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## JOINT STATEMENT BY THE HEADS OF THE CENTRAL ASIAN COOPERATION ORGANIZATION MEMBER STATES

A meeting of the Board of the Heads of the Central Asian Cooperation Organization Member States took place on 18 October 2004 in Dushanbe.

The Presidents of the Republic of Kazakhstan, Kyrgyz Republic, Russian Federation, Republic of Tajikistan and Republic of Uzbekistan, *being based* on the provisions in the Agreement between the Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan and Republic of Uzbekistan on Confirmation of a Central Asian Cooperation Organization (CACO) dated 28 February 2002 and other statutory documents of the Organization, *proceeding* from the aspiration to strengthen the cooperation on the whole range of interstate relations in the spirit of equality and mutually beneficial partnership, *considering* geopolitical realities in the region and all over the world and the need for promoting close interaction in struggle against international terrorism, religious extremism, drug aggression and other challenges towards security of the CACO member states, *exchanging* views on the situation in Afghanistan, *having discussed* approaches of CACO member states to participation in socio-economic rehabilitation in Afghanistan, state as follows:

1. The Heads of State note that within the framework of the Organization significant work was done toward establishment and improvement of mutually beneficial political and economic cooperation in the region.

2. To subsequently promote a wider political dialogue, improve the forms and mechanisms of regional economic integration, develop joint actions for peace and stability, and form a common security space in the region, implement unused potential of regional interaction, the Heads of State supported activation of comprehensive cooperation in political, economic, technological and humanitarian aspects.

3. Recognizing the significance of combining efforts in struggle against international terrorism, religious extremism, drug trade and other security threats, the Heads of State decided to prepare a list of terrorist and religious extremist organizations outlawed to act in the Central Asian Cooperation Organization member states and a list of leaders of these organizations, and are calling other countries of the CIS to organize such work within the Commonwealth.

4. The Presidents of the Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan and Republic of Uzbekistan decided to confirm a Provision on meeting of leaders of security services, law machinery and state border control structures in CACO member states.

5. Striving for effective use of a large potential in the region and considering favorable prospects for its development, the Presidents of the Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan and Republic of Uzbekistan instruct their national governments to carry out specific measures for implementing initiatives to create a common Central Asian market and develop underlying principles for frontier trade between CACO member states. The parties agreed to deep economic dialogue and interaction and contribute to effective use of water, power, transport and food capacities in the region at most. Thereupon they decided to approve concepts for establishing water-energy, food and transport consortiums and instruct the governments to prepare

draft Agreements on foundation of these consortiums in accordance with established procedure.

6. The Presidents of the Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan and Republic of Uzbekistan noted that signing by the Parties a Provision on implementing decisions made at business forums of business circles and entrepreneurs from CACO member states will facilitate implementing agreements on entering regional economics into integration processes of the Organization and deepening mutually beneficial partnership.

7. The Heads of State instruct the Board of Prime Ministers of the CACO Member States to hold in the 1<sup>st</sup> quarter 2005 its meeting, which is expected to consider priority issues of regional economic cooperation, including water and energy, and status of economic trade relationships.

8. The Presidents of the Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan and Republic of Uzbekistan welcome joining of the Russian Federation into the Central Asian Cooperation Organization. The Russian Federation will work over at national level the documents signed under the CACO with a view to joining them and inform about the results of the work done by other CACO member states.

9. The Heads of State welcome the efforts made by Afghan Government to rehabilitate the country and state that the CACO member states will provide all possible assistance in implementing a long-term program for socio-economic rehabilitation of this country and coordinate their own actions for involving Afghanistan in integration processes in the region.

10. The Parties will provide all possible assistance so that Central Asia be an area of peace and stability, sustainable economic development and prosperity, good-neighborliness and peer international cooperation for the welfare of their peoples.

For the Republic of Kazakhstan	N. Nazarbayev
For the Kyrgyz Republic	A. Akayev
For the Russian Federation	V. Putin
For the Republic of Tajikistan	E. Rakhmonov
For the Republic of Uzbekistan	I. Karimov

## **MEETING OF THE BOARD OF THE INTERNATIONAL FUND FOR THE ARAL SEA SAVING (IFAS)**

In accordance with the work plan of the IFAS Board approved at the Board Meeting on 27 March 2004, a regular IFAS Board Meeting was held on 15 November 2004 in Dushanbe.

Among the participants in the Board Meeting, there were the Board members, authorized Board members from different IFAS founder states, members of the Executive Committee (EC) of the IFAS, chiefs of the Executive Committee branch offices, leaders of respective ministries and agencies in the Republic of Tajikistan, representatives from a number of international organizations and the mass media.

At the Board Meeting , the following matters were considered:

1. Progress in implementation of the Statement made by the Heads of Central Asian states on establishment of a Special UN Commission for the Aral Sea Basin Problems.

2. Progress in implementation of projects and programs related to solving problems in the Aral Sea basin using all funding sources and challenges to activate efforts made by the IFAS bodies and founder states to implement the ASBP-2.

The Board Meeting was presided by Deputy Prime Minister of Tajikistan, IFAS Board member Mr. Kozidavlat Koimdodov.

Chairman of the EC IFAS, First Deputy Minister of Foreign Affairs of Tajikistan Sirodjiddin Aslov submitted a report on activities of the EC IFAS in 2003.

The Board Members considered the above-mentioned matters on the agenda and made respective decisions.

The decisions and materials of the Board Meeting were sent to the Governments of the IFAS founder states to give them to respective ministries and agencies, for taking measures to implement and execute them in future.

## **IFAS BOARD DECISIONS**

### **DECISION**

#### **of the Board of the International Fund for the Aral Sea Saving on the progress in implementation of the Statement of the Heads of Central Asian States on establishment of a Special UN Commission for the Aral Sea Basin Problems**

1. Take information of the EC IFAS on the progress in implementation of the Statement of the Heads of Central Asian States on establishment of a Special UN Commission for the Aral Sea Basin Problems into consideration.

2. The EC IFAS shall continue the work on implementation of this Statement of the Heads of State, extending the cooperation with the UN commissions and other international organizations to achieve practical results in implementation of the ASBP-2 and raise the international prestige of the IFAS.

3. Instruct the EC IFAS to consider the matter on interaction between the SPECA Project and IFAS organizations with account of priority tasks of the countries.

### **DECISION**

#### **of the Board of the International Fund for the Aral Sea Saving on the progress in implementation of projects and programs related to solving problems in the Aral Sea basin using all funding sources and challenges to activate the efforts made by the IFAS bodies and founder states to implement the ASBP-2**

1. Take information of the EC IFAS on the matter on the “Progress in implementation of projects and programs related to solving problems in the Aral Sea basin

using all funding sources and challenges to activate the efforts made by the IFAS bodies and founder states to implement the ASBP-2” into account.

2. Note the importance of activities being carried out by the governments of Central Asian Republics using their own funds allocated to implement the main directions of the Program of specific actions for improvement of the environmental and socio-economic situation in the Aral Sea basin for the period 2003-2010 (ASBP-2).

3. Instruct the EC IFAS in association with the ICWC and International Commission for Sustainable Development (ICSD) to activate the work on attracting investments to implement the ASBP-2.

4. With a view to implementing the Statement made by the Heads of the IFAS Founder States on 6 October 2002, instruct the EC IFAS to take measures for coordinating all the projects and programs in the Aral Sea basin being implemented by the IFAS organizations.

ICSD, ICWC and other IFAS bodies shall regularly submit information on the projects being implemented under the ASBP-2 using all funding sources to the EC IFAS.

Consider mutual participation of representatives from the EC IFAS, ICWC and ICSD in activities carried out by them expedient

5. Approve the suggestion of the EC IFAS to appeal to the World Bank for allocating a special grant for institutional support to the IFAS organizations.

6. The EC IFAS together with the ICWC shall consider the activities of the ICWC executive bodies and prepare a proposal for consideration by the IFAS Board.

## **Minutes of the 41<sup>st</sup> MEETING of the Interstate COMMISSION for water coordination (ICWC) of the REPUBLIC of KAZAKHSTAN, KYRGYZ REPUBLIC, REPUBLIC of TAJIKISTAN, Turkmenistan and REPUBLIC of UZBEKISTAN**

17-18 March 2005

Tashkent

### **Participants:**

Sayfitdin Umarovich  
Ismailov

Minister of Agriculture and Water Resources of the  
Republic of Uzbekistan

### **ICWC Members:**

Anatoliy Dmitriyevich  
Ryabtsev

Chairman of the Committee for Water Resources at the  
Ministry of Agriculture of the Republic of Kazakhstan  
Deputy Minister, Director General of the Water Department at the Ministry of Agriculture, Water Resources and  
Processing Industry of the Kyrgyz Republic

Zhenishbek Bek-  
bolotov

Anvar Mukhitdinovich

Deputy Minister of Land Reclamation and Water Re-

Zoirov	sources of the Republic of Tajikistan
Tekebay Altiyevich Altiyev	Deputy Minister of Water Resources of Turkmenistan
Shavkat Rakhimovich Khamrayev	Deputy Minister, Chief of the Water Department at the Ministry of Agriculture and Water Resources (MAWR) of the Republic of Uzbekistan

**From the ICWC Executive Bodies:**

Viktor Abramovich Dukhovny	Director of SIC ICWC, Professor, ICWC Honorary Member
Yuldash Khudayberganov	Chief of BWO “Amudarya”
Makhmud Khamidovich Khamidov	Chief of BWO “Syrdarya”
Gayrat Abdusattarovich Negmatov	Chief of the ICWC Secretariat
Oleg Stepanovich Makarov	Director of CMC ICWC, Director of PKTI “Vodoavtomatika i metrologiya”
Pulatkhon Djakhanovich Umarov	Director of the ICWC Training Center

**Invitees:**

Nariman Kipshakbayevich Kipshakbayev Subkhonkul	Director of the SIC ICWC Kazakh Office, Professor, ICWC Honorary Member
Shomakhmadovich Shaymordonov	Director of the SIC ICWC Tajik Office
Abdybay Shakirbayevich Djayloobayev	Director of the SIC ICWC Kyrgyz Office
Nurken Nurzhanuly Musirali	Manager of the Division for International Relations in Transboundary and Inter-provincial Water Allocation, Committee for Water Resources of the Republic of Kazakhstan
Kurbangeldy Begenchevich Balliyev	Manager of the Division at the SIC ICSD
Abdurakhim Abdurakhmanovich Djalalov	Governor of Syrdarya Province in Uzbekistan
Khakim Khamidovich Ischanov	Chief of the Department at the Cabinet of Ministers of the Republic of Uzbekistan
Sharifjon Zikrillayevich Kuchkarov	Deputy Chief of the Department for Water Resources Balance and Improvement of Water-Saving Technologies, MAWR of Uzbekistan
Eldar Zukhurovich Khusankhodjayev	Manager of the Division at BWO “Syrdarya”

Aleksandr Georgiyevich Laktionov	Manager of the Division at BWO “Syrdarya”
Oleg Grigoryevich Lysenko	Manager of the Division at BWO “Amudarya”
Serik Tungushevich Pernabekov	Director of the GEF Office Component, EC IFAS Member for the Republic of Uzbekistan
Shukhrat Ganiyevich Talipov	EC IFAS Member for the Republic of Uzbekistan
Mavlon Akimovich Kazakov	EC IFAS Member for the Republic of Tajikistan
Usman Kurganovich Buranov	Technical Director of the GEF Office
Yuriy Konstantinovich Gorshkov	Director of the GEF Office Component
Umid Valiyevich Abdullayev	Director of Institute “Uzgiplomeliiovodkhoz”
Yusup Khaydarovich Rysbekov	Assistant Director of SIC ICWC
Ferdinand Fatikhovich Beglov	Manager of the Division at SIC ICWC
Iskander Ferdinandovich Beglov	Key specialist of SIC ICWC

**Presided by:**

Shavkat Rakhimovich Khamrayev	Deputy Minister, Chief of the Water Department, MAWR of Uzbekistan
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## AGENDA

1. Outcomes of the vegetation period 2004 and draft operation modes of reservoir cascade and limits on water withdrawals from the Amudarya and Syrdarya river channels for hydrological period 2004/2005 (BWO “Amudarya” and BWO “Syrdarya” responsible).

2. Report on financial-economic activities of the ICWC executive bodies in 2004:
- BWO “Amudarya”;
  - BWO “Syrdarya”; and
  - SIC ICWC

with coverage of the following issues: structure; amount of funding; share holding; participation in projects funded by donors.

3. Program for providing financial-economic activities of the ICWC and its executive bodies in 2005:

- operating costs funding plan;
- plan of project activities;
- research plan of the SIC ICWC;
- work plan of the CMC ICWC;
- work plan of the ICWC Training Center and its branches



(BWO “Amudarya”, BWO “Syrdarya”, SIC ICWC, CMC ICWC and ICWC TC responsible).

4. Preparation of a draft Agreement on the Syrdarya River Basin.
5. Agenda and venue of the 42<sup>nd</sup> ICWC meeting.

**Additional matters:**

1. Annual 4<sup>th</sup> Central Asian International Scientific-Practical Conference in Almaty.
2. Water situation in the mid- and downstream of the Syrdarya river.

Sayfitdin Umarovich Ismailov, Minister of Agriculture and Water Resources of the Republic of Uzbekistan, delivered an opening address to the participants of the meeting.

Having approved the agenda, heard the speeches made by the participants of the meeting, and exchanged views, the members of the Interstate Commission for Water Coordination (ICWC) in Central Asia decided:

**On the 1<sup>st</sup> matter:**

1. Take information of BWO “Amudarya” and BWO “Syrdarya” on implementing water withdrawal limits and ensuring the adopted actual operation mode of the reservoir cascade on the Syrdarya and Amudarya rivers over the past vegetation period in 2004 into account.

2. Agree on the adjusted and recommended operation modes for the reservoir cascade and water withdrawals from the Amudarya and Syrdarya rivers for the remaining part of the non-vegetation period 2004/2005.

3. Approve preliminary limits on water withdrawals from the Amudarya and Syrdarya river channels and recommended operation modes for the reservoir cascade on these rivers, and, based on the results of the final prediction by the Uzbek Hydromet Service, adjust the operation mode for the vegetation period 2005 to approve for at the next ICWC meeting.

4. BWO “Syrdarya” shall agree on the proposed operation modes for the Naryn-Syrdarya reservoir cascade with energy authorities in the Syrdarya river basin.

5. Instruct the Ministry of Agriculture and Water Resources of Uzbekistan and the Committee for Water Resources of the Ministry of Agriculture of Kazakhstan to consider the issue on allocating funds for operation and maintenance of the Hunger Steppe Collector being transferred to the jurisdiction of BWO “Syrdarya”.

**On the 2<sup>nd</sup> matter:**

1. Report on financial-economic activities of the ICWC executive bodies in 2004:

BWO “Amudarya” – to confirm;

BWO “Syrdarya” - to confirm;

SIC ICWC and its branches – to confirm with remarks and suggestions.

2. Instruct BWO “Syrdarya” together with water management organizations in the riparian states to analyze the demand for funds per activity (entity) to operate inter-state waterworks facilities and submit the results at the next ICWC meeting.

**On the 3<sup>rd</sup> matter:**

1. Approve an estimate of costs to fund operational needs of the Basin Water Organizations “Amudarya” and ”Syrdarya” for 2005

2. Approve an estimate of costs to maintain the SIC ICWC and its branch offices for 2005. The SIC ICWC shall prepare by the next ICWC meeting proposals for improving the structure and operating efficiency of the SIC and its branches through allocating costs to maintain it in 2005 among ICWC member countries, and, taking that into account, make amendments in agreement with ICWC members.

3. Approve a work plan of the CMC ICWC and national metrological organizations for 2005 and an estimate of costs to implement it.

4. Approve a work plan of the ICWC Training Center for January-July 2005 with account of remarks and suggestions.

**On the 4<sup>th</sup> matter:**

1. Take information of the BWO “Syrdarya” on the progress in preparation of a draft Agreement on the Syrdarya River Basin into account .

2. Instruct ICWC Member for Uzbekistan Sh.R. Khamrayev to submit the Government a proposal for participation of the country in preparation of a draft Agreement.

3. Instruct BWO “Syrdarya” to monthly inform ICWC members about the operation mode of the river and transboundary canals before adoption of an Agreement.

**On the 5<sup>th</sup> matter:**

1. Hold the regular 42<sup>nd</sup> ICWC meeting in Almaty on 27-29 April 2005.

2. Confirm an agenda for the regular 42<sup>nd</sup> meeting:

**AGENDA**

1. Progress in implementation of the limit on water withdrawals in the non-vegetation period 2004/2005, confirmation of limits on water withdrawals from the Amudarya and Syrdarya river channels for the next vegetation period 2005, and approval of a predicted operation mode for reservoir cascades (BWO “Amudarya” and BWO “Syrdarya” responsible).

2. Allocating costs to fund the activities of the SIC ICWC and BWO “Syrdarya”

3. Developing the production of water gauging devices in the interests of the ICWC (SIC ICWC and CMC ICWC responsible)

4. Preparing for the 4 World Water Forum
5. CAREWIB Project
6. Agenda and venue of the regular 43<sup>rd</sup> ICWC meeting

**On the 1<sup>st</sup> additional matter:**

- Approve the proposal made by the Committee for Water Resources at the Ministry of Agriculture of Kazakhstan for holding an Annual Central Asian International Scientific-Practical Conference in Almaty on 27-29 April 2005.
- Agree on the suggestion to dedicate this conference to the oncoming 4<sup>th</sup> World Water Forum and name it as “ICWC towards the 4<sup>th</sup> World Water Forum: Local Actions for the Global Challenge”.
- Approve the proposed draft agenda of the conference.
- Instruct the Organizing Committee to invite representatives from international organizations to this conference.

