Interstate Commission for Water Coordination of Central Asia	**BULLETIN № 6 (99)**	December 2023

CONTENTS

Minutes of the 85th Meeting of the Interstate Commission for Water Coordination (ICWC) of the Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan, Turkmenistan and Republic of Uzbekistan

November 1-2, 2023 Tashkent

Chairman:

Shavkat R. Khamraev	Minister of Water Management, Republic of Uzbekistan

ICWC members:

Nurjan M. Nurjigitov	Minister of Water Resources and Irrigation, Republic of Kazakhstan
Jamshed Shodi Shoimzoda	First Deputy Minister of Energy and Water Resources, Republic of Tajikistan
Durdi M. Genjiyev	Chairman of the State Committee for Water Resources, Turkmenistan

ICWC executive bodies:

Umar A. Nazarov	Head, ICWC Secretariat
Makhmud Ya. Makhramov	Head, BWO Amu Darya
Odil A. Kholhujaev	BWO Syr Darya
Mereke Y. Imangaliev	Deputy head of BWO Syr Darya, Representative of Kazakhstan
Dinara R. Ziganshina	Director, Scientific-Information Center (SIC) of ICWC

Invited:

Republic of Kazakhstan

Aidar J. Abishev	Ambassador at large, Ministry for Foreign Affairs
Arsen A. Jakanbaev	Director of International Cooperation Department, Ministry of Water Resources and Irrigation
Aset A. Beristenov	Advisor to the Minister of Water Resources and Irrigation
Yerlan K. Auezbekov	Advisor, Transboundary Water Management Division, International Legal Department, Ministry for Foreign Affairs
Erbolat Pernekhan Mukhtaruli	Chief Expert of Central Asia Water Cooperation Division, International Cooperation Department, Ministry of Water Resources and Irrigation

Republic of Tajikistan

Daler A. Abdurazokzoda	Head of Central Water and Energy Policy Administration, Ministry of Energy and Water Resources

Turkmenistan

Yanov D. Paschiev	Head of Water Use Department, State Committee for Water Resources
Tirkesh Y. Nurgeldiev	Head of Water Use Division, State Committee for Water Resources
Serdar A. Misekov	Chief expert, Digital Technology and Information Security Division, State Committee for Water Resources

Republic of Uzbekistan

Ramz N. Kamilov	Head of Water Resources and Water Use Division, Ministry of Water Management
Ilkhov U. Juraev	Head of Information-Analytical and Resource Center, Ministry of Water Management

USAID regional project:

Yekaterina G. Strikelyova	Director of USAID Water and Environment Project

ICWC executive bodies:

Avaz Uktamov	Head of Water Use Division, BWO Syr Darya
Alisher M. Nazariy	Deputy Director, SIC ICWC
Anatoliy G. Sorokin	Head of Regional Information-Analytical Division, SIC ICWC
Aurika G. Galustyan	Head of Research Planning Division

Agenda

1. Results of the use of water withdrawal limits and operation of the reservoir cascades in the Syr Darya and Amu Darya River basins during the growing season 2023.

2. Approval of the country water withdrawal limits and forecast operation regimes of the reservoir cascades in the Syr Darya and Amu Darya River basins for the non-growing season 2023-2024.

3. Progress and results of fulfillment of the initiatives put forward by the Heads of IFAS Founder States at their summit in Turkmenbashi (August 2018), and the tasks before ICWC following the summit in Dushanbe in September 2023.

4. Agenda and venue of the regular 86th ICWC meeting.

5. Miscellaneous

Decision on the first item:

1. Take into consideration the reports by BWO Amu Darya and BWO Syr Darya on the results of the use of water quotas and operation regimes of reservoir cascade in the Syr Darya and Amu Darya basins during the growing season 2023.

2. By the end of 2023, BWO Syr Darya shall provide to the parties the detailed information on lateral inflow during the growing season 2023 (Table 2.1, report by BWO Syr Darya), including quantities of inflow to the Syr Darya main course.

3. The Kazakh and Uzbek sides shall continue working to update the data from hydrometeorological services on inflow to the Shardara reservoir.

4. ICWC executive bodies shall strengthen work on application of new methods of forecasting hydrological and water management situation, also with involvement of development partners or funds of ICWC member-countries.

Decision on second item:

1. Take into consideration the forecast operation regimes of the reservoir cascade in the Amu Darya and Syr Darya basins proposed by BWO Amu Darya and BWO Syr Darya for the non-growing season 2023-2024 (Appendices 1-2).

2. Approve country water quotas for the Amu Darya and Syr Darya River basins for the non-growing season 2023-2024 (Appendices 3-4).

3. BWO Syr Darya shall ensure monitoring of operation regime of the Naryn-Syrdarya reservoir cascade and, in case of deviation from the forecast regime, inform immediately all the Parties.

Decision on third item:

1. Acknowledge the work done by ICWC executive bodies on implementation of proposals and initiatives put forward by the Heads of IFAS Founder States at the Summit in Turkmenbashi on August 24, 2018.

2. ICWC members and executive bodies shall submit to SIC ICWC proposals on fulfillment of the tasks set at the IFAS summits in Turkmenbashi (August 24, 2018) and in Dushanbe (September 15, 2023) for summary by the next meeting.

Decision on fourth item:

1. Hold the regular 86th ICWC meeting in the Republic of Kazakhstan. The date of the regular ICWC meeting shall be agreed in working order.

2. Propose the following agenda for the 86th ICWC meeting:

1) On non-growing season 2023-2024.

2) Progress on implementation of tasks set at the IFAS summits.

3) Agenda and venue of the regular 87th meeting

4) Miscellaneous.

Miscellaneous:

The report on “Available modeling tools for decision making: Amu Darya and Syr Darya case-studies” was presented by director of the USAID Regional Water and Environment Project.

N.M. Nurjigitov

Republic of Kazakhstan

Kyrgyz Republic

Republic of Tajikistan **D.Sh. Shoimzoda**

Turkmenistan **D.M. Gendjiev**

Republic of Uzbekistan **Sh.R. Khamraev**

Appendix 1

Forecast operation schedule of the Naryn-SyrDarya reservoir cascade (October 1, 2023 – March 31, 2024)

		October	November	December	January	February	March	Total Mm3
Toktogul reservoir								
Inflow to reservoir	m3/s	228	193	163	148	149	160	
	Mm3	611	500	437	396	373	429	2746
Volume: beginning of the season	Mm3	11748	11605	10825	9483	7833	6808	
end of the season	Mm3	11605	10825	9483	7833	6808	6278	
Water releases from the reservoir	m3/s	280	494	664	764	558	358	
	Mm3	750	1280	1778	2046	1398	959	8212
Bakhri Tojik reservoir								
Inflow to the reservoir	m3/s	334	730	954	940	757	468	
(Akdjar gauging station)	Mm3	893	1891	2554	2517	1897	1255	11008
Volume: beginning of the season	Mm3	1694	2024	2742	3209	3373	3445	
end of the season	Mm3	2024	2742	3209	3373	3445	3444	
Water releases from the reservoir	m3/s	210	470	800	900	750	480	
	Mm3	563	1218	2143	2411	1879	1286	9500
Shardara reservoir								
Inflow to reservoir	m3/s	197	540	910	968	880	750	
	Mm3	528	1400	2437	2593	2205	2009	11171
Volume: beginning of the season	Mm3	1008	1265	1758	2856	3815	4516	
end of the season	Mm3	1265	1758	2856	3815	4516	5186	
Water releases from the reservoir	m3/s	99	350	500	610	600	500	
	Mm3	265	907	1339	1634	1503	1339	6988
Water delivery to the Aral Sea	m3/s	11,0	30	85	125	165	200	
	Mm3	29	78	228	335	413	536	1619

		October	November	December	January	February	March	Total
Charvak reservoir								
Inflow to reservoir	m3/s	101	91	78	70	69	101	
(sum of 4 rivers)	Mm3	271	237	209	187	173	271	1348
Volume: beginning of the season	Mm3	1531	1429	1273	1009	741	571	
end of the season	Mm3	1429	1273	1009	741	571	512	
Water releases from the reservoir	m3/s	138	152	176	170	137	123	
(Water discharge from Gazalkent HPP)	Mm3	370	393	473	455	343	330	2364
Andijan reservoir								
Inflow to reservoir	m3/s	48	57	58	50	50	60	
	Mm3	129	147	156	134	125	161	851
Volume: beginning of the season	Mm3	775	694	707	754	754	817	
end of the season	Mm3	694	707	754	754	817	806	
Water releases from the reservoir	m3/s	78	52	40	50	25	64	
	Mm3	210	134	108	134	63	172	820

Note

Inflow to the Shardara reservoir is expected at 10 121 Mm^3 by BWO Syr Darya's estimations and 11 171 Mm^3 from estimations by the Kazakh Ministry of Water Resources and Irrigation.

Appendix 2

Forecast operation regimes of the Nurek and Tuyamuyun reservoirs (October 2023 – March 2024)

Nurek reservoir	unit	Forecast						total
		Oct	Nov	Dec	Jan	Feb	Mar	
Volume: beginning of the season	mcm	10511	10539	10194	9116	7978	6960	10511
Inflow to the reservoir	m^3/s	329	277	236	213	213	260	
	mcm	882	717	633	570	534	698	4034
Water releases from the reservoir	m^3/s	318	390	600	600	586	466	
	mcm	851	1011	1606	1606	1467	1248	7789
Volume: end of the season	mcm	10539	10194	9116	7978	6960	6393	6393
Accumulation(+), drawdown (-)	mcm	28	-346	-1078	-1137	-1018	-567	-4118

Tuyamuyun reservoir	unit	Forecast						total
		Oct	Nov	Dec	Jan	Feb	Mar	
Volume: beginning of the season	mcm	3480	3662	4206	4943	5409	4350	3480
Inflow to the reservoir	m^3/s	289	361	445	354	340	400	
	mcm	775	936	1191	949	851	1071	5772
Water releases from the reservoir	m^3/s	221	151	170	180	764	950	
	mcm	593	392	454	482	1915	2544	6381
Volume: end of the season	mcm	3662	4206	4943	5409	4350	2876	2876
Accumulation(+), drawdown (-)	mcm	182	544	737	467	-1060	-1474	-604

Appendix 3

Country quotas/limits of water withdrawal from the Syr Darya River

Water-user state	Requested Mm^3
Republic of Kazakhstan (Dustlik canal)	487
Kyrgyz Republic	47
Republic of Tajikistan	365
Republic of Uzbekistan	3347
Total:	**4246**

Appendix 4

Limits/quotas on water withdrawal from the Amu Darya River and water supply to the river delta for the non-growing season 2023-2024

River basin, state	Quotas/limits on water withdrawal, Mm^3	
	Total annual (1.10.23 to 1.10.24)	Incl. non-growing season (1.10.23 to 1.04.24)
Total withdrawal from the Amu Darya River	55 391	15 728
of which:		
Republic of Tajikistan	9 821	2 878
From the Amu Darya River to the nominal Kerki gauging station	44 000	12 480
Turkmenistan	22 000	6 500
Republic of Uzbekistan	22 000	5 980
In addition:		
- water delivery to the river delta and the Aral Sea, including irrigation water releases and CDW	4 200	2 100
- delivery of sanitary and environmental flow to irrigation systems	800	800
Dashoguz province	150	150
Khorezm province	150	150
Republic of Karakalpakstan	500	500

Results of the use of allocated water limits/quotas and operation regimes of the reservoirs in the Amu Darya and Syr Darya River basins for the growing season 2023[1]

I. Amu Darya River basin

Actual water availability in the Amu Darya River basin at the nominal Kerki gauging station (upstream of Garagumdarya) estimated for natural flow of the Vakhsh River and taking into account flow regulation by the Nurek reservoir was 93.1% of the norm in the growing season 2023 against 88.3% of the norm in the previous growing season. Water availability was non-uniform during the growing season 2023, varying from 68-86% of the norm in April-May to 115% above the norm. This allowed reaching planned accumulation in reservoirs; however, had a negative effect on downstream water supply at the beginning of the growing season.

The use of allocated water limits/quotas was as follows (breakdown by states) over the reporting growing season.

In the current water situation, given the quota of 39677.6 mcm, 33190.1 mcm or 83.6% were used of the total allocated water limits/quotas, including:

Republic of Tajikistan: actually used 6781.9 mcm or 97.5% of the total quota;

Turkmenistan: actually used 13969 mcm or 90.1% of the total quota;

Republic of Uzbekistan: actually used 12439.2 mcm or 72.2% of the total quota.

[1] Information on the first item of the 85th ICWC meeting's agenda

Water user state	Limits/quotas of water withdrawal for growing season 2023	Actual mcm	%% of use
Republic of Tajikistan	6957.6	6781.9	97.5
Turkmenistan	15500.0	13969.0	90.1
Republic of Uzbekistan	16020.0	12439.2	77.6
Total	39677.6	33190.1	83.6

In the growing season 2023, 81.1 % of total allocated water limit/quota was used downstream of the nominal Kerki gauging station (upstream of Garagumdarya), including:

Republic of Uzbekistan: actually used 11 584.2 mcm or 72.3% of the total limit/quota.

Turkmenistan: actually used 13 969 mcm or 90.1% of the total limit/quota.

Water user state	Limits/quotas of water withdrawal for growing season 2023	Actual mcm	%% of use
Downstream of the nominal Kerki GS	31520.0	25553.2	81.1
Turkmenistan	15500.0	13969.0	90.1
Republic of Uzbekistan	16020.0	11584.2	72.3

The actual use of the approved limits/quotas by river reach was as follows:

1. Upper reaches – actual 7 636.9 mcm or 93.6 % of the total quota, including: Tajikistan – 6 781.9 mcm or 97.5 % of the total quota; Uzbekistan – 855 mcm.

2. Middle reaches – actual 15 619.4 mcm or 96.4% of the total quota, including: Turkmenistan – 10 450.2 mcm or 99.8% of the total quota; Uzbekistan – 5 169.1 mcm or 90.1% of the total quota.

3. Lower reaches – actual 9 993.8 mcm or 64.9 % of the total quota,

including: Turkmenistan – 3 518.8 mcm or 70.0 % of the total quota; Uzbekistan – 6 415.1 mcm or 62.4% of the total quota.

Water user state	Limits/quotas of water withdrawal for growing season 2023	Actual mcm	%% of use
Upper reaches	8157.6	7636.9	93.6
Republic of Tajikistan	6957.6	6781.9	97.5
Republic of Uzbekistan		855.0	
Middle reaches	16207.0	15619.4	96.4
Turkmenistan	10472.0	10450.2	99.8
Republic of Uzbekistan	5735.0	5169.1	90.1
Lower reaches	15313.0	9933.8	64.9
Turkmenistan	5028.0	3518.8	70.0
Republic of Uzbekistan	10285.0	6415.1	62.4

It was planned to supply 2 100 mcm to the river delta and the Aral Sea during the growing season. However, the actual supply was 1 191 mcm or 56.7% of the plan.

