

Interstate Coordination Water Commission of Central Asia	BULLETIN № 1 (36)	February 2004
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CONTENT

REGULAR 37th MEETING OF INTERSTATE WATER COORDINATION COMMISSION.....	4
INFORMATION ABOUT JOINT PROJECT OF MINISTRY OF ENVIRONMENT OF TURKMENISTAN AND UNDP “ASSESSMENT OF AFGHAN CRISIS IMPACT ON AMUDARYA WATER QUALITY IN TURKMENISTAN”	8
ALL-RUSSIAN WATER CONGRESS.....	10
RUSSIA WATER ISSUES.....	11
RESOLUTION OF ALL-RUSSIA WATER CONGRESS	14
WATER RESOURCES INTEGRATED MANAGEMENT – BASE OF WELL-BEING IN FERGHANA VALLEY.....	17
WORKING MEETING «DIALOGUE ABOUT WATER AND CLIMATE»	19
ROUND TABLE «WATER-ENERGY-CLIMATE».....	21
SEMINAR-TRAINING ON NATO SFP-974357 AND SFP-974101 PROJECTS.....	23
WORKSHOP «INTEGRATED WATER RESOURCES MANAGEMENT – INTER-SECTOR AND INTERSTATE APPROACHES».....	26
WORKSHOP AND WORKING MEETING ON IWRM PRINCIPLES STRATEGIC PLAN REALIZATION IN CENTRAL ASIA.....	27
WATER USERS ASSOCIATIONS AND WATER RESOURCES RATIONAL USE.....	29
ASIAN DEVELOPMENT BANK AND CENTRAL ASIA	31
WATER COMES FROM WATER.....	34
CONFERENCES, EXHIBITIONS, SYMPOSIUM.....	36
SIC ICWC PUBLICATIONS	41

REGULAR 37th MEETING OF INTERSTATE WATER COORDINATION COMMISSION

On December 22-24 2003 in Karshi regular 37-th ICWC meeting has been held under chairmanship of First Deputy Minister of Agriculture and Water Resources of Uzbekistan A.A.Jalalov.

Agenda included following questions:

1. About water intake limits realization during growing season 2003 and approval of limits for non-growing period of 2003-2004.
2. About ICWC and its executive bodies' financial-economic activity for 2004:
 - O&M needs financing plan;
 - Plan of scientific research for SIC ICWC, national scientific and design organizations;
 - Work plan of CMC ICWC and national metrological organizations;
 - Work plan of ICWC Training Center.
3. Information provision within ICWC.
4. Progress in PBAM-2 program.
5. Metrological state of operational hydrometry and information technologies and measures on its improvement.
6. Agenda of next 38-th ICWC meeting.
7. Additional question (introduced by ICWC member A.D.Ryabtsev). Expected complicated water related situation in Syrdarya middle and lower reaches in winter-spring period 2004 and ICWC work group establishing to define optimal regime of releases from Naryn-Syrdarya reservoir cascade.

ICWC members accepted BWO Amudarya“ and “Syrdarya” information about water intake limits realization reservoir cascade operation mode maintaining during growing period 2003. Limits for next year and non-growing period 2004 were approved

Participants accepted BWO Amudarya“ and “Syrdarya” O&M cost estimates for 2004, expenses for SIC ICWC and its branches financing, expenses for international scientific-research program, CMC and national metrological centers, Training Center for 2004-2005.

Participants accepted SIC ICWC information about Regional database establishing on water resources in Central Asia (CAREWIB). ICWC members within one month will present their proposals on project organizational structure and information content.

Decision of IFAS Board dated 28.08.2003 about approval of “Program of concrete actions on ecologic and social-economic situation improvement in the Aral sea basin for 2003-2010” is accepted for implementation..

Analytical note prepared by CMC “About metrological provision of operation hydrometry and information technologies in the Aral sea basin and measures on its improvement” is accepted for consideration. CMC jointly with national metrological centers are charged to prepare concrete proposals on each direction and submit to next ICWC meeting.

Next ICWC meeting to be carried out in Ashgabat in march 2004with following agenda:

1. Water intake limits realization during non-growing period of 2003-2004 and limits for growing season 2004 approval as well as reservoir cascade operation mode coordination (responsible: BWO “Syrdarya” and “Amudarya”).
2. Project “Integrated water resources management in Ferghana valley” (responsible: SIC ICWC).
3. ICWC executive bodies activity in 2000-2003 and measures on its improvement (responsible: BWO “Syrdarya” and “Amudarya”, SIC ICWC, CMC, TC).
4. Preparation of annual scientific-applied conference in Almaty.
5. Agenda of next 39-th ICWC meeting.

Existing water related situation creates threat of settlements and enterprises flooding. This is deep concern of ICWC members.

To prevent and avoid emergency situation, BWO “Syrdarya” is charged:

- to direct information to the governments of states located in Syr Drya basin about emergency situation in Syrdarya middle and lower reaches caused by high humidity and expected inflow to Chardara reservoir and establishing special commission.
- to develop and agree with concerned organizations Naryn-Syrdarya cascade operation mode and to submit to ICWC members.
- to submit proposals on working group establishing from representatives of water and power bodies for safe water pass in winter.
- establish daily communication with water bodies of riparian countries.
- organize increased water intake from river to reduce inflow to Chardara reservoir.

AGREEMENT ON COLLABORATION BETWEEN SCIENTIFIC-INFORMATION CENTER OF COMMISSION FOR SUSTAINABLE DEVELOPMENT (SIC SDC) AND SCIENTIFIC-INFORMATION CENTER OF INTERSTATE WATER COORDINATION COMMISSION (SIC ICWC)

SIC SDC is scientific-information and executive body of SDC; it has national branches in 4 states of Central Asia.

SIC SDC is responsible for:

- ecologic and social-economic data collection, processing and summarizing;
- creation of common scientific-information data base and bank on nature protection and rational water resources use in the Aral sea basin;
- development of recommendations on scientific-technical, ecologic and social-economic cooperation within Aral sea region;
- participation in preparation of periodical publications and scientific, technical and advanced experience information provision;
- development of concept and program of uniform system of environmental monitoring;
- development of common methodological base of natural resources and related projects' ecologic-economic assessment;
- development of main principles, indicators and criteria for national legislations on population environmental and social protection;
- SDC members' information about changes of ecologic and social-economic conditions all over the world.

SIC ICWC is scientific-information and executive body of ICWC; carries out its activity jointly with scientific-research and design institutes of Central-Asian countries and has national branches in 4 states of Central Asia.

SIC ICWC is responsible for:

- coordination of joint activity in the region;
- preparation of ICWC regular meetings;
- development of common scientific programs on water resources management; water sector prospective development; water conservation; coordination with other sectors: power, environment, hydrology, capacity building;
- ICWC members information about changes occurring in water sector all over the world;
- strengthening legal base and organizational structure in water sector;
- strengthening collaboration in water resources use and management based on the world experience;
- information-publication activity;
- establishing common information base of water resources use, water, irrigated lands, climate and social-economic monitoring;
- regional projects initiation and coordination;
- ICWC Training Center activity supervision.

According to agreement between SIC SDC and SIC ICWC parties agree on following collaboration:

1. Support and develop information exchange on parity base.

SIC ICWC presents information about:

- a) water resources (surface and ground water);
- b) water sector economy;
- c) irrigated agriculture.

SIC SDC presents information about:

- a) social-economic indicators of countries' development and perspective;
- b) indicators of natural complexes ecologic sustainability;
- c) indicators of population provision with safe drinking water;
- d) change of climatic indicators.

2. Jointly participate in development and realization of "Program of concrete actions on ecologic and social-economic situation improvement" for 2003-2010.

3. Promote regional collaboration in priority ecologic and water relates issues for sustainable development; planning and realization of bilateral measures of common interest.

4. Involve of both parties collaborates to participate in publications.

5. Promote experience and specialists exchange; invite representatives of other party to scientific seminars and conferences.

6. Promote establishing joint working groups for elaboration and coordination of other regional scientific programs (SIC ICWC creates water programs and SIC SDC - environmental ones). Both parties make mutual examination.

7. SIC SDC agrees to participate as Turkmen basic unit in EU bidding process with SIC ICWC proposal on establishing Information-consultation center within framework of EC program FP-6 in Central Asia.

8. Develop together special educational course on environment protection on base of ICWC Training Center.

9. Given agreement can present a foundation for other special agreements on joint projects and programs fulfillment.

10. Present agreement can be amended, complemented or canceled by written notification by one party to another.

11. All agreements including financial aspects are fixed by separate contracts or agreements.

12. Agreement duration is 3 years since date of its signing by both parties and can be extended by mutual agreement.

P.E.Esenov
Director
SIC SDC

V.A.Dukhovny
Director
SIC ICWC

INFORMATION ABOUT JOINT PROJECT OF MINISTRY OF ENVIRONMENT OF TURKMENISTAN AND UNDP “ASSESSMENT OF AFGHAN CRISIS IMPACT ON AMUDARYA WATER QUALITY IN TURKMENISTAN”

Amudarya comes to Turkmenistan through Kelif gorge of Gissar ridge. Biggest tributaries of Amudarya are Pyanj and Vahsh; after their confluence river takes name Amudarya. River flow is fully formed in mountains, watershed area is 200 th.km².