**On the 2<sup>nd</sup> additional matter:**

1. Take information of Chairman of the Committee for Water Resources at the Ministry of Agriculture of Kazakhstan A.D. Ryabtsev and Deputy Minister of Agriculture and Water Resources of Uzbekistan Sh.R. Khamrayev into account.
2. BWO “Syrdarya” shall carry out permanent monitoring and concerted actions with energy authorities of the Syrdarya river basin countries during spring tide in 2005.
3. For reducing water inflow into the Shardara reservoir, take possible measures for water withdrawal over canals in the midstream.
4. In case of critical water inflow into the Shardara reservoir, leaders of water management authorities in Kazakhstan and Uzbekistan shall meet to consider it.

Obligatory participation of ICWC members in the next meetings should be considered necessary.

Water management organizations of Central Asia should be recommended to take part in the International Conference to be held in Dushanbe on 30 May to 1 June 2005.

For the Republic of Kazakhstan	A.D. Ryabtsev
For the Kyrgyz Republic	Zh.B. Bekbolotov
For the Republic of Tajikistan	A.M. Zoirov
For Turkmenistan	T.A. Altiyev
For the Republic of Uzbekistan	Sh.R. Khamrayev

**ICWC PROTOCOL DECISION ON AWARDING A.A. DJALALOV TITLE  
“ICWC HONORARY MEMBER”**

Taking into account the services as ICWC Member for the Republic of Uzbekistan in activities of the Interstate Commission for Water Coordination in Central Asia, award Governor of Syrdarya province in the Republic of Uzbekistan Abdurakhim Abdurakhmanovich Djalalov title “ICWC Honorary Member”.

For the Republic of Kazakhstan	A.D. Ryabtsev
For the Kyrgyz Republic	Zh.B. Bekbolotov
For the Republic of Tajikistan	A.M. Zoirov
For Turkmenistan	T.A. Altiyev
For the Republic of Uzbekistan	Sh.R. Khamrayev

## **ICWC PROTOCOL DECISION ON MAKING A REQUEST TO THE IFAS EXECUTIVE COMMITTEE**

Taking into account the urgent need for providing timely and high-quality hydrological and hydrometric information for water resources management in Central Asian states, instruct BWO “Syrdarya”:

1) to make a request to the IFAS Executive Committee for detailed information on planned and performed activities under Component D of the GEF Project at trans-boundary gauging stations of interstate importance, their equipment, current technical condition, operability and data transmission system.

2) submit received information for consideration at the next regular ICWC meeting.

For the Republic of Kazakhstan	A.D. Ryabtsev
For the Kyrgyz Republic	Zh.B. Bekbolotov
For the Republic of Tajikistan	A.M. Zoirov
For Turkmenistan	T.A. Altiyev
For the Republic of Uzbekistan	Sh.R. Khamrayev

## **OUTCOMES OF THE VEGETATION PERIOD 2004 AND DRAFT OPERATION MODES FOR RESERVOIR CASCADE AND LIMITS ON WATER WITHDRAWALS FROM THE AMUDARYA AND SYRDARYA RIVER CHANNELS FOR THE HYDROLOGICAL PERIOD 2004–2005<sup>1</sup>**

### **1. Amudarya river basin**

<sup>1</sup> Information on the 1<sup>st</sup> matter on the agenda of the ICWC meeting

Water availability in cross-section Atamurat above Garagumdarya over the vegetation period in 2004 was 94.8%, and the actual value amounted to 45.1 km<sup>3</sup>, with the norm set 47.6 km<sup>3</sup>, while last year the water availability for the same period equaled 54.9 km<sup>3</sup>.

In early October 2004, the water volume in the Nurek reservoir amounted to 10 billion 490 million m<sup>3</sup>, with 10 billion 500 million m<sup>3</sup> planned. Water accumulation in the Nurek reservoir was carried out according to the approved operation mode.

On 1 October 2004, the water volume in the Tuyamuyun reservoir amounted to 2 billion 706 million m<sup>3</sup>, against 3 billion 705 million m<sup>3</sup> recorded the previous year

The actual river flow in cross-section Atamurat above the Garagumdarya (gauging station 'Kelif') over the vegetation period in 2004 was 39.7 km<sup>3</sup> against 49.7 km<sup>3</sup> recorded the previous year that amounted to 79.9 %.

The water withdrawal limits set for the reporting vegetation period in 2004 per country were used as follow:

- in the whole basin, the assigned limit on water withdrawals for the vegetation period was used to 94.2%, and the actual use amounted to 37 billion 670 million m<sup>3</sup>, with the limit set 39 billion 970 million m<sup>3</sup>;

- The Kyrgyz Republic used the assigned water withdrawal limit to 2.0%, and the actual use amounted to 9 million m<sup>3</sup>, with the limit set 450 million m<sup>3</sup>;

- The Republic of Tajikistan used the assigned water withdrawal limit to 87.3%, and the actual use amounted to 5 billion 939 million m<sup>3</sup>, with the limit set 6 billion 800 million m<sup>3</sup>;

- Turkmenistan used the assigned water withdrawal limit to 98.3%, and the actual use amounted to 15 billion 230 million m<sup>3</sup>, with the limit set 15 billion 500 million m<sup>3</sup>;

- The Republic of Uzbekistan used the assigned water withdrawal limit to 96.7%, and the actual use amounted to 15 billion 484 million m<sup>3</sup>, with the limit set 16 billion 20 million m<sup>3</sup>;

The use of the assigned water withdrawal limits per river reach was as follow:

1. Upstream – 86.8%, including Tajikistan - 87.3%, Uzbekistan - 84.0%.
2. Midstream – 96.3%, including Uzbekistan – 102.3%, Turkmenistan – 93.0%.
3. Downstream – 98.6%, including Uzbekistan - 93.5%, Turkmenistan – 108.8 %.

Water availability for the three major downstream water users over the reporting period was as follows:

1. Dashoguz province – 108.8%.
2. Karakalpakstan – 90.2%.
3. Khorezm province – 100.1%.

The planned water supply to the Aral Sea and river delta for the current vegetation period was performed to 65.2%, and actually 4 billion 301 million m<sup>3</sup> of water was supplied, with 6 billion 600 million m<sup>3</sup> planned, while over the same period last year 9 billion 134 million m<sup>3</sup> of was supplied.

Taking into account the prior results of the vegetation period, BWO "Amudarya" agreed with each of the water user countries in the basin on water withdrawal limits for the non-vegetation period 2004/2005, which were submitted to ICWC members for consideration and approved at the 40<sup>th</sup> ICWC meeting.

Water withdrawal limits for the hydrological year 2004/2005 per country, submitted to ICWC members for consideration, are assigned as follow:

- 450 million m<sup>3</sup> for the Kyrgyz Republic;
- 9 billion 500 million m<sup>3</sup> for the Republic of Tajikistan;
- 22 billion m<sup>3</sup> for Turkmenistan;
- 22 billion m<sup>3</sup> for the Republic of Uzbekistan.

It is suggested to assign water withdrawal limit for the hydrological year 2004/2005 for the Amudarya river basin as 53 billion 950 million m<sup>3</sup>, including downstream Atamurat station above Garagumdarya - 44 billion m<sup>3</sup>.

The planned water supply to the Aral Sea and Priaralie for the hydrological period 2004/2005 with account of collector-drainage flow is suggested to assign 6 billion 400 million m<sup>3</sup>.

## 2. Syrdarya river basin

According to the pre-assessment of the Uzbek Hydromet Service and based on its analysis for the vegetation period 2004, water availability in the rivers in the Syrdarya basin was expected to be within the normal range or slightly higher. On the rivers in Fergana Valley, Chirchik and Akhangaran, it was 120-140% of the norm.

Hence, BWO "Syrdarya" refined water withdrawal limits for the vegetation period 2004 with due consideration of requests from water consumers, and calculated probable operation mode for the Naryn- Syrdary reservoir cascade.

It should be noted that optimal control over the Naryn-Syrdary cascade mainly depends on correctness of predictions, at that it relates to all kinds of water availability years. There was a similar situation in the current vegetation period when the inflow for the whole basin amounted to about 102%. The predicted inflows into upper reservoirs exceeded the norm by 18% on average, the actual values amounted to about 113.9%. The actual side inflows over the Syrdary river channel were about 84%, with about 95% predicted. In general, the situation with natural water resources seems to be favorable – about 102% - but it is seen from table 2.1 that this is a visible well-being owing to inflows through Karadarya branch (131.5% and 120.4%).

**Table 2.1**

Parameter (from 1 April to 30 September 2004)	Predicted (million m <sup>3</sup> )	Actual (million.m <sup>3</sup> )	Percentage in the norm	
			Predicted	Actual
Inflow to upper reservoirs:				
Toktogul	11556.52	10848.99	124.3	116.7
Andizhan	2989.09	3686.51	103.3	131.5
Charvak	5727.63	5305.47	112.2	103.9
Ugam river	700.1	490.95	125.8	88.2
Subtotal:	20973.34	20331.92	117.5	113.9
Side inflows:				
Toktogul – Uchkurgan	1410.74	1294.29	121,9	111.8

Uchkurgan, Uchtepe-Kayrakkum	2953.15	2289.53	82.3	63.8
Andizhan-Uchtepe	2623.44	2912.55	108.5	120.4
Kayrakkum-Chardara	3460.84	2590.36	108.8	81.4
Gazalkent – Chinaz-Chirchik gauging station	822.19	873.78	53.6	57.0
Subtotal:	11270.36	9960.51	94.9	83.9
Total:	32243.70	30292.43	108.5	101.9

Below the analysis of some operation characteristics of the Naryn-Syrdarya reservoir cascade for the past vegetation period 2004 is given.

**Table 2.2**

Reservoir	Reservoir volume (million m <sup>3</sup> )				Against 2003
	on 1 Apr. 2004	on 30 Sept. 2004		on 30 Sept. 2003, actual	
		predicted	actual		
Toktogul	14578.0	19077.03	19188.00	19500.0	-312.0
Andizhan	1624.0	1126.28	1253.24	1019.0	234.0
Charvak	440.0	1795.79	1204.60	1653.0	-449.0
Kayrakkum	3438.0	1172.84	2029.00	1755.0	274.0
Chardara	4980.0	1423.48	699.00	857.0	-158.0
TOTAL:	25060.0	24595.42	24373.84	24784.0	-411.0

**Table 2.3**

Reservoir	Outflow (million m <sup>3</sup> ) on 30 Sept. 2004	
	predicted	actual
Toktogul	7002.72	6236.00
Andizhan	3475.87	4036.03
Charvak	4354.13	4611.42
Kayrakkum	10361.52	10272.19
Chardara	10860.48	9375.26
TOTAL:	36054.72	34530.9

The inflow into the Toktogul reservoir amounted to 116.7%, at that the outflow for the entire vegetation period was 89.0%, and, as a result, water accumulation in the reservoir bowl amounted to 19188 million m<sup>3</sup>.

The outflow from the Kayrakkum reservoir in the period from June to August reduced on average by 10–18% of the value recommended by BWO “Syrdarya” and approved at the ICWC meeting, due to which the water volume in the reservoir bowl at

the end of the vegetation period amounted to 2029 million m<sup>3</sup> and exceeded the recommended values by 274 million m<sup>3</sup>.

By the beginning of autumn-winter period, the situation in the Toktogul and Kayrakkum reservoirs complicated the situation in the Syrdarya river lowlands and Chardara reservoir, thus causing again the same situation as in the previous non-vegetation period 2003/2004. However, it should be noted that water accumulated at the end of the vegetation period in the reservoirs in the basin was less by 411 million m<sup>3</sup> than at the same time in 2003.

**Table 2.4**

**Water supply per Syrdarya river reach on 30 September 2004**

Reach, water user country	Water withdrawal limit (million m <sup>3</sup> )	Actual water withdrawal (million m <sup>3</sup> )	Percentage
Toktogul – Uchkurgan hydroscheme			
Kyrgyzstan	161.66	117.84	72.89
Tajikistan	236.56	234.90	99.30
Uzbekistan	3634.74	2916.7	80.24
Uchkurgan – Kayrakkum hydroscheme			
Kyrgyzstan	84.83	47.05	55.46
Tajikistan	448.77	528.10	117.67
Uzbekistan	543.63	695.66	127.9
Kayrakkum hydroscheme – Chardara reservoir			
Kazakhstan	725.76	640.92	88.3
Tajikistan	1219.68	1014.18	83.1
Uzbekistan	4708.97	5094.93	108.2
Total BWO zone			
Kazakhstan	725.76	640.92	88.3
Kyrgyzstan	246.49	164.89	66.9
Tajikistan	1905.01	1777.18	93.3
Uzbekistan	8887.33	8707.34	97.9

Favorable water availability in the whole basin in the vegetation period 2004 resulted in reduction in actual water withdrawals by 10-20% on average.

**Table 2.5**

**Data on actual water withdrawals in the vegetation  
on 30 September 2004**

Water user country	ICWC limit (million m <sup>3</sup> )	Actual water withdrawal (million m <sup>3</sup> )	Percentage
Tajikistan	1905.01	1777.18	93.3
Kazakhstan (Dostyk canal)	725.76	640.92	88.3
Kyrgyzstan	246.49	164.89	66.9
Uzbekistan	8887.33	8707.34	97.9



The negative factor in the current vegetation period was reduction in water supply to the Aral Sea and Priaralie by average 20% and underestimated inflow into the Chardara reservoir.

**Table 2.6**

Parameter	Planned (million m <sup>3</sup> )	Actual (million m <sup>3</sup> ).
Supply to the Aral Sea	5258.33	4397.61
Release to the Arnasay depression	259.20	471.57
Inflow into the Chardara reservoir	9439.77	6711.41

Based on the results of the last vegetation period, one may note as follows:

1. Clear-cut organization of crop irrigation largely depends on correct and precise information and reference gauging stations. Thereupon, the organization of metering at all gauging stations can raise the reliability of information on water discharges.

2. The reduction in actual water withdrawals against the limits is due to favorable water availability in vegetation period and inflow from local sources.

3. The outflow from the Toktogul reservoir amounted to 89% against the planned value; as a result, up to 19188 million m<sup>3</sup> of water accumulated in the bowl.

4. The water supply to the Aral Sea amounted to 4397.61 million m<sup>3</sup> under the value planned 5258.33 million m<sup>3</sup>. 471.57 million m<sup>3</sup> of water was released into the Arnasay depression.

5. The reduction in the outflow from the Kayrakkum reservoir led to accumulation of up to 2029 million m<sup>3</sup> of water in its bowl by the end of vegetation period. The inflow into the Chardara reservoir amounted to 6711.41 million m<sup>3</sup> against planned 9439,77 million m<sup>3</sup>, this aggravated the situation in the Syrdarya river lowlands in the autumn-winter period 2004/2005.

### **BRIEF INFORMATION OF BWO “AMUDARYA” ON THE RESULTS FOR 5 MONTHS DURING THE NON-VEGETATION PERIOD 2004/2005 IN THE AMUDARYA RIVER BASIN BY 1 MARCH 2005<sup>2</sup>**

As predicted by the Uzbek Hydromet Service, water availability in cross-section Kerki above Garagumdarya in the non-vegetation period 2004/2005 is expected to be within or about the normal range.

By 1 March 2005, actual water availability in cross-section Atamurat above the Garagumdarya in the Amudarya river basin for the non-vegetation period amounted to 92.3% of the norm. Under the norm set 12.006 km<sup>3</sup>, the actual value amounted to 11.079 km<sup>3</sup> (the last year it was 11 billion 989 million m<sup>3</sup> or 99.3% of the norm).

<sup>2</sup> Information on the 1<sup>st</sup> matter at the ICWC meeting

BWO “Amudarya” refined the alternative operation mode of TMW for the non-vegetation period under 97.4% water availability with average flow expected 18.4 km<sup>3</sup> in cross-section Atamurat above Garagumdarya.

As well, BWO “Amudarya” together with United Control Center “Energy” developed an operation mode of the Nurek reservoir for the non-vegetation period 2004/2005.

Keeping in mind the adopted calculated water availability for the non-vegetation period in cross-section Atamurat above Garagumdarya, water withdrawal limits, available water resources in reservoirs, water supply to the Aral and Priaralie for the non-vegetation period with account of collector-drainage flows, we suggest determining the actual level of the past year as 2100 million m<sup>3</sup>.

The use of the revised water withdrawal limits over 5 months in the current non-vegetation period per country was as follows:

- in the whole basin, the assigned water withdrawal limit was used to 90.4%, and the actual value amounted to 10 billion 84 million m<sup>3</sup>, with the limit set 11 billion 151 million m<sup>3</sup>;

- The Republic of Tajikistan used the assigned water withdrawal limit to 69.5%, and the actual use amounted to 1 billion 565 million m<sup>3</sup> with the limit set 2 billion 253 million m<sup>3</sup>;

- Turkmenistan used the revised water withdrawal limit to 94%, and the actual use amounted to 4 billion 601 million m<sup>3</sup> with the limit set 4 billion 896 million m<sup>3</sup>,

- The Republic of Uzbekistan used the revised water withdrawal limit to 97.8%, and the actual use amounted to 3 billion 678 million m<sup>3</sup> with the limit set 3 billion 762 million m<sup>3</sup>.

