted in the first place.

Since the normative and legislative acts cover all spectrums of legislation and water law in particular, there may be infinitely many of such acts (Decrees of the Government, sectoral acts, etc.).

2.4b	Among the regulations foreseen, how many have been adopted? If possible mark "adopted" on the list given in an annex

Comment on 2.4b:

I. According to the Decree of the Government of Tajikistan of 06.08.2001, #373 "On some measures aimed at realization of the Water Code of the Republic of Tajikistan":

- the Ministry of Nature Protection, the Ministry of Amelioration and Water Resources, the State Committee for supervision over safety in industry and mining, and the Main geological administration under the Government of Tajikistan were identified as the especially authorized state bodies (EASB) for regulation of water resources use and protection;

- the above mentioned bodies were assigned to develop and submit the Government for approval:
draft Provision on differentiation of the EASB authorities for regulation of water resources use and protection;

-the ministries and bodies responsible for development of the normative acts (in accordance with the below list) of the Government of the Republic of Tajikistan were identified.

The List of essential acts of the Government implied by the Water Code of the Republic of Tajikistan:
1. Procedure for preparation, registration and issue of license for water use;
2. Procedure for encouragement of water users who carry out the socially useful measures on rational use and protection of water resources;
3. Procedure for compensation of damages to the juridical and physical persons caused by implementation of water management activities:
4. Procedure for use of small scale boats;
5. Procedure for use of underground waters of the other categories than drinking or curative ones;
6. Procedure for rating of water bodies as navigable waterways and rules of their exploitation;
7. Procedure for use of water bodies for parking, take-off runway, as well as for the other needs of air transport;
8. Procedure for use of water bodies for fishery;
9. Procedure for use of water bodies for hunting farm needs
10. Procedure for recognition of water bodies as nature or culture landmarks;
11. Procedure and conditions for use of water bodies for fire-fighting needs, liquidation of emergency situation impacts and for the other state and public needs;
12. Procedure for organization and coordination of measures ensuring the proper technical conditions and improvement of reservoirs (lakes and the other water bodies used as reservoirs), as well as control over observance of the rules for their operation;

13. Procedure and tariffs for the juridical and physical persons for registration in the State inventory of water structures;
14. Procedure for state control and inventory of water resources, their use, maintenance of the state water cadastre, monitoring, development and approval of the integrated water master plans;
15. The Target State Program in the area of efficient use and protection of water resources and development of drinking water supply systems;
16. Procedure of payments for water use, tariffication and setting of benefits;
17. Procedure for establishment and use of water fund, norms and limits of water use;
18. Procedure for organization of scientific and research works on development, use, and protection of water resources;
19. Program of bank/shore protection works;
20. Rules of specialized water use in the zones of emergency situations;
21. Amount, procedure, and conditions of payments for the right to use, regeneration and protection of water resources, their transportation and disposal of waste waters, pollution and depletion of water bodies;
22. Rules of water bodies' use for hydropower generation.

II. According to the analysis of the technical director of EC IFAS [7], the Water Code of the republic requires adoption as a minimum of 30 normative and legislative acts. In addition, it will be necessary to develop many sectoral normative acts (instructions, orders, etc.).

The List of adopted decrees of the Government of the Republic of Tajikistan:
- Provision on differentiation of authorities of the especially authorized state bodies (EASB) for regulation of water resources use and protection;
- Procedure for maintenance of the state water cadastre of the Republic of Tajikistan;
- Procedure for encouragement of water users who carry out the socially useful measures on rational use and protection of water resources (*it does not work absolutely*);
- Procedure for recognition of water bodies as nature or culture landmarks;
- Procedure for rating of water bodies as navigable waterways and rules of their exploitation;
- Procedure for use of underground waters of the other categories than drinking or curative ones;
- Procedure for use of water bodies for fishery;
- Procedure for preparation, registration and issue of license for the special water use;
- **Rules of water bodies' use for hydropower generation;**
- On state support to the drinking water supply sector;
- Procedure for maintenance of the State inventory of water structures;
- Procedure for attraction of water users to implementation of irrigation and amelioration works.

2.4c	Are the regulations effective?	Yes: ☐	No: ☐	Partly: ☑

Comment on 2.4c:

Practically every newly adopted normative act is the step forward in the national legislation, i.e. it is more effective as compared with its absence. However, due to a number of reasons (it is in general lack or insufficiency of mechanisms for its implementation) it may be not as efficient as expected.

2.4d	If "No" or "Partly" for which reason? (tick one or more of the following possible reasons)	
2.4e	Regulations insufficiently known by the users:	☑
2.4f	Regulations insufficiently known by those who shall enforce them:	☐
2.4g	Regulations too complicated to be operational	☐
2.4h	Regulations contradict each other:	☐
2.4i	Regulations conflicts with customary law or cultural traditions of certain users:	☐

[7] A. Kholmatov. Main provisions of the Water Code of the Republic of Tajikistan and progress with development of its bilaws http://www.caresd.net/site.html?en=0&id=1570

Comment on 2.4h, 2.4i :

There is a persistent enough opinion that the various normative and legislative acts very often allegedly "conflict" or not "harmonized" or "contradict" with each other. This is not entirely true.

The general legal force rules of the normative and legislative acts are as follows:

- The state constitution has supreme legal force
- Laws and the other normative and legislative acts are being adopted on the basis and in pursuance of the national Constitution and can not contradict its norms and principles
- The normative and legislative acts of ministries, state committees and agencies are being adopted on the basis and in pursuance of the Constitution and Laws, decisions of the Parliament, President and Government
- The normative and legislative acts of the local state authorities are being adopted on the basis and in pursuance of the Constitution and Laws, decisions of the Parliament, President, and Government, and also decisions of the superior local state authorities.

Correspondence of legal force between the various normative and legislative acts is as follows:

- Normative and legislative act should correspond to the one that has superior legal force
- In case of disagreements between two normative and legislative acts, it should be enforced the one that has the superior legal force
- In case of disagreements between two normative and legislative acts which have equal legal force, it should be enforced the subsequent one
- The normative and legislative act adopted by one ministry, state committee or agency has superior legal force as compared with the normative and legislative act adopted by the another ministry, state committee or agency if the institution that adopted such act is specially authorized to regulate the certain area of public relationships.

Thereby, in regard to legal force the normative and legislative acts harmonize with each other in accordance the above mentioned provisions.

2.4j	Sanctions are not applied in cases of non-compliance:	☑

Comment on 2.4j :

Sanctions are envisaged and applied. However, the size of sanctions for non-compliance with the water legislation (the majority of them is considered as administrative violations) as a rule is inadequate to the caused damage.

2.4k	Monitoring capacity inadequate	☑
2.4l	Institutional enforcement capacity inadequate	☑
2.4m	Other reasons (explain which):	

2.5	***Is the water law harmonised with other national legislation?***			
2.5a	Environmental legislation	Yes: ☑	No: ☐	Partly: ☐
2.5b	Land-use legislation	Yes: ☑	No: ☐	Partly: ☐
2.5c	Agriculture legislation	Yes: ☑	No: ☐	Partly: ☐
2.5d	Health legislation	Yes: ☑	No: ☐	Partly: ☐
2.5e	Other legislation (describe):			
2.5f	If relevant, list key areas of conflict between the water law and other legislation:			

Comment on 2.5:

In accordance with the above **Comments on 2.4h, 2.4i**, disagreements between various normative and legislative acts can be easily resolved even in case if there is no agreement (in text or wording) between legislation of various sectors.

2.6	***Is the national legal framework harmonised with the international agreements which the country endorses?***		
2.6a	Yes: ☑	No ☐	Partly: ☐
2.6b	List the water related agreements signed by the country [7] and, if possible, mark those which have been integrated in the national legal framework.		

[7] Country can sign the international agreement, but not ratify it.

The Constitution of the Republic of Tajikistan

Article 10

International legal acts recognized by Tajikistan are a constituent part of the legal system of the republic. In the case of a discrepancy between the laws of the republic and recognized international legal acts, the norms of the international legal acts are applied.

Comment on 2.6b:

The International normative and legislative acts of the global nature which are to one or anothe extent relevant to water:

- The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (1998),
- The Convention to Combat Desertification (1994)
- The Framework Convention on Climate Change (1992)
- The Convention on Biological Diversity (1992)
- The Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat (1971).

Agreements and equated to them the regional political and legal documents signed by the Republic of Tajikistan:

- The Dushanbe Declaration (2002)
- Decision of the Heads the Central Asian Countries of 06.10.2002, "On the main directions of the Program for specific actions aimed at improvement of ecological and socio-economic situation in the Aral Sea basin for period 2003-2010" (ASBP-2)
- The Ashgabad Declaration (1999)
- The Agreement of 1998, amongst the Governments of Kazakhstan, Kyrgyzstan, and Uzbekistan about use of water and energy resources of the Syrdarya river basin (Tajikistan is the Party to Agreement since 1999)
- The Agreement of 1998, amongst the Governments of the Central Asian Republics
- The Issyk Kul declaration about the regional cooperation of the Central Asian Countries
- The Agreement of 1997, amongst the Governments of the Central Asian Republics "On status of the International Fund for Saving the Aral Sea"
- *The Almaty Declaration (1997)*
- *The Nukus Declaration (1995) of the Central Asian Countries and the international organizations on sustainable development of the Aral Sea basin*
- Agreement of 1992 amongst the Governments of the Central Asian Republics "On cooperation in joint management, use and protection of the transboundary water resources",

and the others.

2.7	***Does the legal framework include an obligation to elaborate/maintain an IWRM Action Plan/strategy/process?***	
2.7a	Yes: ☐	No: ☑, but…

Comment on 2.7a:

The Water Code of the Republic of Tajikistan does not directly specify the development/support to the IWRM Action Plan/Strategy (they are not mentioned exactly under this title), but the IWRM process in terms of "integrated, rational, efficient use of water resources" is included in the legal structure.

The projects, which reflect practically all the main IWRM aspects (sustainable development, water saving, public participation, coordination and the others), are presented in the key political document ASBP-2, approved by the Heads of the Central Asian Republics. One of the large ASBP-2 projects (Project #8.3) is entitled **"The Integrated Water Resources Management in the Aral Sea Basin".** As "The expected results" of this project it is in particular envisaged the following:

3. The new managerial structure of the water management bodies with involvement of public for implementation of the IWRM principles within the hydrographic boundaries at the pilot objects …

4. The legal basis for realization of the IWRM principles in the form of regulation documents package.

Development of the Concept of sustainable development in the Aral Sea basin is envisaged by the ASBP-2 as Priority #11. In priority rationale it is said that "the main objective of ASBP-2 … can be achieved only within the framework of policy aiming at sustainable development (SD)".

In the Nukus (1995), Issyk Kul (1995), Almaty (1997), Ashgabad (1999), and Dushanbe (2002) Declarations of the Central Asian countries it was declared transition of the countries to the SD policy, integrated and multi-disciplinary approach, ecosystem and **integrated natural resources management** and water use.

3. Institutional framework for the water sector		
3.1	***Provide the organisation chart(s) for the Institution(s) responsible for water resources management (attach in a separate document or in electronic format)***	
	Water resources management in the Republic of Tajikistan is carried out in accordance with the traditional administrative and territorial principle. Water management structure includes the following levels: **1. National:** the Ministry of Amelioration and Water Resources (MAWR); **1.1. Oblast:** - two oblast State Water Administrations; - five territorial State Water Administrations; **1.1.1. Rayon:** 42 rayon and inter-rayon Water Management Administrations (WMA). The Ministry of Amelioration and Water Resources had prepared draft recommendations on change of the organizational structure of water resources management that envisaged the following levels of hierarchy: **1. National:** the Ministry of Amelioration and Water Resources; **1.1. Basin (river basins level):** Basin Water Administrations (BWA) by the main rivers of republic: Syrdarya, Zarafshan, Karatag-Shirkent, Kafirnigan, Vakhsh, and Pyandj rivers; **1.1.1. Enlarged rayon basin (irrigation systems level):** Irrigation system administration (ISA), and Canal Administrations (CA), in particular: **1.** the Khodja-Bakirgan ISA; **2.** the Samgar ISA; **3.** the Aksu ISA; **4.** Isfara ISA; **5.** the Big Asht ISA; **6.** the Northern Fergana ISA; **7.** the Golodnostep ISA; **8.** the Dalverzin ISA.	
3.2	***Water resources management responsibility*** *If the water resources management responsibility is undertaken by a sector institution (e.g. Ministry of Agriculture, Energy, Environment) are there plans to move the responsibility away from the particular sector institution and place it in a cross-sectoral institution.*	
3.2a	Yes: ☐	No: ☑

3.3	***Institutions in the management framework*** *Which institutions are in place being part of a framework for IWRM?*		
3.3a	Is there a national body where cross-sectoral coordination at the overall level can take place?	Yes: ☑	No: ☐
	If Yes, give its name: date of establishment frequency of meetings		
	Comment on 3.3a: At the national level: **The Government of the Republic** On the basis and in pursuance of decisions of the Government, departments of ministries and agencies coordinate their activities at the lower levels: **oblast, rayon, local levels.** As a rule, the main coordination agency is the state authorities and administrations at the relevant levels. Dates and periodicity of the Government sessions are identified by the Government itself		
3.3b	Is there a platform where interaction with stakeholders at the national level can take place?	Yes: ☑, but…	No: ☐
	I If Yes, give its name: date of first meeting frequency of meetings		

	Comment on 3.3b: This is a platform where interaction with stakeholders **may take place**: In accordance with the competence, the state authorities and management bodies at the levels from oblast to the lower levels resolve **all issues** on the respective subordinated territories: The Constitution of the Republic of Tajikistan (Article 76): Local authority consists of representative and executive bodies that operate within their power. They ensure execution of the Constitution, laws, and acts of the Parliament (Madjlisy Oli) and the President. The Constitution of the Republic of Tajikistan (Article 77): The Madjlis of people's deputies, managed by a chairperson, are the bodies of local representative power in oblasts, cities, and rayons. The Madjlis of people's deputies … identifies the ways of local socio-economic development, ….. exercises the other power determined by the Constitution and laws. The Constitution of the Republic of Tajikistan (Article 78): The local power is exercised by representatives of the President, the chairperson of oblast, city, and rayon. The representative and executive power of corresponding administrative territorial units is headed by the Chairperson. The self-administration bodies in settlements and villages are council (jamoat). **Note:** The above mentioned bodies are responsible, in particular, for solution of issues associated with water resources management, including issues related with activities coordination and interaction amongst water use entities on their respective subordinated territories. Another issue is poor public control and necessity for establishment of the public Councils at various levels of water resources management: basin, irrigation system or canals of various orders (Basin Councils, Unions and Water User Associations) and their active involvement in the process of Water Resources Management.		
3.3c	3.3c.1. Are there platforms for interaction with stakeholders at the regional/provincial level?	Yes: ☑	No: ☐
	See Comment on 3.3b, the part relevant to 3.3c.1.		
	3.3c.2. Are they operational (holding meetings and influencing decisions)?	Yes: ☐	No: ☑
3.3d	3.3d.1. Are there bodies for participation of the users at the local level	Yes: ☑	No: ☐
	See Comment on 3.3b, the part relevant to 3.3d.1.		
	3.3d.2. Are they operational (holding meetings and influencing decisions)?	Yes: ☐	No: ☑
3.3e	3.3e.1. Are there bodies for river basin management?	Yes: ☐	No: ☑
3.3f	Other institutions (explain)		
	• Union of canal water users ("Gulyakandoz" Union of Canal Water Users), established within the framework of the IWRM Fergana project • Water User Associations, farmers and dekhkan farms (lower level of water resources management), established during the recent years.		

3.4	***Institutional Capacity at the national/central level*** *The questions below try to establish how far the country has come towards a realistically attainable institutional capacity for water resources management based on IWRM principles. Imagine a 5 year goal of establishing the management functions below and associated competences. The goal has to be consistent with a realistic water resources management budget and staffing considering the usual or immediately foreseen national budget priorities.* *For each of the functions below, give your assessment of the national/central level capacity using the following scale: 0 = function not established, 1 = function has many large gaps in quality and coverage, 2 = function has some gaps in quality and coverage, 3 = function operates at the realistic goal level.*				
3.4a	Policy formulation	0: ☐	1: ☑	2: ☐	3: ☐
3.4b	Drafting of laws and associated regulations	0: ☐	1: ☑	2: ☐	3: ☐
3.4c	Recovery of cost of water resources management	0: ☐	1: ☐	2: ☑	3: ☐
3.4d	Collecting water resources information and operating databases	0: ☐	1: ☑	2: ☐	3: ☐
3.4e	Preparation of water resources assessments	0: ☐	1: ☑	2: ☐	3: ☐
3.4f	Preparation of environmental assessments	0: ☐	1: ☑	2: ☐	3: ☐
3.4g	Preparation of socio-economic assessments	0: ☐	1: ☑	2: ☐	3: ☐

3.4h	Monitoring of water availability	0: ☐	1: ☑	2: ☐	3: ☐
3.4i	Monitoring of ambient water quality	0: ☐	1: ☑	2: ☐	3: ☐
3.4j	Monitoring of aquatic ecosystems	0: ☐	1: ☑	2: ☐	3: ☐
3.4k	Monitoring of pollution loads	0: ☐	1: ☑	2: ☐	3: ☐
3.4l	Monitoring of water use	0: ☐	1: ☑	2: ☐	3: ☐
3.4m	Planning resource use, protection and conservation	0: ☐	1: ☑	2: ☐	3: ☐
3.4n	Facilitating water demand management	0: ☐	1: ☑	2: ☐	3: ☐
3.4o	Water allocation	0: ☐	1: ☐	2: ☑	3: ☐
3.4p	Conflict mediation	0: ☐	1: ☑	2: ☐	3: ☐
3.4q	Cooperation on internationally shared watercourses	0: ☐	1: ☑	2: ☐	3: ☐

3.5	***Institutional constraints (apart from human resources) at the national/central level*** *Give your assessment of the severity of major negative factors constraining the water resources management institution(s). Use the following scale: 0 = not relevant, 1 = not severe, 2 = severe, 3 = very severe*				
3.5a	Lack of Good Governance (transparency, accountability, integrative, communication, participation)	0: ☐	1: ☑	2: ☐	3: ☐
3.5b	Institutional framework poorly suited to address the key water resources management issues (e.g. mix of regulatory and service provider functions)	0: ☐	1: ☑	2: ☐	3: ☐
3.5c	Institutional mandate poorly defined	0: ☐	1: ☐	2: ☑	3: ☐
3.5d	Responsibilities poorly described for departments/sections	0: ☐	1: ☑	2: ☐	3: ☐
3.5e	Inadequate equipment (laboratory, monitoring equipment, etc.)	0: ☐	1: ☐	2: ☐	3: ☑
3.5f	Inadequate budget	0: ☐	1: ☐	2: ☐	3: ☑
3.5g	Inadequate logistics (e.g. transport)	0: ☐	1: ☐	2: ☐	3: ☑
3.5h	Inadequate office facilities	0: ☐	1: ☐	2: ☑	3: ☐

3.6	***Human resources*** *Development of the water resources management functions requires staff with competences at levels corresponding to the technical complexity of the functions. The questions below address the staff capability compared to the realistic goal level of the functions (ref 3.4)* *Assess the human resource situation in the national/central water resources management institution(s) in relation to the IWRM functions under 3.4a – 3.4q. Use the following scale: 0 = not at all, 1: to some degree, 2: to a reasonable degree. 3: fully*				
3.6a	Is the number of staff adequate for handling the IWRM functions at goal level as outlined above?	0: ☐	1: ☐	2: ☑	3: ☐
3.6b	Is the staff sufficiently qualified for to handle the IWRM functions at goal level as outlined above?	0: ☐	1: ☐	2: ☑	3: ☐
3.6c	Is the staff motivated to handle the water resources management based on IWRM principles?	0: ☐	1: ☑	2: ☐	3: ☐
3.6d	Estimate the number of senior managers in the water sector that are familiar with IWRM principles. Less than 5 ☐ 5 - 10 ☐ 10 – 20 ☐ More than 20 ☑				
3.6e	Are there specific IWRM training activities in your country (if Yes, list them here or in a separate annex referring to the number of the question	Yes: ☐		No: ☑, but…	
	List of IWRM training activities:				

Comment on 3.6e:
Apart from the national trainings within framework of the "IWRM Fergana" project, the special trainings in the IWRM are not being conducted due to insufficiency or lack of finance.

The specialized regional training courses, seminars, and round tables are held under the aegis of ICWC for representatives of the various levels of the Central Asian water hierarchy at the Training Center of SIC-ICWC in Tashkent. The list of regional training topics on IWRM is quite wide.

At the same time, all the on-going investment projects in the Republic of Tajikistan (ADB, International Development Association, IDB) aimed at restructuring and rehabilitating of water management complex include component "awareness building". The "National Training Center" for advanced training of specialists had been established within the framework of project aimed at support to reorganization of agricultural production. Training programs of this center are aimed at the broad audience of specialists: upper level (decision makers), medium level, and low level (labors, machine operators, etc), as well as students and postgraduates. 3,600 persons were trained at this center during 2005.

The sectoral newspaper "Obu-obodoni" is published regularly. This newspaper features discussions of all the touchy issues of water resources management and examples of farmers' participation in discussions of the problem associated with operation and maintenance of irrigation and drainage systems.

4. Processes and Milestones leading towards IWRM

4.1	***Status of Action Plan/strategy for implementation of an IWRM Framework*** *(enabling environment, institutional roles and management instruments)*
4.1a	Not foreseen for the time being ☑, but…
4.1b	Under preparation ☐ Since when : month year Expected to be finalised by : month year
4.1c	Existing ☐ Approved by Date of approval: month year
4.1d	Existing and under implementation ☐ Agency in charge of implementation Date of start of implementation : month year

Comment on 4.1:
Although Action Plans on the scale of Tajikistan are not envisaged right at this moment, the conditions for implementation of the IWRM (enabling environment, institutional framework and management instruments) appear in the national and sectoral programs. Part of these programs is listed in the comment on 1.1a.

Specific action plans are envisaged within the framework of the pilot objects of Tajikistan in "IWRM-Fergana" project.

Within the framework of project "UNEP support for achieving the IWRM 2005 target Central Asia" by October 2006, it is envisaged development and approval of the national "road maps", which will be the basis for subsequent development of the detailed Action Plans.

4.2	***If an Action Plan exists (confirmed in 4.1c or 4.1d)***		
4.2a	Which government and non-government agencies were involved in preparing the plan? Specify :		
4.2b	Is there a portfolio of projects to implement the IWRM Action Plan?	Yes: ☐	No: ☑, but…
4.2c	Is there a programme for capacity building included in the IWRM Action Plan?	Yes: ☐	No: ☑
4.2d	If Yes, is it a recurrent programme?	Yes: ☐	No: ☐
4.2e	Does the action plan have mechanisms for monitoring of implementation?	Yes: ☐	No: ☑
4.2f	If Yes, which agency is responsible for monitoring?		
4.2g	Is there a strategy for financing of the Action Plan implementation?	Yes: ☐	No: ☑

Comment on 4.2b:
There are some projects that include elements of the Action Plan on the scale of pilot irrigation systems (for example within the framework of "IWRM Fergana" project), but not on the scale of the Republic of Tajikistan as a whole.

4.3	***IWRM in other Plans*** *Is IWRM itself or the principles that form the basis for IWRM parts of official documents (policies, plans or strategies) from other sectors that use water or relate to water*

4.3a	Does IWRM appear in a Poverty Reduction Strategy Paper	Yes: ☑	No: ☐
4.3b	If Yes, provide date and title of document month year title		
4.3c	Does IWRM appear in a National Development Strategy to achieve the MDGs	Yes: ☑	No: ☐
4.3d	If Yes, provide date and title of document month year title		
4.3e	Does IWRM appear in an Agricultural Development Plan	Yes: ☑	No: ☐
4.3f	If Yes, provide date and title of document month year title		
4.3g	Does IWRM appear in an Energy Development Plan	Yes: ☑	No: ☐
4.3h	If Yes, provide date and title of document month year title		
4.3i	Does IWRM appear in a National Environmental Action Plan	Yes: ☑	No: ☐
4.3j	If Yes, provide date and title of document month year title		
4.3k	Does IWRM appear in other national plans development plans	Yes: ☑	No: ☐
4.3l	If Yes, provide date(s) and title(s) of document month year title		

Comment on 4.3:

Each national development plan (on reduction of poverty or improvement of living standards for achievement of the Millennium Development Goals, agriculture, energy sectors, environmental sphere and the others) is **the integrated one** and includes the main IWRM principles to one or another extent.

4.4	***Awareness on IWRM*** *Is IWRM and the inherent concepts known and understood by the major operators in the water sector and sectors relating to water (e.g. agriculture/irrigation, hydropower, health, environment, water supply and sanitation). Use the following scale: 0 = not at all, 1 = to some degree, 2 = to a reasonable degree, 3 = fully*				
4.4a	High level decision makers	0: ☐	1: ☐	2: ☑	3: ☐
4.4b	Professionals in agencies responsible for water resources management	0: ☐	1: ☐	2: ☐	3: ☑
4.4c	Professionals in agencies within water use and water related sectors	0: ☐	1: ☐	2: ☑	3: ☐
4.4d	Major water users (incl. industries)	0: ☐	1: ☑	2: ☐	3: ☐
4.4e	Consultants	0: ☐	1: ☐	2: ☑	3: ☐
4.4f	Non-government organisations (NGOs) in the water sector	0: ☐	1: ☐	2: ☑	3: ☐

5 Narrative descriptions of process towards IWRM	
5.1	Describe in your own words your assessment of the extent to which your country has achieved the target of the Johannesburg Plan of Implementation on IWRM: "…..to develop integrated water resources management and efficiency plans by 2005"
	The IWRM 2005 Plans were not prepared

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Annex c3

Global Water Partnership Central Asia and Caucasus

UNEP Collaborating Centre on Water and Environment

UCC-Water

THE REPUBLIC OF UZBEKISTAN

NATIONAL REPORT

Within the framework of UNEP support for achieving the Johannesburg Plan of implementation target of "Integrated Water Resources Management and Efficiency Plans by 2005, with support to developing countries"

TASHKENT - 2006

General Information

Geography: The Republic of Uzbekistan is situated between the Amudarya and Syrdarya rivers and occupies 449 square kilometers. The span of the territory from the west to the east is 1,425 km and from the north to the south - 930 km. The territory borders on Kazakhstan in the northeast, on Kyrgyzstan and Tajikistan in the east and southeast, on Turkmenistan in the west, and on Afghanistan in the south. The total length of the state border is 6,221 kilometers.