Average annual Amudarya runoff amounts to 65 km³, from which 60% or 40 km³ belongs to Pyanj river. One third of Pyanj watershed locates in Afghanistan. River runs for 1000km along the border between Afghanistan, Tajikistan and Uzbekistan. Turkmenistan locates in middle and lower reaches of the river.

According to available data, Afghanistan can become potential source of Amudarya. In northern provinces of Afghanistan (Kunduz, Tahar, Badahshan and Baglan) there is dense irrigation network – many Pyanj tributaries with croplands and cities Khanabad, Faizabad, Kunduz and Talokan as well as many settlements.

During last 20 years Afghanistan ecosystem aggravated. This damage was caused by unlimited natural resources use and military operations since 1979. Balanced ecosystems start to degrade by high rate and destroy.

Afghanistan is traditionally agricultural country – rural population amounts to 80%. Since start of war agricultural production has declined by 50%. Population used natural resources like forests that led to flood and avalanches. Many forests were burned during the war. Croplands also burned out and degraded because of heavy machinery and chemicals.

Due to topographic peculiarities, aridity and soils, near 80% are subject to erosion. During intensive rainfalls typical soil of Afghanistan (loess) is destroyed. Negligent and thoughtless land use for agricultural crops production, steep slopes reclamation, bush and trees cutting lead to soil erosion.

During the war chemical weapon was used that damaged soil but there are no evaluations of this impact.

Traditionally Afghanistan produced ecologically pollution-free production but presently under pressure of foreign companies danger chemicals are applied: DDT and BHC are widely used to date.

Presently, Afghanistan environment is in critical state. Main issues are as follows: soil erosion, forest disappearance, biological agents' dissemination. To assess impact of this crisis on Amudarya water quality, in Turkmenistan since October 2002 Ministry of Environment jointly with UNDP is implementing project with following main objectives:

- evaluation of Afghan crisis impact on Amudarya river water quality within Turkmenistan;
- water quality monitoring and analysis at the border between Afghanistan and Turkmenistan;
- study of water quality trends over gauging stations: (Atamurat, Turkmenabat, Birata);
- strengthening potential of chemical laboratories under Ministry of Environment;

Within this project experience of the water sector, health services, Turkmenhydromet, Turkmenstandard, Turkmengeology, BWO “Amudarya” and Ministry of Environment laboratories and existing monitoring of water quality were studied.

In result of this activity became evident that nobody carries out water quality monitoring by Kelif and measurements by Atamurat, Turkmenabat and Birata are not continuous including only definition of water physical properties, biogenic and organic matter.

In order to define water pollution, monthly quality monitoring by Kelif, Atamurat, Turkmenabat and Birata has been established with definition of following components:

- organoleptic characteristics;
- physical parameters;
- total salinity and main ions
- BCO₅ and CCO, hardness;
- pesticides;
- biogenic matter;
- heavy metal ions;
- specific matters;
- microbiologic matter.

Water sampling was performed with regard to current running up time from one alignment to another. Analyses were performed in Turkmengeology, Ministry of Environment and Lebap Sanitary-Epidemiologic Service laboratories.

ALL-RUSSIAN WATER CONGRESS

On December 9-10, 2003 in Moscow under auspice of the Ministry of Natural Resources All-Russian Water Congress was held. It was carried out within framework of the Year of Fresh Water announced by UN.

All 89 regions of Russia and delegation from 17 countries and international organizations were presented including UN EEC and WWC. There were 10 thematic sessions and exhibition. Congress participants discussed initiative of the Ministry of Natural Resources on establishing in Russia common body on hydraulic structures, reservoirs and other water bodies operation. Presently, many ministries (agriculture, transport, power engineering) are responsible for hydraulic structures management.

According to N.M.Tarasov, Water Department Head, payments allocated by different ministries for hydrostructures maintenance (4.3bln.ruble) will be unified and used purposefully. Second source of funding will be water users fee (this measure is foreseen in new Water Code). To compare: now from 14bln.ruble only 17-19% return to water sector. Third source of funding is federal target programs.

Ministry of Natural Resources realizes President and Premier's order to work out main directions of water sector development up to 2010. All-Russian program "Water of Russia – 21 century" is a base for this activity. It consists of 89 regional programs and 16 programs for biggest river basins.

Special attention was paid to transboundary basins management. Two years ago Russia has taken obligation to develop document on interstate transboundary water resources allocation to bring together positions of different CIS countries. Document has been endorsed in the end of November in Madrid. Russia also suggested introduce these recommendations in Tobol basin. This proposal has been supported by Kazakhstan.

WWC Executive Director Daniel Zimmer and representative of WWC Board member Vadim Sokolov (SIC ICWC) noted that within CIS countries only three countries are WWC members. Proposal was introduced to establish WWC Regional Center in Moscow. This center will organize following joint activity within CIS space:

- joining world water community as active participants;
- development of common ways of transition from administrative management to IWRM principles;
- knowledge and experience exchange among members and between West and East. .

Rainer Enderlein, Leader of Helsinki Convention Secretariat and Head of water Department N.M.Tarasov explained to participants WECZA component of EC Water Initiative. Presently, near 150 "building blocks" are presented, which will be considered at high level meeting in Moscow on February 26-27, 2003.

Bo Libert (Helsinki Convention) told about three partnerships within the region: ecologic strategy WECZA, Strategic partnership and Central-Asian Initiative. He presented review on transboundary collaboration in CIS and told about Convention Secretariat activity. In particular, at Madrid conference 6-7 workshops are proposed for CIS during 2 years in order to strengthen network and capacity. It is also planned to carry out activity on Helsinki Convention introduction in Central Asia (though only Kazakhstan joined Conven-

tion to date) and fining pilot projects for this region. Bo Libert noted “bottle necks” in some basins including Dnester one where collaboration between Ukraine and Moldavia can be developed.

Representative of Joint Russian-Finnish Commission on frontier water systems use told about 40-year experience of this commission activity. He told also about EC Framework Directive, which obliges EU members cooperate with non-members in international river basins.

Water Congress in Russia is planned to be held each three years. From ICWC in Congress took part prof.N.Kipshakbaev, Director SIC ICWC Kazakh branch and SANIIRI Director R.I.Ikramov.

RUSSIA WATER ISSUES

Review of report «National program «Water of Russia – XXI century» prepared by State Council of Russian Federation.

Water resources of Russia provide economic and social well-being of people living on its vast territory. Existing water sector is very important for successful development of the country. But practice of wasteful attitude to water plus imperfect water legislation and financing mechanism led to crisis. Report «Water of Russia – XXI century» is devoted to ensuring population and economy provision with safe water, flood protection and water bodies ecologic state improvement.

Russian Federation is one of the richest states of the planet in terms of fresh water resources. Their volume amounts to 60 th.km³. Near three millions of rivers and creeks run across its territory with total volume 4.3 th.km³. 2.7mln. lakes contain 26.5 th.km³ of fresh water. In European part of the country, where 80% of population live, only 8% of water resources is located.

Due to economic decline, water consumption in Russia reduced by 30%. Presently, 85 km³ are taken from natural water bodies, 133 km³ are saved due to water rotation and recycling. Cost of main assets of water sector (water pipelines, pumping stations, treatment plants) is estimated as 360bln.ruble.Near half of them is worn and needs rehabilitation. For river flow regulation there are about 30 000 reservoirs with total capacity 800 th.km³. There are 65 thousands of objects in water sector.

Each fifth water sample does not meet hygienic requirements. Damage to population health is 30bln.ruble/yr. Flood issue is most critical, which annual damage is 40bln.ruble/yr. Climatic changes increase probability of catastrophic floods. Hydrometric network and degree of water bodies’ study do not meet modern requirements.

Major issues of water sector are as follows: unsatisfactory drinking water supply, wasteful water use, unsatisfactory water quality, aggravation of main assets and low efficient management system. In Volga and Don basin there are problems with water quality, wastewater treatment, fish and biologic resources reproduction.

Goal of the program is provision of sustainable water use, creating favorable ecologic situation, hydraulic structures safe operation, flood protection based on set of measures.

Program contains proposals from the regions and oblasts and is directed at elimination of long-term sectoral and territorial separation in water use. «Doctrine of sustainable water use», «Concept of state management by water resources improvement» and «State strategy for water objects use, rehabilitation and protection» constitute a base of this program. Program is planned to be realized up to 2015.

National program has being created at three levels: territorial, basin and federal. Its foundation is built on territorial programs including water use and protection measures permitting improve water supply. Measures of territorial programs are unified in 19 basin sub-programs. It worth to note, that national program is based on basin principle of management.

Near 60% of water is used for industrial needs, 20% - for municipal needs and 20% - for agriculture. Losses in external networks reach 13%/yr (8.6 km³). Water objects are intensively used for navigation, power engineering and fish breeding.

To improve water supply quality set of technical measures is foreseen including creation of new regulating capacities and water works in zone of water deficit, treatment plants and water supply systems reconstruction and building, power and transport water work construction, modernization of existing water related systems.

It is expected wider ground water use for large cities water supply. High efficient technologies including multi-step filtration without chemicals and with biologic reactors and slow filters; water treatment by ozone and ultraviolet ray should be introduced. To improve agricultural water supply, 133 th.km of new pipes and treatment plants of total capacity 0.6mlnm³/day to be constructed. Ground water use will be also among priorities.