The use of the assigned water withdrawal limits per river reach was as follow:

1. Upstream – 72.4%, including Tajikistan – 69.5%, Uzbekistan - 100%.

2. Midstream – 93.9%, including Uzbekistan – 96.2%, Turkmenistan – 92.6%.

3. Downstream – 100%, including Uzbekistan - 100%, Turkmenistan - 100%.

Water availability for the three major downstream water users over the reporting period was as follows:

1. Dashoguz province – 100%

2. Karakalpakstan – 100%

3. Khorezm province – 100%.

Taking into account the prior results of the vegetation period, BWO “Amudarya” agreed with each of the water user countries in the basin on water withdrawal limits for the non-vegetation period 2004/2005.

The planned water supply to the Aral Sea and Priaralie for 5 months of the non-vegetation period was performed to 139.1%; actually 2435 million m<sup>3</sup> of water was supplied with 1750 million m<sup>3</sup> planned, against 1382 million m<sup>3</sup> last year.

In early January 2005, the water volume in the Nurek reservoir amounted to 8699 million m<sup>3</sup> with 8380 million m<sup>3</sup> planned; on 1 March 2005 the actual value amounted to 6427 million m<sup>3</sup>, while at the same time last year it was 6562 million m<sup>3</sup>.

Owing to high inflow in the current period, by 1 January 2005 the water volume in the Tuyamuyun reservoir was retained at the level of 5334 million m<sup>3</sup> (last year it was 5630 million m<sup>3</sup>). On 1 March 2005, the water volume in the Tuyamuyun reservoir amounted to 5 385 million m<sup>3</sup>, last year it was 5132 million m<sup>3</sup>.

In general, the reporting non-vegetation period passed well enough in spite of the fact that in January–February in the Amudarya river lowlands there were extremely tense ice conditions, which successfully finished on 2 March 2005.

Analysis of the use of the assigned water withdrawal limits  
for the non-vegetation period 2004/2005 in the Amudarya river basin by 1 March 2005 (million m<sup>3</sup>)

Name	Limit for the entire period	Limit for 5 months	Revised limit for 5 months	Actual value for 5 months	Percentage in yearly limit	Percentage in assigned limit	Percentage in revised limit
<i>Kyrgyz Republic</i>	0	0	0	0			
<i>River Upstream Department</i>	3233	2488.7	2493.2	1805.54	55.8	72.5	72.4
Republic of Tajikistan	2863	2252.7	2252.7	1	54.7	69.5	69.5
Surkhandarya province	370	236.1	240.48	240.5		9	0
<i>Water withdrawals from the Amudarya river up to Kerki gauging station</i>	12480.0	8686.1	8658.2	8278.7	66.3	95.3	95.6
Republic of Uzbekistan, total:	5980	3960.2	3761.9	3677.7	92.9	61.5	97.8
a) Water withdrawals in river midstream							
Karshi main canal	1700	1340.9	1340.9	1257.65	74.0	5.5	93.8
Amu-Bukhara main canal	1545	1169.8	853.5	852.8	55.2	4.7	99.9
Subtotal midstream:	3245	2510.7	2194.4	2110.51	65.0	2.6	96.2
b) Water withdrawals in river downstream							
Khorezm province	1235	611.6	379.83	379.8			100.
Karakalpakstan	1500	837.9	1187.7	1187.3	30.8	5.0	0
Subtotal downstream:	2735	1449.5	1567.5	1567.14	57.3	4.0	0
Turkmenistan, total:	6500	4725.9	4896.3	4601.0	97.4	2.1	94.0
a) Water withdrawals in river midstream							
Garagumdarya	3810	3067.2	3119.9	2972.12	96.9	78.0	95.3
Lebab province	1290	871.7	7	724.3			
Subtotal midstream:	5100	3938.9	3991.6	3696.7	83.1	56.1	83.1
b) Water withdrawals in river downstream							
Dashoguz province	1400	787.0	904.60	904.6	114.	64.6	100.

			1	01	9		0
Total basin	15713	11174.89	11151.37	10084.2	90.2	64.2	90.4
including: River Upstream Department							
Upstream	3233	2488.74	2493.21	1805.54	72.5	55.8	72.4
Midstream	8345	6449.64	6186.02	5806.94	90.0	69.6	93.9
Downstream	4135	2236.5	2472.14	2471.74	110.5	59.8	100.0
Summary water withdrawals in Amudarya river lowlands	4135	2236.5	2472.14	2471.74	110.5	59.8	100.0
Khorezm province	1235	611.6	379.83	379.8	62.1	30.8	100.0
Karakalpakstan	1500	837.90	1187.73	904.6	141.7	79.2	100.0
Dashoguz province	1400	787	904.60	904.6	114.9	64.6	100.0
Summary sanitation flows	800	715.4	715.4	695.1	97.2	86.9	97.2
Karakalpakstan	500	415.4	415.4	421.8	101.5	84.4	101.5
Dashoguz province	150	150	150	155.3	103.5	103.5	103.5
Khorezm province	150	150	150	118.0	78.7	78.7	78.7
Water release to Priaralie lakes				599.7			
Including the Republic of Kazakhstan				406.0			
Dashoguz province				193.7			

## REPORT ON FINANCIAL-ECONOMIC ACTIVITIES OF BWO "AMUDARYA" IN 2004<sup>3</sup>

### I. In Uzbekistan

Costs to carry out operational measures in 2004 actually amounted to 1575390 thousand sums. They included:

- 216575 th. sums for salary and assignments;
- 467409 th. sums for maintenance of waterworks facilities;
- 417998 th. sums for carrying out protection, regulation and flood control measures and for mechanical cleaning of canals;
- 73817 th. sums for purchasing permanent capital assets;
- 399591 th. sums for other operational measures.

Fulfillment of the cost estimate amounts to 105%.

In 2004 funds were not allocated for capital investments.

### II. In Turkmenistan

<sup>3</sup> Information on the 2<sup>nd</sup> matter on the agenda of the ICWC meeting

Costs to carry out operational measures in 2004 actually amounted to 10064 million manat. They included:

- 5746 million manat for carrying out operation;
- 2210 million manat for carrying out contract work;
- 2108 million manat for discharging credit indebtedness for 2003.

Owing to the facing difficulties with unimpeded, duty-free passing of the personnel, necessary material and technical resources, construction technology and transport facilities through the customs stations of Turkmenistan and Uzbekistan, the scope of the contract work largely reduced. Thus, over 2004 the contract work was performed to 90%. In general, the cost estimate was fulfilled to 95%.

In 2004 the funds for capital investments were not allocated.

### **III. In Tajikistan**

Costs to carry out operational measures in 2004 actually amounted to 92727 somoni. They included:

- 33819 somoni for operational budgetary activities and other costs;
- 58908 somoni for carrying out routine repair.

In general, the cost estimate for 2004 was fulfilled to 53%.

Because of insufficient funding, routine and overhaul repair of water facilities and schemes stipulated in the cost estimate were not carried out in full.

The funds for capital investments were not allocated.

### **IV. Structure and personnel**

Basin Water Organization “Amudarya” is a branch of the Interstate Commission for Water Coordination (ICWC) in Central Asia.

BWO “Amudarya” fulfills the above-mentioned tasks at the local level through its territorial departments:

- River Upstream Department of BWO “Amudarya” in Kurgan-Tyube town, Tajikistan;
- River Midstream Department of BWO “Amudarya” in Turkmenabat town, Turkmenistan;
- Department for Interstate Amudarya Irrigation Canals (UPRADIK) in Urgench town, Uzbekistan;
- River Downstream Department of BWO “Amudarya” in Takhiatash town, Karakalpakstan.

The personnel of the Organization are comprised of 797 employees (1 January 2005).

The structure of the Basin Water Organization “Amudarya” consists of 9 organizations. These are:

- 6 budget-funded organizations with total personnel amounting to 731 employees,

- 3 self-sustained organizations with total personnel amounting to 66 employees. The ratio of personnel employed in BWO “Amudarya” among the countries is as follow:

	Total	including in operation work
Republic of Tajikistan	78	78
Republic of Uzbekistan	510	468
Turkmenistan	209	185
<b>Total</b>	<b>797</b>	<b>731</b>

## REPORT ON FINANCIAL-ECONOMIC ACTIVITIES OF BWO “SYRDARYA” IN 2004<sup>4</sup>

The activities of Basin Water Organization (BWO) “Syrdarya” are determined in the Agreement between Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan on Cooperation in Interstate Water Resources Management, Use and Protection, adopted in Almaty on 18 February 1992. according to article 9 in this Agreement, BWO “Syrdarya” is an executive and interdepartmental controlling body of the Interstate Commission for Water Coordination on the territory of the Syrdarya river basin.

The BWO is located in Tashkent city and carries out water resources allocation in accordance with the approved limits of the ICWC directly through its waterworks departments.

BWO “Syrdarya” consists of the following structural units:

- Naryn-Karadarya Department for Waterworks and Canals in Kuyganyar town;
- Hunger Steppe Department for Waterworks and Dustlik Canal in Gulistan town;
- Upper Chirchik Department for Waterworks in Chirchik town;
- Charvak Reservoir Department in Charvak town;
- Uchkurgan mobile mechanized unit in Uchkurgan town;
- Andizhan self-supporting plot in Andizhan town.

Furthermore, the Hunger Steppe Department comprises self-supporting units:

- a) Gulistan PMC in Gulistan town;
- b) a subsidiary farm in Gulistan town.

The personnel at the budgetary branches of BWO “Syrdarya” consist of 782 employees, including managerial personnel amounting to 98.

In addition, the personnel at the four self-supporting enterprises consist of 119 people, including managerial personnel amounting to 33.

The total personnel of BWO “Syrdarya” amount to 901 people, including managerial personnel amounting to 131.

Basin Water Organization “Syrdarya” is maintained using the budgets of ICWC member states on terms of share holding adopted at the ICWC meeting in Almaty in 1992. With account of received water resources, the share of each ICWC member state should be as follows:

<sup>4</sup> Information on the 2<sup>nd</sup> matter on the agenda of the ICWC meeting

42 %

Republic of Kazakhstan	
Kyrgyz Republic	0.5 %
Republic of Tajikistan	7 %
Republic of Uzbekistan	50.5 %
<b>Total:</b>	<b>100%</b>

The plan for funding operational needs of BWO “Syrdarya” and cost distribution per item per country for 2004 is given in the tables below:

Table 1

Country	In national currency			In thousand dollars		Share holding percentage	
	Unit	Stated in the estimate	Actual funding by 1 Oct. 2004	Stated in the estimate	Actual funding by 1 Oct. 2004	Estimated	Actually funded
Republic of Uzbekistan	th. sum	1098827	808484	1051	773	72.8	53.5
Republic of Kazakhstan	th. tenge	53000	44175	386	322	26.7	22.3
Republic of Tajikistan	somoni	21795	14324	7	5	0.5	0.4
Kyrgyz Republic	th. som						
<b>Total</b>				<b>1444</b>	<b>1100</b>	<b>100</b>	<b>76.2</b>

Table 2

Indicator	Uzbekistan (th. sum)	Kazakhstan (th. tenge)	Tajikistan (somoni)	Kyrgyzstan (th.som)
Salary and equivalent pays	226699	8713	8250	-
Employer assignments	69447	1830	2145	-
Other costs	802681	424577	11400	-
Purchase of permanent capital assets	90000	-	-	-
Routine repair	293670	32148	2000	-
Overhaul repair	105500	-	-	-
Other operational costs	313511	10309	9400	-
<b>Total</b>	<b>1098827</b>	<b>32148</b>	<b>21795</b>	-

Financing the activities of BWO “Syrdarya” for normal functioning and maintenance of operational systems is insufficient.

The yearly financing for operational needs of BWO “Syrdarya” per item in percentage terms consists of these:

1. Salary with extra pays – 27%
2. Routine repair - 26.7%
3. Overhaul repair - 9.6%
4. Purchase of equipment - 8.2%

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 5. Other operational costs - 28.5%

The allocated funds only enable to keep interstate schemes and installations in a working condition and prevent emergency situations. Almost all the interstate schemes and installations work at full stretch. Today, over 60% of the capital assets of the BWO and its infrastructure are depreciated, and 50% of the basic infrastructure has served its time. Most of activities for keeping canals and facilities in a normal technical condition constitute routine and overhaul repair, funding of which should be increased at least by 2.5-3 times. Furthermore, the lack of funding does not make it possible to renew machine-and-tractor fleet of production sub-units. This also affects the normal working of hydraulic structures.

In 2004, BWO "Syrdarya" continued participation in the Project "Fergana Valley Canals and BWO Syrdarya Hydro Structures Automation" funded by the Swiss Agency for Development and Cooperation (SDC). In addition to earlier automated Uchkurgan and Kuyganyar hydroschemes in Fergana Valley, it is planned to install the SCADA system at the five hydraulic structures. They include: head water intake at Big Fergana Canal on Naryn river, Khakulabad splitter wall on the feeder canal, hydro-scheme at DP 66 on the feeder canal with the headworks of the Big Andizhan Canal, headworks and escape structure at Akhunbabayev canal on the Syrdarya river.

By now, phase I of this project has been completed, during which BWO "Syrdarya" carried out repair and renewal operations at the mentioned facilities to prepare them for automation, and made up and submitted Terms of Reference for developing detail designs to the contractor. It is planned to begin construction and assembling operations in December 2004.

## **BASIC RESULTS OF THE ACTIVITIES OF THE SIC ICWC IN 2004**

In the reporting period, the SIC ICWC participated in preparation and holding of 3 meetings of the Interstate Commission for Water Coordination in Central Asia (38<sup>th</sup> meeting, Ashkhabad, Turkmenistan, March 2004; 39<sup>th</sup> meeting – Almaty, Kazakhstan, May 2004; 40<sup>th</sup> meeting – Cholpon-Ata, Kyrgyzstan, August 2004). The 41<sup>st</sup> meeting to be held in December in Dushanbe, Tajikistan was postponed for some reasons.

Appropriate decisions were made on all issues and set out in the minutes of the meetings. Control over fulfilling them was assigned to the SIC ICWC.

The main materials of meetings are published in the 'ICWC Bulletins' and 'ICWC Press-Releases' issued by the SIC ICWC.

In the field of regional cooperation, it is necessary to note the role of the SIC ICWC as a developer and coordinator of the ICWC scientific program for 2003-2005 "Problems of integrated management, rational use and protection of water resources in the Aral Sea basin", in the implementation of which national scientific-research institutes and design organizations of the basin countries are involved.



The Program is aimed at scientific basing of the ICWC policy for development of irrigation, water saving and conflict-free water resources management and protection in the Aral Sea basin.

The results of research activities are published in Annual Collections and serve as a basis for improving water management practices and developing proposals and recommendations.

The joint work of the SIC, research institutes and design organizations in the region also promotes the processes of inter-agency cooperation in the region, through active participation in the activities of interstate commissions, conferences, seminars, meetings on integrated water resources management in the Amudarya and Syrdarya river basins in the interests of hydropower, irrigation and the environment.

By forces of the SIC together with branch offices and sectoral research institutes in Central Asian countries, the population of the Regional Information System on Water and Land Resources Management as well as of the Bibliographic Database on the Aral Seas Basin Management is going on.

One should especially note the Central Asia Regional Water Information Base (CAREWIB) Project, which is mainly aimed at improving information supply to water and environmental sectors in Central Asian countries to raise the sustainability of development and partnership towards rational use of national natural resources.

The project activities are carried out in the five Central Asian states located in the Aral Sea basin. For implementing the project, national coordinators in all the countries and two basin coordinators (for Amudarya and Syrdarya river basins) are appointed.

The first priority task of the project is to create a regional web-portal with regularly updated information on water situation and environmental problems in Central Asia.

The portal is based on information of the SIC ICWC and other organizations in the region subordinate to the ICWC such as BWO “Amudarya”, BWO “Syrdarya”, CMC ICWC, ICWC TC. It is planned to establish relationships with other information sources on water, energy and other natural resources in Central Asia, regional NGOs, and with political processes (SPECA, REAP, ENVSEC, etc.).

The second project assignment is to create an information system on water and land resources in the Aral Sea basin.

In the course of the project, a number of publications are regularly also issued and distributed to inform decision-makers, NGOs and the community.

For the first year of the CAREWIB Project, the following achievements were made:

A Portal for Water and Environmental Issues in Central Asia ([www.cawater-info.net](http://www.cawater-info.net)) consisting of 10 websites was established. Information support for the portal is provided by the SIC ICWC.

Portal sections are:

- Central Asian news - digest of information materials
- Calendar of events
- Directory of water and environmental websites

- Databases (on-line information of the Uzbek Hydromet; data on discharges in the Amudarya and Syrdarya river basins; database on addresses; database on projects implemented in Central Asia; database on the Aral Sea and so on)
- Knowledge base (electronic library, bibliographic database comprised of more than 2000 records)
- Virtual forum to discuss problems in the region
- Websites of the ICWC and its executive bodies – SIC, TC and others
- Websites of the projects being implemented in the region, presenting the activities of ICWC organizations in directions of current importance to the region: IWRM, gender, climate change and so on.

Computer equipment was delivered to provincial water management organizations in the region.

Regular issuance and distribution of the CAWater-Info Newsletter (in Russian and English) along with the ICWC Press-Release was organized. It covers all renovations on the portal websites. Hardcopies of the newsletter are distributed among water organizations, ministries and agencies of Central Asia, as well as among embassies of foreign states accredited in Uzbekistan.

A first version of the information system on water and land resources in the Aral Sea basin was developed (Water, Power, Ecology, Climate, Land and Economics blocks)

Online information of the Uzbek Hydromet is published every day on the website:

- Water discharges
- Water levels
- Reservoir operation mode
- Ten-day water discharges
- Reservoir water balances
- Channel water balances.

Thus, under the CAREWIB Project an information resource not having an analogue in Central Asia was formed in the Internet and is successfully functioning.