Uzbekistan possesses the diversified relief. The territory of Uzbekistan is a mixture of deserts and the high snow-covered mountains, the high-water rivers and vast arid plains and deserts. Piedmont and highland part of the country comprises the Tyan-Shan and Gissar-Alai mountain ridges and spurs separated by intermountain troughs. Height of the mountain ridges is up to 4 thousand meters and more.

Droughty climate has facilitated formation of the Kzylkum and Karakum deserts. The desert vegetation dominates on plains and steppe, and grass meadow and forest vegetation in the mountains. Soils are mainly presented by sierozems and gray-brown desert ones.

The largest rivers flowing through the territory of Uzbekistan are Amudarya and Syrdarya. Amongst the few lakes on the territory of republic the largest one is the Aral Sea/Lake. The largest artificial lake-reservoirs are Charvak, Andidjan, and Tuyamuyun ones.

Climate: The climate of Uzbekistan is sharply continental, characterized by the long dry and hot summer, chilly and moist autumn and mild low snowy winter. Duration of winter period on plains and low piedmont areas in the extreme south of the country is 1.2-2 months, that of in the extreme north (Ustyurt plateau) is up to 5 months. Average temperature in January is around -8°C (Churuk meteostation on Ustyurt), while in extreme south, in Termez and Sherabad it is 2-8°C is 3-6°C respectively. The absolute minimum temperature is -37°C (Churuk meteostation). The average monthly air temperature for July in the northern regions is up to 26°C, that of in the south is more than 30°C. The absolute maximum temperature in the plain and piedmont regions is 42°C. In summer the day time soil surface temperature may be up to 60^0C, that of in sandy desert is up 70°C. The average annual atmospheric precipitation on the plains is 120-200 mm, in mountainous areas – up to 1000 mm. More than 70% of precipitation occurs in winter (in the form of rain and snow) and spring time. Snow cover is formed almost every year, but on plains and in piedmont areas it is often unstable, and lasts only few days.

Political and Administrative Structure: Uzbekistan is a sovereign democratic republic with the presidential form of government. Head of the state and executive power is the President. The Parliament (Oliy Majlis) exercises the legislative power.

The Capital city is Tashkent (with population over 2.5 million people). It is one of the largest cities in the Central Asia. **The State language** is Uzbek. Currently, the Republic of Uzbekistan consists of the Republic of Karakalpakstan and 12 oblasts.

Administrative and Territorial Division of the Republic of Uzbekistan		
Name of Oblasts	**Administrative Centers**	**Territory, '000 km^2**
The Republic of Karakalpakstan	Nukus	165.5
Andidjan	Andidjan	4.24
Bukhara	Bukhara	40.3
Djizak	Djizak	21.2
Kashkadarya	Karshi	28.57
Navoi	Navoi	110.9
Namangan	Namangan	7.44
Samarkand	Samarkand	16.77
Surkhandarya	Termez	20.1
Syrdarya	Gulistan	4.3
Tashkent	Tashkent	15.6
Fergana	Fergana	6.76
Khorezm	Urgench	6.05

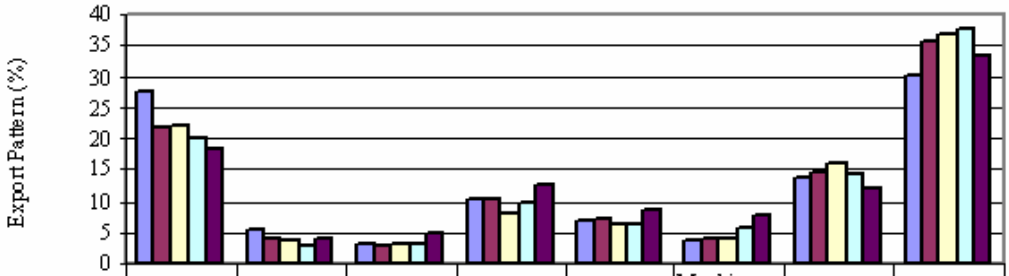
Population: According to the data of the State Statistics Committee of Uzbekistan population of the Republic as of 1 January, 2006, is 26,021 million people. Uzbekistan is the first largest country in terms of population in the Central Asia and the third one of the CIS countries (after Russia and Ukraine), and the 24-

th one in the world. Uzbekistan is the multinational republic. Currently, representatives of more than 100 nationalities and ethnic groups live here. The main part of population is Uzbeks. Concentration of population mainly in oases is explained by the peculiarities of the nature conditions, such as mountain, highland and deserts relief, and aridity of climate.

Social and Economic Conditions [1]

Economy: Uzbekistan is the country of one of the most ancient irrigated agriculture in the world, and one of the most favorable regions for production of various agricultural crops. Thereby, one of the priority directions of the country's economy is agriculture. Irrigated husbandry is the basis of the republic's food independence and source of export production. It provides more than 95% of the total crop production.
The republic is the main producer and supplier of the most important strategic raw material as cotton that has the great export potential. Uzbekistan is the fifth country of the world in terms of cotton fiber production, and out of approximately 2 million tons of cotton fiber produced in the Central Asia 1.4 million tons are produced in Uzbekistan. Uzbekistan produces up to 5 million ton of fruits and vegetables that significantly exceeds demands the republican's market. Over the recent years the private and dekhkan farms become the main managerial and legal forms of agricultural enterprises in the country.

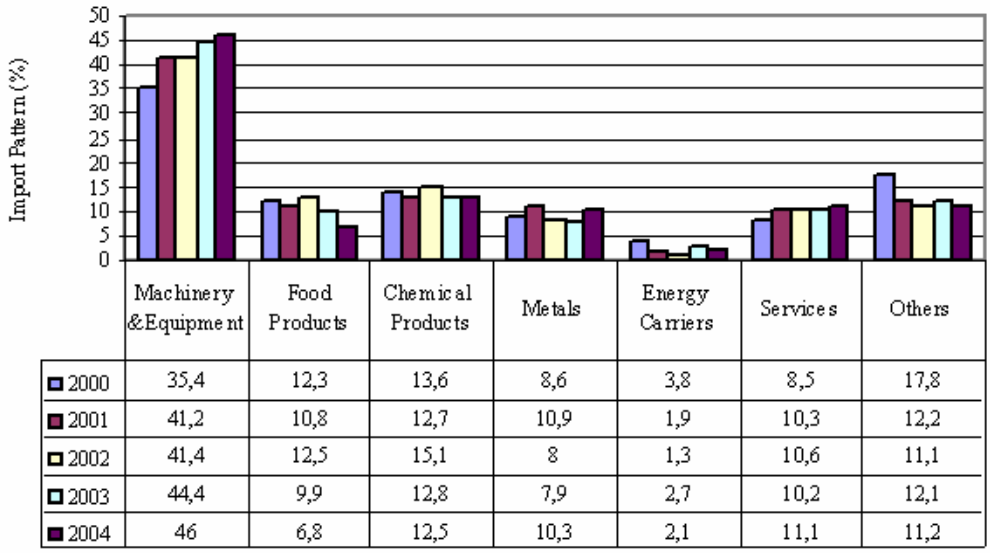
The leading sectors of the Uzbekistan's industry are: ginnery, machine building, textile, natural gas, non-ferrous metallurgy, electrical, instrument making, electronic, aircraft, oil and agricultural products processing industries. Uzbekistan is the fourth and tenth country of the world in terms of gold and copper stocks respectively. Uzbekistan possesses the rich deposits of oil and energy resources. Uzbekistan's gas supply is 5 trillion cubic meters, oil and coal supply is around 4 and 2 billion tons respectively.
Cotton fiber, energy carriers, and ferrous and non-ferrous metals dominate in the commodity export pattern (Figure 1). Machinery and equipment, and chemical products dominate in the commodity import pattern (Figure 2).



	Cotton Fiber	Food Products	Chemical Products	Energy Carriers	Metals	Machinery & Equip-ment	Services	Others
2000	27,5	5,4	2,9	10,3	6,6	3,4	13,7	30,2
2001	22	3,9	2,7	10,2	7	3,9	14,6	35,7
2002	22,4	3,5	3	8,1	6,4	3,9	15,9	36,8
2003	19,8	2,7	3,1	9,8	6,4	5,9	14,4	37,9
2004	18,1	3,8	4,7	12,4	8,6	7,4	11,8	33,2

Figure 1. Pattern of Commodity Export from the Republic of Uzbekistan

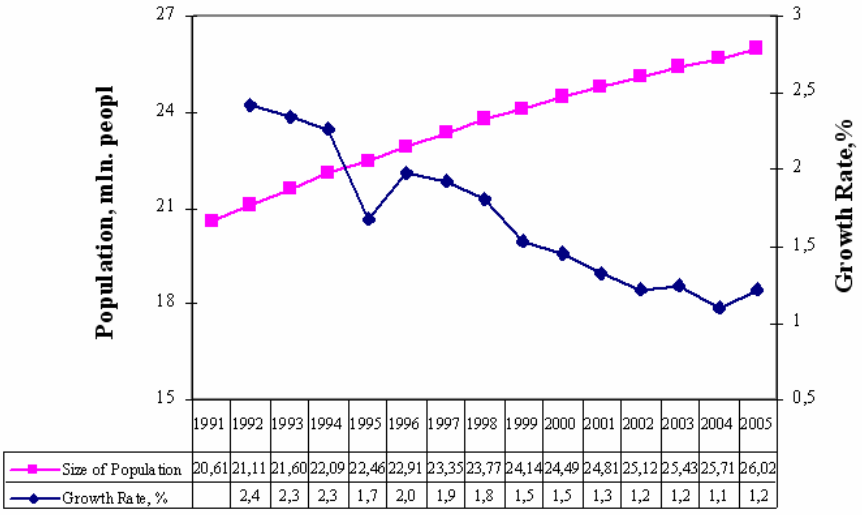
[1] Materials from the website "Uzbekistan in Figures – UinF" are used in this section. This site is the product of joint efforts of UNDP mission in Uzbekistan and the Center for economic studies (www.statistics.uz), as well as news site: www.regnum.ru/news/600454.html



	Machinery &Equipment	Food Products	Chemical Products	Metals	Energy Carriers	Services	Others
2000	35,4	12,3	13,6	8,6	3,8	8,5	17,8
2001	41,2	10,8	12,7	10,9	1,9	10,3	12,2
2002	41,4	12,5	15,1	8	1,3	10,6	11,1
2003	44,4	9,9	12,8	7,9	2,7	10,2	12,1
2004	46	6,8	12,5	10,3	2,1	11,1	11,2

Figure 2. Pattern of Commodity Import in the Republic of Uzbekistan

Demography: Over 14 years of independence population of Uzbekistan was increased by 5.414 million people (in 1991, it was 20.607 millions). During the recent years population growth rate in the republic was halved as compared with 1991, and is now around 1.2 % per year (Figure 3).



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Size of Population	20,61	21,11	21,60	22,09	22,46	22,91	23,35	23,77	24,14	24,49	24,81	25,12	25,43	25,71	26,02
Growth Rate, %		2,4	2,3	2,3	1,7	2,0	1,9	1,8	1,5	1,5	1,3	1,2	1,2	1,1	1,2

Figure 3. Size and Growth Rate of Population in the Republic of Uzbekistan

Percentage of the working-age population is currently 56.1%, share of children and teen-agers up to 16 years old is 36.7%. Uzbekistan possesses 40% of the total labor resources of the Central Asia. The mean age of the Uzbekistan's inhabitants is 23.9 years. According to the prediction of the Uzbek demographers, share of children and teen-agers will be decreased down to 31.2% of total population, that of the working-age population will be increased up to 59.4% by 2010.

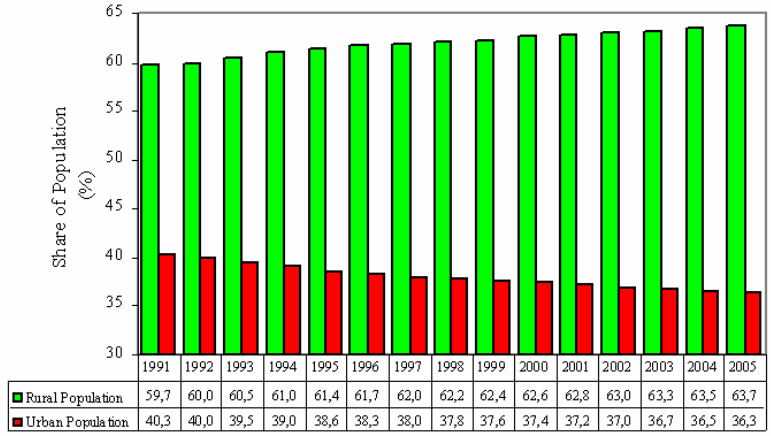
As of 01.01.2006, share of women and men parts of population was: 50.1% of women, and 49.9% of men.

In 2005, the average life expectancy of men was 69.4 years, that of women 73.8 years. By this index Uzbekistan is far ahead of Russia, but behind its neighboring countries of Kazakhstan, Kyrgyzstan, Kyrgyzstan, as well as Ukraine.

By the birth rate (26.36 births per 1,000 people) Uzbekistan is only behind Tajikistan on the territory of the former Soviet Union.

Major part of the Republic's population live in the rural area with the steady tendency for the growth of rural population share. As of 01.01.2006, around 64% and 36% of population live in the rural and urban areas

respectively (Figure 4). Thereby, sustenance of the major part of population directly depends on productivity of the irrigated agriculture.



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Rural Population	59,7	60,0	60,5	61,0	61,4	61,7	62,0	62,2	62,4	62,6	62,8	63,0	63,3	63,5	63,7
Urban Population	40,3	40,0	39,5	39,0	38,6	38,3	38,0	37,8	37,6	37,4	37,2	37,0	36,7	36,5	36,3

Figure 4 Share of Rural and Urban Population in the Republic of Uzbekistan

Water Management Situation in the Republic of Uzbekistan [2]

Irrigated agriculture in Uzbekistan is the important basis for sustenance and well-being of the Republic's population. As it was mentioned above, the major part of population lives in the rural area, i.e. agriculture is the main sphere of employment for the vast majority of people. Due to aridity of climate, the agricultural production in the Republic is impossible without irrigation. Volume of water resources formed on the territory of Uzbekistan is approximately 20% out of the established limits for water withdrawals (Table 1). Thereby, water availability for irrigated agriculture to the great extent depends on the status of the interstate water relationships.

Table 1. Volume of Water Resources (km^3) used/consumed by Uzbekistan (Based on data from "Vodproject" and SIC ICWC)

INDICES	Total	including:	
		Syrdarya River Basin	Amudarya River Basin
Approved Water Intake Limits for the Years with 90% Probability	55.10	25.50	29.60
Long-term Average Volume of the Surface Flow Formed on the Territory of Uzbekistan	11.23	6.17	5.06
Volume of the available water resources	59.20	24.10	35.10
Including:			
Intake from the surface flow of the 90% probability year	52.40	19.90	32.50
Underground Water Extraction (without damage to replenishment)	1.90	1.60	0.30
Volume of Return Waters Use	4.90	2.60	2.30
Average Volumes of Return Waters Flow	20.10	8.50	11.60
Including:			
Water Losses and Collector/Drainage Flow	18.40	7.60	10.80
Industrial and Municipal Sectors Effluent	1.70	0.90	0.80
Average Volumes of Return Waters Flow by Type of Use	20.10	8.50	11.60
Including:			
Discharged Back into River	9.00	5.60	3.40
Reused for Irrigation within the Area of Formation	4.10	2.10	2.00
Disposed into Depressions	7.00	0.80	6.20

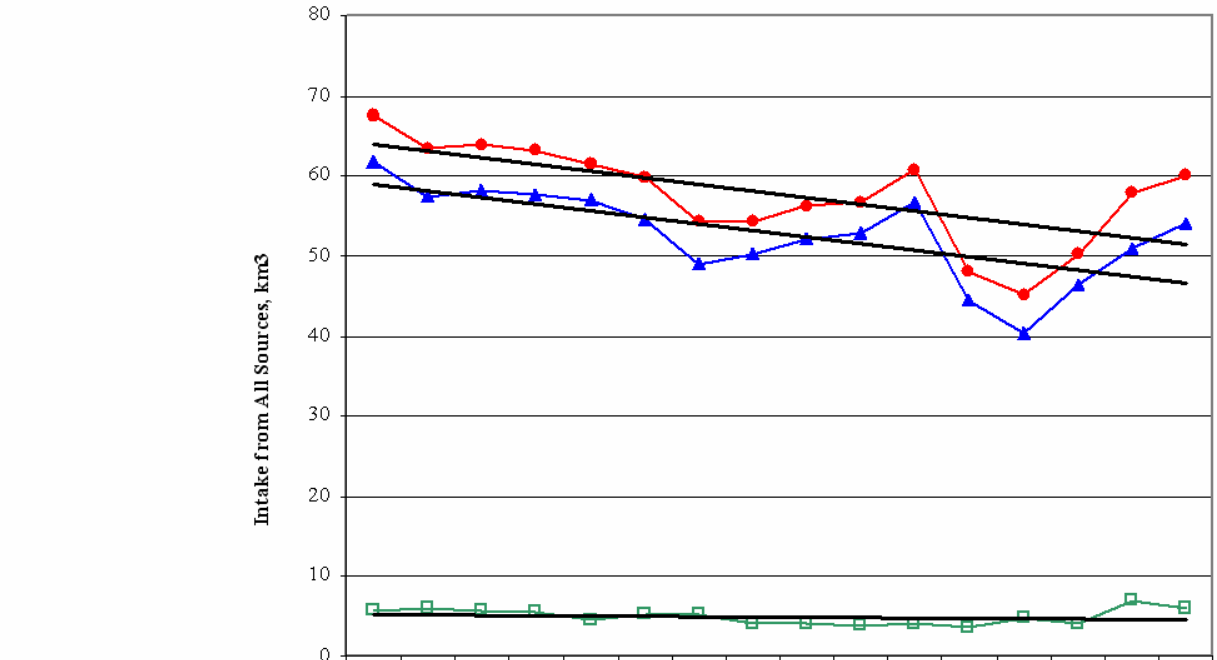
[2] The following materials are used in this section: "Draft Government Strategy of the Republic of Uzbekistan for Improvement of Management and Use of Water Resources" (Vodproject, 2004), "Drainage in the Aral Sea Basin in the Strategy for Sustainable Development" (SIC ICWC, 2004), pre-design study – "Transition to the IWRM in the lower reaches and deltas of the Amudarya and Syrdarya rivers" (SIC ICWC, 2005).

For management, distribution, and control over use of water resources there is the brunched government service in Uzbekistan, comprising the Main Administration of Water Resources (the subdivision of the Ministry of Agriculture and Water Resources), ten Basin Irrigation Systems Administrations (BISA), the Main Canals System Administration of the Fergana valley, seven main canal administrations (MCAs), 52 Irrigation System Administrations (ISA), and also 14 territorial Administrations of pumping stations, energy supply and communication (APSEC), and 13 Hydrogeology and Ameliorative Expeditions (HGAE).
Total area of irrigated land in Uzbekistan is 4.3 million ha (Table 2).

Table 2. Pattern of Land Fund Use in Uzbekistan (mln. ha)

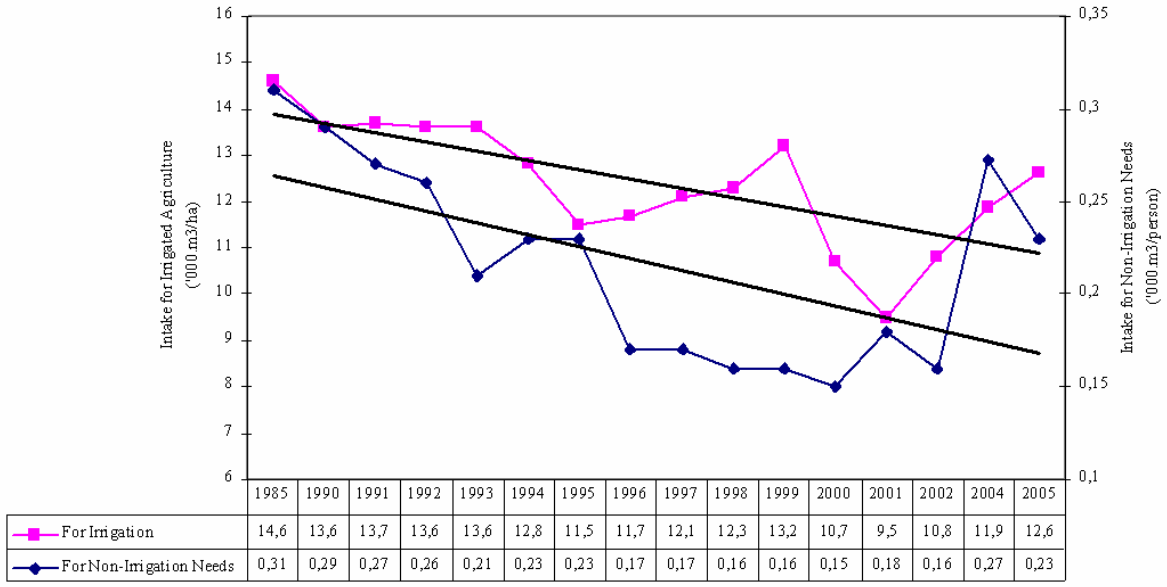
Total Land Area	Including:				
	Irrigated	Rainfed	Pastures	Forests	Not in Use
44.9	4.3	0.9	22.4	1.3	16.0

Water is delivered to 4,235 water consumer/users, including: 2,739 agricultural associations and enterprises and 1,496 non-agricultural entities (municipal, energy, industry and the other sectors).
Out of the total intake in 2005, 90.1% were used in irrigated agriculture, 3.6 % for municipal water supply, and 2.9% in industry and energy sectors (with the deduction of return flow).
Over the recent decades the peculiarity of situation in water sector of the republic (Figures 5 and 6) is that the volume of technically accessible water resources and water demands exceed (especially in the dry years) the volume of ecologically accessible water resources in the rivers. In the conditions of growing population this creates the serious threats to the food and ecological safety of Uzbekistan



	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2004	2005
Intake fromAll Sources, km3	67,48	63,40	63,90	63,20	61,50	59,80	54,20	54,20	56,16	56,70	60,70	48,07	45,10	50,30	57,86	60,13
including: For Irrigation	61,73	57,45	58,15	57,66	56,87	54,61	49,02	50,15	52,09	52,87	56,66	44,41	40,39	46,30	50,91	54,16
including: For Non-Irrigation Needs	5,75	5,95	5,75	5,54	4,63	5,19	5,18	4,05	4,07	3,83	4,04	3,66	4,71	4,00	6,95	5,97

Figure 5. Trends of Water Consumption/Use in Uzbekistan (Gross Indicators)



	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2004	2005
For Irrigation	14,6	13,6	13,7	13,6	13,6	12,8	11,5	11,7	12,1	12,3	13,2	10,7	9,5	10,8	11,9	12,6
For Non-Irrigation Needs	0,31	0,29	0,27	0,26	0,21	0,23	0,23	0,17	0,17	0,16	0,16	0,15	0,18	0,16	0,27	0,23

Figure 6. Trends of Water Consumption/Use in Uzbekistan (Specific Indicators)

Results of predictions received by the SIC ICWC from the analysis of three scenarios ("retention of the existing trends", "medium" or "neutral" scenario, and "optimistic" scenario) for development of Uzbekistan up to 2020 are provided below.

1. Optimistic Scenario

1.1 The Republic will be developed on the basis of development and improvement of the integration processes, including:

- use of water resources on the basis of water saving and the nature protection approaches to their management;
- improvement of productivity and efficiency of the irrigated agriculture.

1.2 Population growth rate will be reduced to 1% a year; due to outrunning paces of industry development by 2020, the average annual growth of the GDP will be not less than 6% (around USD 1,550 per capita).

1.3 It is expected that as a result of the on-going policy aimed at water saving and improvement of efficiency of water distribution and use at the level of country, the specific water intake for irrigation will be reduced to 8.5-9.0 thousand m^3/ha;

1.4 Complex of measures aimed at improvement of productivity and efficiency of irrigated agriculture will allow increasing the irrigated land area up to 4.5 million ha. as compared with 4.3 million ha. (current level). Increase of irrigated land area is mainly expected after 2010. This is associated with the assumed improvement of the general economic situation by this time and emergence of the sufficient funds for introduction of the large-scale water saving measures. Implementation of complex of measures aimed at increase of the agricultural production efficiency will allow improving provision of population with foodstuff. It is expected that food production will ensure the average consumption at the level of 3,500 cal/person/day with domination of fruits and vegetables in ration.

2. Medium Scenario.

2.1. The integration processes in the area of water resources management will be developed more slowly than in the optimistic scenario.

2.2. Population growth rate will be reduced reaching 1.36% and 1.23% a year by 2010, and 2020, respectively.

The average annual growth of the GDP will be 2-4 %.

2.3. Development of new lands will be limited not only by availability of water resources and their quality, but also lack of the necessary investments. Taking into account that this scenario assumes not so significant development of economy, as compared with the "optimistic" one, and limited financial

resources for introduction of water saving in all sectors of economy, the specific water intake for irrigation will be required at the level of 9.5-10.0 thousand m^3/ha;

3. Retention of the Existing Trends.

3.1. Development of Uzbekistan will be carried out with retention of the existing trends in use of water resources.

3.2. Population growth rate will remain constant at the level of 2.0 % a year, and the average annual growth of the GDP will not exceed 2 %.

3.3. The specific water intake for irrigation will remain at the level of 11.5-12.0 thousand m^3/ha.

3.4. The area of irrigated lands will practically remain the same up to 2020.

Thus the only acceptable scenario for Uzbekistan is the "optimistic" one. In this scenario the main attention in the irrigated agriculture will be paid to improvement of productivity and efficiency of water use, strengthening attention of society and decision makers to water sector and comprehensive approach to water resources management and use, taking into account the needs of nature. The IWRM exactly complies with these requirements, and therefore it should become the dominating direction of the political and economic activities for all water using sectors of economy, as well as the oblast, rayon and local management bodies.

