Interstate **C**ommission for **W**ater **C**oordination of Central Asia	**BULLETIN** **№ 1 (53)**	March 2010

CONTENT

MINUTES OF THE 54TH MEETING OF THE INTERSTATE COMMISSION FOR WATER COORDINATION (ICWC) OF THE REPUBLIC OF KAZAKHSTAN, THE KYRGYZ REPUBLIC, THE REPUBLIC OF TAJIKISTAN, TURKMENISTAN AND THE REPUBLIC OF UZBEKISTAN

January 14-15, 2010 Shymkent city

Chairman:	Orman Anarbek Ongaruly – Acting Chairman of the Committee for Water Resources, Ministry of Agriculture, Republic of Kazakhstan

ICWC members:

Uzakbaev Chyngysbek Makeshovich	Director, Agency of Water Resources by the Ministry of Natural Resources, Republic of Kyrgyzstan
Yokubzod Saidi	Minister of Land Reclamation and Water Resources, Republic of Tajikistan
Aymammedov Nurmukhammet	Deputy Minister of Water Resources, Turkmenistan
Khamraev Shavkat Rakhimovich	Deputy Minister, Head of Central Water Administration at the Ministry of Agriculture and Water Resources, Republic of Uzbekistan

ICWC Executive agencies:

Dukhovny Victor Abramovich	Director of SIC ICWC, Professor, Honorable ICWC member
Kdyrniyazov Burkitbay Tadjiniyazovich	Head of BWO “Amudarya”
Khamidov Makhmud Khamidovich	Head of BWO “Syrdarya”
Mukhitdinov Khayrullo Ergashevich	Head of ICWC Secretariat

Makarov Oleg Stepanovich	Director of Coordination Meteorological Center of ICWC, Director of Design and Technical Institute PKTI “Vodoavtomatika i metrologiya”
Umarov Pulatkhon Djakhanovich	Director of ICWC Training Center
	Invited:
Ibatullin Sagit Pakhmatullaevich	Chairman of EC IFAS
Rakhimov Sulton	Head of the Department of Ecology and Emergency Situations, Executive Office of the President of the Republic of Tajikistan
Seytimbetov Dauletiyar Sakhidollaevich	Acting Deputy Chairman of the Committee for Water Resources, Ministry of Agriculture, Republic of Kazakhstan
Kipshakbaev Nariman Kipshakbaevich	Director of Kazakh branch of SIC ICWC, Professor, Honorable ICWC member
Ernazarov Nazimjon Sheralievich	Deputy Head of Central Water Administration, Ministry of Agriculture and Water Resources, Republic of Uzbekistan
Pulatov Yarash Ergashevich	Director General of State Institute “TajikNIIGIM”
Selant’ev Aleksey Nikolaevich	Adviser to the Chairman of the State Joint Stock Holding Company “Barki Tochik”

AGENDA

1. About results of vegetation period 2009 on the Amudarya and Syrdarya river basins (responsible: BWO “Amudarya” and BWO “Syrdarya”).

2. About limits on water withdrawals from the Amudarya and Syrdarya river basins for Central Asian states, the forecast operation modes of cascade reservoirs and water delivery process in non-vegetation period 2009-2010 (responsible: BWO “Amudarya” and BWO “Syrdarya”).

3. About improvement of ecological situation in the deltas of Amudarya and Syrdarya rivers (responsible: SIC ICWC).

4. About preparing new ADB project RETA-6486 “Improved management of water resources in Central Asia” (responsible: SIC ICWC).

5. About realization of ICWC executive bodies rotation.

6. Regarding agenda and venue of the next 55th ICWC meeting.

First item:

1. Take into account the results of fulfillment of water withdrawal limits and of operation modes of cascade reservoirs in the Amudarya and Syrdarya river basins for vegetation period 2009 as informed by BWO “Amudarya” and BWO “Syrdarya”;

2. Instruct executive bodies (of SIC ICWC and its branches) to analyze the data of BWO “Amudarya” and BWO “Syrdarya”, draw conclusions and present them at the next ICWC meeting;

3. Upon the request of BWO “Amudarya” and BWO “Syrdarya” ICWC members shall organize joint measurements at border gauging stations.

Second item:

1. Take into account the information provided by BWO “Amudarya” and BWO “Syrdarya” about water delivery process in non-vegetation period 2009-2010;

2. Note that Parties have not come to a common agreement concerning proposed forecast water withdrawal limits and operation modes of reservoirs for non-vegetation period 2009-2010 due to existing energy problems in the region.

Third item:

1. Take into account the information provided by SIC ICWC about improvement of ecological situation in the deltas of Amudarya and Syrdarya rivers.

Fourth item:

1. In connection with the presentation of proposals by Asian Development Bank on the development of the project RETA-6486 "Improved management of water resources in Central Asia" works, ICWC members shall review the materials submitted and prepare proposals on the work scope and personnel of the national working groups in accordance with ADB requirements.

Fifth item:

1. By February 1, 2010 ICWC Secretariat shall establish an Organizing Commission from among the representatives of the SIC ICWC and its branches for the relocation of SIC ICWC to the Republic of Tajikistan in accordance with the decision of the 53rd ICWC meetings.

2. The chairman of the Organizing Commission is the host country.

3. Instruct the Organizing Commission to prepare a proposal for taking all necessary measures for the timely relocation of SIC ICWC to the city of Dushanbe (Republic of Tajikistan) and submit the final report to ICWC members by April 1, 2010.

Sixth item:

1. Next 55th ICWC meeting will be held in Uzbekistan during the second decade of April 2010.

2. Approve the agenda of the next 55th ICWC meeting.

AGENDA

1. Regarding fulfillment of water withdrawal limits during non-vegetation period 2009-2010 and approval of limits on water withdrawals from the Amudarya and Syrdarya rivers during forthcoming vegetation period 2010, and coordination of the forecast operation mode of the cascade reservoirs (responsible BWO "Amudarya" and BWO "Syrdarya");

2. Consideration of proposals on the ADB project RETA 6486 “Improved management of water resources in Central Asia” (responsible SIC ICWC);

3. Regarding results of the Organizing Commission activity related to relocation of SIC ICWC to the Republic of Tajikistan;

4. Venue and agenda of the next 56th ICWC meeting.

For the Republic of Kazakhstan	**A. Orman**
For the Republic of Kyrgyzstan	**Ch. Uzakbaev**
For the Republic of Tajikistan	**S. Yokubjod**
For the Turkmenistan	**N. Aymammedov**
For the Republic of Uzbekistan	**Sh. Khamraev**

RESULTS OF VEGETATION PERIOD 2009 [1]

I. The Amudarya river basin

Taking into account natural discharges of the Vakhsh river, water availability in cross-section Atamyrat upstream of Garagumdarya for vegetation period 2009 was expected to be lower than norm (in the range of 60-80%)according to Uzhydomet.

The first three decades of April 2009 confirmed the low water availability in the basin. Therefore, BWO together with the Ministry prepared for managing water resources in conditions of sharp water shortage. The BWO tried to reduce the fixed water withdrawal limits for vegetation period 2009, but at the 53rd meeting ICWC members decided in the case of water scarcity to proportionally reduce water withdrawal levels for water users without changing the fixed water withdrawal limits. Such practice was applied during certain periods of time before.

However, hydrological, climatic and water management situation in the basin took a favorable turn resulting in surplus water and according to the results of vegetation period 2009, water availability in the basin amounted to 97.2%.

The Table below shows dynamics of water availability on a decade basis (in percentage)

Months	1st decade	2nd decade	3rd decade
April	55.9	74.6	78.7
May	107.1	121.1	121.1
June	106.8	86.4	82.8
July	81.4	83.2	113.4
August	115.7	120.6	98.2
September	89.5	84.8	84.6
Total	***97.2***		

[1]Information for the first issue of the agenda of ICWC meeting 54, January 2010, Shymkent

As a result, water availability forecast for the Amudarya basin was apparently underestimated and in fact unreliable.

As a result, the operation mode of the Nurek reservoir for vegetation period established by the CDC "Energiya" was not justified, which was not justified in terms of indicators as well.

The Table below shows a comparative analysis of the forecast and actual operation mode of the Nurek reservoir for the entire vegetation period.

	Unit of measure	Expected	Actual	Percentage (%)
Inflow	mln. m^3	13 482	16 821	124.8
Release	mln. m^3	10 630	12 296	115.7
Storage	mln. m^3	2 842	4 525	159.2
Volume in the reservoir at the end of period	mln. m^3	8 885	10 526	118.5

For general information, the Table below illustrates the comparative analysis of forecast and actual operation mode of the Tuyamuyun reservoir for the entire vegetation period 2009.

	Unit of measure	Expected	Actual	Percentage (%) of planned value	Percentage (%) of average value for 1991-2009
Inflow	mln. m^3	16 674	23 589	139.5	101.6
Release	mln. m^3	10 225	15 356	150.2	
Storage	mln. m^3	1 965	3 274	166.6	
Volume in the reservoir at the end of period	mln. m^3	4 437	5 775	130.2	

The forecast operation mode of the Tuyamuyun hydroscheme (TMHS) was set at the level of 70-75% of water availability under reduction of water withdrawal limit by 25%. We have also considered other options for water availability below the accepted level, but they gave poor results, very similar to that occurred in catastrophically low water availability in 2000.

It should be noted that inaccurate forecasts of water availability impose some difficulties in water management planning in the region.

Over the recent years, there have been almost no forecasts on Amudarya river basin. For water users in Turkmenistan and Uzbekistan who receive water in the middle and lower reaches of the river main short-term forecast points are gauging stations Termez and Atamyrat. In recent years, the BWO has failed to receive information on the Nurek hydroscheme.

We think that ICWC and IFAS should address this issue to facilitate the sharing of insufficient hydrological information.

Despite inaccuracy of the forecast and, therefore, failures in planning operation modes of the Nurek and Tuyamuyun reservoirs, with the support of the basin countries it was possible to adequately complete the vegetation period 2009 and create favorable starting conditions for the non-vegetation period 2009-2010.

For example, as of October 1, 2009 the volume of water in the Nurek reservoir amounted to 10 526 million m^3, while the same day last season it was 9615 million m^3.

The volume of water in the Tuyamuyun reservoir on October 1, 2009 amounted to 5775 million m^3. Last season the same day, it was 2124 million m^3.

We believe that these are very good indicators.

The use of fixed water withdrawal limits in the current vegetation period by the states is as follows:

- 85 % of fixed water withdrawal limit was used in total in the basin; under the limit of 39 billion 946 million m^3, the actual use was 33 billion 941 million m^3;

- The Republic of Kyrgyzstan used fixed water withdrawal limit up to 2.2 %; 9 million m^3 were used actually under the limit 405 million m^3;

- The Republic of Tajikistan used fixed water withdrawal limit up to 79.5 %; 5 billion 387 million m^3 were used actually under the limit 6 billion 776 million m^3;

- Turkmenistan used water withdrawal limit up to 85.1 %, under the limit 15 billion 500 million m^3, actual figure indicated 13 billion 183 million m^3;

- The Republic of Uzbekistan used water withdrawal limit up to 91.4 %, 14 billion 642 million m^3 were used actually under the limit 16 billion 020 million m^3.

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

1.Dashoguz province – 89.8%

2.Republic of Karakalpakstan – 90.6%

3.Khorezm province – 92.2%

Water supply plan in Priaralie was fulfilled at 126.3 % for vegetation period; 2652 million m^3 were supplied under the planned value of 2 billion 100 million m^3.

In the current vegetation period, the main objectives for our organization were increased accounting and control over the use and allocation of water resources, compliance with the equitability of water use along the entire river reach.

The table below shows the dynamics of maintaining water withdrawals along the river, which show the satisfactory results achieved by the organization during the vegetation period 2009.

Upstream	
Republic of Tajikistan	79.5
Middle reach	
Turkmenistan	82.7
Republic of Uzbekistan	91.9
Downstream	
Dashoguz province	89.2
Republic of Karakalpakstan	90.6
Khorezm province	92.2

It is also important to note that following the decisions of the "Agreement between Turkmenistan and Uzbekistan on shared use of water resources in the lower reaches of the Amudarya", in the reporting period nine meetings of the commission on water allocation were held with participation of heads of production association "Dashoguzsuvkhojalyk", NABUIS (Lower Amudarya Basin Administration of Irrigation Systems, Karakalpakstan and Khorezm), BWO "Amudarya" and TMHS Management office. At these meetings operation mode of TMHS was developed and water resources were allocated proportionally based on their availability. Such approach to work has given some positive results.

More detailed information about executed work is presented in tables 1.1-1.6.

Table 1.1

Analysis of using limits on water withdrawals from the Amudarya river basin for the vegetation period 2009 (as of 01.10.2009), mln.m^3

№	Items	Limit for the entire period	Limit for 01.10.09	Actual for 01.10.09	Percentage (%%)
I	Republic of Kyrgyzstan	450	450	9	2
II	Verkhnedarya Division				
	(upstream)	7976	7976	6106.7	76.6
	of which:				
1	**Tajikistan**	6776	6776	5387.1	79.5
2	Surkhandarya province	1200	1200	719.6	60
II	Water withdrawals from the Amudarya river				
	up to Kerki gauging station	31520	31520	27825.8	88.3
1	**Uzbekistan:**	16020	16020	14642.3	91.4
	of which:				
	a) water withdrawals in the middle reach				
	Karshi main canal	2700	2700	2278.9	84.4
	Amubukhara main canal	3035	3035	2989.7	98.5
	Total water withdrawals in the middle reach:	5735	5735	5268.6	91.9

№	Items	Limit for the entire period	Limit for 01.10.09	Actual for 01.10.09	Percentage (%%)
	b) downstream water withdrawals				
	Khorezm province	3450	3450	3180.8	92.2
	Karakalpakstan	6835	6835	6192.9	90.6
	Total downstream water withdrawals	10285	10285	9373.7	91.1
2	**Turkmenistan:**	15500	15500	13183.5	85.1
	of which:				
	a) water withdrawals in the middle reach				
	Garagumdarya	7818	7818	6387.6	81.7
	Lebab province	2644	2644	2269.5	85.8
	Total water withdrawals in the middle reach	10462	10462	8657.1	82.7
	b) downstream water withdrawals				
	Dashoguz province	5038	5038	4526.4	89.8
III	**Total water withdrawals in the basin**	39946	39946	33941.5	85
	of which:				
	Verkhnedarya Division				
	(Upper reach)	7976	7976	6106.7	76.6
	Middle reach	16197	16197	13925.7	86
	Lower reach	15323	15323	13900.1	90.7
IV	**Total water withdrawals in the**				

№	Items	Limit for the entire period	Limit for 01.10.09	Actual for 01.10.09	Percentage (%%)
	Amudarya river downstream:	15323	15323	13900.1	90.7
	of which:				
	Khorezm province	3450	3450	3180.8	92.2
	Karakalpakstan	6835	6835	6192.9	90.6
	Dashoguz province	5038	5038	4526.4	89.8

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Table 1.2

Information about the water supply to the Aral Sea and the Amudarya river delta for vegetation period 2009 (as of 01.10.2009), mln.m^3

Items	IV	V	VI	VII	VIII	IX	Water supply from 01.04.09 to 01.10.09		Fulfillment of water supply for the entire period (%%)
							planned value for April	actual value	
Samanbay gauging station	17	30	111	279	1050	381	1600	1868	116.8
Total discharge from the Kyzketken and Suenli canal system	0	0	0	17	61	189		267	
CDF*	12	14	19	65	278	129	500	517	103.4
TOTAL:	29	44	130	361	1389	699	2100	2652	126.3
Cumulative total	29	73	203	564	1953	2652			

*Collector-drainage flow

Table 1.3

Information about the water supply to the Aral Sea and the Amudarya river delta for hydrological year 2008- 2009, mln.m^3

Items	X	XI	XII	I	II	III	IV	V	VI	VII	VIII	IX	Water supply from 01.10.08 to 01.10.09		Fulfillment of water supply for the entire period (%%)
													planned value for April	actual value	
Samanbay gauging station	10	11	12	13	15	18	17	30	111	279	1050	381	3200	1947	60.8
Total discharge from the Kyzketken and Suenli canal system	0	0	0	0	0	0	0	0	0	17	61	189		267	
CDF	11	9	7	6	13	19	12	14	19	65	278	129	1000	582	58.2

TOTAL:	21	20	19	19	28	37	29	44	130	361	1389	699	4200	2796	66.6
Cumulative total	21	41	60	79	107	144	173	217	347	708	2097	2796			

Table 1.4

Information about water supply to the Aral Sea and the Amudarya river delta for 2009 (as of 01.01.2010), mln.m^3

Items	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XI	Water supply from 01.01.09 to 01.12.09		Fulfillment of water supply for the entire period (%%)
													planned value	actual value	
Samanbay gauging station	13	15	18	17	30	111	279	1050	381	316	235	247	3200	2712	84.8
Total discharge from the Kyzketken and Suenli canal	0	0	0	0	0	0	17	61	189	0	0	0		267	

system															
CDF	6	13	19	12	14	19	65	278	129	19	57	106	1000	737	73.7
TOTAL:	19	28	37	29	44	130	361	1389	699	335	292	353	4200	3716	88.5
Cumulative total	19	47	84	113	157	287	648	2037	2736	3071	3363	3716			

Table 1.5

Operation mode of the Nurek reservoir, April 1, 2009-September 30, 2009

Nurek reservoir	Unit of measure	Actual						Total
		April	May	June	July	August	September	
Inflow	m^3/s	478	1020	1239	1587	1422	609	16821
Water losses	m^3/s							0
Volume: at the beginning of period	$mln.m^3$	6001	6140	7214	8725	10199	10530	6001
at the end of period	$mln.m^3$	6140	7214	8725	10199	10530	10526	10526
Accumulation(+),drawdown(-)	$mln.m^3$	139	1073	1511	1474	331	-4	4525

Level: end of period	m							
Release from the reservoir	m^3/s	424	620	656	1036	1299	611	12296

Table 1.6

Operation mode of the Tuyamuyun reservoir, April 1, 2009-September 30, 2009

Tuyamuyun reservoir	Unit of measure	Actual						Total
		April	May	June	July	August	September	
Inflow	m^3/s	606	1509	1705	2090	2369	1190	25063
Water losses	m^3/s	179	76	121	135	-230	289	1474
Volume: at the beginning of period	$mln.m^3$	2100	2212	3634	4675	4789	6002	2100
at the end of period	$mln.m^3$	2212	3634	4675	4789	6002	5775	5775
Accumulation(+),drawdown(-)	$mln.m^3$	112	1422	1041	114	1212	-226	3675
Level: end of period	m							
Release from the reservoir	m^3/s	384	902	1183	1912	2147	989	19914
including to the river	m^3/s	288	686	934	1487	1700	701	15356

II. The Syrdarya river basin

According to the forecast of Hydromet Service April 6, 2009 for vegetation period 2009 water availability in the rivers of the Syrdarya basin was predicted to be 21.6 billion m^3 (or 73% of norm). The inflow to the Toktogul reservoir was expected to be 83%, Andijan - 60%, Charvak - 79% of the norm, and the total lateral inflow - 66% of norm. According to estimations by BWO, which took into account the forecast at the beginning of April, the available water resources in the vegetation period were estimated at 31.9 billion m^3, including water reserves in reservoirs. Compared with the dry year in 2000 when there was the same lateral inflow, the volume of available resources expected to be 4.1 billion m^3 less than planned due to low water reserves in reservoirs. Vegetation promised to be extremely tense. The capacity of compensating releases from the Toktogul reservoir decreased by the beginning of vegetation period to 6.4 billion m^3, seemed to be limited. The shortage of water for irrigation could reach 25-30%.

