Interstate **C**ommission for **W**ater **C**oordination in **C**entral Asia	**BULLETIN № 2 (73)**	June 2017

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MINUTES OF THE 70TH MEETING OF THE INTERSTATE COMMISSION FOR WATER COORDINATION (ICWC) OF THE REPUBLIC OF KAZAKHSTAN, KYRGYZ REPUBLIC, REPUBLIC OF TAJIKISTAN, TURKMENISTAN AND REPUBLIC OF UZBEKISTAN

April 11-12, 2017 Tashkent, Uzbekistan

Chairman:

Khamraev Shavkat Rakhimovich	Deputy Minister of Agriculture and Water Resources of the Republic of Uzbekistan (MAWR RUz), Head of Central Water Administration

ICWC members:

Nysanbayev Yerlan Nuralievich	Vice Minister of Agriculture, Republic of Kazakhstan
Rakhimzoda Sulton Nurmakhmadpur	First Deputy Minister of Energy and Water Resources, Republic of Tajikistan (MEWR RT)
Baydjanov Guyzgeldy	Deputy Minister of Agriculture and Water Resources, Turkmenistan

ICWC executive bodies:

Dukhovniy Viktor Abramovich	Director, Scientific Information Center (SIC) of ICWC
Ziganshina Dinara Ravilyevna	Deputy Director, Scientific Information Center of ICWC
Babadjanova Malika Pulatovna	Head, ICWC Secretariat
Kholkhuzhaev Odil Akhmedovich	Head, BWO Syrdarya

Makhramov Makhmud Yakhshibaevich	Head, BWO Amudarya

Invited:

Kipshakbaev Nariman Kipshakbaevich	Director of Kazakh branch of SIC ICWC
Kenshimov Amirkhan Kadyrbekovich	Deputy Director, Executive Direction of IFAS in the Republic of Kazakhstan
Zhienbaev Musilim Rysmakhanovich	Head of Transboundary Rivers Division of Water and Biological Resources Department, Ministry of Agriculture, Republic of Kazakhstan
Khasanov Khomidjon Usmanovich	Deputy Director, Agency for Land Reclamation and Irrigation at the Government of the Republic of Tajikistan
Paschyev Yanov Durdyevich	Head of Water Use Administration, Ministry of Agriculture and Water Resources, Turkmenistan
Kuchkarov Sharifjon Zikrillayevich	Head, Water Balance and Advanced Water Saving Technologies Division, MAWR of the Republic of Uzbekistan
Beglov Iskander Ferdinandovich	Head, Information Division of SIC ICWC

Agenda of the 70th ICWC Meeting

1. The results of the non-growing season 2016-2017 in the Syrdarya and Amudarya River basins;
2. Consideration and approval of the water withdrawal limits and operation regimes of reservoir cascade for the growing season 2017 in the Syrdarya and Amudarya River basins;
3. Preliminary activities to celebrate the 25th anniversary of ICWC;
4. Progress on the “Implementation Plan on strengthening ICWC activities in key directions”;
5. Agenda and venue of the next 71st ICWC meeting.

Decision on the first item:

1. Take into account the reports by BWO Amudarya and BWO Syrdarya on the results of the non-growing season 2016-2017 in the Syrdarya and Amudarya River basins.

Decisions on the second item:

1. Approve the forecast country water withdrawal limits and forecast operation regime of reservoir cascade for the growing season 2017 in the Amudarya River basin (Annex 1).

2. Entrust BWO Amudarya in coordination with Turkmen and Uzbek parties to control water releases from the Tuyamuyun reservoir based on the actual water content in the Amudarya River during the growing season 2017.

3. Kazakh and Uzbek parties have proposed an option of the forecast country water withdrawal limits and forecast operation regime of reservoir cascade for the growing season 2017 in the Syrdarya River basin (Annex 2).

4. Tajik party has proposed its own option of the operation regime for the Bakhri Tochik reservoir (Annex 3).

5. The parties have agreed to finalize acceptable operation regime of the Bakhri Tochik reservoir for the growing season 2017 through consultations on a routine basis.

6. Entrust BWO Syrdarya to ensure the work of its representatives in the Republic of Tajikistan to maintain water accounting along the North Fergana Canal and Big Fergana Canal and present information for each ten-day to the concerned parties.

7. Entrust BWO Syrdarya to coordinate, on a routine basis, with the Kyrgyz party the proposed country water withdrawal limits and forecast operation regime of the reservoir cascades for the growing season 2017 in the Syrdarya River basin.

Decisions on the third item:

1. Take the “Program of celebration events dedicated to the 25th Anniversary of the Interstate Commission for Water Coordination in Central Asia” as a basis and start its implementation;

2. The parties have agreed upon the Uzbek side’s proposal to hold the final ICWC Conference in Tashkent in November 2017;

3. Entrust SIC and Secretariat of ICWC to address on behalf of ICWC to donors to attract funds for commemorative activities; and

4. Entrust SIC and Secretariat of ICWC to monthly inform ICWC members on preparatory activities.

Decisions on the fourth item:

1. Until the end of April 2017, the parties should appoint their representatives for regional working groups on four main directions of the "Implementation Plan on strengthening ICWC activities in key directions".
2. Take into account that Tajik party temporarily refrains from participating in the Plan implementation.
3. Approve activity plan of the working groups for 2017 and the following schedule of their meetings:

- meeting of the Working Group on Water Conservation to be held on June 5, 2017 under the Central Asian International Ecological Forum in Ashgabat, Turkmenistan;
- meeting of the Working Group on Improvement of Water Accounting Quality and Accuracy to be held on July 19-20, 2017 under EXPO-2017 in Astana, Republic of Kazakhstan; and
- meeting of the Working Groups on Building Capacity of Regional and National Organizations and Implementation of IWRM and Adaptation to Climate Change to be held in September 2017 in Tashkent, Republic of Uzbekistan.

4. Entrust SIC ICWC to appeal to GIZ and CAREC with the request to fund meetings and preparation of reports of four regional groups, as previously agreed.

Decisions on the fifth item:

1. Approve date and venue of the next 71st ICWC meeting on a routine basis.

2. The following agenda should be proposed for the meeting:

1) Implementation of water withdrawal limits and operation regime of the reservoir cascade for the growing season 2017 in the Syrdarya and Amudarya River basins;

2) Progress on commemorative activities for the 25th anniversary of ICWC; and

3) Agenda and venue of the next 72nd ICWC meeting.

Republic of Kazakhstan	**Y.N.Nysanbayev**
Kyrgyz Republic	
Republic of Tajikistan	**S.N.Rakhimzoda**
Turkmenistan	**G.Baydjanov**
Republic of Uzbekistan	**Sh.R.Khamraev**

Annex 1

Forecast operation regime of the Nurek and Tuyamuyun reservoirs
(from April 2017 to September 2017)

Nurek reservoir	unit	Forecast						Total
		April	May	June	July	August	September	
Volume: beginning of the season	mcm	6,733	6,811	7,338	8,375	9,714	10,500	6,733
Inflow to reservoir	m³/s	733	1,132	1,467	1,968	1,590	833	
	mcm	1,901	3,033	3,802	5,270	4,260	2,160	20,425
Water releases from the reservoir	m³/s	703	935	1,067	1,468	1,297	817	
	mcm	1,823	2,506	2,765	3,931	3,473	2,117	16,615
Volume: end of the season	mcm	6,811	7,338	8,375	9,714	10,500	10,543	10,543
Accumulation (+), drawdown (-)	mcm	78	527	1,037	1,339	786	43	3,810

Tuyamuyun reservoir	unit	Forecast						Total
		April	May	June	July	August	September	
Volume: beginning of the season	mcm	2,585	3,111	3,992	4,396	5,355	5,742	2,585
Inflow to reservoir	m³/s	1,010	1,745	2,672	4,615	2,363	1,056	
	mcm	2,617	4,673	6,925	12,360	6,330	2,737	35,643
Water releases from the reservoir	m³/s	807	1,416	2,516	4,257	2,219	928	
	mcm	2,091	3,793	6,521	11,401	5,943	2,405	32,154
Volume: end of the season	mcm	3,111	3,992	4,396	5,355	5,742	6,074	6,074
Accumulation (+), drawdown (-)	mcm	526	881	404	959	387	332	3,489

Annex 2

Schedule-forecast
of the Naryn-Syrdraya reservoir cascade from April 1, 2017 to September 30, 2017

		April	May	June	July	August	September	Total, mcm
Toktogul reservoir								
Inflow to the reservoir	m^3/s	350.00	785.00	1,370.00	1,045.00	487.74	400.00	
	mcm	907.20	2,102.54	3,551.04	2,798.93	1,306.37	1,036.80	11,702.88
Volume: beginning of the season	mcm	**12,777.00**	**12,773.92**	**14,256.95**	**1,7027.12**	**19,011.60**	**19,498.32**	
End of the season	mcm	**12,773.92**	**14,256.95**	**17,027.12**	**19,011.60**	**19,498.32**	**194,54.52**	
Water releases from the reservoir	m^3/s	350.00	230.00	300.00	300.00	300.00	410.00	
	mcm	907.20	616.03	777.60	803.52	803.52	1,062.72	4,970.59
Bakhri Tochik reservoir								
Inflow to the reservoir	m^3/s	555.56	430.97	300.00	300.00	380.00	450.00	
(Akdjar GS)	mcm	1,440.00	1,154.31	777.61	803.53	1,017.80	1,166.40	6,359.65
CDF inflow	m^3/s	29.26	29.26	21.59	19.15	14.16	16.10	
	mcm	75.84	78.37	55.96	51.29	37.93	41.73	341.12
Volume: beginning of the season	mcm	**3,330.10**	**3,403.05**	**3,408.13**	**2,742.41**	**1,969.10**	**1,784.05**	
End of the season	mcm	**3,403.05**	**3,408.13**	**2,742.41**	**1,969.10**	**1,784.05**	**2,099.15**	
Water releases from the reservoir	m^3/s	530.00	400.00	500.00	500.00	385.48	300.00	
	mcm	1,373.76	1,071.36	1,296.00	1,339.20	1,032.48	777.60	6,890.40
Water diversion from the reservoir	m^3/s	17.67	37.33	51.43	52.87	41.77	26.53	
(pumping station from Akdjar to the	mcm	45.81	99.99	133.31	141.62	111.87	68.77	601.37

		April	May	June	July	August	September	Total, mcm
reservoir+ pumping station from the reservoir)								
Shardara reservoir								
Inflow to the reservoir	m^3/s	576.88	412.90	257.89	256.93	174.81	390.87	
	mcm	1,495.28	1,105.92	668.45	688.16	468.21	1,013.14	5,439.16
Volume: beginning of the season	mcm	**4,633.00**	**4,679.35**	**4,312.15**	**3,339.87**	**2,099.58**	**1,000.93**	
End of the season	mcm	**4,679.35**	**4,312.15**	**3,339.87**	**2,099.58**	**1,000.93**	**1,127.60**	
Water releases from the reservoir	m^3/s	500.00	400.00	470.00	550.00	470.00	300.00	
	mcm	1,296.00	1,071.36	1,218.24	1,473.12	1,258.85	777.60	7,095.17
Water releases to the Kzylkum canal	m^3/s	20.00	100.00	110.00	110.00	90.00	25.00	
	mcm	51.84	267.84	285.12	294.62	241.06	64.80	1,205.28
Water releases to the Arnasay	m^3/s	0.00	0.00	0.00	0.00	0.00	0.00	
depression	mcm	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Supply to the Aral Sea	m^3/s	175.50	93.90	42.70	44.70	44.30	118.70	
	mcm	454.90	251.50	110.68	119.72	118.65	307.67	1,363.12
Charvak reservoir								
Inflow to the reservoir	m^3/s	278.53	497.33	647.15	483.89	270.07	163.02	
(4 rivers in total)	mcm	721.95	1,332.05	1,677.41	1,296.05	723.36	422.55	6,173.37
Volume: beginning of the season	mcm	**564.00**	**767.03**	**1,293.95**	**1,931.46**	**1,991.16**	**1,852.60**	
End of the season	mcm	**767.03**	**1,293.95**	**1,931.46**	**1,991.16**	**1,852.60**	**1,753.38**	
Water releases from the reservoir	m^3/s	200.00	300.00	400.00	460.00	320.00	200.00	
(water releases from the Gazalkent HEPS)	mcm	518.40	803.52	1,036.80	1,232.06	857.09	518.40	4,966.28
Andizhan reservoir								
Inflow to the reservoir	m^3/s	200.00	305.71	329.52	215.56	103.60	74.60	
	mcm	518.40	818.81	854.12	577.36	277.48	193.36	3,239.53

		April	May	June	July	August	September	Total, mcm
Volume: beginning of the season	mcm	**1,099.60**	**1,228.27**	**1,594.00**	**1,787.48**	**1,424.66**	**1,029.81**	
End of the season	mcm	**1,228.27**	**1,594.00**	**1,787.48**	**1,424.66**	**1,029.81**	**1,039.09**	
Water releases from the reservoir	m^3/s	150.00	250.00	350.00	350.00	250.00	70.00	
	mcm	388.80	669.60	907.20	937.44	669.60	181.44	3,754.08
Water deficit								
Toktogul-Uchkurgan HS	m^3/s				-15.06	-3.31		
	mcm				**-40.34**	**-8.87**		**-49.21**
Bakhri Tochik-Shardara	m^3/s			-64.70	-124.03	-36.52		
	mcm			**-167.70**	**-332.20**	**-97.80**		**-597.71**
Total								**-646.92**

Annex 3

Operation schedule of the Bakhri Tochik reservoir for the growing season 2017

Month	**June**			**July**			**August**		
Ten-day	**1**	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**
Difference between inflow to and water releases from the reservoir	- 6.00	- 42.00	71	159	214	225	90	155	114
Average per month	**8**			**200**			**119**		
Average per season	**109**								

RESULTS OF THE NON-GROWING SEASON 2016-2017 IN THE AMUDARYA AND SYRDARYA RIVER BASINS[1]

I. Amudarya River basin

The actual water availability in the Amudarya River basin at the conditional Atamurat gauging station upstream of Garagumdarya was 64.3 % of the norm in the non-growing season 2016-2017. Given the norm 14,555 mcm, the actual water content amounted to 9,352 mcm. In the past season, water content was 88.9%.