Priorities and the Key Problems of Water Management

The main objective of water management of the Republic is the stable and equitable delivery of water to water users and nature through the efficient integration of measures aimed at development and management of water resources and conservation of environment with the sustainable and reliable execution of the following functions:

- provision with water the requirements of economic development and social needs on the basis of equality of rights to access to the reliable system of water supply and disposal;
- ensuring conservation of the nature objects (rivers, lakes, reservoirs, deltas, etc.) as the elements of landscape and the natural habitat;
- prevention of the catastrophic or emergency situations associated with water resources (floods, mudflows, droughts, etc.).

The main *priority directions of water resources use: drinking water supply, irrigated agriculture, and ecology are accompanied by the* problems *that require the step-by-step solution, namely:*

- ***compliance with the ecological requirements to water resources quality;***
- ***improvement of water supply system efficiency through water saving at all levels of water hierarchy;***
- ***liquidation of non-uniformity of water distribution by irrigation systems and canals, increase of water availability and stability of water delivery;***
- ***restoration of the irrigated agriculture productivity level.***

These problems should be resolved in the integrated manner for each user, and irrigation system with orientation to water saving, increasing of water and land productivity, and improving of water quality, including:

- ***objective and transparent estimation of the available water resources for years and cycles with the various water supply probability (the current status and perspective);***
- ***joint use of river flow, return and underground waters;***
- ***liquidation of the technical drawbacks in management of water resources;***
- ***compliance with the precise rules of water distribution at the interstate and national levels, introduction of water rotation and reduction of the managerial water losses;***
- ***rational revision of the priorities in selection of crops and crop rotations;***

- ***verification of water use/consumption norms.***

Complexity in solution of the listed problems at the current stage is associated with:

- increasing deficiency of water resources and their pollution;
- progressive ageing of previously created water infrastructure, deterioration of the technical conditions of dams, waterworks, pumping stations and the other structures;
- lack of sufficient support to the proper maintenance of many structures and water management objects of the former on-farm and now the inter-farm network;
- aggravation of problem (especially at the lower reaches of the Amudarya river) with drinking water supply of the proper quality to population;
- significant reduction of irrigated lands productivity due to incompleteness of establishment of the private and dekhkan farms and Water User Associations;
- increasing deficiency of water resources in the conditions of on-going irrational use of water and significant unproductive waste of water;
- inadequate normative and legal basis;
- lack of the sufficient financing of measures and activities in water sector;
- deterioration of the fixed capital assets of water management enterprises and aged production base that is practically not being renewed;
- water management organization and enterprises are poorly equipped with the office equipment, vehicles, modern communication and metering equipment;
- inability of the majority of water users in the current conditions to pay the full price for use of water resources and water delivery services;
- insufficient attention to the system planning in development of water sector of economy;
- lack of harmony between the multidimensional, complicated, and important tasks and problems in water sector of economy and the necessary functions of the authorized body in the area of water resources management that currently is not vested with the appropriate power for implementation of the unified water management policy.

The Main Threats to Water Resources

According to assessments of the "Vodproject" Association, around one third of the available water resources for Uzbekistan are return waters. Part of these return waters is disposed into the natural depressions, and around one fourth is reused for irrigation partly in the areas of their formation and partly at the downstream areas in a form of mixture with the natural river flow. These waters are the main source of the natural flow pollution and salinization of irrigated land and cause the significant ecological problems.

The main source of water pollution is irrigated agriculture because on the one hand the technical level of irrigation system is low, and on the other hand, due to particularity of the majority of Uzbekistan's irrigated land massifs, collector/drainage waters are disposed directly into rivers.

According to the "Vodproject" data the increased level of water pollution (by the average annual values) in Uzbekistan is observed in the Zerafshan (1.2-1.6 MAC), Syrdarya (1.3 MAC), Amudarya (1.2 MAC), and Surkhandarya (1.2 MAC) rivers.

Risks Associated with Water

Due to lack of regulation at the interstate level in regard to the Toktogul reservoir operation mode that was originally designed for operation in irrigation-energy mode, but over the recent years it was changed to the energy-irrigation mode, the "artificial" deficiency of water is created during vegetation period, especially in the Syrdarya and Djizak oblasts of Uzbekistan. Accordingly, because during winter period it is impossible to discharge the big flow volumes through the Syrdarya riverbed downstream from the Chardara reservoir (Kazakhstan), the Arnasai depression is used as the "dumping" capacity. More than 30 km^3 of water were disposed in this depression over the last ten years. This situation caused the problems with flooding of territories in the Djizak and Bukhara oblasts of Uzbekistan.

The Key Tasks for Water Resources Management at the National Level

For the purposeful solution of the problems existing at the various levels of water hierarchy it is necessary to implement activities on the staged solution of the following key tasks:

9. Practical ensuring of the water management organizations' jurisdiction within the hydrographic boundaries that corresponds to the IWRM principles. This will allow making the timely decisions on water management and provision of water services without interference of the territorial administrative bodies.
10. Integrated water management taking into account all types of water use within the boundaries of the hydrographic units on the basis of the hydro-meteorological data analysis in the real-time mode with consideration of water supply dynamics and multi-sectoral use of water resources. Provision of this information in the user friendly format to all water users.
11. Strategic planning of water use and consumption taking into account the needs of agricultural production, municipal and rural waster supply, industry, and nature, as well as the other water consuming sectors of economy.
12. Practical decentralization of decisions on water management with transfer of managerial functions to the lowest level possible (WUAs and their federations, Canal Councils), based on the country's legislation and with assistance from the Government to establishment and development of the WUAs and their federations.
13. Gradual transition from the direct government management of water delivery to transfer these functions to water sector with regulation of its interrelationships with the other sectors of economy.
14. Gradual transition to management of the WUAs and subsequently the water management organizations' activities by the elective Councils vested (within the framework of the country's legislative basis) with the appropriate power for carrying out the water policy, and establishment of rules and procedures on their respective water systems.
15. Ensuring, through introduction in practice the measures on improvement of land and water productivity, the conditions enabling farmers to cover completely costs of operation and maintenance, as well as minor repair and improvement of all irrigation and drainage system within the WUA boundaries.
16. Practical ensuring participation of the Canal Councils, WUAs and their federations in formation of water policy and rules for water resources management.

Actual Status of the IWRM Process in the Republic of Uzbekistan [3]

The concentrated form of expression of the water policy of the Republic of Uzbekistan is the Law "On water and water use" (published on 06.05.1993). In this Law there is no direct mentioning of development/support to the IWRM Action Plan/Strategy (they are not mentioned under exactly this name in the above Law), but the main meaning of the IWRM process in terms of "comprehensive, rational, and efficient use of water resources" is included in the legal structure.

The first step in the direction for transition to the IWRM in Uzbekistan was made by adoption of the below listed Decrees of the President of the Republic of Uzbekistan and Resolutions of the Cabinet of Ministries, which directly or indirectly regulate the various aspects of water relationships:

The Decrees of the President of the Republic of Uzbekistan:

- "On the most important directions for deepening of reforms in agriculture" of 24.03.2003;
- "On improvement of system of the economy management bodies" of 22.12.2003.

The Resolutions of the Cabinet of Ministries of the Republic of Uzbekistan:

- "On improvement of organization of water resources management", No 320 of 21 July, 2003;
- "On improvement of activities of the Ministry of agriculture and water resources of the Republic of Uzbekistan", No 290 of 28 June, 2003.

These documents were the base ones for the practical reforms in the area of water resources management, water distribution and use, and for replacement of the previously existing administrative territorial

[3] Results of monitoring of process for transition to the IWRM presented in ANNEX, are used in this section (monitoring consultant is Dr. Yu. Rysbekov (SIC ICWC)

management scheme by water resources management on the basis of river basins and irrigation systems. It is worth mentioning that the above listed Decrees and Resolutions mainly envisage only the structural reorganizations of water resources management bodies within the framework of the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan because agriculture is the main water user. Some works are already being carried out, but more works are yet to come for separation of functions of the state and farm levels water resources management, organization of water use on the basis of new interrelationships between the state water management bodies and the already established and being established Water User Associations, and on the staged transition to the chargeable water use in the Republic.

The hard works are yet to come for increasing of public participation in the water resources management. The representative authorities and self-administration bodies established in accordance with the Constitution of Uzbekistan should in particular resolve the water resources management problems, including issues associated with coordination of activities and interaction of water use entities on the territory of their jurisdiction. However, the real public participation in the water resources management, especially at the lower levels of the water sector hierarchy, is still insufficiently developed with the exception of some pilot irrigation systems, where introduction of the IWRM principles had been commenced. It is necessary to establish the public Councils at the various levels of the water resources management: basin, irrigation systems and canals (the Basin Councils, Water User Unions and Associations), and their active involvement in the management processes.

A number of the national Concepts, Strategies, Programs, and Action Plans had been adopted and are being implemented in the Republic of Uzbekistan. All these documents to a variable extent contain provisions associated with sustainable management and development of water resources. Many projects associated with water are being implemented that also indicate not only existence, but realization of the appropriate policy in the area of IWRM at the national level.

Although the specific Action Plans for transition to IWRM on the scales of the republics are not envisaged directly at the present moment, the necessary conditions for the IWRM implementation (favourable political environment, managerial roles and tools) are appeared in the national and sectoral programs. Practically all the national development plans (on reduction of poverty level or improvement of living standards for achievement of the Millennium Development Goals, agriculture and energy sectors, nature protection sphere and the others) are integrated one and include the main IWRM principles to one or another extent.

The specific action plans are envisaged within the framework of pilot irrigation systems of the “IWRM-Fergana” project and in the preliminary rationale of the project “Transition to the IWRM in the lower reaches and deltas of the Amudarya (Turkmenistan and Uzbekistan) and Syrdarya (Kazakhstan) rivers”.

If to assess objectively how far Uzbekistan has come towards the institutional capacity building necessary for water resources management based on the IWRM principles, currently no one out of 17 functions, characterizing the institutional capacity, works at the level of the real objective:

- There are some gaps in quality and coverage in:
  Preparation of the ecological and socio-economic assessments, monitoring of water availability and quality, pollution load, water sharing, intermediation in resolution of conflicts, cooperation in use of the international water courses;
- There are a lot of gaps in:
  Preparation of laws and ancillary normative documents, Collection of information about water resources and development of databases, Preparation of water resources assessments, Monitoring of the aquatic ecosystems, Planning of water resources use, protection and conservation, Management of water demands;
- Function for recovery of water resources management costs is not established yet and practically these costs are completely covered by the Republican budget.

The main serious institutional limitations impeding execution of necessary functions by the water management organizations are insufficient: budget, equipment (for maintenance of databases, operative measurements and control over water discharges and quality parameters), material and technical supply (mainly with vehicles and machinery). At the same time the staff number and level of their competence to the acceptable extent correspond to the technical complexity of the above listed management functions. Practically all heads of water management organizations are familiar with the IWRM principles. However, it should be stated that staff is only motivated to some extent to water management based on the IWRM principles.

"IWRM-Fergana" Project

The pilot project "IWRM-Fergana" is being implemented since 2002, in the Fergana valley with sponsorship of the Swiss Development Cooperation Agency (SDC). The organization responsible for implementation of this project is the Association of the International Water Management Institute (IWMI), and the Scientific Information Center of Interstate Commission for Water Coordination (SIC ICWC). The Kyrgyz Republic, The Republic of Tajikistan, and The Republic of Uzbekistan are participating in the implementation of this project. The executive agency is ICWC and the responsible ministries in each republic.

The objectives of the project are: introduction of the IWRM principles in the Fergana valley with participation of all levels organizations, which represent the water management hierarchy.
All vertical participates in the testing and implementation of the IWRM principles: "stakeholders – the decision makers at high level". Different sectors of economy, which are water users and water consumers, are involved in this process at the horizontal levels.

The main achievements of the project are as follows:

- Increased understanding of the IWRM principles amongst politicians, and project participants;
- Appraisal and approval of the IWRM structure, elaborated within the framework of the project by all the three countries in the Fergana valley;
- Creation and registration of the three pilot organizations responsible for canals management (including participation of the main water users in the management) within the hydrographic boundaries;
- Improvement of water distribution along the canals managed by WUA;
- Demonstrated the "bottom-up" approach and its advantages for establishment of WUA and organizations at the canal level;
- Demonstrated potential for improvement of land and water productivity by 5% and water saving by 30%.

According to the conclusion of the Swiss Development Cooperation Agency (SDC), that conducted monitoring of the project progress in the spring of 2005, the project achieved significant results, while developing and implementing the IWRM principles in the oblasts of the Kyrgyz Republic, The Republic of Tajikistan, and The Republic of Uzbekistan, located in the Fergana valley. The significant contribution to the improvement of the social and economic conditions of rural population well-being, and water resources management had been achieved in the pilot objects through the wide involvement of stakeholders, institutional restructuring, and the use of operative management tools.

Main objective of the "IWRM-Fergana" project at the present stage of its implementation (from May 2005 to May 2008) is the extension of scale of the IWRM principles implementation. For this purpose the project will:

- consolidate, strengthen, and replicate the achieved new managerial structure and improvements in the area of water and land productivity;
- intensify the vertical integration;
- in the course of political dialog with the governments, will develop the principles, and methods of the system sustainable financing at canals, Water User Associations (WUAs), and farm levels.

Component "The political improvements and changes at the national level" had been included in the scope of work of "IWRM-Fergana" project, as the most important new direction. This component will be focused on the support to the national efforts at the political level in order to create and develop the legal and political environment facilitating the extension of the IWRM scale.

The decision makers and specialists of water management organizations to full extent recognize that the managerial aspects of IWRM envisage fulfillment of the following requirements:

- transition from management within the administrative boundaries to management within the hydrographic boundaries;
- transition from the sectoral water management to the integrated (system) one;
- water demands management instead of the traditional supply management;
- introduction of the cooperative forms of water resources management instead of the administrative and command ones;
- replacement of the "closed" institutions by the open (transparent) water resources management structures;
- use of the system for water resources management with the active participation of stakeholders ("bottom-up" approach) instead of the existing previously the "top-down" one.

Due to shortage of funds the special national trainings in the IWRM are not carried out in Uzbekistan, with the exception of the National Trainings within the framework of the "IWRM-Fergana" project. Under the ICWC aegis at regional level the special trainings, seminars, round tables for the representatives of different levels of water sector hierarchy of all the Central Asian countries are being held. For these purposes, the training center (SIC ICWC Training Center, Tashkent) and its department (in the Khorezm oblast, Urgench) are available. Program of the regular SIC ICWC trainings is quite comprehensive and covers all the IWRM aspects.

ANNEX

Questionnaire [1] (Republic of Uzbekistan)

Note: Answers to the majority of questions are ticked in the appropriate boxes. Since IWRM is the complicated subject, in a number of cases the explanatory comments referring to the number of the question are added.

1. National water policy

1.1	***Does the country have a water policy?***		
1.1a	Existing ☑	Give the date of publishing: **06.05.1993**	Give the title(s) of the document(s): **The Law of the Republic of Uzbekistan "On Water and Water Use".**
1.1b	In progress ☑	Give the expected date of finalisation:	
1.1c	Foreseen ☐	Give the expected period for preparation:	
1.1d	Not foreseen for the time being ☐		
1.1e	Is the policy and the law/regulations harmonised? Yes: ☐ No: ☐ Partly: ☑		

Comment on 1.1a :

Taking into account that:

- The Republic of Uzbekistan is the successor of former Uzbek SSR that had the water policy
- Succession of the water policy is specified in the Agreement of 1992 (the Agreement amongst the Governments of the Central Asian Countries "On cooperation in the joint management, use and protection of the transboundary water resources")
- The country had adopted the National constitution and Water Law[2], and
- The other provisions, which were outlined in the comments on this questionnaire,

it would be incorrect to deem that the national water policy is absent. Adoption of the Constitution, Laws regulating public relationships in the certain spheres, identification of the authorized body and its power for each sphere etc. are an embodiment of policy.

Besides, the Republic of Uzbekistan had adopted and is implementing the following strategies and action plans[3]:

- The National Sustainable Development Strategy of the Republic of Uzbekistan (1999)
- The National Action Plan on Environmental Hygiene (NAPEH) (1998)
- The National Environmental Action Plan (NEAP) (1998)
- The Environmental Action Program
- The Aral Sea Basin Program (World Bank / UNDP / UNEP)
- The National Biodiversity Strategy and Action Plan of the Republic of Uzbekistan (1998)
- The National Action Program to Combat Desertification (1999)
- The National Concept of Sustainable Development (1998)
- The National Action Plan for Biodiversity Conservation of the Republic of Uzbekistan
- The Sub-Regional Action Plan to Combat Desertification in the Aral Sea Basin
- The UNDP and the Government of Uzbekistan Environmental Program, and the others.

These and the other National Concepts, Strategies, Programs, and Action Plans contain to a variable extent provisions associated with the sustainable management and development of water resources.

There are many "water" projects under implementation. This also indicates not only existence of the policy, but also realization of the relevant policy in the area of IWRM at the national level.
The only problem is how efficiently these projects are being implemented.

[1] Questionnaire format was developed by the DHI Water and Environment jointly with UNEP Center on cooperation (UCC/DHI – 14.12.2005)
[2] The Law of the Republic of Uzbekistan "On Water and Water Use" (06.05.1993г.) – in force;
[3] Based on materials from: http://www.eco-portal.kz/modules.php?name=News&file=article&sid=31 and the others.

Comment on 1.1b:

Policy is a phenomenon. Realization of policy is the continuous process. Dynamism of the public relationships determines the necessity for process of policy change/revision.

Comment on 1.1e:

It is practically impossible to ensure complete harmonization between the policy and legislation. The new public relations emerge, which should be regulated by the normative/legislative acts. Policy, as a rule, goes ahead of legislation, and the latter should "support" the former.

1.2	***What does the water policy cover?***
1.2a	Water resources management only ☐ Water resources management, water supply and other uses [4] ☑
1.2b	If a water policy document exists, does it explicitly state IWRM (or IWRM principles) as a basis for water resources management in the country? Yes: ☐ No: ☐ Partly: ☑
1.2c	Does the water policy define IWRM? Yes: ☐ No: ☑, but… [5]
1.2d	If Yes (1.2c) write definition, if necessary in an annexed document referring to the number of the question.
1.2e	Does the water policy specify the role of the private sector in water resources management? Yes: ☑ No: ☐
1.2f	If Yes (1.2e) describe the role as specified, if necessary in an annexed document referring to the number of the question. **Comment on 1.2f:** The Law of the Republic of Uzbekistan "On Water and Water Use": Article 10. *Participation of public associations, collectives and citizens in implementation of measures aimed at the rational use and protection of water resources* The public associations, collectives (in accordance with their charters) and citizens should assist to the governmental authorities in implementing of measures aimed at the rational use and protection of water resources. In implementing of these measures the Governmental bodies should take into consideration proposals of the public associations, collectives and citizens.
1.2g	Does the water policy include the "polluter pays" principle (those causing pollution pay the cost of monitoring and treatment)? Yes: ☑ No: ☐
1.2h	Does the water policy include the "user pays" principle (water users pay the cost of management and provision of water)? Yes: ☐ No: ☑

Comment on 1.2g :

The Law of the Republic of Uzbekistan "On Water and Water Use":
Article 115. *Responsibilities for violation of the water legislation*
Those responsible for settlement of deals specified in the article 114 of the present law, as well as for:
-pollution and contamination of rivers;
- commissioning of industrial enterprises, public utilities and the other objects without structures and facilities preventing pollution and contamination or their adverse impact on waters;
- violation of water protection regime at watersheds causing their pollution, water erosion and the other harmful phenomenon;
- failure to conduct the planned hydrotechnic, technological, forest ameliorative, sanitation and the other measures ensuring protection of water from pollution, contamination and depletion, and also measures aimed at improvement of water conditions and regime;
- failure to comply with the normative time for construction of water protection structures and devices;
- commissioning of uncompleted water protection structures (with uncompleted construction works and non-compliance with design, which adversely affect their efficient operation);
- disregard of water protection zones;
- failure to submit report to the governmental bodies on use of water or falsification of data in this report;
- failure to fulfill instructions of the nature protection bodies;
- violation of regime of the especially protected water objects,
incur criminal, administrative and the other liability in accordance with the legislation.

The legislation can impose liability for the other types of the water law violations.

[4] Provided that the current Water Law of the republic is understood under water management policy (The Law of the Republic of Uzbekistan "On Water and Water Use" of 1993).
[5] The IWRM concept is included into legislation in the form of statement "integrated, rational, efficient use of water resources".

Comment on 1.2h:

In Uzbekistan the water charge is introduced for the specialized water use only. Agricultural producer does not formally pay for water management and delivery of water.

2. National water legislation

2.1	***What is the situation of ownership of water in your country?***		
2.1a	Is water a common good (i.e. it belongs to everyone)?	Yes ☑	No ☐
2.1b	Is water the property of the State?	Yes ☑	No ☐
2.1c	Is water a private property?	Yes ☐	No ☑
2.1d	Is ownership variable according to the type or location of the water body?	Yes ☐	No ☑

Comment on 2.1a, 2.1b:

- The Constitution of the Republic of Uzbekistan

Article 55

The land, its minerals, fauna and flora, as well as other natural resources shall constitute the national wealth, and shall be rationally used and protected by the state.

- The Law of the Republic of Uzbekistan "On Water and Water Use"

Article 3. *The State Ownership for Waters*

Water resources shall constitute the state property and national wealth of the Republic of Uzbekistan, and shall be rationally used and protected by the state.

2.2	***Does the country have one or more specific water laws, or a water code?***			
2.2a	Existing: ☑	Give the date of publishing:	**06.05.1993**	Give the title(s) of the documents : **The Law of the Republic of Uzbekistan "On Water and Water Use"**
2.2b	In progress: ☑	Give the expected date for finalisation:		
2.2c	Foreseen: ☐	Give the expected period for preparation:		
2.2d	Not foreseen for the time being ☐			

Comment on 2.2b:

Similar to the question 1.1.b: legislation is not at a stop, it is in progress. In particular, the "Law on Water User Associations" is being developed in Uzbekistan.

2.3	***Does the water legislation include obligations to take into account the following principles?***		
2.3a	Public hearings	Yes ☐	No ☑
2.3b	Participation of the stakeholders in the water management	Yes ☑	No ☐
2.3c	Management by river basin	Yes ☑	No ☐
2.3d	Management at the lowest appropriate level [6]	Yes ☑	No ☐
2.3e	Financial contribution by the users towards the management of water resources	Yes ☐	No ☑
2.3f	The "polluter pays" (those causing pollution pay the cost of monitoring and treatment)	Yes ☑	No ☐
2.3g	The "user pays" (water users pay the cost of management and provision of water)	Yes ☐	No ☑
2.3h	The particular role of women in water management	Yes ☐	No ☑
2.3i	Separation between resource management and water service provision	Yes ☐	No ☑
2.3j	Water use efficiency	Yes ☑	No ☐
2.3k	Private sector involvement	Yes ☑	No ☐

[6] The water problems should be managed at the lowest appropriate level. I.e. at the level, where the local competences and the capacities make solution to the problems possible and where decision makers are affected by the solutions

Comment on 2.3a:

If the "public" is understood as "governmental", the only answer is **"Yes"** (the state accountability).

If the "public" is understood as "common" hearing, the only answer is **"No"** (such duty is not imposed on the water management bodies).

Comment on 2.3b:

According to the provisions of the Constitution of the Republic of Uzbekistan: All citizens of the Republic of Uzbekistan shall have the right for associations, participation in the management and administration of public and state affairs, both directly and through representation, and the other rights and freedoms. Therefore, any stakeholder can participate in water resources management in accordance with the procedure established by legislation.

See also the answers to question 1.2e

Comment on 2.3c:

In accordance with the Decree of the President of the Republic of Uzbekistan "On the most important directions for deepening of reforms in agriculture (24 March, 2003), and the Decree of the Cabinet of Ministers of the Republic of Uzbekistan "On improvement of water resources management" (21 July, 2003, #320) transition to the basin principle of water resources management along with reorganization of the managerial structure had been implemented in the republic.

Comment on 2.3d:

The Law of the Republic of Uzbekistan "On Water and Water Use"

Article 7. *Competence of local bodies of the state administration and management in the area of water relationships regulation*

The local state authorities and management bodies in the area of water relationships regulation are responsible for:

- identification of the main directions for use and protection of water resources at their respective territories;

- ensuring of law and order in the area of regulation of water resources use and protection;

- inventory and assessment of the water object conditions, and control over use and protection of waters, compliance with the established limits of water consumption, and maintenance of water use records by water users;

- implementation of measures aimed at protection and improvement of water object conditions, prevention and elimination of the adverse impact, as well as water pollution, and rehabilitation of objects damaged by accidents, flooding, mudflows, and natural disasters;

- regulation of the other issues, specified by the legislation.

Comment on 2.3j :

The Law of the Republic of Uzbekistan "On Water and Water Use"

Article 1. *Tasks of water legislation of the Republic of Uzbekistan*

The tasks of the Law of the Republic of Uzbekistan "On Water and Water Use" are: regulation of water relationships, **rational use of water** for needs of population and the national economy, protection of waters from pollution, contamination, and depletion, prevention and elimination of the adverse impact of waters, improvement of water object conditions, as well as protection of rights of enterprises, institutions, organizations, private and dekhkan farms and citizens in the area of water relationships (the Law version #681-I of 29.08.98).

Article 35. *Responsibilities of water users in regard to use of water objects*

Water users are obliged to:
- use water objects rationally, take care about saving of water, and restoration and improvement of water quality, observe the established limits of water consumption;
- maintain operational conditions of water protection and the other water structures and technical facilities, **improve their performance,** carry out records of volumes of water intake.

Comment on 2.3k:

The Constitution of Uzbekistan (article 53) has appropriate provisions for recognition of the various forms of ownership, including the private one.

See also Comment on 1.2f.

2.4	***Regulations supporting the water law***	
2.4a	How many regulations are required by the water law?	Give the titles and other details of regulations in an annex

Comment on 2.4a:

There is no exact answer to this question. It is only possible to tell the number of normative and legislative acts, which are specified in the Law (or in the special Decree of the Government) as to be developed. As a rule, this list covers the minimum number of normative and legislative acts at the level of bylaws that should be adopted in the first place.

Since the normative and legislative acts cover all spectrums of legislation and water law in particular, there may be infinitely many of such acts (Decrees of the Government, sectoral acts, etc.).