As to power engineering, it is planned to complete Boguchan power plant, start construction of Nizhneangarsky power plants and power plants cascade on Katun river. Feasibility study for power plants construction on Aldan, Vitim rivers and Turuhan power plant in Evenk is foreseen with 50blnkv^t transmission to Ural and European part of the country.

To improve internal navigation it is planned to build second lines on Kochetov lock on Nizhny Don and on Volga-Baltic waterway. Total expenses for above measures amount to 324 bln.ruble. Urban population will be supplied with water by100%, 19mln.people will receive safe water additionally.

Area endangered by flood is 400 th.sq.km, territory endangered by catastrophic flood - 150 th.sq.km including 300 cities and thousands of villages.

Landslides threat to many large cities like Nizhny Novgorod, Saratov, Volgograd, etc. These threats should be assessed and addressed by building dams, collectors and other protection structures. In particular, it is planned to complete dam in Finnish bay protecting Saint-Petersburg. Totally more than 2 thousand dams to be built. Total cost of these structures is 105 bln.ruble. It will permit reduce annual damage from flood by 3-4 times.

Serious attention is planned to be paid to hydraulic structures (60% is not belong to state) safety. Operation duration of many from them exceeds 40-50 years that increase probability of accident. Forty millions people live in risk zone. Cost of measures amounts to 87bln.ruble.

Special attention is paid to pollution issues. Annually 55km³ of wastewater are released to natural water objects, from third part is polluted. Construction of new and reconstruction of existing treatment plants are foreseen in all regions. For this purpose 250bln.ruble will be allocated.

Due attention is paid to development of water resources monitoring system and information provision. Total number of surface water observation points is 5000. Perfection of state management by water resources will be made through strengthening and widening functions of basin organizations and transfer to them significant part of federal bodies' authorities. In particular, basin councils will be established for regional and another water users interests' coordination.

Main principle of economic regulation in water relations should become paid water use, simulation of rational water use, target water charges use for water related measures funding.

International cooperation in transboundary object management improvement (more than one thousand including 70 large and medium rivers) is foreseen.

Program staff provision foresees specialists' preparation and training, new educational technologies introduction. Since water sector is science intensive, it is planned to develop network of scientific-research and design organizations in this sector. Water strategy will be developed with participation of the Academy of Science, concerned ministries and agencies, international organizations.

Total cost of all water related measures foreseen by the national program is 807bln.ruble (in price of 2002) including: 680bln.ruble for capital construction, 54bln.ruble for research. Urgent measures of first stage (2003-2005) need 175bln.ruble. It must stabilize water related situation in the country. Second stage measures (2006-2010) are also called urgent and cost 343bln.ruble. Measures of third stage are perspective (2011-2015) and cost 288bln.ruble. They must ensure integrated and rational use of water resources.

Assessment of program economic effectiveness supposes that by means of paid water use. Program realization will lead to 200-250 new working places creation and damage to population health reduction by 30bln.ruble/yr as well as damage from flood reduction by 30bln.ruble/yr. The main thing is providing water sector normal functioning

System research in all national program's main directions is foreseen with close cooperation between governmental bodies, local authorities, water users and non-governmental organizations at federal, basin and territorial level.

RESOLUTION OF ALL-RUSSIA WATER CONGRESS

Moscow

December 10, 2003

Participants of All-Russia Water Congress representing wide circle of water specialists note that system discussion of water sector role, place and state took place. On base of this discussion, set of proposals has been developed including conceptual ones recommended to be realized by the Ministry of Natural Resources, federal and regional agencies.

Developed in 2002-2003 by the Ministry of Natural Resources jointly with concerned federal and regional agencies National Program "Russian water sector development" became a base for consideration by State Council in Rostov-on-Don (03.09.03), at which President gave directions and mechanisms of this issue solution:

- short terms are determined for development of main directions of water sector development up to 2010 and action plan for their realization;
- responsibility of federal agencies is determined for improvement of water supply and water object state, flood protection; regional and local authorities in technical perfection of water supply system, hydraulic structures safety since 2005 from federal and local budget.

Basic sub-programs "Water resources and water objects", "Volga revival", "Baikal protection", "Environment and natural resources of RF (2002-2010)", "South of Russia", "Far East and Trans-Baikal", "Municipal service reforming", "Drinking water supply", "protection from negative water impact" are being realized.

Participants express gratitude to RF President V.Putin for continuous attention to water resources use as most important factor of economic and ecologic security of the country.

Participants consider expedient:

- to develop national water policy meeting principles of sustainable water use and integrated management both at national and basin level and ensuring economic growth with water ecosystem improvement;
- effective realization of state water policy with regard to specific hydrologic, ecologic and socio-economic conditions can be ensured by water strategy, basin and territorial programs development;
- most important task is to provide necessary scientific ground of water resources use impact on ecosystems, available water resources and their account in prospective development plans; hydraulic structures safety, flood protection and negative water impact preventing;
- one of the most important factors providing water sector sustainable functioning is innovation potential realization within framework of "RF policy of science and technologies development up to 2010 and further perspective";
- development and effective use of existing potential and involvement of organizations beyond the Ministry of Natural Resources including educational institutes will allow optimize and increase efficiency of state water management.

Participants single out:

- recognizing priority of international cooperation in shared water resources use and protection, transboundary collaboration in socio-ecological issues solution;
- necessity of rapid development and strengthening of international cooperation between CIS countries including use of European Water Initiative for Eastern Europe, Caucasus and Central Asia, interstate commissions and international programs;
- necessity of information interaction between federal meteorological body and regional and local bodies, its accuracy and reliability increase;
- necessity to develop scientifically grounded strategy (concept) of flood mitigation, developing on its base basin programs and action plans with short-term, mid-term and operative objectives;
- necessity to establish automated systems of early warning using satellites and radar network, information system for forecast and early warning;
- urgent development of «All-Russian program of water objects' state monitoring including monitoring of water systems and structures.

Congress recommends:

1. Ask the Government of Russian Federation:

1.1. Accept main directions of water sector development up to 2010 and action plan for their realization.

1.2. Provide in 2004 preparation of new edition of RF Water Code in accordance with approved concept, basin principle of water management and protection, legal regulation of ground water use, mining non-metallic minerals from water objects.

1.3. Make decision on federal law “About flood protection” development establishing legal base of flood protection, develop mechanism of economic activity regulation on flooded areas, economic damage reduction to acceptable level, water bodies protection from accidental pollution.

1.4. Support proposals on establishing common structure on all federal hydraulic structures' O&M.

1.5. Make decision on appointment of title «Distinguished water worker of RF».

2. Ask Ministry of Natural Resources:

2.1. Develop economic mechanism of water sector development and submit it to the Government:

- at first stage – introduce financial mechanism of water use in new edition of Water Code based on paid water use, amendments and additions to existing legislation providing stimulation of investments and innovations (Civil Code of RF; Law “About financial rent (lease)”, “About budget of RF”, etc.).

- at second stage – perfection of methodological approaches to water tariffs, mechanism of fund rising (market of water services, infrastructural concessions, leasing form of main assets renovation, subsidizing, ecologic insurance). Regular analysis of water legislation implementation and providing wide participation to its results.

2.2. Provide development and realization of personnel education and training.

3. State water service:

3.1. Use specific proposals developed on thematic sessions, international workshop and round table contained in their resolutions and directed at state water management im-

provement, sustainable flood protection, hydraulic structures safety, international cooperation in joint transboundary water resources use and protection.

3.2. Provide anticipatory development of normative, methodological and instructive base for water object use and protection including “Rules of reservoirs operation and “Rules of reservoir water resources use” for reservoirs Volga-Kama and Angara-Yenisei cascades; formation of automated information-advising system including modeling

3.3. Concentrate efforts on scientific-technologic provision, economic-organizational and legal mechanism of water conservation programs on priority directions:

- realizing principle: «each economic subject should become water conservation subject»;
- setting protected zones with regard to real ecological danger to watershed;
- development of technical regulations for water use and protection;
- optimization of water protection programs with regard to ecologic and economic factors;
- perfection of control over water quality and pollution sources;
- ecologic education and propaganda, attraction of mass-media to water objects protection.

3.4. Establish continuously functioning Executive Committee of All-Russia Congress to control Congress resolution observance.

3.5. Carry out next All-Russian Congress in 2006.

Participants highly appreciate activity of working group in Congress preparation and conduction.

Participants express their confidence that state water management system will serve a base for social-economic development, national security in economic and ecologic areas.

WATER RESOURCES INTEGRATED MANAGEMENT – BASE OF WELL-BEING IN FERGHANA VALLEY

Swiss Agency for International Development and Cooperation (SDC) finances project “Integrated water resources management in Ferghana valley” since May 1, 2002 till April 30, 2005. Interstate Water Coordination Commission (ICWC) is a customer. IWMI and SIC ICWC are responsible for project implementation.

During implementation phase activity is carried out in four oblasts: Andizhan, Ferghana (Uzbekistan), Osh (Kyrgyzstan) and Sogd (Tajikistan). To support field office in Osh has been established. Activity is carried out along three main canals: South-Ferghana (Uzbekistan), Aravan-Akbura (Kyrgyzstan) and Khodjibakirgan (Tajikistan).

Key outcomes

Communication network on base of electronic mail between all participants of the project (SIC ICWC – republican agencies – oblast water organizations – pilot WUAs – BWO “Syrdarya”) has been developed and established.