The use of the approved water withdrawal limits during the period under consideration, with a breakdown by states is as follows:

Totally, in the basin, 92.7 % of the approved water withdrawal limits were used. While the limit was 15,729.9 mcm, actually used volume was 14, 583 mcm, of which:

Given the limit 2,879.9 mcm, the Republic of Tajikistan actually used 2,114.2 mcm (73.4 % of the total limit);

Given the limit 6,350 mcm, the Republic of Uzbekistan actually used 6,228.4 mcm (98.1 % of the total limit);

Given the limit 6,500 mcm, Turkmenistan actually used 6,240.4 mcm (96 % of the total limit).

Water user state	Limit, mcm	Actual, mcm	%%
Republic of Tajikistan	2,879.9	2,114,2	73.4
Turkmenistan	6,500,0	6,240.4	96.0
Republic of Uzbekistan	6,350,0	6,228.4	98,1
Total	15,729.9	14,583,0	92.7

The use of water limits downstream of conditional Atamurat gauging station upstream of Garagumdarya was 98.0% of the total limit, of which:

Republic of Uzbekistan actually used 5,860.5 mcm (98.0 % of the total limit)

Turkmenistan actually used 6,240.4 mcm (96.0 % of the total limit)

[1] Information on the first item of the 70th ICWC Meeting Agenda

River reach Water user state	Limit, mcm	Actual, mcm	%%
Downstream of conditional Atamurat GS	12,480.0	12,100.8	97.0
Turkmenistan	6,500.0	6,240.4	96.0
Republic of Uzbekistan	5,980.0	5,860.5	98.0

The actual use of the approved water withdrawal limits broken down by river reach is as follows:

Upper reaches – 76.4 %, of which 73.4 % - Republic of Tajikistan, 99.4 % - Republic of Uzbekistan.

Middle reaches – 99.5 %, of which 100.0 % - Republic of Uzbekistan, 99.2 % - Turkmenistan.

Lower reaches – 91.2 %, of which 95.0 % - Republic of Uzbekistan, 84.5 % - Turkmenistan.

River reach Water user state	Limit, mcm	Actual, mcm	%%
Upper reaches	**3,249.9**	**2,482.1**	**76.4**
Republic of Tajikistan	2,879.9	2,114.2	73.4
Republic of Uzbekistan	370.0	367.9	99.4
Middle reaches	**8,655.0**	**8,613.2**	**99.5**
Turkmenistan	5,100.0	5,057.3	99.2
Republic of Uzbekistan	3,555.0	3,555.9	100.0
Lower reaches	**3,825.0**	**3,487.7**	**91.2**
Turkmenistan	1,400.0	1,183.1	84.5
Republic of Uzbekistan	2,425.0	2,304.6	95.0

In the Amudarya River delta and Aral Sea, water supply was planned to be 2,100 mcm. Actually, it was 1,505 mcm or 71.7 % during the non-growing season.

The inflow to the Nurek reservoir was expected to be 3,607 mcm; actually, it was 3,800 mcm. Water releases from the reservoir were planned to be 7,902 mcm; actual releases were 7,659 mcm. By the end of the non-growing season 2016-2017, water volume in the reservoir was planned to be 6,289 mcm; the actual volume was

6,733 mcm.

During the non-growing season, the forecast inflow to the Tuyamuyun reservoir was expected to be 6,128 mcm; actually, it was 5,973 mcm. Water releases from the reservoir were planned to be 6,111 mcm, actual releases were 6,139 mcm.

By the end of the non-growing season 2016-2017, water volume in the reservoir was planned to be 2,769 mcm; actually, it was 2,585 mcm.

Parameter		**unit**	**Nurek reservoir**	**Tuyamuyun reservoir**
Volume: beginning of the season		mcm	10,571	2,751
Inflow to the reservoir	forecast	mcm	3,607	6,128
	actual	mcm	3,800	5,973
		%%	105.4	97.5
Water releases from the reservoir	forecast	mcm	7,902	6,111
	actual	mcm	7,659	6,139
		%%	96.9	100.5
Volume: end of the season	forecast	mcm	6,289	2,769
	actual	mcm	6,733	2,585
		%%	107.1	93.4
Accumulation (+), drawdown (-)	forecast	mcm	-4,295	17
	actual	mcm	-3,838	-166
		%%	89.4	97.6

It should be mentioned that water releases from the Nurek reservoir were 96.9% of the planned ones, whereas the inflow was 105.4% of the forecast one.

More detailed information is provided in tables (Annexes 1.1-1.4).

Annex 1.1

Analysis
of the use of withdrawal limits in the Amudarya River basin for the non-growing season 2016-2017

Name	Water withdrawal limits for the non-growing season 2016-2017, mcm	Actual, mcm	%%
Upper-Amudarya Administration	**3,249.9**	**2,482.1**	**76.4**
(upper reaches) of which:			
Tajikistan	2,879.9	2,114.2	73.4
Uzbekistan	370	367.9	99.4
Water withdrawals from the Amudarya River at conditional Atamurat gauging station (Kerki)	**12,480**	**12,100.9**	**97.0**
of which:			
Turkmenistan	6,500.0	6,240.4	96.0
Uzbekistan	5,980.0	5,860.5	98.0
Middle-Amudarya Administration	**8,655**	**8,613.2**	**99.5**
(middle reaches) of which:			
Turkmenistan	5,100	5,057.3	99.2
Uzbekistan	3,555	3,555.9	100.0
Lower reaches:	**3,825**	**3,487.7**	**91.2**
of which:			
Turkmenistan	1,400.0	1,183.1	84.5
Uzbekistan:	2,425.0	2,304.6	95.0
In addition, total sanitary releases, including	**800**	**722.3**	**90.3**
Karakalpakstan	500	423.3	84.7
Dashoguz province	150	149.8	99.9
Khorezm province	150	149.2	99.5
Total for the basin:	**15,729.9**	**14,583.0**	**92.7**
of which			
Tajikistan	2,879.9	2,114.2	73.4
Turkmenistan	6,500.0	6,240.4	96.0
Uzbekistan	6,350.0	6,228.4	98.1

Annex 1.2

Actual hydrological conditions in the Amudarya River over the non-growing season 2016-2017

Parameter	unit	October	November	December	January	February	March	Total
		actual						mcm
Inflow to the Nurek reservoir	m3/s	350	245	226	195	198	232	3,800
Water volume in the Nurek reservoir	mcm	10,500	10,466	10,081	9,537	8,691	7,744	6,733
Water releases from the Nurek reservoir	m3/s	395	393	428	513	588	612	7,659
Atamurat GS, actual	m3/s	415	335	361	400	514	638	6,966
norm	m3/s	881	760	870	876	834	823	13,227
%%	%	47.1	44.0	41.5	45.6	61.6	77.5	52.7
Upstream of Garagumdarya (actual water content)								
	m3/s	826	548	459	392	509	824	9352
norm	m3/s	1,133	952	896	813	796	952	14,555
%	%	72.9	57.5	51.3	48.2	63.9	86.6	64.3
Cumulative, actual	mcm	2,213	3,632	4,862	5913	7,144	9352	9,352
Norm	mcm	3,034	5,503	7,902	10,080	12,006	14,624	14,555
%	%	72.9	66.0	61.5	58.7	59.5	63.9	64.3
Surkhandarya province	m3/s	49	43	3	0	2	42	368
Water diversions upstream of Atamurat GS	m3/s	402	319	299	309	385	521	5,856
Water inflow at Kelif GS	m3/s	817	653	659	708	899	1,159	12,822
Water diversion at Kelif-Birata	m3/s	586	447	455	489	590	720	8,612
Return water at Kelif-Birata	m3/s	77	66	63	76	118	130	1,384
Losses at Kelif-Birata	m3/s	-133	-15	-58	8	-31	145	-213
Inflow to the Birata GS, actual	m3/s	440	287	326	286	458	425	5,807
Norm	m3/s	685	665	729	616	492	546	9,815
Cumulative, actual	mcm	1,179	1,922	2,795	3,561	4,670	5,807	5,807
Norm	mcm	1,835	3,558	5,511	7,161	8,352	9,815	9,815

Parameter	unit	October	November	December	January	February	March	Total
		actual						mcm
%	%	64.3	54.0	50.7	49.7	55.9	59.2	59.2
Losses at Birata-Tuyamuyun	m3/s	14	16	-2	-14	-3	-73	-165
Water volume in the Tuyamuyun reservoir; beginning of the season	mcm	2,751	2,909	3,110	2,876	3,223	3,450	
Inflow to the Tuyamuyun reservoir	m3/s	426	271	327	300	461	497	5,973
Water releases from the Tuyamuyun reservoir	m3/s	367	193	415	171	367	820	6,139
Water volume in the Tuyamuyun reservoir; end of the season	mcm	2,909	3,110	2,876	3,223	3,450	2585	
Accumulation (+), drawdown (-)	mcm	158	201	-234	347	227	-865	-166
Water diversions of the Tuyamuyun reservoir	m3/s	126	27	41	21	117	309	1,687
Water diversion at Tuyamuyun-Samanbay	m3/s	121	41	284	21	87	396	2,514
Losses at Tuyamuyun-Samanbay	m3/s	68	84	71	84	133	86	1,368
Water releases through Takhiatash	m3/s	52	41	18	45	30	30	570
Water diversion at Kelif-Samanbay	m3/s	833	516	780	531	793	1424	12,814

Annex 1.3

Information
on water supply to the Amudarya River delta and Aral Sea in the non-growing season 2016-2017

mcm

Name	October	November	December	January	February	March	Water supply from 01.10.16 to 31.03.17
							Actual
From the Amudarya River, at Samanbay GS	138	117	75	118	83	75	606
Total water discharge from Dostlyk and Suenli canal systems							
CDF	64	39	72	85	61	114	435
TOTAL:	394	409	159	203	147	193	1,505
Cumulative	394	803	962	1,165	1,312	1,505	

Note: Data on water supply to Prearalie are agreed with the State Hydrometeorological Service (Hydromet) of the Republic of Uzbekistan

Annex 1.4

Actual operation regimes of the Nurek and Tuyamuyun reservoirs
(from October 2016 to March 2017)

Nurek reservoir	unit	actual						TOTAL
		October	November	December	January	February	March	
Volume: beginning of the season	mcm	10,571	10,466	10,081	9,537	8,691	7,744	10,571
Inflow to the reservoir	m3/s	350	245	226	195	198	232	
	mcm	937	635	605	522	479	621	3,800
Water releases from the reservoir	m3/s	395	393	428	513	588	612	
	mcm	1,058	1,019	1,146	1,374	1,422	1,639	7,659
Volume: end of the season	mcm	10,466	10,081	9,537	8,691	7,744	6,733	6,733
Accumulation +), drawdown (-)	mcm	-105	-385	-544	-846	-947	-1,011	-3,838

Tuyamuyun reservoir	unit	actual						TOTAL
		October	November	December	January	February	March	
Volume: beginning of the season	mcm	2,751	2,909	3,110	2,876	3,223	3,450	2,751
Inflow to the reservoir	m3/s	426	271	327	300	461	497	
	mcm	1,141	702	876	804	1,115	1331	5,973
Water releases from the reservoir	m3/s	367	193	415	171	367	820	
	mcm	983	500	1,112	458	888	2,196	6,139
Volume: end of the season	mcm	2,909	3,110	2,876	3,223	3,450	2,585	2,585
Accumulation +), drawdown (-)	mcm	158	201	-234	347	227	-865	-166

II. Syrdarya River basin

On September 27, 2016, Hydromet provided forecasts for the non-growing season 2016-2017 and adjusted forecast for the 4th quarter. According to them, the inflow to the Toktogul reservoir was expected to be 97%, to the Andizhan reservoir – 101%, to the Charvak reservoir – 106%, and the lateral inflow – 98% of the norm.

In general, water content in the Syrdarya basin was expected to be 100% of the norm.

The results of the non-growing season are as follows.

Inflow to the upstream reservoirs

The normal inflow to the upstream Naryn-Syrdarya reservoir cascade is 5,233 mcm during the non-growing season.

According to the Hydromet's forecast, the inflow was expected to be 5,247 mcm.

Actually, the inflow to the upstream reservoir cascade was 6,640 mcm or 1,393 mcm more than the forecast one (Table 2.1).

Lateral inflow

The lateral inflow to the Syrdarya River up to the Shardara reservoir is 11,075 bcm of the norm.

According to the Hydromet's forecast, the lateral inflow was expected to be 10,835 mcm.

The actual lateral inflow was 12, 213 mcm or 1, 378 mcm more than the forecast one (Table 2.1).

Total inflow

The total inflow in the basin is 16,308 mcm of the norm during the non-growing season.

According to the Hydromet's forecast, the total inflow was expected to be 16,082 mcm.

Actually, the total inflow was 18,853 mcm or 2,771 mcm more than the forecast one (Table 2.1).