2.4b	Among the regulations foreseen, how many have been adopted? If possible mark "adopted" on the list given in an annex

Comment on 2.4b:

The Decrees of the President and the Cabinet of Ministers of the Republic of Uzbekistan, which directly or indirectly regulate the various aspects of water relationships, are listed below:

The Decrees of the President of the Republic of Uzbekistan:

- "On the most important directions for deepening of reforms in agriculture (24 March, 2003)
- "On improvement of the systems of national economy management bodies" (22 December, 2003)

The Decrees of the Cabinet of Ministers of the Republic of Uzbekistan:

- "On improvement of water resources management" (21 July, 2003, #320)
- "On improvement of activities of the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan" (28 June, 2003, #290)
- "On improvement of activities of the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan" (17 January, 2001, #26)
- "On issues associated with organization and operation of the State inspection for control and supervision over technical conditions and safety of large and especially important water structure under the Cabinet of Ministries of the Republic of Uzbekistan (30 March, 1999, #143)
- "On procedure for preparation of population of the Republic of Uzbekistan for protection from the emergency situations" (7 October, 1998, #427)
- "On measures for the state support to agricultural enterprises of the republic" (with amendments) (13 January, 1997, #24)
- "On organization of activities of the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan" (with amendments) (26 November, 1996, #419)
- "On organization of activities of the Ministry of Emergency Situations of the Republic of Uzbekistan" (with amendments) (11 April, 1996, #143)
- "On improvement of activities of the State Committee of the Republic of Uzbekistan for supervision over safety in industry and mining" (10 January, 1996, #17)
- On approval of "Temporary procedure for limited water use in the Republic of Uzbekistan" (3 August, 1993, #385)
- On approval of "Provision on water protection zones of reservoirs and the other water bodies, rivers, main canals and drainage collectors, sources of drinking and municipal water supply, and also sanative and recreation water bodies in the Republic of Uzbekistan" (7 April, 1992, #174),

and the others.

Annexes to the Decrees of the Cabinet of Ministers of the Republic of Uzbekistan:

- #320 of 21.07. 2003 – (Annex #5 "Provision on the Main Administration of water resources of the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan")
- #419 of 26.11.1996 – (Annex #1. Provision "On the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan")
- #143 of 11.04.1996 – (Annex #1. Provision " On the Ministry of Emergency Situations of the Republic of Uzbekistan")
- #17 of 10.01.1996 - (Annex #1. Provision "On the State Committee of the Republic of Uzbekistan for supervision over safety in industry and mining")
- Temporary procedure for limited water use in the Republic of Uzbekistan (approved by the Decree of the Cabinet of Ministers on 03.08.1993, #385)
- "Provision on water protection zones of reservoirs and the other water bodies, rivers, main canals and drainage collectors, sources of drinking and municipal water supply, and also sanative and recreation water bodies in the Republic of Uzbekistan" (approved by the Decree of the Cabinet of Ministers on 07.04.1992, #174),

and the others.

2.4c	Are the regulations effective?	Yes: ☐	No: ☐	Partly: ☑

Comment on 2.4c:

Practically every newly adopted normative act is the step forward in the national legislation, i.e. it is more effective as compared with its absence. However, due to a number of reasons (it is in general lack or insufficiency of mechanisms for its implementation) it may be not as efficient as expected.

2.4d	If "No" or "Partly" for which reason? (tick one or more of the following possible reasons)	
2.4e	Regulations insufficiently known by the users:	☑
2.4f	Regulations insufficiently known by those who shall enforce them:	☐
2.4g	Regulations too complicated to be operational	☐
2.4h	Regulations contradict each other:	☐
2.4i	Regulations conflicts with customary law or cultural traditions of certain users:	☐

Comment on 2.4h, 2.4i :

There is a persistent enough opinion that the various normative and legislative acts very often allegedly "conflict" or not "harmonized" or "contradict" with each other. This is not entirely true.

The general legal force rules of the normative and legislative acts are as follows:

- The state constitution has supreme legal force
- Laws and the other normative and legislative acts are being adopted on the basis and in pursuance of the national Constitution and can not contradict its norms and principles
- The normative and legislative acts of ministries, state committees and agencies are being adopted on the basis and in pursuance of the Constitution and Laws, decisions of the Parliament, President and Government
- The normative and legislative acts of the local state authorities are being adopted on the basis and in pursuance of the Constitution and Laws, decisions of the Parliament, President, and Government, and also decisions of the superior local state authorities.

Correspondence of legal force between the various normative and legislative acts is as follows:

- Normative and legislative act should correspond to the one that has superior legal force
- In case of disagreements between two normative and legislative acts, it should be enforced the one that has the superior legal force
- In case of disagreements between two normative and legislative acts which have equal legal force, it should be enforced the subsequent one
- The normative and legislative act adopted by one ministry, state committee or agency has superior legal force as compared with the normative and legislative act adopted by the another ministry, state committee or agency if the institution that adopted such act is specially authorized to regulate the certain area of public relationships.

Thereby, in regard to legal force the normative and legislative acts harmonize with each other in accordance the above mentioned provisions.

2.4j	Sanctions are not applied in cases of non-compliance:	☑

Comment on 2.4j :

Sanctions are envisaged and applied. However, the size of sanctions for non-compliance with the water legislation (the majority of them is considered as administrative violations) as a rule is inadequate to the caused damage.

2.4k	Monitoring capacity inadequate	☑
2.4l	Institutional enforcement capacity inadequate	☑
2.4m	Other reasons (explain which):	

2.5	***Is the water law harmonised with other national legislation?***			
2.5a	Environmental legislation	Yes: ☑	No: ☐	Partly: ☐
2.5b	Land-use legislation	Yes: ☑	No: ☐	Partly: ☐
2.5c	Agriculture legislation	Yes: ☑	No: ☐	Partly: ☐
2.5d	Health legislation	Yes: ☑	No: ☐	Partly: ☐
2.5e	Other legislation (describe):			
2.5f	If relevant, list key areas of conflict between the water law and other legislation:			

Comment on 2.5:

In accordance with the above **Comments on 2.4h, 2.4i**, disagreements between various normative and legislative acts can be easily resolved even in case if there is no agreement (in text or wording) between legislation of various sectors.

2.6	***Is the national legal framework harmonised with the international agreements which the country endorses?***		
2.6a	Yes: ☑	No ☐	Partly: ☐
2.6b	List the water related agreements signed by the country [7] and, if possible, mark those which have been integrated in the national legal framework.		

[7] Country can sign the international agreement, but not ratify it.

Comment on 2.6a:

- The Constitution of Uzbekistan

Preamble

"…recognizing priority of the generally accepted norms of the international law…"

- The Law of the Republic of Uzbekistan "On the International agreements of the Republic of Uzbekistan" (22.12.95):

Article 27. *Compliance with the International Agreements of the Republic of Uzbekistan*

The international agreements of the Republic of Uzbekistan shall be the subject to strict and obligatory observance in accordance with the norms of international law.

Practically each Law of the Republic has the provision on precedence of the legal force of international agreement over the similar provision of the national Law.

In particular, the Law "On Water and Water Use of the Republic of Uzbekistan" defines:

Article 119. *International Agreements*

If the international agreement of the Republic of Uzbekistan sets the other provisions than envisaged by the present Law, then the provisions of the international law shall take precedence.

Thereby, after ratification by the country of the international agreement its provisions are automatically considered as harmonized with the national legislation.

Note: There are international agreements that come into force without their ratification

Thus, the Law of the Republic of Uzbekistan "On the International Agreements of the Republic of Uzbekistan" defines:

Article 14. *The International Agreements of the Republic of Uzbekistan that are subject to ratification*

The international loan and indemnity agreements of the Republic of Uzbekistan, signed by the Government of the Republic of Uzbekistan or by its authorized agencies with the international financial institutions **are not subject for ratification and come into force** for the Republic of Uzbekistan **from the moment of their signing.**

The above mentioned is true in regard to the similar agreements of the Republic of Uzbekistan in the water sector.

Comment on 2.6b:

- The Convention to Combat Desertification (1994)
- The Framework Convention on Climate Change (1992)
- The Convention on Biological Diversity (1992)
- The Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat (1971)

Agreements and equated to them the regional political and legal documents signed by the Republic of Uzbekistan:

- The Dushanbe Declaration (2002)
- Decision of the Heads the Central Asian Countries of 06.10.2002, "On the main directions of the Program for specific actions aimed at improvement of ecological and socio-economic situation in the Aral Sea basin for period 2003-2010" (ASBP-2)
- The Ashgabad Declaration (1999)
- The Agreement of 1998, amongst the Governments of Kazakhstan, Kyrgyzstan, and Uzbekistan about use of water and energy resources of the Syrdarya river basin (Tajikistan is the Party to Agreement since 1999)
- The Agreement of 1998, amongst the Governments of the Central Asian Republics
- The Issyk Kul declaration about the regional cooperation of the Central Asian Countries
- The Agreement of 1997, amongst the Governments of the Central Asian Republics "On status of the International Fund for Saving the Aral Sea"
- *The Almaty Declaration (1997)*
- *The Nukus Declaration (1995) of the Central Asian Countries and the international organizations on sustainable development of the Aral Sea basin*
- Agreement of 1992 amongst the Governments of the Central Asian Republics "On cooperation in joint management, use and protection of the transboundary water resources",

and the others.

2.7	***Does the legal framework include an obligation to elaborate/maintain an IWRM Action Plan/strategy/process?***	
2.7a	Yes: ☐	No: ☑

Comment on 2.7a:

Water Law of the Republic of Uzbekistan does not directly specify the development/support to the IWRM Action Plan/Strategy (they are not mentioned exactly under this title), but the IWRM process in terms of "integrated, rational, efficient use of water resources" is included in the legal structure.

The projects, which reflect practically all the main IWRM aspects (sustainable development, water saving, public participation, coordination and the others), are presented in the key political document ASBP-2, approved by the Heads of the Central Asian Republics. One of the large ASBP-2 projects (Project #8.3) is entitled **"The Integrated Water Resources Management in the Aral Sea Basin".** As "The expected results" of this project it is in particular envisaged the following:

5. The new managerial structure of the water management bodies with involvement of public for implementation of the IWRM principles within the hydrographic boundaries at the pilot objects…
6. The legal basis for realization of the IWRM principles in the form of regulation documents package.

Development of the Concept of sustainable development in the Aral Sea basin is envisaged by the ASBP-2 as Priority #11. In priority rationale it is said that "the main objective of ASBP-2 … can be achieved only within the framework of policy aiming at sustainable development (SD)".

In the Nukus (1995), Issyk Kul (1995), Almaty (1997), Ashgabad (1999), and Dushanbe (2002) Declarations of the Central Asian countries it was declared transition of the countries to the SD policy, integrated and multi-disciplinary approach, ecosystem and **integrated natural resources management** and water use.

3. Institutional framework for the water sector		
3.1	***Provide the organisation chart(s) for the Institution(s) responsible for water resources management (attach in a separate document or in electronic format)***	
	Water resources management in the Republic of Uzbekistan is carried out on the basin principle. Water management structure includes the following levels: **1. National:** the Main Administration of water resources of the Ministry of Agriculture and Water Resources (MAWR); **1.1. Basin (at the level of large river basins):** The Basin irrigation systems management (BISM): *Within the Syrdarya river basin*: **1.** the Naryn-Karadarya BISM; **2.** the Naryn-Namangan BISM; **3.** Syrdarya-Sokh BISM; **4.** the Lower-Syrdarya BISM; **5.** Chirchi-Akhangaran BISM, and also: **6.** Administration of Main Canals System with the joined dispatch center for the Fergana valley, *Within the Amudarya river basin:* **1.** Amu-Surkhan BISM; **2.** Amu-Kashkadarya BISM; **3.** Amu-Bukhara BISM; **4.** Lower Amudarya BISM; **5.** Zarafshan BISM. **1.1.1. Basin (at the level of irrigation systems):** Three Main System Administrations (MSA); seven Main Canal Administrations (MCA), and 52 Irrigation System Administrations, as well as the specialized departments: 14 territorial Administrations of Pumping Stations, Energy and Communication (APSEC), 13 Hydro-Geological and Amelioration Expeditions (HGAE).	
3.2	***Water resources management responsibility*** *If the water resources management responsibility is undertaken by a sector institution (e.g. Ministry of Agriculture, Energy, Environment) are there plans to move the responsibility away from the particular sector institution and place it in a cross-sectoral institution.*	
3.2a	Yes: ☐	No: ☑

3.3	***Institutions in the management framework*** *Which institutions are in place being part of a framework for IWRM?*		
3.3a	Is there a national body where cross-sectoral coordination at the overall level can take place?	Yes: ☑	No: ☐
	If Yes, give its name: date of establishment frequency of meetings		
	Comment on 3.3a: At the national level: **The Government of the Republic** On the basis and in pursuance of decisions of the Government, departments of ministries and agencies coordinate their activities at the lower levels: **oblast, rayon, local levels.** As a rule, the main coordination agency is the state authorities and administrations at the relevant levels. Dates and periodicity of the Government sessions are identified by the Government itself		
3.3b	Is there a platform where interaction with stakeholders at the national level can take place?	Yes: ☑, but…	No: ☐
	I If Yes, give its name: date of first meeting frequency of meetings		

	Comment on 3.3.b: This is a platform where interaction with stakeholders **may take place**: In accordance with the competence, the state authorities and management bodies at the levels from oblast to the lower levels resolve **all issues** on the respective subordinated territories: The Constitution of the Republic of Uzbekistan (Article 99): The Soviets of People's Deputies led by khokims are the representative bodies of authority in oblasts, rayons, cities and towns, except in towns subordinate to rayon centers, and city districts. They shall act upon all matters within their authority, in accordance with the interests of the state and citizens. The Constitution of the Republic of Uzbekistan (Article 100): The local authorities shall: - … direct the economic, social and cultural development within their territories, - … protect the environment… The Constitution of the Republic of Uzbekistan (Article 105): Residents of settlements, kishlaks and aulls (villages), as well as of residential neighborhoods (makhallas) in cities, towns, settlements and villages shall decide all local matters at general meetings of citizens… **Note:** The above mentioned bodies are responsible, in particular, for solution of issues associated with water resources management, including issues related with activities coordination and interaction amongst water use entities on their respective subordinated territories. Another issue is poor public control and necessity for establishment of the public Councils at various levels of water resources management: basin, irrigation system or canals of various orders (Basin Councils, Unions and Water User Associations) and their active involvement in the process of Water Resources Management.		
3.3c	3.3c.1. Are there platforms for interaction with stakeholders at the regional/provincial level?	Yes: ☑	No: ☐
	See Comment on 3.3b, the part relevant to 3.3c.1.		
	3.3c.2. Are they operational (holding meetings and influencing decisions)?	Yes: ☐	No: ☑
3.3d	3.3d.1. Are there bodies for participation of the users at the local level	Yes: ☑	No: ☐
	See Comment on 3.3b, the part relevant to 3.3d.1.		
	3.3d.2. Are they operational (holding meetings and influencing decisions)?	Yes: ☐	No: ☑
3.3e	3.3e.1. Are there bodies for river basin management?	Yes: ☑	No: ☐
	3.3e.2. If Yes, give - number of basin bodies – **11** - organisational structure – **See Comment on 3.1.** - key functions – **See Comment on 3.3e.2**		

Comment on 3.3.e.2:

The Main functions of Basin Irrigation Systems Management (BISM):

- summarizes the predictions of water demands and submits proposals on the water intake limits to the MAWR of Uzbekistan;
- upon proposals from the oblast departments of the Ministry of Agriculture and Water Resources (MAWR) and Irrigation System Administrations (ISA) and on the basis of water intake limits approved by MAWR for the certain basin, identifies water intake limits at the basin level by sectors of economy, main canals, especially important water objects, irrigation systems, administrative oblasts and rayons. Identifies the operation mode of the inter-system pumping stations;
- manages the surface water resources within the whole basin and by the irrigation systems for its purposive and rational use;
- develops measures and submits proposals on its implementation to the MAWR in order to ensure reliability of operation and development of water infrastructure of the basin, introduce the resource saving technologies, market principles and mechanisms of water use;
- jointly with "Uzsuvnazorat" inspection executes control over observance of limits and rational management of water resources within the basin;
- maintains inventory of water supply and intake within the whole basin, and by the Main Canal Systems and Irrigation Systems, sectors of economy, administrative oblasts and rayons, water sources and especially important water management objects, and also submits reports on water use in accordance with established procedure;
- compiles the water resources balance, maintains water cadastre section "Water Use" for the whole basin, and by Main Canal Systems and Irrigation Systems, sectors of economy, administrative oblasts and rayons, water sources and especially important water management objects;
- organizes installation of water measurement structures and devices at the state-owned irrigation systems, introduction to the water resources management the modern systems of communication, automation and telemechanics, and also provides their metrological support;
- develops and implements proposals on improvement of water availability for some irrigation systems, improvement and development of irrigation systems and their structures;
- prepares proposals on the basin prospective water master plan, as well as for modernization, reconstruction, re-equipment of irrigation systems and their structures for inclusion into investment programs, participates in the investment projects;
- ensures purposive and efficient use of the allocated funds.

3.3f	Other institutions (explain)
	• Unions of canal water users, established within the framework of the IWRM Fergana project • Water User Associations, farmers and dekhkan farms (lower level of water resources management), established during the recent years.

3.4	***Institutional Capacity at the national/central level*** *The questions below try to establish how far the country has come towards a realistically attainable institutional capacity for water resources management based on IWRM principles. Imagine a 5 year goal of establishing the management functions below and associated competences. The goal has to be consistent with a realistic water resources management budget and staffing considering the usual or immediately foreseen national budget priorities.* *For each of the functions below, give your assessment of the national/central level capacity using the following scale: 0 = function not established, 1 = function has many large gaps in quality and coverage, 2 = function has some gaps in quality and coverage, 3 = function operates at the realistic goal level.*				
3.4a	Policy formulation	0: ☐	1: ☐	2: ☑	3: ☐
3.4b	Drafting of laws and associated regulations	0: ☐	1: ☑	2: ☐	3: ☐
3.4c	Recovery of cost of water resources management	0: ☑	1: ☐	2: ☐	3: ☐
3.4d	Collecting water resources information and operating databases	0: ☐	1: ☑	2: ☐	3: ☐
3.4e	Preparation of water resources assessments	0: ☐	1: ☑	2: ☐	3: ☐
3.4f	Preparation of environmental assessments	0: ☐	1: ☐	2: ☑	3: ☐
3.4g	Preparation of socio-economic assessments	0: ☐	1: ☐	2: ☑	3: ☐
3.4h	Monitoring of water availability	0: ☐	1: ☐	2: ☑	3: ☐
3.4i	Monitoring of ambient water quality	0: ☐	1: ☐	2: ☑	3: ☐
3.4j	Monitoring of aquatic ecosystems	0: ☐	1: ☑	2: ☐	3: ☐
3.4k	Monitoring of pollution loads	0: ☐	1: ☐	2: ☑	3: ☐
3.4l	Monitoring of water use	0: ☐	1: ☑	2: ☐	3: ☐

3.4m	Planning resource use, protection and conservation	0: ☐	1: ☑	2: ☐	3: ☐
3.4n	Facilitating water demand management	0: ☐	1: ☑	2: ☐	3: ☐
3.4o	Water allocation	0: ☐	1: ☐	2: ☑	3: ☐
3.4p	Conflict mediation	0: ☐	1: ☐	2: ☑	3: ☐
3.4q	Cooperation on internationally shared watercourses	0: ☐	1: ☐	2: ☑	3: ☐

3.5	***Institutional constraints (apart from human resources) at the national/central level*** *Give your assessment of the severity of major negative factors constraining the water resources management institution(s). Use the following scale: 0 = not relevant, 1 = not severe, 2 = severe, 3 = very severe*				
3.5a	Lack of Good Governance (transparency, accountability, integrative, communication, participation)	0: ☐	1: ☑	2: ☐	3: ☐
3.5b	Institutional framework poorly suited to address the key water resources management issues (e.g. mix of regulatory and service provider functions)	0: ☐	1: ☑	2: ☐	3: ☐
3.5c	Institutional mandate poorly defined	0: ☐	1: ☑	2: ☐	3: ☐
3.5d	Responsibilities poorly described for departments/sections	0: ☐	1: ☑	2: ☐	3: ☐
3.5e	Inadequate equipment (laboratory, monitoring equipment, etc.)	0: ☐	1: ☐	2: ☐	3: ☑
3.5f	Inadequate budget	0: ☐	1: ☐	2: ☐	3: ☑
3.5g	Inadequate logistics (e.g. transport)	0: ☐	1: ☐	2: ☐	3: ☑
3.5h	Inadequate office facilities	0: ☐	1: ☑	2: ☐	3: ☐

3.6	***Human resources*** *Development of the water resources management functions requires staff with competences at levels corresponding to the technical complexity of the functions. The questions below address the staff capability compared to the realistic goal level of the functions (ref 3.4)* *Assess the human resource situation in the national/central water resources management institution(s) in relation to the IWRM functions under 3.4a – 3.4q. Use the following scale: 0 = not at all, 1: to some degree, 2: to a reasonable degree. 3: fully*				
3.6a	Is the number of staff adequate for handling the IWRM functions at goal level as outlined above?	0: ☐	1: ☐	2: ☑	3: ☐
3.6b	Is the staff sufficiently qualified for to handle the IWRM functions at goal level as outlined above?	0: ☐	1: ☐	2: ☑	3: ☐
3.6c	Is the staff motivated to handle the water resources management based on IWRM principles?	0: ☐	1: ☑	2: ☐	3: ☐
3.6d	Estimate the number of senior managers in the water sector that are familiar with IWRM principles. Less than 5 ☐ 5 - 10 ☐ 10 – 20 ☐ More than 20 ☑				
3.6e	Are there specific IWRM training activities in your country (if Yes, list them here or in a separate annex referring to the number of the question	Yes: ☐		No: ☑, but…	
	List of IWRM training activities:				
Comment on 3.6e: Apart from the national trainings within framework of the "IWRM Fergana" project, the special trainings in the IWRM are not being conducted due to insufficiency or lack of finance. At the same time the specialized regional training courses, seminars, and round tables are held under the aegis of ICWC for representatives of the various levels of the Central Asian water hierarchy. These trainings are held at the Training Center of SIC-ICWC in Tashkent and in its affiliate in Urgench (Khorezm oblast). The list of training topics on IWRM is quite wide.					

4. Processes and Milestones leading towards IWRM

4.1	***Status of Action Plan/strategy for implementation of an IWRM Framework*** *(enabling environment, institutional roles and management instruments)*
4.1a	Not foreseen for the time being ☑, but…

4.1b	Under preparation ☐ Since when : month year Expected to be finalised by : month year
4.1c	Existing ☐ Approved by Date of approval: month year
4.1d	Existing and under implementation ☐ Agency in charge of implementation Date of start of implementation : month year

Comment on 4.1:

Although Action Plans on the scale of Uzbekistan are not envisaged right at this moment, the conditions for implementation of the IWRM (enabling environment, institutional framework and management instruments) appear in the national and sectoral programs. Part of these programs is listed in the comment on 1.1a.

Specific action plans are envisaged within the framework of the pilot objects of "IWRM-Fergana" project and within the preliminary rationale "Transition to IWRM at the lower reaches and delta of Amudarya river (Turkmenistan and Uzbekistan) and Syrdarya river (Kazakhstan), which had been accomplished under sponsorship of the US State Department.

Within the framework of project "UNEP support for achieving the IWRM 2005 target Central Asia" by October 2006, it is envisaged development and approval of the national "road maps", which will be the basis for subsequent development of the detailed Action Plans.

4.2	***If an Action Plan exists (confirmed in 4.1c or 4.1d)***		
4.2a	Which government and non-government agencies were involved in preparing the plan? Specify :		
4.2b	Is there a portfolio of projects to implement the IWRM Action Plan?	Yes: ☐	No: ☑, but…
4.2c	Is there a programme for capacity building included in the IWRM Action Plan?	Yes: ☐	No: ☑
4.2d	If Yes, is it a recurrent programme?	Yes: ☐	No: ☐
4.2e	Does the action plan have mechanisms for monitoring of implementation?	Yes: ☐	No: ☑
4.2f	If Yes, which agency is responsible for monitoring?		
4.2g	Is there a strategy for financing of the Action Plan implementation?	Yes: ☐	No: ☑

Comment on 4.2b:

There are some projects that include elements of the Action Plan on the scale of pilot irrigation systems (for example within the framework of "IWRM Fergana" project and preliminary rationale of project "Transition to IWRM at the lower reaches and deltas of Amudarya and Syrdarya rivers), but not on the scale of the Republic of Uzbekistan as a whole.

4.3	***IWRM in other Plans*** *Is IWRM itself or the principles that form the basis for IWRM parts of official documents (policies, plans or strategies) from other sectors that use water or relate to water*		
4.3a	Does IWRM appear in a Poverty Reduction Strategy Paper	Yes: ☑	No: ☐
4.3b	If Yes, provide date and title of document month year title		
4.3c	Does IWRM appear in a National Development Strategy to achieve the MDGs	Yes: ☑	No: ☐
4.3d	If Yes, provide date and title of document month year title		
4.3e	Does IWRM appear in an Agricultural Development Plan	Yes: ☑	No: ☐
4.3f	If Yes, provide date and title of document month year title		
4.3g	Does IWRM appear in an Energy Development Plan	Yes: ☑	No: ☐
4.3h	If Yes, provide date and title of document month year title		
4.3i	Does IWRM appear in a National Environmental Action Plan	Yes: ☑	No: ☐

4.3j	If Yes, provide date and title of document month year title		
4.3k	Does IWRM appear in other national plans development plans	Yes: ☑	No: ☐
4.3l	If Yes, provide date(s) and title(s) of document month year title month year title month year title		
Comment on 4.3: Each national development plan (on reduction of poverty or improvement of living standards for achievement of the Millennium Development Goals, agriculture, energy sectors, environmental sphere and the others) is **the integrated one** and includes the main IWRM principles to one or another extent.			