Great attention is given to the issue of advanced training on the basis of the ICWC Training Center with the support of the CIDA and other international organizations. The list of organized seminars is given below.

Representatives of the SIC in association with representatives from the countries in the region are keeping on the work on preparing and revising draft Intergovernmental Agreements on diverse aspects of the ICWC activities.

The SIC prepared proposals for a draft resolution on agriculture development in Uzbekistan, a draft Water Code of Uzbekistan, etc..

The development of measures in Central Asia towards the 4<sup>th</sup> World Water Forum was started.

On invitation of foreign partners, representatives of the SIC took part in international meetings and conferences.

In accordance with the “Provision”, the SIC carries out information activities.

Joining the IPTRID International Information Network since 1993, the SIC receives information, translates, publishes and distributes it as information digests.

In 2004, periodical collections were prepared and published:

- “ICWC Bulletin” - 4
- Collection of proceedings – 1
- Abstract review – 4
- Information digest – 4
- Law digest – 2
- “ICWC Press-Release” - 40

In addition, these were prepared and published:

- Series “CAREWIB Project Publications”
- Series “Towards the 4<sup>th</sup> World Water Forum” - 2 editions
- Series of Bulletins published by the Information-Consulting Center for the European Union’s Sixth Framework Program in Central Asia - 7 editions
- Series of the ICWC Training Center Publications – 8 editions

- Collection “Drainage in the Aral Sea basin towards the strategy for sustainable development”, 316 pp (based on the project materials)

#### **Events (conferences, seminars, etc.) in 2004**

The 3<sup>rd</sup> Annual Central Asian International Scientific-Practical Conference “Water Partnership in Central Asia” was confined to the 39<sup>th</sup> ICWC meeting in Almaty, Kazakhstan, 26-27 May 2004.

The aim of this conference was to present the results of a number of water projects being implemented in the countries of the region, and exchange views on most critical aspects of water resources management.

ICWC members, specialists from water management organizations in the countries of Central Asia and Caucasus, representatives from international organizations such as SDC, USAID, GWP, UNDP, ADB and others, guests from Slovenia, Switzerland, Denmark, Philippines, Sri Lanka took part in the conference.

Within the framework of the conference, sessions were held:

- integrated water resources management;
- information service for water partnership development and strengthening;
- women role in water resources management and use;
- drinking water supply and public health;

as well as:

- a meeting of the GWP Regional Consultative Technical Committee of Central Asia and Caucasus;

- inauguration of a Kazakhstan Country Water Partnership.

Altogether over 200 people took part in the conference.

#### **Seminars held in the ICWC Training Center, Tashkent**

1. Dialogue “Water – Energy – Climate”, 12-14 January 2004
2. Training seminar on projects focused on problems in Priaralie, 15-16 January 2004
3. “Irrigated farming improvement”, 9 - 13 February 2004

4. "Integrated water resources management", 16-19 February 2004
5. "Integrated water resources management", 23-29 February 2004
6. "On the way to strategy for sustainable irrigated farming through realizable investments in drainage, Aral Sea basin, Central Asia", 10-13 March 2004
7. Roundtable to coordinate activities on preparation of a strategic plan for IWRM principles implementation in Central Asia, 26-28 April 2004
8. "Environmental protection problems and tasks in Central Asia: water factor", 18-22 May 2004
9. Regional seminar on "Monitoring over safety of large hydraulic structures", 14-17 July 2004.
10. Seminar under the course "Internationally adopted accounting principles and approaches", 2-15 August 2004
11. "Integrated water resources management", 4-7 October 2004
  
12. "Strategic planning and sustainable management of water resources development in Central Asia", 11-12 November 2004
13. "Training course on water resources for secondary schools in Uzbekistan", 13-14 November 2004
14. "Training course on water resources for secondary schools in Uzbekistan", 25-26 November 2004
15. Fergana Valley Canal Automation, 28-29 November 2004
16. Rural Extension Service Development, 1 December 2004
  
17. "Training course on water resources for secondary schools in Uzbekistan", 3-4 December 2004
18. "Training course on water resources for secondary schools in Uzbekistan", 10-11 December 2004.

#### **Seminars held in the ICWC Training Center Office in Urgench**

1. "Prospects and opportunities for implementation of integrated water resources management (IWRM) in lowlands", 10-13 February 2004
2. "Prospects and opportunities for implementation of integrated water resources management in lowlands", 23-26 March 2004
3. "Prospects and opportunities for implementation of integrated water resources management in lowlands", 19-22 April 2004
4. "Prospects and opportunities for implementation of integrated water resources management in lowlands", 9-15 May 2004
5. "Water metering at hydro structures", 9-11 October 2004
6. "Accounting at water management organizations", 9-11 November 2004
7. "Role of Water Users Association in IWRM", 24-27 November 2004
8. "Role of Water Users Association in IWRM", 22-25 December 2004

## INFORMATION ON THE PROGRESS IN IMPLEMENTATION OF INTERNATIONAL PROJECTS WON UNDER GRANTS BY SPECIALISTS OF WATER MANAGEMENT ORGANIZATIONS IN CENTRAL ASIA IN ASSOCIATION WITH FOREIGN PARTNERS

No.	Project name and participants	Implementation period	Funding organization	Results	Project basing	Project publications and guidelines
1	Automation and control system at Uchkurgan hydroscheme on Naryn river	2002-2003	Swiss Agency for Development and Cooperation (SDC)	<p>Construction and assembling operation for preparation and introduction of an automation and control system were carried out. A project was developed. Gathering, assembling and setting-up of a set of hardware (sensors of gate position, levels and salinity; converters, controllers, input/output modules, computers, radio stations and others) were carried out.</p> <p>A software system was developed and set up; project implementation was monitored, and trial operation was conducted.</p> <p>The hydroscheme has been operating in automatic mode 2 years, water supply sustainability on North Fergana Canal and Feeder Canal sharply rose</p>	The project was prepared and implemented on the instruction of the ICWC, order 25 dated 11 Feb. 2000, item 3.3	<p>A booklet with color illustration "Automation and Control System at Uchkurgan Hydroscheme on Naryn River" was prepared and printed in Russian and English, 2003.</p> <p>The Report of BWO "Syrdarya" and SIC ICWC on the Results of the Automation and Control System at Uchkurgan Hydroscheme was prepared and printed in the form of a brochure, 41 pp., 2003</p>
2	"Integrated water resources management in the Aral Sea basin for recovery of water surfaces in South Priaralie"	2000-2004	NATO Scientific Council	<p>More effective layout of man-made water bodies in the delta was developed with account of the existing lake system and current and future fluctuations in</p>	<p>The project was won as a grant under the Program of the NATO Scientific Council "Science for Peace".</p> <p>The project was initiated by:</p>	<p>Monograph "South Priaralie – new prospects" and advertising booklet "New prospects for South Priaralie" were prepared and published</p>

No.	Project name and participants	Implementation period	Funding organization	Results	Project basing	Project publications and guidelines
				<p>water availability in the Amudarya river. Parameters of hydraulic structures ensuring sustainable functioning of the entire ecosystem in Priaralie in different water availability years were selected. A decision support system (DSS) enabling decision-makers to use to the maximum the whole set of information such as GIS, model and field retrospective data was developed. A layout of wetlands was prepared.</p>	<ul style="list-style-type: none"> <li>• The State Committee on Nature Conservation of Uzbekistan, Chairman A. Khabibullayev;</li> <li>• Ministry of Agriculture and Water Resources of Uzbekistan, First Deputy Minister A.Djalalov;</li> <li>• Government of Karakalpakstan, First Deputy Prime Minister B.Bekturdiyev;</li> <li>• Institute “Aralvodproyekt”, Director S. Djamankarayev</li> </ul>	<p>in Russian and English</p>
3	<p>«Integrated water resources management in Fergana Valley». The International Water Management Institute (IWMI), organizations of Tajikistan, Kyrgyzstan, and Uzbekistan take part in the work</p>	2002-2005	Swiss Agency for Development and Cooperation (SDC)	<p>A methodology for IWRM was developed and tested. An IWRM concept was approved by the Ministries of Agriculture and Water Resources of Uzbekistan, Kyrgyzstan and Tajikistan. By the Decision of the Ministries of Agriculture and Water Resources of Uzbekistan, Tajikistan and Kyrgyzstan, pilot Canal Management Organizations were established in Fergana Valley. Standard Statutes of Canal Water Committees were adopted. Special mobilization was carried out, and Canal Water Committees were organized. Personnel for frame</p>	<p>The project was approved by the ICWC decision (minutes No.26 dated 29 April 2000, 2<sup>nd</sup> additional matter)</p> <p>The progress of the project was considered and approved at the 38<sup>th</sup> ICWC meeting (minutes dated 4-6 March 2004, 2<sup>nd</sup> matter)</p> <p>The progress of the project was also considered and approved by the Steering Committee on 28 January 2004 and 24-26 June 2004</p>	<p>These were prepared and published:</p> <ul style="list-style-type: none"> <li>• Booklet “Integrated water resources management in Fergana Valley” in Russian and English;</li> <li>• Guidelines for social mobilization “How to establish a Water Users Association?” in Russian, English, Kyrgyz, Tajik and Uzbek;</li> <li>• Brochure “Experience on effectively carrying out irrigation and agro-engineering measures to improve water and land productivity” in Russian, English, Uzbek, Tajik and Kyr-</li> </ul>

No.	Project name and participants	Implementation period	Funding organization	Results	Project basing	Project publications and guidelines
				<p>control on pilot canals were formed. 3 new WUAs were established, and all planning and servicing management processes along their borders were worked out.</p> <p>Water supply process management in real time on pilot canals and in terms of pilot WUAs in the form of planned water use schedule was started. An information system was created.</p> <p>Certification of all demonstration fields within pilot farms being a tool for a farmer to analyze his reserves and capacity to improve land and water productivity was carried out.</p> <p>Water-metering devices were manufactured and installed in WUAs and on canals.</p> <p>The introduction of a water conservation system with time criterion gave positive results.</p> <p>Registration of WUAs was conducted. Training seminars are regularly held.</p> <p>Based on the project results, recommendations were made for three countries to improve water legislation to implement the IWRM concept on a broader scale.</p>		<p>gyz.</p> <p>In association with the Global Water Partnership, Joint Review Report “Implementation of integrated water resources management principles in Central Asia and Caucasus” was prepared, 130 pp., 2004. These were published in the periodical press:</p> <ul style="list-style-type: none"> <li>- Extension services in agriculture in Uzbekistan (“Ekologicheskiy vestnik Uzbekistan”, No.8-9, 2003);</li> <li>- The first signs – “Obi Zaravshon” (“Leninabadskaya pravda”, 16 April 2003);</li> <li>- A Pilot Project in Fergana Valley (“Pravda Vostoka”, 6 Sept. 2003);</li> <li>- How to adapt water sector to market economy? (“Pravda Vostoka”, 24 Oct. 2003);</li> <li>- Syrdarya: what is the reason for anxiety? (“Pravda Vostoka”, 30 Jan. 2004);</li> <li>- Let’s use water and land effectively (“Uzbekiston ovozi”, “Khalk suzi”, 21 Feb. 2004; “Andijonnoma”, 25 Feb. 2004);</li> <li>- To be a diligent master</li> </ul>

No.	Project name and participants	Implementation period	Funding organization	Results	Project basing	Project publications and guidelines
						<p>           (“Noviy vek”, 26 Feb.-3 March 2004);            - To use water and land effectively (“Pravda Vostoka”, 28 Feb. 2004);            - How to manage water resources (“Pravda Vostoka”, 4.03.2004);            - Putting new water-saving technologies in practice (“Narodnoye slovo”, 10 March 2004);            - Learn to save water (“Khalk suzi”, 10 March 2004);              - What are the risks caused by leaps in water availability in rivers and how should one adapt to them (“Pravda Vostoka”, 20 Apr. 2004);            - A need for implementing integrated water resources management principles (“Obu obodoni”, 25 Jul. 2004, Tajikistan);            - Water is gold (“Mirob”, 8 Aug. 2004, Tajikistan);            - Khojibakirgan Canal Management Organization afoot (“Leninabad pravda”, 4 Sept. 2004, Tajikistan).            Moreover, managers of the project and its components prepared papers for the Annual Almaty International         </p>



No.	Project name and participants	Implementation period	Funding organization	Results	Project basing	Project publications and guidelines
						Scientific-Practical Water Conference in 2003, and a website was launched in 2004.
4	<p>“Strategic planning and sustainable management of water resources development in Central Asia”.</p> <p>Specialists from water management organizations in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan take part in the work.</p>	2003-2004	UN ESCAP	<p>The preparedness of the five Central Asian countries for IWRM implementation was assessed.</p> <p>Prospects for socio-economic development in the Aral Sea basin states were determined in linkage with water factor.</p> <p>Strategic planning and management structure and stages were developed. National objectives of socio-economic development were assessed along with regional constraints in transboundary river water resources management, and capabilities and threats of the consensus. Proposals concerning a mechanism for interstate consultations and ways for further water sector development in Central Asian countries were developed.</p>	<p>The Project was approved by ICWC members at national level.</p> <p>The preliminary project results were considered at the 40<sup>th</sup> ICWC meeting (minutes of 18-20 Aug. 2004, item 3)</p>	<p>A report was prepared and printed as a brochure “Strategic planning and sustainable management of water resources development in Central Asia”, publication of the ICWC Training Center, issue 8, 116 pp., 2004.</p> <p>The attached CD contains electronic version of annexes to the report, English version of the report, and electronic version of eight editions of TC publications.</p>
5	<p>“Central Asia Regional Water Information Base (CAREWIB)”</p> <p>The Project is implemented by the consortium of ex-</p>	2003-2006	Swiss Agency for Development and Cooperation (SDC)	<p>Major project objectives:</p> <ul style="list-style-type: none"> <li>• Create a regional web-portal with information on water situation and environmental problems in Central Asia;</li> <li>• Create a common</li> </ul>	<p>Protocol approval by ICWC members:</p> <ul style="list-style-type: none"> <li>• for Kyrgyzstan on 8 Dec. 2003;</li> <li>• for Tajikistan on 9 Dec. 2003;</li> </ul>	<p>These were prepared and published in Russian and English:</p> <ul style="list-style-type: none"> <li>• brochure (1 issuance);</li> <li>• advertising book-</li> </ul>

No.	Project name and participants	Implementation period	Funding organization	Results	Project basing	Project publications and guidelines
	<p>ecutors: SIC ICWC, UN Economic Commission for Europe (UNECE/SPECA), UNEP's Global Resource Information Database center (UNEP/GRID-Arendal)</p> <p>A contract was concluded with the Kazakh branch of the SIC ICWC.</p>			<p>united information system comprising data on water resources formation, development and prediction, assessment of different water use aspects and measures for achieving potential effectiveness, ensuring sustainable water resources management and improving productivity and economic activities;</p> <ul style="list-style-type: none"> <li>• Regularly issue and distribute a number of publications to inform decision-makers, NGOs and the public;</li> <li>• Build capacities for Central Asian organizations through establishing an information network and delivering computer equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• for Turkmenistan 16 Jan. 2004.</li> </ul> <p>The project was approved by ICWC members for Kazakhstan and Uzbekistan verbally, and they appointed representatives to participate in the project.</p> <p>There is an approval by foreign partners</p> <p>The project was considered at the 37<sup>th</sup> ICWC meeting (minutes of 24 Dec. 2003, Karshi town)</p>	<p>lets (2 issuances);</p> <ul style="list-style-type: none"> <li>• monthly "CAREWIB-Newsletter" - 8 editions.</li> </ul> <p>9 project websites were launched and maintained.</p> <p>The ICWC Press-Release is published twice a month in Russian and English and distributed among more than 40 countries in the world.</p> <p>The ICWC Bulletin is published in Russian and English, as well as information digests, abstract collections (quarterly)</p>

No.	Project name and participants	Implementation period	Funding organization	Results	Project basing	Project publications and guidelines
6	<p>“On the way to a strategy for sustainable irrigated farming through realizable investments in drainage, Aral Sea basin, Central Asia”.</p> <p>FAO/IPTRID Project. Specialists from water management organizations in Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan take part in the work under the coordination by the FAO.</p>	2003 - 2004	FAO European Union through HR Wal- lingford	<p>Water resources available in the Aral Sea basin, dynamics and prospect of their use, reclamation condition of lands, hydro-geological characteristics, technical condition of drainage systems in Central Asian countries, peculiarities of drainage system operation and ways to solve them were considered.</p> <p>Drainage system functioning modeling was carried out. The issues on collector-drainage flow formation, disposal and use for irrigation in future in the region, and methods for land desalting reclamation were considered.</p> <p>The deterioration in drainage condition in the region and a need strengthening attention to this process in a different way were indicated.</p> <p>3 projects approved by ICWC members were prepared and submitted to donors for approval.</p>	<p>The project was supported by the ICWC decision (minutes No.24 dated 23 Oct. 1999, 3<sup>rd</sup> additional matter).</p> <p>Project proposals were agreed by ICWC members for Kazakhstan, Kyrgyzstan and Uzbekistan and approved by the participants of the International Conference “Strategy for sustainable development of irrigated farming through realizable investments in drainage: Aral Sea basin” (10-13 March 2004, ICWC Training Center)</p>	Based on the project materials, a monograph “Drainage in the Aral Sea basin towards a strategy for sustainable development” was prepared and published, 314 pp., 2004.
7	<p>“Fergana Valley Canal Automation”</p> <p>Introduction of an automation and monitoring system on three transboundary canals in Fergana Valley (Aravan-Akbura Canal,</p>	2004-2006	Swiss Agency for Development and Cooperation (SDC)	The initial project phase is being implemented: pilot canals have been investigated as automation and monitoring objects, hydraulic structures subject to automation, functions of a canal automation and monitoring system,	There is a protocol decision on approving the project by ICWC members for Kyrgyzstan, Tajikistan and Uzbekistan, as well as by BWO “Syrdarya”.	Publications are planned for the project completion year.