Forecast operation regimes of the Nurek and Tuyamuyun reservoirs were estimated based on average water availability. The forecast regime for the Nurek reservoir was correct as a whole, and full volume was reached in the reservoir in August. Since water availability was 93.1% of the norm in the season, it varied from 75 to 121 %. The planned accumulation of the Tuyamuyun reservoir was 98.4% fulfilled.

Inflow to the Nurek reservoir was expected to be 15 794 mcm during the growing season; the actual inflow was 16 789 mcm or 106.3%. Water releases from the reservoir were planned in the volume of 12 070 mcm, and the actual water releases amounted to 13 276 mcm or 110%.

Volume of water in the reservoir was expected to reach 10 569 mcm by the end of the growing season 2023; the actual volume amounted to 10 511 mcm or 99.5%.

For the growing season, inflow to the Tuyamuyun reservoir was expected to be 18 597 mcm, and actually 14 085 mcm of water or 75.7% flowed into the

reservoir. Water releases from the reservoir were planned in the amount of 17 763 mcm, while actually 13 305 mcm of water or 74.9% was discharged from the reservoir.

Volume of water in the reservoir was expected to reach 3 535 mcm by the end of the growing season 2023; the actual volume amounted to 3 480 mcm or 98.4%.

Item		unit	Nurek reservoir	Tuyamuyun reservoir
Volume: beginning of the season		mcm	6380	2701
Inflow to the reservoir	forecast	mcm	15794	18597
	actual	mcm	16789	14085
		%%	106.3	75.7
Water releases from the reservoir	forecast	mcm	12070	17763
	actual	mcm	13276	13305
		%%	110.0	74.9
Volume: end of the season	forecast	mcm	10569	3535
	actual	mcm	10,511	3480
		%%	99.5	98.4
Accumulation (+), drawdown (-)	forecast	mcm	4189	834
	actual	mcm	4131	779
		%%	98.6	93.4

Analysis of the use of water withdrawal limits/quotas in the Amu Darya River basin for the growing season 2023

Item	Limits/quotas of water withdrawal for the growing season, mcm	Actual mcm	%%
Upper Darya Division			
(Upper reaches)	8157.6	7636.9	93.6
including:			
Tajikistan	6957.6	6781.9	97.5
Uzbekistan		855.0	
Water withdrawal from the Amu Darya River at nominal Kerki GS	31520.0	25553.2	81.1
including:			
Turkmenistan	15500.0	13969.0	90.1
Uzbekistan	16020.0	11584.2	72.3
Middle Darya Division			
(Middle reaches)	16207.0	15619.4	96.4
including:			
Turkmenistan	10472.0	10450.2	99.8
Uzbekistan	5735.0	5169.1	90.1
UPRADIC and Lower Darya Division			
Lower reaches:	15313.0	9933.8	64.9
including:			
Turkmenistan	5028.0	3518.8	70.0
Uzbekistan	10285.0	6415.1	62.4
Total in the basin	39677.6	33190.1	83.6
including:			
Tajikistan	6957.6	6781.9	97.5
Turkmenistan	15500.0	13969.0	90.1
Uzbekistan	16020.0	12439.2	77.6

Actual operation regime of Nurek and Tuyamuyun reservoirs (April-September 2023), mcm

Nurek reservoir	unit	Actual						total
		Apr	May	Jun	Jul	Aug	Sep	
Volume: beginning of the season	mcm	6380	6403	6625	8854	10226	10540	6380
Inflow to the reservoir	m^3/s	499	742	1474	1600	1365	673	
	mcm	1294	1987	3819	4286	3657	1746	16789
Water releases from the reservoir	m^3/s	496	683	743	1150	1262	684	
	mcm	1286	1831	1927	3081	3379	1773	13276
Volume: end of the season	mcm	6403	6625	8854	10226	10540	10511	10511
Accumulation(+), drawdown(-)	mcm	23	222	2229	1372	314	-29	4131

Tuyamuyun reservoir	unit	Actual						total
		Apr	May	Jun	Jul	Aug	Sep	
Volume: beginning of the season	mcm	2701	2601	2299	3085	3457	3651	2701
Inflow to the reservoir	m^3/s	318	388	1170	1550	1283	618	
	mcm	824	1040	3033	4152	3435	1601	14085
Water releases from the reservoir	m^3/s	357	501	866	1411	1210	684	
	mcm	924	1342	2246	3780	3242	1772	13305
Volume: end of the season	mcm	2601	2299	3085	3457	3651	3480	3480
Accumulation(+), drawdown(-)	mcm	-100	-303	787	372	194	-171	779

Water supply to the Amu Darya river delta and the Aral Sea in the growing season 2023, mcm

	Apr	May	Jun	Jul	Aug	Sep	
From the Amu Darya river to Samanbay GS	38	35	71	106	101	89	440
Total water discharge from Dustlik and Suenli canal system							0
Drainage flow	214	71	91	99	131	145	751
TOTAL:	252	106	162	205	232	234	1191
Cumulative mcm	252	358	520	725	957	1191	

II. Syr Darya River basin

I. Forecast of inflow

For the growing season 2023, by UzHydromet's forecast, water availability was expected as 100-110% (105%) of the norm in the basins of rivers in the south Ferghana Valley and the Naryn, 90-100% (95%) in the basins of the Karadarya and rivers of the north Fergnana Valley, 85-95% (90%) in the Chirchik River basin, and 80-90% (85%) in the Akhangaran River basin.

Information on expected operation regime of the Toktogul reservoir was provided by the Coordination Dispatching Center (CDC) "Energy" on 5 April 2023.

The forecast operation regimes of the Charvak and Andizhan reservoirs were received from the Uzbek Ministry of Water Management after consultation with the Uzbek Ministry of Energy, JSC "UzbekHydroenergy" and UzHydromet.

The forecast operation schedule of the Shardara reservoir was received from the Ministry of Ecology and Natural Resources of the Republic of Kazakhstan.

According to the forecast data, inflow to upper reservoirs was expected to be as follows:

- Toktogul reservoir – 100%;
- Andizhan reservoir – 104%;
- Charvak reservoir (4 rivers in total) – 87% of the norm.

The total lateral inflow was expected to be 95% of the norm.

Overall, water availability was expected at the level of 96% of the norm in the Syr Darya River basin.

The forecast operation schedule of the Naryn–Syr Darya resevoir cascade for the growing season was taken into consideration at the 84rd ICWC meeting and country water limits/quotas for the Syr Darya River basin were approved.

Actual water situation from April 1 to September 30, 2023 is characterized as follows:

II. Total inflow (Table 2.1)

The total inflow to the Syr Darya River basin for the growing season is:

Norm – 29 469 mcm.

According to Uzhydromet forecast, the total inflow was expected to be 28 215 mcm or 96% of the norm.

In fact, the total inflow was 22 749 mcm, which is 5 466 mcm lower or 81% of the forecast (77% of the norm).

III. Inflow to upper reservoirs (Table 2.1)

The norm of inflow to upper reservoirs of the Naryn-Syr Darya cascade is 18 506 mcm for the growing season.

Inflow was expected to be 17 838 mcm.

In fact, 15 459 mcm flowed to upper reservoirs; this is 2 379 mcm lower or 87% of the forecast (84% of the norm).

Inflows to the reservoirs were as follows:

Inflow to the Toktogul reservoir was forecasted to be 9 806 mcm, while the actual inflow was 9 178 mcm, that is 628 mcm lower or 94% of the forecast (94% of the norm).

Inflow to the Andijan reservoir was forecasted to be 3.29 bcm, while the actual inflow was 2.72 bcm, that is 957 mcm lower or 68% of the forecast (71% of the norm).

Inflow to the Charvak reservoir was forecasted to be 5 003 mcm, while the actual inflow was 4 209 mcm, that is 794 mcm lower or 84% of the forecast (73% of the norm).

IV. Lateral inflow (Table 2.1)

Lateral inflow to the Syr Darya River up to the Shardara reservoir is as follows:

norm – 10 963 mcm.

Uzhydromet's forecast – 10 377 mcm or 95% of the norm.

Actual inflow – 7 290 mcm, which is 3 087 mcm lower or 70% of the forecast (66% of the norm).

V. Inflow to in-stream reservoirs and water supply to the Aral Sea (Table 2.2)

Inflow to the Bakhri Tojik reservoir was expected to be 5218 mcm according to the forecast schedule for the growing season 2023.

The actual inflow to the reservoir was 4564 mcm, which is 654 mcm lower than the forecast schedule.

Inflow to the Shardara reservoir was expected to be 4 221 mcm.

In fact, 2 522 mcm flowed into the reservoir according to UzHydromet's data (Chinaz-SyrDarya+Bozsu+Keles gauging stations); this is by 1 699 mcm lower than in the forecast schedule provided by Kazakh Ministry of Ecology and Natural Resources.

According to RSE "KazHydromet" (Kokbulak+Keles gauging stations), 2 407 mcm flowed into the reservoir; which is 1814 mcm lower than the forecast schedule.

Inflow to the Aral Sea and the Aral Sea region was expected to be 996 mcm according to the forecast schedule, and the actual inflow to Karateren gauging station was 340 mcm.

Table 2.1

Water body	Growing season, April 1 – September 30, mcm											
	2023							2022				
	norm	forecast	forecast/ norm (%)	actual	actual/ forecast (%)	actual/ norm (%)		norm	forecast	forecast/ norm (%)	actual	actual/ forecast (%)	actual/ norm (%)
Inflow to upper reservoirs													
Toktogul	**9802**	9806	100	9178	94	94		**9802**	9406	96	10429	111	106
Andizhan	**2927**	3029	104	2072	68	71		**2927**	2133	73	3014	141	103
Charvak (4 rivers in total)	**5777**	5003	87	4209	84	73		**5777**	4557	79	4572	100	79
Total	**18506**	**17838**	**96**	**15459**	**87**	**84**		**18506**	**16096**	**87**	**18015**	**112**	**97**
Lateral inflow													
Toktogul – Uchkurgan	**1216**	1216	100	782	64	64		**1216**	1110	91	1120	101	92
Andizhan – Uchtepe	**2511**	2369	94	1454	61	58		**2511**	2063	82	1783	86	71
Uchkurgan, Uchtepe – Bakhri Tojik	**3349**	2843	85	2129	75	64		**3349**	2907	87	2616	90	78
Bakhri Tojik – Shardara	**2985**	3001	101	2140	71	72		**2985**	2412	81	2595	108	87
Gazalkent-	**902**	948	105	785	83	87		**902**	741	82	799	108	88

Water body	Growing season, April 1 – September 30, mcm												
	2023							2022					
	norm	forecast	forecast/ norm (%)	actual	actual/ forecast (%)	actual/ norm (%)		norm	forecast	forecast/ norm (%)	actual	actual/ forecast (%)	actual/ norm (%)
Chinaz (excluding Ugam)													
Total	**10963**	**10377**	**95**	**7290**	70	66		**10963**	**9233**	**84**	**8913**	97	81
Grand total inflow	**29469**	**28215**	**96**	**22749**	**81**	**77**		**29469**	**25329**	**86**	**26928**	**106**	**91**

Table 2.2

Item	Growing season, April 1 – September 30, mcm							
	2023				2022			
	schedule	actual	actual/ schedule (%)	difference (actual-schedule)	schedule	actual	actual/ schedule (%)	difference (actual-schedule)
Inflow to in-stream reservoirs								
Inflow to the Bakhri Tojik reservoir	5218	4564	87	-654	5161	5579	108	418
Inflow to the Shardara reservoir	4221	2522	60	-1699	3904	4504	115	600
Water supply to the Aral Sea								
Water supply to the Aral Sea	996	340	34	-656	815	339	42	-476

Table 2.3

Reservoir	Water releases, April 1 – September 30, mcm						
	2023				2022		
	Operation schedule NSRC	Actual	Actual / schedule %		Operation schedule NSRC	Actual	Actual / schedule %
Upper reservoirs							
Toktogul	5300	5349	101		5153	4677	91
Andizhan	2964	2190	74		2393	3151	132
Charvak (discharge from Gazalkent HPP)	4003	4010	100		3806	4284	113
TOTAL:	**12267**	**11549**	**94**		**11352**	**12112**	**107**
In-stream reservoirs							
Bakhri Tojik	6191	5423	88		5969	6859	115
Shardara	6869	3898	57		6574	5692	87
TOTAL:	**13060**	**9322**	71		**12543**	**12551**	100
GRAND TOTAL:	**25327**	**20870**	**82**		**23895**	**24663**	**103**

VI. Water releases from reservoirs (Table 2.3)

According to forecast operation schedule of the Naryn-Syr Darya reservoir cascade, 25 327 mcm were to be released from reservoirs for the growing season.

The actual water releases were 20 876 mcm, which is 4 451 mcm lower than the forecast schedule or 82% of the forecast schedule.

VII. Water storage in reservoirs (Table 2.4)

The actual water storage in the Naryn-Syr Darya reservoir cascade was 17 929 mcm by the beginning of the growing season.

The water storage was expected to be 17 706 mcm by the end of the growing season according to the forecast schedule.

In fact, 16756 mcm of water were accumulated; this is 950 mcm lower than the forecast schedule.

In upper reservoirs, 9 487 mcm were accumulated by the beginning of the growing season.

By the end of the growing season, the reservoirs were expected to accumulate 15 060 mcm according to the forecast schedule. The actual accumulation was 14 054 mcm or 1 006 mcm lower than in the forecast schedule.

By the beginning of the growing season, water storage was 8 442 mcm in the in-stream reservoirs.

By the end of the growing season, the forecast water storage was to be 2 646 mcm, while the actual storage was 2 702 mcm, which is 56 mcm more than the forecast.

Table 2.4

Reservoir	Water volume in reservoir, mcm						
	Actual as of April 1, 2023	Scheduled as of October 1, 2023	Actual as of October 1, 2023	Difference (actual "-" schedule		Actual as of October 1, 2022	Difference (actual by October 1, 2023 " - " actual as of October 1, 2022)
Upper reservoirs							
Toktogul	7939	12444	11748	-696		13620	-1872
Andizhan	896	950	775	-175		911	-136
Charvak	652	1666	1531	-135		1573	-42
TOTAL:	9487	15060	14054	-1006		16104	-2050
In-stream reservoirs							
Bakhri Tojik	3448	1628	1694	66		1710	-16
Shardara	4994	1018	1008	-10		1337	-329
TOTAL:	8442	2646	2702	56		3047	-345
GRAND TOTAL:	17929	17706	16756	-950		19151	-2395

VIII. Water supply to countries (Table 2.5).

According to the approved quotas and submitted operational requests of water consumers, water was supplied to the following countries in the following amounts:

- Republic of Kazakhstan – quota - 920 mcm, actual – 704 mcm;
- Kyrgyz Republic – quota - 270 mcm, actual – 188 mcm;
- Republic of Tajikistan – quota – 1 905 mcm, actual – 1 436 mcm;
- Republic of Uzbekistan – quota – 8 800 mcm, actual – 7 479 mcm.