Table 2.1

Name	Non-growing season, mcm						
	From October 1, 2016 to March 31, 2017					2015-2016	
	norm	forecast	actual	actual/ forecast (%)	actual/ norm (%)	forecast	actual
Inflow to the upstream reservoir							
Toktogul	2,891	2,804	3,643	130	126	2,798	3,381
Andizhan	934	945	1,124	119	120	950	909
Charvak (4 rivers in total)	1,408	1,498	1,873	125	133	1,426	1,960
Total	**5,233**	**5,247**	**6,640**	**127**	**127**	**5,174**	**6,250**
Lateral inflow							
Toktogul – Uchkurgan	398	386	423	109	106	400	559
Andizhan – Uchtepe	2,517	2,675	2,857	107	113	2,689	2,669
Uchkurgan, Uchtepe – Bakhri Tochik	4,365	4,317	5,435	126	125	4,265	5,301
Bakhri Tochik – Shardara	2,954	2,750	2,477	90	84	2,687	2,453
Gazalkent- Chinaz (excluding Ugam)	841	707	1,021	144	121	790	1,294
Total	**11,075**	**10,835**	**12,213**	**113**	**110**	**10,831**	**12,276**
Overall (total inflow)	**16,308**	**16,082**	**18,853**	**117**	**116**	**16,005**	**18,526**

Water releases from the reservoirs

The total water releases from the reservoirs were scheduled to be 30,214 mcm.

Actually, they were 34,106 mcm or 3,892 mc more than the schedule (Table 2.2).

According to the operation schedule of the Naryn-Syrdarya reservoir cascade for the non-growing season, water releases from the Toktogul reservoir were planned to be 7,769 mcm. Actually, they were 8,351 mcm or 582 more than the schedule.

Scheduled water releases from the Andizhan reservoir were to be 553 mcm. Actually, they were 741 mcm or 188 mcm more than the schedule.

Scheduled water releases from the Charvak reservoir were to be 2,321 mcm. Actually, they were 2,746 mcm or 425 mcm more than schedule.

Scheduled water releases from the Bakhri Tochik reservoir were to be 11,073 mcm. Actually, they were 12,390 mcm or 1,317 mcm more than schedule.

Scheduled water releases from the Shardara reservoir were to be 8,498. Actually, they were 9,878 mcm or 1,380 mcm more than schedule.

Table 2.2

Reservoir	Water releases from October 1, 2016 to March 31, 2017, mcm		actual/ schedule (%)	Actual, from October 1, 2015 to March 31, 2016
	operation schedule of NSRC	actual		
Toktogul	7,769	8,351	107	7,442
Andizhan	553	741	134	667
Charvak (releases from the Gazalkent HEPS)	2,321	2,746	118	2,702
Bakhri Tochik	11,073	12,390	112	9,801
Shardara	8,498	9,878	116	7,196
TOTAL:	**30,214**	**34,106**	**113**	**27,808**

Water storage in the reservoirs by the end of the non-growing season 2016-2017

By April 1, 2017, scheduled water volume was 14, 476 bcm in the upstream reservoirs. Actually, it was 14,441 bcm by the end of the non-growing season (Table 2.3).

Water accumulation in the upstream reservoirs was as follows:

Toktogul 12,777 mcm,

Andizhan 1,100 mcm,

Charvak 564 mcm.

Table 2.3

Reservoir	Water volume, mcm			
	Actual as of October 1, 2016	Scheduled as of April 1, 2017	Actual as of April 1, 2017	Actual as of April 1, 2016
Toktogul	17,487	12,509	**12,777**	8,934
Andizhan	731	1,121	**1,100**	1,013
Charvak	1,679	846	**564**	791
TOTAL:	**19,897**	**14,476**	**14,441**	**10,738**
Bakhri Tochik	2,270	3,471	**3,330**	3,380
Shardara	1,077	5,125	**4,633**	4,850
TOTAL:	**3,347**	**8,596**	**7,963**	**8,230**
OVERALL:	**23,244**	**23,072**	**22,404**	**18,968**

Water supply to states

During the non-growing season, water supply to the user states, taking into account submitted water requests, was as follows (Table 2.4):

- Given the limit 527 mcm, 450 mcm were supplied to the Republic of Kazakhstan;

- Given the limit 37 mcm, 24.5 mcm were supplied to the Kyrgyz Republic;

- Given the limit 365 mcm, 27 mcm were supplied to the Republic of Tajikistan;

- Given the limit 2,484 mcm, 2,396 mcm were supplied to the Republic of Uzbekistan.

Table 2.4

Water user state	Water withdrawals, mcm, from October 1, 2016 to March 31, 2017		
	limit	actual	%%
Republic of Kazakhstan (Dustlik canal)	527	450	85
Kyrgyz Republic	37	24.5	66
Republic of Tajikistan	365	27	7

Republic of Uzbekistan	2,484	2,396	96
Total	**3,413**	**2,898**	**85**

Inflow to in-stream reservoirs and water supply to the Aral Sea

Scheduled inflow to the Bakhri Tochik reservoir was to be 12,051 mcm. Actually, it was 13,460 mcm or 1,409 mcm more than the schedule.

Scheduled inflow to the Shardara reservoir was to be 13,120 mcm. Actually, it was 13,796 mcm or 676 mcm more than the schedule.

Scheduled water discharge to the Arnasay depression was to be 402 mcm over the non-growing season 2016-2017. Actually, it was 946 mcm (according to the Coordination Dispatch Center "Energy") or 544 mcm more than the schedule.

Scheduled inflow to the Aral Sea and Prearalie was to be 3,317 mcm. The actual inflow at the Karateren GS was 3,595 mcm or 278 mcm more than the schedule (Table 2.5).

Hydromet provided actual data for the Karateren GS for October and November 2016. Due to icing in the lower reaches of the river, Hydromet does not have data for the rest of period. That's why, these data for the period from December 2016 to March 2017 were provided by the Committee for Water Resources of the Republic of Kazakhstan.

Table 2.5

Parameter	Scheduled, mcm, from October 1, 2016 to March 31, 2017	Actual, mcm, from October 1, 2016 to March 31, 2017	Actual, mcm, from October 1, 2015 to March 31, 2016
Inflow to in-stream reservoirs			
Inflow to the Bakhri Tochik reservoir	12,051	13,460	11,845
Inflow to the Shardara reservoir	13,120	13,796	11,030
Discharge to Arnasay and supply to the Aral Sea			
Discharge to Arnasay	402	946	0
Supply to the Aral Sea	3,317	3,595	3,353

Operation schedule of the Naryn-Syrdarya reservoir cascade is given in Table 2.6 for the period from October 1, 2016 to April 1, 2017.

The actual operation regime of the Naryn-Syrdarya reservoir cascade is given in Table 2.7 for the period from October 1, 2016 to March 31, 2017.

Table 2.6

Schedule-forecast of the Naryn-Syrdarya reservoir cascade from October 1, 2016 to March 31, 2017

		October	November	December	January	February	March	Total, mcm
Toktogul reservoir								
Inflow to the reservoir	m^3/s	230.51	200.31	166.09	156.02	153.00	162.06	
	mcm	617.40	519.20	444.86	417.88	370.14	434.06	2,804
Volume: beginning of the season	mcm	17,487.00	17,189.19	16,408.50	15,243.16	14,053.63	13,092.92	
end of the season	mcm	17,189.19	16,408.50	15,243.16	14,053.63	13,092.92	12,508.86	
Water releases from the reservoir	m^3/s	340.00	500.00	600.00	600.00	550.00	380.00	
	mcm	910.66	1,296.00	1,607.04	1,607.04	1,330.56	1,017.79	7,769
Bakhri Tochik reservoir								
Inflow to the reservoir	m^3/s	504.09	841.27	976.70	877.55	831.57	575.93	
	mcm	1,350.14	2,180.58	2,616.00	2,350.43	2,011.74	1,542.58	12,051
Volume: beginning of the season	mcm	2,269.90	2,945.68	3,268.66	3,387.08	3,387.66	3,396.92	
end of the season	mcm	2,945.68	3,268.66	3,387.08	3,387.66	3,396.92	3,470.63	
Water releases from the reservoir	m^3/s	250.00	730.00	950.00	900.00	850.00	560.00	
	mcm	669.60	1,892.16	2,544.48	2,410.56	2,056.32	1,499.90	11,073
Shardara reservoir								
Inflow to the reservoir	m^3/s	335,62	811,50	1084,55	1036,22	993,58	759,37	
	mcm	898,92	2103,40	2904,87	2775,42	2403,67	2033,89	13120
Volume: beginning of the season	mcm	1077,00	1501,84	2011,16	3014,37	4301,94	4595,89	
end of the season	mcm	1501,84	2011,16	3014,37	4301,94	4595,89	5125,13	
Water releases from the reservoir	m^3/s	160,00	600,00	700,00	550,00	700,00	550,00	
	mcm	428,54	1555,20	1874,88	1473,12	1693,44	1473,12	8498
Water releases to Kzylkum canal	m^3/s	5,00	5,00	5,00	5,00	5,00	6,77	

		October	November	December	January	February	March	Total, mcm
Discharge to the Arnasay depression	mcm	13.39	12.96	13.39	13.39	12.10	18.14	83
	m^3/s	0.00	0.00	0.00	0.00	166.07	0.00	
	mcm	0.00	0.00	0.00	0.00	401.76	0.00	402
Supply to the Aral Sea	m^3/s	102.22	128.30	224.10	289.20	273.00	252.20	
	mcm	273.79	332.55	600.23	774.59	660.44	675.49	3,317
Charvak reservoir								
Inflow to the reservoir	m^3/s	114.40	101.77	86.58	76.84	76.48	113.93	
(4 rivers in total)	mcm	306.41	263.79	231.90	205.81	185.02	305.15	1,498
Volume: beginning of the season	mcm	1,679.00	1,553.46	1,425.76	1,255.30	1,057.74	903.11	
end of the season	mcm	1,553.46	1,425.76	1,255.30	1,057.74	903.11	846.41	
Water releases from the reservoir	m^3/s	160.00	150.00	150.00	150.00	140.00	135.00	
(water releases from the Gazalkent HEPS)	mcm	428.54	388.80	401.76	401.76	338.69	361.58	2,321
Andizhan reservoir								
Inflow to the reservoir	m^3/s	64.02	66.66	60.17	51.75	51.24	66.16	
	mcm	171.47	172.78	161.16	138.61	123.96	177.20	945
Volume: beginning of the season	mcm	730.57	669.93	751.45	890.61	1,007.71	1,112.25	
end of the season	mcm	669.93	751.45	890.61	1,007.71	1,112.25	1,120.89	
Water releases from the reservoir	m^3/s	86.45	35.00	8.00	8.00	8.00	62.90	
	mcm	231.55	90.72	21.43	21.43	19.35	168.48	553

Table 2.7

Actual operation regime of the Naryn-Syrdarya reservoir cascade from October 1, 2016 to March 31, 2017

		October	November	December	January	February	March	Total, mcm
Toktogul reservoir								
Inflow to the reservoir	m^3/s	308.71	240.67	235.55	184.19	210.86	208.42	
	mcm	826.85	623.81	630.89	493.35	510.11	558.23	3,643.22
Volume: beginning of the season	mcm	17,487.00	17,345.00	16,648.00	15,777.00	14,656.00	13,677.00	
end of the season	mcm	17,345.00	16,648.00	15,777.00	14,656.00	13,677.00	12,777.00	
Water releases from the reservoir	m^3/s	361.68	508.10	558.45	601.00	615.86	548.71	
	mcm	968.72	1,317.00	1,495.76	1,609.73	1,489.88	1,469.67	8,350.75
Bakhri Tochik								
Inflow to the reservoir	m^3/s	590.45	831.97	959.52	931.48	1,011.36	825.42	
(Akdjar GS)	mcm	1,581.46	2,156.46	2,569.97	2,494.89	2,446.68	2,210.81	13,460.26
CDF inflow	m^3/s	16.26	20.75	24.68	26.17	28.61	22.75	
	mcm	43.56	53.79	66.10	70.10	69.20	60.94	363.70
Volume: beginning of the season	mcm	2,269.90	2,932.90	2,967.20	3,300.70	3,472.30	3,462.50	
end of the season	mcm	2,932.90	2,967.20	3,300.70	3,472.30	3,462.50	3,330.10	
Water releases from the reservoir	m^3/s	303.68	803.17	890.90	878.23	1,003.36	869.48	
	mcm	813.37	2,081.81	2,386.20	2,352.24	2,427.32	2,328.82	12,389.76
Water diversion from the reservoir (pumping station from Akdjar to the reservoir+ pumping station from the reservoir)	m^3/s	1.03	0.73	0.50	0.18	3.27	4.51	
	mcm	2.77	1.90	1.34	0.48	7.92	12.07	26.47
Shardara reservoir								
Inflow to the reservoir	m^3/s	314.39	721.87	986.31	949.26	1,286.48	1,040.45	

		October	November	December	January	February	March	Total, mcm
	mcm	842.05	1,871.10	2,641.74	2,542.49	3,112.25	2,786.75	13,796.38
Volume: beginning of the season	mcm	1,077.00	1,492.00	1,850.00	2,490.00	3,344.00	4,481.00	
end of the season	mcm	1,492.00	1,850.00	2,490.00	3,344.00	4,481.00	4,633.00	
Water releases from the reservoir	m^3/s	146.13	591.83	821.61	703.87	655.54	851.61	
	mcm	391.39	1,534.03	2,200.61	1,885.25	1,585.88	2,280.96	9,878.12
Water releases to the Kzylkum canal	m^3/s	5.00	5.00	5.00	5.00	5.00	47.74	
	mcm	13.39	12.96	13.39	13.39	12.10	127.87	193.10
Discharge to Arnasay	m^3/s	0.00	0.00	0.00	0.00	198.93	173.55	
depression	mcm	0.00	0.00	0.00	0.00	481.25	464.83	946.08
Supply to the Aral Sea	m^3/s	139.42	161.37	240.26	287.45	271.50	273.58	
	mcm	373.42	418.26	643.51	769.91	656.81	732.76	3,594.68
Charvak reservoir								
Inflow to the reservoir	m^3/s	137.84	110.65	113.42	96.60	107.29	147.46	
(4 rivers in total)	mcm	369.20	286.81	303.79	258.72	259.55	394.96	1,873.04
Volume: beginning of the season	mcm	1,679.00	1,489.00	1,265.00	1,138.00	843.00	625.00	
end of the season	mcm	1,489.00	1,265.00	1,138.00	843.00	625.00	564.00	
Water releases from the reservoir	m^3/s	182.42	186.60	155.32	188.11	177.29	158.81	
(water releases from the Gazalkent HEPS)	mcm	488.59	483.67	416.02	503.82	428.89	425.35	2,746.33
Andizhan reservoir								
Inflow to the reservoir	m^3/s	50.00	77.10	92.97	71.68	65.46	71.42	
	mcm	133.92	199.84	249.01	191.99	158.37	191.29	1,124.42
Volume: beginning of the season	mcm	730.57	625.50	681.12	883.02	1,043.29	1,142.60	
end of the season	mcm	625.50	681.12	883.02	1,043.29	1,142.60	1,099.60	
Water releases from the reservoir	m^3/s	90.00	56.83	15.16	10.33	21.72	86.55	
	mcm	241.06	147.31	40.60	27.68	52.53	231.81	740.99

LIMITS OF WATER WITHDRAWALS AND OPERATION REGIMES OF THE RESERVOIR CASCADE FOR THE GROWING SEASON 2017 IN THE AMUDARYA AND SYRDARYA RIVER BASINS[2]

I. Amudarya River basin

BWO Amudarya submits limits for the growing season 2017 to ICWC for consideration. These limits, based on the 100% of water availability, are agreed in advance with the national water agencies.

