

Pilot Projects on IWRM Implementation

V.A. Dukhovny, V.I. Sokolov, M.G. Khorst

Putting some of IWRM principles into practice in the water sector has been started even prior to the independence of Central Asian countries. Over a long time, this process was being implemented without the general strategy of adapting this approach to local conditions, spontaneously putting some IWRM elements and principles into practice at the regional level of water resources management.

One of the first steps was the establishment of two basin organizations as provided by the Resolution No 1088 of the Cabinet of Ministers of the USSR issued in 1987, as well as executing a number of other measures envisaged by this document. Establishing BWO “Amu Darya” and BWO “Syr Darya” was essentially the transition towards basin management (within hydro-geographical boundaries) at the inter-republican level (subsequently at the inter-state level); and organizational efforts of the former Ministry of Water Resources of the USSR have practically created the basis for such management and coordinating the sectoral interests of different republics (countries), as well as for developing mechanisms of water allocation and operational activity taking into consideration provisions of “the Schemes (Master-plans) for integrated water resources use” in both river basins.

Subsequently, after independence, specific steps were undertaken in the frame of other projects [9] under an umbrella of the ASBP-1 (the Aral Sea Basin Program). In particular, the EC WARMAP project has, in a large measure, contributed to first actions of preparing the IMS, measures for water saving at all levels of water management hierarchy, and developing the legal base for IWRM at the top level of basin management. The GEF WEAMP project has resulted in the Regional Water Strategy that has specified the strategic grounds for introducing IWRM in the region; and its Component A-2 has clearly demonstrated the opportunities for water saving (taking into account findings of the EC WARMAP project) [13]. Approaches to rehabilitating the ecological profiles in deltas of two major rivers in the region were developed in the frame of Component “Sudoche Lake Rehabilitation” and the WB projects for rehabilitating the lower reaches of the Syr Darya River.

The CIDA project implemented jointly by the McGill University and SIC ICWC, which allowed training more than 3000 water professionals in the frame of the advance course “Integrated Water Resources Management” held at the ICWC Training Center, has played a considerable role in the popularization of IWRM principles and adoption of their backgrounds by many decision-makers in the region.

The most significant step towards IWRM was made in the frame of the regional project “IWRM-Fergana” implemented by specialists representing the Departments of Water Resources of Kyrgyzstan, Tajikistan, and Uzbekistan under overall co-ordination of the SIC ICWC and IWMI and financial support of the Swiss Development Cooperation (SDC) [41]. This project is aimed at improving the effectiveness of water resources management by means of introducing the IWRM principles in the Fergana Valley. An overall project objective is *“to contribute to more secure livelihoods, increased environmental sustainability, and greater social harmony, and to support rural restructuring in Central Asian countries through the improved effectiveness of water resources management on example of the Fergana Valley”*

Selecting of the Fergana Valley as a pilot area for introducing IWRM methods is based on socio-economic conditions in this dense populated region where more than 11 million people 60% of which are rural population reside on the territory about two million hectares. It is possible to affirm with confidence that livelihood and living standard of the population depend on the use effectiveness of water resources which, in a large extent, are transboundary waters, as well as the system of water management over the irrigated area of 1.2 million hectares.

From the beginning, the project was aimed at maximum participation of water users and water authorities in developing the conception of IWRM adaptation to regional conditions and in selecting the pilot areas. For this purpose, the preparatory project phase was established, during which teams from three countries

and all provinces representing this region took participation in selecting pilot areas using the fundamentals and requirements prepared by the regional group. The principles mentioned in Chapter 1 were proposed as fundamentals and have been carefully reviewed, discussed, approved by participants of workshops for their use in project activity. Subsequently, representatives of all provinces have received the special forms in concordance with which they had to prepare data for two pilot areas in each province. At the same time, each pilot area essentially represents a chain consisting of three levels of an irrigation system including a main irrigation canal, the network of former inter-farm and on-farm canals, on the base of which WUAs can be organized, and the end users – farms.

Based on the analysis of proposed pilot areas, project participants have selected three pilot canals: the Aravan-Akbura Canal in Osh Province in Kyrgyzstan, Khodja-Bakirgan Canal in Soghd Province in Tajikistan, and South-Fergana Canal that crosses Andijan and Fergana provinces in Uzbekistan.

After five-year project activities the following practical outcomes can be noted:

The IWRM conceptual base taking into consideration hydro-geographical boundaries, participatory approach and democratic principles of water management were developed and submitted to national water authorities. The IWRM conception was coordinated and approved by all water authorities in Uzbekistan, Kyrgyzstan, and Tajikistan in May 2003 [41].