The actual total water withdrawal by water user countries amounted to 9,807 mcm given the water quota of 11 895 mcm.

Table 2.5

Water user country	Water withdrawal, mcm April 1 – 30 September 30, 2023	
	quota	actual
Republic of Kazakhstan (Dustlik canal)	920	704
Kyrgyz Republic	270	188
Republic of Tajikistan	1 905	1 436
Republic of Uzbekistan	8 800	7 479
Total	**11 895**	**9 807**

IX. Implementation of the protocol decision on mutual supplies of electric energy and additional water releases through Uchkurgan HPP since April till September 2023 (Table 2.6)

Taking into account the expected water availability in the Syr Darya basin for the growing season 2023 and to prevent the Toktogul reservoir from being emptied, to ensure inflow to the Bakhri Tojik reservoir, and to improve water supply in the upper and middle reaches of the Syr Darya River, a protocol was signed on water and energy cooperation and a schedule of water discharge from Uchkurgan HPP from April to September 2023 was agreed among the Kyrgyz Republic, Kazakhstan and Uzbekistan on March 15, 2023.

Following the Protocol, meetings of country water and energy ministers were held in Tashkent on 2-3 July and of energy ministries in Astana on 25 August.

The water discharge from Uchkurgan HPP for the above mentioned period was measured by gauging rod 02 at 5,244 Mm^3 that is by 644 Mm^3 lower than in the Protocol (5,888 Mm^3).

By CDC "Energy" data, the discharge from Uchkurgan HPP was 252 Mm^3 lower than in the Protocol, i.e. was 5,636 Mm^3.

X. Implementation of the tripartite Protocol on operation regime of the Bakhri Tojik reservoir over June-August 2023 (Table 2.7).

Taking into account the forecast and actual water situation in the Syr Darya River basin, the Uzbek, Kazakh and Tajik parties signed a trilateral protocol on additional water releases from the Bakhri Tojik reservoir on June 22, 2023.

A significant decrease of lateral inflow in the reach from the Toktogul reservoir to the Bakhri Tochik reservoir, compared to the forecast data, led to great difficulties in providing the required inflow to the Bakhri Tochik reservoir.

Inflow to the Bakhri Tochik reservoir was set at 1,866 Mm^3 from 21 June to 31 August by the Protocol, while the actual inflow was 1,729 Mm^3.

Tajikistan, based on the Protocol, provided additional water releases of 1,100 Mm^3 that allowed the improvement of water supply in the Syr Darya middle reaches in the peack of the growing season.

Table 2.9 shows the forecast operation schedule for the Naryn-SyrDarya reservoir cascade for the growing season 2023, while Table 2.10 shows the actual operation regime of the cascade.

Table 2.6

Analysis of water discharge from Uchkurgan HPP for the growing season 2023 (Protocol v. actual)

Unit	April		May		June		July		August		September		Total for the period	
	Protocol	actual	Protocol	actual	Protocol	actual	Protocol	actual	Protocol	actual	Protocol	actual	Protocol	actual
Measured by gauging rod 02														
m^3/s	340	293	380	356	460	421	470	412	390	319	190	185		
Mm^3	881	760	1018	952	1192	1091	1259	1105	1045	855	492	480	5888	5244
CDC “Energy”s data														
m^3/s	340	339	380	382	460	436	470	437	390	344	190	199		
Mm^3	881	878	1018	1023	1192	1129	1259	1170	1045	921	492	515	5888	5636

Table 2.7

Operation regime of the Bakhri Tojik reservoir from 21 June to 31 August 2023

	Unit	June		July								August								Total Mm^3	
		III		I		II		III		Av.monthly		I		II		III		Av.monthly			
		Protocol	actual	Protocol	actual	Protocol	actual	Protocol	actual	Protocol	actual	Protocol	actual	Protocol	actual	Protocol	actual	Protocol	actual	Protocol	actual
Inflow	m3/s	300	290	300	288	300	270	300	285	300	281	300	306	300	251	300	257	300	271		
	Mm3	259	250	259	248	259	233	285	271	804	753	259	265	259	217	285	244	804	725	1866	1729
Water releases	m3/s	450	437	530	512	530	521	530	528	530	521	500	502	440	394	370	297	435	394		
	Mm3	389	378	458	443	458	450	504	502	1420	1394	432	434	380	340	352	282	1164	1056	2972	2829
Akjar + by the Protocol	m3/s	150	147	230	225	230	251	230	243	230	240	200	196	140	143	70	40	135	124		
	Mm3	130	127	199	194	199	217	219	231	616	642	173	169	121	123	67	38	360	331	1106	1100

Table 2.8

Water withdrawal from the Chirchik and Karadarya rivers and downstream of the Shardara reservoir to the Aral Sea, growing season 2023

Water withdrawal	Actual, Mm^3
Karadarya River	
From the Karadarya River (Republic of Uzbekistan)	1712
Chirchik River	
From the Chirchik River (Republic of Uzbekistan)	2713
From the Chirchik River (Republic of Kazakhstan)	721
Total from the Chirchik river	3434
Water withdrawal in the reach downstream of the Shardara reservoir to the Aral Sea	
Reach downstream of the Shardara reservoir to the Aral Sea (Republic of Kazakhstan)	4541

Table 2.9

Forecast operation schedule of the Naryn-SyrDarya reservoir cascade
1 April to 30 September 2023

		April	May	June	July	August	September	Total Mm^3
Toktogul reservoir (CDC "Energy" data)								
	m^3/s	311	643	985	853	582	340	
Inflow to the reservoir	mcm	806	1722	2553	2285	1559	881	9806
Volume: beginning of the season	mcm	7939	8129	9085	10540	11598	12131	
end of the season	mcm	8129	9085	10540	11598	12131	12444	
Water releases from the reservoir	m^3/s	237	286	424	458	383	219	
	mcm	614	766	1099	1227	1026	568	5300
Discharge from Uchkurgan HPP (by Protocol of 15 March 2023)	m^3/s	340	380	460	470	390	190	
	mcm	881	1018	1192	1259	1045	492	5888
Bakhri Tojik reservoir								
Inflow to the reservoir	m^3/s	383	408	319	300	300	270	
(Akjar g/s)	mcm	993	1092	828	803	803	699	5218
Volume: beginning of the season	mcm	3448	3539	3575	3016	2121	1581	
end of the season	mcm	3539	3575	3016	2121	1581	1628	
Water releases from the reservoir	m^3/s	340	350	460	550	440	203	
	mcm	881	937	1193	1473	1179	527	6191

		April	May	June	July	August	September	Total
Shardara reservoir								
Inflow to the reservoir	m^3/s	300	300	250	300	250	200	
	mcm	778	804	648	804	670	518	4221
Volume: beginning of the season	mcm	4994	4846	4118	3208	2260	1368	
end of the season	mcm	4846	4118	3208	2260	1368	1018	
Water releases from the reservoir	m^3/s	300	500	500	500	500	300	
	mcm	778	1339	1296	1339	1339	778	6869
Water releases to the Kyzylkum Canal	m^3/s	50	50	60	110	50	10	
	mcm	130	134	156	295	134	26	874
Discharge into Arnasai	m^3/s	0	0	0	0	0	0	
depression	mcm	0	0	0	0	0	0	0
Water delivery to the Aral Sea	m^3/s	150	70	50	30	30	50	
	mcm	388	187	130	80	80	130	996
Charvak reservoir								
Inflow to the reservoir	m^3/s	270	412	509	372	209	125	
(4 rivers in total)	mcm	699	1104	1319	996	561	324	5003
Volume: beginning of the season	mcm	652	895	1393	1908	1963	1796	
end of the season	mcm	895	1393	1908	1963	1796	1666	
Water releases from the reservoir	m^3/s	182	226	310	351	272	175	
(Discharge from Gazalkent HPP)	mcm	471	606	804	941	728	454	4003
Andijan reservoir								
Inflow to the reservoir	m^3/s	181	319	338	185	75	52	
	mcm	469	854	877	495	200	134	3029
Volume: beginning of the season	mcm	896	1105	1493	1566	1389	1000	
end of the season	mcm	1105	1493	1566	1389	1000	950	
Water releases from the reservoir	m^3/s	100	174	310	250	219	70	
	mcm	259	465	804	670	586	181	2964

Table 2.10

Actual operation schedule of the Naryn-SyrDarya reservoir cascade
1 April to 30 September 2023

		April	May	June	July	August	September	Total Mm^3
Toktogul reservoir								
Inflow to the reservoir	m^3/s	357	512	1063	698	491	364	
	mcm	926	1370	2755	1869	1314	944	9178
Volume: beginning of the season	mcm	7939	8130	8611	10285	10967	11308	
end of the season	mcm	8130	8611	10285	10967	11308	11748	
Water releases from the reservoir	m^3/s	281	334	415	442	360	194	
	mcm	727	894	1075	1185	964	503	5349
Discharge from Uchkurgan HPP	m^3/s	339	382	436	437	344	199	
	mcm	878	1023	1129	1170	921	515	5636
Bakhri Tojik reservoir								
Inflow to the reservoir	m^3/s	330	280	299	281	271	272	
(Akjar g/s)	mcm	855	750	775	753	725	705	4564
Volume: beginning of the season	mcm	3448	3463	3443	3085	2150	1554	
end of the season	mcm	3463	3443	3085	2150	1554	1694	
Water releases from the reservoir	m^3/s	352	252	373	521	394	161	
	mcm	912	675	968	1394	1056	418	5423

		April	May	June	July	August	September	Total
Shardara reservoir								
Inflow to the reservoir	m^3/s	245	107	182	120	135	173	
	mcm	634	285	471	321	361	449	2522
Volume: beginning of the season	mcm	4994	4814	4055	3031	1351	816	
end of the season	mcm	4814	4055	3031	1351	816	1008	
Water releases from the reservoir	m^3/s	159	203	356	498	197	61	
	mcm	411	543	923	1335	527	159	3898
Water releases to the Kyzylkum Canal	m^3/s	32	26	47	89	28	5	
	mcm	82	71	122	237	76	13	602
Water delivery to the Aral Sea	m^3/s	85	15	10	7	5	7	
	mcm	222	39	26	20	14	19	340
Charvak reservoir								
Inflow to the reservoir	m^3/s	264	364	446	251	154	119	
(4 rivers in total)	mcm	684	975	1156	673	413	307	4209
Volume: beginning of the season	mcm	652	1019	1631	1992	1894	1625	
end of the season	mcm	1019	1631	1992	1894	1625	1531	
Water releases from the reservoir	m^3/s	177	220	398	303	263	159	
(Discharge from Gazalkent HPP)	mcm	460	590	1032	813	704	412	4010
Andijan reservoir								
Inflow to the reservoir	m^3/s	116	165	261	126	63	56	
	mcm	301	441	677	337	170	146	2072
Volume: beginning of the season	mcm	896	952	1017	1259	958	740	
end of the season	mcm	952	1017	1259	958	740	775	
Water releases from the reservoir	m^3/s	94	141	166	239	145	43	
	mcm	244	376	431	639	388	111	2190

Approval of country limits/quotas on water withdrawal and forecast operation regime of reservoir cascades for non-growing season 2023-2024 for the Amu Darya and Syr Darya River Basin[2]

I. Amu Darya River basin

Quotas/limits on water withdrawal from Amu Darya River and water delivery to the river delta and the Aral Sea during the non-growing season 2023-2024

River basin, state	Quotas/limits of water withdrawals, mcm	
	Total annual (from 1.10.23 to 1.10.24)	Incl. non-growing season (from 1.10.23 to 1.04.24)
Total withdrawal from the Amu Darya River basin:	55 391	15 728
of which:		
Republic of Tajikistan	9 821	2 878
From the Amu Darya River to the nominal Kerki gauging station	44 000	12 480
Turkmenistan	22 000	6 500
Republic of Uzbekistan	22 000	5 980
In addition: -		
- water delivery to the river delta and the Aral Sea, including irrigation water releases and CDW	4 200	2 100
- delivery of sanitary and environmental flow to irrigation systems:	800	800
Dashoguz province	150	150
Khorezm province	150	150
Republic of Karakalpakstan	500	500

[2] Information on second item of the 85th ICWC meeting agenda

Forecast operation schedule of the Nurek and Tuyamuyun reservoirs
(October 2023 – March 2024)

Nurek reservoir	Unit	Forecast						Total
		October	November	December	January	February	March	
Volume: beginning of the season	mcm	10511	10539	10194	9116	7978	6960	10511
Inflow to the reservoir	m3/s	329	277	236	213	213	260	
	mcm	882	717	633	570	534	698	4034
Water releases from the reservoir	m3/s	318	390	600	600	586	466	
	mcm	851	1011	1606	1606	1467	1248	7789
Volume: end of the season	mcm	10539	10194	9116	7978	6960	6393	6393
Accumulation (+) drawdown (-)	mcm	28	-346	-1078	-1137	-1018	-567	-4118
Tuyamuyun reservoir	Unit	Forecast						Total
		October	November	December	January	February	March	
Volume: beginning of the season	mcm	3480	3662	4206	4943	5409	4350	3480
Inflow to the reservoir	m3/s	289	361	445	354	340	400	
	mcm	775	936	1191	949	851	1071	5772
Water releases from the reservoir	m3/s	221	151	170	180	764	950	
	mcm	593	392	454	482	1915	2544	6381
Volume: end of the season	mcm	3662	4206	4943	5409	4350	2876	2876
Accumulation (+) drawdown (-)	mcm	182	544	737	467	-1060	-1474	-604

II. Syr Darya River basin

I. Forecast of inflow

A forecast for the non-growing season 2023-2024 was received from UzHydromet on September 27, 2023.

The information on expected operation regime of the Toktogul reservoir was provided by the Coordination Dispatching Center (CDC) "Energy" on October 4, 2023.

Forecast schedule of operation regime of the Charvak reservoir was provided by the State Unitary Enterprise (SUE) “National dispatching center” coordinated with "UzbekHydroenergo".

Forecast schedule of the Andijan reservoir operation was received from Joint Stock Company “ Uzbekhydroenergy”.

The forecast schedule of the Shardara reservoir operation was received from the Water Management Committee of the Ministry of Water Resources and Irrigation of the Republic of Kazakhstan.

According to the forecast data, inflow to upper reservoirs was expected to be as follows:

-Toktogul reservoir – 93%

-Andijan reservoir – 91%

-Charvak reservoir (sum of 4 rivers) – 94% of the norm

The total lateral inflow was expected to be 85% of the norm.