No.	Project name and participants	Implementation period	Funding organization	Results	Project basing	Project publications and guidelines
	Kyrgyzstan; South Fergana Canal, Uzbekistan; Khojambakirgan Canal, Tajikistan). Specialists from the mentioned countries take part.			repair and rehabilitation work scope have been determined. Terms of Reference were developed for detail designing of automation and monitoring system, for each pilot canal with account of their characteristics. A detailed action plan and a project timetable were developed. Contracts with executors were prepared.		
8	Transfer to integrated water resources management (IWRM) in the Amudarya and Syrdarya river lowlands and deltas	2004	US State Department	Preliminary basing of transfer to integrated water resources management in the Syrdarya and Amudarya river lowlands. Selection of pilot irrigation systems, WUAs and private farms	The Project was agreed with ICWC members for Kazakhstan, Turkmenistan and Uzbekistan at national level and national coordinators were appointed	It is planned to publish a regional report in the form of a brochure.

## **PREPARATION OF A DRAFT AGREEMENT ON THE SYRDARYA RIVER BASIN<sup>5</sup>**

In accordance with the decision made at the 39<sup>th</sup> ICWC meeting (Almaty, 26-27 May 2004), some work was done on assigning the membership for regional (representatives of the SIC ICWC, BWO “Syrdarya”, United Control Center “Energy”) and national (representatives of Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan) working groups to carry out measures for advancing the 1998 Inter-governmental Agreement on The Syrdarya Basin.

At the 40<sup>th</sup> ICWC meeting (Cholpon-Ata, Kyrgyzstan, 19 August 2004):

- a work plan for the national working groups submitted by BWO “Syrdarya” and SIC ICWC as well as a common work timetable under the program “Improvement of legal and technical frameworks of the Agreement on Water and Power Resources Use in the Syrdarya River Basin” dated 17 March 1998 were approved;

- the membership of the Kazakh, Kyrgyz and Uzbek national working groups were approved;

- it was taken into account that the Republic of Tajikistan would speed up submission of the national working group membership;

- members of the regional working group for BWO “Syrdarya” and SIC ICWC were appointed and approved;

- BWO “Syrdarya” and SIC ICWC were instructed to submit a cost estimate for project implementation at the next ICWC meeting for approval.

The first tranche of the Asian Development Bank (ADB) under the program “Improvement of legal and technical frameworks of the Agreement on Water and Power Resources Use in the Syrdarya River Basin” dated 17 March 1998 amounts to US\$50’000 (fifty thousand).

## **BEIJING DECLARATION ON HYDROPOWER AND SUSTAINABLE DEVELOPMENT<sup>6</sup>**

1. We, the representatives of national and local governments, representatives of utilities and the private sector, United Nations agencies, multilateral financial institutions, other international organizations, non-government organizations, the scientific community and academia, and international industry associations, having met at the United Nations Symposium on Hydropower and Sustainable Development from 27 to 29 October 2004, in Beijing, China, reaffirm our shared resolve to achieve Millennium Development Goals (MDG) and the Sustainable development goals and targets contained in Agenda 21 and the Johannesburg Plan of Implementation (JPOI).

2. We reiterate that access to energy is essential to achieving sustainable development and is critical for meeting the MDGs and JPOI targets and commitments.

<sup>5</sup> Information on the 4<sup>th</sup> matter on the agenda of the ICWC meeting

<sup>6</sup> Adopted at the United Nations Symposium on Hydropower and Sustainable Development, Beijing, China, 29 October 2004.

3. Noting with concern that 2 billion people do not have access to electricity, we call upon all stakeholders to work in concert to deliver energy services to all in a reliable, affordable and economically viable, socially acceptable and environmentally sound manner.

4. We emphasise that improving access to energy will generate opportunities for economic growth, enhanced education, better health care, more training and employment, as well as higher productivity in business, thereby contributing to sustained poverty reduction.

### **Strategic importance of hydropower for sustainable development**

5. Recalling that the JPOI calls for a diversification of energy supply and a significant increase in the global share of energy from renewable energy sources, including hydropower, we note that hydropower offers potential for contributing to these goals.

6. We further recall that the Political Declaration adopted at the Bonn International Conference for Renewable Energies acknowledged that renewable energies, including hydropower, combined with enhanced energy efficiency, can contribute to sustainable development, to providing access to energy, especially for the poor, and to mitigating greenhouse gas emissions.

7. Hydropower represents an important source of renewable energy, accounting for some 20 % of world electricity supply. Hydropower has made a contribution to development, as shown in the experience of developed countries where the majority of technically and economically feasible hydropower potential has been exploited, and in some developing countries, where hydropower has contributed to poverty reduction and economic growth through regional development and expansion of industry. In this regard, we note that two thirds of economically viable hydropower potential is yet to be tapped and 90% of this potential is in developing countries. In Africa, less than 5 % has been developed. We agree the large remaining potential in developing countries, as well as in countries with economies in transition, can be harnessed to bring benefits to these countries, bearing in mind that the world's poor use only one twenty-fifth of the energy consumed by the world's rich.

8. While we are convinced of the need to develop sustainable hydropower, along with other options, including the rehabilitation of existing facilities and the addition of hydropower to present and future water management systems, we emphasise that such development should be sustainable from social, economic and environmental standpoints.

9. We underscore the importance of an integrated approach to dam construction, bearing in mind that other than generating electricity, dams often perform multiple functions, including supplying water for irrigation, industrial production, and residential use, as well as flood prevention and habitat maintenance. We note with concern that demands for water in these areas are already on the rise and competition for water resources is most likely to intensify in future.

### **Promoting hydropower development that is environmentally friendly, socially responsible and economically viable**

10. Having heard expert presentations on social and environment aspects, we acknowledge that progress has been made by governments, financing agencies and in

dustry in developing policies, frameworks and guidelines which are relevant to individual country contexts for evaluation of environmental and social impacts of hydropower, for mitigation of such impacts, and for addressing the concerns of vulnerable communities affected by hydropower development. We also note the many instances of good practice presented, and call on governments and the hydropower industry to disseminate good practice, policies, frameworks and guidelines, and build on it to mainstream hydropower development that is economically, socially and environmentally sustainable.

11. With respect to social aspects, we note that the key ingredients of successful resettlement include minimization of resettlement, commitment to the objectives of the resettlement by the developer, rigorous resettlement planning with full participation of affected communities, with particular attention to vulnerable communities. We are encouraged by the trend of some governments to go beyond good practice resettlement by providing benefit sharing with host communities and call on governments to consider incorporating such approaches in their legal and regulatory frameworks. We further call upon Governments and regional and local authorities to accord special consideration to culturally sensitive areas.

12. With respect to environmental impacts, we recognize that some hydropower projects have had substantial adverse impacts on the environment. Rigorous environmental impact assessment and mitigation and management plans are an essential part of sustainable hydropower development. We note that norms are now in place for such assessments and planning, but that rigorous application of such norms is not universal. We call on project owners and governments to strive for good practice in this important area.

13. We call upon Governments to put in place procedures that emphasise the need to plan hydropower developments in a river basin context and in the context of the full range of alternatives for energy production, and that planning should give due weight to environmental and social factors, as well as economic and financial factors.

### **Hydropower development: investment challenges and opportunities**

14. Noting that hydropower projects are highly capital intensive, we call for tangible action to assist developing countries to finance sustainable hydropower. This should include both conventional multilateral and bilateral loans and guarantees, credits and grants as appropriate to the level of development of the country concerned

15. Further noting that four-fifths of investment in hydropower in developing countries in the 1990s was financed by the public sector, we recognize the World Bank and regional development banks' plans to re-engage in financing sustainable hydropower projects.

16. We urge Governments to create a favourable environment to attract investment for co-financing sustainable hydropower projects. We further urge Governments to establish and strengthen a transparent regulatory framework for private investment, both domestic and international, in hydropower development.

17. Developing country Governments at the meeting call on bilateral agencies to also re-engage in sustainable hydropower development.

### **Hydropower and sustainable development: the way forward**

18. Having considered the social, economic and environmental dimensions of hydropower and its potential contribution to achieving sustainable development goals, we firmly believe that there is a need to develop hydropower power that is economically, socially, and environmentally sustainable.

19. Having shared perspectives, experiences and best practices from all regions of the world, we invite Governments, United Nations agencies and other international organizations, international industry associations, and non-governmental organisations, the private sector, and civil society, to further address the issue of hydropower and sustainable development in appropriate forums, including through regional meetings, in Africa in particular.

20. We invite Governments, United Nations agencies and other international organisations and non-governmental organisations, the private sector, industry associations, and civil society, to report back to the Commission on Sustainable Development in 2006 on their actions in sustainable development of hydropower.

We express our gratitude to the Government of the People's Republic of China for successfully organising the Symposium and to the Government and people of the People's Republic of China for the hospitality and warm welcome extended to all participants. We pledge to work in determined and concerted action to ensure that sustainable hydropower be harnessed for poverty reduction and for achieving the MDGs and JPOI targets and commitments.

### **DEEPENING AGRARIAN REFORMS IN UZBEKISTAN AND CHALLENGES TO IMPROVE THE LEGAL FRAMEWORK FOR THESE PROCESSES**

International Scientific-Practical Conference “Deepening agrarian reforms in Uzbekistan and challenges to improve the legal framework for these processes” took place on 25

November 2004 in Tashkent. The meeting was organized by the Committee for Agriculture, Water Resources and Food at the Oliy Majlis (Parliament) of Uzbekistan, Ministry of Agriculture and Water Resources of Uzbekistan, and Water User Association Support Programs (WUASP) being implemented by the Winrock International with the financial support of the United States Agency for International Development (USAID).

Officials of the Committees at the Oliy Majlis of Uzbekistan, Ministry of Agriculture and Water Resources, State Committee for Water Conservation, SANIIRI, Uzgo-senergonazor (Uzbek State Energy Inspection), Institute for Water Problems at the Academy of Sciences of Uzbekistan, Tashkent Institute of Irrigation, Land Reclamation and Agriculture, as well as representatives from international organizations (World Bank, IWMI, SDC, USAID, WUASP, NRMP, SIC ICWC) took part in the conference.

Deputy Chairman of the Committee for Agriculture, Water Resources and Food at the Oliy Majlis Bakhtiyor Olimjonov opened the conference. In his welcoming speech, he told about the main problems facing the water sector in the light of conducted agrarian reforms, and called the participants of the conference for productive work on development of a specific proposals to improve the current situation.



On behalf of First Deputy Minister of Agriculture and Water Resources of Uzbekistan A.A. Djalalov, H. Eshonov delivered a paper “Foreground tasks of the water-management system in Uzbekistan to create necessary conditions for successful implementation and reforms in agriculture”. Academician R.H. Husanov, Director of the Research Institute for Market Reforms, told about the economic mechanism for deepening agrarian reforms. The speaker stressed the need for developing the institutional frameworks for rational water resources use, cropping patterns and irrigation techniques, introducing water use charges, reconsidering taxing framework and economic sanctions. S. Mirzayev presented a paper of B. Alikhanov from the State Committee for Nature Conservation “Problems of freshwater formation zones protection” and indicated difficulties facing the Committee in this regard. Chairman of the State Water Inspection Ph.D. T.K. Kamalov reported on the challenges of deepening water sector reforms and safety of hydraulic structures. The problems and ways to improve the effectiveness of agricultural use in the context of market reforms development became a subject for the paper of E.Zh. Makhmudov, Director of the Institute for Water Problems at the Academy of Sciences of Uzbekistan. Deputy Chairman of the Association of Dekhkan and Private Farms of Uzbekistan reported on the situation with water use on dekhkan and private in the context of market reforms. Representatives of the International Water Management Institute (IWMI) expressed their vision on obstacles on the way to integrated water resources management in terms of WUAs (Mehmood ul Hassan) and water reform development in terms of WUA “DJambul” under environmentally vulnerable conditions in Karakalpakstan (I. Abdullayev, M. Yakubov)

The discussion of legal issues related to the reforms being conducted caused greatest interest among the audience. Several reports of the participants in the conference were dedicated this theme. Mike Thurman (WUASP) told about legal and regulatory issues related to transfer of irrigation system management in Uzbekistan. Professor of the Department for Environmental and Agricultural Law at the Tashkent State Law Institute A. Nigmatov made a review of foreign experience in addressing water issues. Legal expert of the WUASP Uran Tursunaliyev presented a brief analysis of problems in water legislation of Kyrgyzstan. Leading specialist of the SIC ICWC M.A. Pinkhasov set out a suggestion on land and water legislation advancement in Uzbekistan in view of implementation of agrarian reforms, and submitted the Chairman of the meeting proposals of the SIC ICWC for accelerated private farms development and for establishment and functioning of WUAs set up to serve private farms developed to the Instruction of the President of Uzbekistan dated 4 November 2004 on “Establishment of a Special Commission for preparation of proposals for accelerated private farms development in 2005-2007”.

In conclusion, the Chairman of the meeting thanked the participants for expressed opinions and suggestions and assured of that all of them would be taken into consideration in the activities of the Committees of the Oliy Majlis of Uzbekistan.

## **RESOLUTION OF THE INTERNATIONAL SCIENTIFIC CONFERENCE “DEEPENING OF WATER SECTOR REFORMS IN UZBEKISTAN AND CHALLENGES TO IMPROVE RESPECTIVE LEGAL FRAMEWORKS”**

The International Conference was held in Tashkent by the Committee for Agriculture, Water and Food at the Oliy Majlis of Uzbekistan and Ministry of Agriculture and Water Resources of Uzbekistan in association with the USAID Water User Association Support Project (WUASP), in accordance with the Decrees of the President of Uzbekistan

“On the major directions of agrarian reform deepening” dated 24 March 2003, “On development of the private farms in 2004-2006” dated 27 October, and Decree dated 5 November “On organization of a special commission for developing proposals aimed at rapid development of the private farms in 2005-2007”, and in accordance with the tasks set in them concerning agriculture, in particular with respect to problems facing water sector, and solving them. Delegates of the Oliy Majlis of Uzbekistan, officers of the Secretariat, ministries, committees and organizations, chiefs of research institutes, scientists in water resources, and representatives of international organizations took part in the conference.

More than 20 papers were presented by speakers who told about that deepened economic reforms are giving positive results, production and production relations are being developed on the basis of market relations, the agricultural sector is gaining new forms of economic relations, land tenure, management system is adapted to market relations, legal relationships between producers and service suppliers are bettered. They noted that establishing private farms in place of unprofitable and hopeless farms is a priority; at present there are more than 100 000 private farms in the country; and agrarian reforms are being conducted in parallel with water reforms. A rapid increase in the number of water consumers due to structural transformations as well as complication of water metering and operation of on-farm canals caused a need for establishing water user associations to allocate water resources and water use management. At present, 52'000 private farms are united into 562 WUAs, these unions serve 1.72 million ha of irrigated areas. It was told about transition from territorial to basin management in water sector, water management and operation on a scientific basis, and building of 52 irrigation systems, 11 main canals, 10 irrigation basins, reduction of water losses related to organizational drawbacks, effective use of equipment in water sector, prevention of unlawful interference in water management, purposeful and rational use of budget, equitable water allocation and water delivery on contractual basis and others.

At the conference, it was noted that the Law on Water and Water Use adopted in 1993 and Decree of the Cabinet of Ministers No.385 on Limited Water Use in Uzbekistan do not meet the current requirements in view of the conducted reforms. According to the present legislation, water is a public property, and it does not provide for advancement of market relations. Water users are different owners, i.e. shirkat farms, farmers, dekhkan farms and private possessions.

Following the adoption of the Law on Water and Water Use, the system of water sector and water user management completely changed.

After establishment of private farms in place of shirkat farms, the former shirkat farms stop to function.

Today, a legislative framework for WUA operation has been provided in the country. A WUA is established as non-profit organization under item 77 of the Civil Code of Uzbekistan, and it functions using founder fees. According to the present Code, founders fulfill obligations of the Association.

The main function of WUA is to provide water supply and keep in a working condition the waterworks facilities transferred to its jurisdiction based on foundation contract as well as contracts with other water users and their assignments. As WUA functions as a non-profit organization, it enjoys all privileges given to all nonprofit organizations under the legislation of Uzbekistan. In addition, WUAs are freed from:

- Value added tax under item 66;
- Property tax under item 92;
- Land tax for lands under water resources inventory, in which waterworks facilities assigned by founders to the balance for use located.

These activities are not considered entrepreneurial. Being legal persons, water users themselves pay the stipulated tax for water resources use in an order established by the legislation.

Under item 119 in the Tax Code, WUA is also freed from tax for water resources use.

Under its statute, WUA may provide other services to water users and founders, in addition to its basic functions. In this case, WUA can open a special account in bank and pay tax for these activities in an established order. In this connection, it should especially be emphasized that in accordance with the Decree of the President of Uzbekistan dated 27 October 2003, WUA are freed from VAT, property taxes and income tax within 3 years for their services. Being a connecting and coordinating body between water users and governmental water management organizations, WUA ensures equitable water allocation, effective operation of irrigation and collector networks, keeps them in a working condition, introduces advanced technologies. However, the absence of a clear funding mechanism impedes perfect functioning of WUA in some cases.

One of the main reasons is that payments for WUA are not provided for in funds allocated as credit tranche for farmers. The fact that there is no mechanism for economic motivation of WUAs that effectively use water resources negatively affects the improvement of irrigation technology, and water amount used per unit of produce and per hectare remains high.

