



Interstate Coordination Water Commission

State Committee on Water Resources of
Ministry of Natural Resources and Environment of the Republic of Kazakhstan
1, Satpayeva str, Kokshetau, 475 000, the Republic of Kazakhstan

Water Resources Department of
Ministry of Agriculture, Water Resources and Processing Industry of the Kyrgyz
Republic
194, Moskovskaya str, Bishkek, 720 020, the Kyrgyz Republic

Ministry of Reclamation and Water Resources of the Republic of Tajikistan
5/1, Sahmsi str., Dushanbe, 734 006, the Republic of Tajikistan

Ministry of Water Resources of Turkmenistan
63, Azadi str., Ashkhabad, 744 000, Turkmenistan

Water Resources Department of
Ministry of Agriculture and Water Resources of the Republic of Uzbekistan
4, Navoi str., Tashkent, 700 004, the Republic of Uzbekistan

ICWC Executive bodies

ICWC Secretariat
93 A, K. Khudjand str., Khudjand, The Republic of Tadjikistan

Basin Water Organization (BWO) "AmuDarya"
63, Tashauzskaya str., Urgench, 740 000, the Republic of Uzbekistan

Basin Water Organization (BWO) "SyrDarya"
11, Karasu-4, Tashkent, 700 187, the Republic of Uzbekistan

Scientific-Information Center of ICWC (SIC ICWC)
11, Karasu-4, Tashkent, 700 187, the Republic of Uzbekistan

Coordination Metrological Center ICWC (CMC ICWC)
4A, Toktonaliyeva str., Bishkek, 720 055, the Kyrgyz Republic



ICWC

1992 / 2002

A few about history

In the world history, the Aral Sea basin is among the most ancient centers of civilization. Amudarya and Syrdarya - two main rivers in the basin, water resources of which are allocated to arid lands irrigation and the Aral Sea with their tributaries Vakhsh, Pyandj, Surkhandarya, Kafirnigan, Zerafshan, Naryn, Chirchik, Karadarya and others form a large water system, which is included in water-resources scheme of the Aral Sea basin. Five independent states of CIS - the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan and the Republic of Uzbekistan - and part of Afghanistan are entirely and partly situated on the territory of the basin.



Aral Sea basin in figures

Area of basin 1,550,000 km²
 Irrigated area 7.95 million ha*
 Renewable water resources 130 km³ of water per year
 Total amount of water reservoirs with capacity of more than 100 million m³ 80
 Total capacity of water reservoirs 60 km³
 Total length of irrigation network:
 - inter-farm 47.75 th. km
 - on-farm 268.6 th. km
 Total amount of drainage wells 865
 Total length of collector-drainage network 191.9 th. km
 - including subsurface 47.9 th. km
 Electric power generation 126 billion kWh,
 - including hydro electric power 34.5 billion kWh

* excluding Afghanistan

ICWC is mainly focused on water sciences development.

Scientific branches under SIC coordination carry out scientific researches on interstate scientific programs:

- Working out main components of ICWC policy on rational water use and water resources conservation in the Aral Sea basin (1998-1999);
- Problems of sustainable water resources management in the Aral Sea basin for the 21st century (2000-2002).

Regional information system on water and land resources management has been created and developing, its information collection is held, as well as adequate national databases on water and land resources and the environment are improved and realized through Internet.

Bibliographic database on the Aral Sea basin management has been created.

Great attention is drawn also to issue of professional skill development. ICWC with the assistance of Canadian International Development Agency (CIDA) and participation of Brace Center at McGill University and Mount Royal College (Canada) formed ICWC Training Center (TC).

Courses on the program "Integrated water resources management", "Transboundary water resources management", "International and national water law and policy", "Advanced irrigated agriculture in Central Asia" were and are being held.

TC branches are established in Dushanbe, Osh and Turkmenistan with the support of international organizations.

ICWC draws not less attention to information-publishing activity. It publishes such periodicals as ICWC Bulletins, Abstract reviews, Information collections, Scientific review collections, Juridical collections, IFAS Bulletins.

Furthermore, materials on various seminars, symposiums and conferences are prepared and issued.

ICWC branches entered the IPTRID international network. Received information is processed and disseminated as information collection among Central Asian Countries.

ICWC has its web-site in Internet - www.icwc-aral.uz.