Overall, water availability was expected at the level of 88% of the norm in the Syr Darya River basin.

II. **Total inflow** (Table 2.11)

The total inflow to the Syr Darya basin is 16 501 mcm for the non-growing season.

According to the forecast, the total inflow is expected to be 14 483 mcm (88% of the norm).

The total inflow to the Syr Darya basin for the previous non-growing season 2022-2023 was expected to be 14 906 mcm that is more than forecasted for the non-growing season 2023-2024. Actual inflow was 15 849 mcm (which is 943 mcm more or 106% of the forecast).

III. **Inflow to upper reservoirs** (Table 2.11)

The norm of inflow to upper reservoirs of the Naryn-Syrdarya cascade is 5308 mcm for the non-growing season.

According to the forecast, 4945 mcm is expected (93% of the norm).

The norm of inflow to the Toktogul reservoir is 2945 mcm.

According to the forecast, 2746 mcm is expected (93% of the norm).

The norm of inflow to the Andijan reservoir is 934 mcm.

According to the forecast, 851 mcm is expected (91% of the norm).

The norm of inflow to the Charvak reservoir (4 rivers in total) is 1428 mcm.

And by forecast, 1348 mcm is expected (94% of the norm).

IV. **Lateral inflow** (Table 2.11)

The norm of the lateral inflow is 11 194 mcm. According to the forecast, 9538 mcm is expected (85% of the norm).

Table 2.11

Reservoir	Non-growing season, mcm									
	2023-2024				2022-2023					
	norm	forecast	forecast/ norm (%)		norm	forecast	forecast/ norm (%)	actual	actual/ forecast (%)	actual/ norm (%)
Inflow to upper reservoirs										
Toktogul	2945	2746	93		2882	2882	100	2882	100	100
Andijan	934	851	91		929	782	84	676	86	73
Charvak (4 rivers in total)	1428	1348	94		1422	1261	89	1535	122	108
Sub-total:	5308	4945	93		5233	4925	94	5093	103	97
Lateral inflow										
Toktogul – Uchkurgan	400	372	93		398	398	100	386	97	97
Uchkurgan, Uchtepe - Bakhri Tojik	4423	3633	82		4397	3925	89	4213	107	96
Andijan – Uchtepe	2546	2056	81		2533	2202	87	2229	101	88
Bakhri Tojik – Shardara	2987	2687	90		2969	2670	90	3138	118	106
Gazalkent – Chinaz (excluding Ugam)	838	790	94		833	786	94	790	101	95
Sub-total:	11194	9538	85		11130	9981	90	10756	108	97
Total (total inflow):	16501	14483	88		16363	14906	91	15849	106	97

V. **Water storage in reservoirs** (Table 2.12)

As of October 1, 2023, the total water storage was 16756 mcm (including 7963 mcm of dead storage). Water storage in the reservoirs excluding dead storage was 8793 mcm.

As of October 1, 2022 , the total water storage in reservoirs was 19151 mcm (including 7963 mcm of dead storage). Water storage in reservoirs excluding dead storage was 11 188 mcm).

Available water resources of the Narin-Syr Darya reservoir cascade are 23 276 (total inflow plus water storage in reservoirs excluding dead storage) for the non-growing season 2023-2024.

(14 483 mcm + 8793 mcm = 23 276 mcm)

Table 2.12

Reservoir	**Water volume in reservoir, mcm**			
	Actual as of October 1, 2023	Actual as of October 1, 2022	Difference 2023 minus 2022	Dead storage
Upper reservoirs				
Toktogul	11748	13620	-1872	5500
Andijan	775	911	-136	150
Charvak	1531	1573	-42	426
Sub-total:	**14054**	**16104**	**-2050**	**6076**
In-stream reservoirs				
Bakhri Tojik	1694	1710	-16	917
Shardara	1008	1337	-329	970
Sub-total:	**2702**	**3047**	**-345**	**1887**
Total:	**16756**	**19151**	**-2395**	**7963**

VI. Water releases from reservoirs (Table 2.13)

According to the forecast operation schedule of the Naryn-Syr Darya reservoir cascade, 30 187 mcm were planned to be released from the reservoirs during the non-growing season 2023-2024.

According to the forecast operation schedule of the Naryn-Syr Darya reservoir cascade, 24 719 mcm were planned to be released for the non-growing season 2022-2023, and the actual water releases were 32 972 mcm (which is more by 8253 mcm than the forecast schedule).

Table 2.13

Reservoir	Water releases, mcm		
	Forecast schedule 2023-2024	Forecast schedule 2022-2023	Actual 2022-2023
Upper reservoirs			
Toktogul	8212	6639	8560
Andijan	820	681	676
Charvak (discharge from Gazalkent HPP)	2364	2097	2392
Sub-total:	11396	9417	11628
In-stream reservoirs			
Bakhri Tojik	9500	8386	12637
Shardara	6988	6916	8707
Sub-total:	**16488**	**15302**	**21344**
TOTAL:	**27884**	**24719**	**32972**

VII.

VIII. Water withdrawal limits (Table 2.14)

Based on requests of water user states, the following water withdrawal limits are proposed for the non-growing season.

The total volume of water withdrawal limit of water-user states is 4246 mcm during the non-growing season.

Table 2.14

Water-user state	Request, mcm
Republic of Kazakhstan (Dustlik canal)	487
Kyrgyz Republic	47
Republic of Tajikistan	365
Republic of Uzbekistan	3347
Total from the Syr Darya River	**4246**

According to the Committee of Water Management under the Ministry of Water Resources and Irrigation of the Republic of Kazakhstan, water supply to the Aral Sea and the Aral Sea Region is expected to be 3076 mcm for the non-growing season.

The actual inflow was 1671 mcm to the Aral Sea and the Aral Sea region through Karateren gauging station for the non-growing season 2022-2023.

According to the forecast data and accumulated water storage in the reservoirs, as well as requests of the water-user states, the forecast operation schedule of the Naryn -Syr Darya reservoir cascade has been drafted for October 1, 2023 – March 31, 2024. This schedule was submitted to ICWC members for consideration (Table 2.15).

Table 2.15

Forecast operation schedule of the Naryn-Syr Darya reservoir cascade (October 1 – March 31, 2024)

		October	November	December	January	February	March	Total, mcm
Toktogul reservoir								
Inflow to the reservoir	m3/s	228	193	163	148	149	160	
	mcm	611	500	437	396	373	429	2746
Volume: beginning of the season	mcm	11748	11605	10825	9483	7833	6808	
end of the season	mcm	11605	10825	9483	7833	6808	6278	
Water releases from the reservoir	m3/s	280	494	664	764	558	358	
	mcm	750	1280	1778	2046	1398	959	8212
Bakhri Tojik reservoir								
Inflow to the reservoir	m3/s	334	730	954	940	757	468	
(Akjar gauging station)	mcm	893	1891	2554	2517	1897	1255	11008
Volume: beginning of the season	mcm	1694	2024	2742	3209	3373	3445	
end of the season	mcm	2024	2742	3209	3373	3445	3444	
Water releases from the reservoir	m3/s	210	470	800	900	750	480	
	mcm	563	1218	2143	2411	1879	1286	9500
Shardara reservoir								
Inflow to the reservoir	m3/s	197	540	910	968	880	750	
	mcm	528	1400	2437	2593	2205	2009	11171
Volume: beginning of the season	mcm	1008	1265	1758	2856	3815	4516	
end of the season	mcm	1265	1758	2856	3815	4516	5186	

		October	November	December	January	February	March	Total,
Water releases from the reservoir	m3/s	99	350	500	610	600	500	
	mcm	265	907	1339	1634	1503	1339	6988
Water supply to the Aral Sea	m3/s	11.0	30	85	125	165	200	
	mcm	29	78	228	335	413	536	1619
Charvak reservoir								
Inflow to the reservoir	m3/s	101	91	78	70	69	101	
(4 rivers in total)	mcm	271	237	209	187	173	271	1348
Volume: beginning of the season	mcm	1531	1429	1273	1009	741	571	
end of the season	mcm	1429	1273	1009	741	571	512	
Water releases from the reservoir	m3/s	138	152	176	170	137	123	
(Discharge from Gazalkent HPP)	mcm	370	393	473	455	343	330	2364
Andijan reservoir								
Inflow to the reservoir	m3/s	48	57	58	50	50	60	
	mcm	129	147	156	134	125	161	851
Volume: beginning of the season	mcm	775	694	707	754	754	817	
end of the season	mcm	694	707	754	754	817	806	
Water releases from the reservoir	m3/s	78	52	40	50	25	64	
	mcm	210	134	108	134	63	172	820

Progress and outcomes on implementation of initiatives of the Heads of IFAS founder-states raised at the Summit in Turkmenbashi (August 2018) and tasks for ICWC in relation to the IFAS summit in Dushanbe (September 2023)[3]

I. Progress on implementation of initiatives of the Heads of IFAS founder-states raised at the Summit in the city of Turkmenbashi (August 2018)[4]

(August 25, 2018 – September 25, 2023)

The Summit of the Council of Heads of IFAS founder-states was held on August 24, 2018 in the city of Turkmenbashi. The heads of states put forward proposals and a number of initiatives aimed at environment, water and socio-economic improvement in the Aral Sea basin, and a Joint Communique[5] was adopted.

ICWC members have regularly addressed the follow-up on the initiatives raised since the 77th (November 5-6, 2019, Almaty) meeting. Given brief summarizes the outcomes of implementation of the initiatives from 2018 to 2023 in the following key areas:

1. Institutional and legal improvement of IFAS
2. Aral Sea Basin Program (ASBP – 4)
3. Mitigation of the Aral Sea disaster and UN special program for the Aral Sea basin
4. Automation of gauging stations
5. Regional cooperation and water diplomacy
6. Regional mechanism on integrated use of water-energy resources in Central Asia
7. Water conservation and climate change adaptation
8. Youth, capacity building and scientific cooperation

[3] Information on third item of the 85th ICWC meeting agenda

[4] Prepared in accordance with the decision of the 84th ICWC meeting on the 3rd item

[5] http://kazaral.org/wp-content/uploads/2018/10/Arals-Sammit-2018-brochure-russ_engl.pdf

9. Regional environmental program for sustainable development in Central Asia.

1. Institutional and legal improvement of IFAS

Joint communiqué:

"...The Presidents expressed their readiness to further improve the organisational structure and the legal framework of IFAS to ensure effective and sustainable institutional mechanism capable timely responding to current challenges. Such an institution shall enable mutually beneficial cooperation in implementing regional projects and programs aimed at such issues as saving the Aral Sea, ecological improvement in the Aral Sea Basin, integrated use and protection of water resources, transboundary watercourses, water management, energy and socio-economic development …"

During the **Turkmenistan**'s chairmanship in IFAS (2017-2019), the activities on institutional and legal improvement of IFAS started in 2009[6] were resumed in 2018[7]. Three meetings were held by the relevant Working Group (WG) (May 16-17, July 30-31 and November 25, 2019) in Ashgabat, where the proposals of the countries were considered and 5 stages of work were agreed upon.

During the chairmanship of Tajikistan in IFAS (2020-2023), the Working Group's meetings were held on May 27, August 16, October 18, 2021; January 27-28, January 23-24, September 21-22, 2022; January 17-19, April 5-6, and August 7-10, 2023.

The progress on institutional and legal improvement of IFAS was reported at the meetings of the IFAS Board (June 29, 2021; February 22 and November 22, 2022). By the decision of the Board of June 5, 2023, the EC IFAS, ICWC, ICSD and relevant ministers and agencies shall take measures to complete the process of institutional and legal improvement as soon as possible.

As of September 25, 2023: the 2nd stage of activities on identification of problems/gaps in performance of structural subdivisions of the IFAS was completed; the 3rd stage on determination of functions of existing and newly

[6] In 2009-2012, EC IFAS under the chairmanship of Kazakhstan and on the order of the Heads of State of 2009 started the work on institutional and legal improvement of IFAS. A Discussion Paper and the "Conceptual elements of institutional and legal improvement" were developed by the joint efforts of national experts and international consultants.

[7] item 4 of the EC IFAS Work Plan approved by the IFAS Board decision (January 30, 2018)

established organizations is in progress, including the coordination of goals and objectives/tasks of IFAS, and the 4th stage aimed at developing and coordinating proposals on the improvement of financial provisions of institutional management structure of the IFAS was continued.

The parties have not yet reached a consensus on quantity and missions of commissions in the institutional framework under reformation. There are two opinions:(1) establish separate commissions for each area of competency (water, energy, environment, socio-economic aspects of water and ecology); and, (2) keep the two existing commissions and include energy related issues in the competence of ICWC by renaming it into the Interstate Water and Energy Commission (IWEC) and leave environmental protection and the socio-economic aspects of water and ecology in the competence of the current ICSD.

2. Aral Sea Basin Program (ASBP-4)

Joint Communique:

"The Heads of State noted the importance to elaborate "The Aral Sea Basin Programme (ASBP-4)" ensuring that efforts and capacities of the region and the international community shall enable to address the common for the Aral Sea Basin priorities in water management, environmental and socioeconomic issues.

The parties highlighted that countries employ similar approaches in solution of key issues of the Aral Sea Basin agenda, including the development of the Aral Sea Basin Programme-4, the Concept of which has already been adopted".

During the **Turkmenistan's** chairmanship in IFAS[8] (2017-2019), the IFAS Board developed and approved the "Concept for development of ASBP - 4"[9] in line with the Board's decision of August 23, 2018 and 34 project proposals were agreed upon for inclusion in ASBP-4.

During the **Tajikistan's** chairmanship in IFAS (2020-2023), the ASBP-4 (34 investment projects, implementation timeline – 2021-2030) was approved by the IFAS Board (June 29, Dushanbe).

EC IFAS monitors the implementation of ASBP-4 and informs the Board on the progress. As of June 5, 2023, thirteen projects totaling $54.2 million are

[8] According to the item 3 of the EC IFAS Work Plan, it is planned to develop ASBP-4 in the following directions - integrated water resources use, environmental, socio-economic and improvement of institutional-legal mechanisms

[9] prepared with the support of GIZ

implemented by international development partners under ASBP-4. Of these, the work for over $30 million has been accomplished; national projects for over $600 million[10]are implemented in the IFAS founder-states.