The forecast operation regimes of the Nurek and Tuyamuyun reservoirs were developed, taking into account these limits and for average flow probability.

According to the forecast by Hydromet and Tajikhydromet and analysis of BWO Amudarya, the water availability is expected to be higher than the norm in the Amudarya River basin, and about 120-150% of the annual average norm at the conditional Atamurat gauging station upstream of the Garagumdarya. In this context, while developing operation regime of the Tuyamuyun reservoir for the growing season, BWO Amudarya took into account that the inflow to the reservoir was twice as high as the norm in April and 135% of the norm in the next months.

BWO Amudarya and each water user state in the basin have agreed upon preliminary limits of water withdrawal at the annual average level for the growing season as follows:

Water withdrawal limit for the Republic of Tajikistan is 6,943 mcm,

Water withdrawal limit for the Republic of Uzbekistan is 16,020 mcm, for Surkhandarya province it is 1,200 mcm.

Water withdrawal limit for Turkmenistan is 15,500 mcm.

In conclusion, BWO Amudarya submits the following items to ICWC for consideration and approval for the growing season 2017, taking into account current hydrological situation and forecast of water availability:

1. Forecast operation regime of the Nurek and Tuyamuyun reservoirs (Annex 1.6)

2. Limits of water withdrawals from the Amudarya River (Annex 1.5)

3. Water supply to the Aral Sea and Amudarya River delta (Annex 1.5)

[2] Information on the second item of the 70th ICWC Meeting agenda

Annex 1.5

Limits
of water withdrawals from the Amudarya River and water supply to the Aral Sea and Amudarya River delta for the growing season 2017

River basin, state	water withdrawal limits, mcm	
	total annual (from 1.10.16 to 1.10 .17)	Including growing season (from 1.04.17 to 1.10.17)
Total withdrawal from the Amudarya River	55,393	39,663
of which:		
Republic of Tajikistan	9,823	6,943
From the Amudarya River to the Atamurat gauging station	44,000	31,520
Turkmenistan	22,000	15,500
Republic of Uzbekistan	22,000	16,020
additionally:		
Surkhandarya province, Uzbekistan	1,570	1,200
Plus: - - water supply to the Aral Sea and Amudarya River delta, including irrigation water and CDW	4,200	2,100
- sanitary and environmental releases to irrigation systems in	800	
Dashoguz province	150	
Khorezm province	150	
Republic of Karakalpakstan	500	
Total	60,393	41,763

Note: Water withdrawal limits imply water supply for irrigation, industrial, municipal and other purposes. If water availability in the basin changes, the limits will be adjusted accordingly.

Annex 1.6

Forecast operation regime of the Nurek and Tuyamuyun reservoirs (from April 2017 to September 2017), mcm

Nurek reservoir	unit	Forecast						total
		April	May	June	July	August	September	
Volume: beginning of the season	mcm	6,733	6,811	7,338	8,375	9,714	10,500	6,733
Inflow to the reservoir	m3/s	733	1,132	1,467	1,968	1,590	833	
	mcm	1,901	3,033	3,802	5,270	4,260	2,160	20,425
Water releases from the reservoir	m3/s	703	935	1,067	1,468	1,297	817	
	mcm	1,823	2,506	2,765	3,931	3,473	2,117	16,615
Volume: end of the season	mcm	6,811	7,338	8,375	9,714	10,500	10,543	10,543
Accumulation(+),drawdown(-)	mcm	78	527	1,037	1,339	786	43	3,810

Tuyamuyun reservoir	unit	Forecast						total
		April	May	June	July	August	September	
Volume: beginning of the season	mcm	2,585	3,111	3,992	4,396	5,355	5,742	2,585
Inflow to the reservoir	m3/s	1,010	1,745	2,672	4,615	2,363	1,056	
	mcm	2,617	4,673	6,925	12,360	6,330	2,737	35,643
Water releases from the reservoir	m3/s	807	1,416	2,516	4,257	2,219	928	
	mcm	2,091	3,793	6,521	11,401	5,943	2,405	32,154
Volume: end of the season	mcm	3,111	3,992	4,396	5,355	5,742	6,074	6,074
Accumulation(+),drawdown(-)	mcm	526	881	404	959	387	332	3,489

II. Syrdarya River basin

Hydromet's forecast

According to the preliminary forecast of Hydromet as of March 7, 2017, water content of major rivers in the Syrdarya basin is expected to be within norm in the growing season 2017. For the Naryn, Karadarya, rivers of the Southern Fergana Valley, Chirchik, and Akhangaran rivers, it is 100-110% of the norm; for the rivers in the Northern Fergana Valley, it is 90-100%.

The forecast inflow is as follows:

- to the Toktogul reservoir – 105 % of the norm,

- to the Andizhan reservoir – 106% of the norm,

- to the Charvak reservoir – 107 % of the norm, and

- lateral inflow – 106 % of the norm (Table 2.8).

In general, forecast water contetnt of the Syrdarya River basin is to be 106% of the norm.

Inflow in upstream reservoirs

The normal inflow to the *upstream reservoirs* of the Naryn-Syrdarya cascade is 18,482 mcm for the growing season.

The forecast inflow to the *upstream reservoirs* of the Naryn-Syrdarya cascade is expected to be 19,559 mcm, i.e. 106% of the norm or 1,077 more than the norm (Table 2.8).

Lateral inflow

The normal lateral inflow is 11,042 mcm.

The forecast inflow is expected to be 11,713 mcm, i.e. 106% of the norm or 671 mcm more than the norm (Table 2.8).

Total inflow

The normal total inflow is 29,524 mcm in the basin.

The forecast total inflow is expected to be 31,272 mcm, i.e. 106% of the norm or 1,748 mcm more than the norm (Table 2.8).

Table 2.8

Forecast of inflow for the growing season 2017 in the Syrdarya River basin

Name	Volume, mcm, from April 1, 2017 to September 30, 2017		
	norm	**forecast**	**forecast /norm (%)**
Inflow to upstream reservoirs			
Toktogul	9,746	10,222	105
Andizhan	2,990	3,164	106
Charvak (4 rivers in total)	5,746	6,173	107
Total:	**18,482**	**19,559**	**106**
Lateral inflow			
Toktogul – Uchkurgan	1,216	1,277	105
Andizhan – Uchtepe	2,529	2,767	109
Uchkurga, Uchtepe – Bakhri Tochik	3,368	3,478	103
Bakhri Tochik – Shardara	3,020	3,162	105
Gazalkent – Chinaz (excluding Ugam)	909	1,029	113
Total:	**11,042**	**11,713**	**106**
Overall:	**29,524**	**31,272**	**106**

Water storage in the reservoirs

By the beginning of the growing season 2017, the water storage in the reservoirs, excluding dead storage, is 14,891 mcm or 3,436 mcm more than last year.

In 2016, water storage in reservoirs was 11,455 mcm (Table 2.9).

Table 2.9

Reservoir	Water storage in the reservoirs by April 1 (mcm)				Dead storage (mcm)
	including dead storage		excluding dead storage		
	2017	**2016**	**2017**	**2016**	
Upstream reservoirs					
Toktogul	12,777	8,934	7,277	3,434	5,500
Andizhan	1,100	1,013	950	863	150
Charvak	564	791	138	365	426
Total:	**14,441**	**10,738**	**8,365**	**4,662**	**6,076**
In-stream reservoirs					
Bakhri Tochik	3,330	3,380	2,413	2,463	917
Shardara	4,633	4,850	4,113	4,330	520
Total:	**7,963**	**8,230**	**6,526**	**6,793**	**1,437**
Overall:	**22,404**	**18,968**	**14,891**	**11,455**	**7,513**

In the growing season 2017, the total water resources are estimated at 46,163 mcm.

(«water storage in the reservoirs» plus «total inflow by forecast»)

(14,891 + 31,272 = 46,163)

Water withdrawal limits

The following country water withdrawals are submitted to ICWC for consideration for the growing season 2017, given the limits of 100% (Table 2.10):

Republic of Kazakhstan (Dustlik canal)	732 mcm,
Kyrgyz Republic	246 mcm,
Republic of Tajikistan	1,905 mcm,
Republic of Uzbekistan	8,800 mcm,
Total:	11,683 mcm.

Table 2.10

Country water withdrawal limits in the Syrdarya River basin

Water user state	Limits (100%), mcm
Republic of Kazakhstan (Dustlik canal)	732
Kyrgyz Republic	246
Republic of Tajikistan	1,905
Republic of Uzbekistan	8,800
Total:	**11,683**

Operation regime of the Naryn-Syrdarya reservoir cascade

Taking into account the operation regime of the Toktogul reservoir in the growing season, water releases, to cover electricity needs of the Kyrgyz Republic, do not exceed 3,600 mcm on average within the last 5 years.

In the growing season 2016, water releases from the Toktogul reservoir were 3,573 mcm, including additional releases in the volume of 212 mcm for the Republic of Kazakhstan to produce electricity (201 million kWh) (source: Coordination Dispatch Center "Energy").

In the Toktogul reservoir, large volumes of water releases coincide with the beginning of the growing season when demand for irrigation water is low by consumers.

Taking into account water storage in the reservoirs and forecast water content, preliminary calculation of forecast operation regime of the Naryn-Syrdarya reservoir cascade is proposed for consideration from April 1, 2017 to September 30, 2017 (Table 2.11).

Table 2.11

Schedule-forecast of the Naryn-Syrdarya reservoir cascade from April 1, 207 to September 30, 2017

		April	May	June	July	August	September	Total, mcm
Toktogul reservoir								
Inflow to the reservoir	m^3/s	319.83	660.99	1,012.81	906.20	639.67	330.50	
	mcm	829.00	1,770.40	2,625.20	2,427.17	1,713.29	856.66	10,221.71
Volume: beginning of the season	mcm	12,777.00	12,773.47	14,004.71	16,056.41	17,856.61	18,937.75	
end of the season	mcm	12,773.47	14,004.71	16,056.41	17,856.61	18,937.75	19,309.96	
Water releases from the reservoir	m^3/s	320.00	200.00	220.00	230.00	230.00	180.00	
	mcm	829.44	535.68	570.24	616.03	616.03	466.56	3,633.98
Bakhri Tochik reservoir								
Inflow to the reservoir	m^3/s	525.56	400.97	258.20	192.55	217.15	280.35	
(Akdjar reservoir)	mcm	1,362.24	1,073.96	669.26	515.73	581.62	726.68	4,929.49
CDF inflow	m^3/s	29.26	29.26	21.59	19.15	14.16	16.10	
	mcm	75.84	78.37	55.96	51.29	37.93	41.73	341.12
Volume: beginning of the season	mcm	3,330.10	3,584.49	3,509.22	2,994.35	2,067.16	1,407.06	
end of the season	mcm	3,584.49	3,509.22	2,994.35	2,067.16	1,407.06	1,541.63	
Water releases from the reservoir	m^3/s	430.00	400.00	400.00	450.00	400.00	200.00	
	mcm	1,114.56	1,071.36	1,036.80	1,205.28	1,071.36	518.40	6017.76
Water diversion from the reservoir (pumping station from Akdjar to the reservoir+ pumping station from the reservoir)	m^3/s	17.67	37.33	51.43	52.87	41.77	26.53	
	mcm	45.81	99.99	133.31	141.62	111.87	68.77	601.37
Shardara reservoir								
Inflow to the reservoir	m^3/s	476.88	412.90	257.89	256.93	194.68	290.87	
	mcm	1,236.08	1,105.92	668.45	688.16	521.43	753.94	4,973.98
Volume: beginning of the season	mcm	4,633.00	4,549.75	4,182.55	3,391.71	2,151.42	1,025.64	
end of the season	mcm	4,549.75	4,182.55	3,391.71	2,151.42	1,025.64	1,152.31	

		April	May	June	July	August	September	Total, mcm
Water releases from the reservoir	m^3/s	450.00	400.00	400.00	550.00	500.00	200.00	
	mcm	1,166.40	1,071.36	1,036.80	1,473.12	1,339.20	518.40	6,605.28
Water releases to Kzylkum canal	m^3/s	20.00	100.00	110.00	110.00	90.00	25.00	
	mcm	51.84	267.84	285.12	294.62	241.06	64.80	1,205.28
Discharge to Arnasay	m^3/s	0.00	0.00	0.00	0.00	0.00	0.00	
depression	mcm	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Supply to the Aral Sea	m^3/s	175.50	93.90	42.70	44.70	44.30	118.70	
	mcm	454.90	251.50	110.68	119.72	118.65	307.67	1,363.12
Charvak reservoir								
Inflow to the reservoir	m^3/s	278.53	497.33	647.15	483.89	270.07	163.02	
(4 rivers in total)	mcm	721.95	1,332.05	1,677.41	1,296.05	723.36	422.55	6,173.37
Volume: beginning of the season	mcm	564.00	767.03	1,293.95	1,931.46	1,991.16	1,852.60	
end of the season	mcm	767.03	1,293.95	1,931.46	1,991.16	1,852.60	1,753.38	
Water releases from the reservoir	m^3/s	200.00	300.00	400.00	460.00	320.00	200.00	
(water releases from the Gazalkent HEPS)	mcm	518.40	803.52	1,036.80	1,232.06	857.09	518.40	4,966.28
Andizhan reservoir								
Inflow to the reservoir	m^3/s	171.01	305.71	329.52	215.56	103.60	74.60	
	mcm	443.26	818.81	854.12	577.36	277.48	193.36	3,164.39
Volume: beginning of the season	mcm	1,099.60	1,204.96	1,594.27	1,747.61	1,438.36	1,123.87	
end of the season	mcm	1,204.96	1,594.27	1,747.61	1,438.36	1,123.87	1,133.15	
Water releases from the reservoir	m^3/s	130.00	160.00	270.00	330.00	220.00	70.00	
	mcm	336.96	428.54	699.84	883.87	589.25	181.44	3,119.90

ANALYSIS OF HYDROLOGICAL CONDITIONS IN THE SYRDARYA AND AMUDARYA RIVER BASINS OVER THE NON-GROWING SEASON 2016-2017

1 Syrdarya River basin

The actual inflow to the upstream reservoirs in the Syrdarya basin (Toktogul, Andizhan, and Charvak reservoirs) was 6.64 km³ or 127% of the forecast during the non-growing season. The actual water releases were 10.81 km³ from the reservoirs.