On the occasion of the 10th anniversary of Interstate Coordination Water Commission in Almaty - the city where 10 years ago such an important event for Central Asian water economy and environment occurred - a series of activities was carried on:

- 32nd ICWC jubilee meeting;
- Scientific and Practical Conference "Water Resources of Central Asia";
- The 3rd Central Asian Fair on water technologies and water economy;
- ICWC members and donors meeting;
- GWP Regional Conference for Central Asian and Transcaucasian countries.

Along with ICWC members - A.D. Ryabtsev, B.T. Koshmatov, A.A. Nazirov, T.A. Altiyev, A.A. Djalalov - and honorary members, the invited participants of these activities were: B. Schultz, President of International Commission on Irrigation and Drainage; C. Madramootoo, Vice-president of ICID and Director of Brace Center/McGill's University; V.P. Roshupkin, Prime Deputy Minister of Natural Resources of the Russian Federation; N.N. Mikheyev, consultant of the Minister of Natural Resources of the Russian Federation; P.A. Polad-zade, Director General of Public Joint-Stock Company "Vodstroy" and others. The importance of ICWC activity in many respects was emphasized by the presence of a great number of foreign guests - the representatives of the World Bank, Asian Development Bank, UN European Commission, UN Economic and Social Commission for Asia and the Pacific (ESCAP), Canadian International Development Agency (CIDA), Swiss International Development and Cooperation Agency (SDC), USA, Great Britain, Germany, Japan, Denmark, European Union, Global Water Partnership (GWP), International Water Management Institute (IWMI), etc.

ICWC close cooperation with UNESCO, FAO, World Bank, IPTRID, UNDP, European Union, GWP, World Water Council, UN Economic Commission for Europe, NATO and others is going on.

Regular relations with the Embassies of the Great Britain, Holland, Germany, Israel, India, Indonesia, China, Russia, USA, France and international organizations, accredited in the region are kept.

Specialists of ICWC scientific and design organizations participate in carrying out a number of international programs and projects.



• **ICWC delegation in Paris**

At 31st ICWC meeting in Dushanbe, regional cooperation strengthening program towards the 3rd World Water Forum that will be held in Japan in March 2003 has been adopted.

The next Forum in Japan should show ways and opportunities of transfer from vision to actions on integrated water resources use, which will ensure sustainable world-wide development for the next 25-30 years.

SIC on behalf of ICWC is registered in the Forum Organizing Committee as a coordinator of regional virtual forum, attached to the 3rd World Water Forum. Special Program on development of partnership and integration in Central Asia has been worked out.



Water-resources scheme includes such a unique water reservoir as Toktogul with capacity of 19 km³, Charvak, Andijan and Nurek hydrounits with dams of 100-350 m in height.

Karakum canal that is one of the largest gravity-flow carriers in the world with stream flow of 600 m³/sec and length of 1400 km, unique water lifting cascades, including Karshi cascade with flows of 350 m³/sec and lifting height of 180 m and so on.

In Soviet times two basin water organizations BWO "Amudarya" and BWO "Syrdarya", founded by the Ministry of Water Resources of the USSR, were responsible for basin water resources management and control. Scientific Production Association "SANIIRI" fulfilled the functions of Regional Scientific Center on Water Resources.



• **Hydro structure on Chardara reservoir**



• **Karakum reservoir**



• **Toktogul reservoir**

After collapse of the Soviet Union, to prevent arising of conflicts and serious complications in water resources management and to put water allocation, limitation and account in order, the Ministers of five Central Asian independent states (N. Kipshakbayev, V. Melnichenko, A. Nurov, A. Ilamanov, R. Giniyatullin) in consequence of negotiations, meetings and discussions adopted at the conference in Tashkent on 10-12 October 1991 the Statement, in which, based on historical community of Central Asian peoples, their equal rights and responsibility for ensuring rational water resources use in the region, and taking natural and economic conditions into account, they recognized that only joint actions in coordination and management can help to effectively solve the region's water problems in a context of increasing ecological and social tension.