Currently, SIC ICWC is not involved in the projects included in ASBP-4 but priority areas of the Program guide its activities and future projects. In particular: (1) surveying gauging stations and development of a feasibility study of the automation of gauging stations in the Syr Darya River basin, including small rivers in the basin, and improvement of the regional information system (project 1.6, ASBP-4) are included in the regional OECD project "Regional mechanisms for transformation"; (2) the matters related to improvement of water accounting and monitoring in the Amu Darya and Syr Darya River basins (project 1.7, ASBP-4) have been addressed[11] as part of the "Development of E-rules of intra-annual flow regulation in the Amu Darya River Basin"[12] project; (3) development of a system of environmental and water monitoring in the Aral Sea region and on the dried bed of the Aral Sea (project 2.7, ASBP-4) was completed as part of "Addressing the urgent human insecurities in the Aral Sea region through promoting sustainable rural development" project (MPHSTF for the Aral Sea Region, UNDP, UNICEF, FAO) and "Adaptation of a modern system for water and land resources monitoring and water balance (water requirement) modeling in the conditions of the Aral Sea region with a view of combating salinization and increasing land productivity"[13] project.

3. Mitigation of the Aral Sea disaster and the UN Special Program for the Aral Sea basin

Joint communiqué:

"The Heads of State expressed their concern over the aggravation of the Aral Sea crisis and its negative consequences,…

The Parties acknowledged the importance of consolidating efforts to address in a comprehensive manner the problems associated with the improvement of socio-economic and environmental situation in the Aral Sea Basin, especially in areas prone to environmental crisis ...

The Heads of State noted the need to consider the possibility of developing a special UN programme for the Aral Sea Basin and

[10] A summary of the ASBP-4 Progress Report highlighting regional and national projects was presented at the Board meeting on June 5, 2023.

[11] jointly with the Institute of Geographical Sciences and Natural Resources Research of the Academy of Sciences of the People's Republic of China and the BWO "Amu Darya"

[12] http://www.cawater-info.net/projects/amu2.htm

[13] http://www.cawater-info.net/projects/satreps.htm

instructed the IFAS Executive Committee to hold consultations with the states of the region, UN member states, the United Nations and its institutions…"

In Kazakhstan, the issues of socio-economic development of the Aral Sea region and improvement of living conditions of population are solved as part of the following ongoing projects: "Green Kazakhstan" 2021-2025 (approved by the presidential order No. 731 as of October 12, 2021); "Ecologically oriented development in the Aral Sea region (ECO ARAL). The 2nd phase[14] of the "Regulation of the Syr Darya River flow and preservation of the northern Aral Sea" project is under preparation. The National Action Plan for prevention and mitigation of effects of sand and dust storms (SDS) in the Republic of Kazakhstan for 2021-2024[15] has been drafted.

An Interactive map of afforestation monitoring [16] was launched. In the period from 1990 to 2021, afforestation was carried out on an area of 195 thousand ha (9%). Planting of seedlings is also underway as part of the projects "Afforestation of the dried bed of the Aral Sea in Kyzylorda region"[17] and on ecosystem restoration in the dried Aral Sea bed.[18] Two saksaul greenhouses and the shadehouse (Aral district of Kyzylorda region)[19] were opened; the nursery «Mezhurechensk»[20] was created. There is a ban on cutting saksaul plantations until December 31, 2023.[21] It is planned to plant saksaul on the dried bed of the Aral Sea on an area of 1.1 Mha by 2030.

Turkmenistan actively promoted the Aral Sea issue and the need for a UN Special program for the Aral Sea Basin (UN SPAS) at the UNGA sessions: the 73rd (2018), 74th (2019), 75th (2020). 76th (2021) and 77th sessions (2022).

[14] in the 1st phase (2002-2010), the North Aral Sea dam (Kokaral dam), Aitek set of structures, and protective dams on the Syr Darya River were built and , and the river channel near Aksu village was straightened, http://www.cawater-info.net/syrdarya-knowledge-base/pdf/rrssam1.pdf

[15] as part of the project "Regional Approaches to Combating Sand and Dust Storms (SDS) and Drought in Central Asia" and with the financial support from the United Nations Convention to Combat Desertification.https://carececo.org/publications/zasuha/Russian/c2n-kaz/UNCCD - C2N - KAZ - National_Action_Plan_SDS_Kazakhstan (Revised Final - RUS).pdf

[16] https://orman.gharysh.kz/ru/map

[17] 2018-2020 - 5 million saxaul seedlings on an area of 13.3 thousand ha, https://ecogosfond.kz/2020/06/12/38519/, http://kazaral.org/wp-content/uploads/2023/02/USAID-Environment-Restoration-of-the-Aral-Sea-Fact-Sheet-Sept-2022-RUS.pdf

[18] 62,500 planted in early April 2022 and 110,000 in March 2023,

[19] as part of the demonstration project "Afforestation of the dried bed of the Aral Sea: piloting a closed root system", implemented as part of the EU's "Nexus Dialogue in Central Asia" project.

[20] as part of the UNDP-GEF pilot project on establishment of the Aral Forest Nursery

[21] Order of the Chairman of the Forestry and Wildlife Committee at the Ministry of Agriculture of the Republic of Kazakhstan

In particular, Turkmenistan initiated:

- Resolutions adopted by the UNGA A/RES/72/273 of April 12, 2018., A/RES/73/297 of May 28, 2019., and A/RES/75/266 of March 3, 2021 “Cooperation between the United Nations and the International Fund for Saving the Aral Sea”; the thematic event “Cooperation of international institutions in providing sustainable development in Central Asia: the UN-IFAS model” (July 17, 2019, New York);
- The resolution E/ESCAP/RES/79/8 of May 19, 2023 entitled “Consideration of the modalities for the establishment of the United Nations special programme for the Aral Sea basin” (May 15-19, 2023, Bangkok, Thailand) was adopted in co-authorship with Azerbaijan, Armenia, China and Singapore, Turkey and the Philippines[22]. Earlier, consultations on the UN SPAS Concept were held (June 5[23] and December 18, 2019, Ashgabat); the Program was presented at a number of events (August 29, 2019, Thailand Bangkok; September 9, 2019, New-Delhi, India; December 18-19, 2019, Almaty).

(1) The Turkmenistan National Program on the Aral Sea for 2021-2025 and the related Action Plan were approved (October 22, 2021).

The Program covers modernization of domestic land and water legislation, implementation of preventive measures given the impact of natural factors, improvement of health care services, as well as improvement of water management and use, afforestation and biodiversity protection.

The Program will be supported by the “Conservation and sustainable management of land resources and high nature value ecosystems in the Aral Sea Basin for multiple benefits” project[24] between the Government of Turkmenistan and UNDP (March 3, 2022);

(2) The construction of Turkmen “Altyn Asyr” lake is ongoing to address the problem of utilization of collector-drainage flow. The Concept for the development of the region around “Altyn Asyr” lake for 2019-2025 and the related Action Plan were approved by the Resolution of the President of Turkmenistan (April 12, 2019).

The UN Multi-Partner Human Security Trust Fund for the Aral Sea region/MPHSTF functions **in Uzbekistan**.

The Fund supported 7 projects (in environmental, public health, food and

[22] as part of the ESCAP 79th session

[23] on the margins of the International Conference "Water Diplomacy as a Basis for Sustainable Development of Central Asia" (special session)

[24] funded by GEF and implemented by UNDP together with the Ministry of Agriculture and Environmental Protection of Turkmenistan

socio-economic areas) for an amount of $13.5 million. The projects had a positive impact on the lives of more than 274 thousand people (14% of the population in Karakalpakstan). Over 2019-2022, Uzbekistan's contribution to the MPHSTF amounted to $6.5 million.[25]

The International Innovative Center of the Aral Sea Region under the President of the Republic of Uzbekistan, the Central-Asian University on environmental studies and climate change/Green University (PP RUz No.PP-175 of 31.05.2023) were established as well. The State Committee on the development of the Aral Sea region and ecology was created under the Senate' of Uzbekistan in 2020.

The Concept "Aral Sea region – a zone of environmental innovation and technology" was developed (Resolution of KM RUz No.41 of 25.01.2022), the high-level international conference under the auspices of the UN on the theme "Aral Sea region – a zone of environmental innovation and technology" was held (October 24-25, 2019, Nukus) and the adoption of a special resolution declaring the "Aral Sea region a zone of environmental innovation and technology" was initiated[26] (A/75/L.83 of 18.05.2021).

The Program on socio-economic development of the Republic of Karakalpakstan (PKM of January 16, 2019 No.37 and of April 5, 2022 No.155. PP RUz of November 12, 2020 No.PP-4889) is underway. The work is undertaken to adopt water conservation irrigation technologies in the Aral Sea region.

Measures are taken to preserve existing ecosystems by expanding the area of protected natural areas in the Aral Sea region (Priaralie zone): – the park "Southern Ustyurt" and the state wildlife reserve "Sudochye Akpetki" were created; lake Sudochye was included in the list of wetlands of international importance of the Ramsar Convention (PP RUz No. 4247 of 20.03.2019; PKM RUz No.707 of 11.11. 2020 and No. 58 of 8. 02. 2021).

The "Strategy for the conservation of biological biodiversity in the Republic of Uzbekistan for 2019-2028" and the related Action Plan was approved (PKM No.484 of June 2019). The Lower Amu Darya State Biosphere Reserve was included in the World Network of Biosphere Reserves as part of the UNESCO "Human and biosphere" program (September 16, 2021, http://tugai.uz/).

Since 2018, 1.62 million ha of Aralkum were afforested with saxaul, tamarix and other desert plants (PPKM RUz No.132, 15.02 2019; No.1031 of

[25] under the Standard Administrative Agreement between the Government of RUz and the UNDP Multipartner Trust Fund Office in New York on Uzbekistan's contribution to the MPHSTF

[26] http://www.cawater-info.net/library/eng/a_res_75_278_e.pdf

24.12.2019; No. 745 of 25.11.2020 and No.31 of 18.01.2022).

As contribution to these activities, **SIC ICWC**

- monitors conditions of the South Aral region and the Large Aral sea based on satellite images[27] on a regular basis;
- together with IICAS conducted three field research expeditions to study saline land conditions in the Aral sea region and the dried bed of the Aral Sea: 1st expedition on an area of 600 thousand ha in the south-western part of the dried seabed (September 20 – October 20, 2019); 2nd expedition on an area of 500-600 thousand ha from Jyltyrbas to Kok-Darya (May 28 – June 26, 2020)[28] the results of which were reflected in the "Monitoring the dried seabed of the Aral Sea" and the 3rd expedition[29] covering 2.5 thousand km of the territory of Akpetka island system, Karateren lake, Vozrojdeniya island, and new and old afforestation areas (April 26 – May 19, 2023). The 4th expedition to the remaining territory began on September 20, 2023. The expedition to the delta of the Amu Darya River and south Aral sea was also conducted (June 10- July 18, 2021).
- carries out the Project "Adaptation of a modern system for water and land resources monitoring and water balance (water requirement) modeling in the conditions of the Aral Sea region with a view of combating salinization and increasing land productivity" [30] (May 2022-2025) aimed at improving water resources management in the Large Aral Sea.

4. Automation of gauging stations

Joint Communique:

"The Parties pointed out the importance of promoting automatic operation of hydroposts along the entire Syr Darya river basin through fund raising activity based on the agreement reached by the heads of water management organisations of the States-Founders of IFAS."

[27] http://www.cawater-info.net/aral/data/monitoring_amu.htm

[28] as part of the project "Addressing the urgent human insecurities in the Aral Sea region through promoting sustainable rural development" (UNDP/MPHSTF for Aral Sea region)

[29] as part of component 3.1. "Creation of data repository on science-based monitoring of the dried Aral Sea bed" (UNDP) of the project "Empowering youth towards a brighter future through green and innovative development of the Aral Sea region" (MPHSTF for the Aral Sea region, UNDP, UNICEF, FAO).

[30] as part of the joint call (57th round) of the Agency for Innovative Development under the Ministry of Higher Education, Science and Innovations of RUz and SATREPS-2020 Program (Japan)

In Kazakhstan, a five-year Plan for automation of the irrigation network of the RSE "Kazvodkhoz" was formed for 2021-2025. It is planned[31] to automate and digitize 212 primary and inter-farm canals with the total water withdrawal of 7.7 km^3 on an irrigated area of 497 thousand ha in Almaty, Jambyl, Turkistan and Kyzylorda provinces.

In Turkmenistan, as part of the Socio-Economic Development Program 2019-2025, the efforts are made to save water and create additional water reserves. In particular, water meters[32] have been installed at 13 points along the Murgab River in Mary province. The automated water monitoring system allows the "Marysuvkhodjalik" and "Goskomvodkhoz" organizations to control water level and flow in real-time for better water planning.

In Uzbekistan, 11 automated hydroposts have been installed along small rivers in the Fergana Valley, such as Karabagizh, Maylisuv, Sarikanda, Uchkurgan, Gava, Chadak, Kal, Kasansay, Shakhimardansay, Sarikanda and Dugoba through the EU-funded "Climate change and resilience in Central Asia" project implemented jointly by Uzhydromet and UNDP. The data from the gauging stations are updated every 15 min and transmitted to the republican server of UzHydromet.

As a contribution to this direction, **SIC ICWC**:

- performed jointly with BWO Syr Daryasurveys of water bodies in the upper and middle reaches of the Syr Darya River, including the Chirchik River basin. The results and recommendations concerning the need for feasibility and design studies to implement the SCADA automation system along the middle and lower reaches, as well as the request to allocate the budget for the relevant 2020 workplan were submitted to the Ministry of Investments and Foreign Trade of the Republic of Uzbekistan (No.185 of 16.09.19) and the Ministry of Ecology and Natural Resources of the Republic of Kazakhstan (No.256 of 18.11.2019);

- drafted Terms of Reference for feasibility study development on the gauging station automation project in the Syr Darya River basin, including small rivers, following the decision of the 80th ICWC meeting (May 11, 2021, videoconference). The document was agreed by Kazakhstan (ref. No.05-09/9283 of 01.06.2022), Tajikistan (ref. No.7-1122 of 08.06.2022) and Uzbekistan (ref. No.01/17-1363 of 17.06.2022). Organizations/candidates for

[31] https://primeminister.kz/ru/news/v-kazahstane-do-2030-ploshchad-oroshaemyh-zemel-budet-dovedena-do-3-mln-ga-s-brekeshev-5996

[32] equipment was transferred to the State Committee for Water Management (Goskomvodkhoz) of Turkmenistan as part of the project "Water, Education and Cooperation" funded by USAID and implemented by CAREC

coordination of work and the list of gauging stations to be surveyed (Kazakhstan, Uzbekistan) were identified from the countries.

At the 83rd ICWC meeting (November 22, 2022, Ashgabat, Turkmenistan), a proposal was put forward for the up-to-date equipment of water accounting and monitoring in the **AmuDarya River basin** and to assist in attracting investments for the implementation of ASBP-4 project proposal 1.7 "Improvement of water accounting and monitoring systems in the Amu Darya and Syr Darya River basins".

5. Regional cooperation and water diplomacy

Joint Communique:

" The Heads of State noted the significance of the results of the Dushanbe High-Level Conference on the International Decade for Action: Water for Sustainable Development 2018-2028, the Central Asian International Environmental Forum and the Tashkent International Conference Joint Actions to Mitigate the Consequences of the Aral Sea Catastrophe: New Approaches, Innovative Solutions, Investments that allowed strengthening the extension of cooperation between the countries of the region to achieve the Sustainable Development Goals."