ICWC Training Center branch has been established in Osh; working program has been developed. Since October 2002 regular educational workshops are conducted for water organizations’ personnel, water users and NGOs of Ferghana valley.

IWRM concept base has been developed and submitted to republican agencies taking into account hydrographic boundaries, participation of all stakeholders and democratic principle of management. IWRM concept has been endorsed and agreed by republican agencies of Kyrgyzstan, Tajikistan and Uzbekistan on May 16, 2003.

In result of IWRM ideology propaganda Government of Uzbekistan decided to transform water resources management on base of hydrographic principle (cabinet of Ministers decree № 320 dated July 21, 2003).

Alternative institutional structures of water management at canal and WUA level were discussed and agreed. On base of these proposals, water agencies have established new subdivisions - Canal Boards for three canals.

“Typical provision on Canal Water Committee” and recommendations on these provisions application in each canal has been developed and submitted for practical utilization. In December 2003 Canal Water Committees were established at constituent meetings for each from three pilot canals.

Big attention is paid to IWRM ideology dissemination. System approach to social mobilization (IWRM principles explanation) has been developed – educational program for social mobilization and organizational development has been prepared. Regular educational seminars and sociological surveys provide new possibilities for public involvement in water sector reforming in Ferghana valley. Additionally, ministries of Tajikistan and Uzbekistan ask to organize 5 educational seminars (3 for Uzbekistan and 2 for Tajikistan) for rayon level on theme: «How establish WUA through social mobilization».

New WUAs («Akbarabad» on SFC, «Kerme-Too-Akbursai» on Aravan-Akbura canal and «Obi-Zerafshan» on Khodjibakirgan canal) have been established. . Newly established

WUAs were registered according to national legislation; WUA Boards signed agreements on joint governance in the beginning of 2003.

Project gives technical assistance in water metering along pilot canals and within WUA. This will improve water account within WUA and make it more transparent.

Water metering devices were produced in Regional Metrological Centre in Bishkek. Project started water supply management in real time on pilot canals within pilot WUAs as a water distribution and monitoring schedule during growing season on base of water users' applications with regard to climatic conditions. This is first step to equitable and equal water distribution and attempt to reduce water losses.

Project created information system (including database, set of mathematical models and GIS) working in real time, which is mighty tool of planning, analysis and water management perfection.

Certification of demonstrative fields within pilot farms permitted create tool for farmers to analyze their reserves and potential for land and water productivity increase. Tool for water consumption prediction depending on climatic conditions is being tested and to be introduced widely. Analysis shows that on 9 from 10 pilot plots land and water productivity increased. Where farmer did not follow recommendations, productivity decreased.

Many women are involved in land and water productivity management discussion in Ferghana valley. Near 60 women took active part in workshop on water productivity in WUA "Akbarabad" on September, 15, 2003.

In result of IWRM principle introduction in Ferghana valley with regard to organizational, technical and other measures and satisfactory funding, following final results of the project will be reached:

- stable available water resources in entire Ferghana valley;
- even and equitable water resources distribution over sub-basins under significant unproductive losses reduction;
- introduction of democratic water management principles through involvement of all concerned parties;
- social issues solution by equitable population water supply especially with drinking water.
- ecological issues solution related to water activity in the valley;
- and, final goal, water and land resources productivity increase in Ferghana valley.

WORKING MEETING «DIALOGUE ABOUT WATER AND CLIMATE»

On December 15-17, 2003 working meeting “Dialogue about water and climate” (DWC) was held in Waheningen, the Netherlands.

Near 60 persons participated in this meeting. Central Asia was represented by G.Stulina (SANIIRI), Meeting was organized in form of dialogue.

Meeting was opened by DWC/CPWC Commission, President of World Water Council V.Cosgrow. Leader of program “Dialogue on water and climate” H.Van Shaik noted that further program development should be directed to transition from monitoring to active actions. Business-plans and proposals should be formulated this way.

Main questions of the meeting:

- How to organize partnership between climate and water institutes to mitigate negative consequences of climatic changes.
- How organize partnership.
- How to inform society about this issue.

Scientific leader of the program P.Kabat presented program “Dialogue about water and climate” for 2004-2009 in three directions:

1. Climatic changes.
2. Impact of land resources and energy consumption.
3. Adaptation.

Following aspects should be reflected in DWC program:

1. Definition of links between natural and anthropogenic factors of climate changes.
2. Climate change impact on runoff hydrology and their interaction.
3. How these factors impact water resources use, their quality, requirements to management. Latter is especially important under long-term flow regulation and climate variability.
4. Climatic changes impact on land and water productivity and water demand.
5. What can be suggested as adaptation measures to climate change.

A. Nishad told about program fulfillment in Bangladesh where there is good coordination between ministries of agriculture, meteorology, environment as Council of interaction, which coordinates activity and gives recommendations on climate changes and their consequences. Plan includes monitoring and coordination of “influence” and “sensitivity threshold”.

M. Nias presented example of partnership in transboundary water management at basin level between five states of Western Africa. Considering climate changes and related issues they avoid conflict between them in future.

One of examples is presented by Mozambique where in December 1999 and the beginning of 2000 catastrophic floods occurred when 700 people perished and 544000 people suffered. Economic losses amounted for 600mln.USD. Rehabilitation and protection program has been developed in amount of 450mln.USD used for education, health care, social services, dikes construction, water supply and water use. Special attention was paid

to early warning – meteorological and hydrographic improvement of infrastructure (two new dams construction).

Special Coordination Committee has been established to prevent catastrophes including ministers of foreign affairs, public works, defense, industry, communication and tourism, internal affairs, health and transport. Council is responsible for: approval of protection plan, assistance to suffered people and mitigation, national mobilization and participation in international conferences on flood and desertification.

Besides plenary meeting, 4 sections were carried out in following directions:

- Assessment of contribution and strategy success.
- Partnership.
- Infrastructure
- Climate variability index.

Section 1. Participants considered link between climatic changes and water sector including economics and gender program. Main suggestions: pure water in lakes (Sweden), interrelation of pure and saline water (Lena river basin), water resources and climate changes (Western Africa), transboundary water management (Central Africa), climate changes and water resources management within planning zone (Central Asia), gender program in water resources management (Dominican Republic).

Section 2. Training in partnership formation within the project. Necessity of common platform establishing including organizations, knowledge, scientists, practice, position and training.

Section 3. Proposals on possible infrastructure changes under climatic changes were considered. This is additional investments in water sector due to risk for: dam strengthening, ground water use, additional reservoirs construction, etc.

Section 4. “Climate variability index” was considered.

Main methodological principles of index assessment and proposals on water components inclusion in sustainable development index.

Index components: water resources, their quantity and quality, water resources availability, water resources use over oblasts, ecologic aspect of their use, geographic peculiarities of region location.

It was noted, that models should be endorsed by governments and data used in models should be reliable. Training in models under UNESCO auspice is probable.

It is proposed to establish special commission on transboundary waters.

Big attention was paid to sub-program “people – climate – water”. Goal of this program is to teach people to adapt to climate changes. It is supposed to create educational package for three levels: scientific environment, living environment, training.

ROUND TABLE «WATER-ENERGY-CLIMATE»

On January 12-13, 2004 in ICWC Training Center round table “Water –Energy - Climate” has been held. Representatives of water related and power organizations, regional and national scientific institutions were participants of this round table. Participants were given literature about world experience in water resources management prepared by SIC ICWC. Seminar was opened by prof.V.Dukhovny. Greetings to participants were presented by Chairman of Water Committee of Kazakhstan A.Ryabtsev, Minister of Water Resources of Tajikistan A.Nazirov, First Deputy Minister of Agriculture and Water Resources of Uzbekistan A.Jalalov, Head BWO “Syrdarya” M.Khamidov.

A.Jalalov told about water resources management in Uzbekistan. Positively assessing agricultural reforming he underlined that because of transition to small farms it is necessary to select their optimal size and coordination with water users. For this purpose WUAs are being established in the republic. Bearing in mind that most part of agricultural production belongs to irrigated agriculture, highest guaranteed water supply remains highest priority. Transition to basin principle in water management was acknowledged by the state. On base of SFC, BFC and NFC, Ferghana min canals administration with dispatch centers has been established. Instead of previous 250 water managing organizations there are only 72. Pumping stations are also transferred under basin administration. Hydrogeological-reclamation expeditions do not subordinate to oblast authority and belong now to the Ministry. A.Jalalov underlined also that there is deficit of water specialists in the republic.

A.Nazirov noted, that Ministry of Water Resources of Tajikistan suffers from financial deficit. During civil war many objects were destroyed and data collection was not performed. Presently with support of donors some objects are being rehabilitated. Main source of funding are water charges but situation is aggravated by the fact that 42% of irrigated area are supplied by pumping stations. Water users’ debt for water delivery amounts to 27mln.USD and ministry’s debt for electricity amounts for 12mln.USD.

Presently ministry achieved return of 57% of debt; during 3-4 years this figure will be 90%. Water supply reduced by 30%. Simultaneously, attempts are made to subsidize water delivery by the state. Water delivery expenses are 35 USD/ha, from which 10% is paid by water user and 25% - by state. WUA establishing is begun based on project “IWRM-Ferghana” experience. Minister informed participants about Kairakkum reservoir state.