4.4	***Awareness on IWRM*** *Is IWRM and the inherent concepts known and understood by the major operators in the water sector and sectors relating to water (e.g. agriculture/irrigation, hydropower, health, environment, water supply and sanitation). Use the following scale: 0 = not at all, 1 = to some degree, 2 = to a reasonable degree, 3 = fully*				
4.4a	High level decision makers	0: ☐	1: ☐	2: ☐	3: ☑
4.4b	Professionals in agencies responsible for water resources management	0: ☐	1: ☐	2: ☐	3: ☑
4.4c	Professionals in agencies within water use and water related sectors	0: ☐	1: ☐	2: ☑	3: ☐
4.4d	Major water users (incl. industries)	0: ☐	1: ☑	2: ☐	3: ☐
4.4e	Consultants	0: ☐	1: ☐	2: ☑	3: ☐
4.4f	Non-government organisations (NGOs) in the water sector	0: ☐	1: ☐	2: ☑	3: ☐

5 Narrative descriptions of process towards IWRM	
5.1	Describe in your own words your assessment of the extent to which your country has achieved the target of the Johannesburg Plan of Implementation on IWRM: "…..to develop integrated water resources management and efficiency plans by 2005"
	The IWRM 2005 Plans were not prepared

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ANNEX D

Annex d1

Global Water Partnership Central Asia and Caucasus

UNEP Collaborating Centre on Water and Environment
UCC-Water

"ROAD MAP"
PLANNED STEPS TOWARDS REALIZATION OF THE IWRM PRINCIPLES
and
RATIONALE OF THE ESSENTIAL ACTIVITIES
IN THE KYRGYZ REPUBLIC

BISHKEK – 2006

INTRODUCTION

The presented "road map" and rationale of the essential activities are the output of work of the national expert of UCC Water project in the Kyrgyz Republic and the National Group on Coordination and Support to the "IWRM – Fergana" project (NGCS IWRM), created at the end of 2005, within the framework of "IWRM-Fergana" project (SIC ICWC[19] – IWMI[20] under the SDC[21] sponsorship). Experience and lessons learned by these specialists in introduction of the IWRM principles in the pilot objects of the "IWRM-Fergana" project have allowed them to work out the draft "road map" and rationale of the essential activities.

This "road map" describes process of the staged transition from vision to the IWRM plan. In the initial stage of the "road map" development the status of the national water resources management and the main provisions of the long-term program for water resources development in the Kyrgyz Republic[22] have been assessed from the IWRM principles viewpoint in the context of the current socio-economic situation and taking into account the national vision of IWRM.

30 representatives from the key ministries and institutions participated in the Seminar #1 "Issues of intersectoral interaction in water use and transition to the integrated water resources management" (21.04.06, Bishkek). The following issues were reflected in the presentations and reports discussed at the seminar:

- IWRM objectives and tasks and the planned approaches to their implementation;
- Tasks of the National Group on Coordination and Support to the IWRM;
- Problems and conflicts in water resources management of the region and possible ways for their solution;
- Problems of reformation of water resources management and use;
- Problems associated with the state support to the WUAs;
- Problems of the aquatic ecosystems conservation;
- Role and place of the Hydro-meteorological Service and Hydropower in the IWRM system.

The participants of the seminar decided to entrust the national consultant to the UCC-Water jointly with the National Group on Coordination and Support to the Integrated Water Resources Management with preparation of the draft "road map" of activities aimed at transition to the IWRM for subsequent presentation of this draft at the regional seminar #1.

The draft national "road map" was discussed at the regional seminar on the subject "Speedup of IWRM – 2005 Objectives Implementation in Central Asia" (27-28.07.06, Bishkek). During discussions (which were continued at the joint UNEP and GWP seminar on methodology for managerial capacity building on 30-31.07.06) participants of the seminar made the constructive comments and proposals on the presented draft national "road maps" (need to stress the improvement of water use productivity, prepare rationale of the essential activities, social mobilization of stakeholders, etc.).

The draft "road map" and rationale improved in accordance with these comments were discussed at the final national seminar #2 "Draft road map of the staged transition to IWRM in Kyrgyzstan and the necessary actions" (22.09.06, Bishkek) and submitted to the key ministries and institutions.

Approvals were obtained from:

- The Main Administration of Hydro-meteorology of the Ministry of Emergency Situations of the Kyrgyz Republic (#729, 27.09.06)
- The State Agency for Environment Protection and Forestry (#01-6/2053, 02.10.06)
- The OAO "Electric Power Stations" (#011-4/13-614, 02.10.06)

[19] Scientific Information Center of the Interstate Commission on Water Coordination
[20] International Water Management Institute
[21] The Swiss Agency for Development and Co-operation
[22] National report of the Kyrgyz Republic within the framework of UNEP on assistance and aid to the developing countries for achieving of implementation target of "Integrated Water Resources Management and Efficiency Plans by 2005"., GWP CACENA – UCC Water, Bishkek 2006, 29 pages.

- Ministry of Health of the Kyrgyz Republic (#04-1-1068, 04.10.06)
- The Ministry of Agriculture, Water Resources and Food Processing Industry (#01-4/2325, 09.10.06)
- The Ministry of Foreign Affairs (#025-17/4915, 09.10.06)
- The State Agency on Geology and Mineral Resources of the Kyrgyz Republic (#01/1769, 12.10.06).

Further steps envisage submission of the "road map" and rationale to the international agencies at the final regional seminar #2 "Speedup of IWRM – 2005 Objectives Implementation in Central Asia" (29-30.11.06, Tashkent). Based on the results of discussions at this seminar these documents together with the protocol of seminar and letters of approval from the key ministries and institutions will be submitted to the Government of the Kyrgyz Republic to make decision on practical implementation of these activities.

THE KYRGYZ REPUBLIC (KR)

"ROAD MAP"

PLANNED STEPS TOWARDS REALIZATION OF THE IWRM PRINCIPLES IN THE KYRGYZ REPUBLIC

#	Necessary Actions	Objectives	Realization Time	Responsible Executors	Source of Financing
1. MANAGERIAL CAPACITY BUILDING					
The Essential Period (2007 - 2008)					
1.	Establishment of the State water administration within the framework of Water Code of the Kyrgyz Republic	- Capacity building for water resources management and execution of the unified state policy on use and protection of water resources both at the national and international levels; - Elimination of duplicated functions and authorities in the area of water resources management, which had been previously imposed on a number of ministries and agencies; - Elimination of sectoral dependence of the management body called to resolve the national tasks; - Ensuring the centralized strategic planning, organization and control over implementation of the complex of interrelated measures on regulation of water relationships, conditions and use of water resources and water management activities; - Detailed definition of responsibilities of the base management body for efficient realization of its functions.	**2007**	The Department of water resources of the Ministry of Agriculture and Water Resources and Food Processing Industry of the Kyrgyz Republic, The National Water Council	The Republican Budget, International Grants
2.	Strengthening of the state supervision over conditions	Implementation of the preventive measures, control, and elimination of consequences resulting from violation of	**2007**	The State Water Administration,	The Republican Budget

#	Necessary Actions	Objectives	Realization Time	Responsible Executors	Source of Financing
	and use of water resources, establishment of the State water inspection.	the water and nature protection legislation, norms and rules of water use and management.		The Government of the Kyrgyz Republic	
The Mid-term Period (2007 - 2012)					
3.	Establishment of the republican, basin and rayon commissions on irrigation and drainage.	- Consolidation of efforts of the republican, and local management bodies, water use entities from the irrigated agriculture sector, business and local communities aimed at the rehabilitation and further development of irrigation and drainage systems; - Ensuring of the practical realization of the decentralization and democratization principles of the irrigation and drainage systems management through the consistent transfer of functions and power to the lower levels of management; - Gradual decrease of the state budget financing on the basis of expansion of financing from the local budgets, and participation of WUAs, and the other independent business structures in maintenance and development of the irrigation and drainage infrastructure.	**2007-2009**	The State Water Administration, The Republican Federation of the WUAs, the state local administrations of rayons and oblasts	The Republican and Local Budgets, Investments of Private Sector
4.	Establishment of the Dam safety commission	- Ensuring of the normative safety level of the strategically important objects of water infrastructure through systematic monitoring of their conditions and timely implementation of the adequate measures; - Consolidation of efforts and resources of the republican and local management bodies, construction and O&M organizations, as well as water use entities, aimed at	**2007-2009**	The State Water Administration, Ministries and Agencies, Dam Owners	The Republican Budget, Possible Participation of the Neighboring Countries, Funds of the Dam Private Owners

#	Necessary Actions	Objectives	Realization Time	Responsible Executors	Source of Financing
		rehabilitation, renovation and ensuring of safe O&M mode of dams and the other water infrastructure objects in accordance with the established list.			
5.	Organization of efficient interaction between the national water management bodies and energy sector and between the regional structures – IFAS, Joint Dispatch Center "Energy" and the Integration bodies of the Eurasian Economic Cooperation Organization.	- Establishment of the permanent joint governing and executive body of water management and energy sectors; - settlement of the main region's water problems.	**2007-2009**	The State Water Administration, The Council on energy policy under the Integration Committee of the Eurasian Economic Cooperation Organization	Possible Participation of the Neighboring Countries, International Grants
The Long-term Period (2007 - 2025)					
6.	Realization of the National IWRM plan – introduction of the IWRM principles in the Kyrgyz Republic	Establishment of the water resources management system for sustainable social development taking into account the needs of nature.	**2008-2018**	The State Water Administration	International Grants, The Republican and Local Budgets
2. CREATION OF THE LEGISLATIVE AND POLITICAL ENVIRONMENT FOR THE IWRM					
The Essential Period (2007-2008)					
7.	Development of the National water strategy of the Kyrgyz Republic	Identification of the priority directions for development of internal and external water policy of the Kyrgyz Republic	**2007**	The State Water Administration, Ministries, Agencies	International Investments and Projects
8.	Development of the package of normative/legislative acts for realization of the water code of the Kyrgyz Republic	Introduction of the integrated water resources management principles into water sector	**2007-2008**	The State Water Administration, Ministries, Agencies	International Grants

#	Necessary Actions	Objectives	Realization Time	Responsible Executors	Source of Financing
9.	Development of the Kyrgyz Republic's concept of the National plan on IWRM.	Identification of the current situation and main problems in the water resources management system of the Kyrgyz Republic and possible ways for solution of these problems in the context of socio-economic reformations.	**2007**	The State Water Administration	International Grants
10	Development, coordination and approval of the National IWRM plan of the Kyrgyz Republic.	Development of complex of measures aimed at implementation of the IWRM principles in Kyrgyzstan in pursuance of the **Paragraph 26** of the Plan for implementation of proposals of the World summit on sustainable development in Johannesburg (September 2002). (WSSD)	**2007-2009**	The State Water Administration, the National Water Council	International Grants
The Mid-term Period (2007-2012)					
11	Formation of the favorable investment climate in Kyrgyzstan	Attraction of the additional external investments and donor assistance for development of activities aimed at water management and protection	**2007-2009**	The Jogorku Kenesh (Parliament) of the Kyrgyz Republic, the State Water Administration	The Republican Budget
12	Streamlining the market mechanisms of water use	Unification of the contracting system of payments for services to deliver and dispose of water and the other works and services associated with water management and use.	**2007-2010**	The State Water Administration	The Republican Budget
13	Improvement of water use pricing and tariffing policy	Ensuring of the optimal reduction of financing from the state and local budgets taking simultaneously into account the dynamics of population and various categories of water user's real ability to pay for delivery of water, as well as the real cost of these services.	**2007-2011**	The Jogorku Kenesh (Parliament) of the Kyrgyz Republic, the Government of the Kyrgyz Republic, the State Water Administration	The Republican Budget, International Grants

#	Necessary Actions	Objectives	Realization Time	Responsible Executors	Source of Financing
14	Improvement of the state tariffication policy in water protection from pollution and depletion	Increase of water user responsibilities for environmental water use through introduction of the economic incentives mechanism for the rational use of water and reduction of polluted wastewater disposal	**2007-2012**	The State Water Administration, Ministries, Agencies	The Republican Budget
15	Development and realization of the efficient mechanism for economic incentives to activities aimed at introduction of water saving technologies and water protection.	Water saving at all levels of water hierarchy, productive and rational use of water resources taking into account the nature protection requirements	**2008-2010**	The State Water Administration, Ministries, Agencies	The Republican Budget
16	Elaboration of the Basin plans for development, use and protection of water resources	- Planning of water resources use at the basin level; - Selection of priorities in water use at the basin level; - Rationale of ways and methods for improvement of water use efficiency	**2008-2012**	The State Water Administration, Basin Councils and Water Administrations, the National Water Council	The Republican and Local Budgets, International Grants
17	Streamlining the ownership rights to the objects of water infrastructure	Speedup of transfer with the ownership rights of water objects that are of the non-strategic importance to water user associations and the other independent entities for management, operation and maintenance	**2008-2012**	The State Water Administration, the Ministry of Justice, Gosregistr, the Republican Federation of WUAs, the State Committee on Property of the Kyrgyz Republic	The Republican Budget
The Long-term Period (2007-2025)					
18	Improvement of public awareness about use and protection of water resources, and measures aimed at its rational use and protection	Efficiency of decision making in water resources management, as well as improvement of public awareness level about use of water bodies and their conditions	**2007-2015**	The State Water Administration, the Ministry of Agriculture and Water Resources and Food Processing Industry of the	The Republican Budget, International Projects and Grants

#	Necessary Actions	Objectives	Realization Time	Responsible Executors	Source of Financing
				Kyrgyz Republic, the State Agency for Environment Protection, The State Agency on Geology, the Ministry of Justice, Gosregistr, the Republican Federation of WUAs, NGOs	
3. ESTABLISHMENT OF STRUCTURE FOR THE BROAD PARTICIPATION OF STAKEHOLDERS IN WATER RESOURCES MANAGEMENT					
	The Essential Period (2007-2008)				
19	Establishment of the organizations network of the Kyrgyzstan's National water partnership for their subsequent involvement in the Global water partnership	Assistance to development of water policy and strategy, dissemination of knowledge about IWRM, broad involvement of public in this process, managerial capacity building for progress in the IWRM national planning process	**2007-2008**	The State Water Administration, The Republican Federation of WUAs, NGOs	International Grants
The Mid-term Period (2007-2012)					

#	Necessary Actions	Objectives	Realization Time	Responsible Executors	Source of Financing
20	Establishment of the National and Basin water councils	- Ensuring the efficient coordination of interaction amongst all stakeholders and entities of water use sector; - Eliminating the acts of sectoral monopolism and corruption through collectivity and transparency of the strategically important managerial decision making; - Improvement of efficiency of managerial decisions approval; - Limitation of the state expenses for maintenance of management bodies, because activities of the National and Basin water councils should be carried out on the voluntary basis.	**2008-2011**	The State Water Administration, Apparat of The Prime Ministers of the Kyrgyz Republic, The WUA Federations, Local State Administrations	International Grants and Projects, The Republican and Local Budgets
4. THE TECHNICAL AND TECHNOLOGICAL MEASURES					
The Long-term Period (2007-2025)					
21	Restoration and modernization of the national system for hydrological and hydrochemical monitoring of the surface and underground water conditions	Creation of proper conditions for execution of observations, inventory, assessment and forecasts of water resources in the Kyrgyz Republic for their management and conditions control	**2007-2015**	The State Water Administration, Ministries, Agencies	The Republican Budget, International Investments and Projects, Possible Participation of the Neighboring Countries

#	Necessary Actions	Objectives	Realization Time	Responsible Executors	Source of Financing
22	Strengthening of managerial, human, and material/technical capacity of monitoring over conditions and use of water resources.	- Development of the unified database on conditions and use of water resources for efficient planning and implementing the state water policy; - Encouragement of the additional investments attraction for the activities aimed at rational use and protection of water resources; - Establishment of system for staff training and advanced training.	**2008-2014**	The State Water Administration	The Republican Budget, International Grants, Possible Participation of the Neighboring Countries
23	Assessment of water-energy regulation processes in the upper watersheds and their impact on environment in the Aral Sea basin	- Ecological assessment of water-energy regulation processes in the upper watersheds and their impact on environment of the whole basin; - solution of ecological problems.	**2008-2010**	EC IFAS, ICWC, ISDC, Interstate Water and Energy Commission, The State Water Administration (SWA)	The Republican Budget – Share in IFAS, International Grants
24	Development and approval of programs aimed at maintenance of the ecological balance in regard to water resources in the upper watersheds, as well as in the whole Aral Sea basin	- Solution of the aquatic ecosystem problems in the republic, as well as in the whole region	**2009-2019**	IFAS, ISDC, The State Water Administration, The State Agency for Environment Protection	International Grants, Possible Participation of the Neighboring Countries
25	Modernization of irrigation and drainage infrastructure with its subsequent transfer to water users and improvement of the irrigation application methods	Improvement of irrigation efficiency and productivity, involvement of water users in process of regular O&M of water infrastructure, reduction of environment pollution	**2008-2016**	The State Water Administration, the Ministry of Agriculture and Water Resources and Food Processing Industry of the Kyrgyz Republic	International Investments and Projects, Water User Funds
26	Reconstruction of existing and introduction of the new	Reduction of polluted waters disposal into water bodies	**2007-2025**	The Local Administrations, Municipal Services	The Local Budget, International and

#	Necessary Actions	Objectives	Realization Time	Responsible Executors	Source of Financing
	wastewater treatment systems				Private Sector Investments
27	Introduction of ecologically clean production and water saving technologies in all sectors of economy	Rational use of water resources and reduction of wastewaters volumes	**2010-2025**	The Local Administrations, the State Water Administration, the State Agency for Environment Protection, Water Users, Business Structures	International and Private Sector Investments

THE KYRGYZ REPUBLIC (KR)
RATIONALE OF THE ESSENTIAL ACTIVITIES

Subject 1: MANAGERIAL CAPACITY BUILDING

Activity 1.
Establishment of the State water administration within the framework of Water Code of the Kyrgyz Republic

Objectives:

- Managerial capacity building for water resources management and execution of the unified state policy on use and protection of water resources both at the national and international levels;
- Elimination of duplicated functions and authorities in the area of water resources management, which had been previously imposed on a number of ministries and agencies;
- Elimination of sectoral dependence of the management body called to resolve the national tasks;
- Ensuring the centralized strategic planning, organization and control over implementation of the complex of interrelated measures on regulation of water relationships, conditions and use of water resources and water management activities;
- Detailed definition of responsibilities of the base management body for efficient realization of its functions.

Rationale:

The main disadvantage of the still operating water resources management system is the sectoral subordination of the key regulatory agency, the Department of water resources (DWR) of the Ministry of Agriculture and Water Resources and Food Processing Industry of the Kyrgyz Republic. As a consequence, over a number of years the DWR serves interests of the irrigated agriculture only, thereby violating the base principle of equal rights of all water relationship entities. Insufficient attention had been paid to the strategic problems of water protection from pollution and depletion, regulation of balance between supply and demand for water resources, incentives to water resources saving and efficient use, development of market mechanisms of water use, improvement of participation of public and the natural resource users in the solution of the above mentioned problems, etc.

Taking into account these conditions, the leading specialists from Kyrgyzstan jointly with the competent foreign experts have prepared the new legal basis for reformation of water resources management system. This document has passed through all the necessary stages of approval and reflected in the "Water Code" of the Kyrgyz Republic. According to the norms of this legislative act the national system of water relationships regulation should be drastically modernized.

Since the directions of reformation, envisaged by the "Water Code", are very comprehensive their realization will require a long period of time and attraction of considerable financial and other resources. Thereby, it was recommended to the Government of the Kyrgyz Republic to implement a number of the high-priority institutional measures that will not require the significant investments from the state budget, but allow resolving the most urgent for Kyrgyzstan water problems in a more efficient manner.

In accordance with the Water Code the State Water Administration (SWA) is entrusted with the leading role in water resources management. By the decree of the Government of the Kyrgyz Republic the Department of water resources is appointed as an acting State Water Administration.

Approach:

Establishment of the State Water Administration envisages activities which will comprise four elements:

1) Working group will establish the new institutional structure, including preparation of detailed provisions on the State Water Administration, its rights and obligations and intersectoral interactions;
2) With support from the National Water Council director will form the key personnel for fulfillment of the functions specified in the "Water Code";
3) Working group will provide the technical support required for formation of the State Water Administration as a body for water resources management in the Kyrgyz Republic and also establishment of secretariat of the National Water Council;
4) After staffing the State Water Administration will take over the responsibilities for a number of managerial functions, such as monitoring and reporting about water resources, development of the national information system, and recommendations to the National Water Council.

Realization Time:
From the beginning to the end of the first year (12 months)

Responsible Executors:
The Department of Water Resources (DWR)
The National Water Council

Results:
The new body - State Water Administration established by the National Water Council in cooperation with the Department of Water Resources. Steady operating water distribution system and water law. Monitoring and reporting about water resources, development of the national information system

Necessary Resources:
Estimated number of man-months: 72 man-months.
Planned contribution from the Republic's budget: USD 100 thousand
Planned contribution from potential sponsors: USD 350 thousand

Subject 1: MANAGERIAL CAPACITY BUILDING

Activity 2.
Strengthening of the state supervision over conditions and use of water resources through establishment of the State water inspection

Objectives:

- Development of the unified database on conditions and use of water resources for efficient planning and implementing the state water policy;
- Implementation of the preventive measures, preclusion, and elimination of consequences resulting from violation of the water and nature protection legislation, norms and rules of water use and management.

Rationale:

Water use licensing that was abolished in the republic in 2001, led to wasteful use of water resources, lack of reliable data on use of water, broke the existing system of statistical reporting on water and water use, and lack of data about a number of water users in the republic. Cases of the unauthorized water use and construction of water structures and devices, violation of the state property rights to water resources and water bodies/structures, and illegal use of water fund's land became more frequent.
Currently the Water Inspection is established and operates, but without governmental status, and therefore, it can not operate in efficient manner. It has no right to check operation of economic entity-water users, as well as to issue a license for water use. Water use licensing is envisaged by the Water Code and this provision should be implemented.

Approach:

Establishment of the State Water Inspection envisages activities which will comprise three elements:

1) Working group will establish the new institutional structure, including preparation of detailed provisions on the State Water Inspection, its rights and obligations and intersectoral interactions;
2) Working group will provide the technical support required for formation of the State Water Inspection, subordinated to the State Water Administration, as a body for control over use of water resources in the Kyrgyz Republic;
3) After staffing the State Water Inspection will take over the responsibilities for a number of functions associated with supervision over conditions and use of water fund.

Realization Time:
From the beginning to the end of the first year (12 months)

Responsible Executors:
The Department of Water Resources (DWR)
The National Water Council

Results:
The new body with the supervision status - State Water Inspection established by the National Water Council in cooperation with the Department of Water Resources. Steady operating system of the state control over water use.

Necessary Resources:
The main part of work will be financed and carried out along with the establishment of the State Water Administration. The additional part of the necessary expenses will be distributed as follows:
Planned contribution from the Republic's budget: USD 20 thousand
Planned contribution from potential sponsors: USD 60 thousand

Subject 2: CREATION OF THE LEGISLATIVE AND POLITICAL ENVIRONMENT FOR THE IWRM

Activity 7.
Development of the National water strategy of the Kyrgyz Republic

Objectives:

- Identification of the priority directions for development of internal and external water policy of the Kyrgyz Republic;
- Implementation of the preventive measures, preclusion, and elimination of the negative consequences resulting from violation of the water and nature protection legislation, norms and rules of water use and management.

Rationale:

From the second half of 1990s, based on a number of decisions of the Republican Government the repeated attempts were undertaken to develop various concepts and strategies for water resources use. Taking into account the strategic importance of water resources to the country, even the National Commission on water strategy issues under the President of the Kyrgyz Republic was established. According to the decision of this Commission the International Institute of Strategic Studies under the President of the Kyrgyz Republic was appointed as a head organization for development of the National Water Strategy.

The list of the developed documents and responsible organization is provided below:

- The "Main provisions (concept) of the national water strategy of the Kyrgyz Republic (the Ministry of Agriculture and Water Resources and Food Processing Industry);
- The "Concept of Integrated Use and Protection of Water Resources" (the Institute of water problems and hydropower of the National Academy of Science);
- The "Strategy of national policy of the Kyrgyz Republic in regard to use of the transboundary water resources" (the Institute of water problems and hydropower of the National Academy of Science);
- The "Strategy for cooperation and rational and efficient use of water/energy resources of the Central Asia" (SPECA project);
- The "Water strategy of the Kyrgyz Republic" (the International Institute of Strategic Studies).

However, practice of involvement of the Ministry of Agriculture and Water Resources in drafting of water use concepts and strategies had proved to be irrational and did not provide the positive results due to priority for the ministry of its own sectoral interests. Therefore, it was impossible to take into account interests of all sectors of economy. Because many of issues associated with use of water resources are the competence of the other ministries and agencies the intersectoral coordination of priorities is required.
The national water strategy is the official water policy of the government and therefore, it should be developed and approved by the relevant body and consistently implemented. Lack of the unified position of the government leads to different approaches of the state agencies to solution of these issues from the viewpoint of their sector specific interests.

Approach:

Development of the National Water Strategy envisages activities which will comprise three elements:

1) Working group under guidance of the State Water Administration and Institute of the Strategic Studies will prepare new and improve the existing drafts;
2) The State Water Administration as secretariat of the National Water Council will submit the draft to the President of the Kyrgyz Republic for consideration and approval;
3) After approval by the President of the Kyrgyz Republic this draft will become the document that reflects the country's water management policy.

Realization Time:
From the beginning to the end of the first year (12months)

Responsible Executors:
The Department of Water Resources (DWR)
The National Water Council

Results:
Normative legal act reflecting the official water policy of the government.

Necessary Resources:
Estimated number of man-months: 80 man-months.
Planned contribution from the Republic's budget: USD 15 thousand
Planned contribution from potential sponsors: USD 60 thousand

Subject 2: CREATION OF THE LEGISLATIVE AND POLITICAL ENVIRONMENT FOR THE IWRM

Activity 8.
Development of the package of normative/legislative acts for realization of the Water Code of the Kyrgyz Republic

Objective:

- Introduction of the integrated water resources management principles into water sector and realization of the Water Code's provisions

Rationale:

The Water Code of the Kyrgyz Republic dated 12.01.2005, envisages the main IWRM principles. It covers water resources management and the main types of water use. The Code also envisages principle of payments by water user the cost of water management and delivery, but not in the full amount due to low solvency of population.
In accordance with the provisions of the Water Code of the Kyrgyz Republic around 29 normative/legislative acts of the bylaw nature should be adopted. As a result of well-known political events consideration and adoption of the prepared draft acts was delayed. Currently, out of 17 drafts only one act has been adopted. This normative act is a "hybrid" between two drafts. It identifies the staff of the National Water Council and approves its provision. At the same time in accordance with this act the Department of Water Resources of the Ministry of Agriculture and Water Resources and Food Processing Industry of the Kyrgyz Republic is appointed as an acting State Water Administration. In other words, the draft decrees of the Government and draft Orders of the President in regard to water resources issues have been not adopted and executed to the full extent.