Kazakhstan has approved the Concept of Water Resources Management Development for 2023-2029[33], according to which development of transboundary cooperation should become one of the key aspects of the state water policy until 2029, with the target indicator of improved water diplomacy and water law.

To develop interstate water relations, agreements will be signed with the Republic of Uzbekistan and the Kyrgyz Republic on transboundary water bodies, among other things and methodological and scientific-analytical work will be undertaken in support of negotiation processes. To have personnel equipped with water negotiation skills, the Kazakh National University plans to implement a new "Water Diplomacy" master degree program in 2023 at the meteorology and hydrology department.

Tajikistan is the initiator of the most UNGA resolutions on water, actively advancing water on the global agenda; the 1st (June 20-21, 2018) and 2nd international high-level conferences on the International Decade of Action "Water for Sustainable Development, 2018-2028"[34] were held in Dushanbe

[33] https://legalacts.egov.kz/npa/view?id=14598934

[34] The International Decade for Action "Water for Sustainable Development", 2018-2028 is intended to consolidate and expand the progress made during the International Decade for Action "Water for Life", 2005-2015, to create a strong platform for consolidating efforts aimed at further effective water

(June 6-9, 2022) with the UN support as part of the Dushanbe Water Process.

A high-level side event "Central Asia: Commitments to Water Action Agenda" was organized and held[35] in March 23, 2023 in New York to demonstrate the region's solidarity in jointly addressing water issues to achieve water, energy, food and environmental security in CA in the context of climate change and other challenges. The Joint Statement[36] including the commitment of the Central Asian countries to implement the Water Action Agenda was adopted.

Water diplomacy as one of the priority directions of **Turkmenistan's** foreign policy is promoted at various international platforms – UNESCO International conference on water resources (May 13-14, 2019 Paris); the 4th Asia-Pacific Water Summit (April 23-24, 2022, Kumamoto); UN Water Conference (March 22-24, 2023 New-York). On Turkmenistan's initiative, the UN resolutions were adopted: A/RES/75/272 of April 16, 2021 "Role of UN Regional Center on Preventive Diplomacy for CA"; A/RES/76/299 of July 28, 2022 "Zone of Peace, Trust and Cooperation of Central Asia".

Turkmenistan organized: the International conference titled "Role of water diplomacy in ensuring sustainable development in Central Asia" (June 5, 2019, Ashgabat), water diplomacy workshops (October 7, 2020, Ashgabat; December 15 and 19, 2022, Dashoguz[37], Ashgabat; April 25, 2023, Turkmenabad). The courses, workshops and trainings on water diplomacy are held at the Institute of International Relations of Turkmenistan's Ministry for Foreign Affairs.

Development of interstate transboundary water relations, development and promotion of mutually acceptable mechanisms for joint water management and programs for efficient water use that balance the interests of the Central Asia countries are among the priority areas of the "Concept for water sector development in the Republic of Uzbekistan for 2020-2030". In recent years, the country has initiated several bilateral water agreements and actively participates in bilateral and multilateral water commissions.

---

resources management and to become a powerful impetus for the rapid launch of the proposed Sustainable Development Goals related to water.

[35] as part of the UN Water Conference 2023, which was co-chaired by the Republic of Tajikistan and the Kingdom of the Netherlands from March 22 to 24 in New York City.

[36] http://sic.icwc-aral.uz/releases/rus/395.htm

[37] as part of the project "Conservation and sustainable management of land resources and ecosystems of high nature value ecosystems in the Aral Sea basin for multiple benefits", implemented by UNDP and the Ministry of Agriculture and Environmental Protection of Turkmenistan with the financial support of GEF

SIC ICWC activities are aimed at water diplomacy and water cooperation processes, including transboundary cooperation and regional organizations. Several analytical documents were developed during the mentioned period: "Diagnostic report on rational use of water resources in Central Asia as of 2019[38] (2020), "Highlights on the environmental matters and international cooperation in the statements made at the general debate of the UN General Assembly by the countries from Eastern Europe, Caucasus and Central Asia in 1992-2020"[39], the position paper "9th World Water Forum: Central Asia for peace and development. Priorities, actions and challenges for the future"[40] (2022), the Discussion Document[41] "Rethinking institutional and financial mechanisms on water and energy cooperation in Central Asia" (2023). SIC ICWC has become a member of the World Water Council's Board of Governors. It actively cooperates with UNECE, ICID, OECD, UNESCO, ADB, the Network of EECCA Water Management Organizations, SDC, EDB, GIZ and other partners.

6. Regional mechanism for integrated use of water and energy resources in CA

Joint Communique:

"The Heads of State, taking into account the mutual interest of the Parties in the integrated and rational use of water and energy resources in Central Asia, noted the importance of hydropower facilities that are under construction on trans boundary watercourses. However the interests of all countries concerned as well as the international principles and standards shall be taken into due account...

The Kazakh party proposed to find the possibility of creating a sustainable regional mechanism for the integrated use of water and energy resources in Central Asia."

After the Summit in Turkmenbashi, discussions on establishing a regional mechanism for integrated use of water and energy resources in Central Asia have intensified. At the request of **Kazakhstan**, the USAID Regional Water and

[38] http://cawater-info.net/expert-platform/dr2019.htm

[39] http://cawater-info.net/expert-platform/pdf/consolidated_assessment.pdf

[40] http://cawater-info.net/9wwf/pdf/position-paper-ru.pdf

[41] http://cawater-info.net/expert-platform/water-financing-ca.htm

Vulnerable Environment Activity (WAVE) assessed the possibilities for formation of an International Water and Energy Consortium (IWEC). The Eurasian Development Bank has developed an analytical study "Regulation of the water and energy complex in Central Asia"[42] which contains a proposal to create IWEC.

SIC ICWC with the support of OECD and participation of experts from Central Asian countries prepared a Discussion paper "Rethinking institutional and financial mechanisms on water and energy cooperation in Central Asia"[43]. It particularly proposes to improve the existing water and energy management and coordination bodies that shown their efficiency in operational management and coordination, with the adoption of new elements, relations and mechanisms of coordination, harmonization and service provision.

7. Water conservation and measures for adaptation to climate change

In their statements presidents of the Central Asia countries addressed the need to strengthen joint efforts in the area of rational use of water resources, adoption of modern water-saving technologies in irrigated agriculture in the context of climate change.

Kazakhstan takes actions as part of (1) the State program of water resources management for 2020-2030 (PPRK of 07.07.2020) aimed at maintaining water balance at the level of 100 km^3 by increasing additional surface water resources: construction of new reservoirs for 5-7 km^3, saving up to 5 km^3 of water-, and use up to 15 km^3 of groundwater.

By 2025, the National Project "Jasil Kazakhstan"[44] (Green Kazakhstan)[45] aims to decrease irrigation water losses by 4 km^3 and reduce freshwater diversion by 1.3 km^3 through reconstruction of 401 and digitalization of 212 canals. As of January 1, 2021, the area covered by water-saving technologies in the republic reached 248 thousand ha. Of these, only 5.4% of the total irrigated area or 67.7 thousand ha were covered in the southern region out of 1.25 Mha.

The task was set[46] to develop Roadmaps for the introduction of water-

[42] https://eabr.org/analytics/special-reports/regulirovanie-vodno-energeticheskogo-kompleksa-tsentralnoy-azii-/

[43] http://cawater-info.net/expert-platform/pdf/watfin-ru.pdf

[44] approved by PP RKNo. 731 of 12.10.2021, includes 11 objectives, for which 19 indicators and 48 measures are defined

[45] the main objective is sustainable use of natural resources, primarily water resources and reduction of energy intensity of the economy

[46] https://inbusiness.kz/ru/news/v-kazahstane-predlozhili-razrabotat-dorozhnye-karty-vnedreniya-vodosberegayushih-tehnologij-po-vsem-oblastyam

saving technologies in all provinces, including restoration of all irrigation canals and reservoirs. As a result of these measures, the abandoned canals and water bodies will be returned to state property. It is planned to allocate funding from the national budget for the construction of three reservoirs along the transboundary Qorgas, Osek and Tyshkan rivers.

Tajikistan implements the Water Sector Reformation Program for 2016-2025. As of 2022, (1) a new Water Code[47] was adopted. The laws "On drinking water supply and sanitation"[48] and "Water User Associations"[49] in a new edition, as well as 17 subordinate acts regulating various water management aspects; the "National water strategy of RT until 2040", Basin water management plans for the Syr Darya, Zarafshan, Panj, Kafirnigan, Isfara and Isfana rivers basins, Programs for restoration of industrial water supply systems and their equipping with water meters were developed; ; large-scale work was undertaken to assess conditions of the water supply and sanitation system for the development of a state program on water supply and sanitation system for the period up to 2030; (2) in part of institutionalized development, 5 basin zones were defined, as well as 5 basin organizations were designated under the Ministry of Energy and Water Resources of Tajikistan; 5 basin councils for Syr Darya, Zarafshan, Panj, Vakhsh, Kafirnigan rivers were established; the work on the improvement of management structure of the water supply and wastewater sector was started; the Concept of National Water Information System of Tajikistan (2019) was adopted to provide guidelines on elaboration and implementation of National Water Information System (NWIS)[50]. The procedure and methods for drafting water balances were approved (Order No.45 of MEWR RT of 01. 12. 2022). The "State program on water supply and sanitation system up to 2030" has been developed. The "Strategy for the development of "green" economy in Tajikistan for 2023-2037" was approved in 2022.

The National Climate Change Strategy is under implementation in **Turkmenistan;** the Government approved the updated nationally determined contribution (NDC)[51] for submission to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC). The implementation of the project "Supporting climate resilient livelihoods in agricultural

[47] effective 02.04.2020

[48] effective since 19.07. 2019

[49] effective since 02.01.2020

[50] consists of information systems "State Water Cadastre", "Geoportal", "Water Balances of Water Bodies" and "Reclamation and Irrigation".

[51] The document is a Climate Change Mitigation Action Plan with the long-term goal of holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C, consistent with the goals of the Paris Agreement.

communities in drought-prone areas of Turkmenistan" (UNDP/GEF) has been completed.

Measures are taken in **Uzbekistan** to expand incentive mechanisms for the introduction of water-saving technologies to support all users of resource-saving technologies, particularly in raw cotton production (PP No. 4087 of 27.12.2018), establish new vineyards (PP No. 4161 of 05.02.2019), develop horticulture and greenhouse farms (PP No. 4246 of 20.03.2019). The mechanism and amount of subsidies to cover a portion of costs have been determined (PP 4499 of 25.10. 2019). Forecast indicators on introduction of water-saving technologies for 2019-2022 on 253 381 ha of agricultural land were adopted (No.5742 of 17.06.2019).

In order to eliminate existing shortcomings and problems for introduction of water-saving technologies, mitigation of the negative impact of the observed water shortage in the region as well as further efficient use of irrigation water, forecast indicators on introduction of water-saving technologies on 478 thousand ha of agricultural land were approved in 2022 (PP No.144 of 01.03.2022).

Since 2022, the procedure of state support for the introduction of water-saving technologies in agricultural production was set to cover: (1) a portion of costs born by agricultural producers on introduction of water-saving irrigation technologies; (2) a portion of interests on bank loans allocated for purchase and construction of water saving irrigation systems.

As part of the "Strategy for water resources management and irrigation development in Uzbekistan for 2021-2023", the water-saving technologies were introduced on 940 thousand ha, digital technologies were installed at 11 554 water facilities, including 5736 smart water devices, 4452 devices for groundwater table monitoring, 1 335 online monitoring devices for pumping stations and operation processes of 31 large waterworks facilities were automated.

The "Climate adaptive water resources management in the Aral Sea basin sector" project (ADB $194.8 million, 2022-2029, executing agency - Ministry of Water Management of Uzbekistan) is underway.

SIC ICWC contribution to water conservation and adaptation to climate change is as follows:

- **monitoring of water balance in the Amu Darya and Syr Darya River basins** is conducted jointly with BWO Amu Darya and BWO Syr Darya every ten days. Operational analytical reports on situation in the basin for each ten days are published on the SIC ICWC website in the sections "Water management situation in the Amu Darya River

basin"[52], "Water management situation in the Syr Darya River"[53] including a weekly newsletter "Water management, irrigation and ecology in Eastern Europe, Caucasus and Central Asia" which is disseminated among 77 recipients.

- pursuant to the decision of the 82nd ICWC meeting (April 27, 2022, Turkistan) on the **analysis of the data from Hydromet's gauging stations to be conducted by BWO Syr Darya jointly with SIC ICWC and hydrometereological services of the countries**, joint control measurements of water discharge at g/s Chinaz-Syr Darya, inflow to the Syr Darya River along Bozsu canal, g/s Kokbulak and g/s Keles, were made and water withdrawals downstream of g/s Chinaz-Syr Darya up to the border of Uzbekistan and Kazakhstan along the Syr Darya River bed were examined (May 26-27). Analysis of inflow to the Shardara reservoir was conducted[54]. The results were submitted to the Vice-Minister of Ecology, Geology and Natural Resources of the Republic of Kazakhstan, Mr. S. Kozhaniyazov (No.69 and No.01/109 of 02.06.2022).
- Research was carried out (1) jointly with BWO Amu Darya, on more precise definition of the components of the river water balance of the Amu Darya and its main tributaries and development of a XLSX routine[55] (2021); jointly with IGSNRR CAS, on development of E-rules of intra-annual flow regulation in the Amu Darya River Basin"[56] and adoption of this computed program;[57] (2) under the contract with BWO Syr Darya, on more precise definition of water balance of the Syr Darya River and reservoirs in the reach of Toktogul reservoir–Uchkurgan hydroscheme – Bakhri Tojik reservoir, Farkhad hydroscheme–Chardara reservoir and development of a computing accounting program, as well as on precise definition of the components of the river water balance of Karadarya and Chirchik rivers and development of a XLSX computer program.

[52] http://www.icwc-aral.uz/reports_amudarya_ru.htm

[53] http://www.icwc-aral.uz/reports_syrdarya_ru.htm

[54] according to the data of the UzHydromet and KazHydromet from April to May 2022.

[55] http://www.cawater-info.net/projects/amu1.htm

[56] http://www.cawater-info.net/projects/amu2.htm

[57] Client- Ministry of Innovative Development of RUz/ Agency for Innovative Development under the Ministry of Higher Education, Science and Innovations of RUz

- Synthesis reports on "Water saving in Central Asian countries: past experience and vision for the future"[58] and "Water-saving experience in Uzbekistan"[59] were prepared.
- Development of training programs and delivery of trainings for three different target groups as well as preparation of Training Manual on “Integration of adaptation into water planning in Turkmenistan” are underway[60] jointly with SIC ICSD.