The total lateral inflow in the reach from the Toktogul reservoir to the Shardara reservoir, including discharges along the Karadarya and Chirchik rivers, was 11.82 km³. This is 1.8 times more than the total inflow to the upstream reservoirs.

By the end of the non-growing season, 14.44 km³ were accumulated in the upstream reservoirs, including 12.78 km³ in the Toktogul reservoir or 102 % of the BWO Syrdarya's scheduled amount. The inflow to the Torktogul reservoir was 3.64 km³. The discharge from the reservoir was 8.35 km³ or 0.58 km³ more than the BWO Syrdarya's scheduled amount.

During the non-growing season, the inflow to the Bakhri Tochik reservoir amounted to 13.46 km³, which is 1.41 km³ more than scheduled by the BWO Syrdarya (during the non-growing season 2015-2016 the inflow was 9.8 km³); the water releases were 12.39 km³ from the reservoir (in 2015-2016 – 9.8 km³). The accumulation of water in the reservoir amounted to 2.27 km³ to 3.33 km³. The actual water releases from the reservoir exceeded the BWO Syrdarya's scheduled amount from the first ten-day of February to the third ten-day of March. In the first and second ten-days of October and from the first ten-day of December to the third ten-day of January, the actual water releases were lower than the BWO's scheduled amount; it totally amounted to 356 mcm.

During the non-growing season, the total water diversion from the Naryn and Syrdarya rivers in the reach up to Shardarya reservoir was 2.9 km³, of which: for the Kyrgyz Republic – 0.02 km³, the Republic of Tajikistan – 0.03 km³, the Republic of Kazakhstan (along the Dustlik canal) – 0.45 km³, and for the Republic of Uzbekistan – 2.4 km³. Water supply was uneven in space and time (Table 1.1).

The water losses amounted to 2.05 km³ in the reach Toktogul-Shardara (estimated by the balance method). For comparison, these losses amounted to 1.95 km³ in the same reach during the non-growing season 2015-2016.

During the non-growing season 2016-2017, the total inflow to the Shardara reservoir was 13.8 km³ or 0.68 km³ more than scheduled by the BWO Syrdarya. The amount of 9.88 km³ was discharged into the river from the Shardara reservoir; the water diversion for the Kzylkum canal was 0.19 km³; water releases to Arnasay were

0.95 km³. According to UzHydromet's data, the actual water delivery to the Aral Sea was 2.9 km³.

Table 1.2 shows the Syrdarya River channel water balance, and Table 1.3 gives the water balance of the reservoirs.

Table 1.1

Water availability in the Syrdarya River basin countries for the non-growing season 2016-2017

№	Water user	Water volume, km³		Water availability, %	Deficit (-), surplus (+), km³
		limit/ schedule	actual	season	season
1	Total water diversion	3.41	2.90	85	-0.52
2	Water diversion by state:				
	Kyrgyz Republic	0.04	0.02	66	-0.01
	Republic of Uzbekistan	2.48	2.40	96	-0.09
	Republic of Tajikistan	0.37	0.03	7	-0.34
	Republic of Kazakhstan	0.53	0.45	85	-0.08
3	By river reach				
3.1	Toktogul reservoir – Uchkurgan hydroscheme	1.37	1.24	91	-0.12
	of which:				
	Kyrgyz Republic	0.030	0.024	82	-0.005
	Republic of Tajikistan	0.084	0.021	25	-0.063
	Republic of Uzbekistan	1.252	1.197	96	-0.055
3.2	Uchkugran hydroscheme – Bakhri Tochik hydroscheme	0.25	0.16	67	-0.082
	of which:				
	Kyrgyz Republic	0.007	0.000	0	-0.007
	Republic of Tajikistan	0.069	0.001	2	-0.067
	Republic of Uzbekistan	0.171	0.163	95	-0.008
3.3	Bakhri Tochik hydroscheme – Shardara reservoir	1.80	1.49	83	-0.31
	of which:				
	Kyrgyz Republic	0.527	0.450	85	-0.08
	Republic of Tajikistan	0.212	0.005	2	-0.21
	Republic of Uzbekistan	1.061	1.036	98	-0.02
4	Inflow to the Shardara reservoir	13.12	13.80	105	0.68
	Discharge into Arnasay	0.40	0.95	235	0.54
5	Water delivery to the Aral Sea (Karateren gauging station)	3.32	2.90	88	-0.41

Table 1.2

Syrdarya River channel water balance for the non-growing season 2016-2017

№	Balance item	Water volume, km^3		Deviation (actual - plan)
		Forecast/plan	Actual	
1	Inflow to the Toktogul reservoir	2.80	3.64	0.84
2	Lateral inflow at the river reach of Toktogul reservoir – Shardara reservoir (+)	10.93	11.82	0.89
	of which:			
2.1	Water releases to the Karadarya river	1.89	1.93	0.04
2.2	Water releases to the Chirchik river	2.08	1.56	-0.52
2.3	Lateral inflow from CDF and small rivers	6.97	8.34	1.37
3	Flow regulation in the reservoirs: inflow (+) or diversion (-)	3.76	3.27	-0.48
	of which:			
3.1	Toktogul reservoir	4.97	4.71	-0.26
3.2	Bakhri Tochik reservoir	-1.21	-1.43	-0.22
4	Regulated flow (1+2+3)	17.49	18.74	1.25
5	Water diversion at the reach Toktogul – Shardara (-)	-3.41	-2.90	0.52
6	Water losses (-) or unrecorded inflow to the channel (+) at the reach of Токtogul-Shardara	-0.96	-2.05	-1.09
6.1	Including % of the regulated flow	5	11	
7	Inflow to the Shardara reservoir	13.12	13.80	0.68
8	Flow regulation in the Shardara reservoir: inflow (+) or diversion (-)	-4.14	-2.78	1.36
9	Releases from the Shardara reservoir to the river	8.50	9.88	1.38
10	Delivery to the Aral Sea (Karateren GS)	3.32	2.90	-0.41

Table 1.3

Water balance of the Syrdarya River basin reservoirs for the non-growing season 2016-2017

№	Balance item	Water volume, km³		Deviation (actual-plan)
		Forecast/ Plan	Actual	
1	**Toktogul reservoir**			
1.1	Inflow to the reservoir	2.80	3.64	0.84
1.2	Water volume in the reservoir:			
	- beginning of the season (October 1, 2016)	17.49	17.487	0.00
	- end of the season (April 1,2017)	12.51	12.78	0.27
1.3	Water releases from the reservoir	7.77	8.35	0.58
1.4	Unrecorded inflow (+) or losses (-)	-0.01	0.00	0.010
	Including % of inflow to the reservoir	0	0	0
1.5	Flow regulation: inflow (+) or diversion (-)	4.97	4.71	-0.26
2	**Andizhan reservoir**			
2.1	Inflow to the reservoir	0.95	1.12	0.18
2.2	Water volume in the reservoir:			
	- beginning of the season (October 1, 2016)	0.73	0.73	0.00
	- end of the season (April 1, 2017)	1.12	1.10	-0.02
2.3	Water releases from the reservoir	0.55	0.74	0.19
2.4	Unrecorded inflow (+) or losses (-)	0.00	-0.01	-0.01
	Including % of inflow to the reservoir	0	1	1
2.5	Flow regulation: inflow (+) or diversion(-)	-0.39	-0.38	0.01
3	**Charvak reservoir**			
3.1	Inflow to the reservoir	1.50	1.87	0.37
3.2	Water volume in the reservoir:			
	- beginning of the season (October 1, 2016)	1.68	1.68	0.00
	- end of the season (April 1, 2017)	0.85	0.56	-0.28
3.3	Water releases from the reservoir	2.32	2.75	0.43
	Unrecorded inflow (+) or losses (-)	-0.01	-0.24	-0.23
	Including % of inflow to the reservoir	1	13	12
3.5	Flow regulation: inflow (+) or diversion(-)	0.82	0.87	0.05
4	**Bakhri Tochik reservoir**			
4.1	Water inflow to the reservoir from the river	12.05	13.46	1.41
4.2	Lateral inflow	0.300	0.36	0.06
4.3	Water volume in the reservoir:			
	- beginning of the season (October 1, 2016)	2.27	2.27	0.00
	- end of the season (April 1, 2017)	3.47	3.33	-0.14
4.4	Water releases from the reservoir	11.14	12.39	1.25
	of which:			
	- releases to the river	11.07	12.39	1.32

№	Balance item	Water volume, km³		Deviation (actual-plan)
		Forecast/ Plan	Actual	
	- diversion from the reservoir	0.07	0.00	-0.07
4.5	Unrecorded inflow (+) or losses (-)	-0.01	-0.37	-0.37
	Including % of inflow to the reservoir	0	3	3
4.6	Flow regulation: inflow (+) or diversion (-)	-1.21	-1.43	-0.22
5	**Shardara reservoir**			
5.1	Inflow to the reservoir	13.12	13.80	0.68
5.2	Lateral inflow	0.0	0.0	0.00
5.3	Water volume in the reservoir:			
	- beginning of the season (October 1, 2016)	1.08	1.08	0.00
	- end of the season (April 1, 2017)	5.13	4.633	-0.49
5.4	Water releases from the reservoir	8.98	11.02	2.03
	of which:			
	- Discharge into Arnasay	0.40	0.95	0.544
	- Water releases to the river	8.50	9.88	1.38
	- water diversion from the reservoir	0.08	0.19	0.11
5.5	Unrecorded inflow (+) or losses (-)	-0.09	0.78	0.87
	Including % of inflow to the reservoir	1	6	5
5.6	Flow regulation: inflow (+) or diversion(-)	-4.14	-2.78	1.36
	Total flow regulation by reservoirs: inflow (+) or diversion (-)	0.05	0.98	0.93
	Total unrecorded inflow (-), or losses (+)	-0.12	0.14	0.27

2 Amudarya River basin

The actual water availability in the Amudarya River at the Atamurat gauging station (upstream of the intake to Garagumdarya) was 8.98 km³, which is 31% less than expected by the BWO Amudarya schedule.

The established limit of water withdrawal in the basin was 93 % used; the total water withdrawal was 14.58 km^3, including 12.1 km^3 downstream of Atamurat gauging station (starting from the intake to Garagumdarya).

Water availability was uneven in the states and river reaches (Table 2.1). The water deficit was 7% in general. It amounted to 26% in the Republic of Tajikistan, 1% - in the Republic of Uzbekistan, and 5 % - in Turkmenistan.

By the end of the growing season, 6.73 km³ of water was managed to be kept in the Nurek reservoir and 2.58 km³ - in the TMHS reservoirs. The inflow to the Nurek reservoir was 3.8 km³; the water releases amounted to 7.66 km³. The surplus to the river flow due to the drawdown of the Nurek reservoir was 3.86 km^3. In October-December, the water releases from the Nurek reservoir were 0.37 km³ less than planned. From the second ten-day of January to March, it was 0.57 km³ more than planned.

In the TMHS reservoirs, the water accumulation plan has not been achieved – by the 1st of April the actual water volume was less than the scheduled one by 0.4 km³. The failure to implement the water accumulation plan is explained by the limited inflow to the in-stream reservoir as expected.

The established limits for environmental water releases to the Amudarya downstream canals were 91% used; the water supply was 0.72 km³. According to the Hydromet's data, 1.51 km³ were supplied to Prearalie and the Aral Sea.

Table 2.2 provides data on the river channel balance, and Table 2.3 gives the water balance of the reservoirs.

In the Atamurat-Bir-Ata section, water losses were not recorded; unrecorded inflow was 0.19 km³. In the Tuyamuyun-Samanbay section, flow losses were 1.32 km³.