A comprehensive approach for social mobilization (awareness of IWRM principles) was developed [18]. A training program for social mobilization and capacity building at the levels of WUA and irrigation canal was prepared. Regular training seminars and sociological surveys established by the project provide new opportunities for involving all stakeholders in reforming the water sector in the Fergana Valley. Thanks to project efforts, new water users associations (the WUA “Akbarabad” in the command area of the South Fergana Canal in Uzbekistan, WUA “Kerme-Too-Akbursay” in the command area of the Aravan-Akbura Canal in Kyrgyzstan, and WUA “Obi-Zerafshan” in the command area of the Khodja-Bakirgan Canal in Tajikistan) were established. Earlier established WUA “Japalak” was also included as base WUA into the project sphere. Newly established WUAs were registered in compliance with national legislations; and in the beginning of 2003, WUAs’ boards have signed the agreements on joint management with relevant privileges. In addition, at the instance of the MAWR of Uzbekistan and Tajikistan, the project has organized some unplanned training seminars on the topic “How to establish WUAs through social mobilization” for district-level specialists. Based on the experience learnt from these WUAs during first three years, dissemination of the proved IWRM principles and regulations over all WUAs in the command areas of pilot canals through the network of training centers and on-job training, which was conducted by specially trained project facilitators (trainers) in each province, was started [26].

Apart from the training activity in the Central ICWC Training Center, the project has established the branch of head training center in Osh City. Personnel of the Osh Training Center were trained, and then were independently carrying out the training programs related to dissemination of the project experience. Subsequently, similar branches were established under the Provincial Basin Organizations in Andijan, Fergana, and Khodjent to extend coverage of WUAs personnel and farmers in these provinces. Since July 2002, planned (according to the project program) and unplanned training seminars for personnel of water management organizations, water users and NGOs representatives from Fergana Valley were being monthly conducted. At these training courses, the great attention was paid to dissemination of the IWRM ideology. The communication network that was based on e-mail system and linked all key project participants (the SIC ICWC – national departments – provincial water management organizations – pilot canal administration - WUAs) was developed. The project has established the Information Management System (consisting of a database, a set of mathematical models, and GIS), operating in the on-line regime, which is a powerful tool for planning, operational analysis, and improving the water allocation process and actual water distribution.

Alternative organizational structures for water management at the level of WUA and main irrigation canals were specified, discussed and coordinated by project partners and other stakeholders. Based on agreements achieved, water authorities of Uzbekistan, Tajikistan, and Kyrgyzstan created new

departments – Canal Administrations. In December 2003, activity on involving water users into the decision-making process related to water governance was initiated. As a result of these works, the Pilot Canal Water Users Unions were established and officially registered on all pilot canals; and the joint governance principle was put in practice: the agreements related to joint water governance were signed, and the Canal Water Committees consisting of representatives of superior state water management organization (WMO) and water users (CWUU) were created. An effectual factor of transition towards IWRM is participation of representatives of civil society in the governance process that is also legally fixed.

In the course of following works related to institutional reforms, the need in functioning intermediate agencies – a framework of basin water authorities and provincial water authorities should be specified yet. The first steps towards establishing procedures of water resources planning, record-keeping, reporting and monitoring at each level of new water management hierarchy were made. It is expected that activity will be implemented at all levels of the water hierarchy by means of establishing the Canal Water Committees.

Many technical aspects also depend on the public. It is not easy task to provide guaranteed and equitable water distribution over the irrigation system as a whole. When water is delivered in line with planned amounts and of necessary quality increase in productivity of water and land resources may be expected. Water users themselves should participate in more precise specifying of command areas for each irrigation canal, assessment their water demands, and accounting additional available water sources (ground water, return water). Adjusting water supply, rotation and use depending on weather and economic conditions, as well as improving hydraulic measurements and record-keeping at all levels of the water management system are also their functions. To tackle arising issues it is necessary to establish extension services that assist water users in the introduction of new technologies, advanced practice of planning and production, and solving water distribution problems. The project has developed and transferred for use “Model Regulations on Canal Water Committees”, as well as recommendations for their adaptation on each pilot canal [18].

Objectively realizing that the existing national legislations in the region are not perfect and cannot be the platform for supporting necessary reforms in the water sector, the project has prepared the recommendations on the package of changes required and transferred them to all national water authorities in the region. Just laws have to specify a role and duties of governments and water management organizations in regard to water resources use, protection and development. The need to specify clearly social, economic and ecological values of water, as well as a role of water users associations and regulations for coordinating water-consuming sectors is obvious. For example, there is the need to regulate relations of water authorities with conservancies, agricultural and local authorities. Financial mechanisms should also have the clear legal regulation in the water sector. The project has paid enormous attention to aspects of disputes settling at the level of WUAs and irrigation canal administrations – sociological surveys were conducted and recommendations, for presentation of which the project organized some on-site seminars, were developed.