The operation mode of the Naryn-Syrdarya cascade reservoirs (NSCR) for vegetation was considered in Dushanbe at the 53rd ICWC meeting on June 4, 2009. By this time, April and May months of vegetation period experienced excess precipitation, which caused not only reduction of water use for irrigation, but also increase in inflow to the upper reservoirs. Total water reserves in reservoirs on June 1 reached 5.3 billion m^3 exceeding the expected amount by 1.1 billion m^3. However, the lateral inflow above the Kayrakkum reservoir was low, necessitating feeding the basin with additional releases from the Toktogul. In these circumstances at ICWC meeting it was decided to approve the schedule for the forecast of operation mode of cascade reservoirs after approval of the operation mode of the Toktogul reservoir, and prior to addressing this issue, countries should limit water withdrawal to 25%.On this basis, during the vegetation period operation mode of the cascade was adjusted depending on the current water situation. Diversion to the main canals was carried out taking into account requests from water users and the actual availability of water resources.

Further development of water situation undergone high inflows to the upper reservoirs, leading to increased water reserves.

In June, in the absence of agreements on the operation mode of the Toktogul, average monthly release from the reservoir decreased up to 180 m^3/s, whereas since 1991 the reservoir has been releasing at 360 m^3/s. With lateral inflow remaining low, this led to a significant reduction in water availability.

The situation was exacerbated by the fact that the Naryn hydropower plants, operating under energy mode, caused inadmissible fluctuations in water availability on the way to Uchkurgan hydroscheme. In the site of the head intake of Big Fergana

Canal, fluctuations of water level ranged between 0 to 3 meters for 3-4 hours. Sudden increases and decreases of the flow rate up to ± 200 m^3/s alternated with each other several times a day. The intake and supply of water to Ferghana Valley in the required stable volumes was extremely complicated. Occurred forced interruptions in discharges through the Uchkurgan hydroscheme, which had a negative impact on inflow to the Kayrakkum reservoir. As a result, during the second half of June the discharges at Akzhar gauging station decreased from 470 to 250 m^3/s. Despite having 4 billion m^3 less water than the average long-term reserves, to accumulate resources for the autumn-winter period 2009-2010 the Toktogul reservoir could still reduce discharges. In this case, without additional inflow the Kayrakkum reservoir would be fully drawn down by mid-July, followed by the transition to release of transit discharges not exceeding 170-200 m^3/s. This could lead to a sharp decline in water availability for lands of neighboring states in the middle reach of the Syrdarya.

To improve the water situation in the second half of vegetation, it was required to provide sufficient water releases from the Toktogul, while receiving the equivalent amount of electricity from the Kyrgyz Republic. A corresponding agreement between the Kazakhstan and Uzbekistan was reached and on July 3 the release from the Toktogul reservoir was increased from 176 to 352 m^3 /s. At the same time fluctuations in water availability at the outlet of the Naryn cascade stopped. Simultaneously Andijan reservoir started producing compensating releases, which gave up to 120 m^3 /s additional feeding to the basin. The measures taken by the parties contributed to the stabilization of water intakes and improvement of water availability in Fergana Valley, as well as allowed to prevent inflows to the Kayrakkum reservoir, as was the case in the vegetation period 2008. Water reserves in the Kayrakkum reservoir at the beginning of July amounted to 3291 million m^3 and an additional inflow created forced conditions to increase reservoir's releases to improve water supply to irrigated lands in the middle reach. However, the required increase in discharges from 450 to 600 m^3/s at the Kyzylkishlak gauging station was achieved only after a month, by August 1. Such situation arose due to inconsistency among agencies in timely receipt of reliable information on inflow and release of the reservoir and, at the same time not quite proper operation of two river gauging stations Akzhar Kyzylkishlak. Nevertheless, due to the interaction of stakeholders and agreement reached through negotiations between the Kazakh and Tajik parties, initial disagreements have been overcome. The irrigated lands in the middle reach received additional water, much- needed under conditions of increased temperature.

The results of the vegetation period 2009 are generally characterized by the following indicators. From April 1 to October 1, the inflow to upper reservoirs (Table 2.1) reached 20 billion 627 million m^3 of water (112% of norm), which is 6.3 billion m^3 more than expected. Unlike the forecast, the inflow to the Toktogul reservoir was 10676 million m^3 (111% of norm) rather than 7922 million m^3, and 6389 million m^3 (123% of norm) to the Charvak reservoir, as opposed to 5188 million m^3.The inflow to the Andijan reservoir exceeded the predicted value by 1093 million m^3 and amounted to 2913 million m^3 (96% of norm).

Table 2.1

ıce items	Norm	Volume, million m^3		Percentage (%) of the norm		Actual (percentage of predicted)
	mln. m^3	predicted	actual	predicted	actual	
Inflows to upper reservoirs:						
to Toktogul	9584	7922	10676	83	111	135
to Andijan	3035	1820	2913	60	96	160
to Charvak	5188	4117	6389	79	123	155
river Ugam	542	395	650	73	120	165
Total:	***18349***	***14254***	***20628***	***78***	***112***	***145***
lateral inflows:						
Toktogul–Uchkurgan	1184	991	1108	84	94	112
Uchkurgan, Uchtepe-Kayrakkum	3378	2530	2710	75	80	107
Andijan – Uchtepe	2545	1739	2240	68	88	129
Kayrakkum – Chardara	3178	1423	2693	45	85	189
Gazalkent-g/s. Chinaz-Chirchik	986	712	862	72	87	121
Total:	***11271***	***7395***	***9613***	***66***	***85***	***130***
TOTAL:	**29620**	**21649**	**30241**	**73**	**102**	**140**

The lateral inflow remained at low level (85% of norm) and accounted for 9613 million m^3.

Total inflow in the basin reached 30.2 billion m^3 (102% of norm) instead of expected 21.6 (73% of norm). The predicted value was exceeded by 40%, i.e. the inflow was 8.6 billion m^3 more than expected.

Releases from reservoirs as a whole exceeded the volumes scheduled by the Naryn-Syrdarya cascade reservoirs by 19% (Table 2.2). Meanwhile, out of total releases amounting to 4 billion 440 million m^3 from the Toktogul reservoir 849.83 million m^3 of water conforms to an equivalent volume of electricity, received by the Republic of Kazakhstan from the Kyrgyz Republic.

Table 2.2

Reservoir	Releases (from 01.04.2009 to 01.10.2009), million m^3		Percentage (%)
	scheduled (reduction of limits by 25%)	actual	
Toktogul	3622.22	4440.53	123
Andijan	1852.87	2646.69	143
Charvak	4126.16	4966.96	120
Kayrakkum	6408.56	7267.80	113
Chardara	9467.28	10889.86	115
TOTAL:	**25477.09**	**30211.84**	**119**

The volumes of reservoirs as of October 1, 2009: Toktogul - 12.67 billion m^3, Andijan - 905 million m^3, Charvak - 2 billion m^3, Kayrakkum – 1.3 billion m^3, Shardara – 1.1 billion m^3 (Table 2.3).

Table 2.3

Reservoir	Reservoir storage, million m^3			
	for 01.04.09	scheduled for 01.10.2009	actual for 01.10.2009	for 01.10.08
Toktogul	6421	10800.92	12674	9617
Andijan	691.1	896.33	905	362
Charvak	844	1330.92	1992	927
Kayrakkum	3198	1060.08	1315	826
Chardara	5385	1059.51	1091	931
TOTAL:	**16539.10**	**15147.76**	**17977**	**12663**

On average for vegetation period 2009, country-water users were supplied 77% of available water provided for 100 percent water withdrawal limit.

The volume of water supplied to the countries was as follows (Table 2.4 and 2.5):

Kazakhstan – 647.35 million m^3 (82% of limit),

Kyrgyzstan -179.68 million m^3 (73%),

Tajikistan – 1287.59 million m^3 (68%),

Uzbekistan – 6942.1 million m^3 (79%).

Inflow to the Aral Sea exceeded 2.3 billion m^3.

Inflow to the Shardara reservoir amounted to 6418 million m^3 (Table 2.6).

Table 2.4

River reach, country-water user	Water withdrawal limit (100%), million m^3	Actual water withdrawal, million m^3	Percentage (%)
Toktogul–Uchkurgan hydroscheme			
Kyrgyzstan	161.66	134.41	83
Tajikistan	236.56	141.98	60
Uzbekistan	3548.40	2955.26	83
Uchkurgan–Kayrakkum hydroscheme			
Kyrgyzstan	84.83	45.26	53
Tajikistan	448.77	425.84	95
Uzbekistan	544.06	404.68	74
Kayrakkum hydroscheme–Shardara reservoir			
Kazakhstan	794.02	647.35	82
Tajikistan	1219.68	719.78	59
Uzbekistan	4708.17	3582.17	76

Table 2.5

Country-water user	Limit (100%) for 01.10.09, million m^3	Actual water withdrawal for 01.10.09, million m^3	Percentage (%)
Republic of Kyrgyzstan	246.49	179.68	73
Republic of Uzbekistan	8800.53	6942.11	79

Republic of Tajikistan	1905.01	1287.59	68
Republic of Kazakhstan (Dostlik canal)	794.02	647.35	82

Table 2.6

Indicators	Scheduled, million m^3	Actual, million m^3
Inflow to the Aral Sea	1806.51	2399.08
Discharge to the Arnasai depression	0	25.06
Inflow to the Shardara reservoir	5935.54	6418.27

Actual operation mode of the Naryn-Syrdarya cascade reservoirs, April 1, 2009-September 30, 2009

	Unit	April actual	May actual	June actual	July actual	August actual	September actual	Total *million* m^3
Toktogul reservoir								
	m^3 /sec							
Inflow to the reservoir	*mln* m^3							
Volume: beginning	*mln* m^3							
of the period	*mln* m^3							
End of the period								
	m^3 /sec							
Release from the reservoir	*mln* m^3							
Kayrakkum reservoir								
Inflow to the reservoir	m^3 /sec							
	mln m^3							
Volume: beginning of the period	*mln* m^3							
End of the period	*mln* m^3							

Release from the reservoir	m^3 /sec							
	mln m^3							
Chardara reservoir								
Inflow to the reservoir	m^3 /sec							
	mln m^3							
Volume: beginning of the period	*mln* m^3							
End of the period	*mln* m^3							
Release from the reservoir	m^3 /sec							
	mln m^3							
Release to Kizilkum canal	m^3 /sec							
	mln m^3							
Discharge to Arnasay depression	m^3 /sec							
	mln m^3							
Inflow to the Aral Sea	m^3 /sec							
	mln m^3							
Charvak reservoir								

	m^3 /sec							
Inflow to the reservoir	*mln* m^3							
Volume: beginning of the period	*mln* m^3							
End of the period	*mln* m^3							
	m^3 /sec							
Release from the reservoir	*mln* m^3							
Andijan reservoir								
	m^3 /sec							
Inflow to the reservoir	*mln* m^3							
Volume: beginning of the period	*mln* m^3							
End of the period	*mln* m^3							
	m^3 /sec							
Release from the reservoir	*mln* m^3							

Table 2.7

		Фактический режим						
		работы Нарын-Сырдарьинского каскада водохранилищ						
		на период с 1 апреля 2009 г. по 30 сентября 2009 г.						
Токтогульское водохранилище		Апрель (факт)	Май (факт)	Июнь (факт)	Июль (факт)	Август (факт)	Сентябрь (факт)	Всего млн.м3
Приток к водохранилищу	м3/сек	272,93	515,78	1194,47	953,16	705,64	404,20	
	млн.м3	707,44	1381,45	3096,06	2552,95	1890,00	1047,69	10675,59
Объем: Начало периода	млн.м3	***6421,00***	***6313,00***	***7073,00***	***9692,00***	***11283,00***	***12359,00***	
Конец периода	млн.м3	***6313,00***	***7073,00***	***9692,00***	***11283,00***	***12359,00***	***12674,00***	
Попуск из водохранилища	м3/сек	318,50	235,45	184,20	357,94	304,48	282,67	
	млн.м3	825,55	630,63	477,45	958,69	815,53	732,67	4440,53
Кайраккумское водохранилище		Апрель (факт)	Май (факт)	Июнь (факт)	Июль (факт)	Август (факт)	Сентябрь (факт)	Всего млн.м3
Приток к водохранилищу	м3/сек	522,63	538,77	348,10	271,74	219,74	321,47	
	млн.м3	1354,67	1443,05	902,28	727,83	588,56	833,24	5849,62
Объем: Начало периода	млн.м3	***3198,00***	***3428,00***	***3513,00***	***3291,00***	***2506,00***	***1505,00***	
Конец периода	млн.м3	***3428,00***	***3513,00***	***3291,00***	***2506,00***	***1505,00***	***1315,00***	
Попуск из водохранилища	м3/сек	367,03	532,32	370,47	525,03	577,97	376,60	
	млн.м3	951,35	1425,78	960,25	1406,25	1548,03	976,15	7267,80
Чардаринское водохранилище		Апрель (факт)	Май (факт)	Июнь (факт)	Июль (факт)	Август (факт)	Сентябрь (факт)	Всего млн.м3
Приток к водохранилищу	м3/сек	628,99	687,56	445,92	316,30	137,71	221,64	
	млн.м3	1630,35	1841,56	1155,82	847,18	368,85	574,50	6418,27
Объем: Начало периода	млн.м3	***5385,00***	***5399,00***	***5204,00***	***4770,00***	***3586,00***	***2161,00***	
Конец периода	млн.м3	***5399,00***	***5204,00***	***4770,00***	***3586,00***	***2161,00***	***1091,00***	
Попуск из водохранилища	м3/сек	628,00	864,68	631,00	665,65	730,48	606,17	
	млн.м3	1627,78	2315,95	1635,55	1782,87	1956,53	1571,18	10889,86
Попуск в Кзылкум. канал	м3/сек	25,17	9,19	38,67	96,93	77,18	8,00	
	млн.м3	65,23	24,62	100,22	259,63	206,71	20,74	677,16
Сброс в Арнасайскую	м3/сек	9,67	0,00	0,00	0,00	0,00	0,00	
впадину	млн.м3	25,06	0,00	0,00	0,00	0,00	0,00	25,06
Подача в Аральское море	м3/сек	89,69	80,36	107,32	181,50	146,43	306,66	
	млн.м3	232,48	215,24	278,18	486,14	392,19	794,85	2399,08
Чарвакское водохранилище		Апрель (факт)	Май (факт)	Июнь (факт)	Июль (факт)	Август (факт)	Сентябрь (факт)	Всего млн.м3
Приток к водохранилищу	м3/сек	262,07	456,42	644,50	559,00	319,93	178,37	
	млн.м3	679,28	1222,47	1670,54	1497,23	856,91	462,33	6388,76
Объем: Начало периода	млн.м3	***844,00***	***1214,00***	***1692,00***	***1989,00***	***2005,00***	***1976,00***	
Конец периода	млн.м3	***1214,00***	***1692,00***	***1989,00***	***2005,00***	***1976,00***	***1992,00***	
Попуск из водохранилища	м3/сек	98,37	270,97	540,67	518,74	296,87	154,43	
	млн.м3	254,97	725,76	1401,41	1389,40	795,14	400,29	4966,96
Андижанское водохранилище		Апрель (факт)	Май (факт)	Июнь (факт)	Июль (факт)	Август (факт)	Сентябрь (факт)	Всего млн.м3
Приток к водохранилищу	м3/сек	125,37	249,32	317,07	221,29	111,68	79,73	
	млн.м3	324,95	667,78	821,84	592,71	299,12	206,67	2913,06
Объем: Начало периода	млн.м3	***691,10***	***768,56***	***1135,63***	***1520,10***	***1298,00***	***876,20***	
Конец периода	млн.м3	***768,56***	***1135,63***	***1520,10***	***1298,00***	***876,20***	***905,00***	
Попуск из водохранилища	м3/сек	93,31	106,96	164,21	297,44	268,93	67,80	
	млн.м3	241,87	286,49	425,63	796,65	720,31	175,74	2646,69

WATER WITHDRAWAL LIMITS FOR CENTRAL ASIAN STATES, PREDICTIVE MODES OF TANDEM RESERVOIR SYSTEMS AND WATER DELIVERY PROCESS IN NON-VEGETATION PERIOD 2009-2010[2]

I. The Amudarya river basin

The use of fixed water withdrawal limits by states during non-vegetation period 2009-2010 is as follows:

- Republic of Tajikistan – 2 848.6 million m^3
- Turkmenistan – 6 500 million m^3
- Republic of Uzbekistan – 5 980 million m^3
- Surkhandarya province – 370 million m^3

Total water withdrawal from the Amudarya basin amounted to 15 698.6 million m^3.