A.Ryabtsev informed participants about current situation in water sector of Kazakhstan. Agricultural lands have been privatized; water objects at rayon level are also being privatized. Big water objects at oblast level remain state property. There is trend of farms enlargement; condominiums are established for common management of water works. There are three types of ownership on water objects: state (interstate large systems and water works, municipal and private). During recent years 8 basin and 15 republican water organizations were established. Reforms in water sector envisage also public involvement. Water resources management transfer from state organizations to public ones is made in places where public is ready to changes and has certain experience in this

field. Special attention should be paid to education and training. State allocates annually 20 mln.USD for water sector.

Participants discussed situation in Syrdarya basin. Uncoordinated actions of riparian countries lead to unexpected situation. Agreement of 1998 is based on data for average dry year. Long-term water-power resources management strategy development is necessary to solve these issues.

Kyrgyzstan's actions relating Toktogul reservoir operation mode, led to radical river hydrology changes. Inflow to Chardara in winter never exceeded 800 m³/s and outflow – 420 m³/s. Presently, inflow amounts to 1560 m³/s, outflow – 750 m³/s + Kyzylkum canal's release - 50 m³/s, totally - 810 m³/s. Experience of last years showed that ICWC is powerless in extreme situations.

There is necessity to create organizational mechanism for further promotion of this regional institution. Idea of consortium creation has been discussed during 7 years. During this time downstream and midstream countries strengthened their potential of water resources conservation. Countries spend big money to reach this goal instead of solving it through dialogue and economic levers. Necessity of its creation was underlined by the Heads of State in Dushanbe on October 5, 2002.

Water-power consortium is economic mechanism of coordinated regime of releases from reservoirs using ICWC water-power limits. But due to some reasons this question is not solved.

Built by Uzbekistan for protection of its territory and winter flow use Arnasai reservoir, led to tense water situation in Syrdarya lower reaches. Uncertain obligations also facilitate situation aggravation. Further inactivity may lead to repetition of such situation in form of flood or drought.

A.Ziryanov expressed opinion that it is necessary to use ADB proposal about funding of Agreement 1998 revision and organize joint activity in this direction. Information about growing recurrence due to climatic changes is worth of attention and permanent alternation of floods and droughts will make situation in the region even more tense.

E. Abitaev: “Winter releases of this year led to dangerous situation in Chardara reservoir and it can be real for Toktogul one. We agree that Agreement 1998 should be revised in such manner in order to take into account fluctuations of dry and wet years; clear regulation rules for these years developed”.

Round table participants noted that there is necessity to international conventions' principle utilization with regard for regional peculiarities. They also noted that Kazakhstan already took positive steps; for instance, the republic joined UN Convention “Transboundary watercourses and lakes use and protection”. SIC ICWC and BWO “Syrdarya” have prepared draft agreement on Syrdarya resources use and management. This draft foresees water allocation limits establishing for Syrdarya basin according to runoff (ordinary, maximum and minimum volume). Referring to successful framework agreements on other basins (Rein, Danube), requirements to amount and quality should be envisaged in framework agreement.

Economic transition to market requires water pricing variation should be foreseen according to time and place of use; regulating prices should be seasonal. Agreement requires ac-

cess to information to all participants of agreement. Necessary water use rules have been prepared

But need coordination by all parties. Taking into account positive side of joint decisions development, participants expressed confidence in necessity of round table series at top level.

Participants made following conclusions:

- It is necessary to establish working group to develop rules of Syrdarya river management under different humidity especially during drought and catastrophic discharges;
- revise provisions of Agreement 1998 with regard to comments of participants;
- renew discussion of proposed provisions on water-power consortium as financial body of power exchange with regard to electricity price 1.2-1.5cents/kvth in Central-Asian market;
- continue work on agreements for ecologic damage compensation rules;
- it is expedient to foresee transfer of discharges from one country to another as well as recommendations on water salinity and pollution.

Participants express their gratitude to ICWC Training Center personnel, moderators, SIC ICWC and BWO “Syrdarya” for carrying out round table at high level.

SEMINAR-TRAINING ON NATO SFP-974357 AND SFP-974101 PROJECTS

Seminar-training on NATO funded projects with participation of “Science for Peace” program representative Dr.K.Vispelaere and French consultant P.Chevallier as well as US Department of State representative was held.

Outcomes from projects SFP-974357 and SFP-974101 together with INTAS-Aral and INTAS-Kazakh Priaralie presentations have been heard, which permitted integrate:

- academic and sectoral science of Academy of Science of Uzbekistan and Karakalpakstan, Institute of Geography of Russian Academy of Science , SIC ICWC, SANIIRI, UzGidroingeo, UzNIILH;
- disciplines: ecology, hydrology, economy, informatics, biology, mathematics, reclamation;
- western (Holland, Belgium, France) science and former Soviet school of Central Asia;
- practice, science and design.

Participants noted that NATO projects’ scientific objectives are achieved, in particular:

- Situation in South Priaralie including desertification under Aral sea desiccation is observed;
- assessment of existing infrastructure for Amudarya delta watering and options comparison have been performed;
- methodological approaches to technical decisions selection providing rational and effective account of social and ecologic requirements have been developed;

- ecologic requirements to water bodies system in Amudarya delta have been developed and agreed;
- database for zone of ecological disaster has been prepared;
- set of models on South Priaralie water bodies management and development and Decision Support System (DSS) on its base have been prepared;
- recommendations on organizational structure of wetland management have been developed.

Following new EU technologies have been introduced:

- Remote sensing and GIS technologies on base of ERDAS, IDRISI;
- program complex for water bodies modeling MIKE 11;
- device for water salinity definition Horiba (Japan);
- geo-reference device GPS (Germany);
- organizational principles of wetland management.

Outcomes

GIS and Remote Sensing:

- database for Priaralie has been prepared jointly with SFP-974101 project;
- satellite images for 2000 have been purchased, processed and input into database;
- Priaralie soil-landscape map of 1992 built by SANIIRI has been digitized and compared with analogue prepared within framework of SFP-974101 project in 2000;
- unstable landscapes subject to protection have been revealed;
- bathymetric characteristics for all existing and future water bodies have been built and input in database;
- wetlands and lakes dynamics during inflow to delta change has been evaluated;
- Mezhdurechie reservoir sedimentation character and dynamics have been defined;
- options with area of ecologically unstable landscape and socially tense zones are compared.

Scientific grounds:

1. There are two types of natural processes in South Priaralie determining dynamics of unstable landscapes, presenting danger and depending on anthropogenic activity:
 - dried seabed desertification and transport of alluvial and proluvial sediments with aeolian relief formation;
 - development of solonchak and desert vegetation and landscape stabilization, especially in zone of periodic or permanent moistening or artificial afforestation.
2. In result, unstable landscape areas reduced but this reduction was accompanied by such natural productivity, which can significantly impact social-economic situation.
3. Existing in Priaralie water bodies though play important social-economic role but depend on sharply changing inflow to delta, which uncertain regime can't be accepted by existing hydraulic structures both for flood and drought. Dry years, especially paired (2000-2001), destroy ecosystem almost fully disappeared during this period (fish, mask rat, reed, migrating birds). At the same time, water bodies keep ability to restoration.

4. Decisions on delta watering, as mean of desertification combat, should be directed to long-term measures taking into account:

- natural flow fluctuations aggravated by water diversion in upper reaches to preserve bioproductivity under drought;
- necessity of stable water bodies operation in zones of social tension;
- maximum stabilization of unstable landscapes located close to arable lands and settlements;
- maximum reduction of social-economic damage within economic ability.

5. Ecological requirements to water bodies and entire delta have been developed and agreed.

Modeling outputs:

1. Set of models has been developed:

- surface inflow to delta forecast;
- link of collector-drainage outflow with inflow to delta;
- water bodies' parameters calculation;
- dynamics of reed, fish, mask rat productivity growth depending on water bodies' parameters;
- set of models MIKE 11 is complemented by set of water bodies productivity and transformation in GAMS ;
- water works and water bodies calculations are carried out and their optimal size for design is determined;
- DSS complex has been developed;
- ecological releases parameters during dry years in amount of 4,9 km³ and for medium humidity years - 8,5-9 km³ are defined;

2. On base of model complex and designed discharges delta infrastructure is recommended allowing:

- effectively manage 67,5 % of inflow on base of long-term inflow;
- provide biologically active water bodies' area -180 th. Ha in delta;
- create 9000 working places in zone of disaster;
- provide constant water supply to support additional water bodies on 70 th.ha and constant aquatic surface on 110 th.ha of existing water bodies;
- increase stable landscape on 420 th.ha;
- achieve fish production in delta up to 2,04 th.t, mask rat - to 130 th. heads;
- achieve complex revenue during 16 years.

Participants endorsed activity within the framework of NATO SFP-974357, SFP-974101 projects and recommended to circulate its outcomes as a monograph to concerned lead and design organizations.

It is expedient to strengthen design and construction of environmental structures using suggested measures and prepared materials. It is necessary to continue preparation of ecological equilibrium agreement and legalize ecological release accepted in component A-1 of GEF project

Participants suggested appeal to Uzbekistan Government in order to initiate soft loans from donors for nature protection complex in Amudarya delta on base of Heads of State decision dated September 11, 1994.