In particular, every year on average 12.2-13.2 th. m<sup>3</sup> of water is used per hectare in the country, under the existing technology. This indicator has not changed over the recent 15-20 years and, in turn, negatively influence the reclamation condition of lands. Moreover, if every year 55-56 billion m<sup>3</sup> is used for agricultural needs in the country, then after water use, 18-19 billion m<sup>3</sup> (32-33%) of water is discharges from drains and collectors. Thus, the efficiency index is 0.68-0.69. In addition to increase in costs, this wastewater washes out useful elements from soil and results in reduction in land fertility.

Furthermore, WUA does not have rights to applying economic sanctions on its territory against water users that use water over the limit, do not pay for services in time, and make hydro structure useless.

Items 74, 75 and 76 in the Code on Administrative Responsibility provide for economic measures for individual persons only. This is also a reason for that water resources are used ineffectively, and waterworks facilities are becoming useless. The development of market relations in water sector is one of the urgent problems. A method for water price calculation was developed in the country. Hence, water price should include costs to transport water and operate waterworks facilities. In accordance with the recommendations for WUA, the working tax for 1 m<sup>3</sup> of water, repairing waterworks facilities and maintaining them in a working condition is determined with account of tax paid per hectare. Therefore, in order to establish market relations between WUA and water users, it is necessary to install measuring devices. WUA does not have financial resources for carrying out these measures.

For deepening the water sector reforms being conducted in the country even greater, improving the legal frameworks for them and solving the above-mentioned problems, the participants of the Scientific-Practical Conference recommend the following measures:

- taking into account the inadequacy of legal frameworks and regulatory documents that determine direction of WUA activities, it is necessary to adopt a special law on WUA, and insert required amendments and supplements into respective regulatory documents;
- strengthen the participation of WUA in development the policies aimed at effective water resources use in irrigated lands;
- develop a mechanism for of economic motivation of WUAs improving irrigation technique, effectively using water resources to reduce water use per unit of produce and per hectare, develop a special program for introduction of modern technology and consider the issue on providing credits to farmers;
- assist WUAs in installing water-metering devices within the territories of Associations with a view to exact estimation and metering of water use by users;
- for equitable water use, develop a Law on Drinking Water, and stipulate in it requirements for water quality, terms and procedures for providing drinking water to water consumers, obligations and rights of drinking water consumers, as well as administrative and legal rules setting responsibility for breach of drinking water protection and use.

## **“INTEGRATED WATER RESOURCES MANAGEMENT IN FERGANA VALLEY” PROJECT STEERING COMMITTEE MEETING**

The meeting of the “Integrated Water Resources Management in Fergana Valley” Project Steering Committee took place on 11 March 2005 in Fergana town, in which Urs Herren, Djanishbek Bekbolotov, K. Omurzakov, Nariman Kipshakbayev, Gayrat Negmatov, Norkabul Rakhmatov, Azamjon Rakhmatilloev, Kurbanali Saidmuradov, A. Radjabov, Pulatkhon Umarov took part. Moreover, Viktor Dukhovny, Herat Manthritilake, Vadim Sokolov and Mehmood ul Hassan attended the meeting.

At the meeting the following matters were discussed:

1. Results of the project activities in 2002-2005.
2. Coordination of activities up to the completion of project phase 2 in April 2005.
3. The first edition of the project document and budget for project phase 3 aimed at IWRM principles implementation.

Following the discussion of the above-mentioned matters, the Steering Committee members came to the following conclusions and decisions:

1. The principal results of the IWRM-Fergana Project achieved in 2002-2005 and presented at the Annual Meeting on 9 March 2005 should be confirmed.
2. IWMI-SIC Association should take all necessary actions to complete project activities up to April 2005.

3. The principal line and contents of the first version of the Project Document for phase 3 that was discussed at the meeting on 10 March 2005 should be confirmed.

4. IWMI-SIC Association should take all necessary actions to complete the Project Document within next two weeks. Based on the Project Document, project budget (2005-2008) and work program for 2005 should be submitted. The project Document, budget and work program for 2005 should be submitted to a new Steering Committee for approval.

5. The new Steering Committee should convene a meeting after signing a Project Agreement for phase 3.

## **TRAINING COURSE ON WATER RESOURCES FOR SECONDARY SCHOOLS IN UZBEKISTAN**

A kick-off seminar under the Project “Training course on water resources for secondary schools in Uzbekistan” took place on 13 November 2004 in the ICWC Training Center. The seminar was organized by the SIC ICWC in association with the Ministry of Popular Schooling of Uzbekistan with the sponsorship of the OSCE Center in Tashkent.

The aim of the seminar was to discuss the current education of youth on water resources issues and developing recommendations for improving the current situation by specialists in water resources and popular schooling. Representatives from popular schooling institutions, research institutes and SIC ICWC took part in the seminar.

Among the participants of the seminar opening there were Prof. V.A. Dukhovny, Director of the SIC ICWC; Prof. R.H. Djurayev, Ministry of Popular Schooling of Uzbekistan; U.T. Ruziyev, officer of the OSCE Center in Tashkent; honored specialist in irrigation of Uzbekistan A.A. Kadyrov, Ministry of Agriculture and Water Resources of Uzbekistan; P.D. Umarov, Director of the ICWC Training Center.

At the seminar, the following presentations were made:

1. “Goals of the project at the beginning of activities” - Prof. V.A. Dukhovny.
2. “State standard for secondary education and need for advancement of educational programs for schools in Uzbekistan” – Prof. R.H. Djurayev.
3. “The current status of available water resources and challenges to advance water use practices” – R.K. Ikramov, Ph.D.
4. “Suggestions on advancement of educational programs (geography, chemistry, history; economic and legal knowledge fundamentals)” – A.A. Kadyrov.
5. “Preparation and holding of a training seminar on water resources use for teachers” – Prof. E.O. Turdikulov.

It was noted that Central Asia would be under the pressure of problems related to water scarcity in the near future. This is especially noticeable in summer period in

many provinces of Uzbekistan. Year by year the water consumption amount increases as population grows. Owing to poor economic position of the countries in the region,

such water-saving methods as drip irrigation and sprinkling are inaccessible for many water users. Furthermore, at the Soviet time, water was used without account of environmental interests and almost without noticeable costs of water users, and careful attitude to water as God's gift inherited in culture and ethics of local population was lost. This led to wasteful water use by millions of primary users constituting large amount of non-productive water losses.

The participants of the seminar noted that there are a lot of technologies for achieving water conservation. Along with technical and economic factors, human factor plays an important role in water conservation as well. Economic and legal measures taken by the government and techniques will not give such effect as expected, if human does not make his mind to rationally use natural resources.

In the history of the region, publications of prominent persons on rational natural resources use and human behavior norms at that are well known. In old times, religious doctrines also brought up young generation in the spirit of morality, which included not only interpersonal attitudes, but also behavior norms in natural resources use. There are quite a lot of popular sayings, which prove that.

Upbringing of young generation in the spirit of old traditions regarding an attitude to water plays an important role in formation of society that will be inclined to rational natural resources use and protection.

According to the psychological and pedagogical studies conducted in the country, it can be said (E. Gaziyeu, M.G. Davletshin, A.Z. Zunnunov, A.S. Medjidova,

P. Musayev and others) that education quality can considerably be raised when upbringing and development of pupils is purposefully carried out in the process of education. Based on the above-mentioned, it can be said that there is an urgent need for development of the educational and pedagogical programs on water problems at schools. Growing generation will constitute tomorrow's society.

It was noted that there are a lot of definitions for environmental education in different countries, though its goals are defined by different priorities. However, a common goal can be marked out: it is to achieve harmony between human, society and nature. Such a goal forms, first of all, an environmental human culture. Environmental education is an integrated and complicated process. Education is a common denominator, which supports all actions for natural resources protection. Education includes disseminating information and raising public awareness to change the attitude to natural resources and character of their use.

Environmental education – what does it give? It was noted that through effective education system one can gradually achieve a range of positive benefits including:

1) *public participation in natural resources protection and management*; raising public awareness and inducing its wish to participate in shared water resources management;

2) *increasing comprehension of natural resources value*, thus raising the sense of responsibility for that wasteful water resources use would cause a lot of problems to descendants;

3) *high level of social mobilization*; understanding of common problem leads to uniting of people for solving large problems;

4) *awareness*; public awareness is one of the key factors ensuring public participation in management, protection and rational use of natural resources and speeds up the response of society to decisions made.

Water education and upbringing at schools can be carried out by different approaches and ways. To this end, minimums for environmental knowledge, which school leavers should have, were provided for in the state education standard of Uzbekistan. However, for many reasons, there is a very large gap between standards and reality. Based on that our country strongly depends on transboundary river water resources during economic development, economic and legal frameworks for water resources management and use should be included in lessons of jurisprudence and economics.

The purpose of effective education is to teach children to think and conclude. The participants of the seminar suggested a number of ways and approaches to organize education of youth on water issues. To develop education on water problems at schools, the participants recommend:

- to assign more lesson-hours to teach water-related issues;
- reconsider the existing curriculum from the perspective of new tendencies in ecology;
- re-orientate the pedagogical approach and use innovative methods such as extracurricular lessons and interactive games to develop independent thinking of pupils;
- integrate water theme into other lessons for more frequent attraction of children's attention;
- organizing camps, seminars and contests on water resources for school activists;
- organize training seminars on formation and rational use of water resources for teachers through network of institutes for advanced training of teachers;
- develop and implement new programs and methodologies for environmental education;
- arrange trips to districts experiencing water scarcity;

At the seminar, proposals for inserting water-related issues into such lessons as geography, history, biology, economics, foreign languages and jurisprudence, and supposed amendments into curriculum were submitted by scientists and practical water specialists to the participants for consideration. The participants supported such an idea and gave practical suggestions on this matter. The participants of the seminar also expressed a wish to cooperate in further development of a project for promoting education on water problems at schools. In conclusion, the participants of the seminar suggested organizing similar seminars for school teachers at local level.

The participants of the seminar expressed organizers and moderators of the seminar their gratitude for holding the seminar at high level.

## INTERNATIONAL SEMINAR “LEGAL FRAMEWORKS FOR COOPERATION IN TRANSBOUNDARY WATER RESOURCES USE AND PROTECTION”

An international seminar on “Legal frameworks for cooperation in transboundary water resources use and protection” took place on 22-24 November 2004 in Kiev, Ukraine.

*Seminar organizers, sponsor and technical assistance:* Division for the Environment and Settlements of the UN Economic Commission for Europe (UNECE), Ministry of the Environment, State Committee for Water Resources Management (WRM) of Ukraine, Swedish Environmental Agency, UNDP/GEF Program for Environmental Sanitation in Dniepr Basin.

*Seminar participants:* chiefs, experts, managers, leading specialists of international, governmental and non-governmental organizations dealing with transboundary water resources use and protection issues.

In particular, representatives from the Ministry of the Environment and State Committee for Water Resources Management of Ukraine, UNECE, Swedish Environmental Agency, NGO “Ecoterra”, NGO “Eco-Tiras”, Dundee University (Scotland), UNDP-GEF, EC IFAS, SIC ICWC, State Concern “Apele-Moldova”, OSCE, international commissions for protection of Danube, Dniepr and other river basins, a range of basin water organizations and commissions in countries of Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan), Caucasus (Azerbaijan, Armenia, Georgia), Moldova, Ukraine, Russia took part in the seminar.

The seminar was held within the framework of the UNECE Project “Capacity Building for Water Cooperation in Eastern Europe, Caucasus and Central Asia”. The Project is a part of the Action Program of the 1992 UNECE Convention on Transboundary Watercourses and International Lakes Protection and Use.

The 3<sup>rd</sup> UNECE Convention Meeting was held in November 2003, at which it was decided to focus the activities on cooperation in transboundary water resources in Eastern Europe, Caucasus and Central Asia (EECCA). This project is aimed at capacity building for cooperation, improving the coordination of efforts in transboundary water resources management in EECCA, and is a contribution to implementation of the European Union’s Water Initiative “Strategic partnership in water resources for sustainable development” for these countries.

The Project was prepared and is implemented by the UNECE Convention Secretariat in partnership with a range of national and international organizations.

The project partners are:

- Swedish Environmental Agency;
- Finnish Environmental Institute;
- International network for training, exchange and information on international water resources (IW:LEARN);
- UNEP’s Global Program of Actions for Marine Environment Protection from Ground-Based Activities (GPA);
- WHO Regional Office for Europe (WHO/EURO);



- UNEP Regional Office for Europe (UNEP/ROE );
- Organization for Security and Cooperation in Europe (OSCE);
- Peipsi Center for Transboundary Cooperation;
- UNESCO International Shared Aquifer Resource Management Program.

In the project implementation period (2004-2006), it is planned to consider the following aspects of cooperation in transboundary water resources:

- legal framework for international water cooperation;
- work of joint bodies for transboundary water resources;
- joint monitoring and assessment of transboundary water basins, emergency warning and signaling systems;
- information access and exchange, public participation;
- integrated water resources management and transboundary river basin management planning, including under the European Union's Water Directive;
- Joint transboundary water catchments and their linkage with regional seas;
- application of the Protocol on Water Resources and Health.

During three days of the seminar, 6 sessions were held:

*Session 1.* General issues of interstate cooperation on transboundary water resources, including introduction to international water law fundamentals.

*Session 2.* Cooperation in Dniepr and Dniestr river basins.

*Session 3.* International legal framework for cooperation on transboundary water resources (1997 UN Convention, 1992 UNECE Convention, Protocols on water and health, civil liabilities, legal aspects of international aquifer resources management; and so on).

*Session 4.* Interstate basin agreements (Europe: Rhine, Danube rivers; Africa: Inkomaputo river; Asia: Mekong river; others).

*Sessions 5 and 6.* Cooperation in transboundary water resources use and protection in EECCA: experience, problems, needs, prospects.

At the seminar, key papers were presented by B. Libert, R. Enderlain, F. Bernardini (UNECE), N. Babich (State Committee for Water Resources Management of Ukraine), Prof. S. Vinogradov (Dundee University), A. Karlsson (OSCE), L. Markevich (UNDP/GEF Program), M. Volk (State Concern "Apele-Moldova"), K. Futaka (International Commission for Danube), N. Grishin (NGO "Ecoterra"). On behalf of the SIC ICWC, paper "Regarding the issue on development of an international legal framework for water relationships in Central Asia" was delivered (Y. Rysbekov).

The international seminar was held in an interactive way. In particular, 4 training groups were assigned to discuss legal problems of transboundary river basin water resources use and protection:

Group 1: Caucasus (Kura, Samur, Arake rivers).

Group 2: Central Asia (Amudarya, Syrdarya, Zerafshan, Chui, Talas, Ili rivers).

Group 3: Watercourses in the European Union member countries (Danube, Bug, Daugava, Tisza, Neman, Narva and other rivers).

Group 4. Other watercourses (Dniepr, Dniestr, Northern Donets, Ural, Irtysh and other rivers).

The activities of the training groups was carried out under sessions 4 and 5 of the seminar. The seminar organizers suggested 2 principal themes for discussion in the training groups:

A) Ratification of the 1992 UNECE Convention and Protocols to it (what the reasons for delay, what help is needed to speed up the ratification of the Convention and Protocols: on water and health; civil liabilities).

B) Regional bilateral and multilateral agreements on cooperation in transboundary water resources use and protection (existing agreements; factors impeding implementation of provisions in agreements; need for developing new draft Agreements; what assistance can be needed in this context from other countries, authorities, sponsors and the Secretariat of the UNECE).

Under the activities of training group 4 (membership: representatives of the UNECE Secretariat, IFAS, SIC ICWC, water authorities in Central Asian countries), the SIC ICWC suggested to submit to the UNECE Secretariat the issue on providing assistance to develop draft Agreements stipulated under the Program of specific actions for improvement the environmental and socio-economic situation in Aral Sea basin in 2003-2010” (ASBP-2), designed to fulfill the instruction of the Heads of Central Asian states (Dushanbe, 6 October 2002), confirmed by the decision of the IFAS Board (Dushanbe, 28 August 2003), and to be prepared up to 2005:

- Agreement on underlying principles of joint water resources management, use and protection in the Syrdarya river basin;
- Agreement on environmental flow rates for the Syrdarya river in view of Northern Priaralie and the Aral Sea;
- Agreement on underlying principles of joint water resources management, use and protection in the Amudarya river basin;
- Agreement on environmental flow rates for the Amudarya river in view of Southern Priaralie and the Aral Sea,
- Rules for water resources management in the Syrdarya river basin;
- Rules for water resources management in the Amudarya river basin; and
- harmonization of national and regional water legislations in Central Asian countries.

First six of the above-mentioned seven positions are included in Priority 1 (“Development of coherent mechanisms for integrated water resources management in the Aral Sea basin”) of the ASBP-2. At that, it should be noted that the exact formulation of position 1 (Agreement on fundamental principles of joint water resources management, use and protection in the Syrdarya river basin) is slightly different: “on underlying principles of joint management, improvement of the 1998 Agreement, use and protection of water resources in the Syrdarya river basin”. Owing to that at present there is a consent of the Asian Development Bank to fund activities for analyzing and improving the 1998 Syrdarya Agreement, the phrase “*improving the 1998 Agreement*” from the title of the draft submitted to the UNECE Secretariat was excepted.

As for the above-mentioned draft regional Agreements, it was noted that the work on them is advancing too slowly due to a number of circumstances.

It was also noted that there are some results regarding a draft Agreement on environmental flow rates for the Syrdarya river in view of Northern Priaralie and the Aral

Sea and a draft Agreement on environmental flow rates for the Amudarya river in view of Southern Priaralie and the Aral Sea, but the process was not carried to its logical conclusion.