In addition, for non-vegetation period 2009-2010 it is planned to set sanitary and environmental releases of 800 million m^3 in the lower reaches of the Amudarya river, including:

- Turkmenistan – 150 million m^3 for Dashoguz province;
- Republic of Uzbekistan – 650 million m^3; of which: for Karakalpakstan – 500 million m^3, for Khorezm province – 150 million m^3.

It is planned to establish a plan of water supply of 2100 million m^3 to Priaralie and Aral Sea for the non-vegetation period. Actual water availability during three months of non-vegetation period in the Amudarya river basin in the cross-section Atamyrat above Garagumdarya was 77.3% of the norm. Under the norm of 7902 million m^3, the actual value amounted to 6107 million m3, while last year water availability for the same period equaled 43.1%.

According to our calculations, for the entire current non-vegetation period water availability in the basin expected to be about 80-85% of norm, which is 27-32% higher than last year's actual value.

The table below shows the actual operation mode of the Nurek reservoir, actual value for Atamyrat gauging station and actual water availability in the cross-section Atamyrat above Garagumdarya for three months of the current vegetation period.

[2] Information for the second issue of the agenda of ICWC meeting 54, January 2010, Shymkent

Balance items	Unit of measure	October			November			December		
		phase I	phase II	phase III	phase I	phase II	phase III	phase I	phase II	phase III
Inflow to the Nurek	m^3/s	441	347	344	283	236	228	197	198	194
	m^3/s			376			249			196
Accumulation (+), drawdown (-)	m^3/s	-15	-59	-89	-185.2	-333.5	-324	-338	-337	-366
Volume of the Nurek reservoir	mln. m^3	**10513**	**10462**	10377	10217	9929	9650	9358	9067	8719
Water losses in reservoir	m^3/s									
Release from the Nurek reservoir	m^3/s	**456**	**406**	433	468.2	569.5	551.5	535	535	560
				432			530			544
Atamyrat gauging station	m^3/s	**658**	**559**	**479**	**537**	**616**	**561**	**729**	**710**	**732**
norm	m^3/s	**986**	**863**	**801**	**745**	**782**	**754**	**835**	**891**	**882**

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	%	**66.7**	**64.8**	**59.8**	**72**	**78.8**	**74.4**	**87.3**	**79.7**	**83**
Atamyrat above Garagumdarya (water availability)	m^3/s	**1228**	**1017**	**806**	**685**	**618**	**559**	**711**	**660**	**640**
Norm	m^3/s	1280	1110	1020	988	949	920	903	902	883
	%	96	91.6	79	69.3	65.1	60.7	78.7	73.1	72.5
Cumulative actual value	mln. m^3	1061	1940	2706	3298	3832	4314.7	4928.9	5498.7	6107.4
Norm	mln. m^3	1106	2065	3034	3888	4708	5502.8	6283	7062.3	7901.5
	%	96	94	89.2	84.8	81.4	78.4	78.4	77.9	77.3

The actual flow in Kelif gauging station (boundary cross-section of water allocation between Turkmenistan and Uzbekistan) was 7728 million m^3 against last year's level of 5106 million m^3 (plus 2622 million m^3).

Preliminary plan of water supply to Priaralie and Aral Sea during three months of non-vegetation period is fulfilled at 93.3%; 980 million m^3 of water was supplied actually with 1050 million m^3 planned.

Actual volumes of run of the river reservoirs as of 01.01.2010:

- Nurek reservoir- 8 719 million m^3 under the planned value of 8608 million m^3; (design value was accepted as actual one, since starting from the 2nd decade of December 2009 the organization stopped receiving data).

- Tyuyamuyun reservoir- 5 459 million m^3, with 5 247 million m^3 planned.

The use of fixed water withdrawal limits during the three months of the non-vegetation period by states is as follows.

In the whole basin, fixed water withdrawal limit was used up to 107.7 %; under the limit 6 billion 683 million m^3, the actual one was 7 billion 199 million m^3, including:

- Republic of Tajikistan used fixed water withdrawal limit at 93.9 %,

1 billion 401 million m^3 were used actually under the limit of 1 billion 493 million m^3;

- Turkmenistan used water withdrawal limit up to 107.7 %, under the limit 2 billion 475 million m^3, actual figure indicated 2 billion 664 million m^3;

- Republic of Uzbekistan used water withdrawal limit up to 116.5 %; 2 billion 947 million m^3 were used actually, with the limit of 2billion 530 million m^3.

The use of fixed water withdrawal limits in the reaches of the river is as follows:

1. Upstream – 94.6%, including: Tajikistan – 93.9%, Republic of Uzbekistan – 100.4%.

2. Middle reach – 105.4%, including: Republic of Uzbekistan – 98.8%, Turkmenistan – 109.5%.

3. Downstream – 131.3%, including; Uzbekistan – 139.9%, Turkmenistan – 87.7%.

Water availability for three downstream water users for the reporting period is as follows:

1. Dashoguz province – 87.9%

2. Karakalpakstan – 127.7%

3. Khorezm province – 176.2%

For the three months of the current non-vegetation sanitary and environmental releases were used up to 74.5%, under the planned value of 497.8 million m^3, actual use amounted to 371.1 million m^3.

Turkmenistan used sanitary and environmental releases up to 62.8%; under the planned value of 131.9 million m^3, actual use amounted to 62.8 million m^3. Over three months of the current non-vegetation period Uzbekistan used them up to 84.3%, while the planned value was 365.9 million m^3, actual use amounted to 308.3 million m^3.

Favorable weather conditions in the Amudarya basin, water availability and availability of irrigated lands for washing irrigation made appropriate adjustments in the use of water withdrawal limits in the middle and lower reaches of the Amudarya river and allowed a number of water users to begin washing irrigation ahead of schedule, without infringement of other water users' interests. Therefore, as actual use of water withdrawal limits shows for the three months of the current growing season there was agreed inequality in water use between the states and water users of the Amudarya basin.

Preliminary results of the non-vegetation period 2009-2010 show that the arising at the beginning of the second half of the current non-vegetation period starting water management, hydrological and climatic conditions in the Amudarya basin, as well as water reserves in the Nurek reservoir (8.7 billion m^3), Tuyamuyun reservoir (5.4 billion m^3) and sufficient inflow to both reservoirs, as a whole will allow to successfully complete tasks set for non-vegetation period 2009-2010 and start vegetation period 2010 with good indicators of water reserves in the Tuyamuyun reservoir.

Table 1.1

Analysis of using limits on water withdrawals from the Amudarya river basin for the vegetation period 2009-2010 (as of 01.10.2010)

№	Items	Limit for the entire period	Limit for 01.01.10	Actual value for 3-month period	%% of 3-month period	%% of annual limit
I	Kyrgyz Republic	0	0	0	0	0
II	Verkhnedarya Division					
	(Upstream)	3218.6	1678.6	1587.8	94.6	49.3
	of which:					
1	Tajikistan	2848.6	1492.8	1401.3	93.9	49.2
2	Surkhandarya province	370	185.8	186.5	100.4	50.4
II	Water withdrawals from the Amudarya river					
	up to Kerki gauging station	12480	5004.4	5611.4	112.1	45
1	Uzbekistan	5980	2529.6	2947	116.5	49.3
	of which :					
	a) Water withdrawals in the middle reach					
	Karshi main canal	1700	848.9	698.5	82.3	41.1
	Amubukhara main canal	1545	590.8	723.9	122.5	46.9
	Total water withdrawals in the middle reach:					
		3245	1439.7	1422.4	98.8	43.8
	b) Total downstream water withdrawals					

№	Items	Limit for the entire period	Limit for 01.01.10	Actual value for 3-month period	%% of 3-month period	%% of annual limit
	Khorez province	1235	274.3	483.4	176.2	39.1
	Karakaplakstan	1500	816	1041.2	127.7	69.4
	Total downstream water withdrawals	2735	1089.9	1524.6	139.9	55.7
2	Turkmenistan:	6500	2474.8	2664.4	107.7	41
	of which:					
	a) Water withdrawals in the middle reach					
	Garagumdarya	3777	1735.8	1939.7	111.7	51.4
	Lebab province	1323	524.9	536.6	102.2	40.6
	Total water withdrawals in the middle reach	5100	2260.7	2476.3	109.5	48.6
	b) Downstream water withdrawals					
	Dashoguz province	1400	214.1	188.1	87.9	13.4
III	Total water withdrawals in the basin	15698.6	6683	7199.2	107.7	45.9
	of which:					
	Verkhnedarya Division					
	(Upstream)	3218.6	1678.6	1587.8	94.6	49.3
	Middle reach	8345	3700.4	3898.7	105.4	46.7
	Downstream	4135	1304	1712.7	131.3	41.4
IV	Total water withdrawals in the					

№	Items	Limit for the entire period	Limit for 01.01.10	Actual value for 3-month period	%% of 3-month period	%% of annual limit
	Amudarya river downstream:	4135	1304	1712.7	131.3	41.4
	of which:					
	Khorezm province	1235	274.3	483.4	176.2	39.1
	Karakalpakstan	1500	815.6	1041.2	127.7	69.4
	Dashoguz province	1400	214.1	188.1	87.9	13.4
V	Total sanitary-environmental releases	800,0	497.8	371.1	74.5	46.4
	including Karakalpakstan	500	286.4	251.3	87.7	50.3
	Dashoguz province	150	131.9	62.8	47.6	41.9
	Khorezm province	150	79.5	57	71.7	38

Table 1.2

Information about the water supply to the Aral Sea and the Amudarya river delta for non-vegetation period 2009-2010 (as of 01.12.2009)

Items	October	November	December	January	February	March	Water supply from 01.10.09 to 01.12.09		Fulfillment of water supply (%%)
							planned	actual	
Samanbay gauging station	316	235	247				800	798	99.8
Total discharge from the canal system Kyzketken and Suenli	0	0	0					0	
KDF	19	57	106				250	182	72.8
TOTAL:	335	292	353	0	0	0	1050	980	93.3
Cumulative total	335	627	980	980	980	980			

Note: Data on water supply to the Aral Sea is conformed with Glavgidromet (Main Administration of Hydrometeorology) of the Republic of Uzbekistan.

Table 1.3

Operation mode of the Nurek reservoir, October 2009-March 2010 (actual value as of 01.01.2010)

Nurek reservoir	Unit of measure	Actual			Predicted			Total
		October	November	December	January	February	March	
Inflow	m3/s	376	249	196	179	169	162	3515
Water losses	m3/s							0
Volume: at the beginning of period	mln.m3	10526	10377	9650	8719	7859	7090	10526
at the end of period	mln.m3	10377	9650	8719	7859	7090	6399	6399
Accumulation(+),drawdown (-)	mln.m3	-149	-728	-931	-860	-769	-691	-4127
Release from the reservoir	m3/s	432	530	544	500	487	420	7669

Table 1.4

Operation mode of the Tuyamuyun reservoir, October 2009-March 2010 (actual value as of 01.01.2010)

Tuyamuyun reservoir	Unit of measure	Actual			Predicted			Total
		October	November	December	January	February	March	
Inflow	m3/s	412	411	765	621	498	546	8591
Water losses	m3/s	105	94	124	95	75	72	1494
Volume: at the beginning of period	mln.m3	5775	5334	5526	5459	5322	4832	5775
at the end of period	mln.m3	5334	5526	5459	5322	4832	3908	3908
Accumulation(+),drawdown(-)	mln.m3	-441	192	-67	-136	-490	-924	-1867
Release from the reservoir	m3/s	471	243	666	577	626	755	8809
including to the river	m3/s	329	210	620	465	464	500	6833

Table 1.5

Limits on water withdrawals from the Amudarya river and water supply to the Aral Sea and the river delta for non-vegetation period 2009-2010

River basin, state	Water withdrawal limits , km^3	
	total annual (from 1.10.09 to 1.10 .10)	for non-vegetation period (from 1.10.09 to 1.04.10)
Total water withdrawal from the Amudarya river	**53.950**	**15.326**
of which:		
Republic of Tajikistan	9.500	2,8486
Kyrgyz Republic	0.450	0,000
From the Amudarya river basin up to Atamurat gauging station	44,000	12,480
Turkmenistan	22,000	6,500
Republic of Uzbekistan	22,000	5,980
In addition:		
- water supply to Priaralie taking into account irrigation releases and CDW*	4,200	2,100
- supply of sanitary-environmental releases to irrigation schemes:	0,800	0,800
Dashoguz province	0,150	0,150
Khorezm province	0,150	0,150
Republic of Karakalpakstan	0,500	0,500

* Collector and drainage waters

Annex:

1. Water withdrawal limits provide for the supply of water for irrigation, industry, public utilities and other needs. If water availability in the basin changes water withdrawal limits will be adjusted accordingly.

2. In case water availability increases in the Amudarya river, total volume of water will be directed to the Aral Sea.

II. THE SYRDARYA RIVER BASIN

In accordance with the Hydromet Service forecast for non-vegetation period 2009-2010 from 25.09.2009, the inflow to the Toktogul reservoir is expected to reach 122%, to the Andijan - 94% and to the Charvak - 116% of norm, while total lateral inflow - 95% of norm (Table 2.1).

Table 2.1

Parameters according to the Hydromet Service forecast for non-vegetation period 2009-2010 (01.10.09-01.04.2010)	Volume, million m^3				Percentage of norm		
	norm	interval between predicted values		average	interval between predicted values		average
		min.	max.		min.	max.	
Inflows to upper reservoirs**:**							
Toktogul	2715	2990	3620	3305	110	133	122
Andijan	922	790	940	865	86	102	94
Charvak	1224	1340	1490	1415	109	122	116
river Ugam	165	80	240	160	48	145	97
Total:	*5026*	*5200*	*6290*	*5745*	*103*	*125*	*114*
Lateral inflows**:**							
Toktogul-Uchkurgan	398	346	440	393	87	111	99
Uchkurgan-Uchtepe-Kayrakkum	4198	3850	4480	4165	92	107	99

Andijan-Uchtepe	2469	1970	2590	2280	80	105	92
Kayrakkum-Shardara	3019	2360	3140	2750	78	104	91
Gazalkent-gauging station Chinaz-Chirchik	1040	860	1020	940	83	98	90
Total:	*11124*	*9386*	*11670*	*10528*	*84*	*105*	*95*
Total:	**16150**	**14586**	**17960**	**16273**	**90**	**111**	**101**

In general, water availability in the Syrdarya river basin is expected to reach 101% of norm, or 16.3 billion m^3.

During the past non-vegetation period (from October 2009 to January 2010) inflow to upper reservoirs amounted to more than 3.8 billion m^3.

The volume of inflows to reservoirs was as follows: Toktogul -2.403 billion m^3, Andijan - 511 million m^3, Charvak - 872 million m^3 (Table 2.2).

Table 2.2

Parameter	Volume of inflow (October-December 2009), mln. m^3		
	predicted	actual	percentage (%)
Inflows to upper reservoir:			
Toktogul	1870.47	2403.41	129
Andijan	466.04	511.55	110
Charvak	813.28	872.11	107
Ugam	74.14	74.97	101
Total:	**3323.93**	**3862.04**	**116**
Lateral inflows:			
Toktogul–Uchkurgan	206.58	206.58	100

Uchkurgan, Uchtepe-Kayrakkum	1854.32	1950.53	105
Andijan–Uchtepe	1202.42	1390.41	116
Kayrakkum–Chardara	1298.85	1246.41	96
Gazalkent-gauging station Chinaz-Chirchik	392.26	293.14	75
Total:	**4954.43**	**5087.07**	**103**
Total:	**8278.36**	**8278.36**	**108**

The total inflow in the basin amounted to 8.9 billion m^3, including lateral inflow of 5.0 billion m^3. The reservoirs released 10.9 billion m^3 of water (Table 2.3).

Table 2.3

Reservoir	Releases (October - December 2009), mln. m^3		Percentage (%)
	scheduled	actual	
Toktogul	3657.31	3385.42	93
Andijan	296.96	548.86	185
Charvak	1086.91	1323.69	122
Kayrakkum	4447.87	3547.9	80
Shardara	3028.32	2147.47	71
TOTAL:	**12517.37**	**10953.34**	**88**

On January 1, 2010 the volumes of water in the reservoirs were as follows: Toktogul - 11.7 billion m^3, Andijan - 859 million billion m^3, Charvak – 1.4 billion m^3 (Table 2.4). The total water reserve in the upper reservoirs amounted to 13.9 billion m^3, which is 4.3 billion m^3 more than at the beginning of January last year.

Table 2.4

Reservoir	Reservoir storage, mln. m^3				
	for 01.10.09	scheduled for 01.01.10	Actual		
			for 01.01.10	for 01.01.09	+/-
Toktogul	12674	10875.56	11694.32	8337	3357.32
Andijan	905	1072.42	859.3	472	387.3
Charvak	1992	1711.68	1405.51	805	600.51
Kayrakkum	1315	2362.24	3418	2114	1304
Shardara	1091	3621.59	2935.51	2842	93.51
TOTAL:	**17977**	**19643.49**	**20312.64**	**14570**	**5742.64**

The volume of water supplied to country-water users during October- December 2009 (Tables 2.5 and 2.6):

Kazakhstan (along Dustlik canal) – 5.1 million m^3 (14% of planned value),

Kyrgyzstan – 23.8 million m^3 (105%),

Tajikistan – 42.5 million m^3 (40%),

Uzbekistan - 1424 million m^3 (120%).