The project has rendered the technical assistance in inspections and extra equipping of flow-measuring structures on pilot irrigation canals (an enormous work was implemented to establish the water-metering systems within pilot WUAs). This activity allowed setting the proper water record-keeping on the pilot canals and within WUAs resulting in the more transparent process of water distribution. Water meters were mainly manufactured and certified in the Regional Meteorological Center of the ICWC in Bishkek with participation of SANIIRI. The project has started real-time management of the water delivery process on pilot irrigation canals and within pilot WUAs in the form of monitoring and updating the planned water supply schedule based on water users’ applications with taking into account weather conditions during a growing season. This is the first step towards equitable and rightful water distribution and, at the same time, an attempt to reduce unproductive water losses [21].

Preparing the passports of demonstrative fields within pilot farms allowed creating an instrument for analyzing farmers’ production reserves and potential with the purpose of improving productivity of land and water resources. Testing the instrument for forecasting water consumption in line with weather

conditions is conducted in the real-time regime, and its introduction in wide scale during the next phase of the project is planned. Our analysis shows that on 9 of 10 pilot plots the land and water productivity was perceptibly improved. On one pilot plot located on the SFC, where farmer did not follow the project recommendations, productivity has reduced.

Many women were involved in discussions related to management of the land and water productivity and of other water resources management problems in the Fergana Valley. For example, about 60 women actively participated only in one project seminar that was devoted to water productivity issues and was held on September 15, 2003 in the WUA “Akbarabad.” Based on outcomes of these activities, the enabling environment was created for the wide introduction of extension services for farmers in the Fergana Valley.

Partners, under regular co-ordination of SDC, implement sufficiently effective governance and monitoring of project activity. Since 2003, the co-ordination meetings of project managers and SDC experts were being organized practically monthly. Problem-oriented matters of activity were being discussed at these meetings to come to an understanding and consensus in methods and approaches to implementing those or other IWRM aspects. The project has paid much attention to regular publishing of technical papers and disseminating of information related to the project activity through mass media. The project can enter as its asset the fact that as a result of intense popularization and information on the IWRM concept, the Government of Uzbekistan has decided to reform water governance in line with the hydrological principles (the Resolution No 320 of the Cabinet of Ministers “On Improving the Water Sector Governance” issued on July 21, 2003).

Major project objectives at the third phase (since May 2005 until April 2008) were the following:

- Strengthening proposed reforms at all levels of water management hierarchy and co-operation of all water-consuming sectors and completing a set of all necessary regulations for their wide dissemination;
- More wide and intense disseminating institutional, managerial, and technical information and appropriate recommendations among existing and newly established water management organizations, including agencies that co-operate with international donors.

By the end of project activity in 2010, the following is expected:

- IWRM principles will be adequately used in the practice of pilot canal management;
- WUAs, in their service area and under supporting by the project, will distribute and deliver water to their members on the equitable and sustainable basis, using IWRM guidelines;
- Advanced water management technologies will be introduced at the level of water users;
- Project recommendations will be transformed into certain political reforms at the national level; and
- Project outcomes will be positively assessed by the Swiss Develop Cooperation and national authorities.

A mission of the Swiss Development Cooperation has already highly appreciated project outcomes and activities in the frame of its components one year before their completion.

Conclusion of this mission is the following:

“The project has developed the unique IWRM approach (reorganizing the governance and management frameworks) for which none ready model existed. Thanks to this new role, social mobilization (rising of public awareness, clarification of new conceptions, and persuasion) has become the important project component.”

A token of success is the direct participation of water sector officials in governance of activities at pilot sites and in establishing national working groups consisting of representatives from water-related sectors, as well as a broad interest and support of above principles by water authorities of other regions and provinces that was expressed at the get-to-know seminars conducted by project personnel together with appropriate national ministries and departments.

Along with activities described in detail in other chapters of this book, the project (IWRM-Fergana Project) has implemented and proceeds with implementing sub-projects aimed at putting basic IWRM principles into practice in Central Asia and Kazakhstan. These subprojects are focused on different aspects of regional activity, but one general purpose unite them – the introduction of IWRM principles into multi-sectoral water economy in the region and involving the communities into the governance process by means of establishing the system of social mobilization (of water users and other stakeholders) aimed at introducing IWRM.