On 18 February 1992, five Ministers of Water Resources of Central Asian states (N. Kipshakbayev, M. Zulpuyev, A. Nurov, A. Ilamanov, R. Giniyatullin) signed in Almaty "Agreement on cooperation in joint management, use and protection of interstate sources of water resources". Actually, this agreement founded a united body Interstate Coordination Water Commission (ICWC). This Agreement was confirmed by the Judgment of the Presidents, Kzyl-Orda, 26 March 1993, and their "Agreement on joint actions on resolving the problems related to the Aral Sea and its coastal zone on environmental sanitation and social-economic development in the Aral Sea region", and later by Agreement of the region's five countries of 9 April 1999 "On status of IFAS and its organizations".



ICWC, represented by five Ministers of water resources or by their prime deputies at par, is the body of five governments, which entrusted direct functions of water resources management and development and maintenance of sustainable natural and hydro ecological processes on transboundary water resources to the Ministries (State Committees, Departments) of Water Resources.

The meetings are held quarterly by chairmanship of adequate states' representatives in turn. 33 meetings of the Commission have been held by May 2002.

The main issues considered at the meetings are: determining a single water economy policy and working out its main directions in the interests of population and the sectors of the states; water resources rational use and protection; programs on enhancing water supply for river basins and measures on their performance; confirming the limits of annual consumption of water from its main sources for each of the states, and operation modes of large reservoirs; water allocation management and adjustment in the context of actual water availability and forming water economy situation.

ICWC also considers environmental programs related to the Aral Sea drying and water sources exhaustion, determination of annual volumes of water supply to river deltas and the Aral Sea, as well as of sanitation releases over rivers and canals.

At the meetings draft interstate agreements on joint water resources use, on water use legal foundations, on creation of a unified information base on water resources use, on monitoring of irrigated lands and adjacent areas, on provision of general hydro meteorological maintenance, on coordination of joint studies on scientific and technical support of regional water management problems, on schemes preparation fulfillment and others are discussed.

During the last decade in different years ICWC members were:

for the Republic of Kazakhstan N. Kipshakbayev, T. Sarsenbekov, A. Ramazanov;

for the Kyrgyz Republic I. Zulpuyev, A. Polotov, V. Melnichenko, J. Bekbolotov, A. Kostyuk, B. Koshmatov;

for the Republic of Tajikistan A. Nurov, V. Shafoyev, I. Eshmirzoyev, I. Ashurov, D. Mahsudov, A. Nazirov;

for Turkmenistan A. Ilamanov, P. Odeyev, A. Dadonov, S. Kurbanov, T. Altiyev, K. Volmuradov;

for the Republic of Uzbekistan R. Giniyatullin, T. Kamalov, A. Djalalov.

Taking into account services in formation and organization of Interstate Coordination Water Commission, which assists in strengthening of economy and friendly relations between Central Asian peoples, its founders N. Kipshakbayev, M. Zulpuyev, A. Nurov, A. Ilamanov, R. Giniyatullin - were selected as its Honorary members according to the 16th ICWC meeting decision.



First ICWC meeting

**ICWC founders (from left to right):
M. Zulpuyev, N. Kipshakbayev, A. Ilamanov,
A. Nurov, R. Giniyatullin,
April 6, 1992, Ashkhabad**



Visits of ICWC members and its organizations' personnel for acquaintance with progressive methods to France (1994), Italy, Belgium (1995), USA, Canada (1996, 1997, 1998, 2000), Spain (1998), Israel (1995, 1997), India (1999), Pakistan (1999) with the sponsoring support of the World Bank, European Union, Canadian International Development Agency (CIDA), USAID, Israeli Government, Indian Government, Swiss International Development and Cooperation Agency (SCD) were organized.

In March, 2000, a big delegation of ICWC and IFAS participated in the Second World Water Forum in the Hague, Netherlands, decisions and materials of which reflect the main purpose to find consensus between needs of water for nature, food production, human and the world that is feasible through integrated water resources management, concerted and equitable use of transboundary water resources in the interests of adjacent countries as well as of the environment, establishing and supporting adequate management infrastructure, creating advanced information system, water conservation and increasing the productivity of each cubic meter of water.

Regional paper "Water the 21st century vision for the Aral Sea basin " was presented at the special seminar on the Aral Sea basin problems. ICWC members Ramazanov A.M., Beyshekeyev K.K., Nazirov A.A., Altiyev T.A., Djalalov A.A., and also Giniyatullin R.A., Dukhovny V.A., Khamidov M.H. take part in Ministerial Conference within the Forum.