Table 2.5

River reach, country-water user	Water withdrawals for October-December 2009, mln. m^3		
	Proposed limit	Actual	Percentage (%)
Toktogul–Uchkurgan hydroscheme	527,32	636.45	121

Kyrgyzstan	15,52	21,46	138
Tajikistan	13.48	16.99	126
Uzbekistan	498.31	598	120
Uchkurgan–Kayrakkum hydroscheme	80,02	68.21	85
Kyrgyzstan	7,13	2.35	33
Tajikistan	23.49	6.58	28
Uzbekistan	49,4	59.28	120
Kayrakkum hydroscheme – Shardara reservoir	744,38	790.74	106
Kazakhstan	36,29	5,1	14
Tajikistan	69,15	18.89	27
Uzbekistan	638,94	766.75	120

Table 2.6

Country – water user	Water withdrawal for 01.01.10, mln. m^3		
	Proposed limit	Actual	Percentage (%)
Kyrgyz Republic	22.65	23.81	105
Republic of Kazakhstan (Dustlik canal)	36.29	5.1	14
Republic of Tajikistan	106.11	42.45	40
Republic of Uzbekistan	1186.66	1424.03	120

According to estimations, more than 1 billion m^3 of water was supplied to the Aral Sea and Priaralie (Table 2.7).

Table 2.7

Items	Actual for 01.01.10, mln. m^3
Water supply to the Aral Sea (estimated)	1021.85
Discharge to Arnasay	0
Inflow to the Shardara reservoir	3729.39

Based on the prevailing water situation and taking into account the Hydromet Service forecast, BWO "Syrdarya" proposes water withdrawal limits of states and the operation mode of the Naryn-Syrdarya tandem reservoir system for non-vegetation period 2009-2010 as shown in Table 2.8.

It should be noted that the volume of water released in the drawdown of Toktogul reservoir in the current non-vegetation period together with lateral inflow, which is predicted at 90-95% of norm, is enough to fill run of the river reservoirs and satisfy water users. Meanwhile, the inflow to the Shardara for non-vegetation period can amount to 11.7 billion m^3 of water, of which 3.7 billion m^3 has already been received by the reservoir over the past 3 months and another do 8 billion m^3 may inflow.

Having 3 billion m^3 of water on January 1 and releasing 500-550 m^3/s (45-47 million m^3 of water per day) in the coming months, the Shardara reservoir can reach total capacity by the end of February.

Afterwards, the reservoir, having lost the ability to regulate, will be forced to discharge through transit the inflows with flow rate of more than 800 m^3/s, which can cause difficulties in the passage of water downstream in the presence of ice cover.

Table 2.8

River basin, state		Proposed water withdrawal limits for non-vegetation period 2009-2010, million m^3
1	Total water withdrawal from the Syrdarya river	3120
	of which:	
	Republic of Kazakhstan (Dustlik canal)	400
	Republic of Kyrgyzstan	40
	Republic of Tajikistan	180
	Republic of Uzbekistan	2500
2	Discharge to Arnasay	1000
3	Water supply to the Aral Sea and Priaralie	2200

Table 2.9

ГРАФИК
работы Нарын-Сырдарьинского каскада водохранилищ
на период с 1 октября 2009 г. по 31 марта 2010 г.

Токтогульское водохранилище		Октябрь (факт)	Ноябрь (факт)	Декабрь (факт)	Январь	Февраль	Март	Всего млн.м3
Приток к водохранилищу	м3/сек	**410,35**	**265,60**	**229,94**	**182,00**	**180,00**	**192,00**	
	млн.м3	1099,09	688,44	615,88	487,47	435,46	514,25	3840,59
Объем: Начало периода	млн.м3	**12674,00**	**12746,00**	**12356,00**	**11694,32**	**10574,37**	**9678,98**	
Конец периода	млн.м3	**12746,00**	**12356,00**	**11694,32**	**10574,37**	**9678,98**	**9121,55**	
Попуск из водохранилища	м3/сек	**384,03**	**416,80**	**476,58**	**600,00**	**550,00**	**400,00**	
	млн.м3	1028,60	1080,35	1276,47	1607,04	1330,56	1071,36	7394,37
Кайраккумское водохранилище		Октябрь (факт)	Ноябрь (факт)	Декабрь (факт)	Январь	Февраль	Март	Всего млн.м3
Приток к водохранилищу	м3/сек	**460,20**	**617,07**	**852,03**	**843,71**	**813,70**	**566,62**	
	млн.м3	1232,59	1599,44	2282,08	2259,78	1968,50	1517,65	10860,03
Объем: Начало периода	млн.м3	**1315,00**	**1564,00**	**2903,00**	**3418,00**	**3418,00**	**3418,00**	
Конец периода	млн.м3	**1564,00**	**2903,00**	**3418,00**	**3418,00**	**3418,00**	**3418,00**	
Попуск из водохранилища	м3/сек	**437,19**	**165,67**	**727,12**	**857,31**	**827,16**	**573,26**	
	млн.м3	1170,98	429,41	1947,51	2296,23	2001,07	1535,43	9380,63
Чардаринское водохранилище		Октябрь (факт)	Ноябрь (факт)	Декабрь (факт)	Январь	Февраль	Март	Всего млн.м3
Приток к водохранилищу	м3/сек	**345,95**	**310,83**	**745,63**	**1147,36**	**1084,79**	**853,19**	
	млн.м3	926,60	805,66	1997,10	3073,09	2624,33	2285,18	11711,97
Объем: Начало периода	млн.м3	**1091,00**	**1374,00**	**2002,00**	**2935,51**	**3985,07**	**4901,45**	
Конец периода	млн.м3	**1374,00**	**2002,00**	**2935,51**	**3985,07**	**4901,45**	**5400,00**	
Попуск из водохранилища	м3/сек	**266,94**	**79,00**	**458,39**	**550,00**	**550,00**	**595,28**	
	млн.м3	714,96	204,77	1227,74	1473,12	1330,56	1594,39	6545,54
Попуск в Кзылкум. канал	м3/сек	**5,00**	**5,00**	**5,00**	**5,00**	**5,00**	**6,77**	
	млн.м3	13,39	12,96	13,39	13,39	12,10	18,14	83,38
Сброс в Арнасайскую	м3/сек	**0,00**	**0,00**	**0,00**	**200,00**	**150,00**	**60,00**	
впадину	млн.м3	0,00	0,00	0,00	535,68	362,88	160,70	1059,26
Подача в Аральское море	м3/сек	**180,60**	**127,40**	**77,63**	**155,78**	**157,00**	**155,20**	
	млн.м3	483,71	330,23	207,91	417,24	379,81	415,69	2234,59
Чарвакское водохранилище		Октябрь (факт)	Ноябрь (факт)	Декабрь (факт)	Январь	Февраль	Март	Всего млн.м3
Приток к водохранилищу	м3/сек	**138,45**	**103,72**	**86,79**	**75,00**	**66,00**	**93,00**	
	млн.м3	370,83	268,83	232,45	200,88	159,67	249,09	1481,76
Объем: Начало периода	млн.м3	**1992,00**	**1849,00**	**1643,00**	**1405,51**	**1176,24**	**947,87**	
Конец периода	млн.м3	**1849,00**	**1643,00**	**1405,51**	**1176,24**	**947,87**	**714,58**	
Попуск из водохранилища	м3/сек	**170,16**	**164,23**	**165,11**	**160,00**	**160,00**	**180,00**	
	млн.м3	455,76	425,69	442,24	428,54	387,07	482,11	2621,42
Андижанское водохранилище		Октябрь (факт)	Ноябрь (факт)	Декабрь (факт)	Январь	Февраль	Март	Всего млн.м3
Приток к водохранилищу	м3/сек	**66,26**	**61,73**	**64,99**	**47,00**	**46,00**	**62,00**	
	млн.м3	177,46	160,01	174,08	125,88	111,28	166,06	914,78
Объем: Начало периода	млн.м3	**905,00**	**764,50**	**711,20**	**859,30**	**944,93**	**1017,43**	
Конец периода	млн.м3	**764,50**	**711,20**	**859,30**	**944,93**	**1017,43**	**1049,49**	
Попуск из водохранилища	м3/сек	**117,29**	**81,67**	**8,60**	**15,00**	**16,00**	**50,00**	
	млн.м3	314,15	211,68	23,03	40,18	38,71	133,92	761,67

37TH BOARD OF GOVERNORS MEETING OF THE WORLD WATER COUNCIL3

The World Water Council Board of Governors (BoG) meeting was held in Delft, Netherlands, 27-29 January 2010. The WWC's Board approved the following nominated members of the WWC Bureau:

Loic Fauchon – President, France;

Benedito Braga – Vice-President, Brazil;

Dogan Altinbek – International Hydropower Association, Turkey;

Eunkyung Park- Korea Water Forum, Korea;

Jerome Delli Priscoli- US Army Corps of Engineers, USA;

Andras Szollosi-Nagy, UNESCO-IHE, Netherlands.

The WWC Executive Directorate activity for the last period concentrated on development of directions designated on the WWC General Assembly. The WWC Directorate jointly with IUCN and IWA has organized series of events related to climate change. Particularly Global Fund for Water was proposed to establish. Now the relevant documents are being prepared for mailing to the potential founders and donors. As a consequence of COP15, the Directorate prepared the basic provisions for the protection of fundamental provisions on the impact of climate change on water resources. One of the conclusions from the work leading up to and at COP15 is that the water sector needs to take more initiative in its own right to work on climate change and variability. This is a key theme (from the WWC Board of Governors' point of view) that now is becoming more important for achieving the MDGs, especially regarding to food security of developing countries.

The African theme was a priority in the activity of Executive Directorate, which prepared a prospective analysis of the challenges and opportunities of water development as an engine for broader growth and progress of the African continent. During the Africa Water Week, much attention was paid to attract water users and water management organizations to involve public initiatives in water governance and management.

The Secretariat has prepared the World Water Council Strategy 2010-2012, incorporating the many suggestions received during the General Assembly.

[3] http://sic.icwc-aral.uz/releases/eng/174.htm

The WWC Strategy is focused on 4 objectives:

- Supporting political action to improve water and sanitation services and water management;

- Deepening the involvement of major water users in solving global water challenges;

- Strengthening regional cooperation to achieve water security and economic development;

- Mobilizing citizens and consumers to address the global water crisis.

The Board of Governors has approved these main objectives (as a whole), but made a lot of comments regarding to expected outcomes and results of some topics.

Objective 1: "Supporting political action to improve water and sanitation services and water management" has 3 outcomes:

- Supporting Mayors' intention to implement the Istanbul Water Consensus signing of which began during the 5 World Water Forum. It is supposed to form the Working Group from representatives of local organizations (burgomasters, municipalities, etc.) - total 1000 persons - to generalize their experience and more broad involvement of other local authorities in 2010;

- Supporting Parlamentarians in their efforts to improve participation in water governance. The target group will develop a guide on control and supervising by the parlamentarians bodies on water policy development, better water legislation, and especially transboundary cooperation. A series of meetings will be organized with regional parlamentarians, possibly resulting in the establishment of the Global Water Parliament. These meetings will form part of the parliamentarian's work for the 6th World Water Forum;

- Supporting Ministers in their efforts to participate in elaboration and strengthening global, regional and national water governance capacities. Focus will be given to the recognition of the rights to water, to the realization of the MDGs on water and sanitation, ratification of existing conventions and elaboration of roadmap on political improvement of water governance. During discussion Prof. Dukhovny V.A. suggested to use a positive experience of Cabinet Ministers and their deputies who can assist to determine and put into practice the developed water management policy. Essential role will be given to highlighting successful implementation of agreements between countries related to this activity.

Objective 2: “Deepening the involvement of major water users in solving global water challenges” has 4 outcomes:

- Establishing the Working Group “Water - Food – Energy” to define principal global interrelations and to help major stakeholders better understand their inter-dependencies and pressing them to participate in this activity; organization of the workshops of that group;

- Using COP-15 outcomes to develop proposals on strengthening water activity related to climate change adaptation and to disseminate proposals on establishing the Global Fund for Water. Moreover, it is planned to prepare recommendations on preventing the critical situations related to climate change (floods, droughts);

- Preparing “White Book” about better water disposal and sanitation, addressing to developing countries;

- Creating innovative platforms for discussing the financing and development of water sector and water community with participation of investors, financial institutions and decision makers.

Objective 3: “Strengthening regional cooperation to achieve water security and economic development” has 4 outcomes:

- Synthesizing transboundary management information and make it available for all users; defining series of “best practice” cases on transboundary cooperation; developing economic aspects of interrelationships on transboundary waters;

- Arranging activity of the Working Group on Transboundary Cooperation, which was formed during the General Assembly in Marseilles; outlining review of the regional problems in the World; creating the website for dialogue between neighboring countries and defining ways for consensus; in preparing for the 6 World Water Forum, promote regional dialogues targeted to create regional “roadmaps”. Initial focus areas include the Himalayan/South-Asia complex, the Mediterranean region, Sub-Saharan Africa and Central Asia;

- Preparing review of the global and regional challenges, and proposals on improving the global and regional mechanism of transboundary governance;

- Analyzing situation in the large federal states where transboundary problems are being solved by the federal states or provinces; using their experience to solve interstate problems.

The Board mandated Prof. Dukhovny V.A. to coordinate works on this topics. Members of the Working Group agreed to consider the concept prepared by Prof.

Dukhovny V.A. and the Draft Work Plan, which will be disseminated among the working group members. The Governors, who are the members of the Working Group, jointly with the Program Director will consider the Work Plan during the next board meeting in April 2010.

Objective 4: “Mobilizing citizens and consumers to address the global water crisis”.

This objective shall raise awareness of global public on growing water challenges and measures to cope with them. It is planned to organize campaign "Water for All!". There will be close cooperation with the program "Live Earth Water"; activity will include organizing the World Water Pavillion at the World Exhibition "Shanghai Expo 2010". It will also support the activities related to a “International Open Water University” and a number of social events (Online Water Media Centre, TV programs etc.).

The WWC's President assigned the board members responsible for main directions of WWC's activity:

- Water Resources and Demands - Xia JUN (IWRA);
- Water and Food – P. Stedutto (FAO);
- Water and Nature – Karin Krchak;
- Water and Energy – Jinshen JIA (China);
- Water and Health – Samir BENSAID;
- Water and Transboundary Rivers – Dukhovny V.A., Metawie A.;
- WWC Membership – K. Reid;
- Finance – M. Vassal.

Preparing to the 6 World Water Forum to be held in 2012 in Marseilles was considered. Persons in charge of various preparing activities to 6th WWF are approved taking into account experience from the 5th WWF. The Organizing Committee is chaired by Ben BRAGA, Vice-President of WWC, and representative of Marseilles mayor’s office. The Logistic organization will be formed on a parity basis from representatives of French organizations and the World Water Council.

The next meeting dedicated to 6WWF with official announcement of the Forum's Program will be held on 22-28 April 2010; there will be considered also the Forum’s Program and preparation events including regional ones.

During the meeting, the Board of Governors was familiarized with work of Dutch water management organizations.

Two ministries - Ministry of Transport, Public Works and Water Management, and Ministry of Housing, Spatial Planning and the Environment - issued the special edition "Dutch Water Sector 2009-2010" where a huge work on development of national and international water sectors is presented.

“In the Netherlands, we know all about living with water. Our two thousand years of habitation in a delta area close to sea level has produced an ambivalent relationship: we love water and loathe it. Our permanent battle to control the sea and rivers has made us experts in water management. The experience has taught us two fundamental truths: that water management is a process of continuous innovation and that water management has to be a team effort. That’s why the Netherlands promotes both technological expertise and a deep-rooted willingness to cooperate. The Netherlands have government bodies that are geared up to deal with water, a relevant knowledge infrastructure and, last but not least, a strong public awareness of the issue. “We tackle problems in a holistic, cross-disciplinary way: water and health, water and spatial planning, water and wildlife, water and energy. This approach is paying off. Oil is a fossil fuel, water a source of life. We may think of alternatives for oil, but not for water. So we must do our utmost best to confront our water problems in a sustainable way[4].”

The Netherlands Water Partnership (NWP) established over 10 years ago unites both the governmental (5 ministries dealing with water), regional and provincial bodies, and the Water Committees, as well as a number of professional water organizations. The Water Committees were established in 13 century and continue to play now the important role in the wastewater treatment, flood protection caused by river and sea. They implement IWRM including land reclamation, coastal protection, maintenance of ports and terminals, construction of dams etc.

The Netherlands Water Partnership (NWP) promotes Dutch expertise in water world-wide. Particularly the programmes "Partners for Water" are being implemented by the NWP in collaboration with Agency on International Cooperation for Ganges, Mekong, Nile. When Hurricane Katrina devastated much of the land around the lower Mississippi in 2004 and caused large parts of New Orleans to flood, the NWP signed a Memorandum of Agreement (MoA) with US Army Corps of Engineers and currently assisting in creating sustainable flood protection system for New Orleans and Louisiana. The value of programs implemented by the Netherlands exceeds half a billion USD.

The Dutch experience on cooperation, monitoring and operation of large number of water structures is accompanied by innovations and new programs (e.g. delta protection, climate and water change and others). SIC ICWC intends to issue the special edition dedicated to the Dutch expertise in water management.

[4] Dutch Water Sector, page 3, 2009-2010

ENERGY SECTOR COORDINATING COMMITTEE MEETING TOGETHER WITH THE DISCUSSION OF WATER-ENERGY NEXUS, ORGANIZED BY THE WORLD BANK AND EC IFAS

2-4 September, 2009, Almaty, Kazakhstan

Participants from Uzbekistan:

Eso Sadullaev – "Uzbekenergo" State Joint-Stock Company

Nurmukhamad Sheraliev – Member of EC IFAS from Uzbekistan

Oleg Azarov – "Uzbekneftgaz"

Participants from International Organizations:

Prof. Dukhovny V.A. – Director, SIC ICWC

Sorokin A.G. –Head of Department, SIC ICWC

Shamsiev Khamidulla– Coordination Dispatch Center "Energiya"

The first day of the meeting was dedicated to energy issues.

The meeting was held under the auspices of Ranzhib Lamen, Director of Energy Department of the World Bank and Daryl Fields, Water and Energy Specialist of the World Bank.