Approach:

Development of the package of normative/legislative acts envisages activities which will comprise two elements:

1) Working group that comprises representatives from the ministries and agencies, as well as water users, under guidance of the State Water Administration will prepare new and improve the existing draft normative acts;
2) The State Water Administration as secretariat of the National Water Council will submit the draft normative acts to the relevant governmental body for consideration and approval.

Realization Time:
From the beginning to the end of the first year (12 months)

Responsible Executors:
The State Water Administration (SWA)
The National Water Council

Results:
Adoption of all the normative/legislative acts and full realization of the Water Code, creation of the legal basis for proper operation of the State Water Administration.

List of the Normative/Legislative Acts which are being Developed for Realization of Provisions of the Water Code of the Kyrgyz Republic

N	Title of Normative/Legislative Act
1.	"Provision on Activities of the Basin Council" with approval by a Decree of the Government of the Kyrgyz Republic
2.	"Provision on Identification of the Basin Water Administrations and Basin Water Councils' Zone of Activities" with approval by a Decree of the Government of the Kyrgyz Republic
3.	"Provision on Procedures, Standards and Methods of Water Resources Monitoring" with approval by a Decree of the Government of the Kyrgyz Republic
4.	"Provision on the Frequency and Scope of Data Collection for Water Resources Monitoring" with approval by a Decree of the Government of the Kyrgyz Republic
5.	"Provision on Regulation of Activities Associated with Use of Water Resources" with approval by a Decree of the Government of the Kyrgyz Republic
6.	"Provision on Compensation to an Owner of Water Use License in Case of Abolition or Temporary Change of License" with approval by a Decree of the Government of the Kyrgyz Republic
7.	"Instruction for Establishment of Minimum and Maximum Rights to Water Delivery by Regions and Rayons" with approval by a Decree of the Government of the Kyrgyz Republic
8.	"Templates of the Standard Contract and Standard Annual Agreement for Water Delivery" with approval by a Decree of the Government of the Kyrgyz Republic
9.	"Provision on Mechanisms and Procedures for Delivery of Additional Water Volumes and Associated Changes of the Agreement" with approval by a Decree of the Government of the Kyrgyz Republic
10.	"Provision on Procedure for Calculation of Compensation Amount to Water User for Incomplete Delivery of Water" with approval by a Decree of the Government of the Kyrgyz Republic
11.	"Procedure of Payments for Water Delivery Services" with approval by a Decree of the Government of the Kyrgyz Republic
12.	"Provision on Borehole Drilling for Water Extraction" with approval by a Decree of the Government of the Kyrgyz Republic
13.	The Decree of the Government of the Kyrgyz Republic "On Establishment of Water Protection Zones on Rivers and Irrigation Systems of the Kyrgyz Republic
14.	The Decree of the National Water Council "On Criteria for Dam Classification in the Kyrgyz Republic and on Rating of Dams by Categories"
15.	The Decree of the Government of the Kyrgyz Republic "On Provision for Underground Water Protection from Pollution"
16.	The Decree of the Government of the Kyrgyz Republic "On Establishment of Minimum Ecological Requirements to the River Water Flows of the Kyrgyz Republic"
17.	The Decree of the Government of the Kyrgyz Republic "On Approval of Instruction for Maintenance of the State Ameliorative Cadastre of the Kyrgyz Republic"
18.	The Decree of the Government of the Kyrgyz Republic "On Draft Law of the Kyrgyz Republic "On Subsidies to Irrigation and Drainage"
19.	The Decree of the Government of the Kyrgyz Republic "On Approval of the List of the State Owned Irrigation and Drainage Systems and Water Structures"
20.	The Decree of the Government of the Kyrgyz Republic "On Procedure for Transfer with Ownership of the Irrigation and Drainage Systems or Their Parts to the Water User Associations"
21.	The Decree of the Government of the Kyrgyz Republic "On Content of the Unified Information System about Water Resources"

Necessary Resources:
Estimated number of man-months: 96 man-months.
Planned contribution from the Republic's budget: USD 12 thousand
Planned contribution from potential sponsors: USD 50 thousand

Subject 2: CREATION OF THE LEGISLATIVE AND POLITICAL ENVIRONMENT FOR THE IWRM
Activity 9. Development of the Kyrgyz Republic's concept of the National IWRM plan
Objective: • Identification of the current situation and main problems in the water resources management system of the Kyrgyz Republic and possible ways for solution of these problems in the context of socio-economic reformations
Rationale: Development of concept of the Kyrgyz Republic's National Plan for transition to the IWRM will be conducted prior to development of the plan itself, because development of the detailed plan can not be successful without identification of the current situation, problems and ways for their solution. Development of the concept and the National Water Strategy will be carried out in parallel and will require approximately six months.
Approach: Development of concept of the Kyrgyz Republic's National Plan for transition to the IWRM envisages the activities that will be carried out in parallel with development of the National Water Strategy. These activities include a number of measures: 1) Working group from the qualified representatives of stakeholders under the guidance of the International Institute of the Strategic Studies and on the basis of the available materials will prepare the draft Concept; 2) Several round tables with participation of the governmental bodies, civil society, international organizations and water users will be conducted for the comprehensive consideration of the concept that is being developed in order to take into account interests of all water users and government. 3) The prepared draft concept will pass through the independent international expertise; 4) The Concept of the National IWRM Plan will be submitted by the State Water Administration to the Government for consideration and subsequent approval.
Realization Time: Six months from the beginning of the first year
Responsible Executors: The State Water Administration (SWA) The International Institute of the Strategic Studies under the President of the Kyrgyz Republic
Results: Final version of concept of the National Plan for transition to the IWRM for guidance in development of the detailed National Plan.
Necessary Resources: Estimated number of man-months: 30 man-months. Planned contribution from the Republic's budget: USD 8 thousand Planned contribution from potential sponsors: USD 12 thousand

Subject 2: CREATION OF THE LEGISLATIVE AND POLITICAL ENVIRONMENT FOR THE IWRM
Activity 10. Development, coordination and approval of the National IWRM plan of the Kyrgyz Republic
Objective: Development of complex of measures aimed at implementation of the IWRM principles in Kyrgyzstan in pursuance of the Paragraph 26 of the Plan for implementation of proposals of the World summit on sustainable development in Johannesburg (September 2002) (WSSD)
Rationale: One of the main objectives of the Johannesburg plan is: "….. achieving of implementation target of "Integrated Water Resources Management and Efficiency Plans by 2005". The Kyrgyz Republic could not achieve the implementation target of the Integrated Water Resources Management and Efficiency Plans by 2005 due to lack of the appropriate financing.

Participation in the "Integrated water resources management project in the Fergana valley" has provided the possibilities to understand the IWRM principles and move towards their practical implementation as well as to involve public into the water resources management process.

- The first step towards the final restructuring of management at the canal level had been made. The agreement between the registered Water Users Council of the "Aravan-Akbura" canal and the Osh Basin Water Administration about transition to the joint canal management had been prepared. Draft agreement had been discussed at the National round table conducted in Bishkek on 3 February, 2006. It was recommended to both parties to sign it;
- The National coordination group on the IWRM had been created;
- The seminars for the members of the National Group for Coordination and Support had been conducted in the ICWC training center and in field in Osh (Fergana valley);
- A number of reviews on the National Experience in establishment of the WUAs had been prepared.

However, all these measures are of the local and preparatory nature. The detailed plan is required for the complete transition to the IWRM in the Republic.

Approach:

Development of the Kyrgyz Republic's National Plan for transition to the IWRM envisages several stages of activities. Each stage includes implementation of a number of measures:

I) Increase of public awareness about the IWRM, political will and support to reforms in water sector:

I.1. Development of the advocacy strategy;

I.2. Initiation of meetings with politicians, MM, civil society and donors;

1.3. Establishment of the national water partnerships as a driving force of the process;

I.4. Organization of a series of the purposeful seminars for participants of the national water partnership network;

I.5. Public awareness campaign.

II) Creation of platform for the intersectoral coordination:

II.1. Draft platform for coordination;

II.2. Organization of working meetings and round tables;

II.3. Creation of the formal platform for network operation (status, regulations, communication procedures, etc.).

III) Managerial and technical capacity building:

III.1. Development of information system (database, modeling);

III.2. Identification of the IWRM planning stages;

III.3. Assessment of the advanced training requirements;

III.4. Train the trainers in the IWRM aspects;

III.5. Development of the relevant initiatives system for creation of necessary "climate" for the IWRM;

III.6. Managerial capacity building (equipment, communication means, water metering devices, etc.).

III 7. Training courses for various stakeholders.

IV) Overview of the current activities which may be used as a basis for the IWRM plan;

IV.1. Identification of the IWRM functions and assessment of the water management status;

IV.2. Identification of useful experience in the adjacent spheres of planning;

IV.3. Compilation and dissemination of information amongst stakeholders about the positive and negative experience in the IWRM planning.

V) Development of the IWRM plan and strategy for transition to the new water management principles:

V.1. Reformation of policy, legal basis and financial mechanisms;

V.2. Creation of the relevant managerial structure with the well-defined tasks and responsibilities;

V.3. Development of the necessary management tools;

V.4. Identification of groups subjected to the positive and negative impacts as a result of reforms and selection of the most acceptable mechanisms for their adaptation;

V.5. Estimation of the necessary budget for realization of the IWRM plans;

V.6. Restructuring of the existing budget lines;
V.7. Use of the GWP ToolBox as a check list;
V.8. Approval of the IWRM plan and strategy for the transition period;
V.9. Establishment of national supervisory (coordination) group.

Realization Time:
24 months from the second half of the first year

Responsible Executors:
The State Water Administration (SWA)
The National Water Council

Results:
The National Plan for transition to the IWRM and strategy for transition to the new principles of water resources management

Necessary Resources:
Planned contribution from the Republic's budget: Som/USD _____
Planned contribution from potential sponsors: USD 845 thousand

Subject 3: ESTABLISHMENT OF STRUCTURE FOR THE BROAD PARTICIPATION OF STAKEHOLDERS IN WATER RESOURCES MANAGEMENT

Activity 19.
Establishment of the organizations network of the Kyrgyzstan's National water partnership for their subsequent involvement in the Global water partnership

Objective:

- Assistance to development of water policy and strategy, dissemination of knowledge about IWRM, broad involvement of public in this process, managerial capacity building for progress in the IWRM national planning process

Rationale:

The main and acknowledged world theoretician in the IWRM principles is the Global Water Partnership. Establishment of the national water partnership with its subsequent involvement in the Global Water Partnership network will allow ensuring the broad participation of stakeholders in the water resources management process.

The preliminary work is carried out within the framework of activities of the Regional Technical Advisory Committee of the Central Asian Countries and Caucasus (RTAC CACENA).

Approach:
Establishment of the Kyrgyzstan's National water partnership organizations network is envisaged within the framework of the IWRM plan development.

Realization Time:
From the beginning to the end of the first year (12 months)

Responsible Executors:
The State Water Administration (SWA)
NGOs dealing with water resources and ecology issues.

Results:
Established network of the national water partnership.

Necessary Resources:
This work can be carried out within the framework of development of the National IWRM plan.

CONTACTS AND INFORMATION

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Annex d2

Global Water Partnership Central Asia and Caucasus

UNEP Collaborating Centre on Water and Environment
UCC-Water

"ROAD MAP"
PLANNED STEPS TOWARDS REALIZATION OF THE INTEGRATED WATER RESOURCES MANAGEMENT PRINCIPLES
and
RATIONALE OF THE ESSENTIAL ACTIVITIES
THE REPUBLIC OF TAJIKISTAN

DUSHANBE – 2006

INTRODUCTION

The presented "road map" and rationale of the essential activities are the output of work of the national expert of UCC Water project in the Republic of Tajikistan and the National Group on Coordination and Support to the "IWRM – Fergana" project (NGCS IWRM), created at the end of 2005, within the framework of "IWRM-Fergana" project (SIC ICWC[23] – IWMI[24] under the SDC[25] sponsorship). Experience and lessons learned by these specialists in introduction of the IWRM principles in the pilot objects of the "IWRM-Fergana" project have allowed them to work out the draft "road map" and rationale of the essential activities.

This "road map" describes process of the staged transition from vision to the IWRM plan. In the initial stage of the "road map" development the status of the national water resources management and the main provisions of the long-term program for water resources development in the Republic of Tajikistan[26] have been assessed from the IWRM principles viewpoint in the context of the current socio-economic situation and taking into account the national vision of IWRM.

53 representatives from the key ministries and institutions, non-governmental organizations, apparat of the President of Tajikistan, the Parliament of Tajikistan, Executive Committee of the International Fund for Saving the Aral Sea, international projects, mass media and public relations participated in the Seminar #1 "Issues of intersectoral interaction in water use and transition to the integrated water resources management" (29.04.06, Dushanbe). The following issues were reflected in the presentations and reports discussed at the seminar:

- IWRM objectives and tasks and the planned approaches to their implementation;
- Problems associated with the establishment and state support to the WUAs;
- Perspectives for development of the water management sector from the IWRM viewpoint;
- Water legislation in the light of implementation of the IWRM principles;
- Strategy for development of water sector and priorities;
- Review of the "IWRM-Fergana" project results;
- Role of information system, capacity building, and public participation in the IWRM process;
- Water saving and metering as the basic principle of the IWRM;
- Technical, managerial, ecological and social aspects of the IWRM;
- Results of the gender study in water sector.

The participants of the seminar decided to entrust the national consultant to the UCC-Water jointly with the National Group on Coordination and Support to the Integrated Water Resources Management with preparation of the draft "road map" of activities aimed at transition to the IWRM for subsequent presentation of this draft at the regional seminar #1.

The draft national "road map" was discussed at the regional seminar on the subject "Speedup of IWRM – 2005 Objectives Implementation in Central Asia" (27-28.07.06, Bishkek).

During discussions (which were continued at the joint UNEP and GWP seminar on methodology for managerial capacity building on 30-31.07.06) participants of the seminar made the constructive comments and proposals on the presented draft national "road maps" (need to stress the improvement of water use productivity, prepare rationale of the essential activities, social mobilization of stakeholders, etc.).

The draft "road map" and rationale improved in accordance with these comments were discussed at the final national seminar #2 "Draft road map of the staged transition to IWRM in Tajikistan and the necessary

[23] Scientific Information Center of the Interstate Commission on Water Coordination
[24] International Water Management Institute
[25] The Swiss Agency for Development and Co-operation
[26] National report of the Republic of Tajikistan within the framework of UNEP on assistance and aid to the developing countries for achieving of implementation target of "Integrated Water Resources Management and Efficiency Plans by 2005"., GWP CACENA – UCC Water, Dushanbe 2006, 24 pages.

actions" (31.10.06, Dushanbe), approved by the members of the NGCS – representatives of the key ministries and institutions (appointed by the Government of the Republic of Tajikistan):

Mr. A.A. Nazirov: Minister of Amelioration and Water Resources (MAWR);
Mr. T.Kh. Nazarov: Head of Science Administration, State Committee for Nature Protection and Forestry;
Mr. A. Tirandozov: Head of Operation Administration of the MAWR;
Ms. S. Ikramova: Head of Department of Environment, Water and Land Resources, Ministry of Economy and Trade;
Mr. M. Amindjanov: Head of Department, SPA TajikNIIGIM;
Mr. B. Samadov: Head of Administration of Investments and Foreign Economic Relations, MAWR;
Mr. F.R. Dadaboev: Head of Administration of the International and Legal Relations and Protection of the Economic Interests, the Ministry of Justice;
Mr. N. Izatov: Deputy Head of the Department for Monitoring of the Sectors of Economy, the Ministry of Finance;
Mr. Z.B. Safarov: Adviser of Administration on the CIS, the Ministry of Foreign Affairs

and then submitted to the key ministries and institutions for official approval.

Approvals were obtained from:

- The Ministry of Economy and Trade of the Republic of Tajikistan (#11/5-627, 08.11.06);
- The Ministry of Amelioration and Water Resources of the Republic of Tajikistan (#1-1374, 09.11.06);
- The State Committee for Environment Protection and Forestry of the Republic of Tajikistan (#1088/17, 09.11.06).

Further steps envisage submission of the "road map" and rationale to the international agencies at the final regional seminar #2 "Speedup of IWRM – 2005 Objectives Implementation in Central Asia" (29-30.11.06, Tashkent). Based on the results of discussions at this seminar these documents together with the protocol of seminar and letters of approval from the key ministries and institutions will be submitted to the Government of the Republic of Tajikistan to make decision on practical implementation of these activities.

"ROAD MAP"
OF PLANNED ACTIVITIES ON TRANSITION TO THE INTEGRATED WATER RESOURCES MANAGEMENT (IWRM) IN THE REPUBLIC OF TAJIKISTAN

No	Necessary Actions	Objective and Tasks	Realization Time	Responsible Executors	Source of Financing
1. CREATION OF THE LEGISLATIVE AND POLITICAL ENVIRONMENT FOR THE STAGED TRANSITION TO IWRM					
The Essential Period (2007-2008)					
1.1	Elaboration of strategy for development of water sector of the Republic of Tajikistan	Identification of the priority directions for development of the national and interstate water policy of the Republic	**2007-2008**	Ministries and Agencies	The International Grants and the Republican Budget
1.2.	Improvement of the legislative basis of water sector	Adaptation of water sector of the Republic of Tajikistan to the new socio-economic conditions and speedup of this process on the basis of transition to the IWRM	**2007-2008**	Ministries and Agencies	The International Grants and the Republican Budget
1.3.	Development, coordination and approval of the Concept and National IWRM plan of the Republic of Tajikistan	Identification of the current situation and main problems of the water resources management system in Tajikistan and possible ways for solution of these problems in the context of socio-economic reformations. Development of complex of measures aimed at implementation of IWRM principles in Tajikistan in pursuance of the Paragraph 26 of the Plan for implementation of proposals of the World summit on sustainable development in Johannesburg (September 2002) (WSSD).	**2007-2008**	Ministries, Agencies, WUAs, NGOs	The International Grants
1.4.	Improvement of the normative and legislative acts for execution of the Water Code of the Republic of Tajikistan	Creation of the normative and legal basis for realization of the integrated water resources management principles in the Republic of Tajikistan	**2007-2008**	Ministries and Agencies	The International Grants and the Republican Budget
The Mid-term Period (2007-2012)					
1.5.	Development, improvement and implementation of pricing policy and economic incentives in water use.	Identification of the actual economic parameters (supply and demand, solvency, water delivery cost, etc.) for various categories of water users in regard to water delivery services. Ensuring of financial independence and interest in	**2007-2012**	Ministries and Agencies	The International Grants and the Republican Budget

No	Necessary Actions	Objective and Tasks	Realization Time	Responsible Executors	Source of Financing
		water saving.			
The Long-term Period (2007-2025)					
1.6.	Development and improvement of market mechanisms for water use	Transition to the contracting system of water delivery and disposal services and the other works and services in the water sector. Increase efficiency of operations.	**2007-2015**	Ministries and Agencies	The Republican Budget and International Grants
1.7.	Realization of the National IWRM plan in the Republic of Tajikistan.	Ensuring the sustainable development through transition to the integrated water resources management system.	**2007-2016**	Ministries and Agencies	The International Grants and the Republican and Local Budgets
2. MANAGERIAL CAPACITY BUILDING					
The Essential Period (2007-2008)					
2.1.	Establishment of the State Committee for Water Coordination (SCWC).	Capacity building for water resources management and carrying out the unified state policy in rational use and protection of water resources at the national and international levels.	**2007-2008**	Ministries and Agencies	The Republican Budget
2.2.	Development of the political measures aimed at structural reorganizations in water sector of Tajikistan along with establishment of the specialized agencies for realization of the IWRM principles.	Managerial capacity building for increasing steerability of water resources at all levels of water hierarchy, productivity of water resources use, and stability and equability of water distribution.	**2007-2008**	Ministries and Agencies	The Republican Budget and International Grants
2.3.	Establishment and organization of the Tajikistan's National Water Partnership within the framework of realization of the Global Water Partnership (GWP) plans.	Assistance to the process of water policy and strategy development, which include the main IWRM principles, involvement of public in water resources management process, dissemination of knowledge about IWRM.	**2007-2008**	Ministries, Agencies, and NGOs	The International Grants
The Mid-term Period (2007-2012)					

No	Necessary Actions	Objective and Tasks	Realization Time	Responsible Executors	Source of Financing
2.4.	Establishment of the National water/energy and ecological Information Center.	Information capacity building for increasing degree of steerability (operational efficiency, forecasting, planning, decision making, etc.) of water, energy and land resources.	**2007-2010**	Ministries and Agencies	The Republican Budget and International Grants
2.5.	Establishment of the National and Basin Water Councils.	• To ensure the efficient coordination of interaction amongst all stakeholders and water use entities; • To ensure collectivity and transparency of procedures for making the strategically important managerial decision in order to prevent the sectoral monopolism and corruption; • To improve procedure for the managerial decisions approval; • To cut down the state expenses for maintenance of management bodies.	**2008-2011**	The State Committee for Water Coordination (SCWC), Ministries and Agencies, WUAs and NGOs	The Republican Budget and International Grants and Projects
The Long-term Period (2007-2025)					
2.6.	Development and realization of programs aimed at improvement of education and increase of awareness and knowledge about the rational use and protection of water resources.	Increase of level of public awareness about use and conditions of water bodies and methodologies for the rational use of the natural resources. Preparation of highly qualified specialists.	**2007-2025**	Ministries, Agencies and NGOs	The Republican Budget and International Grants
3. THE TECHNICAL AND TECHNOLOGICAL MEASURES					
The Essential Period (2007-2008)					
3.1.	Inventory of the technical conditions and certification of the water management systems and structures of the Republic of Tajikistan.	Improvement of operational reliability of the irrigation and drainage systems and structures, and mitigation of threats associated with water.	**2007-2008**	Ministries and Agencies	The Republican Budget and International Grants
The Long-term Period (2007-2025)					

No	Necessary Actions	Objective and Tasks	Realization Time	Responsible Executors	Source of Financing
3.2.	Development of the Basin Master Plans for use and protection of water resources.	Identification of priorities, planning, forecasting and ways for improving efficiency of water resources use at the level of basins and sub-basins.	**2008-2015**	The SCWC, Ministries, Agencies, Basin Councils and Water Administrations	The Republican Budget and International Grants
3.3.	Rehabilitation of the national system for hydro-meteorological and hydrological monitoring over conditions of water resources.	To ensure observations, inventory, assessment, forecast, management and control over water resources conditions in the Republic of Tajikistan	**2007-2015**	Ministries and Agencies	The International Investment Projects
3.4.	Rehabilitation of irrigation and drainage systems and structures and improvement of irrigation technologies	To increase efficiency and productivity of water and land resources use.	**2006-2016**	Ministries and Agencies	The International Investment Projects and Local Budget
3.5.	Rehabilitation (reconstruction) of wastewater treatment systems.	Reduction of the polluted flow disposal into water bodies	**2006-2020**	Ministries, Agencies, and the Local Authorities	The Local Budget and International Projects
3.6.	Development and introduction of water saving technologies in all sectors of economy.	Ensuring rational use of water resources and their protection at all levels of water hierarchy.	**2010-2025**	The Local Authorities, Ministries, Agencies, WUAs and Business Structures	Private and International Investments

THE REPUBLIC OF TAJIKISTAN

RATIONALE OF THE ESSENTIAL ACTIVITIES ON TRANSITION TO THE INTEGRATED WATER RESOURCES MANAGEMENT

Subject 1: CREATION OF THE LEGISLATIVE AND POLITICAL ENVIRONMENT FOR TRANSITION TO THE INTEGRATED WATER RESOURCES MANAGEMENT (IWRM)

Activity 1.1

Elaboration of strategy for development of water sector of the Republic of Tajikistan

Objectives: Identification of the priority directions for development of the national and interstate water policy of the Republic of Tajikistan.

Rationale:

Necessity and tasks of strategy that is being developed are determined by current conditions in the Republic of Tajikistan. Tajikistan is located in the Aral Sea basin with two main transboundary rivers of Amudarya and Syrdarya. Therefore, development and subsequent realization of the Strategy for water sector of Tajikistan will be a concrete contribution to implementation of the Specific Actions Program for improvement of ecological and socio-economic situation in the Aral Sea basin for the period 2003-2010 (ASBP-2). This program was approved by the Board of the International Fund for the Aral Sea on 28.08.2003, in Dushanbe. It is aimed at achieving of the positive regional effect.

As for any other country, the sustainable development of Tajikistan is determined by the efficiency of use of the available natural, water, land, mineral, energy and the other resources, as well as human capacity. The significant reserves of water, hydropower and recreational resources, and the limited land resources determine subsistence and economic development of the country. From this viewpoint the problems of water resources, their integrated management, conditions of water sector infrastructure and perspectives of its development oriented on economic growth and reduction of poverty level in Tajikistan will be discussed in this document.

The strategy will be elaborated on the basis of the Program for economic development of the Republic of Tajikistan for the period up to 2015, Concept of rational use and protection of water resources of the Republic of Tajikistan, Concept of energy sector development in the Republic of Tajikistan, Report on capacity needs assessment for achievement of the Millennium Development Goals in Tajikistan, and the other development programs approved by the government of the Republic of Tajikistan, and also taking into account the accomplished international projects and legislation of the Republic of Tajikistan.

Approach:

Elaboration of water sector development strategy of the Republic of Tajikistan will be carried out by the working group approved by the Government of the Republic of Tajikistan.

The sectoral approach to the branches of water management complex will be used for elaboration of the Strategy. The Strategy will comprise the strategic tasks and ways for their solution in the area of water resources management and development, urban and rural municipal and drinking water supply and sanitation, industrial water supply and pollution control, irrigation and drainage, hydropower, environmental issues, as well as control over flooding and readiness to undertake measures against the natural disasters.

Institutional development, legal basis, economic tools, regulation through tariff, rehabilitation and further development will be proposed for each of the considered sectors.

The conception of the Strategy for Water Sector itself is considered as a guiding idea and general plan for achievement of the planned objectives with specification of financial possibilities in the context of the objectives, concepts and development programs approved by the Government of the Republic of Tajikistan.