The project: Transition towards IWRM in Lower Reaches and Deltas of Amu Darya and Syr Darya Rivers. The Pre-Feasibility Study

A methodology of the above project [10] (see Box 4.1.1) is based on the concept and principles adopted in the IWRM-Fergana Project, however, there are some differences resulting from the peculiarities of Amu Darya and Syr Darya lower reaches.

The project was aimed at developing the Pre-Feasibility Study (PFS) for the introduction of IWRM principles under the specific conditions in lower reaches that are the most depressive region from the socio-economic point of view in Central Asia subjected to recurrent catastrophic drops in water availability (for example, in 2000 and 2001) and environmental degradation. It was assumed that based on the PFS, international donors will receive the opportunity to assist the region in adaptation of IWRM methods to these conditions and to cover, selected with stakeholders' participation, pilot irrigation systems in Kyzyl-Orda Province in Kazakhstan, in Dashhowus Province in Turkmenistan, and in Khorezm Province in Uzbekistan, by analogy with the IWRM-Fergana Project. In spite of the fact that an appeal to the many international donors was not crowned with success, some project outcomes were reached:

- The IWRM conception was adapted to the conditions in lower reaches (considering the environmental requirements);
- Transboundary aspects of IWRM were specified.

Special consideration was given to land reclamation issues in the course of implementing IWRM. Peculiarities of Amu Darya and Syr Darya lower reaches show up, first of all, in the form of social and environmental tensions, and in some losing of *water resources controllability*, which emerges in extremely dry years (2000 and 2001).

By present time, specific socio-economic and environmental conditions conditioned by *inefficient water resources management during last 5...10 years* have been formed in different areas of lower reaches.

What kinds of activities are envisaged in “IWRM in lower reaches” for implementing measures planned in the preliminary FS?

At the national level, in contrast to “IWRM in Fergana Valley”, consideration of local peculiarities is needed for each specific area in lower reaches:

- A situation in Khorezm Province is similar to the situation in Fergana Province (limited land resources and high population density), but differs by the specific character of land reclamation conditions resulting from stratified soils of deltaic layered- lacustrine sediments.
- A situation in Kyzyl-Orda and Dashhowus provinces and in Karakalpakstan a little bit different: abundant land resources; unsustainable water supply, insufficient natural and man-made drainage; salt-affected soils, and excessive carrying capacity of irrigation and drainage canals;

Tackling these specific matters requires different managerial, technical and land reclamation approaches for developing IWRM, but should follow the same key directions and mechanisms that are fine-tuned within the framework of IWRM-Fergana Project.

At the inter-state level:

- Strengthening the interstate co-operation in allocating a runoff of the Amudarya and Syr Darya rivers based on IWRM principles and by means of improving the institutional frameworks of existing organizations established for managing transboundary waters – the BWO “Amu Darya” and BWO “Syr Darya”:
- Establishing the Public Boards (Councils) of the BWOs with inclusion to them of the representatives from all countries, provinces located in each river basin, large-scale water users such as hydropower schemes, as well as representatives of Hydro-Meteorological Services, administrations of large main canals, and the Hydro-Ecological Councils for Deltas Management that represent the interests of deltaic complexes;
- Setting up special subdivisions in each BWOs for monitoring and controlling river water quality that will be responsible for developing their proposals to the ICWC and national governments

regarding measures necessary for improving natural streams and for integrated using of surface, return, and ground waters.

- Receiving national governments' endorsement of fundamental documents related to managing transboundary river flows such as:
 - The Statute of Basin Water Councils and procedures for their participation in planning and governing the water economy in Amu Darya and Syr Darya river basins;
 - Estimated values of environmental water requirements of natural complexes, rivers, and especially their deltas;
 - Forecast of available water resources of rivers in years with the different runoff probability;
 - Rules for regulating and allocating water resources in years with the different runoff probability, taking into consideration the specificity of flow regimes;
 - Instructions to BWOs regarding water management under emergency events (extreme droughts or floods);
 - Scheme of reservoirs system operation, including the regimes of water releases and filling;
 - Procedures for financial relations between countries participating in control and regulation of river flows; and
 - Regulations concerning the responsibility of countries and large-scale water users related to maintaining of established operational regimes.
- Developing a set of models for water resources management in each river basin (for annual and long-term operation) taking into account the interacting of rivers and areas under economical activity (water diversions, formation of return water, productivity of water use). The set of developed models should become the base for:
 - Developing the national and sectoral strategies for regulating their economic activity related to water use and assessing impacts of their economic activity on downstream areas and riparian countries; and
 - Specifying the possible consequences of management decisions and ways for achieving the consensus in the process of decision making.