The keynote report by D. Fields (World Bank) did not give any clear directions or preferences. It was aimed at finding consensus on the use of water resources to meet interests of both irrigation and hydropower, being filled mostly with vain wishes and references to the experience of other countries where the consensus has been reached. He presented three papers, of which only one described positive experience of the Canadian company "BC Hydro":

- "BC Hydro" focuses on the three-year electricity demand and the corresponding long-term forecasts of water availability, which serve as the basis for planning;

- The company operates on the basis of a license obtained for water, depending on the demands of Water Resources Department of the Ministry of Environment, other stakeholders, as well as system demands of own consumers. In planning operational

facilities, priority is placed on forecasts of water inflow, non-energy demands, contracts and system requirements. Given the transboundary nature of the Columbia River, it is very important to fully meet the U.S. water demand for irrigation. Among the main features of planning in order of priority: fish and wildlife, demands of society and land resources, water quality and lastly electricity. The plan is developed on the basis of consultations with all stakeholders through mutual concessions and taking into account main tasks and objectives. Meanwhile, natural requirements in terms of releases, water levels are taken into consideration obligatorily. In compliance with social and nature protection requirements, there are 750 various constraints for 23 hydroschemes. This approach implies the following very important conclusion - hydropower cannot dictate water regimes.

On the first day of the meeting Shamsiev Kh.A., Director of CDC "Energiya" presented a fundamental report. He practically showed that even with all the new construction, the isolated operation of power system is virtually impossible due to the need for ensuring reliability during normal operating modes and breakdowns, as well as for regulating the frequency (capacity) and eliminating emergencies, not to mention the damage that may be caused to water supply across the region.

Central Asia Integrated Power System (CA IPS) networks must be operated as an integrated single system via common control center and regular procedures to ensure regional energy exchange based on economic principles. At the same time, out of the three interacion patterns of water and energy, he justified the adoption of the third model, which deals only with water and electricity and which excludes from the model the fuel component as having no direct relation to the volume of discharges and power generation.

Organic fossil fuels between the two countries should be traded taking into account market conditions regardless of water and energy regimes.

In this case, fuel purchase costs of power generating companies should be included in a generalized annual average selling price of electricity, i.e. the fuel cost should be indirectly included in the model under development in selling electricity.

Whereas fuel purchase costs of other agencies, in particular, aiming to sell it for the population, should not be included in the model (nither in the trade of petrol and other oil products that are not related to the production of electricity), i.e. these costs should not be included in the averaged price per kWh.

It is a matter of great importance with regard to "Kyrgyzenergo" behavior, in the fuel balance of which gas production makes up only 5%, but the price is set based on 100% conversion of Heating Power Plant to gas production.

They were also proposed to introduce the system for regulating water as "international reserve in the long-term storage" and to charge for this service on a contractual basis under guaranteed safety - as a reserve on behalf of payer. As a result, the following model for the price of electricity generated by hydropower plants with long-term storage was proposed, including:

- cost of hydropower;

- share of fuel to ensure the operation of heating stations in the autumn and winter seasons for water saving;

- payment for services of reservoir for multiannual regulation.

Provided that water demands of other economic sectors are meet, this enables to address the issue of energy market creation.

The discussion showed that only the representative of Kyrgyzstan (Tyumenbaev A., Deputy Minister) disagreed with this approach, although Tajikistan advocated the need to set generalized seasonal price for electricity (for vegetation and non-vegetation periods) rather than the averaged annual.

Following the discussion of agenda, it was agreed upon the "logframe" (framework) of the action plan that includes strengthening of CDC "Energiya"'s role, development of analytical tool of water-energy interrelationship, gaining more open access to water and energy information which would enable to assess the impact of various options on agriculture and energy sectors.

The second and third day of the conference were devoted to a more detailed discussion of water and energy relations. The keynote address "Water and energy analysis in the context of Central Asia" was made by Mr. Ibatullin S., Chairman of EC IFAS, who in the light of decree of the Heads of Central Asian States (April 28, 2009) defined the objectives and tasks that are implemented in relation to the followings:

- improving the quality of information, including a set of indicators to measure progress in achieving national objectives and international commitments, as well as ensuring free access to information about the state of water and energy resources and socio-economic conditions through modern technology;

- ensuring the wide use of mathematical modeling and remote sensing techniques to reduce the volume of data collection and monitoring costs;

- based on national and regional interests, improving interstate coordination between responsible agencies, organizations and parties involved in the collection and exchange of information;

- placing an emphasis on the creation of complex of models to search for national operation modes of reservoirs hydrosystems with HPS of interstate significance, which would provide maximum regional benefits in hydropower, irrigated agriculture and ecology and guarantee, under certain conditions (in the presence of international treaties and management rules, cooperation) compliance with national interests and minimization of risks (damages) of flow regulation.

- ensuring the optimum ratio of irrigation and energy modes of cascade reservoirs, taking into account annual and long-term runoff fluctuation cycles and balance of water and energy regimes.

SIC ICWC presented two papers at the meeting: one by Prof. Dukhovny V.A. on water and energy problems, the role of analysis and of water allocation in the search of consensus and another by Sorokin A.G. on the principles of the approaches to the creation of a new model of the Aral Sea Basin.

In his presentation prof. Dukhovny V.A. stressed (with reference to Kyrgyzenergo actions in 2002-2008) that energy sector that own hydropower units lack an understanding of the role of irrigated agriculture and the importance of sustainable water supply to ensure social, economic and environmental security in the region. Disregard of the long-term regulation in this period, water releases for power generation for profit making, creation of artificial winter floods and constant fluctuation of releases on a daily basis in the head of big irrigation canals in 2008 caused billions in losses not only for irrigated agriculture, but also for all related industries, net income and contribution to the GDP of which is much higher than that of the irrigation.

Implementation of analytical expertise and modeling of water-energy regimes in Central Asia rivers should be devoted specifically to achieving an understanding of interstate interests. If understanding is achieved, there will be possibility to build trust between the industry and, accordingly, between decision-makers.

In this activity, EC IFAS has to take over the strategic task of coordinating key provisions: criteria for sustainable water use, economic parameters; the creation of national and regional working groups, selection and approval of development scenarios and trade-offs in the future. Just as ICWC created open access information on water resources and water intakes (CAREWIB), hydropower and hydro-meteorological sectors must provide access to their information. It is very important that the uniform work of national groups approved within EC IFAS focused on the search of consensus and consideration of intersectorial and international interests. This requires proper assessment of losses and opportunity cost, as well as the dynamics of development trends of each country as conglomerated water consumers.

In consequence of debates and two-day discussions, the plan of the analytical work was drawn up as a base for concerted mechanism of water-energy relationship. It was decided to create a coordination group of IC IFAS with participation of national representatives, SIC ICWC and SIC ICSD, as well as representatives of Energy sector committee. The work plan will be presented to the Board at its meeting in late October 2009.

SAINT PETERSBURG STATEMENT ON THE ARAL SEA5

Background: An international conference on the Aral Sea, sponsored by the St. Petersburg Branch of the Russian Academy of Sciences and several other organizations, was held in St. Petersburg, Russia, from 12 to 15 October 2009. The conference was devoted to the Aral: Past, Present and Future and to two centuries of Aral Sea investigations. Scientists and some nonscientists from the European Union (Belgium, France, Germany, Greece, Sweden), Israel, Switzerland, Japan, Kazakhstan, Russia, Ukraine, the United States, and Uzbekistan who are studying or interested in the Aral Sea or other similar water bodies participated in the meeting. The statement below is based on the presentations and discussions at this meeting. It represents the consensus of thought on the Aral Sea issue and has been reviewed and commented upon by many of the participants as well as several experts not at the conference.

1. The Aral Sea, once a large terminal lake lying in the deserts of Central Asia, has undergone unprecedented shrinking and salinization since the 1960s. These processes have had serious negative ecologic impacts on the lake and deltas of its two influent rivers. The people living around the lake have also suffered from the sea's destruction that has worsened environmental and health conditions, devastated local economies, and led to social and cultural disruption.

2. In order to place the modern (post 1960) recession in context, it is essential to understand that the lake has experienced repeated recessions and transgressions since it most recent geological incarnation some 10,000 years ago. These have resulted from natural climate change, development of irrigation in the lake's basin during the past 4,000 years, and repeated shifts of the beds of the two influent rivers (the Amudarya and Syrdarya) from the Aral westward to the Caspian Sea or into the desert. The last factor, caused by both natural and human forces, appears to have been the primary cause of deep recessions, the most recent of which occurred during medieval times (13th to 16th Centuries).

3. The modern (post 1960) recession is different than its predecessors. For the first time irrigation is the dominant force driving a major recession rather than diversion of the Amudarya River away from the lake. This desiccation is the most severe for at least several thousand years and soon will become the greatest in the last 10 millennia. The chief factor leading to the modern drying of the Aral was the expansion of irrigation in the sea's drainage basin from the mid-1950s to the mid 1980s that went well beyond the point of sustainability, causing a marked decline of river inflow to the lake. Primarily irrigation and secondarily natural climatic cycles

[5] http://waterwiki.net/index.php/St._Petersburg_Statement_on_the_Aral_Sea

have been the dominant cause of the modern drying of the Aral. Global warming in recent decades has started to influence the water balance of the Aral and will become a more important factor in the future; however, it has not been a major cause of the Aral's desiccation to this time.

4. Diversion (redirection) of Siberian rivers southward to the Aral Sea Basin or the pumping of water from the Caspian to the Aral are not realistic options for solving water problems in Central Asia. They would be too expensive and complicated, would require complex international agreements, and have too many potentially serious environmental consequences. It would be wiser to focus on local and regional solutions to these key issues such as improved efficiency of water use in irrigation and efforts to preserve and partially restore remaining parts of the Aral Sea.

5. The Aral Sea depends on the Amudarya and Syrdarya rivers for its water. This inflow in turn is the key factor determining both the lake's size and ecological quality. Hence, an urgent necessity is proper management of the water resources of the Aral Sea drainage basin. This requires cooperation and collaboration among the basin states to solve the critical problems of water management, including water sharing, and the conflicts arising between the upstream and downstream states over the needs of irrigation versus maximization of hydropower output. The most important measure is widespread introduction of modern technologies and methods of irrigated agriculture as part of a program for reconstruction of outdated, inefficient irrigation systems. This would promote reduction of water withdrawals by the countries of the Aral Sea Basin and free water for the Aral Sea, which would aid in the restoration of that water body's unique biota. Working and lobbying for agricultural reform and rational water use is necessary at all levels of government and society in the Central Asian nations - from the individual user to decision-makers. This process must involve specialists as well as social-ecological organizations, associations and activist groups.

6. There is a long and rich history of Aral Sea studies dating from the middle of the 19th Century. Many high-quality, careful and scientifically sound investigations took place during the Russian Empire and the subsequent Soviet Union and resulted in a plethora of excellent scientific publications. Contemporary research and researchers should not ignore the valuable scientific contributions made during these periods.

7. Reports of the Aral Sea's death are premature. Although the Aral Sea of the 1960s is gone for the foreseeable future, sizable parts of the lake remain. The Small (north) Aral Sea has been partially, and so far very successfully, restored so that it again has significant ecological and economic value. Although the Eastern Basin of the Large Aral is lost, the Western Basin could be partially preserved and restored, if studies show this to be economically and environmentally feasible. Laudable efforts are also underway to protect and preserve parts of the Syrdarya and Amudarya deltas.

8. A new research approach is essential for the study of the Aral Sea, river deltas and surrounding region. It must be a balance of theoretical and applied science and involve collaboration of scientists from different disciplines and as many countries

as possible. Special efforts must be made to attract and engage younger scientists and researchers in order to secure long-term scientific commitment and continued international dialogue. IFAS (International Fund for Saving the Aral Sea) must co-operate with leading scientists from all countries of the world.

9. An international committee for interdisciplinary ecological monitoring and research on the Aral Sea needs to be established. Its focus should be to develop a comprehensive view of the ecosystems of the lake and immediate surrounding zone (especially the deltas of the two influent rivers). The charge of the committee should be analysis of available data as background for design of measures to improve ecological conditions and water management methods for the Aral Sea and its drainage basin. The Committee should give careful consideration to the ideas for improving the situation of the Aral Sea and Priaralie developed by the International Working Group of the United Nations Environment Program (composed of Western and Soviet experts) from 1990-1992. It also needs to coordinate and cooperate with the existing IFAS (International Fund for Saving the Aral Sea and Priaralie) to avoid duplication of effort, to ensure the most effective use of international donor funds, and to avoid interfering with the valuable work of this organization. The Committee should include scientists from a diversity of relevant disciplines, including, but not limited to, limnology, terrestrial ecosystems ecology, geography, geology, botany and zoology, ornithology, hydrology, agronomy, soil sciences, meteorology, historical sciences (anthropology, archeology and history), economics, and ichthyology. It is of critical importance to include local politicians and administrators as well as representatives from public bodies such as NGOs, and other stakeholders on the committee. A research team composed of experts from the Aral Sea region should also be established to carry out a long-term research master plan. As a key part of this effort, funding must be provided for the construction of a modern, well-equipped laboratory at an appropriate location in the Aral Sea Basin. Since many useful and pertinent raw data are fairly inaccessible (e.g., found on handwritten charts and the like) a concerted effort is essential to convert such data to easily accessible digital format. This would improve access to the data and would enable greater participation from the world scientific community.

MODERN ASPECTS OF USING NATURAL RESOURCES POTENTIAL OF TRANSIT RIVERS IN CENTRAL ASIA

The International Research and Practice conference on “Modern Aspects of Using Natural Resources Potential of Transit Rivers in Central Asia” was held from 10 to 12 November, 2009 at Taraz State University named after M.Kh. Dulati.

The conference focused on the issues of rational use and protection of water resources by interstate countries, integrated water resources management of transboundary rivers, international legal regulation of the use and protection of transboundary water resources.

The conference was organized by the Committee for Water Resources (CWR) of the Ministry of Agriculture of the Republic of Kazakhstan, akimat (state regional administration) of Djambil province, State-owned enterprise “Tarazvodkhoz” of the CWR, Kazakh Scientific Research Institutes of Water Management (KazNIIVH), Taraz State University named after Mukhammed Haydar Dulati and other water management organizations of Zhambyl province.

The participants were composed of foreign and native scientists, heads of organizations: Uy Fuyan, Deputy Director of Chinese Institute of Water Resources and Hydropower Research (Ministry of Water Resources), prof. Chzhan Chanchun, senior engineer of International Economic Cooperation Center, Ministry of Water Resources of China, Tere Helland, Head of Economic and Environmental Dimension (OSCE Centre in Astana), William Metzger, representative of the OSCE Centre in Astana, Abirov Abdulla, head of drainage department, Central Asian Research Institute of Irrigation named after Zhurin V.D. (SANIIRI), Chondiev Suyunaly Suerkulovich, deputy head of Talas Basin Water Administration, Water Resources Department, Kyrgyz Republic, Kichibekov Nurlan Itemirovich, head of the Kirov Reservoir Administration, Department of Water Resources of the Kyrgyz Republic, heads of basin inspections of CWR, etc.

The participants were welcomed by Mr. Seytimbetov D., Deputy Chairman of the Committee for Water Resources of the Ministry of Agriculture of the Republic of Kazakhstan, Mr. Akhmetov A., Rector of Taraz State University and Mr. Usenbaev E., First Deputy akim of Zhambyl province.

Conference was organized within the following 5 topics:

1. The interaction of natural and economic systems: theoretical approaches and methodological aspects of research.

2. Methodological approaches for evaluating and monitoring the natural resources potential in the transboundary territories.

3. Problems of improving the use and protection of natural resources potential of Lake Balkhash.

4. Socio-economic problems of development of transboundary territories.

5. Improving environmental management in trasboundary territories.

The presentations on OSCE activities related to IWRM water security in Central Asia was made by Terje Helland, Head of Economic and Environmental Division (OSCE Centre in Astana). He noted that IWRM should be based on two aspects - institutional changes and transfer of management responsibilities to the lower level. A number of conferences and training modules were held on the promotion of IWRM. In Kazakhstan, regarding IWRM OSCE recommends to strengthen the

status and increase financing of water sector; to transfer functions to one agency; to give greater status to the Committee for Water Resources of the Ministry of Agriculture, etc.

A total of 25 presentations were heard, 3 of which were presented at the plenary meeting by the heads of water management organizations, scientists and teachers.

In the addresses of participants, urgent problems were raised, including water availability in Kazakhstan and neighboring states, shared use of transboundary water resources, creation of international water-energy consortia to address these issues.

Moreover, conference participants showed concern about deterioration of the meliorative condition of a large irrigated area in Dzhetysay district of South Kazakhstan province due to resalinization of irrigated lands entailed by inadequate operation of drainage systems.

The contents and topics of presentations on the current state of the Aral Sea and Lake Balkhash were relevant and worthwhile.

The presentations on the state and problem of the Chu-Talas river basins, the methodological provision of equitable use of transboundary water resources, participation Kazhydromet in the Kazakh-Chinese cooperation in the use and protection of transboundary rivers, monitoring of water bodies in the Tobol River basin, etc. arouse great interest among the participants.

Conference participants noted the relevance of speeches of leaders of the basin inspections of the Committee for Water Resources (CWR) of the Ministry of Agriculture of the Republic of Kazakhstan, which touched on the pressing issues and possible solutions to regulate the use and protection of water resources.

Recognizing the high level, relevance and practical significance of the presentations and addresses, realizing huge political, economic, scientific importance of the use of natural-resources potential of transboundary rivers, the participants adopted the following recommendations for:

- the governments of the Aral Sea basin countries to activate domestic activities for the early improvement of the situation in the Aral region;

- the governments of the Republic of Kazakhstan and China to take some measures to prevent the recurrence in Lake Balkhash of the ecological catastrophe similar to one that occurred in the Aral Sea;

- the governments of Russia, China, Kazakhstan and Central Asian countries to ensure full implementation of the obligations assumed under the Agreement on a mutually beneficial and careful use of transboundary water resources;

- the Ministry of Agriculture of the RK and CWR to develop arrangements for technical maintenance of vertical drainage on irrigated lands of Dzhetysay district of South Kazakhstan province in order to prevent further deterioration of irrigated lands;

- the Ministry of Education and Science of the Republic of Kazakhstan to harmonize the three-stage model of higher professional and postgraduate education with a degree in “Hydraulic structures” by restoring the undergraduate level;

- the Government of the Republic of Kazakhstan to raise the status of the CWR, by giving it the status of an independent state body in connection with high importance of problems solved by CWR.