Realization Time:
12 Months

Responsible Executors:

Ministries and Agencies
Results: Realization of Strategy will facilitate the sustainable development of Tajikistan and achievement of the Millennium Development Goals adopted by the world community at the Johannesburg Summit in 2002. Strategy for water sector will create the reliable basis for ensuring rational and efficient use of water resources with maximum possible and balanced benefits for all water users and minimum adverse impact on environment.
Necessary Resources: Estimated number of man-months: ____ man-months. Planned contribution from the Republic's budget: USD 8 thousand Planned contribution from potential sponsors: USD 120 thousand

Activity 1.2 **Improvement of the legislative basis of water sector**
Objectives: Adaptation of water sector of the Republic of Tajikistan to the new socio-economic conditions and speedup of this process on the basis of transition to the IWRM. Improvement of the current laws and bylaws and development of the new ones for transition to the IWRM.
Rationale: The current legislative basis of the Republic of Tajikistan regulating activities in water sector was established during Soviet time at the beginning of transition towards market economy. The existing management structure of water sector was created in the conditions of the command-administrative economic system. For sustainable operation of water sector of the Republic of Tajikistan in the market conditions the radical reformation of its management is essential. This reformation is held back due to imperfection of the current legislation. Over the past six years since adoption of the Water Code of the Republic of Tajikistan many of its new articles are not implemented yet. At the same time macro and micro-economic conditions were changed, and thinking of society and the country's leadership in the direction of deepening of reforms in economy management evolved. These changes facilitated the necessity for introduction of the relevant amendments to some chapters and articles of the Water Code. It is obvious that development of water and other laws in the conditions of transition period will be going on along with changes and development of economic and social relationships. First of all these changes will affect issues associated with ownership rights to water structures, transition to the basin principle of water resources management, regulation of economic relationships in water sector, as well as differentiation of functions between the governmental authorities dealing with management and protection of water resources, and also the other amendments, clarification and further development in accordance with the gaining experience. In the conditions of market economy the clear legal identification of the ownership rights is the basis for successful operation of each organization. This is also applicable to water sector. Over the recent years, the issue associated with ownership rights in water sector develops towards privatization of the small scale water structures, especially the on-farm boreholes and pumping stations. There is no point now to prohibit to farmers to construct boreholes and pumping stations on their own territories, but this issue should be regulated in accordance with the relevant standards and norms. Gradually became obvious that free of charge transfer of the on-farm irrigation and drainage systems to the newly established water user associations is expedient.

Approach:

Working group comprising the qualified specialists will carry out:

- Studies and assessments of the existing water management structures of the Republic of Tajikistan, as well as the main documents regulating activities of the water management organizations (laws, bylaws, provisions and the other normative documents);
- Studies of water management systems in the developed countries, as well as in the countries which are in transition to market economy and with the nature conditions similar to those of Tajikistan;
- Development of proposals for introduction of changes and amendments to the current legislation of the Republic of Tajikistan, as well as a new laws and their submission to the Government and Parliament of the Republic of Tajikistan for consideration and decision making.

Realization Time:
18 Months

Responsible Executors:
Ministries and Agencies of water sector

Results:
Improvement of the current and development of new laws and bylaws will create the necessary conditions for successful implementation of water and land reforms aimed at introduction of new efficient forms of farming in agricultural and water sectors of economy, which are adequate to needs of the market economy development and reduction of poverty level. In general the reliable legal basis for transition to the IWRM will be created.

Necessary Resources:
Estimated number of man-months: ___ man-months.
Planned contribution from the Republic's budget: USD 10 thousand
Planned contribution from potential sponsors: USD 160 thousand

Activity 1.3.
Development, coordination and approval of the Concept and National IWRM plan of the Republic of Tajikistan.

Objectives:

a. Identification of the current situation and main problems of the water resources management system in Tajikistan and possible ways for solution of these problems in the context of socio-economic reformations;
b. Development of complex of measures aimed at implementation of IWRM principles in Tajikistan in pursuance of the **Paragraph 26** of the Plan for implementation of proposals of the World summit on sustainable development in Johannesburg (September 2002) (WSSD).

Rationale:

The following conditions justify the necessity for development of the National IWRM plan:

- Water resources experience the increasing anthropogenic pressure from growth of population, economic activities and competition for water amongst various water users. Water intake increases in accordance with growth of population;
- More and more intensive development causes increase of environmental impact;
- Concernment with the current climate change requires improvement of water resources management in order to withstand flooding and droughts;
- Sectoral approaches to water resources management predominate as in the past and lead to uncoordinated use of water resources, inefficiency of which is more and more obvious;
- Out of 600 collective and state farms existed in Tajikistan more than 400 were already reformed and replaced by more than 40,000 private farms. In general, the on-farm irrigation and drainage systems are managed inefficiently. At the national level the water resources management is a structure inherited from the command-administrative system where changes just began in accordance with the market relationships. Along with the relatively high level of the inter-farm water management, the on-farm water use remains at poor level;
- The integrated water resources management (IWRM) envisages harmonization of all the main factors affecting the efficient management and use of water, land, energy and the other resources

taking into account the political, legal, economic, financial, technical, managerial, social and the other aspects at various levels of sectoral and administrative hierarchy in order to ensure sustainable economic development and social well-being of population.

Approach:

Working group comprising the qualified specialists will carry out:

- study of experience and methodology for development of the national IWRM plans in the other countries where conditions similar to Tajikistan's ones;

- preparation of system and successive programs, tasks and work schedules for development of components of the IWRM plan;

- institutional studies in water sector;

- informing about and support to the IWRM process from stakeholders;

- monitoring and evaluation of the IWRM implementation process;

- development of information network, carrying out seminars, etc.;

- realization of the main IWRM principles and actions plan in the selected pilot river basin;

- establishment of the new water resources management structures;

- development, publication and dissemination of the special recommendations on transition to the IWRM.

Realization Time:
24 Months

Responsible Executors:
Ministries, Agencies, WUAs and NGOs

Results:
The integrated water resources management (IWRM) ensures actual equality of all water users, coordination of water use in all sectors of economy, and also participation of beneficiaries, transparency and profitable local management.

The National IWRM plan is aimed at achievement of the following results:

1. Managerial capacity building on the basis of participation of all stakeholders and social mobilization of public;
2. Capacity building of water management organizations and WUAs established in the pilot systems with potential expansion and replication of experience all over the country (communication network, information system, education system, set of models);
3. Establishment of water management organizations within the hydrographic boundaries;
4. Creation of reliable and trustworthy legal and economic basis that includes mechanisms for resolution of conflicts;
5. Organization of the efficient system for delivery and distribution of water;
6. Perspective opportunities for efficient use and protection of water resources.

Necessary Resources:
Estimated number of man-months: ___ man-months.
Planned contribution from the Republic's budget: USD 20 thousand
Planned contribution from potential sponsors: USD 680 thousand

Activity 1.4
Improvement of the normative and legislative acts for execution of the Water Code of the Republic of Tajikistan.

Objectives:
Creation of the normative and legal basis for realization of the integrated water resources management principles in the Republic of Tajikistan.

Rationale:
For sustainable operation of water management complex of Tajikistan in the market conditions the radical reformation of management is required that is restrained due to imperfection of the current legal and

normative basis. The Water Code is in force since 2000, but its main provisions are not being realized due to lack of the appropriate mechanisms and norms (tools) that should comprise the normative and legislative basis of water management complex. Water resources management is carried out mainly by the command-administrative methods, transition to the hydrographical principles of management is still at the level of plans and elaboration. At the present moment the operational, managerial, technical, economic and ecological issues of management are not resolved to full extent and highly efficient and productive use of water resources are not achieved. The insufficient normative and legislative basis delays realization of the integrate water resources management in the country.

Approach:

Creative team comprising the qualified specialists and scientists will carry out:

- Development of the action plan (programs, terms of reference, work schedules, etc.) for fulfillment of the objectives and tasks of project;
- Study the current normative and legislative basis of water sector and its adequacy to practice.

Action plan for development and improvement of the normative and legislative basis of the water management complex will be approved by the Government of the Republic of Tajikistan. This work will be organized in the consistent, systematic and collegiate manner with participation of public and stakeholders. Seminars, round tables and public hearings will be organized.

The following draft decrees of the Government of the Republic of Tajikistan will be developed:

1. Procedure for transfer of management rights to water infrastructure to the local and foreign legal entities on the contractual basis;
2. Plan (A) and procedure (B) for the staged transition to the basin water resources management system. Identification of boundaries and development of the structural models (B) of the basin water management organizations (BVO, BVA, Water District, Water System, etc.);
3. On procedure for introduction of the State Inventory of the Water Management objects of the Republic of Tajikistan;
4. On procedure for establishment and use of Water Fund, approval of water use norms and limits;
5. On procedure for development and approval of the Master plan of integrated water resources use and protection in the Republic of Tajikistan;
6. On the state support to the development in the area of drinking water supply;
7. On procedure for compensation of damages caused to the physical and legal entities, owners of the water management objects;
8. On procedure for privatization of the water sector objects;
9. On procedure for involvement of water users in implementation of the irrigation and ameliorative works.

Improvement of the normative basis of water sector will be carried out in respect to the following aspects:

a) development of the rough norms of costs for operation, and capital repair of the inter-farm irrigation and drainage systems and structures;
b) development of mechanisms for improvement of water use efficiency on the basis of introduction of the differentiated tariffs;
c) development of criteria for assessment of water structures importance from the viewpoint of their inclusion in the State Inventory of water management structures.

Realization Time:

12 Months

Responsible Executors:

Ministry of Amelioration and Water Resources

Results:

Strengthened the normative and legislative basis of water management complex that will be acceptable for the staged transition to the integrated water resources management principles. In general, the capable operational service will be created, economic, technical and managerial issues resolved, rational use of water ensured, and productivity of water and land resources use increased.

Necessary Resources:

Estimated number of man-months: ___ man-months.
Planned contribution from the Republic's budget: USD 5 thousand
Planned contribution from potential sponsors: USD 70 thousand

Subject 2. MANAGERIAL CAPACITY BUILDING

Activity 2.1.
Establishment of the State Committee for Water Coordination (SCWC).

Objectives:
Capacity building for water resources management and carrying out the unified state policy in rational use and protection of water resources at the national and international levels.

Rationale:
Currently the Government of the Republic of Tajikistan identified four specially authorized state agencies for regulation of water resources use and protection: the Ministry of Amelioration and Water Resources (in the area of irrigation); the State Committee for Nature Protection and Forestry (excluding irrigation); Tajikglavgeology (underground waters); Gosgortechnadzor (underground thermal and mineral waters).

There are a number of sectoral and intersectoral problems:

- Lack of coordination amongst water users of agricultural sector, energy and environment needs;
- Lack of precise mechanisms for mutual settlements between suppliers and users of water;
- Planning of water resources distribution is based on sharing of available water without proper consideration of economic, social and ecological impacts;
- Administrative and hydrographical boundaries are not always coincide; there are a lot of difficulties in regard to material and technical supply, planning, operation and maintenance of water delivery systems;
- Development and use of lands are hampered due to poor investment support;
- Around 59% of population has access to the tapped drinking water supply, that of in the rural areas is only 47%. Around 25% of population uses a poor quality drinking water from irrigation canals. Events of water-borne diseases are very frequent and their number is increasing;
- There is no detailed plan of investment activities in water management sector. As a result, it is difficult to coordinate activities on rehabilitation/reconstruction of water infrastructure;
- On-farm irrigation and drainage systems are not transferred with ownership rights to farmer-water users. Therefore, there is no practically management and maintenance of these systems, and they are currently in a very poor technical conditions.

Approach:

In order to involve water users from water sector into management process it is proposed to establish the State Committee for Water Coordination (SCWC). The main function of this committee is coordination of activities in water sector and establishment of water policy. The Committee should comprise representatives of the following stakeholders: the Ministry of Amelioration and Water Resources, Ministry of Energy, State Committee for Nature Protection and Forestry, and river basin organizations. This Committee will be subordinated to the Government of the Republic of Tajikistan. Establishment of the State Committee for Water Coordination (SCWC) will be carried out by working group. This working group will work out the new institutional structure, provisions on the SCWC, specifying its rights and obligations, and procedure for the intersectoral interaction.

Realization Time:
12 Months

Responsible Executors:
Ministries and Agencies of water sector

Results:
The unified state water policy aimed at the rational use and protection of water resources at the national and international levels will be ensured. Sustainability of water distribution system based on the water law will be improved.

Necessary Resources:
Estimated number of man-months: ___ man-months.
Planned contribution from the Republic's budget: USD 5 thousand
Planned contribution from potential sponsors: USD 80 thousand

Activity 2.2.
Development of the political measures aimed at structural reorganizations in water sector of Tajikistan along with establishment of the specialized agencies for realization of the IWRM principles.

Objectives:
Managerial capacity building for increasing steerability of water resources at all levels of water hierarchy, productivity of water resources use, and stability and equability of water distribution.

Rationale:
During the process of water management complex reformation, change of functional tasks of the management structures and interrelations between water suppliers and users, transition to fully chargeable water use and new methods of management, the need for establishment of the specialized organizations for implementation of the IWRM principles was revealed. The need for establishment of new structures is determined by the following circumstances:

- Insufficient control over water use; poor water metering; non-observance of agreements between water suppliers and users; violation of irrigation schedules and ecological requirements.
- Insufficiency of methodological, normative and legislative basis for establishment of WUAs, lack of the special standard recommendations and state support to WUAs (apart from WUAs established within the framework of IDA, ADB, and IWRM-Fergana projects), and advisory services;
- Lack of the State inventory of water structures with the systematized data of inventory and certification. Need for improvement of the procedure for licensing of the specialized water use. Lack of the approved mechanisms for integrated water resources management of the international water bodies. Complications with preparation of the annual water cadastre;
- Lack of unified sectoral program on investments, ranked by priorities, poor international interaction. Deficiency of highly qualified specialists in the area of the water law.

Approach:
On the basis of system approach the working group comprising the qualified specialists will carry out the following actions:
- Development of program and selection of tools for realization of the planned tasks;
- Analysis and assessment of the existing situation in the structural reformations;
- Assessment of the institutional reforms in the developed countries and their applicability in the conditions of Tajikistan;
- Development of provisions for the newly establishing structures, identification of their functional responsibilities, staffing and procedure for interrelationships with the other structures;
- Coordination and approval of provisions. Managerial and technical support to establishment of the new structures and improvement of old ones.

Realization Time:
12 Months

Responsible Executors:
Ministries and Agencies of water sector

Results:
Relationships between water suppliers and users will be regulated, and control over water use arranged. Process of the WUAs establishment will be accelerated and productivity of land and water resources use increased. Development of the national and international water relationships and also water law will get an impulse. Management, use and protection of water resources will advance to the market conditions and the IWRM principles.

Necessary Resources:
Estimated number of man-months: ___ man-months.
Planned contribution from the Republic's budget: USD 9 thousand
Planned contribution from potential sponsors: USD 140 thousand

Activity 2.3.
Establishment and organization of the Tajikistan's National Water Partnership within the framework of realization of the Global Water Partnership (GWP) plans.

Objectives:
Assistance to the process of water policy and strategy development, which include the main IWRM principles, involvement of public in water resources management process, dissemination of knowledge about IWRM.

Rationale:
At the World Summit on Sustainable Development in Johannesburg in 2002, the Leaders of the world countries called on all the countries to "….. achieving of implementation target of "Integrated Water Resources Management and Efficiency Plans by 2005". In accordance with this call the main objective of the Global Water Partnership (GWP CACENA) is to facilitate realization of the IWRM principles in Central Asia. This objective should be achieved through involvement of public in the decision making process, changing of political will towards cooperation, initiating dialog amongst all stakeholders and supporting practical actions aimed at realization of the IWRM principles.
Political and legal basis for development of the country's water sector in the current conditions is the legislative and program documents adopted by the Government of the Republic of Tajikistan.
Efficient water resources management is the important factor in development of economy. In the Governmental document "Progress in achievement of the Millennium Development Goals in the Republic of Tajikistan" (2003) introduction of the integrated water resources management principles is specified amongst the main goals for achievement of sustainable development. This is the enabling political environment for introduction of the IWRM principles in Tajikistan. These provisions were taken into consideration in the developed draft "Law on WUAs" and amendments to the Water Code of the Republic of Tajikistan.
Gradual steps towards reformation of water sector, including introduction of the IWRM principles and approaches in Tajikistan are in general identified by the Strategy for reduction of poverty, approved by the Parliament in June 2002.
Need for establishment of the national water partnership is identified by lack of the target public and governmental structures, which will be dealing directly with the IWRM issues and involvement of public in this process.

Approach:

In order to achieve the objectives the following actions will be implemented:

- Working group will be created for establishment of the national water partnership. This group will develop provisions, programs, constituent instruments, structure of the partnership's network and carry our registration in the Ministry of Justice;
- Realization of the planned tasks will be carried out through: organization of the political dialog on use of the IWRM at the national level (in the form of intersectoral seminars and round tables); support to the public awareness campaign; coordination of the joint actions with the ongoing projects in the republic, cooperation with ToolBox for its practical use; dissemination of knowledge about the IWRM concept; organization of training seminars; cooperation with programs of the EC IFAS, ICWC, GENDER, VEKCA, REC (Regional Ecological Center), and others; joint actions with the regional and national non-governmental organizations (NGOs); creation and regular update of the National Water Partnership Internet site.

Realization Time:
12 Months

Responsible Executors:
Ministries, Agencies, local authorities, and NGOs

Results:
The National Water Partnership of Tajikistan will be established for the first time. In will facilitate implementation the integrated water resources management principles in the Republic of Tajikistan, and increase public role and its participation in the IWRM process.

Necessary Resources:
Estimated number of man-months: ___ man-months.
Planned contribution from the Republic's budget: USD 7 thousand
Planned contribution from potential sponsors: USD 160 thousand

Subject 3: THE TECHNICAL AND TECHNOLOGICAL MEASURES

Activity 3.1.
Inventory of the technical conditions and certification of the water management systems and structures of the Republic of Tajikistan.

Objectives:
Improvement of operational reliability of the irrigation and drainage systems and structures, and mitigation of threats associated with water.

Rationale:

- On the basis of certification of water structures on irrigation systems, analysis of their technical conditions, and the Program for economic development of the Republic of Tajikistan up to 2015, approved by the Government, measures aimed at implementation of the intended targets will be developed;
- Currently the fixed assets of irrigation and drainage systems are worn out by more than 50%, and in the area of lift irrigation this figure is up to 60%;
- Amongst the vulnerable structures are irrigation tunnels (their total length is 26 km), aqueducts, inverted siphons, reservoir dams, large pumping stations, main canals, etc. These structures are mainly of inter-rayon importance. For instance, failure of only one inverted siphon "Laikasai" on the canal "Right Branch" in the Yavan-Obiliy valley has left three rayons without water during 46 days causing huge losses. In this situation failure to undertake measures may lead to the secondary desertification of lands.

Approach:
Working group, approved by the Government will carry out analysis of technical conditions and certification of irrigation and drainage systems by the following group/types of structures:

- Water structures;
- Pumping stations and vertical drainage wells;
- Collector and drainage network;
- Land amelioration (degree of drainage, degree of soil salinization, etc.).

The short-, mid-, and long-term measures aimed at rehabilitation and modernization will be proposed for each type of these structures. Realization of these measures will ensure the reliable operation of irrigation and drainage systems and stable water delivery to water users, and therefore, improve efficiency of water and land resources use.

Realization Time:
18 Months

Responsible Executors:
The Government of the Republic of Tajikistan
Ministry of Amelioration and Water Resources

Results:

- Reliable operation of water structures;
- Improved water metering;
- Increased crop yields;
- Timely distribution of water and agricultural information amongst water management organizations, WUAs and farmers;
- Improved ecological situation;
- Irrigation water saving;
- Reduction of poverty level amongst rural population.

Necessary Resources:
Estimated number of man-months: ___ man-months.
Planned contribution from the Republic's budget: USD 11 thousand
Planned contribution from potential sponsors: USD 190 thousand

Note: Estimated requirement of financial resources includes involvement of the international consultants.

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Annex d3

Global Water Partnership Central Asia and Caucasus

UNEP Collaborating Centre on Water and Environment
UCC-Water

"ROAD MAP"
PLANNED STEPS TOWARDS REALIZATION OF THE INTEGRATED WATER RESOURCES MANAGEMENT PRINCIPLES
and
RATIONALE OF THE ESSENTIAL ACTIVITIES
IN THE REPUBLIC OF UZBEKISTAN

TASHKENT – 2006

INTRODUCTION

The presented "road map" and rationale of the essential activities are the output of work of the national expert of UCC Water project in the Republic of Uzbekistan and the National Group on Coordination and Support to the "IWRM – Fergana" project (NGCS IWRM), created at the end of 2005, within the framework of "IWRM-Fergana" project (SIC ICWC[27] – IWMI[28] under the SDC[29] sponsorship). Experience and lessons learned by these specialists in introduction of the IWRM principles in the pilot objects of the "IWRM-Fergana" project have allowed them to work out the draft "road map" and rationale of the essential activities.

This "road map" describes process of the staged transition from vision to the IWRM plan. In the initial stage of the "road map" development the status of the national water resources management and the main provisions of the long-term program for water resources development in the Republic of Uzbekistan[30] have been assessed from the IWRM principles viewpoint in the context of the current socio-economic situation and taking into account the national vision of IWRM.

42 representatives from the key ministries and institutions, representatives of UNDP, Japan International Cooperation Agency, and representatives of the projects being implemented in Uzbekistan with support from the international agencies participated in the Seminar #1 "Issues of intersectoral interaction in water use and transition to the integrated water resources management" (29.04.06, Tashkent). The following main issues were reflected in the reports and presentations made by the members of the National Group on Coordination and Support to the IWRM and in the discussions at the seminar:

- Further development of reformation that begun in the Republic in the area of water resources management and use and hydrographical management principle;
- Transition to the chargeable water use in the Republic's irrigated agriculture;
- Coordination between priorities of hydropower and the IWRM system;
- Legal basis of establishment and state support to the WUAs;
- Aquatic ecosystems conservation;
- Provision of the IWRM system with the reliable hydro-meteorological and environmental information.

The participants of the seminar decided to entrust the national consultant to the UCC-Water jointly with the National Group on Coordination and Support to the Integrated Water Resources Management with preparation of the draft "road map" of activities aimed at transition to the IWRM for subsequent presentation of this draft at the regional seminar #1.

The draft national "road map" was discussed at the regional seminar on the subject "Speedup of IWRM – 2005 Objectives Implementation in Central Asia" (27-28.07.06, Bishkek). During discussions (which were continued at the joint UNEP and GWP seminar on methodology for managerial capacity building on 30-31.07.06) participants of the seminar made the constructive comments and proposals on the presented draft national "road maps" (need to stress the improvement of water use productivity, prepare rationale of the essential activities, social mobilization of stakeholders, etc.). The draft "road map" and rationale improved in accordance with these comments were discussed at the final national seminar #2 "Draft road map of the staged transition to IWRM in Uzbekistan and the necessary actions" (28.10.06, Tashkent) and submitted to the key ministries and institutions.

Approvals were obtained from:

- The Ministry of Agriculture and Water Resources of the Republic of Uzbekistan (#04/29-1520, 31.10.06);

[27] Scientific Information Center of the Interstate Commission on Water Coordination
[28] International Water Management Institute
[29] The Swiss Agency for Development and Co-operation
[30] National report of the Republic of Uzbekistan within the framework of UNEP on assistance and aid to the developing countries for achieving of implementation target of "Integrated Water Resources Management and Efficiency Plans by 2005"., GWP CACENA – UCC Water, Tashkent 2006, 26 pages.

- Uzbek Agency “UZKOMMUNHIZMAT” (#011-1/1233, 03.11.06);
- The Ministry of Higher and Secondary Education of the Republic of Uzbekistan (#84-02-1098, 06.11.06);
- The State Committee of the Republic of Uzbekistan for Nature Protection (#11-1539, 07.11.06);
- The Ministry of Economy of the Republic of Uzbekistan (#6-1/6-6-1404, 08.11.06);
- The Ministry of Justice of the Republic of Uzbekistan (#03-7952/6, 08.11.06);
- The Centre of Hydro-meteorological Service (Uzhydromet) under the Cabinet of Ministers of the Republic of Uzbekistan (#01-15/545, 09.11.06);
- The State Inspection “SANOATKONTEXNAZORAT” (#03-875, 09.11.06);
- The State Joint Stock Company “Uzenrgo” (#BA-01-21/2815, 10.11.06);
- The State Committee of the Republic of Uzbekistan on Geology and Mineral Resources (#04/1127, 10.11.06).

Further steps envisage submission of the “road map” and rationale to the international agencies at the final regional seminar #2 “Speedup of IWRM – 2005 Objectives Implementation in Central Asia” (29-30.11.06, Tashkent). Based on the results of discussions at this seminar these documents together with the protocol of seminar and letters of approval from the key ministries and institutions will be submitted to the Government of the Republic of Uzbekistan to make decision on practical implementation of these activities.