8. Youth, capacity building and scientific cooperation

Joint communiqué:

“The Heads of States noted the importance of the regional youth movement for the protection of water resources and the environment to ensure the participation of the younger generation in addressing modern challenges and threats.

With a view to improve the Research and Development field as well as human resources capacity the Uzbekistani party proposed arrangement of training to develop knowledge and skills of HR as well as interdisciplinary research in the field of water resources and environmental protection on the basis of the Tashkent Institute of Engineers of Irrigation and Agricultural Mechanisation in cooperation with the leading higher educational institutions of the states of the region.”

The Regional Central Asia Youth for Water Network (CAY4W) operates at the **regional level,** bringing together young people to engage in water management in Central Asia.[61]At the side-event "Catalyzing youth action for climate and water"[62] (UNFCCC COP-27, November 16, 2022) the joint "Regional statement of the Central Asian Youth on Climate Change to the participants of the UNFCC COP 27”[63] was announced.[64]

[58] http://www.icwc-aral.uz/pdf/synthesis-report-watersaving.pdf

[59] http://cawater-info.net/library/rus/watlib/watlib-26-2021.pdf

[60] "Developing a National Adaptation Planning Process in Turkmenistan/NAP within the UNDP/GCF project (RFQ-TKM-017-2022 (POC0001726))

[61] https://www.facebook.com/CAY4W/

[62] as part of COP27 UNFCCC of 16.11. 2022

[63] https://www.carececo.org/publications/Youth_CALP Statement to COP-27_04.11.2022_RUS_FINAL_approved.pdf

The Concept of State Youth Policy of the Republic of Kazakhstan for 2023-2029 was approved in **Kazakhstan** (PP RK No.247 of March 28, 2023).[65] The SDG-2030 Youth Leaders Program is implemented and the "SDG-2030 Youth Ambassadors" were identified; the Central Asian Environmental Leadership Program for Sustainable Development (CALP) is in place.[66] The regional scientific-practical conference "Silk Road of Knowledge" - a platform for regional dialog on sustainable water resources management, exchange of knowledge and experience in applying innovative approaches and solutions – is regularly conducted.[67]

The following youth organizations are operational in **Tajikistan:** (1) NGO "Youth Group for Environmental Protection" (YGPE), with one of its programs ("Green Patrols") aiming to develop and strengthen the youth initiative groups in situ through training and involvement of the youth in solving socio-environmental problems in practice; (1) Youth Environmental Center working with: communities, by introducing climate change adaptation technologies at the farm and household level; youth, by developing training programs, environmental actions and campaigns; public organizations, by developing environmental networks, and governmental organizations, by actively participating in discussions and development of national programs on environmental protection, natural resources management and adaptation to climate change, etc. The Ecocenter is one of the organizers of the Tajikistan NGO Network on Climate Change. The "Concept for supporting the development of higher education for training of water experts in Tajikistan until 2030" has been developed.

Turkmenistan has approved the Strategy for International Cooperation of the Youth of Turkmenistan for 2023-2030 (June 10, 2023). The UNDP project "Young Ambassadors of SDGs" is implemented to raise awareness on SDGs among youth and educate young leaders.

A youth conference on climate change (October 8, 2021), a climate eco-festival (October 9, 2022), and meetings for university students were held in Ashgabat, where the issues related to the role of the young generation in combating the climate crisis, sustainable cities, and the Aral Sea environmental

---

[64] prepared on behalf of the CALP Alumni Network 2010-2021 together with the Working Group of the first regional youth climate conference in CA (RCOY CA), CAY4W youth network, and other youth networks, in cooperation with government bodies of CA countries.

[65] target indicator 8 provides for "Increase in the share of young people involved in volunteer, charitable and environmental initiatives"

[66] in CAREC since 2010. CAPL is a regular capacity building program on environment for sustainable development in Central Asia for governments, private sector, NGOs, youth, which allows participants to gain a comprehensive understanding of sustainable development issues.

[67] In KNU since 2020

disaster, Turkmenistan's international climate initiatives were addressed, etc. (May, June 2023); lectures and thematic games were organized on land degradation and preservation of ecological systems in the context of climate change.[68]

Uzbekistan is in process of implementing the Concept for the Development of Environmental Education, which aims to build environmental knowledge, awareness and culture among the younger generation and improve environmental sciences through the use of innovative technologies (PKM No. 434 of 27.05.2019).

To improve the engineering education system, the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers was renamed[69] into the National Research University "Tashkent Institute of Irrigation and Agricultural Mechanization Engineers" (National Research University "TIIAME"). Scholars of the National Research University "TIIAME " and the Colorado State University (USA) jointly teach disciplines included in the curriculum of the two universities in line with international standards. In 2022, NRU "TIIAME" took the 1st place among the universities of Uzbekistan and received high rating on the UN SDGs (15 out of 17). The University was ranked 301 among universities in the Asia-Pacific region by QS Asia University Rankings 2023 and 603 by the World Green University Rankings.

As a contribution to this direction, **SIC ICWC:**

- supports the activities of the Expert Platform on Water Security, Sustainable Development and Future Studies[70]. Together with experts from CA countries (1) the database of experts on water, environment and sustainable development was created for free use, population and development; (2) a compendium of best transboundary water cooperation practices was prepared; (3) analytical studies "Statements made by the Central Asian countries at the UN General Assembly in 1992-2020: Key highlights and priorities" (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan) and "Environment and Transboundary Cooperation in the Statements made by the EECCA countries at the UN General Assembly in 1992-2020" (Belarus, Moldova, Russia, Ukraine), Caucasus (Azerbaijan, Armenia and Georgia) [71] were conducted;

[68] as part of the UNDP project "Conservation and sustainable management of land resources and ecosystems of high nature value ecosystems in the Aral Sea basin for multiple benefits"

[69] PP RUz PP No-42 of 10.12.2021 "On measures for radical improvement of the system of engineering personnel training for industries based on innovations and digitalization".

[70] http://www.cawater-info.net/expert-platform/index.htm

[71] as part of the UNECE project "Support to the Network of Russian-Speaking Water Management Organizations in Eastern Europe, Caucasus and Central Asia", with the involvement of experts from the countries of the region

- made a voluntary commitment[72] to work closely with CA countries and other partners to advance scientific evidence-based transboundary water cooperation in Central Asia;
- participates in the expert groups of UNECE, OECD, World Water Council, International Network of Basin Organizations, International Commission on Irrigation and Drainage and promotes scientific evidence-based approaches on the UN platform, in particular at the informal plenary meeting of the UNGA 77th session (February 7, 2023, New York);
- delivers lectures and practical training for undergraduates of NRU "TIIAME". Also, one-time lecture classes were held for undergraduates of KNU and Nazarbayev University;
- Master students of "Hydraulics and Engineering Hydrology" and "Integrated Water Resources Utilization and Management" faculties undergo internship at SIC ICWC on a regular basis;
- organized among young pupils of “Euroasia school” a contest on the theme “Water is a precious gift” on the occasion of the World Water Day to raise environmental culture among the younger generation and popularize careful attitudes to water.

9. Regional Environmental Program for Sustainable Development in Central Asia (REP4SD-CA)

Joint communiqué:

“…The Presidents encouraged the development of the Regional Environmental Protection Programme for Sustainable Development of Central Asia aimed at implementing the UN Sustainable Development Goals and Environmental Conventions, development of green economy principles and adaptation to climate change ...”

The decision to develop the Regional Environmental Programme for Sustainable Development of Central Asia (REP4SD-CA) was made at the ICSD meeting in Ashgabat on June 8, 2017. National (except Kyrgyzstan) and regional working groups (RWG) were formed to develop the program. Three meetings and one technical meeting of the RWG, an interagency consultative meeting on the development of the REP4SD-CA[73] (April 4, 2018. Ashgabat)

[72] https://sdgs.un.org/partnerships/advancing-evidence-based-transboundary-water-cooperation-central-asia

[73] organized by EC IFAS, ICSD, State Committee on Environmental Protection and Land Resources, with the support of the GIZ Regional Program on "Sustainable and climate sensitive land use for economic development in Central Asia".

were held. On October 24, 2019, REP4SD-CA was approved at the ICSD meeting in Nukus and the ICSD Advisory Council was established to coordinate program implementation. Regional assessment reports on monitoring and evaluation of implementation are made periodically.

Tasks for ICWC arising from the IFAS Summit in Dushanbe

From the Dushanbe Statement adopted by the Council of Heads of Founding States of the International Fund for Saving the Aral Sea (IFAS) on September 15, 2023, the following tasks are proposed to be included in the ICWC work:

1. **Raise priority** of water in national and regional strategies and development plans.

2. Further strengthen regional **cooperation** to ensure environmental, food and energy security and achieve climate resilience and socio-economic development on the base of comprehensive and cross-sectoral approach.

3. Institutional and legal improvement of IFAS as well as strengthening its capacity and enhancing its image on the international arena.

4. Prepare and implement **joint projects and programs** as part of ASBP-4 and REP4SD-CA.

5. Take concrete measures for complete solution of the **Aral Sea** catastrophe effects.

6. Extend cooperation and coordination on **climate** agenda.

7. Extend cooperation and coordination on nature care, in particular glacier preservation and water conservation, including promotion of **resource-saving and "green" technologies** at the national and regional levels.

8. Ensure universal and equitable access to safe and sustainable **water supply,** sanitation and hygiene.

9. Develop a comprehensive and mutually beneficial cooperation mechanism **on water and energy** in Central Asia.

10. Take coordinated measures for widespread adoption of **advanced information and communication technologies** for water management and development of water and environment information bases and information exchange.

11. Support regional **youth** movements

12. Activate cooperation **with the UN system** and implement commitments made in the “Joint Statement of the Central Asian States at the UN 2023 Water Conference”.

Analysis of water situation in the Syr Darya and Amu Darya river basins for the growing season 2023[74]

1 Syr Darya River Basin

The inflow to the upstream reservoirs in the Syr Darya basin (Toktogul, Andijan, Charvak) was 15.5 km³ or 87% of the forecast. This is 84% of the norm and by 2.6 km^3 lower than during the growing season 2022. The total lateral inflow to the Naryn and the Syr Darya Rivers (in the reaches before the Shardara reservoir) was 6.5 km^3 (this is by 2 km^3 lower than during the growing season 2022). including from the Karadarya River (Uchtepa g/s) - 0.98 km^3, the Chirchik River (Chinaz-Chirchik g/s) - 0.46 km^3, and from the collector drainage network/CDN (return flow) and small rivers - 5.05 km^3.

At the beginning of the growing season, the upper reservoirs (Toktogul, Andijan, Charvak) accumulated 9.49 km^3. By the end of the growing season, full water storage was 14.05 km^3 in the upstream reservoirs, i.e. the accumulation was 4.57 km^3.

Inflow to the Toktogul reservoir from the Narin River was 9.18 km^3, which is less by 0.63 km^3 than forecasted (94% of the norm). Water releases from the reservoirs amounted to 5.35 km^3, as scheduled by BWO Syr Darya. The total water withdrawal from the Narin River to the reservoir amounted to 3.83 km^3, which is 15% less than in the BWO Syr Darya schedule.

The amount of water in the Bakhri Tojik reservoir was 3.45 km^3 at the beginning of the growing season and 1.69 km^3 by the end of the growing season. Inflow to the Bakhri Tojik reservoir was 4.56 km^3 during the growing season and discharge into the river was 5.42 km^3. The analysis of the Bakri Tojik reservoir operation shows that the inflow to the reservoir was 0.65 km^3 lower than planned by BWO schedule and, consequently, water releases from the reservoir into the river were less by 0.77 km^3 than in the BWO schedule.

The total water withdrawal from the Narin and Syr Darya Rivers in the reaches up to the Shardara reservoir reach amounted to 9.81 km^3 or 82 % of the established limit/quota. For the growing season 2023, the water withdrawal was 2.09 km^3 lower than planned according to the established water limits/quotas by ICWC.

[74] Prepared by A. Sorokin and I. Ergashev, SIC ICWC

The water withdrawal by republic was as follows: 0.7 km^3 – Republic of Kazakhstan (through the Dustlik canal); 0.19 km^3 – Republic of Kyrgyzstan; 1.44 km^3 – Republic of Tajikistan; and, 7.48 km^3 – Republic of Uzbekistan.

The water storage in the Shardara reservoir was 5.0 km^3 by the beginning of the growing season and 1.01 km^3 by the end of the growing season. Inflow to the Shardara reservoir was 2.52 km^3 or 60% of the forecast, while 4.51 km^3 of water was discharged from the reservoir, including 3.9 km^3 into the river; no water flew from the Shardara hydroscheme into Arnasay reservoir.

Water supply to the Aral Sea and the Aral Sea region (Karateren g/s) amounted to 0.34 km^3 according to the Committee for Water Resources of the Republic of Kazakhstan.

The amount of flow used in the lower reaches of the Syr Darya (including water withdrawal plus water losses and minus lateral inflow) is estimated at 4.17 km^3.