Table 2.1

Water availability in the Amudarya River basin countries for the non-growing season 2016-2017

№	Water user	Water volume, km3		Water availability, %	Deficit (-), surplus (+), km^3
		limit / schedule	actual	season	season
1	Total water withdrawal	15.73	14.58	93	-1.15
2	Water withdrawal by state:				
	Kyrgyz Republic	-	-	-	-
	Republic of Tajikistan	2.88	2.11	73	-0.77
	Turkmenistan	6.50	6.24	96	-0.26
	Republic of Uzbekistan	6.35	6.23	98	-0.12
3	Downstream of the Atamurat section	12.48	12.10	97	-0.38
	of which:				
	Turkmenistan	6.50	6.24	96	-0.26
	Republic of Uzbekistan	5.98	5.86	98	-0.12
4	By river reaches				
	Upper reaches	3.25	2.48	76	-0.77
	of which:				
	Kyrgyz Republic	-	-	-	-
	Republic of Tajikistan	2.88	2.11	73	-0.77
	Republic of Uzbekistan, Surkhandarya	0.3700	0.3679	99	0.00
	Middle reaches	8.66	8.61	100	-0.04
	of which:				
	Turkmenistan	5.10	5.06	99	-0.04
	Republic of Uzbekistan	3.56	3.56	100	0.00
	Lower reaches	3.83	3.49	91	-0.34
	of which:				
	Turkmenistan	1.40	1.18	85	-0.22
	Republic of Uzbekistan	2.43	2.30	95	-0.12
5	Sanitary and environmental releases to canals within lower reaches	0.80	0.72	91	-0.07
	Including:				
	Turkmenistan	0.15	0.15	100	0.00
	Republic of Uzbekistan	0.65	0.57	89	-0.07
6	Supply to Prearalie and the Aral Sea	2.1	1.51	72	-0.60

Table 2.2

The Amudarya River channel water balance for the non-growing season 2016-2017

Balance item	Water volume, km^3		Deviation (actual-plan)
	forecast/ plan	actual	
1.Water content of the Amudarya river - non-regulated flow at the Atamurat GS *	12.93	8.98	-3.95
2.Flow regulation in the Nurek reservoir: accumulation (+) or diversion (-)	4.30	3.86	-0.44
3.Water diversion (-) in the middle reaches	-8.29	-8.61	-0.32
4. Return CDF (+) in the middle reaches	1.35	1.38	0.03
5.Water losses (-) or unrecorded inflow to the channel (+)	-2.33	0.19	2.52
% of flow at the Atamyrat GS conditional	13	2	-12
6.Flow at the Bir-Ata GS	7.96	5.81	-2.15
7.Flow regulation by TMHS: accumulation (+) or diversion (-)	-1.85	0.33	2.18
8.Water releases from TMHS (including water diversion from the reservoir)	6.79	6.14	-0.65
9. Water diversion, including from TMHS (-) in lower reaches	-4.24	-3.49	0.76
10. Return CDF (+) in lower reaches	0.00	0.00	0.00
11.Emergency and environmental water releases to canals (-)	-0.80	-0.72	0.07
12.Runoff losses (-) or unrecorded inflow to the channel (+)	-0.49	-1.32	-0.83
% of flow at the Tuyamuyun GS section	12	30	18
13.Supply to Prearalie and the Aral Sea (Samanbay GS)	0.58	0.61	0.02
TOTAL losses:	-2.81	-1.13	1.69
% of water content	16	9	-8

* Minus water diversions (Tajikistan and Surkhandarya province) in upper reaches

Table 2.3

Water balance of the reservoirs in the Amudarya River basin for the non-growing season 2016-2017

Balance item	Water volume, km^3		deviation (actual-plan)
	forecast/plan	actual	
1 Nurek reservoir			
2.1 Inflow to the reservoir	3.61	3.80	0.19
2.2 Water volume in the reservoir:			
– beginning of the season (April 1, 2016)	10.57	10.57	0.00
– end of September (October 1,2016)	6.29	6.73	0.44
2.3 Water releases from the reservoir	7.90	7.66	-0.24
2.4 Lateral inflow (+) or losses (-)	0.02	0.02	0.01
% of the inflow to the reservoir	0.42	0.55	0.14
2.5 Flow regulation: accumulation (+) or diversion (-)	4.30	3.86	-0.44
2 TMHS reservoirs			
2.1 River flow at Bir-Ata GS	7.96	5.81	-2.15
2.2 Water losses at Bir-Ata GS-Tuyamuyun GS section (-)	-1.85	0.33	2.18
2.3 Water volume in the reservoirs:			
– beginning of the season (April 1, 2016)	2.75	2.75	0.00
– end of September (October 1,2016)	2.98	2.58	-0.40
2.4 Water release from the hydroscheme	6.111	6.14	0.03
of which:			
– release to the river	4.037	4.45	0.41
– water diversion	2.074	1.69	-0.39
2.5 Unrecorded inflow (+) or water losses (-)	-1.62	0.17	1.78
including %of inflow to the reservoir	20	-3	-23.18
2.6 Flow regulation: accumulation (+) or diversion (-)	-1.85	0.33	2.18
TOTAL flow regulation by the reservoirs: accumulation (+) or diversion (-)	2.45	4.19	1.75
TOTAL losses (-), unrecorded inflow (+)	-1.60	0.19	1.79

INTERNATIONAL EECCA NWO CONFERENCE "CHALLENGES OF RIVER BASIN MANAGEMENT IN THE CONTEXT OF CLIMATE CHANGE"

The International Conference of the EECCA NWO "Challenges of River Basin Management in the context of Climate Change" was held in premises of the Russian Research Institute of Hydraulic Engineering and Land Reclamation (VNIIGiM) on 18-19 May 2017 in Moscow. The Conference brought together researchers and experts from many countries, including Russia, Belarus, Moldova, Azerbaijan, Armenia, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, France, Switzerland, and Austria.

The focus areas of the Conference included:

- transboundary river basin cooperation,
- sustainable water management and adoption of information-communication technologies (ICT) at basin level,
- adaptation of water management to climate change and anthropogenic impact,
- water-food production-hydropower-environment nexus,
- SMART-water,
- water supply and sanitation,
- river basin reclamation issues.

Opening speech by EECCA NWO President Prof. D.V.Kozlov.

Welcoming addresses:

- V.A. Zhukov, Director, Land Reclamation Department, Ministry of Agriculture, Russian Federation
- A.A.Filtchakova, Head, Moscow-Oksk Basin Water Administration
- B. Libert, Regional Advisor for Environment, UNECE
- JF Donzier, Permanent Technical Secretary INBO
- EECCA NWO Executive Secretary Prof. V.A.Dukhovniy - Report on EECCA NWO activity in 2016 - first quarter 2017
- B.M. Kizyaev, Chief Research Officer, VNIIGiM

- N.A. Sukhoy, Chairman of the Board, Union of Water and Land Reclamation Experts
- T.M.Belyakova (CIS Executive Committee) Regarding the Concept on cooperation of CIS member states on land reclamation and integrated use of interstate water bodies and the First Priority Measure Plan for its implementation

Key speakers

JF Donzier (INBO, France) Presentation of INBO activities with focus on adaptation to climate change

V.A. Dukhovny (Secretariat EECCA NWO/SIC ICWC) The future: water saving and cooperation

T. Efimova (OECD) and M. Sutter (UBA, Austria) Presentation of EUWI+East project supporting implementation of WFD

SESSION 1: National Strategy for adaptation to CC, River basin management plans, transboundary basins

Key speakers

B. Libert (UNECE) UNECE projects on adaptation of transboundary basins to climate change

P. Polad-Zade (JSC Vodstroy, Russia) Tasks of efficient water use in the face of global challenges

Presentation of relevant case studies by country representatives

M.G. Morozov (RosNIIVH, Russia) Water strategy as a tool of water resources management

G. Tilyavova (BWO Amudarya) Transboundary cooperation in the Amudarya River Basin

A.R. Uktamov (BWO Syrdarya) Transboundary cooperation in the Syrdarya River Basin

SESSION 2: Practical measures for adaptation to CC in basins in line with the concept of water-food-hydropower-environment nexus

Key speakers

JF Donzier (INBO) European directives and adaptation to climate change

B. Libert (UNECE) UNECE nexus assessments in transboundary basins

Presentation of relevant case studies by country representatives

G.V. Stulina (SIC ICWC) Usage of the positive effects of climate change in the basin in modeling crop water requirements

N.N. Balgabayev (KazNIIVH, Kazakhstan) Efficient water management in Kazakhstan

Ya.E. Pulatov (Institute of water problems, hydropower engineering and ecology of Academy of Sciences of the Republic of Tajikistan) Water resources and irrigated agriculture in the context of climate change in Tajikistan

V.A. Omelianenko (National Information Agency "Nature", Russia) Russia's river basins in climate change context

R.M. Corobov (Eco-TIRAS, Moldova) Lessons learnt from the assessment of river basin vulnerability to climate change and elaboration of common adaptation strategy by the example of Dnestr basin

SESSION 3: Supporting the development of operational Basin Organisations and efficient networking

Key speakers

P. Henry de Villeneuve (OIEau, France) Steps for developing Basin Organisations

Y. Videnina (OIEau) Stakeholders and public participation in line with WFD requirements

Presentation of relevant case studies by country representatives

D.V. Kozlov (Russian State Agrarian University) Current issues of water management and engineering in Russia

A. Inosemtseva (CAREC, Kazakhstan) CAREC activity on water resources management: progress and prospects

A.L.Buber (VNIIGiM named by A.Kostyakov, Russia) Development of strategic and operation plans for Volgian-Kamsk reservoir management in the context of climate change

SESSION 4: Monitoring for sustainable water management and implementation of data flow management and information-communication technologies (ICT) at basin level

Key speakers

JF Donzier (INBO) Importance of organisation and management of water

related data

M. Sutter (UBA, Austria) Example of WFD compliant monitoring

Presentation of relevant case studies by country representatives

M.Yu. Kalinin (Association of river guardians “Eco-Krones”, Belarus) Belarus towns’ influence on surface water in transboundary river basins of the Baltic Sea

J. Mukhatov (Shu-Talas Basin Commission Basin Inspection for Water Use Regulation and Protection, Kazakstan) Water resource management in Shu-Talas River Basin in the context of climate change

A. Karlykhanov (Aralo-Syrdarya Basin Inspection for Water Use Regulation and Protection, Kazakstan) Transboundary cooperation in the Syrdarya River Basin

B.O. Askaraliev (Kyrgyz National Agrarian University) Sustainable management of water in irrigation systems of the Sokoluk River Basin, Shu depression in Kyrgyzstan

SESSION 5: Role of economic analysis and financial mechanisms for sustainable basin planning

Key speakers

T. Efimova (OECD) Use of economic analysis and deployment of economic instruments

P. Henry de Villeneuve (OIEau) Financing the Program of Measures included in RBMPs

Presentation of relevant case studies by country representatives

A.Row (KazNAU, Kazakhstan) Effects of climate and anthropogenic load on flow quality in the river basins of rice-growing areas in the South Kazahkstan

Finally, the Conference adopted the resolution.

EECCA NWO CONFERENCE RESOLUTION
CHALLENGES OF RIVER BASIN MANAGEMENT IN CONTEXT OF CLIMATE CHANGE

The participants of the International Conference "Challenges of River Basin Management in the context of Climate Change" gathered in Moscow on 18-19 May 2017 within the framework of the Network of Water-Management Organizations from Eastern Europe, Caucasus, and Central Asia (EECCA),

having discussed urgent issues in the following focus areas:

- National strategies for adaptation to climate change, river basin management plans, transboundary basins;
- Practical measures for adaptation to CC in basins including in line with the concept of water-food-hydropower-environment nexus;
- Supporting the development of operational Basin Organisations and efficient networking;
- Monitoring for sustainable water management and implementation of data flow management using , information-communication technologies (ICT) at basin, national and transboundary levels to develop operational Water Information Systems (WIS) for decision making;
- Role of economic analysis and financial mechanisms for sustainable basin planning;
- Land reclamation issues in river basins; protection and restoration of wetlands and aquatic ecosystems;
- Control of water demands and strengthening efficient uses of water.

have agreed that:

- The challenges related to climate change and its consequences (floods, droughts, aquatic ecosystem destruction, etc.) become more acute for the water sector. In this context, the Paris Pact on water and adaptation to climate change in the basins of rivers, lakes and aquifers, promoted by INBO and UNECE at UNFCCC COP21 in December 2015, offers practical measures through:
    - enhanced work for capacity building and knowledge generation among the staff of water-management organizations and the general public;
    - adaptation of the water sector to climate change, mainly at river basin level;
    - strengthened governance;
    - adequate financing.

- Of particular note is the role the UNECE Water Convention and its task-force on water and climate play in the development of adaptation strategy for transboundary river basins by preparing guidelines, implementing projects, and exchanging experience.
- There is a considerable value and potential of engaging economic development sectors into a dialogue about management and use of resources. In this respect the efforts by UNECE in developing dialogues and assessments on water-food-hydropower-environment nexus in transboundary basins thus facilitating cooperation among concerned parties in various sectors were highlighted.
- Particular measures for adaptation to climate change include the following:
    - the need for better application of long-term flow forecasts and the long-term planning of multi-year regulation on the basis of more accurate forecasts and IWRM.
    - In line with IWRM, it is necessary to enhance participatory governance and involve energy, Inland transport, agriculture, tourism fishery, hydrometeorological, and environmental organizations in the activities of basin organizations.
    - Moreover, it is necessary facilitate the creation and strengthening of basin councils or committees and to develop a network of basin councils representing the interests of all water using and water supply sectors that would be able to assume coordination and supervision over management;
    - the river basin water management to be sustainable requires that the long-term strategic tools be implemented on the basis of prospective assessment for 15-20 years and a set of measures be developed to overcome potential demographic and climate challenges.
    - water conservation is the most powerful adaptation mechanism. The tools that could be used include:
        - selection of appropriate crop patterns;
        - full use of irrigation area;
        - revision of hydromodule zoning and irrigation regimes;
        - reduction of productivity losses by using programming methodology;
        - reduction of salinized areas and, consequently, leaching requirements;
        - selection of appropriate irrigation techniques, including drip irrigation;
        - IWRM as a whole;
        - improvement of water accounting;

- use of treated wastewater and saline water;
- agricultural extension services;
- production of less water intensive crops;
- implementation of all kind of Natural Water Retention Measure.