The Pre-Feasibility Study approved by the ICWC was submitted to potential donors to provide financial support to the IWRM-Lower Reaches Project.

Box 4.1.1**Project name:**

Transition towards IWRM in Lower Reaches and Deltas of Amu Darya and Syr Darya Rivers. The Pre-Feasibility Study (FY 2003 OESI Water Project, the Regional Environment Office of US Department of State) [10]

Donor:

US Department of State

Project period:

2004 to 2005

Executors:

The Regional Environment Office of US Department of State, national experts from Kazakhstan, Turkmenistan, and Uzbekistan

Project objective:

Developing the detailed plan of supporting and establishing the IWRM system and creating the water partnership at the national and inter-state level in Amu Darya River lower reaches (Khorezm Province and the Republic of Karakalpakstan in Uzbekistan and Dashhowus Province in Turkmenistan) and in Syr Darya River lower reaches (Kyzyl-Orda Province in Kazakhstan). A priority of this objective is conditioned by extremely keen ecological and socio-economic problems in above regions due to Aral Sea crisis and the low level of water resources control.

Key project outputs:

- Review of the current trends and issues that need to be tackled;
- Analysis of the political, legal and institutional frameworks necessary for functioning IWRM elements;
- Review of the national and international projects related to water resources management issues in Amu Darya and Syr Darya lower reaches;
- IWRM activity planned in lower reaches; and
- Regional and national action plans.

Implementation aspects:

The pilot sites for fine-tuning of IWRM principles taking into consideration the specific character of lower reaches were selected under consultations with decision makers, WUAs' representatives and the public, and cover three levels of water hierarchy: hydro-ameliorative / irrigation system – water users association - farms.

Selection criteria have included:

- Readiness and firm determination of all participants of the water sector for reforming the water resources management system;
- Representative character of pilot sites for each of three levels of water management hierarchy according to key indicators for above regions;

Taking into consideration the dependence of lower reaches from the quality of transboundary water resources management, the additional component (level) was included: "Amu Darya and Syr Darya transboundary water resources management."

The plan of introducing IWRM principles at pilot sites and all three levels of water management hierarchy and for implementing the additional component (level): "Transboundary water resources management" was elaborated in details.

Key tasks and principles for each level and phase of activity, as well as expected outcomes and implementation indicators were specified.

Necessary funds for implementing project activity over the three-year period were estimated: US\$ 35,255,000 including US\$ 907,000 of counterpart funds provided by Kazakhstan, Turkmenistan, and Uzbekistan.

The Pre-Feasibility Study was approved by members of the ICWC (Interstate Coordination Water Commission for Central Asia).

The Project: Developing the Kazakhstan National Integrated Water Resources Management (IWRM) and Water Efficiency Plan

Under current socio-economic conditions in our region, Kazakhstan is a more advanced country having sufficient financial resources and appropriate legislative base for purposeful activity related to putting the IWRM principles into practice in the national water sector. Part of IWRM provisions was included in the new Water Code (passed in 2003).

The project “Developing the Kazakhstan National IWRM & Water Efficiency Plan” [14] (Box 4.1.2) is a considerable step towards awareness of the IWRM principles and substantially facilitates follow-up introducing this method into the practice of national water sector.

The plan (its first draft) outlines the actions needed to reduce wastes a significant proportion of national water resources through both inefficient use of water and through pollution; it also focuses on the problem of managing water resources use and water quality. As top-priority measures, the plan envisages strengthening a role of the State Water Resources Committee and Basin Water Organizations (BWOs), establishing the National Information Center, preparing the Basin IWRM and Water Efficiency Plans and providing sufficient funding the water resources management system. **The strategy for achieving the MDGs in the field of water supply and sanitation** has to be developed as well.

In 2007, the following activities were planned and implemented in the frame of this project:

- Submitting the National IWRM & Water Efficiency Plan for endorsement by the ministries and departments of the Government of the Republic of Kazakhstan;
- Supporting the formal meetings of Basin Councils of the Republic of Kazakhstan;
- Preparing the proposals concerning address some modifications in the Water Code of the Republic of Kazakhstan to strengthen a role of the Basin Councils in decision making;
- Specifying possible financial mechanisms for achieving the MDGs; in the field of water supply and sanitation in the Republic of Kazakhstan;
- Developing the program for achieving the MDGs; and
- Informing the general public (public awareness) and stakeholders regarding the MDGs and the importance of their achieving.