During 5 days of the Forum work, ICWC and IFAS specialists held many bilateral and multilateral meetings with the representatives of international organizations and foreign partners to discuss cooperation extension.



ICWC delegation at the 2nd World Water Forum, Hague, 2000



ICWC from the beginning of its activity organized close cooperation with UNESCO, World Bank, UNDP, UNEP and other international organizations that allowed to jointly work out and present "Program of concrete actions on improving ecological and socio-economic situation in the Aral Sea basin", to which significant funds were allocated yet in the first stage, on behalf of five Central Asian states at donors meeting in Paris, 1994.

ICWC founder countries actively take part in work of International Commission on Irrigation and Drainage (ICID), of which they are juridical members. Special Working Group on the Aral Sea basin has been organized within ICID.

ICWC representatives participated in ICID congresses in the Hague, 1993 (Giniyatullin, Dukhovny), in Cairo, 1996 (Sarsembekov, Bekbolotov, Ashurov, Dreyakuliyev, Djalalov, Dukhovny), in Spain, 1999 (Sarsembekov, Altiyev, Djalalov, Dukhovny), in the 47th ICID Conference, Oxford, 1996, in the 49th Conference of ICID International Executive Committee, Indonesia, 1998, in the 50th Conference in Granada, Spain, 1999, Bonn Conference on Fresh Water, Germany, 2001.

To enrich decision makers - water sector leaders - with progressive methods it is important that they take part in study tours on water management activity in the leading countries of the world.



• **After signing Agreement between IFAS and World Bank on GEF Project beginning, April 1998**



ICWC from the very outset had 3 executive bodies newly established Secretariat and earlier existed two basin organizations BWO "Amudarya" and BWO "Syrdarya", which were engaged in water resources allocation and head structures, interstate canal beds and structures serviceability maintenance and solved all issues, related to efficient water resources management in five countries and water supply to the Aral Sea and its coastal zone.

Then Scientific-Information Center (SIC), which would fulfil planning, development, informing and other functions and brings together more than 16 scientific and project organizations of Agreement member countries, and its national branches were established. Coordination Metrological Center (CMC) was started up in 2000.

Main directions of ICWC and its executive bodies practical work are:

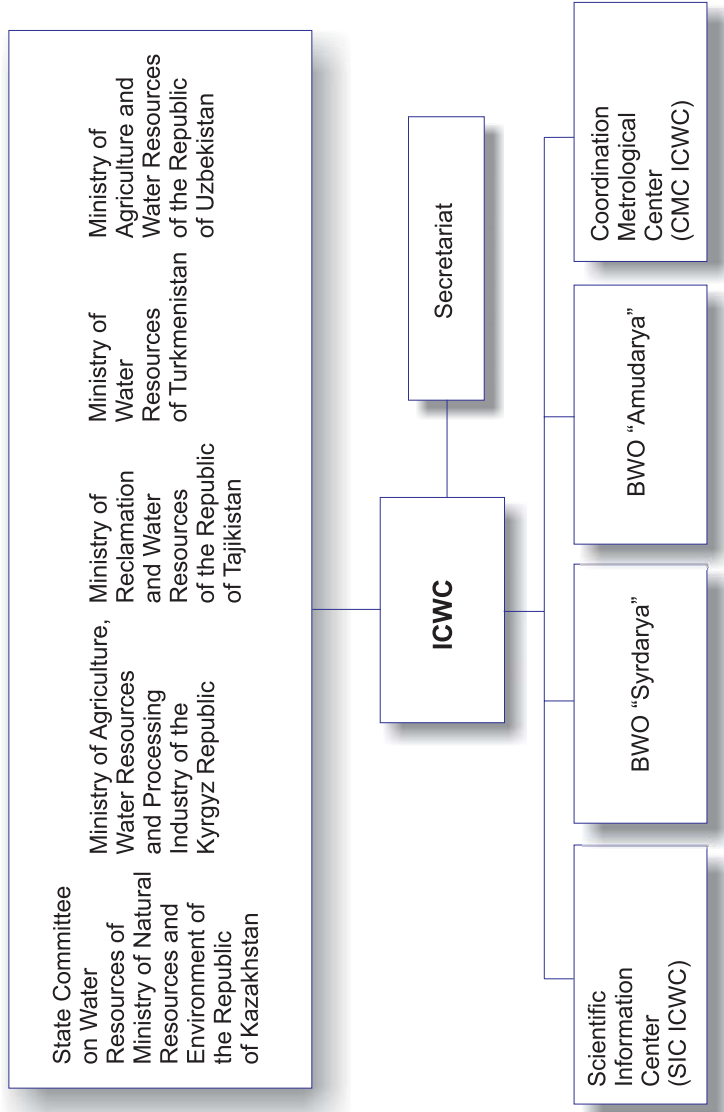
- River basin management;
- Non-conflict water allocation;
- Organization of water conservation on transboundary water courses;
- Interaction with hydro meteorological services of the countries on flow forecast and account;
- Introduction of automation into head structures;
- Regular work on ICWC and its bodies activity advancement;
- Interstate Agreements preparation;
- International relations;
- Scientific researches;
- Training.