"ROAD MAP"
OF ACTIVITIES ON TRANSITION TO THE INTEGRATED WATER RESOURCES MANAGEMENT (IWRM)
IN THE REPUBLIC OF UZBEKISTAN

No	Necessary Actions	Objectives	Planned Realization Time	Responsible Executors	Expected Source of Financing
1. MANAGERIAL CAPACITY BUILDING					
The Mid-term Period (2007-2012)					
1.1	Development and approval of the Provisions on Public Councils for assistance in implementation of the IWRM principles, program of seminars aimed at explanation of the IWRM principles, organization of such seminars for the members of Councils of the various water hierarchy levels	Ensuring of public participation at the "bottom-up" levels in solution of all the fundamental issues associated with introduction of the IWRM principles	2007-2010	The Main Administration of Water Resources of the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan (MAWR MAWR RUz), Basin Irrigation Systems Management (BISM), Basin Councils, The Ministry of Justice	The Republican Budget, and International Grants
1.2	Managerial capacity building for improvement of water resources manageability, and coordination of the intersectoral activities in use of water resources	Capacity building of the authorized water resources management body	2007-2012	MAWR MAWR RUz, the Ministry of Economy, the Ministry of Justice, the State Committee on Geology and Mineral Resources, the State Committee for Nature Protection	The Republican Budget
1.3	Establishment of the National water and ecological Information Center	Identification of needs for information and strengthening of the informational capacity. Development of database and system for exchange of information on water resources conditions accessible to all stakeholders interested in the efficient and	2009-2014	MAWR MAWR RUz, the State Committee on Geology and Mineral Resources, the State Committee for Nature Protection, The Centre of Hydro-meteorological Service	The Republican Budget, Funds of the Main Water Users, and International Grants

No	Necessary Actions	Objectives	Planned Realization Time	Responsible Executors	Expected Source of Financing
		nature protective water resources management		under the Cabinet of Ministries of the Republic of Uzbekistan (Uzhydromet)	
1.4	Development and improvement of water resources management at the local level	Joint search and identification of ways favorable to development of the IWRM principles and their introduction in practice	2007-2012	MAWR MAWR RUz, Basin Irrigation Systems Management (BISM), Basin Councils, Uzbek Agency "UZKOMMUNHIZMAT", Oblast Khokimiyats	The Republican and Local Budgets
The Long-term Period (2007-2025)					
1.5	Realization of the National IWRM Plan, Introduction of the IWRM principles on the scale of Uzbekistan	Management system for ensuring sustainable development of society and environment needs	2009-2015	MAWR MAWR RUz, Basin Irrigation Systems Management (BISM), Basin Councils, the State Committee for Nature Protection, Uzbek Agency "UZKOMMUNHIZMAT", Oblast Khokimiyats	The Republican Budget, Funds of the Main Water Users, and International Grants
1.6	Improvement of education and increase of awareness about nature protective use of water resources	Preparation of highly qualified managers for realization of the water saving policy and protection of water resources. Encouragement and forming sense of responsibility for conservation of the natural resources for future generations	2007-2025	MAWR MAWR RUz, Basin Councils, the Ministry of Higher and Secondary Education, the Ministry of Justice, the Ministry of Economy, the State Committee for Nature Protection, Oblast Khokimiyats	The Republican Budget, Funds of the Main Water Users, and International Grants
2. CREATION OF THE LEGISLATIVE AND POLITICAL ENVIRONMENT FOR THE IWRM					
The Essential Period (2007-2009)					
2.1	Development of concept of the National Integrated Water Resources	Identification of the current situation and main problems of the water resources management system in Uzbekistan and	2007	MAWR MAWR RUz, the State Committee on Geology and Mineral Resources, the State	The Republican Budget, and International Grants

No	Necessary Actions	Objectives	Planned Realization Time	Responsible Executors	Expected Source of Financing
	Management Plan (IWRM) of the Republic of Uzbekistan	possible ways for solution of these problems in the context of socio-economic reformations		Committee for Nature Protection, the State Committee for Supervision over Safety in Industry and Mining, the State Joint Stock Company "Uzbekenergo", Uzbek Agency "UZKOMMUNHIZMAT"	
2.2	Development, approval and adoption of the Law "On Water User Associations"	To provide the appropriate legislative basis for the efficient operation of the WUAs. To undertake the necessary legislative procedures for approval of the Law on Water User Associations.	2007	***MAWR MAWR RUz,*** Basin Irrigation Systems Management (BISM), Basin Councils, the State Committee on Geology and Mineral Resources, the State Committee for Nature Protection, the Ministry of Justice, the Ministry of Economy	The Republican Budget, and International Grants
2.3	Development, approval and adoption of the "Water Code of the Republic of Uzbekistan"	Establishment of the unified normative/legislative basis for regulation of water relationships in the area of use and protection of water resources for the guaranteed and sufficient supply of the proper quality water for Uzbekistan's population and sectors of economy. Establishment of balance between protection of water resources and ever-increasing economic activities of the physical and legal entities.	2007-2008	***MAWR MAWR RUz, Basin Irrigation Systems Management (BISM), Basin Councils,*** the State Committee on Geology and Mineral Resources, the State Committee for Nature Protection, the State Joint Stock Company "Uzbekenego", the Ministry of Justice, the Ministry of Economy	The Republican Budget, and International Grants
2.4	Development, coordination and approval of the National IWRM plan of the Republic of Uzbekistan	Development of complex of measures aimed at implementation of IWRM principles in Uzbekistan in pursuance of the **Paragraph 26** of the Plan for	2007-2009	MAWR MAWR RUz, Basin Irrigation Systems Management (BISM), Basin Councils,	The Republican Budget, and International Grants

No	Necessary Actions	Objectives	Planned Realization Time	Responsible Executors	Expected Source of Financing
		implementation of proposals of the World summit on sustainable development in Johannesburg (September 2002) (WSSD).		the State Committee on Geology and Mineral Resources, the State Committee for Nature Protection, the Ministry of Justice, the Ministry of Economy, the State Committee for Nature Protection, "UZKOMMUNHIZMAT"	
The Mid-term Period (2007-2012)					
2.5	Development and broad introduction of the "water user pays" principle	Improvement of the efficiency, productivity, and discipline of water resources use. Improvement of the tariff policy	2007-2010	MAWR MAWR RUz, Basin Irrigation Systems Management (BISM), Basin Councils, the Ministry of Economy, the Ministry of Justice, Uzbek Agency "UZKOMMUNHIZMAT", Oblast Khokimiyats	The Republican and Local Budgets
2.6	Development and broad introduction of the "polluter pays" principle.	Decrease of water bodies and ecosystems pollution. Improvement of the tariff policy.	2007-2012	The State Committee for Nature Protection, Basin Irrigation Systems Management (BISM), Basin Councils, the Ministry of Justice, the Ministry of Economy, Uzbek Agency "UZKOMMUNHIZMAT", Oblast Khokimiyats	The Republican and Local Budgets
The Long-term Period (2007-2025)					
2.7	Improvement of the normative and legislative basis of integrated water resources management	Code of normative and legislative documents (bylaws) aimed at stability and efficiency of water management complex operation	2007-2015	***MAWR MAWR RUz,Basin Irrigation Systems Management (BISM), Basin Councils,*** the State Committee on Geology and Mineral Resources,	The Republican and Local Budgets

No	Necessary Actions	Objectives	Planned Realization Time	Responsible Executors	Expected Source of Financing
				the State Committee for Nature Protection, the Ministry of Justice, the Ministry of Economy, Uzbek Agency "UZKOMMUNHIZMAT",	
3. THE TECHNICAL AND TECHNOLOGICAL MEASURES					
The Essential Period (2007-2008)					
3.1	Inventory of the technical conditions and certification of the water management systems and structures, including objects of the interstate importance	Identification of complex of priority measures aimed at improvement of operational reliability of the irrigation and drainage systems and structures, and mitigation of threats associated with water	2007-2008	MAWR MAWR RUz, Basin Irrigation Systems Management (BISM), Basin Councils, the Ministry of Emergency Situations, Agency for supervision over safety of water structures, the State Joint Stock Company "Uzbekenergo" , Uzbek Agency "UZKOMMUNHIZMAT",	The Republican Budget, and Funds of the Main Water Users
The Mid-term Period (2007-2012)					
3.2	Development of the Basin Master Plans for use and protection of water resources. Development of the Master Plans for use and protection of water resources of the Republic of Uzbekistan	Selection of priorities in the context of socio-economic reformations in Uzbekistan, rationale of ways and methods for improvement of efficiency of water resources use taking into account the environment needs. Selection of priorities for achievement by Uzbekistan the Millennium Development Goals, rationale of ways and methods for improvement of efficiency of water resources use taking into account the environment needs and limitations for use of transboundary waters	2008-2012	MAWR MAWR RUz, Basin Irrigation Systems Management (BISM), Basin Councils, the State Committee on Geology and Mineral Resources, the State Committee for Nature Protection, the State Joint Stock Company "Uzbekenergo", Uzbek Agency "UZKOMMUNHIZMAT", the Ministry of Economy	The Republican and Local Budgets

No	Necessary Actions	Objectives	Planned Realization Time	Responsible Executors	Expected Source of Financing
3.3	Improvement and development of network for monitoring of surface and underground waters and ecosystems	Improvement of measurements quality and reliability of forecasts of water resources availability and quality	2008-2012	MAWR MAWR RUz, Basin Irrigation Systems Management (BISM), the State Committee on Geology and Mineral Resources, the State Committee for Nature Protection, Uzhydromet of RUz	The Republican and Local Budgets, Funds of the Main Water Users, and International Grants
The Long-term Period (2007-2025)					
3.4	Broad introduction of the improved irrigation application methods, and technologies for wastewaters treatment, including collector and drainage waters	Improvement of efficiency and productivity of irrigation, reduction of environment pollution.	2011-2025	MAWR MAWR RUz, Basin Irrigation Systems Management (BISM), Basin Councils, Uzbek Agency "UZKOMMUNHIZMAT", Oblast Khokimiyats, the State Committee for Nature Protection	Funds of Water Users

THE REPUBLIC OF UZBEKISTAN

RATIONALE OF THE ESSENTIAL ACTIVITIES (2007-2008) ON TRANSITION TO THE INTEGRATED WATER RESOURCES MANAGEMENT (IWRM)

Subject 2: CREATION OF THE LEGISLATIVE AND POLITICAL ENVIRONMENT FOR THE INTEGRATED WATER RESOURCES MANAGEMENT (IWRM)

Activity 2.1
Development of concept of the National IWRM Plan for the Republic of Uzbekistan

Objectives:

- Identification of the current situation and main problems of the water resources management system in Uzbekistan and possible ways for solution of these problems on the basis of the IWRM principles in the context of socio-economic reformations

Rationale:

In many countries transition to the Integrated water resources management is a response to the growing problems associated with the guaranteed and stable water supply to society and environment. In the conditions of growing population and reduction of river runoff these problems are aggravated year by year for Uzbekistan as well. The main ones are:

- Growing demand for foodstuff due to population growth;
- Increased competition between agriculture and the other sectors of economy;
- Inadequate access to the safe drinking water supply and sewerage systems, especially in the lower river reaches and tail parts of irrigation systems;
- Inadequate or deteriorated infrastructure;
- Low productivity of water and land;
- Deteriorating quality of water and environment (soil degradation, waterlogging and salinization).

Pendency of these problems at the present stage of the Uzbekistan's socio-economic development hinders the stable supply of water users and environment with water resources, as well as sustainability and reliability of execution of the following functions:

- Water supply to development of economy and social needs on the basis of equal rights to access to the reliable systems of water delivery and disposal;
- Ensuring conservation of the nature objects (rivers, lakes, reservoirs/ponds, and deltas) as the elements of landscape and the natural habitat;
- Prevention of catastrophic or emergency situations associated with water (flooding, mudflows, droughts, etc.).

Due to these problems and taking into account dependence of further economic growth and development on efficiency of water resources management, the purposeful reformation of the Uzbekistan's water sector on the basis of the IWRM principles is essential.

The first steps towards reformation of the Uzbekistan's water sector were made during the last five years, but they mainly affected management structures. They were not sufficiently supported by the appropriate legislative basis and managerial capacity and mainly affected irrigated agriculture.

The technocratic approach prevailed in the integrated water master plans that were developed in the past. They did not envisage participation of water users in the process of water resources management. The demands of ecosystems were definitely not taken into account to the sufficient extent.

All these drawbacks should be taken into consideration in development of concept of the National IWRM plan for the Republic of Uzbekistan in order to ensure its correspondence to the generally recognized definition of the ***integrate water resources management***[1] as:

[1] As definition the IWRM is the generally recognized philosophy of the World Water Commission, Global Water

The coordinated guidance, provision and financing of water services based on the broad participation of stakeholders within the framework of the approved strategies, laws, organizations and technologies, which will optimize the social and economic value of water, efficiency of its use and equal distribution of benefits, ensuring at the same time sustainability of the significant ecosystems.

Approach:

Working group comprising the qualified representatives of stakeholders will carry out:

- Inventory of water resources problems in Uzbekistan and associated management problems;
- Development of proposals for approaches to management, use, development, conservation, protection and control over the national water resources, managerial measures and strengthening of public participation in water resources management;
- Preparation of draft Concept.

In order to take into account interests of water users and the government in the Concept, consultations and discussions will be carried out with participation of representatives of the governmental bodies, public, international agencies and water users.
The developed and approved by the stakeholders Concept will be submitted to the Cabinet of Ministries for approval.

Realization Time:
Nine months from the beginning of the first year.

Responsible Executors:
The Main Administration of Water Resources of the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan (MAWR MAWR RUz),
Basin Irrigation Systems Management (BISM),
Basin Councils,
The State Committee on Geology and Mineral Resources,
The State Committee for Nature Protection,
The Uzbek Agency "UZKOMMUNHIZMAT",
The Ministry of Justice,
The Ministry of Economy

Results:
Adoption of Concept of the National IWRM Plan for the Republic of Uzbekistan

Necessary Resources:
Estimated number of man-months: 90 man-months.
Planned contribution from the Republic's budget: 15 million sum/USD 12 thousand
Planned contribution from potential sponsors: USD 40 thousand

Subject 2: CREATION OF THE LEGISLATIVE AND POLITICAL ENVIRONMENT FOR THE INTEGRATED WATER RESOURCES MANAGEMENT (IWRM)

Activity 2.2 Development, approval and adoption of the Law "On Water User Associations"

Objectives:
To provide the appropriate legislative basis for the efficient operation of the WUAs.
To undertake the necessary legislative procedures for approval of the Law on Water User Associations.

Rationale:
The main water user in the Republic is agriculture, share of which is more than 80% from the total water intake. The intensive process of the agricultural enterprises restructuring is ongoing in Uzbekistan. The private farms are formed on the basis of unprofitable and unpromising collective farms.
Sharp increase of water users' number has caused a necessity for establishment of appropriate structures which would carry out the on-farm water management and control over water distribution. The optimal solution of this problem is establishment of water user associations (WUAs) with involvement of public in the management processes and creation of the necessary conditions for the equitable and equal water delivery to water users at the lower level of water hierarchy, and efficient and productive use of water resources with minimization of the adverse impacts on environment.

Partnership, the 1-st and 2-nd World Water Forums, UNDP, FAO, World Bank, Asian Development Bank, OECD, European Union, IWMI, et al.

Currently more than 142 thousand private farms are united in 1388 Water User Associations, which deliver water and provide other services to farmers on the basis of agreements. However, status of the WUAs, their management structure, operational principles, etc. is not identified to full extent so far. Efficient operation of the WUAs is hampered due to lack of the appropriate legislative and legal basis. This determines a necessity for speedup of development and adoption of the Law of the Republic of Uzbekistan "On Water User Associations".

Approach:
Preparation and adoption of the law on WUAs will follow the usual legislative process (in accordance with the Law of the Republic of Uzbekistan "On the normative and legislative acts", dated 14.12.2000), including development of the necessary ancillary documents for the government (rationale for adoption of law, implementation strategy, etc.). After approval by the ministries and agencies concerned the draft law will be submitted to the Ministry of Justice for consideration and correction and finally it will be considered by the Cabinet of Ministries and the Oliy Majlis. After signature the law will be officially published and put in force.

Realization Time:
From the beginning to the end of the first year (12 months).

Responsible Executors:
MAWR MAWR RUz,
BISM,
Basin Councils,
The State Committee on Geology and Mineral Resources,
The State Committee for Nature Protection
The Ministry of Justice,
The Ministry of Economy

Results:
Adoption of the Law of the Republic of Uzbekistan "On Water User Associations"

Necessary Resources:
Estimated number of man-months: 72 man-months.
Planned contribution from the Republic's budget: 10 million sum / USD 8 thousand
Planned contribution from potential sponsors: USD 35 thousand

Subject 2: CREATION OF THE LEGISLATIVE AND POLITICAL ENVIRONMENT FOR THE INTEGRATED WATER RESOURCES MANAGEMENT (IWRM)

Activity 2.3 Development, approval and adoption of the "Water Code of the Republic of Uzbekistan"

Objectives:

Establishment of the unified normative/legislative basis for regulation of water relationships in the area of use and protection of water resources for the guaranteed and sufficient supply of the proper quality water for Uzbekistan's population and sectors of economy.

Establishment of balance between protection of water resources and ever-increasing economic activities of the physical and legal entities.

Rationale:

The current Law of the Republic of Uzbekistan "On water and water use" is the concentrated form of expression of the republic's water management policy (published on 06.05.1993). This Law does not directly mention the development/support to the IWRM Action Plan/Strategy, but the main sense of IWRM process in terms of "integrated, rational, efficient use of water resources" is included in the legal structure. Subsequently some elements in the direction to transition towards IWRM in Uzbekistan were included in the listed below Orders of the President and Decrees of the Cabinet of Ministries. These documents are bylaws that directly or indirectly regulate the various aspects of water relationships.

The Orders of the President of the Republic of Uzbekistan:

- "On important directions for deepening reforms in agriculture", dated 24.03.2003;
- "On improvement of economy management bodies", dated 22.12.2003.

The Decrees of the Cabinet of Ministries of the Republic of Uzbekistan:

- "On improvement of management system in water sector", No 320, dated 21.07.2003;
- "On improvement of activities of the Ministry of agriculture and water resources of the Republic of Uzbekistan", No 290, dated 28.06.2003.

However, the above mentioned Orders and Decrees mainly envisage only structural reorganizations of water management bodies within the Ministry of agriculture and water resources of the Republic of Uzbekistan, because the main water user is agriculture.

It should be stated that the Law of 1993, "On water and water use" was elaborated in the beginning of formation of the government management structures and development of the market mechanisms in economy. Although it played the certain positive role in the development of water relationships, this law does not meet the modern requirements in many aspects at the present stage of the socio-economic development of Uzbekistan.

Based on requirements to ensure conditions for sustainable development of Uzbekistan and taking into account the high dependence of the republic's economy on the properly regulated water relationships at all levels of water hierarchy, it is necessary to develop and adopt the "Water Code" as the legislative basis for implementation of the purposeful activities on staged solution of the following key tasks:

17. Practical ensuring of jurisdiction of the water management organizations within the hydrographical boundaries that corresponds to the IWRM principles and will allow making timely decisions on water management and provide water services without interference of the administrative and territorial bodies;
18. Integrated water resources management taking into account all types of water use within the hydrographical boundaries on the basis of the hydro-meteorological data analysis in the real time mode that takes into account water supply dynamics and use of water in various sectors of economy. Provision of this information in the user-friendly format for all water users;
19. Strategic planning of water use and consumption taking into account needs of the agricultural production, municipal and rural water supply, industry and environment, as well as the other water consuming sectors;
20. Practical decentralization of solutions on water management with transfer of management functions to the possibly lowest level (WUAs and their federations, Canal Councils), based on the country's legislation and with assistance from the Government to establishment and formation of the WUAs and their federations;
21. Gradual transition from the direct state management of water delivery towards it regulation by water sector, as well as its relationships with the other sectors of economy;
22. Gradual transition to management of the WUAs activities and then water sector organizations by the elective Councils with authorization to carry out water policy, establishment of rules and procedures on their respective water systems within the Uzbekistan's legislative basis;
23. Ensuring the necessary conditions that will allow farmers to pay full costs of operation and maintenance, as well as minor repair and improvement of all irrigation and drainage system within the WUA boundaries through adoption of measures on improvement of land and water productivity;
24. Ensuring of actual participation of Canal Councils, WUAs and their federations in formation of water policy and establishment of rules for water resources management.

Approach:

Preparation and adoption of the Water Code will follow the usual legislative process (in accordance with the Law of the Republic of Uzbekistan "On the normative and legislative acts" dated 14.12.2000), including development of the necessary ancillary documents for the government (rationale for adoption of Water Code, implementation strategy, etc.). After approval of the draft Water Code by the ministries and agencies concerned it will be submitted to the Ministry of Justice for consideration and correction and finally it will be considered by the Cabinet of Ministries and the Oliy Majlis. After signature the Water Code will be officially published and put in force.

Realization Time:

From the beginning of the first year to the end of the second one (24 months)

Responsible Executors:

MAWR MAWR RUz,
BISM,
Basin Councils,
The State Committee on Geology and Mineral Resources,
The State Committee for Nature Protection
The Ministry of Justice,
The Ministry of Economy

Results:
Adoption of the Water Code of the Republic of Uzbekistan

Necessary Resources:
Estimated number of man-months: 240 man-months.
Planned contribution from the Republic's budget: 20 million sum / USD 16 thousand
Planned contribution from potential sponsors: USD 80 thousand

Subject 2: CREATION OF THE LEGISLATIVE AND POLITICAL ENVIRONMENT FOR THE INTEGRATED WATER RESOURCES MANAGEMENT (IWRM)

Activity 2.4. Development, coordination and approval of the National IWRM plan of the Republic of Uzbekistan

Objectives:
Development of complex of measures aimed at implementation of IWRM principles in Uzbekistan in pursuance of the Paragraph 26 of the Plan for implementation of proposals of the World summit on sustainable development in Johannesburg (September 2002) (WSSD)

Rationale:
One of the reasons for development of the National IWRM plan for the Republic of Uzbekistan is the Declaration of the World Summit on sustainable development in Johannesburg (September 2002) that called on all the countries to "….. achieving of implementation target of "Integrated Water Resources Management and Efficiency Plans by 2005". Being the member of the UN the Republic of Uzbekistan thereby assumes commitments to develop such a plan and implement the IWRM principles in the Republic.

The National plan was not developed by 2005, but the IWRM principles were and being elaborated in the pilot irrigation system of the Southern Fergana Main Canal (SFMC) within the framework of the :IWRM-Fergana" project under the Swiss Development Cooperation Agency (SDC) sponsorship.

All vertical "stakeholders – high level decision makers" and various water using and consuming sectors of economy at the horizontal levels participate in testing and introducing the IWRM principles in the pilot objects of the SFMC. The significant contribution in the social and economic improvement of the rural population living conditions, increase of water resources management efficiency through the broad involvement of stakeholders, management restructuring and use of the operative management tools were demonstrated in these pilot objects. Although this project is of the local nature, there are no doubts that experience gained from its implementation, and analysis of its strengths and weaknesses will be useful for development of the national IWRM plan.

Approach:
Development of the IWRM plan will be based on the preliminarily developed Concept analyzing the current water resources problems in Uzbekistan and associated management problems. The ways for solution of these problems, roughly outlined in the Concept, will be developed in details in the plan as the measures facilitating implementation of the IWRM principles on the scale of the republic. Complex of the planned measures will envisage establishment of balance between supply and demand for water resources taking into account efficiency and productivity of water use, economic efficiency, equity, stability and ecological requirements.
The working group comprising the qualified specialists will carry out:

- Development on the basis of the approved Concept the complex of measures facilitating implementation of the IWRM principles on the scale of the republic;
- Preparation of the first version of the National IWRM plan for the Republic of Uzbekistan;
- Submission of the first version of the National IWRM plan to stakeholders for consideration and

comments and its revision in accordance with comments if necessary;
- Final approval of the National IWRM plan by the key ministries and agencies.

The National IWRM plan, approved by the key ministries and agencies, will be submitted to the Cabinet of Ministries for final approval.

Realization Time:
From the fourth quarter of the first year to the end of the first half of the third year (21 months)

Responsible Executors:
MAWR MAWR RUz,
BISM,
Basin Councils,
The State Committee on Geology and Mineral Resources,
The State Committee for Nature Protection,
The Uzbek Agency "UZKOMMUNHIZMAT",
The Ministry of Justice,
The Ministry of Economy

Results:
Adoption by the Cabinet of Ministries of the National plan for transition towards the IWRM and the strategy for transition towards the new principles of water resources management in the Republic of Uzbekistan.

Necessary Resources:
Estimated number of man-months: 600 man-months.
Planned contribution from the Republic's budget: 50 million sum / USD 40 thousand
Planned contribution from potential sponsors: USD 320 thousand

SUBJECT 3. THE TECHNICAL AND TECHNOLOGICAL MEASURES

Activity 3.1. Inventory of the technical conditions and certification of the water management systems and structures, including objects of the interstate importance

Objectives:
- Improvement of operational reliability of the irrigation and drainage systems and structures, and mitigation of threats associated with water

Rationale:
Since 1991, due to complicated economic situation experienced by Uzbekistan during the transitional period, share of investment in water sector was reduced almost by 5 times. Allocation of funds from the state budget for proper operation and maintenance of irrigation and drainage infrastructure was sharply reduced. Volume of works for reconstruction of canals and water structures was also significantly reduced.

The significant part of the irrigation and drainage infrastructure, comprising 27.4 thousand km of the main and 167.8 thousand km of the on-farm canals and structures, is outdated and worn out. Former on-farm irrigation and drainage infrastructure, that as a result of the state and collective farms subdivision into private ones became the inter-farm infrastructure, is transferred to the WUAs. This infrastructure is now in a poor technical conditions due to organizational and material/technical problems experienced by the majority of WUAs.

Almost half of the Republic's irrigated land area is supplied with irrigation water by pumping stations. The majority of these pumping stations are required modernization due to deterioration of equipment. Currently such a huge water structures as the Amu-Bukhara, Karshi, and Amuzang pumping station cascades with the main canals, and many large hydropower stations require replacement of pumping, hydro-mechanical, and electrical equipment that is practically worn-out. This situation severely affects the level of steerability of the water management complex and its efficiency.

Therefore, the detailed evaluation of water management infrastructure conditions is required in order to identify on this basis the priorities for undertaking a complex of measures on improvement of the operational reliability of infrastructure and mitigation of threats associated with water.

Approach:

Inventory of the technical conditions and certification of the water management systems and structures will be based on the unified methodology differentiating specificity and interrelationship of objects at all levels of water hierarchy. Database and the State cadastre of water management systems of the Republic of Uzbekistan will be developed on the basis of this inventory.
The working group comprising the qualified specialists will carry out:

- Development of methodology for certification of the water management systems and structures;
- Development of database on the basis of the GIS technologies;
- Inventory of the technical conditions and certification of water management systems and structures of the Republic of Uzbekistan;
- Preparation of the State cadastre of the water management systems and structures of the Republic of Uzbekistan;
- Assessment and analysis of information and identification of the priority measures aimed at improvement of the operational reliability of the irrigation and drainage systems and structures, and mitigation of threats associated with water.

The State cadastre of the water management systems and structures of the Republic of Uzbekistan approved by the key ministries and agencies and the package of the priority measures aimed at improvement of the operational reliability of water management systems and structures and mitigation of threats associated with water will be submitted to the Cabinet of Ministries for consideration.

Realization Time:
From the second half of the first year to the end of the first half of the second year (12 months)

Responsible Executors:
MAWR MAWR RUz,
BISM,
Basin Councils,
The Ministry of emergency situations,
The Agency for supervision over safety of water structures,
the State Joint Stock Company "Uzbekenergo",
The Uzbek Agency "UZKOMMUNHIZMAT"

Results:

- The State cadastre of water management systems of the Republic of Uzbekistan;
- Package of the priority measures aimed at improvement of the reliability of water management systems and structures and reduction of threats associated with water

Necessary Resources:
Estimated number of man-months: 300 man-months.
Planned contribution from the Republic's budget: 80 million sum / USD 65 thousand
Planned contribution from potential sponsors: USD 100 thousand

CONTACTS AND INFORMATION

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