The project is quite important for the top level of IWRM introduction, because as a result of this project, not only IWRM has received the legal acknowledgement in the first one of countries in Central Asia and the water management organizations based on the hydro-geographical principle were officially established, but also the National IWRM & Water Efficiency Plan was approved. This plan outlines the time constraints and financing sources for some IWRM components, including establishing the training network, national and basin information systems, Basin Councils etc.

However, the IWRM introduction mechanism is insufficiently outlined in the plan, since the National IWRM & Water Efficiency Plan was confined exclusively to the national and basin level of water management without coverage of all water management hierarchy, especially of the most crucial “bottom” level - WUAs and farms. Just on that level, a considerable scope of works related to social mobilization of water users, including public awareness regarding putting IWRM principles into practice in the irrigated farming sector, need to be implemented. All measures for improving the efficiency of water use by direct consumers have been ignored. Public involvement was confined to the advisory functions and powers, but decision making remains the prerogative of water authorities. Thus, functions of water governance and management remain only in the hands of water professionals even at the top level of governance resulting in the possible strengthening the professional hydrogeism.

Box 4.1.2
<p>Project name: Developing the Kazakhstan National Integrated Water Resources Management (IWRM) and Water Efficiency Plan (under assistance of the UNDP)</p>
<p>Donor: The Government of Norway and the UK Department for International Development</p>
<p>Project period: June 2004 to June 2007</p>
<p>Executors: Basin Water Organizations (BWOs), Ministry of Agriculture and Ministry of Economy and Budget Planning of the Republic of Kazakhstan, the UK Department for International Development (DFID), Global Water Partnership (GWP)</p>
<p>Project objective: Assistance to the State Water Resources Committee and Ministry of Agriculture of the Republic of Kazakhstan in developing the National Integrated Water Resources Management (IWRM) and Water Efficiency Plan, as well as Basin IWRM and Water Efficiency Plans for eight river basins in the Republic of Kazakhstan (Aral-Syrdarya, Balkhash-Alakol, Irtysh, Ishim, Jayik-Caspian, Nura-Sarisuy, Tobol-Torgay, and Chu-Talas) Establishing the Basin Councils in all eight river basins in the Republic of Kazakhstan. Developing the strategy for achieving the MDGs in the field of water supply and sanitation, reducing by half a share of the population without access to safe drinking water by 2015.</p>
<p>Key project outputs:</p> <ul style="list-style-type: none"> • The conceptual note for the National IWRM and Water Efficiency Plan (March 2005); • The Cross-sectoral Working Group for IWRM (ISWG) (May 2005); • Draft IWRM plan sections (July 2005); • The First National IWRM Forum (July 2005); • The first draft of National IWRM and Water Efficiency Plan (November 2005); • The second meeting of the ISWG (January 2006); • The Second National IWRM Forum (March 2006); • The Substantiation Report for including the National IWRM and Water Efficiency Plan into the

- National Medium-Term Socio-Economic Development Plan;
- The Resolution No 978 of the Government of the RoK issued on October 11, 2006;
- The second draft of National IWRM and Water Efficiency Plan (November 2006);
- The third meeting of the ISWG (December 2006);
- The Congress of Basin Councils of the Republic of Kazakhstan (April 2007) *where expected project outcomes by 2008 have been reviewed*;
- The National and Basin IWRM and Water Efficiency Plans for Kazakhstan; and
- The Strategy for Achieving the MDGs in the Field of Water Supply and Sanitation.

Implementation aspects:

Seven Basin Councils were established and are operable:

Balkhash-Alakol (09.09.05), Nura-Sarisuy (21.12.05), Chu-Talas (24.05.06), Aral-Syrdarya (29.07.06), Tobol-Torgay (17.10.06), Ishim (02.11.06), and Irtish (01.12.06).

The BWO “Nura-Sarisuy” has prepared and signed two multilateral agreements (the first one for the Samar Reservoir water area and adjacent water protection zones; the second one for water protection zones adjacent to the Nura River).

The BWO “Aral-Syrdarya” has prepared and signed inter-provincial agreements on water protection zones, strips, and protection ground water and surface water of the Syr Darya River.

The BWO “Chu-Talas” has prepared and signed four basin agreements on water protection zones and strips along rivers Chu, Asa, Talas, as well as Lake around Bibikol.

The UNEP and UCC-Water Sub-Regional Program for Central Asia: “Speedup of IWRM-2005 Goals Implementation in Central Asia”

A key output foreseen for three countries: Kyrgyz Republic, Tajikistan and Uzbekistan in the frame of the UNEP and UCC-Water Sub-Regional Program for Central Asia: “Speedup of IWRM-2005 Goals Implementation in Central Asia” is the road maps / work plans for implementation of the IWRM target [15] (Box 4.1.3).