INTERNATIONAL WORKSHOP CONFERENCE DEDICATED TO THE 100TH ANNIVERSARY OF LAND RECLAMATION SCIENCE IN RUSSIA AND 85TH ANNIVERSARY OF THE A.N. KOSTYAKOV ALL-RUSSIAN RESEARCH INSTITUTE OF HYDRAULIC ENGINEERING AND LAND RECLAMATION (VNIIGIM)[6]

(November 24-25, 2009, Moscow)

International workshop conference was organized by the Directorate and the Academic Council of VNIIGiM on November 24-25 in honor of the anniversary of reclamation science and the institute. Participants of the Conference were welcomed by: Svintsov I.P., Academician-secretary of the Department for Land Reclamation, Water and Forestry, Academician of RAAS, Russia; Kizyaev B.M., Director of the All-Russian Research Institute of Hydraulic Engineering and Land Reclamation, Academician of the RAAS.

The following persons took part at the conference and presented papers: Svintsov I.P.; Kizyaev B.M.; Olgarenko G.V., professor, doctor of agricultural sciences, director of the land reclamation department of the Ministry of Agriculture of the Russian Federation; Schedrin V.N., academisian, director of RosNIIPM; Kozlov D.V., professor, doctor of technical sciences, rector of the Moscow State University of Environmental Engineering (MSUEE); Guber K.V., doctor of technical sciences; Kireycheva L.V., doctor of technical sciences; Bezdnina S.Ya., doctor of technical sciences. Speakers touched on the problems of development of the land reclamation science in Russia, VNIIGIM's role, cooperation with educational institutes and universities in training of personnel for melioration and water management, achievements and further development of irrigation and drainage in Russia, the concept of the Federal special-purpose program "Development of agricultural lands reclamation in Russia till 2020" etc.

The following persons addressed greetings to the VNIIGIM: Vakhonin N.K., candidate of technical sciences, director of Institute of Melioration (Belarus); Sukhovoy N.A., "Union of water and melioration specialists"; Dubenok N.N., academician of RAAS, dean of the Timiryazev agricultural academy; Omelianenko

[6] http://sic.icwc-aral.uz/releases/eng/169.htm

V.A., corresponding member of the Academy of water management sciences, first deputy of the director of "Natural resources" research institute; Tupikin N.I., candidate of technical sciences, director of "Meliovodinform" and others.

The numerous greetings for the institute have been read including congratulation of SIC ICWC by Prof. Dukhovny V.A.

The conference continued its work at the sections' meetings under the chairmanship of Volynov M.A., candidate of technical sciences.

Following reports were presented:

- Bystritskaya, candidate of technical sciences, VNIIGIM "Development of water charge in Russia;

- Davydov A.V. “The economic feasibility of the use of concession agreements in the water sector”

- Isaeva S.D., Bezdnina S.Y. et al, doctor of technical sciences, VNIIGIM “Recommendations and the system of measures for environmentally safe and economically efficient functioning of agribusiness”

- Kusher A.M., VNIIGIM “Use of computer technology to choose hydromeliorative structure in the open channel”

- Tolkachev G.Yu., Water Problems Institute, RAS “Geochemical evaluation of bottom deposits of the Ivan’kovskoye reservoir based on monitoring observations of 2001-2002”.

- Kiselyova O.E. “Forecasting of snowmelt runoff of small lowland rivers”

- Vlasov V.A., Federal State Educational Institution of Higher Professional Education MSUEE “Ecological-meliorative approaches to rehabilitation of small water bodies in urban areas”

- Galustyan A.G. (SIC ICWC) presented papers: "About SIC ICWC activity", "CAREWIB" project, "Experience of implementation of integrated water resources management in three countries of Central Asia".

The SIC ICWC activity, including the CAREWIB project and the IWRM-Fergana project were evaluated very highly by the participants; the positive opinions were delivered about the CAWater-Info portal and also about practical results of IWRM's principles implementation in the Fergana Valley. The publication published by SIC ICWC for the last year was given to the VNIIGIM library. The book about IWRM "From theory to real practice. Central Asia case study" attracted the particular interest.

All reports, presentations and literature within the framework of the conference were given to the Scientific and Technical Information and Publishing Division of SIC ICWC.

THE 5TH ASIAN REGIOANL CONFERENCE AND THE 60TH IEC MEETING OF ICID[7]

Delegation of ICWC composed of Polat O. Beysebekov (Kazakhstan), President of the Water Users Association of Kazakhstan, Kadirbek Beishekeev (Kyrgyzstan), Director of the Directorate of enterprises construction of the Water Management Department of Kyrgyzstan, Khasanov Kh., Deputy Minister of Melioration and Water Resources of Tajikistan, Ernazarov N.Sh., Deputy Director general of the Water Management Department of Uzbekistan, Mukhamedjanov L., secretary general of NCID of Uzbekistan, and Prof. Dukhovny V.A., SIC ICWC Director, honorable vice-president of ICID participated in the 5th Asian Conference of the International Commission on Irrigation and Drainage in New Delhi from 6 to 12 December 2009 . Unfortunately, the representatives of Turkmenistan could not participate in the conference.

Conference events were quite rich and combined with the 60th anniversary meeting of the Executive Committee of ICID.

The ICWC delegation could participate in the conference owing to the large preparatory work conducted by Prof. Chandra Madramoote, ICID's President, Mr. Gopalakrishnan, the ICID's Secretary General, Prof. Dukhovny V.A., the honorable vice-president of ICID, and also owing to the financial support of the World Bank, particularly Mr. Fields D. and Mrs. Nizamova I. The participants express great thanks to all of them.

India is home to the ICID, which was established here exactly 60 years ago in 1950 at the initiative of eminent Indian scientists and water management specialist prof. Gulati. The ICID headquarters is in New Delhi, India. India has organized six working panels of the Commission, including two Congresses and two Conferences.

Today India holds the 2nd place in the world in terms of irrigated lands area (87 million ha) after China and is the example of greatest governmental attention to the water and agriculture development It is confirmed by existence of the Ministry of Water Management at the Federal and the state levels, by the huge investments to the water sector (more than 8 billion USD per year), by the irrigation and water resources development and by governmental support of water sector. The fact that the Prime Minister of India, Manmohan Singh inaugurated the Conference with his introduction speech at the presence of the ministers of water management of the country and states and 4 ministers (water management, finance, economy and information) took part and gave the closing addresses to participants, speaks for itself. The Prime-Minister had emphasized in his speech that population growth

[7] http://sic.icwc-aral.uz/releases/eng/170.htm

creates additional water demand, decrease of water availability per capita, climate impact increase. Indian government declared "National water mission", which is aimed to implementation of IWRM, water saving, disposal minimizing and ensuring more equitability of water distribution.

The "National water mission" includes database accessible for broad use especially for assessment and monitoring of climate change and its impact on water resources; involving stakeholders into water saving and protection; increasing effectiveness of water resources use by 20%. The "National water mission" will develop new regulation mechanisms including legal positions and financial relationships, as well will promote realization of new technologies: groundwater artificial recharge, sprinkling and drop irrigation, increasing productivity of agricultural production aimed to ensure the food security of the country. The priority of the country is the increasing of annual growth rate of agricultural production twice (by 4% in the next year). Effectiveness of gravity irrigation has to be increased from 40 up to 60% and of wells - from 35 up to 65%. During eleventh planning period - 2007-2012 - the country will add 16 million ha of new irrigated lands.

The country is implementing the program of consultative service through involving of the institutes and universities as well the program of women participation in irrigated agriculture.

The program on irrigated lands and water management development was widely presented at the Conference and its thematic sessions. The Ministry of Water Management of India is planning to add 64 billion m3 of water of dams under construction and another 108 km3 of water from further planned dams to 4700 existing large dams with the capacity of 255 billion m3 of water. At the same time, India will cover its water demands up to 2050 by existing water resources (including 433 km3 of the exploiting groundwater in consideration with future artificial groundwater recharge). But, there will be water resources deficit in some Indian states (Radjastan, Gudjarat, Andra, Pradesh, Karpataka and Tamil Nadu). Therefore, the interbasin diversions of runoff aimed to compensate water deficits and to avoid the annual and seasonal runoff/precipitation variation are planned by the state. Particularly the hydrographs and characteristics of runoff and precipitation of the Himalayan watersheds and of the peninsula were identified. There were found more than 30 dependencies between hydrographs and characteristics of runoff and precipitation. These findings can be used for planning additional water resources (up to 200 km3) during the dry seasons. Rivers with the great "donor capacity" are Brahmaputra, Mahandi, Godavari and western rivers flowing from the western coastal zone[8]. Additionally India gives more attention to develop the WUAs, which amounted already 56,000, as well to control soil salinization and waterlogging which reach 3 and 6.45 million ha accordingly. They probably can be increased up to 13 million ha[9].

[8] Water Resources development in India, INCID, by edition C.D. Thatte, A.G. Gupta, ML Boweda, NDelhi, 2009, 173 pp.
[9] A.K. Bajaj, Water resources and irrigation development in India, ICID Newsletter 4, 2009, p.2

The ICWC delegation took part in the working group meeting on climate change(December 7, 2009), in the meeting with the President and the Secretary General of ICID, in the special working team "ST-ARAL"(December 8, 2009), which discussed the work results together with the foreign representatives. The high importance of the ICWC activity on the CAREWIB information system development, the training activity, as well successes in IWRM development and the irrigation systems automation was noted within the meeting.

Participants of the working team meeting had worked out proposals on transforming the "ST-ARAL" into the working group "Irrigation and drainage in the countries in the social-ecological transforming conditions" due to expiration of the term of responsibility. The proposals were presented by Prof. Dukhovny V.A. at the meeting of Standing Committee on Strategic Planning and were approved and included after into the EC ICID report and adopted. Prof. Kovalenko P.I., Vice-President of ICID, was elected as the chairman of the working group, and Prof. Dukhovny V.A., Honorable Vice-President of ICID was assigned as the deputy chairman of the working group.

During the work of the working group and EC, it was stated that Kazakhstan and Uzbekistan are the active members of ICID, and Kyrgyzstan did not pay one's subscription for 2 years and Tajikistan - after 2002 too. Turkmenistan became a member of ICID but paid no entrance fee nor periodic fees. The EC ICID and headquarters appealed to the heads of national committees of those countries (Kyrgyzstan, Tajikistan and Turkmenistan) to renew their activity in the ICID (item 12 of the Planning Committee protocol). It was noted also that only Uzbekistan participates in other working groups (Drainage, Climate, Finance) but the representatives of other countries are absent in the working groups.

At the ICID Executive Committee's meeting, Prof. Dukhovny V.A. pointed out that such situation is caused by difficulties of our countries' participation in the working groups meetings because of financial problems He has suggested that the working group leaders to be turned to organizing their work as the e-information exchange and e-conferences and also to seek the financial resources for participation of the working group members in the seminars because it is very important for countries especially with transition economy. This proposal was adopted by the EC ICID.

The ICWC delegation's members have acted as main organizers of ICID Special session on the Aral Sea Basin "Water and Food Security in Central Asia" (December 11, 2009). President Chandra A. Madramootoo emphasized the great importance of the Aral Region as one of the key regions in the World where methods and approaches to solve the complex water and food security problems related to transboundary rivers and the increased stress related to climate change and social problems were tried out. Here the cooperation scenarios between not only the water management organizations but at the inter-sectors level to overcome competition especially between irrigation, power engineering and ecology are also tried out.

In the opening speech and the key presentation "Water and food security in the

region" Prof. Dukhovny V.A. had emphasized the role of political wills of the region's countries on the cooperation development and had noted importance of the meeting of the states' heads of 28 April 2009 in Almaty for further strengthening of cooperation on transboundary waters. Having shown the water availability during dry year 2008 and all course of mutual relation, he has presented a complex of measures, which should be undertaken within the framework of region's countries interaction for overcoming certain hydro-egoism aspirations. It is needed, firstly, to complete the signing of the Agreement on the Syrdarya river, revise the Agreement on the Amudarya, to develop the methodical approaches on assessment and payment for damages caused by break of agreed water distribution modes and plans, as well as to develop the legal base of cooperation within IFAS on the basis of statutory provisions of the International Water law. It is very important that all countries acceded to both Conventions (1992 and 19979) and thereby demonstrate their adherence to support the UN line of water security ensuring.

The reporters of the region's countries mainly have followed this line of behavior. Mr. Beisebekov P., representative of Kazakhstan, had demonstrated projects on restoration of Northern Aral Sea and Syrdarya delta, on the natural and ecological potential of "deep places" in the region. He stated that "these projects in the Aral Sea Basin and their objects have to become as "spots" of the progress on the integrated solution of the water management problems and dissemination of modern innovation experience in the rehabilitation of the natural water bodies and irrigated lands, novel reconstruction methods, organization of quality operation of irrigation and drainage systems and efficient water use".

Mr. Beishekeev K., representative of Kyrgyzstan, had noted the great progress achieved by the republic in creation and development of WUAs, in restructuring of water sector, stabilizing and reducing water intake from all water sources. Having emphasized the role of hydropower development for satisfying the fuel and power needs of the republic, he stated that "construction of Kambarata HES-1 and HES-2 will allow to satisfy not only the energy needs in the republic but also possibility to the Toktogul waterworks operation in the irrigation regime for our neighbors' benefits."

Mr. Khasanov Kh., Deputy Minister of water resources management of Tajikistan, demonstrated the role and importance of water management improvement for the republic as the key sector of its development and progress. “Scientifically grounded and ecologically acceptable level of total water use in the region is determined in volume of 80 km3 per year. Whether or not we want or not, this is a limit determined by the nature. And we have to learn how to follow it even if we need great efforts to do this. Experience of countries, which obtain up to 4 tons/ha using 5000 m3/ha in the similar natural and climatic conditions, indicates the great potential of water saving.

According to above-mentioned statement, it is supposed that implementation of the water saving ideology as a base of regional water strategy and all actions on further water resources development and management requires a large preparatory work.

Parameters and factors of each planning zone, which consists of river's reach and permissible area of irrigated land inside the country, and then within a whole country in the basin have to be determined, analyzed and evaluated".

"The special task is to analyze the water losses caused by organizational mistakes such as wrong water distribution because of insufficient information. These water losses numbering billions m3 have to be discovered and mechanism to avoid and prevent it has to be elaborated by regional and international experts jointly.

In connection with the international nature of the problem of the market relations between countries - water users have to be based on the international water law. As to the transboundary watercourses use it means that any water overuse must be compensated. Saving water use is more beneficial for water user than expensive water delivery from outside.

Recently a lot of debates and negotiations on water and energy problems are being carried out between Central Asian countries. One has the impression that this process is supported with certain aim by some interested stakeholders. Particularly it is asserted that implementation of water-power projects in Tajikistan will damage the neighboring countries. In connection with this, I would like to note that such statements are completely baseless. Construction of water-power structures in Tajikistan do not lead by no means to water decrease of transboundary rivers in the region and to deterioration of ecological situation.

Today it is needed to draw attention on such thing that we must not prolong people's suffering which has been lasting for last 17 years in the winter. I appeal to those representatives of fraternal peoples of Central Asia who are here, and I would like to stress clearly and precisely that the people of Tajikistan is one of the ancient people of this territory and lived with its neighbors for many centuries peacefully and in friendly air. Having continued the heart-warming tradition we never leave our neighbors without water. We always will fulfill the commandments of our great parents from the Hadis of great Islamic prophet: "The service for neighbor is the service for the Most High".

Mr. Ernazarov N.Sh., Vice-chief of the main water management administration of the Ministry of Agriculture and Water Resources Management of Uzbekistan, have spoken about water management principles in the Republic, about the role of water management for well-being of rural people and for the whole country, about development of the State Program for 2008-2012 on coordinated improvement of irrigated lands, ensuring the ecological and food security. Uzbekistan now has reached close to the self-provision with food under water deficiency of 20% annually from the agreed water limit of transboundary rivers. Referring to the speech of the President of the Republic at the council meeting of supreme leaders in Bishkek, 16 August, 2007, he stated approaches of Uzbekistan, which are as followings:

- Problems on use of transboundary water resources of Central Asian rivers have to be solved in consideration of interests of more than 50 million people living in all countries of the region;

- Any actions implemented on the transboundary rivers must not negatively affect the existing ecological and water balance of the region;

- The active international legal base on water use and ecology, particularly "UN Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 1992", and "UN Convention on the Law of the Non-navigational Uses of International Watercourses", 1997 have to become the basis for development of the efficient system on the transboundary water resources sharing in Central Asia;

- There have to be guarantees that damages from regional country when the hydraulic engineering structures are under construction stage on the transboundary watercourses have to be excluded, and construction of structures will not lead to the negative ecological consequences and will not disturb the existing balance of all countries-waterusers along the river;

- The projects on water resources use of transboundary rivers including the hydraulic engineering construction have to be implemented after preliminary comprehensive independent expertise under transparency principle and full information awareness of stakeholders;

- The projects have to be implemented on the basis of constructive approach and compromise in consideration of the other states' interests and ensuring the following very important conditions:

    - water level has not to be decreased for downstream countries;

    - ecological security of the region has not to be deteriorated.

Representatives of various countries - ICID's members including Prof. Dr. Bart Schultz, Honorary president, some vice-presidents, the heads of national committees on irrigation and drainage from European countries had noted that Central Asia has advanced far on development of its approaches for impact assessment on transboundary waters and on implementation of IWRM The line undertaken by countries to involve water users and to increase water and land productivity and optimizing the irrigated lands use and improvement of organizational forms attracts attention of European water communities and activates their intention to participate in this process. In particular, the IHE-UNESCO institute represented by Prof. Dr. Bart Schultz, has developed the training program for joint work with ICWC, which will be implemented in 2010-2012; the collaborative project on modelling the future

development of water resources management in the region and in each of countries etc. President Chandra Madramootoo had expressed confidence that ICID's authority and in particular, he himself will make all efforts to attract further the financial resources for the collaborative work with ICWC's members and its working bodies.