• **ICWC meeting in Nukus, October 1993**

STRUCTURE of Interstate Coordination Water Commission of Central Asian states

FOUNDERS OF ICWC



The Aral Sea basin is now the region, to which the international community draws heightened attention, and which is field of international cooperation in solving the Aral Sea crisis that affected through its sequels more than 35 million people, living on the territory of five Central Asian states.

Large-scale irrigation of huge desert land areas in terms of scarce water resources led to the Aral Sea level fall and its productivity loss. Hundreds of giant hydraulic structures and irrigation of 7.5 million ha turned into climatic, sanitary and socio-economic situation worsening and desertification of more than 1.4 million ha lands in the Aral Sea coastal zone.

Significant increase of population, need for food and job provision resulted in intensive irrigation, which in turn led to above-mentioned phenomena. So, the Aral Sea and its basin program have become not only Central Asian problem, but also global one, and ways of solving the Aral crisis will notably influence the international community to recognize importance of concerted and integrated efforts on eliminating the consequences of the 20th century's biggest environmental disasters.

Just because of that the world-wide interest in ICWC experience is intense enough as well as willing to help to solve the Aral Sea problems on behalf of whole international community.



*Dried bottom
of the Aral Sea*





Regular work on ICWC and its executive bodies activities advancement is carried out.

For the purpose of preparing and working out proposals in this field, thematic groups on legal, organizational, financial, economic and technical issues and training were formed by decision of the 30th ICWC meeting. The groups have recommendatory and advisory status and are trusted to give concrete proposals and recommendations for enhancing effectiveness of transboundary water resources and adequate water objects use, to work out proposals on unifying water legislation of the region's states, to take measures on operation, to prevent and eliminate emergency conditions in transboundary objects.

The tasks of groups also include reduction of flow losses along Amudarya stem stream, refining of flow forecasts in a real time, hydrometric account improvement, development of financial and economic activities modeling and so on.

ICWC confirmed the plan for development of works on interstate agreements and the schedule of their implementation. After efforts of conciliatory commissions, consisted of Central Asian states representatives, Draft Agreement "On formation and functioning of national and basin databases on the Aral Sea basin transboundary water resources integrated use and conservation" was prepared, signed by ICWC members and submitted to IFAS.

Work plan of the group on legal issues includes revision and preparation for submission a whole package of agreements on seven directions, among which continuation of works on revision of interstate agreements "On the main principles of Syrdarya River basin transboundary water resources joint and rational use" and "On transboundary water resources conservation, rules on control of their quality and guaranteeing environmental sustainability in the region" is of primary importance.



• **Charvak reservoir**



• **Nurek hydro power station dam**



Daily activity

Transboundary water resources of two main rivers, Amudarya and Syrdarya, in the center of which the Aral Sea remains are situated, are the main subject of direct management and joint development in the Aral Sea basin that should be implemented by ICWC and its executive bodies.

ICWC, as the body of five states, fulfils functions of water resources management and development and maintenance of sustainable natural and hydro ecological processes on water resources directly through two BWOs "Amudarya" and "Syrdarya". Owing to their efforts during decade, non-conflict allocation of joint water resources and serviceability of all canal beds, structures, paths are ensured as well as all issues, related to effective water resources use in five states and water supply to the Aral Sea and its coastal zone, are solved. It is known that "Plan of concrete actions on improvement of situation in the Aral Sea basin" and "Main provisions of the Aral Sea coastal zone conservation concept", worked out by ICWC, were approved on 11 January 1994 by the Heads of state; afterwards the Commission prepared "Main provisions of water strategy of the region and five countries" and submitted it to consideration of the governments in 1996.