The suggestions of the SIC ICWC on preparation of a package of the above-mentioned draft Agreements were accepted by the representative of the UNECE and approved at the concluding session of the seminar.

## **CONCLUDING REGIONAL SEMINAR ON STRATEGIC PLANNING AND MANAGEMENT OF NATURAL RESOURCES**

24-26 November 2004

Bangkok

### **A. Preamble**

A concluding regional seminar was held as a final event under the Project “Capacity Building in Strategic Planning and Management (SPM) of Natural Resources in Asia and the Pacific”.

The Project was launched in 2000 and funded by the UN. The project strategy was developed for more integration of sustainability issues, in particular those related to ecology, into such important sectors as power and water sectors. Understanding that there is no tool and methodology for supporting such integration process, the main project element was dedicated to promoting and developing methodologies and tools of common character and thus suitable for other countries and sectors. A concept for strategic planning and management (SPM) was proposed and then promoted using a joint approach, with the help of international, regional and national experts. A significant part of the project activities was focused on labor resources and building organizational capacity through holding a series of seminars and trainings at sub-regional and national levels with subsequent national studies and actions for implementing the SPM concept.

The Concluding Regional Seminar on Strategic Planning and Management of Natural Resources was held in order to enable the participants:

- to exchange experience concerning the concept and capacity for applying a strategic planning and management approach to development of national and organizational policies;
- identify alternatives for fortifying a principle of strategic planning and management at national level;
- establish or strengthen regional and national networks on strategic planning and management.

Leaders of governmental authorities/organizations responsible for policies in the field of environmental protection, power engineering and water resources and representatives from the UN organizations, specialized and other agencies, including sub-regional organizations and educational institutions took part in the seminar.

During the concluding regional seminar, the following sessions were held:

Session 1: Review of experiences related to SPM implementation: identifying major advantages and problems

Session 2: Measures and options for using networks to fortify SPM implementation activities

Session 3: Strategies for fortifying SPM implementation activities at national level

Session 4: Role of international agencies in supporting SPM implementation activities at national level

Session 5: Conclusions and recommendations

## **A. CONCLUSIONS AND RECOMMENDATIONS**

### **Review of experiences related to SPM implementation: identifying major advantages and problems**

Here, a review of the results of the sessions held was presented.

*The advantages of SPM implementation are:*

Natural resources planning and management is carried out all over the region. It was recognized that the tools developed under the project gave an opportunity to make a critical review of the existing strategies and organizational measures for achieving the goals of sustainable development through implementing a SPM approach.

In general, at the seminar it was acknowledged that the SPM approach extends the participation of stakeholders that will raise responsibilities for implementing strategies. At the seminar, the need for continuing SPM implementation activities was recognized. During fulfilling activities at national level, the national groups made use of the existing network to gather information and consult other stakeholders. It is recommended to further strengthen similar networks for supporting activities being carried out.

*Problems of SPM implementation:*

Supporting SPM implementation activities at national level, the countries recognized that one of the key SPM implementation problems is the lack of labor resources as well as of organizational capacity for supporting the process. It is necessary to steadily carry out activities for raising awareness of the SPM concept, its advantages and significance for different levels, including higher governing echelons and politicians. To replicate and speed up SPM implementation, it is necessary to continuously develop the skills to implement SPM approach.

The participants also recognized the need for providing political support at higher level for SPM implementation. To overcome organizational obstacles, which hamper effective cooperation between stakeholders, a strong political responsibility of politicians and government officials at the level of management is necessary.

## **Strategies for fortifying SPM implementation activities at national level**

Based on the identified SPM implementation problems, at the seminar first divided into four groups, the problem analysis from the position of determining measures and actions for advancing was continued. The results of the sessions are given as an annex to the Conclusions and Recommendations.

It was recognized that different countries are at different development levels and have different systems and traditions in planning and management. Therefore, actions for solving the key challenges to implement SPM and maintain the current activities will be different. Moreover, it was recognized that for effective SPM implementation, it would be required to mix “bottom-up” and “top-down” principles.

While considering the major problem related to mobilization of political will, it was noted that the linkage with implementation of the Millennium Development Goals and recommendations of the World Summit on Sustainable Development would ensure necessary political responsibilities for SPM implementation.

At the seminar, a number of actions were proposed; some of the common actions for most countries are listed below:

- orientate an organization to supporting but not to opposing against SPM implementation;
- raise awareness of high officials;
- apply successful experience and stories as a means for propagation to attract the attention of decision makers at higher level; replication if necessary;
- use subregional and regional organizations to promote SPM implementation through their respective governing bodies if possible.

At the seminar, actions for improving cooperation and coordination between organizations from different levels and sectors were also proposed:

- strengthen national networks for information exchange;
- establish forums for regular consultations;
- integrate SPM into the existing frameworks or plans for national development with account of inter-agency cooperation and capacity building.

It was noted at the seminar that capacity building at all levels and on a continuous basis would be necessary to support and replicate SPM implementation activities. The following actions were proposed:

- develop project proposals or plans for capacity building to attract necessary financial resources;
- involve people participating in the current SPM activities as agents of further training in and development of SPM;
- use networks to get access to experiences, standard proposals and other materials for training.

## **Measures and options for using networks to fortify SPM implementation activities**

While carrying out SPM activities in different countries of the region, the national groups established/strengthened their networks to carry out activities. The Secretariat presented the results of the review conducted to study network capabilities from the position of reinforcing SPM implementation activities at national level. Based on

the review results, the need and opportunities for strengthening these networks were discussed at the seminar.

In general, the participants identified advantages of networks and indicated to the need for strengthening the existing regional and subregional networks to improve access and exchange information. These networks can also serve as organizations for information collection, classification and dissemination, interactive forum and for identifying successful cases of SPM implementation. It was noted that similar networks would be expanded thanks to new supporters of SPM principles. Thus, it is important to mobilize active participation of users in SPM to solve problems of SPM implementation.

As there may be no funds to establish a broad network, it is suggested to create a network on the basis of e-mail and the Internet. It was also noted that in order to maintain the network, the partner-participants should accurately define the scope of the network, benefits from its operation and obligations of the partner-participants in the network.

The support by international agencies and subregional organizations in strengthening the focus on the need for and scope of the network and its activities was welcomed. It was suggested to expand the existing network of the Global Water Partnership.

The Secretariat was appealed to continue to support actions for organizing networks with participant-governments, and interested international organizations/agencies and subregional organizations for SPM implementation.

### **Role of international organizations and agencies**

At the seminar, it was estimated that the project could mobilize participation of several international organizations and agencies, including subregional organizations, to attract their experience and expert knowledge while implementing SPM project and supporting the process after project completion at regional, subregional and national levels. Active participation of the Center for Power (ASEAN), Asian Institute for

Technologies (AIT), Interstate Commission for Water Coordination (ICWC), Mahidol University (Thailand), School for Renewable Energy Sources Technologies (SERT/CORE), Commission for Applied Geo-Sciences of the Pacific (SOPAC) and United Nations Development Program (UNDP) was of great use at the seminar.

In this connection, it was acknowledged that subregional organizations and international organizations/agencies could continue to play an active part in propagating and providing technical assistance to SPM approach implementation as a means for planning and management of strategies for sustainable development, and achieving the Millennium Development Goals. It is necessary to carry out measures for attracting other international agencies such as UNESCO and

South Asian Association for Regional Cooperation (SAARC) and for organizing cooperation with national training centers.

The participants of the seminar emphasized that in order to fulfill subsequent SPM activities, it is necessary to develop program/project activities through the process controlled by the countries.

They also recommended developing and strengthening the relations and joint actions at all levels, in particular at national level between projects and initiatives for SPM.

## **SEMINAR UNDER THE “FERGANA VALLEY CANAL AUTOMATION” PROJECT**

A seminar under the “Fergana Valley Canal Automation” Project was held on 29 to 30 November 2004 in the ICWC Training Center.

The aim of the seminar was to discuss the principal provisions to the “Fergana Valley Canal Automation” Project, Terms of Reference of the project for automation and automation objects preparedness.

J. Gely, J. Kraehenbuehl (Swiss Agency for Development and Cooperation), H. Plusquellec (international expert in automation and irrigation) and V.A. Dukhovny (Director of the SIC ICWC), and representatives from water organizations, canal management organizations and other parties involved in the project took part in the seminar.

### **The following papers and reports were presented:**

1. Goals and objectives of the “Fergana Valley Canal and BWO Syrdarya Objects Automation” Project as a sequel to the IWRM-Fergana Project (V.A. Dukhovny).
2. Preparedness of BWO Syrdarya’s objects for automation, a ToR to the «BWO Syrdarya Objects Automation” Project, and results of the operation of an automation and control system at Uchkurgan hydroscheme and other automated objects of BWO “Syrdarya” (M.K. Khamidov, Chief of BWO “Syrdarya”)
  - international expert
3. Results of expert review of the report on phase 1 and Terms of Reference for the “Fergana Valley Canal Automation” Project (H. Plusquellec).
4. Principal provisions of the report on phase 1 of the “Fergana Valley Canal and BWO Syrdarya Objects Automation” Project, and presentation of Terms of Reference for the “Fergana Valley Canal Automation” Project (I. Begimov, expert of the regional group).
5. Monitoring system on pilot canals planned in the “Fergana Valley Canal Automation” Project (F.Y. Eingorn, expert of the regional group).
6. Expected efficiency of Aravan–Akburra Canal automation and preparedness of the object for implementation of the “Fergana Valley Canal Automation” Project (O. Tuychiyev, Chief of the Aravan-Akburra Canal Management Organization).

7. Expected efficiency of South Fergana Canal automation and preparedness of the object for implementation of the “Fergana Valley Canal Automation” Project (R.A. Rustamov, Chief of the South Fergana Canal Management Organization).

8. Expected efficiency of Khojibakirgan Canal automation and preparedness of the object for implementation of the “Fergana Valley Canal Automation” Project (A.K. Boboyev, Chief of the Khojibakirgan Canal Management Organization).

9. Results of the expert review of the report on phase 1 of the “Fergana Valley Canal Automation” Project (A.V. Legavko, Chief of Small Enterprise “Sigma”)

10. Organizational and Contractual Arrangements of the “Fergana Valley Canal Automation” Project (Juerg Kraehenbuehl, Swiss Cooperation Office)

### **Participants of the seminar:**

1) approved the principal provisions of the “Fergana Valley Canal and BWO Syrdarya Objects Automation” Project, discussed the completeness and quality of prepared materials, including Terms of Reference for BWO Syrdarya objects and for each of pilot canals: South Fergana Canal, Aravan-Akbura Canal and Khojibakirgan Canal, and a plan for keeping documents and drawings. Small Enterprise “Sigma” agreed to accept these documents for preparing detailed schemes and drawings.

2) discussed the results of the operation of Uchkurgan hydroscheme and other hydro structures of BWO “Syrdarya”, and recognized satisfactory level of their effectiveness; adequate actions should be taken to eliminate frequent interferences.

3) discussed the issues to be solved for successful project implementation, including organizational issues to be solved for successful automation at the level of ministries, higher instances and local administration and management structures:

- organization responsible for canal management is properly structured, registered and now acting;
- adequate status of civic and mechanical structures, including electric power supply;
- carrying out construction work;
- training personnel of canal management organizations;
- sequence of project implementation;
- recovering the growth in operational costs as a result of automation;
- issues of equipment replacement and renewal in case of ageing and outage, and recovering costs to replacement.

The speakers in discussion, including chiefs of three canal (Aravan-Akbura Canal, Khojibakirgan Canal, South Fergana Canal) management organizations confirmed that:

- the IWRM-Fergana Project created conditions for automation in the form of Canal Management Organizations formulated and working on hydrographic principle;
- a management information system was introduced; and
- Terms of Reference for automation were agreed by them and management of higher organizations;



At the same time, these were noted:

- the need for providing canal management organizations with communications, computers and transport vehicles;
- considering in the project a possibility to provide an automation system with sources of standby power supply in the form of 2-3 kW diesel power stations at control stations;
- need for envisaging in the project a possibility to provide the South Fergana Canal Management Organization with communications with the Andijan Reservoir Management Organization;
- need for including linkage of Aravan-Akbura Canal to Papan reservoir in the project;
- need for duplicating more important equipment;
- need for organizing training of personnel from Canal Management Organizations in computerization, monitoring and control techniques;
- providing for a possibility to ensure replaceability of element and instrument base in future reconstruction activities;
- ask the Ministries of Water Resources of Tajikistan and Uzbekistan to instruct the Pumping Station Management Organizations about the urgency to adjusting operation modes for pumping stations with canal management organizations;
- ask the Ministries of Water Resources of Tajikistan and Uzbekistan to include allocating assignments for recovering costs of construction preparation and operation of automated control systems in cost estimate;
- ask the Ministries of Water Resources of Kyrgyzstan, Tajikistan and Uzbekistan to appoint the responsible for organization and implementation of project (canal management organizations or basin management organizations for irrigation systems).
- take into account that the Ministry of Water Resources of the Kyrgyz Republic entrusted the Osh Basin Water Management Organization with bilateral agreement on the project with the SDC.

Contractual obligations will be organized in the following order:

1. Bilateral project agreements between the SDC and responsible executive agencies assigned respectively by the Ministries of Water Resources and BWO "Syrdarya".
2. Contracts between executing agencies and BWO "Syrdarya", on the one hand, and SE "Sigma" and others, on the other hand, certified by the SDC.
3. Contract between the SDC and SIC ICWC to control activities as an "Engineer". The SIC ICWC will be supported by the group of international experts to be hired and paid by the SDC.

**The major obligations of the parties under the contracts are as follow.**

**SDC:**

- provision of financial resources;
- payment;
- inspection.

BWO and 3 canal management organizations:

- preparation and carrying out of construction and rehabilitation operations;
- selection and training of personnel;
- acceptance, storage and protection of equipment;
- organization of operation;
- responsibility for implementation and further maintenance;
- acceptance of accomplished operations by Small Enterprise “Sigma”.

### 3. Small Enterprise “Sigma”:

- delivery of equipment;
- creation of SCADA;
- introduction of technology;
- commissioning;
- training;
- responsibility for sustainable functioning.

### 4. SIC ICWC:

- engineering;
- control;
- affirmation of activities and payment.

## **PROMOTION OF EXTENSION SERVICES FOR FARMERS IN THREE CENTRAL ASIAN COUNTRIES**

A seminar organized by the Swiss Agency for International Development and Cooperation together with the SIC ICWC and IWMI took place on 1 December 2004 in the ICWC Training Center.

The aim of the seminar was to discuss the program of joint actions for organization and development of extension services in water and agricultural sectors in Fergana Valley.

Representatives from three projects – J. Gely, J. Kraehenbuehl, B. Fayziyev (Swiss Agency for International Development and Cooperation), Hans Wouldring (Sogd Agro Service Project in Tajikistan), Marcus Arbenz (RAS Rural Extension Services Project in Kyrgyzstan), V.A. Dukhovny (Director of the SIC ICWC, Director of the IWRM-Fergana Project for the SIC ICWC), V.I. Sokolov (Chairman of the GWP Regional Technical Consulting Committee for Central Asia and Caucasus, Manager of the IWRM-Fergana Project for the SIC ICWC), Herat Manthritlake, Mehmood ul Hassan, I. Abdullayev, M. Yakubov (IWRM–Fergana Project, International Water

Management Institute), donor organizations – Kazuo Nakabayashi (Japan International Cooperation Agency - JICA), A.G. Kalashnikov (US Agency for International Development - USAID), specialists of the SIC ICWC, SANIIRI, and representatives from the ministries of agriculture and water resources of Uzbekistan, Tajikistan, Kyrgyzstan, and Sogd Province Administration took part in the seminar. The agenda and list of participants is given.

The Swiss Agency for International Development and Cooperation funds 3 projects aimed at improving water and land productivity in Kyrgyzstan, Tajikistan and Uzbekistan through promotion of extension services for farmers:

- RAS Project being implemented by the Helvetas Company in Kyrgyzstan;
- FOM Project being implemented in Sogd province, Tajikistan;
- IWRM-Fergana Project where this direction is one of the components.

Having heard and discussed the following papers:

- “Major tasks and orientations of activities of Extension Services” (Prof. V.A. Dukhovny, Director of the SIC ICWC);

- “Organizational framework and orientations of activities of Rural Extension Services in Kyrgyzstan” (Marcus Arbentz, Manager of the RAS Project in Kyrgyzstan);

- “Organizational framework and orientations of activities of the SodgAgroService in Tajikistan” (Hans Wouldring, Manager of the SodgAgroService Project in Tajikistan);

- “Adaptation of the results in Extension Services. Prospects for promotion of Extension Services in Fergana Valley” (S. Mukhamedjanov, Leader of Water and Land Productivity Activity at the level of farms under the IWRM-Fergana Project for the SIC ICWC);

- of senior specialist in water resources of the IWRM-Fergana Project for the IWMI I. Abdullayev;

- suggestions of the IWMI on extension services promotion;

- of consultants Johan Gely and Juerg Kraehenbuehl,

the participants of the meeting came to the following conclusion:

The current situation in agriculture in Central Asia requires intensive development of extension services from the position of satisfying needs of farmers for different information and providing them assistance in solving many problems, communicating with foreign partners in agricultural production, studying getting knowledge about developed cropping methods. In this connection, there is a need for general advisory services including:

- information on possibility and prices to purchase materials, fertilizers, chemicals, seeds;

- credit services;

- marketing information on expected prices and demand for agricultural products;

- legal services;

- sectoral needs of animal husbandry, veterinary service, pest control;

as well as for specialized advisory services related to developing recommendations for farmers concerning their fields and productions conditions, including:

- recommendations for improving land fertility;

- recommendations for cropping techniques;

- recommendations for irrigation regime;

- recommendations for land reclamation.