At the end of meeting, the Vice-President Kovalenko I.P. had presented materials substantiating the activity and work program of new working group "Irrigation and Drainage in States under Social-Economic Transformation ".

Prof. V.A.Dukhovny took part in the "Water Governance" session organized by Mr. M.Svendsen, the chairman of USCID. He presented the report, which was prepared jointly with Mrs. D. Ziganshina for the special working group at the General Assembly of the World Water Council. This report, as the Central Asia case study, is dedicated to the problem on further increasing of crisis of international management of transboundary waters if the world water community will not mobilize efforts to overcome "the water-power egoism". The outcome of water governance system has to be the legal base, which is ensuring the water right protection for all people in a sustainable manner. The water authority has to be considered as the base for decision-making on all problems (operational management, regimes' control, quality control, water development et.) for decision-makers and management system at all levels of water hierarchy. The proposed measures were approved during the debate and Mr. Svendsen (the working group manager) and Mr. Wolf were authorized to elaborate the ICID position on this problem in order to advocate interests of irrigated agriculture and ecology.

At the EC Meeting on December 11, 2009:

- parties' proposals on holding regular activities were approved:

– 6th Asian Conference and 61st IEC Meeting – Indonesia, Jakarta, October 10-16, 2010;

– 3rd African Conference, Mali;

– 24th European Regional Conference, Groningen, Netherlands, May 16-20, 2011;

– 21st Congress and 62nd IEC Meeting – Tehran, Iran, October 15-23, 2011;

– 63rd IEC Meeting, 2012, Australia;

– 22nd Congress and 65th IEC Meeting, 2014, South Korea;

Following reports were approved:

- Report of the Secretary General of ICID;

- Report on the participation of ICID in the 5th WWF;
- Report on the development of publications and web-site noted the increase in the number of visits to the website and electronic library up to 1000 visits per day;
- Reports of the Committees of ICID and Financial Report;
- WatSave award in the amount of $ 2000 was given for development of software to choose elements and tools for the surface furrow irrigation. At the request of Prof. Dukhovny V.A. Australian Committee promised to distribute the software among NCID;
- three retired vice-presidents were replaced by newly elected ones:
  - Willem Vlotman – NCID (Australia)
  - Laszlo Hadi – NCID (Hungary)
  - Bajaj – NCID (India).

In the end, the group of participants was awarded the badges of honor, among them an honorary vice-president Prof. Dukhovny V.A.

It is pleasure to note that at the ICID Conference reports of the representatives of our region were presented and published, including:

- Experience in improving water productivity at irrigation level –, Mukhamedjanov Sh., candidate of technical sciences, Uzbekistan;
- Assessment of IWRM Fergana efficiency at WUA level – Alimdjanov A., candidate of technical sciences, Uzbekistan;
- IWRM – as a path to sustainable development in Central Asia – Sokolov V., candidate of technical sciences, Uzbekistan;
- Analysis of water use in the Amudarya as a case study of simulation of Khorezm oblast –Sorokin A., Nazariy A., Uzbekistan.

Despite of positive influence of participation of ICWC delegation in the conference it is a shame that the young professionals from our region are not yet involved in the ICID working groups because they are the base of future international relationships development between the region and the world community. Probably the ICWC members do not understand the importance of such events for development of knowledge about the world experience as well as for demonstration of our professionals' potential.

THE 5TH SESSION OF THE MEETING OF THE PARTIES TO THE CONVENTION ON THE PROTECTION AND USE OF TRANSBOUNDARY WATERCOURSES AND INTERNATIONAL LAKES[10]

Representatives of all countries - ICWC's members - had opportunity to participate in the fifth session of the Meeting of the Parties to the Convention by invitation of UNECE convention secretariat. The following persons took part in the meeting:

Tultabaev M., Ministry of Environment; Kazakhstan;

Uzakbaev Ch., Water Department, Ministry of Agriculture, Water Management and Processing Industries; T. Neronova, State Agency for Environmental Protection and Forestry; Kyrgyzstan;

Saidi Yoqubzod, Ministry of Melioration and Water Resources; N. Amanov, Republic Committee on Environmental Protection; Tajikistan;

Khamraev Sh., Ministry of Agriculture and Water Resources; Umarov N., State Committee for Nature Protection; Uzbekistan.

Unfortunately, a representative of Turkmenistan did not arrive as well as a chairman of Committee on Water Resources from Kazakhstan who was indicated in the participants' list. Moreover the following people participated: From the regional bodies: Ibatullin S., Executive Committee of the International Fund for saving the Aral Sea; Dukhovny Victor., Scientific Information Center, Interstate Commission for Water Coordination of Central Asia; From NGOs: Kamalov Yu., “Board of Aral protection”; I. Chistyakova, CARNet; G. Djamalova, REC CA.

Mr. Moritz Leunberger , Vice-chairman of the Federal office on environment of Switzerland, has presented a wide assessment of governmental attitude to water situation in the country, Europe and in the World in his greeting. The Government is greatly concerned by water stress increasing and is doing efforts to mitigate this aggravation especially in connection with climate change. One of such regions is Central Asia where by 2080 the temperature is expected to rise up to 4 degrees of centigrade and where the Switzerland intends to continue its support on adaptation to this dynamics by the monitoring strengthening and IWRM implementation. “Water is not responsible for climate change, but water crisis is increasing as far as climate is changing”. Switzerland is preparing for the Ministerial Conference "Environment for Europe" which will be held in Astana in 2011 under slogan "Sustainable Development for Water and Water Related Ecosystems".

The delegation of Uzbekistan had welcomed participants of the session, had thanked the secretariat and Government of Switzerland for organizing of this event and for

[10] http://sic.icwc-aral.uz/releases/eng/168.htm

hard work on the Convention transforming into efficient mechanism of shared transboundary water management. Mr. Khamraev Sh.R. noted that Uzbekistan had acceded to both conventions (1992 and 1997) and called on neighboring countries to accede these important documents on international water law.

The session's program was aimed on both to summarize previous action plan and to develop a plan of measures within the proposed activity development on 2010-2012 and onward.

Adoption of the Guide to Implementing the Convention was the most important among other issues. Ahead of the conference Uzbekistan had introduced a number of remarks aiming to hardening of the International Water Law that could improve a guarantee of water availability for water users in the basin. Mr. Khamraev Sh.R. and Prof. Dukhovny V.A. have presented their remarks on the basis of analysis of the situation in the Syrdarya basin in 2008-2009. These remarks are as follows:

- need to focus in the Guide on the rules of actions regarding quality and natural requirements for rivers firstly of the flow regime meaning exclusion of unauthorized actions resulting in damages and losses of bordering countries;

- to determine clearly margins of sovereignty within basin meaning a need to coordinate all actions not only along the river but also on the whole catchment's area;

- need of the detailed recommendations on application of such main rules of the Convention as "reliable and equitable use", "non prejudice", "a limited sovereignty" and their interconnection.

Although all other countries implicitly supported the Guide, the Chairman asked the delegation of Uzbekistan to express a final opinion. Mr. Khamrayev agreed on condition that the work on the governance will continue to take into account emerging conflict situations in order to obtain a clear framework for using the Convention.

The proposal of Uzbekistan was marked by Chairman of the Law Council in his final generalized report and also was included in resolution in which the Law Council was recommended to continue work on improving the Guide in consideration of comments and evaluation of critical situations on our rivers.

During discussion, the representative of Afghanistan reported about absence of country's policy on transboundary waters though the National Water Council was established and new ecological law was adopted. He emphasized that downstream countries are increasing their water potential that can lead to future conflict. Afghanistan intends to join to the Convention and has started procedures through diplomatic channels. The country needs very much the information exchange, trainings and knowledge about modern experience in irrigated farming.

During discussion of water resources monitoring, Mr. Umarov N., Chairman of the State Committee on Environment of Uzbekistan, had noted importance of data exchange about water quality between riparian countries and various agencies, and suggested to develop mechanism of interagency and transboundary barriers overcoming.

Mr. Uzakbaev Ch., Deputy director of Water Resources Department of Kyrgyzstan, had reported about country's experience on national dialogue about sectoral policy of financing water supply in the country that provided the strategy to ensure achievement of MDGs.

Special High-level Segment on Transboundary water cooperation in Central Asia had discussed situation and further development of collaborative works with consideration of works connected with the Convention. Mr. Ibatulin S., Chairman of EC IFAS, reported about work directions, which are being considered by countries-participants and regional bodies for implementation of Statement of Heads of State of 28 April 2009 and will be considered by EC IFAS at the nearest time and presented to country's leaders for approval.

Mr. Saidi Yoqubzod, Minister of Melioration and Water Resources of Tajikistan, had emphasized the water distribution unevenness in the region: 80% of water resources are originated in Tajikistan and Kyrgyzstan, but 85% of water resources are used by downstream countries. Water problems are aggravated by climate change and at the same time they exert an impact on socio-economic situation in the region. The problems solving is possible on the basis of water saving in the irrigation (where losses are 40%) and more rapid development of the hydropower engineering potential. The latter will allow increasing not only electricity production but also sustainability of water delivery for irrigated agriculture. He called on to shift from words to concrete dialogue including participation of other countries in the waterworks construction.

Mr. Shavkat Khamraev , Deputy Minister of Agriculture and Water Resources of Uzbekistan, reported that there is some interaction between national and regional bodies that requires special attention regarding to determination of releases regime The current situation when holders of HES press the unauthorized releases regime, is very dangerous both for irrigated agriculture and for Nature. The compulsory tight rules for flow regulation by reservoirs are needed. Rules when no one can feel themselves as a holder of river should be laid down. The consensus is to be found because growth of disagreements generates conflicts. Uzbekistan, being adhered to the Convention, fulfils all commitments on support of cooperation and regional bodies. We think that it is a time to start development of the strategic plan on transboundary basins development.

Deputy Director of the Water Department of Kyrgyzstan stated that after collapse of the USSR some bilateral and multilateral agreements were concluded in order to keep previous bodies - BWOs. Now neither ICWC nor BWOs play any vital role. He concluded that these bodies are to be reorganized because they have no enough

authorities to resolve any disagreements and conflicts. (Prof. Dukhovny had disagreed with that position. He told that this speaker likely forgot about the revised ICWC Status which was developed by the Work Group over the period of 2 years and adopted at the last ICWC meeting under the chairmanship of Mr. Koshmatov, Vice Director of the Water Department of Kyrgyzstan). He told that the most successful case of bilateral cooperation is the Chu-Talas Commission activity.

The representative of Afghanistan had raised a question about participation of his country in the negotiation process on the Amudarya River and suggested to keep them in mind in all activities in the region.

Mr. Klimchuk, representative of newly established UN Center on Preventive Diplomacy, had informed about Center's work plan on strengthening cooperation in the region.

Speaking for the second time after the break in place of the Minister of Environment, Mr. Yakubzod again returned to the issue of inefficient use of water for irrigation and the need to develop hydropower as a means of reducing the burden on the climate.

Mr. Umarov N. had concentrated attention on climate change and its impact on situation in Priaralie. The strong warning for neighbors about uncoordinated actions on transboundary water bodies which aggravate the existing situation especially in the Amudarya basin was given in his report. He also called on to ratify Conventions and to implement their provision. Using own position as ICSD's Chairman, he informed participants about intention to give new impulse to the regional ecological cooperation by creation of unified system of ecological monitoring and by revising the indicators of nature state.

The representative of Kazakhstan had also expressed concern about melting of glaciers and made unexpected allegation about possibility to save 70 billions cubic meters of water in irrigation.

Mrs. Neronova T. informed about situation with glaciers in Kyrgyzstan and gave the warning prognosis about their possible disappearance to 2050. Special National Committee on adaptation to climate change was established in the Republic.

Prof. Dukhovny had demonstrated ICWC's measures on strengthening of cooperation between countries: dialogue between national and regional teams, development of regional information system, organizing the unified regional training system, arrangement of works on regional projects for water use improvement.

Collaborative work must be based on unrestricted information about river runoff use provided by ICWC but not on the newspaper or dilettante speculations like the statement of Kazakh representative. If he looked at the real data, he could be sure that countries of the region used 88 billion cubic meters of water for irrigation of 7.8 million hectares of lands in 2007 or a little more than 11 thousand cubic meters of

water per hectare. But in the dry 2008 aggravated by activity of Kyrgyz power engineers, when irrigated fields of 4 countries received 60% of planned water at 75% of the natural water content, 70 billion cubic meters were delivered for irrigation in the basin. All of this amount could be saved but only drying up irrigated fields!!!

Yusup Kamalov, Chairman of the Union for the Defense of the Aral Sea and Priaralie on behalf of non-governmental organizations had informed about situation in this region where million tons of dust from dried sea bed create additional load for climate. These phenomena are beyond attention because there is no any project that is aimed to save the Sea and to reduce consequences of its drying. He was against rivers use by upstream countries as runoff ditches and suggested to use the economical mechanisms on the basis of principle "a polluter must pay".

At the closing part of the meeting, parties considered and adopted resolutions about efforts of Secretariat for last three years, the work plan on the follow-up period and the plan for financing.

The work meetings were held. Particularly, the Ministry of Environment of France suggested its assistance for improvement of ICWC information system for Syrdarya River.

1st MEETING OF THE WORKING GROUP ON IMPROVEMENT OF ORGANIZATIONAL STRUCTURE, CONTRACT & LEGAL BASE AND ON DEVELOPMENT OF ASBP-3

Almaty, 10-11 December 2009

The meeting gathered about 50 representatives of national and regional organizations and international agencies providing support for EC IFAS.

The meeting agenda consisted of 4 sessions (two sessions per day):

1. Revealing the weaknesses of regional organizations and related national bodies, as well as regional and national legal base (Chairman - B. Libert, UNECE Regional Adviser)

Results of questionnaire sent to all key organizations on behalf of EC IFAS were discussed within session 1.

2. General directions for the improvement of organizational structure and contract and legal base (Chairman - B. Libert, UNECE Regional Adviser)

Within the 2nd session, international experts S.Vinogradov and Yu.N. Steklov presented their reports dedicated to proposals on improvement of organizational

structure for the Aral Sea Basin and of contract-legal base.

3. Conditions for the ASBP-3 development (Chairman - M. Krashnay, UNECE Regional Adviser)

The preparation process for ASBP-3 was discussed within the 3rd session.

4. Proposals on main directions of ASBM-3 development (Chairman - M. Krashnay, UNECE Regional Adviser).

Selection criteria for ASBP-3 themes and content were discussed within session 4.

B.Libert presented the key report: There is a task to create the ASBP-3 and countries are making efforts. There is frustration concerning finances and results. The ASBP-3 - is the last opportunity to attract donors' interests! What should be done? It is necessary to create a framework (list of projects), however not too ambitious. Clear assessment through the following chain is needed: problem = money needed – money in hand. It should be remembered that the donors already have their strategy in the region, so it is important to coordinate with donors. The question "How to create the responsibility for the ASBP-3 implementation?" should be answered. It is important to have a funding mechanism - keep in mind that donors prefer to work directly with the project, rather than create a common fund. Countries must clearly show the co-financing and a linkage mechanism for the flow of internal and external finances.

While delivering speeches, the participants mentioned that priority should be given to the development of a new water allocation strategy. They stressed on the importance of clear dependence of water supply on available water resources and of technique for assessing damages to regulate the flow in an irrigation mode to meet irrigation demands.

Steklov Yu.N. (international expert) proposed an entirely new regional coordination structure under the aegis of IFAS through Coordination Councils at different levels.

Sokolov V.I. (SIC ICWC) emphasized that it would be cheaper to strengthen the existing structure by working mechanisms rather than alter it and create new ones: the main problem is the absence of active general fund focusing on and coordinating flow of funds from countries and donors; no coordinated information exchange. There is a need for regulatory mechanism to deal with disagreements. It should include institutional (social councils + platform for coordination of sectors), legal, economic, financial and technological elements - all based on regular consultations under the auspices of IFAS. There is no coordination in capacity building (isolation of science, shortage of personnel); no coordinated system of education and professional development. Detailed analysis of the main provisions of the regional strategy in 1997, the diagnostic report of the UN Special Programme for the Economies of Central Asia (SPECA), draft agreements of the ADB RETA project,

etc. should be carried out. The main aspect is the transparency of process. Since countries have their relations with donors, IFAS conducts its own negotiations with the donors-- all parties must inform each other to avoid mistrust and duplication.

We need to create a platform of sectors' interaction, i.e. interaction of water management bodies with energy, environmental protection agencies, Hydromet services and Emergencies Ministry. Organizational structure and legal framework of interaction is needed.

Yarash Pulatov (Tajikistan) proposed to create an electronic conference under IFAS for operational discussion of works on the ASBP-3. He pointed out the importance of supporting the idea of establishing a Council for donor coordination. Given the realities of the two opposing positions of upstream and downstream countries, it is required to establish a Coordinating Council under IFAS, which will be based on the concept of IWRM.

In conclusion, Ibatullin S.R. (IFAS) noted that consensus was reached on several issues, such as water quality accounting, enhancement of cooperation, creation of basin councils, IWRM at the basin level, agreements and personnel. However, there are other issues requiring clarification and approval.

EC IFAS will continue coordination of the working group for the ASBP-3 development, the final version of which should to be presented to the EC IFAS in June 2010. It is agreed that the second meeting of the working group of experts will be held in March 2010.

GENERAL ASSEMBLY OF THE INTERNATIONAL NETWORK OF BASIN ORGANIZATIONS[11]

The General Assembly of the International Network of Basin Organizations took place in Dakar (Senegal) from 21 to 23 January 2010, at the invitation of the Organization for the Development of the Senegal River (OMVS).