While underlining the importance of professional unity, information exchange and best practices dissemination maintained within EECCA NWO, the participants stressed the Network's achievements in 2016-2017 including:

- organization of the conference of "Cultural and Educational Issues related to Water Management in the EECCA Countries" in Almaty on the 9th of February 2016 and the round-table for discussion of the ways to improve activities of the Network (February 10, 2016);
- events dedicated to 50 years since initiation of the ambitious program "Large-scale reclamation of land for higher and sustainable yields of grain and other crops" (Moscow, June 2016);
- XIV International scientific-practical symposium "Clean water of Russia – 2017" (Yekaterinburg, April, 2017);
- issue of Network's information collections and scientific publications, including the collection of scientific papers "Cultural and educational issues related to water management in the EECCA countries";
- further development of the Central Asian knowledge portal - CAWater-Info (cawater-info.net) - as part of the system of uniform tools for implementation of IWRM that are adapted to specific conditions of water management in river basins with different water stresses in arid and semi-arid zones of EECCA countries.

The participants agreed on the necessity to strengthen activities on:

- increasing availability of water information;
- exchange of information on best practices and effective technologies for rational water use and decreased water pollution and exhaustion;
- development of (regional and national) knowledge hubs with the task to assist water users at different levels of water hierarchy;
- involvement of basin organizations in the Network's activity;
- training workshops and study tours to learn best practices and exchange experience and knowledge on water management.

They expressed a strong interest in the European Union Water Initiative plus for the Eastern Partnership in 6 EECCA Countries and wished to be informed of the results of this project.

In the context of the above mentioned, the participants deemed it necessary to deepen joint activities of the Network by:

- keeping submitting on a regular basis information on national events in the area of water management and information on new publications, software, methodologies and training materials in order to raise awareness among water professionals and encourage water sector development in EECCA;

- enhancing cooperation with national focal points of international networks and organizations, such as Global Water Partnership (GWP), International Commission on Irrigation and Drainage (ICID), Europe-INBO and CEENBO and others.

The participants proposed to organize the next Network's conference in 2018 on the theme "Land reclamation in the EECCA countries in XXI: problems and solutions" and discuss the following:

- new approaches and technology for reclamation of land, more effective use of water, and prevention of soil salinization;
- prospects of irrigated agriculture development through innovations;
- application of up-to-date information technologies for monitoring and assessment of irrigated land.

The participants expressed high interest in the participation of representatives of EECCA basin organizations and national authorities in next international events such as Europe-INBO international conferences in Dublin (Ireland) in September 2017 and in Sevilla (Spain) in October 2018 and in the 8th World Water Forum in March 2018 in Brasilia (Brazil) and asked for financial support in traveling from organizers and donors.

The participants thanked the Government of Russia, UNECE and the International Network of Basin Organizations (INBO) for assistance provided to the Network, including in organization of this Conference, and seek for the continuance of financial support to core activities of the Network.

The participants also appreciated very much the assistance rendered by the A.N.Kostyakov Russian Research Institute of Hydraulic Engineering and Land Reclamation in preparation and organization of the Conference.

FIRST INTERNATIONAL ARAL FORUM OF SUSTAINABLE DEVELOPMENT

On May 30-31, 2017, the first International Aral Forum of Sustainable Development was held in Kyzylorda, Republic of Kazakhstan. Gulshara Abdylkalikova, the State Secretary of the Republic of Kazakhstan, Krymbek Kusherbayev, akim (mayor) of the province, parliamentarians of Kazakhstan, heads of central and local authorities of Kazakhstan and Central Asian countries, heads of diplomatic missions in Kazakhstan, representatives of international organizations, scientists, and experts took part in the Forum.

In the opening speech, akim of the province Krymbek Kusherbayev referred to the President Nursultan Nazarbayev who underlined that the Aral Sea problem was not a problem just of one region and country. At present, it became the global problem to be solved through joint efforts of all the countries in the world.

On January 18, 1992, the Supreme Council of the Republic of Kazakhstan adopted a resolution "On immediate measures for radical improvement of living conditions of communities in Prearalie". Twenty-five years passed; a lot has changed. Economy of the country is under dynamic growth; living standards of communities were improved. Thanks to the implementation of the first phase of the "Regulation of the Syrdarya River channel and preservation of the Northern Aral Sea" project initiated by the President of Kazakhstan, Prearalie today is experiencing its rebirth. To compare, at the start of the project, Aralsk was 75 kilometers away from the Sea, today it is 17 kilometers. Water has brought life; salinity of the sea water has significantly decreased; fishery is restored. In just 4 years, fish production increased by 65%, processing –2.5 times, and export –3 times. Environmental conditions are gradually improved.

According to Mr. Kusherbayev, however, one should admit that environmental factors of the Aral crisis were exacerbated by anthropogenic ones. Oil production developed very actively; uranium mines were extended. The influence of the "Baykonur" cosmodrome on environment is not studied.

During 25 years, the region has achieved substantial environmental, economic, and social development. The mayor noted that people hardly realize the consequences and responsibility for the generation born in these years and future generation in Prearalie.

Along with unbiased and comprehensive assessment of the current situation, identification of the most acute problems, joining of efforts in the implementation of programs, and strengthening of partnership relations, the Forum will contribute not only to the saving and rehabilitation of the Aral Sea, but also to the well-being of future generations. Only by joining efforts and most importantly not ignoring the

problems, one can rely on real success in creating favorable conditions for people, as well as prevent negative environmental changes, and ensure sustainable development of the countries.

Mr. Kusherbayev expressed confidence that the Forum would be held in a constructive manner, integrate experiences accumulated in environment protection and facilitate joint efforts of experts to protect environment and preserve its unquantifiable values.

According to Gulshara Abdylkalikova, the tragedy of the Aral Sea symbolizes one of the most serious environmental disasters of the planet. It is a common responsibility of the global community to combat its consequences. Everybody knows that the disaster has adverse environmental and climate, social and economic, and humanitarian consequences. It seriously threatens sustainable development, health and future prospects in the Central Asian region. That is why, the President Nursultan Nazarbayev in his program article "Outlook on the Future*:* Modernization of Public Consciousness" focused on pragmatism, which is based on knowing definitely of national and personal resources, their efficient use, and ability to plan one's future.

The International Fund for the Aral Sea Saving has been the space that unites the Central Asian countries for 24 years. It was in Kyzylorda that the heads of Central Asian countries signed an agreement on joint efforts to address problems in the Aral Sea and Prearalie in March 1993.

Under IFAS, two programs were developed and implemented to improve environmental situation in the Aral Sea basin. At present, the third program is implemented. Kazakhstan carries out systematic work to address the common problem. The Northern Aral Sea was restored with the financial support of the World Bank. The State Secretary expressed gratitude to international organizations, countries, and experts for their support.

However, there are serious challenges and tasks ahead. The State Secretary expressed hope for a serious support of the global society to solve the issues.

It was underlined that the Forum was based on principles of sustainable development in solving the regional problems of different character and consequences. Hence, the ways for their solution may not be single-vector. A comprehensive approach is required; it will consider a whole range of issues related to the Aral Sea basin, including energy, environment, public health, and socio-economic development.

Deputy of the Senate of the Kazakhstan' Parliament Bekmyrza Elamanov read out the greeting of the Senate chairman Kasym-Jomart Tokayev.

Ambassador Extraordinary and Plenipotentiary of the Republic of Tajikistan to the Republic of Kazakhstan Alizoda Nazirmad noted that the Forum would continue sustained efforts of the regional countries to raise awareness on environmental and socio-economic problems in Prearalie. Deputy Minister of Agriculture and Water Resources of Turkmenistan Gyuzgeldy Baydjanov underlined that water resources were of great importance for socio-economic development of the countries located in one region and sharing the same waters. Any changes in water use in one of the

countries impacts the interests of other states. Deputy Minister of Agriculture and Water Resources of the Republic of Uzbekistan Shavkat Khamraev noted wisdom of the heads of state who defined a set of joint tasks to overcome the crisis and ensure environment security in the region and, first, in Prearalie.

At the Forum, Program Analyst at the UNDP Konstantin Sokulskiy and Director of the UNECE Environment Division Marco Kainer made their speeches as well.

In his report, akym of the province focused on the most important aspects of the Aral Sea problem. Kazakhstan pays great attention to the problem, despite complex economic conditions in the country in the first years of Independence and the years followed after the crisis. The President Nursultan Nazarbayev adopted measures to mitigate consequences of the drying Sea in the region, solve problems and develop the Kazakh part of Prearalie.

Akim spoke on speeds of socio-economic development in the province, which is among the leading ones in the state. At the same time, economy cannot develop steadily if a fragile ecological balance is broken. Scientists say that annually million tons of sand, dust, and hazardous aerosols blown from the dried bed of the Aral Sea cover irrigated areas, pastures, and orchards, thus reducing their productivity, withdrawing land from agriculture, worsening environmental condition, and negatively impacting public health. Hence, much effort was directed to combat salt and dust transfer, fix blown sands, and localize an adverse impact on environment. For this purpose, saksaul and other plants that suffer local climate conditions are annually planted on several thousand ha of the dried seabed. Nowadays, this area covered 150,000 ha.

A number of international organizations make efforts to address the consequences of environmental problems. These are UNDP, UNICEF, UNESCO, USAID, CIDA, JICA, TIKA, MASHAV, Kuwait Fund and many others. More than 70 projects were implemented with US $ 6 million.

Of course, the most important project to save the Aral Sea is the “Regulation of the Syrdarya River channel and preservation of the Northern Aral Sea” project initiated by the President of Kazakhstan and supported by the World Bank. The construction of the 13 km dam between the Small and Large Aral gave unexpected results.

By March 2006, the water level in the Small Aral reached 42 meters, and salinity began decreasing. Lost fish species were restored and amounted to more than two thousand. Fish production increases from year to year; fish products are exported to European and Asian countries. Fish industry is again becoming one of the major economic sectors.

At the same time, the analysis of the current situation in the basin shows that, despite all efforts, the degree of growth of factors threatening the ecology in the region outstrips the scale of the measures. The Large Aral Sea located in the south is dying; the water level is catastrophically falling. Water salinity increases and today perhaps exceeds 150 grams per liter. Therefore, according to scientists and experts, the return

of the Aral Sea to its former state is unlikely in the nearest future.

Based on the results of the studies on composition of soil, water, and air, the excess of chemical elements is observed throughout the territory, in all areas of the Kyzylorda province, even in those areas that are formally referred to zones with relative ecological well-being and located more than 400 km from the Aral Sea.

Unfortunately, it is obvious today that the Aral Sea cannot be fully restored. Hence, the most important task is to reduce the adverse impact of the Aral Sea crisis on environment and millions of people in Prearalie, including through well thought-out and target projects.

Vice Minister of Agriculture of the Republic of Kazakhstan Yerlan Nysanbayev spoke about implemented and future projects of the Kazakhstan Government in Prearalie. Executive Director of the Regional Environmental Center for Central Asia (CAREC) Iskander Abdullayev informed on the activity of CAREC and on sustainable development oinf the region. Director of the Executive Committee of IFAS Bolat Bekniyaz reported on implemented and planned projects to overcome socio-economic and environmental problems in the Kazakh part of Prearalie.

A Memorandum on Cooperation was signed at the plenary session.

A representative of the Forestry and Wildlife Committee of the Ministry of Agriculture of the Republic of Kazakhstan Galymjan Orakbayev, Director of the Executive Committee of IFAS in Kazakhstan Bolat Bekniyaz, Director of the International Science Complex “Astana” Nurlan Sarsenbay, and Head of the “Biodiversity Conservation Fund of the Republic of Kazakhstan” Asylkhan Asylbekov signed the Memorandum on Cooperation to implement the “Development of phytomeliorative plants on the dried bed of the Aral Sea and “green belt” project on the eastern coast of the Aral Sea and settlements”.

A representative of the Forestry and Wildlife Committee of the Ministry of Agriculture of the Republic of Kazakhstan Galymjan Orakbayev, Director of the Executive Committee of IFAS in Kazakhstan Bolat Bekniyaz, and Director of the International Science Complex “Astana” Nurlan Sarsenbay signed the Memorandum on Cooperation to implement the “Establishment of Prearalie Center for adaptation of wild animals to climate change” project.

Deputy mayor of the Kyzylorda province Serik Kojaniyazov, Director of the Executive Committee of IFAS in Kazakhstan Bolat Bekniyaz, and Director of the International Science Complex “Astana” Nurlan Sarsenbay signed the Memorandum on Cooperation to establish and operate the “Scientific-Touristic complex “Aral” on the coast of Kamystybas lake, as well as to implement other research and practical projects and programs on sustainable development in Prearalie”.

Deputy Mayor of the Kyzylorda province Serik Kojaniyazov and Director of the International Science Complex “Astana” Nurlan Sarsenbay signed the Memorandum on Cooperation to establish the “Atlas of the Kyzylorda province and interactive digital maps of the Kazakh part of Prearalie based on GIS-technologies”.

At the plenary session held in the second half of the day, doctor of geography

sciences, professor, and director of the Geography Institute of the Ministry of Education and Science of the Republic of Kazakhstan Akhmetkala Medeu made a report on research activities carried out in the Kazakh part of Prearalie.