Taking into account that both project accumulated significant databases on Aral sea and Priaralie, it is necessary to continue monitoring to use its data by all concerned parties. It is recommended to continue research on dried seabed afforestation.

Project goals and objectives proposed by Kazakhstan government are endorsed and supported including hydraulic infrastructure (works, measures, structures), feasibility study meeting IWRM requirements. System should guarantee ecologic sustainability in combination with bioresources rational use in Northern Priaralie and reduce ecologic and social-economic damage from unstable river discharge.

Research outcomes should serve a base for international investment proposals. Public and water users participation will strengthen undertaken measures and help to create “Committee for water resources management in Amudarya delta” and then for Syrdarya delta as well.

WORKSHOP «INTEGRATED WATER RESOURCES MANAGEMENT – INTER-SECTOR AND INTERSTATE APPROACHES»

Workshop “Integrated water resources management – inter-sector and interstate approaches” was held on November 3-7, 2003 in ICWC Training Center. Specialists from rayon, oblast and basin organizations, scientific-research institutes and NGOs.

Participants have developed recommendations on IWRM utilization in the region. They noted that regional organizations do not have satisfactory status. Water organizations at national level and water users’ right also should be legalized. IWRM legal base must be prepared. IWRM introduction at the regional level calls for joining international conventions, for instance, “Convention on transboundary watercourses and international lakes rational use and protection”. In some countries there is no clear ownership of agricultural organizations that hinders effective WUA functioning.

Participants proposed following specific measures:

- water legislation, investment and tax policy perfection for IWRM principles realization;
- clear definition of rights and obligations of agricultural organizations according to form of ownership;
- WUA legal base perfection.
- Public participation in rational water use is very important. In this connection, public access to information raises awareness and confidence of water users. For public opinion formation, many measures can be used:
 - water campaigns and special measures;
 - special radio and TV translations;
 - free access to information.

Participants noted following specific measures:

- organization of regional conferences, seminars concerning IWRM with NGO involvement;
- preparation and dissemination of materials on IWRM concept for public awareness with NGO support.
- stimulation of public water council development including representatives of different level water users;
- establishing public council of basin regulation;
- organization of seminars in oblasts for broader IWRM ideas dissemination.

Participants noted that there is trend of moving to IWRM and basin principles in CAR countries. But economic difficulties do not allow provide sustainable water sector development.

Participants proposed following measures:

- definition of possible mechanisms and sources of finance, creation of base for fund rising;
- gradual WUA technical upgrading.

Participants recommended following measures for water conservation:

- use control water use acts between rayons and oblasts;
- develop mechanism of incentives for water conservation in form of bonuses in amount of expenses spent for water resources formation, tax privileges and other incentives;
- development of service and consultations for farmers in field certification and water productivity increase;
- information technologies and programs utilization in water use planning and control;
- strict observance of agro-reclamation requirements;
- in-farm water account and irrigation regime observance.

WORKSHOP AND WORKING MEETING ON IWRM PRINCIPLES STRATEGIC PLAN REALIZATION IN CENTRAL ASIA

Workshop and working meeting, organized by UN ESCAP, SDC, SIC ICWC and IWMI, was held in Tashkent on November 26-28, 2003 г. Workshop goal was as follow:

- summarizing experience of CAR countries in IWRM elements introduction (hydro-graphic management, WUA establishing, water use efficiency increase);
- discussion of preliminary outcomes of “IWRM-Ferghana” project 2-year activity;
- explanation of goals and objectives of UN ESCAP – SIC ICWC project in Central Asia.

Representatives of UN ESCAP, SDC, US State Department, IWMI, SIC ICWC took part in the workshop.

Workshop was opened by Prof. V.Dukhovny who noted that project played important role in public awareness about IWRM principles. But project encompasses only agricultural water consumers and only surface water resources. Public involvement is only in its initial stage.

It is very important in order IWRM principles were accepted as cooperation of water users, public and governmental organizations with responsibilities distribution depending on hierarchic level – basin or separate system.

Given workshop demonstrates possibilities of serious cooperation and interaction of various projects supported by donors.

Project SDC/SIC ICWC/IWMI «IWRM-Ferghana» on example of IWRM introduction on three pilot canals in three republics will allow learn lessons both negative and positive and demonstrate society aspiration to IWRM introduction. This experience will be used in UN ESCAP pilot project, which should demonstrate how to develop strategic planning and management in most socially tense zones of CAR.

This experience should be disseminated within entire Ferghana valley and river lower reaches in Khorezm, Tashauz, Kyzylorda oblasts and Karakalpakstan.

Ti Le Huu, Robert Watts, J.Maccen, Kh.Ishanov greeted participants.

Central Asia has high potential for strategic planning and management introduction. Success in IWRM introduction makes the region attractive for donors, Ti LeHuu noted.

R.Watts told that USA will take part in IWRM project within Amudarya delta for access to safe water, sanitary, water use perfection and its productivity increase, sustainable development.

Ti LeHuu in his presentation “Practical use of strategic planning tools on pilot objects of Central Asia and experience review in other parts of Asia” told about history of strategic planning development, noted increased interest to decentralization and participation in water management. It was noted that capacity building is a tool of success. Examples of successful experience are given for Rein basin, USA, Japan, Korea, Malaysia, Thailand and Laos. In conclusion reporter noted that SIC ICWC created great opportunities for strategic planning introduction.

Prof.V.Dukhovny in his presentation “Summarizing IWRM experience in Central Asia and objectives of its development” noted that there is experience of Hunger Steppe water resources integrated management on 320 th.ha where high effectiveness of water use, water supply and distribution account, self-financing of lower level management and public participation were achieved. On example of IWRM introduction in Ferghana valley common principles were developed. First positive results were obtained, which can be disseminated within the valley.

Strategic planning and management (SPM) is further step of IWRM development. For this development clear vision for 20-25 years, objectives, priorities and measures should be formulated.

In V.Sokolov and Dr.Ul-Hassan’s presentation “Preliminary results of “IWRM-Ferghana” project attention was drawn to public involvement in water resources management. Results of the project can be disseminated within Ferghana valley. Legal and organizational base for WUA and Water Canal Committee (WCC) establishing and functioning have been prepared; system of indicators for activity assessment have been prepared.

Then “IWRM-Ferghana” project progress was considered in following directions:

1st direction – pilot canals. N.Mirzaev made presentation. He noted that most important result of current year activity is transition to hydrographic principle of management and canal board establishing on base of hydrographic principle, development and discussion draft “WCC provision”, social mobilization and constituent meeting conducting for WCC establishing.

One from main directions to be organized in 2004 is strict order of work on water distribution within canal system, water supply correction, and introduction of this complex on pilot canals. It will allow coordinate activity with other hierarchic levels, reduce head water intakes and increase water distribution evenness and equitability.

2nd direction – IWRM aspects at WUA level. Activity on WUA establishing on pilot canals was reflected in M.Pinkhasov presentation. Principles of WUA establishing, work with co-founders, content of constituent documents (statute, contracts, cost estimates, constituent meeting’s documents) were reported. Experience in water distribution system creation and water use plans preparation, deviations from plan and their reasons were highlighted.

3rd direction – water productivity aspects were reported by Sh.Muhamejanov. He told about concept and approach to tasks solution and irrigation water productivity increase within framework of “IWRM-Ferghana” project. He drawn attention to irrigation water use technology and agro-reclamation measures quality as main factors of water and land productivity increase. For water productivity increase it is necessary to save water. Extension services play important role in land productivity increase.

All presentations were discussed by participants.

WATER USERS ASSOCIATIONS AND WATER RESOURCES RATIONAL USE

Scientific-technical conference “issues of WUA establishing and transition to hydrographic principles of water management under agricultural and water sector reforming” was held in Tashkent on December 4-5, 2003.

Principles of WUA establishing under agricultural reforming, available water resources impact on agricultural crops productivity and measures on WUA effective functioning provision (legal, social, organizational and financial) were discussed during the conference.

Participants consider that for normal functioning of irrigation and reclamation systems it is necessary:

At the Republic Government and Ministry of Finance level:

1. Develop legal base of state water organizations functioning.
2. Create legal base of WUA functioning including:
 - foresee in shirkats’ budget and farms’ business-plans along with agricultural outputs (seeds, fuel, fertilizers, etc.) water provision and drainage system maintaining;

- free WUA from taxes to create favorable conditions for water delivery services payment;
 - define WUA statute as commercial organization;
 - privilege credits for WUA;
 - develop guidelines for water fees payment and their size (tariffs).
3. In case of shirkat breaking-up, transfer reclamation machinery and social infrastructure to private ownership and permit WUA to use flumes from old abandoned network for existing network rehabilitation.
4. Adjust market prices for grain with prices of agricultural outputs to cover expenses for agricultural production and grain producers' stimulation.
5. For gradual transition to WUA self-financing, during initial period give necessary financial assistance in machinery purchase and repair and fuel purchase.

At the Ministry of Agriculture and Water Resources and WUA level:

- increase secondary and high education level for water sector; develop mechanism of incentives for young specialists in water sector;
- recommend water users to establish WUA based on hydrographic (not administrative) principle;
- develop and legalize WUA statute;
- use experience of foreign IWRM projects and NRP for WUA establishing;
- strengthen WUA personnel education and training through training centers creation in each oblast;
- explain farmers WUA objectives, highlight in mass-media WUA role, functions and current activity;
- define each structure (ministry, WUA, shirkat) responsibility degree and fix it in statutes and contracts;
- use foreign investments to support WUA, attract international organizations-investors (WB, ADB, etc.) for this purpose.