This “road map” describes objectives and the process of phased transition towards IWRM-2005 MDGs achievement (for short-term, medium-term, and long-term periods). To the point, the road map is the working sketch of the detailed IWRM plan, which should be prepared by each country-participant of the project in compliance with the proposals of the World Summit on Sustainable Development (Johannesburg, 2002).

The process of developing the national “road maps” within the framework of the UNEP and UCC-Water Sub-Regional Program for Central Asia was initiated at the first national workshops held in April 2006. There was proposed to national experts from three countries and members of the National Groups for Coordination and Support to IWRM to assess the following:

- At which stage of the IWRM planning cycle does a country stand?
- What factors are restraining the process of planning?
- What actions should be undertaken for implementing the IWRM plan?
- What is required for realization of these actions?

On the basis of the specificity of IWRM processes in each country, a composition of measures, dates scheduled for their implementation and funds required for the short-term period could be different, but were grouped in similar clusters:

- Capacity building in water management organizations;
- Establishing the enabling environment for IWRM (legal and political); and
- Technical and technological measures.

In the process of developing “the road maps”, along with specific tasks conditioned by peculiarities of the water policy in different countries, purposeful activity for phased solving of the following key problems existing at different levels of water management hierarchy was envisaged:

1. Practical providing the jurisdiction of water organizations within hydro-geographical boundaries that meets to IWRM principles and allows making water management decisions in timely manner and to render water services without interference of administrative-territorial authorities.
2. Integrated water resources management taking into consideration all types of water use within the hydro-geographical boundaries, and based on the analysis of real-time hydro-meteorological information including data on the dynamics of water supply and multi-sectoral water resources use. This information should be in a format suitable for all water users.
3. Strategic planning of water use and consumption taking into consideration the needs of agriculture, municipal and rural water supply, industry and nature, as well as other water-consuming sectors.
4. Practical decentralization of water governance with transferring of the administrative functions towards an acceptably low level (WUAs and their federations, Canal Councils) based on the national legislation and under assistance of the Government in establishing and developing WUAs and their federations.
5. Gradual transition from direct state governance of water supply to regulation of water sector’s activity and its relations with other economic sectors.
6. Step by step transition towards governing WUAs’ activity (and later the water management organizations’ activity) by Public Councils that will be authorized by relevant powers in the frame of national legislation in order to pursue a water policy, to establish procedures and rules necessary for their water management systems.
7. Based on the introduction of the measures for improving land and water productivity, to provide the conditions, which enable farmers to cover completely all expenditures related to O&M, as well as small repairing works and improving all irrigation and drainage systems within WUAs.
8. Assurance of the practical participation of Canal Councils, WUAs and their federations in developing a water policy and establishing rules for water resources management.

The draft national “road maps” were reviewed and discussed at the first regional seminar (Bishkek, July 27-28, 2006). During discussions, participants of the seminar made the constructive comments and proposals on the presented draft national “road maps” (the need to stress the improvement of water use productivity, prepare rational of the essential activities, social mobilization of stakeholders, and training in IWRM principles etc.).

The draft “road maps” and rational improved in accordance with these comments were discussed during the second phase of national seminars and then submitted to the key ministries and institutions of Kyrgyzstan, Tajikistan, and Uzbekistan. The national “road maps” and rational for the short-term period coordinated with key national ministries and institutions were presented at the final regional seminar (Tashkent, November 29-30, 2006). In the course of this seminar, it was proposed to national experts to submit “road maps” to the national governments officially to make decision on their practical implementation, and to the GWP CACENA (with assistance of the UNEP Collaboration Center for Water and Environment) to submit the project findings to potential donors / international organizations with purpose of seeking the financial support to the follow-up developing of the national IWRM plans based on “road maps.” [15].

The UNDP support to the Ministry of Agriculture and Water Resources of Uzbekistan in developing the national IWRM plan was the important follow-up step of promoting the project findings. After consultations with stakeholders and representatives of governmental and donor organizations, the decision was made to implement the pilot project “Zerafshan River Basin IWRM Plan” as the first phase of developing the national IWRM plan on the ground that the Basin Water Organization is the most advanced for introducing IWRM: i) water management is implemented within hydro-geographical boundaries; ii) there is the database on water diversions and water delivery to users; iii) considerable donors’ assistance in rebuilding WUAs and water authorities’ capacity. A preparatory phase (September 2007 to January 2008) covers clarification and coordination of project objectives, as well as preparation of project rational for its submitting to the Cabinet of Ministers of Uzbekistan.