Furthermore, there is an urgent need for training farmers in connection with specifics of their farms.

The RAS Project covers a large scope of different consultations aimed at satisfying the needs of farmers based on their interests within Kyrgyzstan through the network of their provincial and district organizations and private farms. The component of land fertility and irrigated farming was not developed by any common methodology. The FOM Project is based on organization of “SogdAgroService” with participation of farmers and mainly covers the issues of general information about targeted introduce

tion of certain innovations such as laser leveling of lands, direct water supply to furrows through siphons and many others. Both the projects to a certain extent build their relationships with farmers on a commercial basis, at the same time donors cover the major part of costs.

The IWRM-Fergana Project mainly focused its attention on applying the developed method for improving land fertility first in terms of 10 private farms, then in terms of other 20 surrounding farm fields, that proved the possibility of significant reduction in water use and improvement in water and land productivity. This work showed that when certification costs amounting to \$20/ha and servicing costs being \$5-6 per ha, the growth in productivity per hectare amounted to at least \$32/ha, i.e. the costs are compensated within a year. Thus, there is a possibility to transition in this form of servicing to a commercial basis after preliminary reconnaissance.

It seems expedient to determine the operation of Extension Service in three versions:

- develop the reclaimed lands fertility component in two SDC projects being implemented in Kyrgyzstan and Tajikistan on a commercial basis (with a focus on the IWRM-Fergana Project area);
- identify methods, means and organizations;
- spread methods for improving water productivity developed in phase 1 of the IWRM-Fergana Project in Uzbek part;
- determine a program for training farmers in all pilot canal areas, based on survey and analysis of farmers’ needs while using developed material of demonstration plots.

Based on the mentioned recommendations, a program of this component should be prepared in phase 2 of the IWRM-Fergana Project.

## **ADDRESSING WATER SCARCITY AND DROUGHT IN CENTRAL ASIA DUE TO CLIMATE CHANGE**

A concluding seminar under the Project “Addressing Water Scarcity and Drought in Central Asia Due to Climate Change” was held on 14 March 2005.

Project Director Prof. V.A. Dukhovny opened the seminar. He welcomed the participants and guests of the seminar and summarized the two-year project activities.

The speaker noted that in Central Asia insufficient attention is given to climate change issues. Such attitude can hardly be defined proper. Even minor changes in air temperature – by only 1°C – are followed by rapid change in frequency of extreme situations. Therefore, various natural cataclysms such as floods,

droughts, tsunami and so on became more frequent all over the world. From 1999, we experienced 2 catastrophically dry years, as a result of which some zones received from 35 to 50% of prescribed water. For the time being, Kazakhstan and Uzbekistan have managed to avoid any troublesome events in this regard. It would be shortsightedness not to notice climate changes and in this connection not to take certain actions for adaptation to this event. It is necessary to prepare agriculture to it in order to avoid unpredictable consequences. As for drought, overall damage

from its appearance amounts to US\$200 million in the Syrdarya lowlands. As a result of occurrences taking place, irrigated lands that are not subject to rehabilitation are taken out of use. Our task is to ease entry to the current situation. One of the ways is to use polyethylene film in growing crops. The rise in temperature helps to more quickly reach the sum of effective temperatures by plant, thus shortening vegetation period, and this gives an opportunity to grow recurring crops. Activities carried out under the Climate Change Project prove the effectiveness of legume crops growing as recurring crops after wheat maturing. The speaker thanked the executors for productive two-year work and expressed hope that they would put their ideas into practice.

Then Project Manager G.V. Stulina spoke who also noted the positive results of the work during two years. She offered the executors from regions to report on studies conducted by them and recommendations made while carrying out activities.

Later **G.F. Solodkiy** told about a database created.

To gather and store field data received after completing the activities under the Climate Change Project, a CLIM database was created. As a database management system (DBMS), ACCESS 2002 (Office XP) was used. Since input of information and development of input forms were practically carried out in parallel, it was expedient to divide the DB into three separate files that simplified information exchange between the developer and group of data input. At present, the DB consists of a file with immediate data, a file with data input forms and a file with data analysis forms and tools.

The data collection process included filling of specially developed information collection forms by field observers, transmission of filled forms to the Central Office and input of data into the DB by the input group. The information collection forms were developed by the project facilitators. In accordance with the collection forms, the DB developer, using DBMS based on ACCESS, established directories, tables for data collection and input forms that provide user-friendly interface and sift out gross errors during data input.

A part of information, namely received using automatic registers (soil temperature registers and local weather stations situated near experimental sites were used in the project), was inputted into the DB without input forms, as this information was read from sensors using special programs.

By now, information on Uzbekistan and Kazakhstan has been inputted into the DB. In case of project extension, the DB has a capability for information input on other objects.

Direct data input is implemented using input forms gathered in file “**CLIMFORM**”. To assess inputted information, a number of output forms united into DB “**ANALIZ**” were made up.

After presenting the papers of the executors, the participants were shown a film shot in Fergana province, which in detail told about the experience of growing green gram, beans and Canadian soybean as recurring crops after harvesting wheat.

Later **A.D. Torguzova** touched upon gender aspect of the project.

We conducted a research on farms in Uzbekistan, Kazakhstan and Tajikistan to identify urgent problems facing private farms in different fields, including in regard to

public health, education, culture, access to resources, employment, incomes and so on. Analysis of gender problems in water resources access and management was made. At present, gender inequality in rights to land, access to water, participation in functions partition, control over resources, participation in water management in agriculture, access to markets and commercial services are becoming more and more apparent in agricultural and water sectors.

The no less important goal of this research was also to collect reliable information on basic issues of gender differences.

The results of the social survey “Gender aspects in water resources access and management” in terms of Uzbekistan, Kazakhstan and Tajikistan were analytically set out.

To successfully achieve the goals and objectives set in the given research, more optimum methods were selected. To this end, a plan for performing this work in all the above-mentioned countries was developed and it included the following stages:

- developing and making up materials for conducting research (developing a methodology and making up a questionnaire);
- identifying specific objects where research should be conducted (residential areas, villages, private and shirkat farms);
- collecting key statistical data on socio-economic situation on farms under study;
- immediately collecting information;
- inputting received information into the database, analytically process it – identifying dependence, making main conclusions;
- making up a report on the research results.

The studies showed that the problems related to rural women, their access to water, land tenure, financial and material resources, education and culture are highly critical, and one may consider that most of rural women experience certain restrictions in implementing available capabilities.

At rural level, changes in gender roles in families are occurring. Heavy financial situations in families force many women do hard daily underpaid labor for richer farmers. This is a major factor causing social instability and imbalance within farmer families. The position of women is aggravated by larger unpaid homework and traditional possession of many children.

Rural women to a larger extent participate in subsistence farming to provide their families and cannot spend enough time for constructive public labor.

Project Manager **G.V. Stulina** summarized the seminar and thanked the participants.

After discussing the results of accomplished activities, it was decided:

- 1) broadly advertise the conclusions on the accomplished activities; hold a series of field seminars for farmers with participation of decision-makers;
- 2) translate recommendations in the form of notes for farmers into national languages, make copies and distribute among farmers;
- 3) accentuate the attention of land users and managers on reduction in land productivity; submit managers a suggestion on broadly introducing cultivation of legume crops as recurring crops after winter crops replacing crop rotation and improving land fertility.
- 4) advertise water-saving methods, including use of a polyethylene film, to save water for recurring crops.
- 5) organize demonstration fields and extension services based on them to train farmers in water-saving methods and farming techniques.
- 6) search for means and finance to continue studies in demonstration fields under the project for studying aftereffects of legume crops.

## **NEWS BRIEFS**

### **RAO UES to construct power stations in Tajikistan and Kyrgyzstan<sup>7</sup>**

**Dushanbe (RBC).** RAO UES hopes to start the construction of hydro power stations in Tajikistan and Kyrgyzstan in 2005, head of the energy grid Anatoly Chubais announced. "We return to the countries, where our positions have always been strong," he added. RAO UES plans to focus on the CIS in 2005.

On October 16, 2004, Russia and Tajikistan signed an intergovernmental agreement, which stipulates Russian direct investments worth \$200m to fund the construction of the Sangtudunskaya hydro power station. It is to become operational in 2008. the construction started in 1989, but the project was later frozen. The power station will contribute 670 megawatt to the overall capacity of the Tajik energy system.

### **Kyrgyzstan should increase energy exports<sup>8</sup>**

**BISHKEK.** Kyrgyz President Askar Akayev said he believes Kyrgyzstan should increase exports of its energy resources for the economy to develop successfully. "We need to increase the export flows of our competitive electric energy industry from year to year," the president said. "The volume of exports today is 2 billion kWt/h and it will be steadily increasing. We need to work hard to promote our electric energy to the gigantic Chinese market," Akayev said at a meeting marking the 70<sup>th</sup> anniversary of the Kyrgyz power grid.

"The republic possesses a rich hydropower potential, which can produce about 142 billion kWt/h a year, while no more than 9% of this potential is being used today," he said. Kyrgyzstan has 18 power plants with an aggregate capacity of 3,600 mWt, among them 16 hydropower and 2 thermal power plants, Akayev said. "The republic's

<sup>7</sup> The Times of Central Asia, 30 December 2004

<sup>8</sup> *ibid.*

power plants produce over 12 billion kWt/h annually, and the power grid has steady links with Central Asian states, and it has connections with the Russian power grid, and the republic also exports power to Kazakhstan, Uzbekistan, Tajikistan, and China,” he said.

“I believe the Kyrgyz energy industry has every chance to become an investment-appealing economic sector if we carry out restructuring and set up transparent financial-economic foundations for managing the power grid,” Akayev said. In addi

tion, negotiations with Russia that Kyrgyzstan is currently holding are aimed at drawing investment for building the Kambarata hydropower plant, he said.

“Agreements have also been reached with Russia on building aluminum works. Aluminum export and production is in fact a direct transformation of electric energy into a hard currency. It is of no less importance that dozens of thousands of jobs will be created,” Akayev said.

### **Iran-Turkmenistan highway under construction<sup>9</sup>**

**ASHGABAT (nCa).** A new highway connecting Iran and Turkmenistan at Esenguly-Gudriyol points would come into operation in 2005.

The 65 kilometer road would provide a new road link between the two countries along the Caspian coast. Turkmenawtoyollary (Turkmen Highways) and Balkan-neftegazstroi are doing the project.

Work has been completed on a 32 kilometer patch and gravelling is going on in the remaining strip.

The new road is suitable for heavy traffic including extended-bed trailers. It would ensure quick deliveries of liquefied gas from Turkmenbashi refinery to Iran.

Two major road connections between Iran and Turkmenistan are available at Gowdan-Bajigran and Serakhs-Serakhs.

### **Uzbek water supply project financed by WB and Switzerland<sup>10</sup>**

**TASHKENT (TCA).** Conferences on the implementation of the project “Water supply of Samarkand and Bukhara” were held in Tashkent. The conferences were aimed to inform the beneficiaries and public of Uzbekistan about the start and the course of implementation of the project, financed by the World Bank and the governments of Switzerland and Uzbekistan.

The project, with total cost of US \$62.33 million, targets increasing efficiency, quality and reliability of the water supply, as well as strengthening financial position and sustainability of water supply organizations in Bukhara and Samarkand. The project is financed due to credit of the International Development Association (IDA), a loan from the International Bank for Reconstruction and Development (IBRD), a grant from the government of Switzerland, as well as capital investments of the government and own funds of water supply organizations in Bukhara region and Samarkand city.

<sup>9</sup> The Times of Central Asia, 30 December 2004

<sup>10</sup> The Times of Central Asia, 6 January 2005



## **Cotton growers offered better incentives in Turkmenistan<sup>11</sup>**

*ASHGABAT (nCa). After three consecutive years of dismal cotton crops, Turkmenistan has finally announced some incentives for farmers, which may be expected to improve the situation to a certain extent*

Under the package unveiled Tuesday, the newly formed national agricultural joint stock company, which enjoys countrywide jurisdiction and carries a virtual monopoly on all support resources, would offer the use of machinery, water, seed, fertilizers and crop protection facilities at a 50% rebate to the individual farmers and local associations.

In return, the farmers would be obliged to surrender 30-40% of their produce to the state under the following formula:

30% of the yield if total output is up to and including 35 centners per hectare.

35% of the yield if total output is up to and including 40 centners per hectare.

40% of the yield if total output is more than 40 centners per hectare.

(One centner is 100 kg)

The textile industry of Turkmenistan would get to requisition 15% of the share.

The collection of the state share would be managed through the public association Turkmenpagta, which is also part of the national agricultural joint stock company.

The agricultural development fund of Turkmenistan would foot

the bill for subsidies to the farmers. It is not clear as to what kind of book-balancing relationship would exist between the agricultural development fund and the national agriculture joint stock company.

This year Turkmenistan has allocated 500000 hectares (1.2 million acres) of land for the cotton crop.

The remaining crop, after the deduction of the state share, and 100% of the seed would be the

property of the farmers, and they would be free to dispose it as they deem fit. This includes the right to export their output through the state raw materials and commodity exchange, the national clearinghouse that oversees all major transactions in Turkmenistan.

Although the new package offers some incentives that may contribute to better cotton crop this year, there are certain questions that need to be tackled sooner than later.

There could be an road bump in the package in the sense that some farmers may be motivated to restrict their output to less than 30 centners per hectares to surrender less to the state.

Also, what if an individual farmer or a member association fails to produce enough cotton to recover the investments made by the state? Would the farmers in such cases be penalized or would there be some mechanism to write off losses? If the losses were written off, would it ultimately spill to the farmers who performed better?

There is another fundamental question that begs immediate attention. With the expiry of the multi-fiber agreement (MFA), the traditional exporters of cotton garments such

<sup>11</sup> The Times of Central Asia, 20 January 2005

as India, Bangladesh and Pakistan are again free to penetrate into the American markets as much as their products would allow them. Some fashion houses that were buying from Turkmenistan are already considering switching back to the traditional suppliers.

This trend is likely to continue in the foreseeable future. In such case, it would be better for Turkmenistan to concentrate more on upper and high-end fashion markets where quality fetches superior prices. With sophisticated manufacturing facilities and universal ISO 9000 certification, Turkmenistan should be able to manage it.

## **DRAINAGE WATER POLLUTING THE AMUDARYA<sup>12</sup>**

**TASHKENT (IRIN).** The return of drainage water back to the Amudarya River is a major source of water contamination in northwestern Uzbekistan, leading to health implications for the local population, observers say.

"Drinking water is very salty in Nukus [the capital of Karakalpakstan in the Aral Sea area],» local resident Gulya, 43, told IRIN in the Uzbek capital, Tashkent. «It is not a very pleasant thing to drink it but we have no other choice.»

A local official told IRIN that drinking water in Karakalpakstan, especially in the delta of the Amudarya flowing into the Aral Sea, was of poor quality and foreigners visiting the region were usually buying bottled mineral water to avoid consuming locally piped water.

«We are dealing with the issue of drainage water all over Karakalpakstan. Initially, we want to get the things sorted out in our area and then we can appeal to other provinces of Uzbekistan that discharge drainage water into Amudarya,» Yusup Kamalov, head of the Union for Protection of the Aral Sea and Amudarya (UPASA), a local NGO based in Nukus, told IRIN in Tashkent. Samarkand, Bukhara and Khorezm provinces were among those, he added.

According to the UPASA, the Amudarya's average annual flow is some 60 cu km, while discharge of drainage water back into the river is 10 cu km based on official figures -suggesting that every sixth cu km in the river's flow was drainage water from irrigated fields.

However, observers say these drainage waters are repeatedly used for irrigation, thus increasing the level of pollution in the river.

A report published in 2004 on the results of research conducted by the UN-supported Global International Waters Assessment (GIWA) for the Aral Sea program says that more than 95 percent of the total volume of water returned to the river in the region is formed by drainage waters from irrigated fields, which is why return waters have a high mineral content and are one of the main sources of pollution of surface and ground water.

«Gradually the concentration of pollutants is increasing and at the delta where we live water becomes very polluted,» Kamalov emphasized.

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<sup>12</sup> The Times of Central Asia, 20 January 2005

«More than 70 percent of the Amudarya territory within Uzbekistan has a water quality that is hazardous to health and more than 10 percent of water is in the category extremely hazardous," the GIWA report added.

«There are the remains of dissolving pesticides and [other] chemical fertilizers in drainage water. They are poisonous because they contain dioxins, which are now considered the most dangerous pollutants," Kamalov highlighted.

Some studies suggest that the content of mineral and organic substances, petrochemicals and heavy metals in parts of the Amudarya were two to three times higher than established levels.

«The other thing is that sewerage waste is discharged into the Amudarya and this is very dangerous. In some towns, local authorities often discuss the issue of where to find money to discharge that town's sewage waste into the drainage network," the environmental activist maintained.

«They don't think that it is dirt, [potential] disease and etc. We drink this water, we irrigate crops with this water and from the very beginning our crops contain these things [pollutants]," he said. «That means we eat them. Through meat we get even higher concentrations of these substances in our bodies."

In 2001, Medecins Sans Frontieres (MSF), in collaboration with the Uzbek health ministry and the World Health Organization (WHO), carried out a study in the area to assess dietary exposure to persistent organic pollutants (POP). The study revealed that high levels of dioxins were detected in food samples, particularly food samples of animal origin.

An estimate of the average monthly intake of dioxins and dioxin-like chemicals among Karakalpakstan residents showed that the intake was almost three times higher than that recommended by WHO.

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