Participants defined range of specific technical measures both for basin administrations and entire water sector.

ASIAN DEVELOPMENT BANK AND CENTRAL ASIA

Central Asia during 2004-2006 will receive 1,4 bln. USD for projects implementation¹

According to international conference on economic cooperation in Central Asia held in Tashkent on November 11-12, 2003, international financial organizations will allocate 1.4bln.USD during 2004-2006 for regional projects implementation.

Cooperation priorities are as follows: development of transport infrastructure, trade and power engineering. During this period ADB plans to allocate 480mln.USD. Near 932 mln. USD will come from Islamic Development Bank, EBRD, WB and UN.

After first conference in March 2002, number of regional investment projects funded by international organizations is growing. Since March 2002 ADB allotted 115 mln. USD for two projects including 90mln.USD for power systems reconstruction in Tajikistan and Uzbekistan and 25mln.USD for trade development in Kyrgyzstan and Tajikistan.

WBis also involved in regional cooperation programs. It allotted 64.5mln.USD for Syrdarya lower reaches and Small Aral sea.

ADB helps to rehabilitate irrigation system

ADB supports rehabilitation of outdated irrigation system in Uzbekistan on the area with population of 400 thousands people as a loan of 73,2 mln. USD.

This project will help to rehabilitate 30-year old Amu Zang irrigation system, which serves 5 rayons in Surhandarya oblast where poverty level is 30% higher compared with average country level.

As ADB mission in Uzbekistan informed, beside rehabilitation project is devoted to private farms development and water management perfection.

Amu Zang irrigation system includes cascade of pumping stations on Amudarya river serving 96,8 th.ha. It is expected that rehabilitation will fully change situation and increase cotton production from 2,8 to 3,4 t/ha and grain from 3,1 to 3,9t/ha. Three main pumping stations will be rehabilitated including pumps, diesels, waterworks and some parts of irrigation and drainage system.

Project will train specialists from water agencies, introduce water resources management system and support WUA establishing. Presently, water users do not participate in irrigation and drainage system management.

Improved irrigation and drainage system will be demonstrated in some farms of five pilot rayons.

At expense of additional technical assistance grant in amount of 500 th. USD, project will support strategy development and institutional reforms. Grant will be allotted by ADB Special Japanese Fund funded by Japan Government.

¹ Acc. to mass-media

ADB loan will come from capital resource and cover 73,2mln.USD or 65% of total project cost (112,6 mln.USD). Rest of money will be allotted by Uzbekistan Government (37 mln.USD) and beneficiaries (2,4 mln.USD).

Loan is given for 25 years including 5-year privileged period. Bank interest-bearing is defined according to ADB LIBOR one.

ADB approved loan for public infrastructure²

ADB has approved urgent loan in amount of 5mln.USD for public infrastructure restoration in Kyrgyzstan, which was damaged by landslides and floods in the beginning of this year. Project will include repair of roads, bridges and electric transmission lines as well as four schools reconstruction for rapid economic and social activity restoration in Chu, Issikkul, Jalalabad and Osh oblasts. Two resettlement centers' municipal infrastructure will be built for people of Osh oblast. There were intensive rainfalls (50% higher compared with average) in spring-summer period (March- June 2003) in Jalalabad and Osh oblasts. Floods and landslides were most dangerous after 1994. There were 1000 landslides during 8 months of this year (15-20 landslides during normal year). 43 people perished, 1088 families lost their shelter, 6 th.ha of cropped land were damaged, more than 300 th. people suffered.. Project will help 128 th. people in 78 villages, where most people are poor.

Government will allocate 1.3mln.USD while total cost of the project amounts to 6.3mln.USD. Project will be completed in March 2007.

Third World Water Forum: Regional cooperation in shared water resources management³

Introduction

Water resources distribution is challenge both for community and river basin. Scarce water resources management under competing uses like drinking water supply, industry, agriculture becomes even more complicated when water users live in different countries and share common water resources.

Water resources distribution includes cooperation at various levels:

- between local communities where water users compete for basic needs in water;
- within river basin where local governments and administrative sub-divisions compete for access and use of water resources (irrigation, industry, drinking water supply, municipal water supply);
- where water cross state border and mutually beneficial agreement between countries is necessary on water resources management;

Experience of Central-Asian countries in water resources distribution contribute significantly to growing knowledge about shared resources management.

Aral sea reduced by half for last 35 years due to growing water diversion from Syrdarya and Amudarya. Irrigation consumes 92% of total diversion.

² Bishkek Observer, 16.12.2003 г.

³ ADB web-site, 18.09.03

Region faces choice: keep agricultural production or save the Aral sea. After independence gaining the republics began work to develop rational and equitable base of water distribution and use.

ADB has organized thematic session during WWF-3 “Shared water resources management”, Special attention was paid to challenges and possibilities in AmuDarya and Syrdarya resources management.

Objectives:

1. Study existing experience, issues, limitations and opportunities of regional cooperation in shared water resources management in the Aral sea basin.
2. Define policy, legal and organizational problems, limitations and opportunities.
3. Formulate strategic directions of regional cooperation and define ADB role in assistance to this activity.

ADB partners in this theme were ICWC and UN University.

Preliminary conclusions of WWF-3 session on regional cooperation in shared water resources management:

1. Continued efforts of riparian countries in shared water resources management and use led to successful attempts to find sustainable solution for these problems
 - ICWC establishing;
 - IFAS Aral sea basin program establishing;
 - preventing water conflicts;
 - development of cooperation in regional water management including water-power agreements.

The following issues remain unsolved:

- harmonization of water management strategy and water codes of the countries;
 - increasing role of regional water managing bodies;
 - developing new and perfecting old agreements on water management and use;
 - providing adequate financing of water infrastructure.
2. Links between water, environment and social development management will require:
 - to develop concept of integrated management meeting region specific features;
 - to develop approach to water management in multidisciplinary manner;
 - Link between water management and market incentives for efficiency increase;
 - strengthening regional institutes and organizations involved in water management.

Following recommendations were elaborated during the session:

- contribute to ecological stabilization and improve transboundary water resources management through formulation of compatible national and regional ecological policy and strategy;
- improve dams and reservoirs management;
- undertake more intensive monitoring of transboundary watercourses by quantity and quality;
- increase public awareness about complicated nature of issues.

WATER COMES FROM WATER

Atmospheric Water Technology, Inc. Company used natural hydrologic cycle for localized source of safe and pure drinking water without any connection with water pipes and basins. Only electricity is needed to condense, accumulate, filtrate and pump pure water. This product is known as “Water-maker” and “Water fountain without limits”.



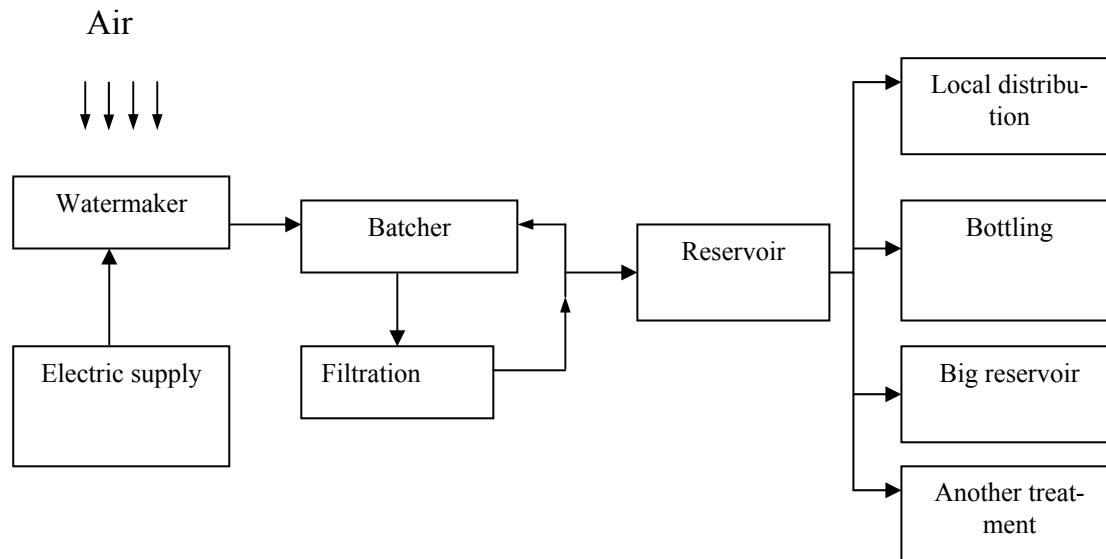
Review

Patented unit Water-maker is ideal for hotels, schools, industrial buildings and places of people accumulation. Produced water exceeds all quality standards. .

Operation principle

Water-maker use cooling technology for water condensation from the air. Air by ventilator is supplied to the system through electro-static filter. Compressor circulates cooling matter through spiral located on way of air movement. Cooled spiral gives temperature difference between air and spiral surface leading to condensation. Heat is removed by heat exchanger. Protection from cooling is performed by thermo-static management.