The concept of preservation and restoration of the Aral Sea developed by the Institute of Geography envisages preservation of the Sea as a whole water body by restoring the inflow to the Sea through the implementation of a program on intensified water use in production field for 20 years. Scientists conducted water-ecological monitoring of the Syrdarya delta, assessed anthropogenic impacts on the Aksai-Kuandarya, Kamystybas, and Akshatau lake systems in terms of water security, and conducted expeditions in the Syrdarya delta. Using this knowledge, the scientists recommended a complex of environmentally safe and cost-efficient solutions for water management in the delta. These include restoration of the natural spring-summer regime of flooding in the lake systems to more efficiently flood estuaries and hayfields, preserve and restore forest bushes, and develop fishery production.

Speaking at the Forum, Dr. Nikolai Aladin, head of the Laboratory of Brackish Hydrobiology of the Zoological Institute of the Russian Academy of Sciences, noted that in 1989 the Aral Sea already partially dried up, salinity of its waters strongly increased, and biodiversity of flora and fauna disastrously decreased due to continued anthropogenic regression. The laboratory staff managed to confirm the prediction of L. Berg that the Aral has repeatedly changed its outlines during its history. In 1991, the laboratory staff suggested to close the runoff from the Small Aral with a dam in the Berg Strait.

As PhD student of Kyoto University Kayo Matsui told, their colleague and professor Norio Ishida carried out reclamation activities on the dried bed of the Aral Sea for the first time. Japanese scientists sowed two hectares with black saksaul. The joint work of Kazakh and Japanese scientists gave results. Now saksauls retain sand and salt; the number of plants has already increased several times.

The President of the JSC “Science Foundation” of the Science Committee at the Ministry of Education and Science Anuarbek Sultangazin spoke on “green economy” development and ensuring sustainable development of the country using available scientific-technical potential.

Director of the Kazakh branch of the Scientific Information Center of the Interstate Commission for Water Coordination (SIC ICWC) and chairman of the Global Water Partnership in Kazakhstan Nariman Kipshikbayev spoke on engineering measures from 1992 to 2017 for the improvement of socio-economic and environmental situation in the Northern Aral Sea. On the proposal of the Government of the Republic of Kazakhstan and with the financial support under the NATO’s “Science for Peace and Security” Program, integrated scientific research activities were carried out from November 2004 to April 2008 to implement integrated water resource management in the Syrdarya delta and Northern Aral Sea.

Within the first phase of the “Regulation of the Syrdarya River channel and preservation of the Northern Aral Sea” project, Kokaral dam, Aklak hydroscheme, Aytek set of structures, and protective dams were constructed on the Syrdarya River.

Moreover, repair work was conducted on the Kazalin and Kyzylorda hydrochemes and Shardara dam. For this purpose, US $ 85 million were allocated by the World Bank.

Implementation of the first phase of the project proved that the Northern Aral Sea might be saved. The number of fish species increased. If during the worst years for the Aral Sea only flatfish-gloss lived in the Sea, today 27 fish species live there; microclimate began changing.

Today, people in Prearalie are looking forward to the start of the second phase of SCRPAS project. As experts say, 6 out 8 projects are planned to be implemented at the cost of 23.2 billion tenge. This includes the restoration of the check structure on left bank in the Kyzylorda hydroscheme, rectification of the Syrdarya channel at Korgansh and Turumbet, construction of protective dams in Kazalin and Karmakshi districts and automobile bridge in the Birlik village. In addition, the Kamystybas and Akshatau lake systems in the Aral district will be restored, as well as nursery ponds will be restored and extended at the Tastak section of the Kamystybas fish hatchery. Then the reconstruction in the Northern Aral Sea will be continued; a center of water management in the Kazakh part of the Syrdarya River basin will be established. Required documentation is prepared.

At the session, a chairman of the “Shartken-Ata” NGO Kudaybergen Sarjanov, doctor of technical science and chairman of the Eco-Kronos Association of River Guardians Mikhail Kalinin, writer and environmentalist Saylaubay Jubatyrov and others made their presentations.

The participants of the Forum adopted a final document, which defined further tasks to save the Aral Sea.

* * *

Source:

Kazybek Botayev, Mira Jakybayeva

“Kyzylordinskie vesti” (Kyzylorda News)

RESOLUTION OF THE FIRST INTERNATIONAL ARAL FORUM OF SUSTAINABLE DEVELOPMENT

On May 30-31, 2017, the first International Aral Forum of Sustainable Development was held in Kyzylorda. The event was aimed at discussing and attracting attention to environmental and socio-economic problems in Prearalie, strengthening intergovernmental cooperation, developing partnership relations with international organizations and business entities to implement socio-economic, environmental, and educational projects and programs for the Aral Sea basin.

Representatives of concerned organizations from the Central Asian countries, international, regional, and donor organizations took part in the Forum; ecologists, hydraulic engineers, hydrologists, hydrogeologists, biologists, physicians, sociologists, economists, and politologists also took part.

At the Forum, leading scientists, manufacturers, and experts from Kazakhstan, Belarus, Iran, Russia, USA, Uzbekistan, and Japan made their presentations on the present state of and solutions to water, environmental, and social problems in Prearalie and the Aral Sea basin; possible environmental consequences were assessed; issues related to preservation and efficient management of natural resources of the region and forecast and management of natural resources were considered.

International donors and business entities were presented new projects on sustainable development of the Kazakh part in Prearalie.

The participants of the first Aral International Forum of Sustainable Development:

- noted that the Central Asian countries take measures to solve the Aral Sea basin problems with the support and cooperation of international organization, financial institutes and governments of donor-countries;
- agreed upon the need to implement further large-scale measures to examine problems and conduct research with financial, scientific, and technical support;
- appeal to global society, international and donor organizations, governments, national companies, business entities, and research institutes to use the Forum as a place to consolidate joint efforts of scientific schools, directions, and scientists from various countries to develop efficient and best measures on improving environmental and socio-economic situation in general;
- underline that the scientific platform of the Forum will serve as one more space for regional cooperation on climate change, comprehensive solutions to water problems, industrial ecology, green technology development, and other issues related to sustainable development in Prearalie and the Aral Sea basin;
- consider that themes, range, and geography of the Forum should be extended in

order to discuss not only environmental and socio-economic development of Prearalie and the Aral Sea basin but also positive experiences in solving environmental problems in the world;

- underline the relevance of establishment of a Scientific-Touristic Center "Aral" to coordinate and systemize scientific and practical research in Prearalie, as well as activities on commercialization of scientific and technical results;
- support the initiative to announce the 26th of March, the date of IFAS establishment, as a "Day of the Aral Sea" and propose to hold public events and environmental campaigns devoted to the Aral Sea; and
- support the decision of the 8th Nevsky International Ecological Congress on organization of the 2nd International Conference on the Aral Sea in Saint Petersburg in November 2017 under the umbrella of the Inter-parliamentary Assembly of CIS, Parliament of the Republic of Kazakhstan and Saint Petersburg Scientific Center of the Russian Academy of Sciences.

Summarizing the results of the Forum, participants proposed the following focus areas to improve environmental situation in the region:

- to fix blown sands on the former bed of the Aral Sea by planting drought-resistant trees and bushes, developing saksaul forests, and local, areal, and zone planting of greenery to protect communities, irrigated areas, pastures, and enterprises.
- to provide engineering support to existing aquatic ecosystems with their water and near-water biodiversity;
- to preserve and restore population of rare animals listed in the Red Book;
- to systematically and comprehensively monitor environment and desertification using latest achievements in remote sensing and modeling emergency and dangerous environment and anthropogenic processes and situations;
- to carry out further work on improvement and filling up existing geospatial information systems with a set of simulation modeling to ensure timely and reasonable decision making on water resource management;
- to broadly promote careful environmental protection in mass media and education programs of secondary and higher institutions.

MINUTES OF THE MEETING OF SIC ICWC WORKING GROUP ON WATER CONSERVATION

June 6, 2017 Yyldiz hotel, Ashgabat

Participants:

Gulmira Saginbayevna Imasheva– Ministry of Agriculture, Republic of Kazakhstan

Yanov Durdyevich Paschyev - Head of Water Use Department, Ministry of Agriculture and Water Resources, Turkmenistan

Gayrat Rakhimov – Ministry of Agriculture and Water Resources, Republic of Uzbekistan

Shukhrat Shakirovich Mukhamedjanov– Acting Head of the Working Group on Water Conservation

Dinara Ravilyevna Ziganshina– Deputy Director, SIC ICWC

Agenda of the meeting:

1. Opening of the meeting and approval of the agenda
2. Water conservation practices in the Central Asia states: achievements, problems, and potential
3. Summary of water conservation practices in the Central Asian states and proposals for further activities
4. Approaches to summarize water conservation practices and disseminate them
5. Discussion of institutional issues related to activities of the Group and closing remarks

The meeting was opened by D.Ziganshina. She presented the mandate and tasks of the Working Group. The participants were acquainted with the action plan of the Working Group for 2017 approved by ICWC. Based on this plan, the agenda of the first meeting of the Working Group was prepared.

On the second item of the agenda, Sh.Mukhamedjanov made a presentation on "The importance and value of water saving for Central Asia". The Working Group members from Kazakhstan, Turkmenistan and Uzbekistan presented their water saving practices.

In particular, the ways to share practices and maintain cooperation with the current producers of water saving technologies were discussed. Mr. Paschyev mentioned that Uzbekistan has well developed infrastructure for production and installation of drip irrigation systems. It makes sense for Turkmenistan to consider possibilities for buying equipment from Uzbekistan as an alternative to the current equipment supplies from Israel and China. Mr. Rakhimov was proposed to provide the information on companies which produce drip irrigation systems in Uzbekistan, with their price lists. The Water Research Center in Taraz is responsible for dissemination of drip irrigation technologies in Kazakhstan. They implement pilot projects in each province to spark the interest of farmers by demonstrating benefits of these technologies.

The main focus was on water saving at the field level; the participants also mentioned the importance of measures undertaken at the main canal level and reduction of conveyance losses.

On the third item, Mr. Mukhamedjanov presented the draft structure of national reports on water saving to the Working Group for consideration. The participants agreed upon the presented structure as it covered all key aspects. While discussing the content of reports, it was underlined that they should contain not only practices, but also proposals for further water saving activities. The participants have set main components of the regional summary report that will include an overview of the situation in three Central Asian countries – Kazakhstan, Turkmenistan, and Uzbekistan.

On the fourth item, Ms. Ziganshina made a presentation on the current approaches to systematization of knowledge on water saving. Particularly, a brochure "Systematization of water saving practices based on country experiences and previous project developments" (by Sokolov V.I., Horst M.G.), preliminary version of the interactive map of best practices (joint product by CAREC and SIC ICWC), and hierarchical classification system of knowledge base of SIC ICWC ("Water saving" section) were presented. Other alternative ways were discussed also to systematize and disseminate knowledge. Particularly, it was proposed to develop a catalogue of producers of drip irrigation systems in Central Asia.

The invitees discussed institutional issues related to activities of the Group.

Based on the meeting outcomes, it was agreed that:

1. By July 10, 2017, the Working Group members would send the first drafts of the national reports on water saving based on the approved structure.

2. The members would present updated national reports at the Anniversary Conference in Tashkent in November 2017.

3. The Working Group members from SIC ICWC would prepare the regional summary report on "Water saving in the Central Asian countries: lessons learnt and future prospects" by the Anniversary Conference of ICWC in Tashkent in

November 2017. The draft report is to be discussed with the Working Group members on a routine basis.

The Working Group members expressed their gratitude to the host country (Turkmenistan) and the Regional Environmental Center for Central Asia (CAREC) for their support in holding the meeting of the Working Group in Ashgabat.

Information:

At the 63rd ICWC meeting (18-19.04.2014, Tashkent), the "Implementation Plan on strengthening ICWC activities in key directions" was approved. It consists of 4 main directions:

(1) Water conservation;

(2) Implementation of IWRM as a tool for "green" development and adaptation to climate change;

(3) Improvement of water accounting quality and accuracy;

(4) Building capacity of regional and national organizations.

To implement the Plan, 4 working groups were organized. At the 70th ICWC meeting (11-12.04.2017, Tashkent), the members agreed upon to:

«3. Approve the Action plan of the Working Group for 2017 and the following schedule of their meeting:

- meeting of the Working Group on Water Conservation to be held on June 5, 2017 within the Central Asian International Ecological Forum in Ashgabat, Turkmenistan;
- meeting of the Working Group on Improvement of Water Accounting Quality and Accuracy to be held on July 19-20, 2017 within EXPO-2017 in Astana, Republic of Kazakhstan; and
- meeting of the Working Groups on Building Capacity of Regional and National Organizations and Implementation of IWRM and Adaptation to Climate Change to be held in September 2017 in Tashkent, Republic of Uzbekistan.

4. Entrust SIC ICWC to appeal to GIZ and CAREC with the request to fund meetings and preparation of reports of four regional groups, as previously agreed».

On behalf of ICWC, SIC ICWC appealed to GIZ and CAREC with the request to fund meetings and preparation of reports on these directions. CAREC agreed to support the meeting of the Working Group on Water Conservation under the Central Asian International Ecological Forum in Ashgabat.

Aims and tasks of the Working Group

The main task of the Working Group is to summarize the activities at the national level and support ICWC in developing and implementing water policies in the region, including rational water use. In this context, the Group will:

Summarize and systematize water saving practices in the Central Asian (CA) countries and abroad;

Analyze proposals and develop further actions for water saving and rational water use in the CA countries;

Keep track of activities and results of the international projects on water saving and rational water use to raise awareness among ICWC members.

Expected work results by the Working Group in 2017:

- two meetings of the Working Group (in June in Ashgabat and in November in Tashkent);
- national reports on water saving practices in CA and future plans;
- regional summary report to be presented at the Anniversary Conference of ICWC in 2017 “Water saving in the Central Asian countries: lessons learnt and future prospects”;
- systematized catalogue of water saving practices in the context of CA countries (taking into account local conditions);
- interactive map of the best practices on water saving in CA (joint product of CAREC and SIC ICWC)
- knowledge dissemination, including thematic publications (brochures, booklets)
- 2018 action plan of the Working Group.

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