Taking into account scarcity of water resources in the region, water-saving is not less important component of the Commission work.



• **BWO "Amudarya", Urgench**



• **BWO "Syrdarya", Tashkent**

In 1960, total water intake in the Aral Sea basin was 60 610 million m³, but by 1990 it increased to 116 271 million m³, or by 1.8 times. For the same period, the population on the indicated territory rose up by 2.7 times, irrigated areas increased by 1.7 times, agricultural production by 3 times, gross national product almost by 6 times (see table). After the Soviet Union collapse in 1991, total water use in the region started to decrease that was caused by general economic degradation.

Main indicators of water and land resources use in the Aral Sea basin

Indicators	Unit of measure	1960	1970	1980	1990	2000
Population	million of people	14.1	20.0	26.8	33.6	41.5
Irrigated lands area	thousand ha	4510	5150	6920	7600	7990
Irrigated area per capita	ha/man	0.32	0.27	0.26	0.23	0.19
Total water intake	km ³ a year	60.61	94.56	120.69	116.27	105.0
Including for irrigation	km ³ a year	56.15	86.84	106.79	106.4	94.66
Specific water intake per 1 hectare of irrigated area	m ³ /ha	12450	16860	15430	14000	11850
Specific water intake per capita	m ³ /man/year	4270	4730	4500	3460	2530
Gross domestic product	billion USA dollars	16.1	32.4	48.1	74.0	54.0
Including agricultural product	billion USA dollars	5.8	8.9	18.3	22.0	15.0

After 1992, as a result of concerted water conservation policy, accepted by ICWC, the reduction of total water intake had become target tendency. In 2000 total water intake was 104 955 million m³ that is 11.4 km³ less than in 1990.

At the same time, undoubtedly, water intake reduction in the basin was resulted mainly by gross output volume diminution in most countries of the region, as well as cereal crops increase along with rice and cotton cutting down.

To develop this activity, ICWC initiated several programs for water use effectiveness enhancement. These are WUFMAS Project of the European Union (1996-1999), "The Aral Sea basin water resources and environment management" (contest on water saving - GEF - A-2, 1999-2000), "Best practices in water use" (IWMI, 2001). Supported by Swiss International Development and Cooperation Agency (SDC), the new ICWC/IWMI initiative - "Integrated Water Resources Management in Fergana Valley" Project (2002-2005), developing the transfer to hydrographic method of water resources management within Fergana Valley - is of a great importance in joint solution of the above issue.

Hydrological forecast reliability is of great importance in basin water resources management. So, the issue of strengthening interaction between water bodies and hydro meteorological services on Syrdarya and Amudarya flow amplification and hydrometeorological forecast reliability advancement was put at the 28th ICWC meeting. Measures to renew systematic observations on meteorological stations on Fedchenko and Abramov glaciers, to realize annual two-time test flight for definition of snow supplies in flow formation zone, and also to restore meteorological stations and hydro posts in the Aral Sea basin are planned.

No less attention is drawn to the issue of water-resources systems automation.

In the light of realizing the Program 7 "Water resources management and control in Amudarya and Syrdarya and Syrdarya river basin", Canadian company UMA Engineering LTD jointly with BWO "Syrdarya" and SIC ICWC and with the support of Canadian International Development Agency (CIDA) designed, installed and commissioned in 1999 an automated system of monitoring and control over headwork of "Dustlik" canal, which supplies water to 220.0 ha of irrigated lands in Kazakhstan and Uzbekistan.

Installation of analogous automated system of Kyrgyz firm "Sigma" on Upper Chirchik hydrounit with financial support of USAID has been completed. Similar works on "Pakhtaabad" canal with the assistance of USAID.

Preparation for comparative tests of these systems on "Dustlik" canal ("SCADA", Canada), South Golodnostepskiy Canal and Upper Chirchik hydrounit ("Sigma", Kyrgyzstan) are in progress.

"Sigma" system launch and adjustment works on Uchkurgan hydrounit are being done with the assistance of SDC.



Headwork of interstate canal "Dustlik"