Condensate is directed to reservoir. Level sensor located in reservoir controls re-production cycle in the unit. Water in reservoir circulates by pump through ozone-ultraviolet camera (to kill bacteria) and set of coal filters of low and high density (to eliminate solid particles and oxidants) and directed back to reservoir. Filtration cycles are managed in time. Water is released by tap during filtration.



Application

Concept has various application scales. Spiral surface and air movement capacity determine water production. Even for small Water-makers there is need for big mass of fresh air. Bigger systems are most effective in open air. Big units are suitable for inclement atmospheric conditions.

Water-maker can be autonomous unit. Reservoirs, filters and batchers provide wide access or specific application, for instance, for ice production.

Water- maker can be combined with bottling system and supply local distribution systems. Big water-maker through pipeline can provide with water big buildings, campuses and tenement-houses. Mobile water-maker is suitable for field expeditions and camps.

Small water-makers produce 5gallons of water per day, big one – 50 gallons/day. Water-maker for 5000 gallons/day production are designed and built be request. Design takes into account both application, energy supply and geophysical and climatic conditions of locality.

Water-maker works most effectively in warm regions with high air humidity. In highly elevated and desert areas or close to equator it can work only seasonally or don't work at all. Water-maker is ideally suitable for regions with 70% of world population and severe water scarcity.

Water-maker economic indicators

Technical characteristics are presented in table 1. Climatic conditions impact on unit operation is presented in table 2.

Table 1

	Model	Kvt-h	gssl/ day	gall/ kvt-h	Kvt-h/ gall	\$/gall@. 10\$/ kvt- h	l/hour	l/ kvt-h	Kvt-h/l	\$/l@ .10\$/ kvt-h
WRC @72°F &60%RH	150	11	6.25	0.5682	1.7600	0.1760	23.6250	2.1477	0.4656	0.0466
	200	14	8.33	0.6061	1.6500	0.1650	31.5000	2.2909	0.4365	0.0437
	500	29	20.83	0.7110	1.4064	0.1406	78.7500	2.6877	0.3721	0.0372
	1500	79	62.50	0.7931	1.2608	0.1261	236.2500	2.9981	0.3335	0.0334
	2500	129	104.17	0.8075	1.2384	0.1238	393.7500	3.0523	0.3276	0.0328

Table 2

	Model	Kvt-h	gsl/ day	gall/ kvt-h	Kvt-h/ gall	\$/gall@. 10\$/ kvt-h	l/hour	l/ kvt-h	Kvt-h/l	\$/l@ .10\$/ kvt-h
WRC @90°F &80%RH	150	11	10.50	0.9545	1.0476	0.1048	39.6900	3.6082	0.2771	0.0277
	200	14	14.00	1.0182	0.9821	0.0982	52.9200	3.8487	0.2598	0.0260
	500	29	35.00	1.1945	0.8371	0.0837	132.3000	4.5154	0.2215	0.0221
	1500	79	105.00	1.3325	0.7505	0.0750	396.9000	5.0368	0.1985	0.0199
	2500	129	175.00	1.3566	0.7371	0.0737	661.5000	5.1279	0.1950	0.0195

Note: WRC – production capacity; RH – relative air humidity

CONFERENCES, EXHIBITIONS, SYMPOSIUM

HYDROVISION 2004

August 16-20, 2004, Montreal

HydroVision 2004 Conference will be held on August 16-20, 2004 in Montreal (Quebec, Canada). This conference will give opportunity to study current water issues, discuss them with distinguished experts, strengthen links and alliances, establish new contacts. 1600 participants from all over the world are expected to take part in conference.

HydroVision 2004 presents diverse program consisting of 9 sessions in 7 themes. Theme «Technical reports» proposes 150 topics. Theme «Interactive program» proposes 50 topics with lead industrial experts participation. Along with conference, exhibition will be held showing new hydraulic equipment and supporting services.

HydroVision program contains 9 parallel sessions in 7 themes

	Theme A Strategic management by enterprise and assets	Theme B Safe construction work	Theme C Water strategy and rules	Theme D New water resources development	Theme E Operation and maintenance	Theme F Water, natural and cultural resources management	Theme G Technical documentation and advertising galleries		
Session 1 Wednesday, 8.18.04 12.30-14.00	1A Setting strategic governance	1B Dam safety monitoring: Is failure character an effective tool?	1C Water resources management: different approaches comparison	1D New in water area: multipurpose development benefits	1E Higher profit receiving; operation and maintenance methods which work	1F Channel flow for multipurpose utilization: Technologies and lessons learned exchange	1GA CFD modeling application for turbine design improvement	1GB Licensing, permitting and approval: new tools	1GC New projects: research, design and construction
Session 2 Wednesday, 8.18.04 15.00-16.30	2A Capacity building	2B Equipment use and monitoring on base of work done analysis	2C Data management in view of new safety requirements	2D Public dialogue, links and decision making system	2E New tools of O&M improvement	2F What we agree to do?!? Practical implementation of lawful requirements	2GA Innovation in turbine generator loading	2GB Water market growth in India	2GC Capital repair of hydraulic structures
Session 3 Thursday 8.19.04 8.30-10.00	3A Quality criteria in enterprise perspective	3B Public access and safety guarantee	3C Integrated licensing: why or why not?	3D Experience in barrier overcoming within project and country	3E Advanced methods: generators	3F Electronic master-plans: new managers' tool in resource area	3GA Methods of new small hydrostructures' development	3GB Turbine design	3GC Hydraulic research

Session 4 Thursday 8.19.04 10.45- 12.15	4A Capital investment incentive	4B Knowledge storage and transfer	4C Conflict in water supply: scarce resources, competing interests	4D Information receiving from politicians and cooperation with them	4E Advanced methods: Turbines	4F New technologies application for data collection and management	4GA Water issues resolution	4GB Planning perfection and O&M budgeting	4GC.1 Control technologies in real time 4GC.2 Water resources groups establishing and functioning
Session 5 Thursday 8.19.04 13.45- 15.15	5A Assessment of enterprise perspective	5B Innovations in old state structures improvement	5C Effective project management	5D Open doors: new and changing financing structures	5E Advanced methods: mechanical systems	5F DSS for power engineering – real experience	5GA Turbine design for mitigating ecologic impact	5GB Generator rehabilitation and design	5GC Power plants' water issues
Session 6 Thursday 8.19.04 16.00- 17.30	6A Setting priorities in investment risk management	6B State structures rehabilitation contracts	6C Transformation of climatic changes into actions	6D Small power engineering: rapid growth of water market	6E Advanced methods: control means, electric supply, panels and transformers		6GA Project planning and optimization	6GB Turbine rotor issues solutionP	6GC Mechanical repair: tools and experience
Session 7 Friday 8.20.04 8.30- 10.00	7A Contract conclusion strategy with time change	7B Investment revenue taken up in structure safety	7C Out of transaction: keeping compliance	7D Innovative technologies	7E Safe work: perfection methods	7F Uniting local communities for water project management	7GA Practical experience in system operation	7GB Working monitoring systems for hydraulic structures	7GC Gates and valves design, production and repair

Session 8 Friday 8.20.04 10.45- 12.15	8A Plan- ning unbe- lievable	8B Water conveying system safety		8D De- veloping countries' reports	8E Labor efficiency increase	8F Public awareness in- crease in hy- dropower en- gineering benefit	8GA As- sessment and miti- gating ecologic and social impact	8GB North- American project ap- proval: topical is- sues	8GC Hydro- turbine new and improved tech- nology
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**FORTH INTERNATIONAL SYMPOSIUM “AGRO-ENVIRONMENT – 2004”:
ROLE OF MULTIPURPOSE AGRICULTURE IN STRENGTHENING GLOBAL
ENVIRONMENT**

October 20-24, 2004, Italy

First symposium on agro-environment was organized by Faizalabad Agrarian University (Pakistan) in 1998, second symposium – by Trakinsky University, Turkey in 2000, third – by National RS Committee in Cairo, Egypt in 2002. Udine University, Italy is organizer of forth symposium in October 2004. Themes cover soil, air and water pollution in agricultural regions, agro-technique and yield prediction, landscape ecology, forest and pasture management, global climatic changes and agricultural environment, biotechnology and agricultural biodiversity, land degradation and desertification control, re-use of agricultural wastes and management at field level, wetland and coastal ecology, remote sensing in agriculture, rural sustainability achievement.

Abstracts (250 words without figures and references) should be sent to prof. Giuseppe Zerbi, Secretary General (zerbi@dpvta.uniud.it) or Sadjid Azimi, International Coordinator (smahmoodpk@yahoo.com).

SIC ICWC PUBLICATIONS

ICWC Bulletins №№ 1-35, 1993-2003.

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Information collections

Mekong river basin –example of cooperation

Twin-brothers. Aral sea problem analogues

Middle East – growing water crisis region

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Water for food production in XXI century

Water: ecologic and water security in the world and region

US water sector

Water use in Asia

Water conservation measures

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Water issues in Australia (Murrey-Darling basin)

Current state and perspective of water resources development in Spain

Current state and perspective of irrigation in India

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Water management for food security

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Central Asia – look from outside

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Editing board:

Dukhovny V.A.

Pulatov A.G.

Turdibaev B.K.

Editorial office address:

SIC ICWC

B.11, Karasu-4, 700187, Tashkent, Uzbekistan

E-mail: info@icwc-aral.uz

Website:

www.sic.icwc-aral.uz

Editor

Ananyeva N.D.

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