The meeting was held under the auspices of His Excellency the President of the Republic of Senegal Abdoulaye Wade and honored with the effective presence of the President of the Senate, the President of the National Assembly, the President of the Economic and Social Council, the Prime Minister and the Minister for Energy of the Republic of Senegal, as well as of the Minister for Energy and Water of the Republic of Mali, the Minister for Hydraulics and Sanitation of the Islamic Republic of Mauritania, the Vice-Mayor of Dakar and the High-Commissioner of OMVS.

The Assembly gathered 268 delegates, representing the Member Organizations,

[11] http://sic.icwc-aral.uz/releases/eng/173.htm

water administrations or observers from 41 Countries, as well as the representatives of several interested multilateral organizations (including GWP) and International Commissions or Authorities for transboundary basins. Central Asia was represented by Sokolov V.I., Deputy Director of SIC ICWC.

The main outcomes of General Assembly of INBO were presented by the participants in the Declaration of Dakar, in which there are the following aspects to attract special attention.

Integrated and sound water resources management is more than ever an unquestionable priority when this scarce resource is already a limiting factor for sustainable development in many countries of the world. Unprecedented mobilization is essential for humanity to win the water battle and prepare the future. Organizing this management on a basin scale is an effective solution which deserves to be developed, fostered and supported.

INBO intends to actively contribute to the efforts for adapting to the effects of climate change:

- by supporting programs for identification of the desired measures through the development of information systems;

- by allowing the populations to be better warned and informed on the evolutions and behavior that are likely to overcome the difficulties;

- by protecting and adapting natural objects in basins and infrastructures within the framework of basin development plans;

- by supporting the development of better coordinated agricultural and forestry policies regarding deforestation control, irrigation and water storage in particular .

It is especially necessary:

- to improve the collection of information for modeling of the phenomena and the development of scenarios leading to an identification of the most vulnerable black spots and recommending priority actions for obtaining suitable answers,

- to reinforce the water management institutions to guarantee a long-term and rational meeting of water needs of the populations, industry, hydropower, agriculture, fish farming, tourism and of the ecosystems.

Investing in water management is profitable! This contributes to sustainable development and enhances social, economic and environmental potential in the long term. Reduces adverse effects of floods and droughts, fights against wastages and pollution and protects aquatic ecosystems, as well as allows reducing poverty.

INBO member organizations have experience and expertise which they invest in a common database, which in turn is available for all countries and organizations

willing to use it to better manage the basin.

The Assembly underlined the great interest of publishing “Briefs”, such as that on basin management development, jointly published in 2008 with the “International Water Management Institute” and the GWP - Global Water Partnership. Particularly, it is important to note the joint publication with the Global Water Partnership “Handbook on IWRM at the basin level, which enjoys great popularity in the world and has been translated into 9 languages, including Russian.

The drafting of a second Handbook on transboundary river basin management with GWP and UNESCO is expected in 2010.

The Assembly underlined successes of close cooperation between INBO's regional networks and regional GWPs in some regions (Africa, Europe, Central Asia and Caucasus) regarding implementation of IWRM principles at the basin level.

The Assembly was informed about establishment of the Network of Russian-speaking Basin Organizations of Eastern Europe, Caucasus and Central Asia (EECCA-NBO), which started in Moscow on 11 and 12 December 2008. Its provisional secretariat chaired by Mr. Victor Dukhovny is situated at the SIC ICWC in Tashkent.

The Assembly unanimously nominated Mr. Mohamed Salem Ould Merzoug, an academic, a researcher, a former Minister and current High Commissioner of the Organization for the Development of the Senegal River (OMVS), as the new INBO President until next General Assembly which will take place in 2013 in Brazil.

It also nominated the members of the World Liaison Bureau: Mrs. Madeleine Jouye de Grandmaison (France) and Mr. Monsieur Laszlo Kothay (Hungary) as former Presidents and Mr. Vicente Andreu Guillo, as next INBO President in 2013 (Brazil), as well as the representatives of the Permanent Technical Secretariats: Mr. Jean-Francois Donzier (France) also representing EUROPE-INBO, Mr. Dalto Favero Brochi for LANBO, Mr. Luis Firmino Pereira for MENBO, Mrs. Daniela Radulescu for CEENBO, Mr. Adama Sanogo for ANBO and Mr. Javier Ferrer for MENBO, Mr. Normand Cazelais for NANBO and Mr. Vadim Sokolov for EECCA-NBO.

The Assembly awarded unanimously the title of «honorary INBO expert», for services rendered to the Network, to Mr. Laszlo Kothay, and to Messrs. Jacky Cottet, Walter Mazzitti, Victor Dukhovny, Pierre Roussel, Ovidiu Gabor, Reginald Tekateka and Tamsir Ndyane.

The General Assembly proposed to the organizers of the 6th World Water Forum that INBO organizes preparatory work on « the creation and strengthening of Basin Organizations for transboundary cooperation in the world» in collaboration with other relevant and representative organizations concerned, UNESCO and FAO in particular.

The Assembly mandated the World Liaison Bureau for preparing INBO

participation in the 6th World Water Forum of Marseilles and for also planning active partnerships with relevant organizations for joint events at the Forum. It entrusted Messrs. Guy FRADIN and Victor DUKOVNY, as Board members of the World Water Council and JF DONZIER from PTS to ensure a permanent liaison with the Marseilles Forum organizers.

The field trip to water management structures at the Senegal River head near border with Mauritania was organized for the participants on 23 January.

MEETING ON THE PROBLEMS OF AFGHANISTAN'S FUTURE[12]

The meeting gathered over 70 participants: 15-from Afghanistan, 3-from India, 5-from Iran and 11-from Pakistan. As to Central Asia there were representatives from Uzbekistan and Kazakhstan and SIC ICWC.

The meeting was opened by Bernard Kouchner, French Foreign Affairs Minister. He noted that during the period after the Bonn meeting and especially over the past five years, cooperation was extended to spheres of medicine and education. If previously the local residents were afraid of foreign physicians, now 90% of the children are vaccinated against various diseases. The aim is to give the people of Afghanistan understanding that they can live differently.

Mr. Omar Samad, Afghan Ambassador to France stated: "We are examining (especially after Barack Obama's speech) possibility of arranging the subtle policy regarding to Afghanistan. The Pushtun traditions are not a base of Taliban. Taliban's objective is the desire to establish a tyrannical government and access to drug money. The election showed that people want to change their choice and approaches. As a result Afghanistan cannot be ignored both at the regional and global context. Among many directions, we are interested in integration in the transport infrastructure, water, trade, frontier issues, and especially the power engineering. We have to trust each other. Previous policy focused on cosmetics to improve the situation, while everything remained the same. Now we have to correct mistakes".

Thierry Mariani, the representative of France in Afghanistan and Pakistan emphasized that the collaboration format in this case is complex enough. Our view on Central Asia as the soviet state generates distrust. We need to connect Central Asia with Afghanistan by energy-wise civil actions. Central Asian countries play a key role: using these countries as examples, it may be shown that developed countries show respect for religion, culture and traditions of the region as a whole.

[12] http://sic.icwc-aral.uz/releases/eng/165.htm

This has to be a base of collaboration without involving the third countries. Only those countries can organize the legal trade and relationships in the sphere of energy and water.

Hekmat Karzai, Director, Center for Conflicts and Peace Studies, began his speech with proverb: "One conclusion can be obtained from the history that we don't make any conclusion from it". Afghanistan never created a real national union, governance system (army, police etc.). Afghanistan has no serious policy regarding its neighbors including Pakistan, Iran and Central Asian countries. At the same time it is noted that talibans are more organized, they use weaknesses of the government and of the international community. Among the mistakes of the West he emphasizes the insufficient financing (25 times less against what was given to one person in Kosovo after war); lack of understanding about needs of local people and orientation of projects to vision and benefit of foreign companies but not to them; work of international forces with commanders who supported Taliban earlier but not with people.

Gul Badshah Majid, parliamentary and leader of the Parliament Committee, also takes a view that "Government and foreign ideologists have no regional strategy and they don't understand our relations". Competition between donors, competition between provinces, terrorism and lack of agreements especially with Iraq and Pakistan impede us. Afghan government is not responsible and don't give account to its people. As a result, the external and internal forces look at the afghan territory as an action field. There is a lot of speaking about talibs. What do we want from them? How do we want to see them? Foreign countries also have to think clearly what they want from Afghanistan.

The special session of the work group was dedicated to the water relations development issues. The resumption of works on Iran-Afghan agreement 1973 on use of water resources of Helmand river was noted as a positive instance. Delegation activity of the Helmand regional commission was reestablished and 10 of its sessions were held. The coordination and water and ecosystems management mechanism was established under GEF support; the transboundary diagnostic analysis was prepared; the special action plan was developed. Within this cooperation Iran renders very great assistance for information collection and database creation. At the meeting of the workgroup, Khudainazar Sarmanshar, member of Afghan parliament, stated: «We never requested water from neighbors, but they also never suggested to include us to their community." He drew attention of participants that donors promised a lot of money for reconstruction and development of irrigation. Expectations during 3 years have brought only a very little effect.

Representatives from Australia (Mr. Austin) and France (Taith) told about some specific issues on possible water withdrawals increase by Afghanistan from Amudarya, Pyandj, Murghab, Harirud (Tejen). Pier Morel, assistant of the EU permanent representative in Central Asia, had notified western countries that they have to be careful when consider issues on development of the hydropower and water intakes by Afghanistan since the downstream countries already suffer due to insufficient water supply during dry period that can be aggravated even more by

one-side actions. Deputy Permanent Representative of EU for Central Asia Pierre Morel, warned Western countries that the development of hydropower and water diversion from Afghanistan should be careful, because the downstream country is already in the period of water shortage suffered from nevodoobespechennosti that can be further exacerbated by unilateral actions.

Discussion outcomes about water relations could be summarized as follows:

- determining a procedure to involve Afghanistan into activity of regional organisations of the Aral Sea Basin is the government prerogative of 4 Central Asian countries situated in the Amudarya Basin;

- Central Asian countries are open for information exchange. ICWC portal CAWater-info.net provides free information on water resources and their use to everybody. From this point of view, we are strongly interested in obtaining information from Afghanistan (for past and current periods) on surface water, development and condition of irrigation, water intake, water use, present situation and planning concerning water management and its further development;

- it is very important to organize joint observations at the border gauging stations on Pyadnj, Kokcha, Kunduz and Amudarya rivers.

Among other proposals Jean-Francois Donzier, INBO director, proposed to strengthen the exchange of technical and scientific information with water management organizations of Afghanistan, to familiarize them with modern water saving techniques, automation, reconstruction and public participation in water management, including organizing trainings for them.

The workgroup participants from Pakistan, Iran and Afghanistan suggested the same ideas about cooperation within river basins of Kabul, Harirud and Murghab.

At the same time, the Ministry of Energy and Water has prepared the draft water sector strategy, which was presented to the meeting participants.

In the end of the plenary meeting the grandson of the last king of Afghanistan, Mr. Nadir Naeem made the concluding address. “During seven years after my return to the country, I see very little progress. Often thinking about what needs to be done in the country, I came to the conclusion about the following three things:

- Introduction of the national solidarity program to improve national and local administrations;

- Development of the best past initiatives, traditions and people’s education in the broadest sense of the word;

- It is needed to determine farmers’ interest and possible cooperation that will urge reconstruction of our irrigation and agriculture as a whole without drugs”.

The meeting generalized conclusions of workgroups on regional economic cooperation, on regional coordination on water and on transboundary coordination and stressed the need to strengthen cooperation within Regional Economic Cooperation (RECCA) between Pakistan and Afghanistan, three-sided cooperation (Afghanistan-Iran-Pakistan) towards implementation of Afghanistan National Development Strategy (ANDS). The most important activity spheres are as follows:

- Afghanistan-Pakistan and Afghanistan-Turkmenistan cooperation in the energy sector;
- development of free trade zones and free trade transit;
- increasing effectiveness of donor's assistance.

IMPROVEMENT OF THE ECOLOGICAL SITUATION IN THE AMUDARYA AND SYRDARYA RIVER DELTAS[13]

"Restoration of equilibrium of destroyed ecosystems in the delta's region and firstly in deltas of Amudarya and Syrdarya rivers" is defined as one of the general tasks of regional countries according to the Agreement of Heads of States of Central Asia of 6 March 1993 (Article 1).

Conception of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan on resolving problems of Aral Sea and Priaralie with consideration of socio-economic development of the region approved by the Heads of States 11.01.1994 has defined more clearly that:

- Works on creation of artificial ecosystems in deltas and on the dried sea bed are first-priorities as to nature conservation measures for Priaralie directly and have to include the followings on the own water resources base:
- Creating the adjustable reservoirs system for Amudarya, and management of Small Sea part for Syrdarya;
- The polder systems on the dried sea bed;
- Works on vegetative reclamation for blown sands fixation;
- Drainage waters delivering to the sea water area through the sand winnowing zones.

[13]Information for the third issue of the agenda of ICWC meeting 54, January 2010, Shymkent http://sic.icwc-aral.uz/releases/eng/172.htm

Schemes of integrated water resources use of the Amudarya and Syrdarya river basins approved by the governmental bodies before independence according to the agreement of all republics provide the ecological releases implementing along rivers length that are amounted to 100 m^3/sec aiming to ensure ecological sustainability of rivers as natural objects and to conserve deltas as well.

During the last 10 years, the ICWC organizations has implemented big works related to improvement of water volumes needed for ecological maintenance of rivers and deltas, particularly of lakes, which correct values of the integrated water resources use schemes. Particularly, according to the NATO 974357 project, water necessary for maintaining the ecologically stable profile of the Amudarya river delta and feeding the lakes on the area of 180 thousand hectares accounts for 8km^3 of water in the wet year, 4.6 km^3 - in the average year, and at least 3.1 km^3 - in the dry year. According to the NATO 980986 project on the Syrdarya river delta it was stated that in order to protect lakes and wetlands in deltas of 6 lake systems on the area of 152 thousand hectares it is needed 1.78 km^3 of guaranteed water delivery including 133 million m^3 of drainage waters. In the process of reconstruction of lake systems, this volume can be decreased to 1.4 km^3 of water. Additionally 2.7 km^3/year of water is needed to maintain the surface area of the Small Sea.

The Government of Kazakhstan with financial support of the World Bank performed large amount of works, which allowed to build a number of large structures in the downstream of the Syrdarya, to improve infrastructure of the Northern Sea and to start the second stage of this project today that provides further improvement of lake system. At the present time the water area of the Northern Sea reached the project level of 42 m and the low water salinity about 15 g/L which is enough to support rapid development of fish culture in this region. The volume of fish catching in this water body exceeded 2000 ton in 2008.

Similarly the Government of Uzbekistan implemented works on creation of the Sudochie lake's infrastructure in the western part of the Amudarya delta as well as construction of a number of structures within the project on delta watering and on water delivery improvement for small water bodies in the delta.

All of above mentioned gave possibilities to have the lakes systems on the area of 116.7 thousand hectares in the Amudarya delta and 85.8 thousand hectares - in the Syrdarya delta by 2000.

At the same time, Uzbekistan put much effort on afforestation of the dried bed of the Aral Sea over the area of 248 thousand hectares. It is notable that observation carried out by 5 expeditions organized by SIC ICWC under support of the German Government, have shown that these works resulted in self-growing natural plants in the area of 200 thousand hectares. These works are ongoing today.

Unfortunately, over the last years both deltas have experienced extremely unsteady water supply and most importantly with regard to its delivery into lake system.

Actual inflow to the Amydarya and Syrdarya river deltas from 2002 to 2009 *(mln. m^3)*

Year	Amudarya	CDF*	Amudarya + CDF	Syrdarya
2002	2707	437	3144	4815.5
2003	9655	1061	10716	8173.1
2004	4605	1083	5688	10473.6
2005	13060	1156	14216	10141.4
2006	3103	1432	4535	9164.5
2007	731.2	1117	1848.2	6049.8
2008	676.1	663.5	1339.6	5921.7
2009	2423.9	991.1	3415 (as of December 1, 2009)	5377 (as of December 1, 2009)

*CDF-collector-drainage flows

Although the period from 2002 to 2007 was the high-water years, the volumes of water delivered through the Amudarya river in 2002 and 2007 were less than twice the one provided for the normal years. Practically all water bodies in the delta in the end of 2008 were dry. In 2009 with enough water (exceeding the mean annual runoff) water delivery through the river began only in August. This sharply affected the amount of fish in the delta and especially the migratory birds, for which the Amudarya delta was place of intermediate stop before further way.

Though water delivery through the Syrdarya river constantly exceeds the ecological releases (even during dry year 2008), the water availability of delta's lakes is very unstable and this affects on the water body's area.

Dynamics of areas of lake systems in the Syrdarya and Amudarya river deltas (hectare)

Lake system	**2000**	**2001**	**2005**	**2006**	**2007**	**2009**
Lakes	80591	85837	73322	62830	64990	54142
Amudarya						
	116658.9	20405.57	26000			August -22794.32 September – 75170.78 November- 104863.43

Such situation usually emerges because of very poor management of both deltas. In this connection a series of measures are needed at the regional and national levels to implement tasks defined by the Heads of the States related to maintenance of ecological sustainability of Priaralie. Particularly:

- Develop the long-term strategy of Central Asian republics on water supplying of environment and natural complexes and adopt the relevant agreement;

- Strengthen the role and authorities of BWO "Syrdarya" and BWO "Amudarya" on supply of guaranteed water delivery with consideration of the environment and natural complexes requirements.

- BWO "Amudarya" jointly with the Low Amudarya basin association have to ensure strong waterwithdrawal limits on the site between the Tuyamuyun reservoir's tail-water and the delta's mouth (gauging station Samanbay) in order to supply the maximal water passing into the delta - not less than 100 m3/sec according to "Scheme on integrated water resources use of the Amudarya river basin"; discharge of water delivery has to be implemented by the department of dam of the Low Amudarya basin association at the gauging station Samanbay;

- Establish WUA of each of deltas on the basis of consolidation of interested water users (fishermen, hunters, cattle-farmers, hokimiyats etc.), having recognized stakeholders interested in equitable and fair water distribution in the deltas' water bodies, and to promote their interest in rational water use.

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