Box 4.1.3
Project name: The UNEP and UCC-Water Sub-Regional Program for Central Asia: “Speedup of IWRM-2005 Goals Implementation in Central Asia
Donor: Danish International Development Agency (DANIDA)
Project period: November 2005 to November 2006
Executors: UNEP Collaboration Center for Water and Environment - GWP CACENA and national experts from the Republic of Kirgizstan, the Republic of Tajikistan and the Republic of Uzbekistan
Project objectives: <i>Long-term objective</i> is: «Speedup of IWRM-2005 Objectives Implementation in Central Asia». <i>Short-term objectives:</i> <ul style="list-style-type: none"> • 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.

Project outputs:

- The sub-regional and national reports on progress with implementation of the IWRM 2005 MDGs and the IWRM planning in three countries in Central Asia: the Kyrgyz Republic, the Republic of Tajikistan, and the Republic of Uzbekistan;
- The accomplished national road maps/working plans for implementation of the IWRM objectives;
- 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.

Implementation aspects:

The “road maps” developed by national working groups describe in detail the process of phased transition from national visions towards IWRM plans.

“Road maps” consist of three key sections:

- Capacity building in water management organizations;
- Establishing the enabling environment for IWRM (legal and political); and
- Technical and technological measures.

These sections specified objectives, scope of works, project periods (short-term – 2007 to 2009; medium-term – 2007 to 2012, and long-term – 2007 to 2025) executors, and potential sources of funds.

The rationale of implementation methods and necessary inputs was prepared for short-term actions.

Approvals of “road maps” were obtained from key ministers and institutions. The “road maps” were submitted to the national governments officially (through the Department of Water resources in the Kyrgyz Republic, Ministry of Water Resources in Tajikistan, and Ministry of Agriculture and Water Resources in the Republic of Uzbekistan) to make decision on their practical implementation.

The RIWERTWIN Project (www.cawater-info.net/rivertwin) was initiated by the SIC ICWC together with the Hohenheim University (Germany) and is the only project in our region covering long-term planning of improvements in the water and water-related sectors based on IWRM principles that is implemented in the Chirchik sub-basin (Syr Darya River’s tributaries: Chirchik, Akhangaran, and Keless).

Available water resources in the sub-basin, the efficiency of water use in irrigation, hydropower, water supply and other sectors were assessed by the project with special emphasis on the environmental needs. Based on former national elaborations and methods developed by European partners, the models for selecting long-term development scenarios have been developed. Alternative options for implementing the selected scenarios were assessed with participation of beneficiaries. Institutional approaches for transition towards the highest form of IWRM - hydro-environmental management, under which the needs of nature are considered as the top priority, were also developed (the Nature Managers Association represents the interests of nature management in the Basin Council).

At present, the Regional UNDP Office for Eastern Europe, Caucasus and Central Asia in Bratislava together with UNDP Offices in Tashkent, Dushanbe, and Bishkek prepare the proposal on developing the national IWRM plans in Kyrgyzstan, Tajikistan, and Uzbekistan. National Coordination and Support Groups, established in the frame of the IWRM-Fergana Project will participate in this activity based on national “road maps” prepared under the UCC-Water & Environment Project. The summary of IWRM projects’ outputs and progress according to developed indicators is given in Table 4.1. As shown, the actual introduction of almost all IWRM principles takes place only in the IWRM-Fergana Project, and only the RIWERTWIN Project provides for joint consideration of all IWRM principles.

Table 4.1. Planning and the Introduction of IWRM Principles in Various Projects in Central Asia

Project Name	WARMAP	WEAMP	WB project in lower reaches of Syr Darya	IWRM-Fergana	National IWRM plan in Kazakhstan	Canadian Training Project	UCC WATER	IWRM in lower reaches	RIVERTWIN
1. WM according to hydrological principles: - at the inter-state level - at the national or basin level - WMS as a whole		<input type="checkbox"/>							
2. Accounting all kinds of waters: - at the inter-state level - at the national and all sub-national levels	<input type="checkbox"/>			+	+		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Coordination of all water uses: - at the inter-state level - At all sub-national levels.	<input type="checkbox"/>	<input type="checkbox"/>		+					<input type="checkbox"/>
4. Public participation				+	partially			<input type="checkbox"/>	<input type="checkbox"/>
5. Priority of environmental needs		+	+	+	partially			<input type="checkbox"/>	<input type="checkbox"/>
6. Water saving and preservation		+		+				<input type="checkbox"/>	<input type="checkbox"/>
7. Information exchange	+			+	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	+
8. Economic and financial sustainability				partially					

LEGEND:

- planning & designing,

+ - put in place