Table 1.1

Indicators of water supply of the countries in the Syr Darya River basin, growing season 2023

Water user	Water volume, km^3	
	BWO schedule/limit	actual
1 Total water withdrawal up to Shardara reservoir	11.90	9.81
2 Water withdrawal by state:		
– Kyrgyz Republic	0.27	0.19
– Republic of Uzbekistan	8.80	7.48
– Republic of Tajikistan	1.91	1.44
– Republic of Kazakhstan	0.92	0.70
3 Water withdrawal by river reach		
3.1 Toktogul reservoir – Uchkurgan hydroscheme	3.99	3.53
Including:		
– Kyrgyz Republic	0.21	0.10
– Republic of Tajikistan	0.24	0.04
– Republic of Uzbekistan	3.55	3.38
3.2 Uchkurgan hydroscheme – Bakhri Tojik reservoir	1.05	1.15
Including:		
– Kyrgyz Republic	0.06	0.08

Water user	Water volume, km^3	
	BWO schedule/limit	actual
– *Republic of Tajikistan*	0.45	0.53
– *Republic of Uzbekistan*	0.54	0.53
3.3 Bakhri Tojik – Shardara reservoir	6.85	5.13
Including:		
– *Republic of Kazakhstan*	0.92	0.70
– *Republic of Tajikistan*	1.22	0.86
– *Republic of Uzbekistan*	4.71	3.57
4 Additionally:		
– Inflow to the Shardara reservoir	4.22	2.52
– Discharge into Arnasay	0.00	0.00
– Water supply to the Aral Sea and Aral Sea region[75]	1.00	0.34

[75] Committee for Water Resources of the Republic of Kazakhstan

Table 1.2

Water balance of the Syr Darya River, growing season 2023

Balance item		Water volume, km^3		Deviation (actual-plan)	
		forecast / plan	actual	km^3	%
1	Inflow to Toktogul reservoir	9.81	9.18	-0.63	6
2	Lateral inflow (LI) in the reach of Toktogul reservoir-Shardara reservoir (+)	8.89	6.49	-2.40	27
	Including:				
	– *Discharge from the Karadarya River (Uchtepa g/s)*	1.24	0.98	-0.26	21
	– *Discharge from the Chirchik (Chinaz-Chirchik)*	0.59	0.46	-0.13	23
	– *Lateral inflow from CDN and small rivers*	7.06	5.05	-2.01	28
3	Flow regulation by reservoirs: recharge (+) or diversion of flow (-)	-3.53	-2.97	0.56	16
	Including:				
	– *Toktogul reservoir*	-4.51	-3.83	0.68	15
	– *Bakhri Tojik reservoir*	0.97	0.86	-0.11	12
4	Regulated flow (1+2+3)	15.16	12.70	-2.47	16
5	Water withdrawal in the Toktogul– Shardara reach (-)	-11.90	-9.81	2.09	18
6	Inflow to Shardara reservoir	4.22	2.52	-1.70	40
7	Water releases from Shardara reservoir (into the river and water withdrawal)	7.74	4.51	-3.24	42
8	Water use (-) downstream of the Shardara reservoir (water withdrawal –lateral inflow + river water losses)	-6.75	-4.17	2.58	38
9	Water supply to the Aral Sea and Aral Sea region	1.00	0.34	-0.66	66

Table 1.3

Reservoir water balance in the Syr Darya River basin. growing season 2023

Balance item	Water volume, km^3		Deviation (actual-plan)	
	forecast/ plan	actual	km^3	%
1.Toktogul reservoir				
1.1 Inflow to the reservoir	9.81	9.18	-0.63	6
1.2 Water volume in reservoir:				
– beginning of the season (April 1, 2023)	7.94	7.94	0.00	0
– end of the season (October 1, 2023)	12.44	11.75	-0.70	6
1.3 Water releases from the reservoir	5.30	5.35	0.05	1
1.4 **Flow regulation:** recharge (+) or diversion of flow (-)	-4.51	-3.83	0.68	15
2. Andijan reservoir				
2.1 Inflow to the reservoir	3.03	2.07	-0.96	32
2.2 Water volume in the reservoir:				
– beginning of the season (April 1, 2023)	0.90	0.90	0.00	0
– end of the season (October 1, 2023)	0.95	0.77	-0.18	18
2.3 Water releases from the reservoir	2.96	2.19	-0.77	26
2.4 **Flow regulation:** recharge (+) or diversion of flow (-)	-0.06	0.12	0.18	
3. Charvak reservoir				
3.1 Inflow to the reservoir	5.00	4.21	-0.79	16
3.2 Water volume in the reservoir				
– beginning of the season (April 1, 2023)	0.65	0.65	0.00	0
– end of the season (October 1, 2023)	1.67	1.53	-0.14	8
3.3 Water releases from the reservoir	4.00	4.01	0.01	0
3.4 **Flow regulation:** recharge (+) or diversion of flow (-)	-1.00	-0.20	0.80	80
4 Bakhri Tojik reservoir: recharge (+) or diversion of flow (-)				
4.1 Inflow to the reservoir	5.22	4.56	-0.65	13
4.2 Lateral inflow	0.28	0.133	-0.15	52

Balance item	Water volume, km^3		Deviation (actual-plan)	
	forecast/ plan	actual	km^3	%
4.3 Water volume in the reservoir:				
– beginning of the season (April 1, 2023)	3.45	3.45	0.00	0
– end of the season (October 1, 2023)	1.63	1.69	0.07	4
4.4 Water releases from the reservoir	6.77	6.109	-0.66	10
Including*:*				
– *water releases into the river*	6.19	5.42	-0.77	12
– *water withdrawal from the reservoir*	0.58	0.69	0.11	19
4.5 **Flow regulation:** recharge (+) or diversion of flow (-)	0.97	0.86	-0.11	12
5 Shardara reservoir				
5.1 Inflow to the reservoir	4.22	2.52	-1.70	40
5.2 Lateral inflow	0.00	0.00	0.00	
5.3 Water volume in the reservoir:				
– beginning of the season (April 1, 2023)	4.99	4.99	0.00	0
– end of the season (October 1, 2023)	1.02	1.01	-0.01	1
5.4 Water releases from the reservoir	7.74	4.51	-3.24	42
Including:				
– *discharge into Arnasay*	0.00	0.00	0.00	
– *water releases into the river*	6.87	3.90	-2.96	43
– *water withdrawal from the reservoir*	0.87	0.60	-0.27	31
5.5 **Flow regulation:** recharge (+) or diversion of flow (-)	2.65	1.38	-1.27	48
TOTAL volume of flow regulation by reservoirs: recharge (+) or diversion of flow (-)	-1.95	-1.67	0.28	14

2 Amu Darya River Basin

The actual water availability in the Amu Darya River at nominal Kerki g/s (upstream of water intake to Garagumdarya) was 43.46 km^3 (94% of the norm), which is 0.36 km^3 lower than forecasted by BWO Amu Darya (Table 2.2). For comparison, in the growing season 2022, the river's water availability was 41.23 km^3.

Inflow to the Nurek reservoir amounted to 16.79 km^3 and was above the projected flow by 1.0 km^3, while water releases from the reservoir were 13.28 km^3 or 1.21 km^3 more than the forecast by BWO Amu Darya. 3.51 km^3 of river water was diverted through accumulation of water in the Nurek reservoir (Table 2.3)

According to the data from Darganata gauging station, the inflow to Tuyamuyun hydroscheme (TMHS) amounted to 16.27 km^3, which is less by 4.48 km^3 of the forecast. In spite of this, the planned amount of water of 3.5 km^3 was accumulated in TMHS reservoirs during the growing season. Water releases from TMHS were 13.31 km^3 or 4.46 km^3 less than planned.

Under the current situation in water, the established water withdrawal limit for canals in the Amu Darya River basin was met by 84% (Table 2.1). The total water withdrawal was 33.2 km^3, including 25.55 km^3 diverted downstream of Kerki g/s (starting from the water intake to Garagumdarya). In the growing season, the average water availability was 98% in the Republic of Tajikistan, 91% in Turkmenistan, and 73% in Uzbekistan. As to the lower reaches, the water availability was 70% in Turkmenistan, 63% in Uzbekistan, including 72% in Surkhandarya province.

The water supply to the Aral Sea region and the Aral Sea was 1.19 km^3 (flow of the Amu Darya River at Samanbay g/s plus discharge from CDN) or 57% of BWO schedule.

Table 2.1

Indicators of water supply of the countries in the Amu Darya River Basin, growing season 2023

Water user	Water volume, km^3		Water availability, %	Shortage (-), surplus (+), km^3
	limit/ schedule	actual	season	season
1. Total water withdrawal	**39.45**	**33.19**	**84**	**-6.3**
2. By state:				
Kyrgyz Republic	-	-	-	-
Republic of Tajikistan	6.9	6.8	98	-0.1
Turkmenistan	15.4	14.0	91	-1.4
Republic of Uzbekistan	17.1	12.4	73	-4.7
3. Downstream of nominal Kerki g/s*	**31.339**	**25.55**	**82**	**-5.8**
Including:				
Turkmenistan	15.4	14.0	91	-1.4
Republic of Uzbekistan	15.9	11.6	73	-4.3
4. By river reach:				
Upper reaches	**8.111**	**7.64**	**94**	**-0.5**
Including:				
Kyrgyz Republic	-	-	-	-
Republic of Tajikistan	6.92	6.78	98	-0.1
Surkhandarya province, Uzbekistan	1.19	0.86	72	-0.3
Middle reaches	**16.121**	**15.62**	**97**	**-0.5**
Including:				
Turkmenistan	10.42	10.45	100	0.0
Republic of Uzbekistan	5.70	5.17	91	-0.5
Lower reaches	**15.218**	**9.93**	**65**	**-5.3**
Including:				
Turkmenistan	4.99	3.52	70	-1.5
Republic of Uzbekistan	10.223	6.42	63	-3.8
5. Additionally:				

Water user	Water volume, km^3		Water availability, %	Shortage (-), surplus (+), km^3
	limit/ schedule	actual	season	season
Sanitary – environmental flow to canals in the lower reaches	0	0		
Including:				
Turkmenistan	0	0		
Republic of Uzbekistan	0	0		
Water supply to the Aral Sea region and the Aral Sea**	2.10	1.19	57	-0.9

*) nominal Kerki section - section in the Amu Darya River upstream of the water intake to Garagumdarya
**) including discharge from CDN

Table 2.2

Water balance of the Amu Darya River, growing season 2023

Balance item	Water volume, km^3		Deviation (actual-plan)	
	forecast/ plan	actual	km^3	%
1. Water content in the Amu Darya - unregulated flow at nominal Kerki station*	43.82	43.46	-0.36	1
2. Flow regulation by the Nurek reservoir: recharge (-) or diversion of flow (-)	-3.72	-3.51	0.21	6
3. Water withdrawal in the middle reaches (-)	-16.12	-15.62	0.50	3
4. Return flow in the middle reaches (+)	1.03	0.94	-0.09	9
6. River flow at Darganata g/s	20.75	16.27	-4.48	22
7. Water releases from TMHS (including water diversion from reservoir)	17.76	13.31	-4.46	25
8. Water withdrawal in the lower reaches, including diversion from TMHS (-)	-15.22	-9.93	5.28	35
9 Return flow in the lower reaches (+)	0.00	0.00	0.00	
10 Sanitary-environmental flow to canals (-)	0.00	0.00	0.00	
11 Water supply to the Aral Sea region and the	0.67	0.44	-0.23	34

Balance item	Water volume, km^3		Deviation (actual-plan)	
	forecast/ plan	actual	km^3	%
Aral Sea (Samanbay g/s)				

***** Amu Darya River flow upstream of the water intake to Garagumdarya, natural flow at Nurek HPP (excluding flow regulation of the Vakhsh River)**.**

Table 2.3

Reservoir water balance of the Amu Darya River, growing season 2023

Balance item	Water volume, km^3		Deviation (actual-plan)	
	forecast/ plan	actual	km^3	%
1 Nurek reservoir				
1.1. Inflow to the reservoir	15.79	16.79	0.99	6
1.2. Water volume in the reservoir:				
– beginning of the season (April 1, 2023)	6.38	6.38	0.00	0
– end of the season (October 1, 2023)	10.57	10.51	-0.06	1
1.3. Water releases from the reservoir	12.07	13.28	1.21	10
1.4. **Flow regulation:** recharge (+) or diversion of flow (-)	-3.72	-3.51	0.21	6
2 TMHS reservoirs				
2.1 River flow at Darganata g/s	20.75	16.27	-4.48	22
2.2 Water volume in reservoirs:				
– beginning of the season (April 1, 2023)	2.70	2.70	0.00	0
– end of the season (October 1, 2023)	3.53	3.48	-0.05	2
2.3 Water releases from hydroscheme	17.76	13.31	-4.46	25
Including:				
– water releases into the river	12.77	9.98	-2.79	22
– water withdrawal	4.87	3.33	-1.55	32

Balance item	Water volume, km^3		Deviation (actual-plan)	
	forecast/ plan	actual	km^3	%
2.4 **Flow regulation:** recharge (+) or diversion of flow (-)	-7.98	-6.29	1.69	21
TOTAL flow regulation by reservoirs: recharge (+) or diversion of flow (-)	-11.70	-9.80	1.90	16

International events

25th International Congress on Irrigation and Drainage "Tackling Water Scarcity in Agriculture" and 74th ICID International Executive Council meeting[76]

The events that brought together representatives from almost 90 countries were held from 1-8 November 2023 in Vishakhapatnam (Vizag), Andhra Pradesh, India.

The three-day Congress was comprised of two plenary sessions, 18 thematic sessions and a number of side events to answer the two key questions:

***(*Question 64): What alternative water resources could be tapped for irrigated agriculture?**

During thematic sessions, the participants raised common concern that the spatial and temporal variability in precipitation and water availability call for new approaches to water management. Most irrigation systems operate at levels below the achievable efficiency and have enormous scope to improve their productivity and efficiency.

Many new ideas were voiced, e.g. that in addition to the water withdrawal from surface sources, irrigation requirements of plants can be met through rainwater, greywater, recycled wastewater, and groundwater. Wastewater irrigation has long development history and has undergone different phases in developing and developed countries that desires appropriate safety practices. Adopting under-irrigation is also a strategy that can be highly beneficial in water-scarce conditions – this is proven by experience of Uzbekistan in the past 20-25 years.

***(*Question 65): Which on-farm techniques can increase water productivity**

In the course of thematic sessions, the participants underlined that substantially increasing productivity, not only in terms of physical outputs but

[76] source: https://aral.uz/wp/2023/11/06/vizag_3/, https://aral.uz/wp/2023/11/08/vizag-4/

also in economic terms, is essential to meet the goals of poverty alleviation, food security and water security. Water productivity is dependent on, among others, water management practices and agronomic practices. Here, we have a big room for improvement. Productivity at different levels of the irrigation system needs to be critically analyzed to effectively guide policy interventions and practices vital to achieving the desired objectives. Interventions that close the “yield gap” between a farm’s current yield and its higher potential yield are needed.

Reporters presented several different approaches by which farmers can improve water productivity. Options include those related to plant physiology, which focus on making transpiration more efficient or productive, agronomic practices, which aim at reducing evaporation, and on-farm agricultural-engineering approaches, which aim at making water application more precise and more effective. In this context, the participants shared the beneficial results of laser land leveling for field preparation and a wide spectrum of water conserving techniques. Emerging technologies present a vista of new opportunities such as precision agriculture, biotechnology, sensor technology, bioinformatics, climate-smart agriculture, robotics, drones, artificial intelligence, etc.

The 74th ICID International Executive Council meeting took place on the 5th of November.

The International Executive Council (IEC) is the highest decision-making body of ICID. It is vested with the management of the affairs of the International Commission on Irrigation and Drainage. All matters of policy that may be initiated or sponsored by any member National Committee or Office Bearer or by the Management Board come under its purview. It may itself initiate and determine or otherwise advise and lay down any policies, decisions pertaining to the matters of strategic importance for ICID. All matters affecting the executive or administrative functions and financial liabilities of ICID must come up before the Council and its decision shall be conclusive. The Central Office of ICID (situated in India) shall act as an instrument for carrying into effect all decisions taken by the Council.

Work body meetings under the Permanent Committee for Technical Activities focusing on four strategy themes of ICID took place on 5-6 November.

The following working groups (WG) had their meetings on the river basin theme^

- WG on environment (WG-ENV)
- WG on sustainable development of tidal areas (WG-SDTA)

- WG on managing water scarcity under conflicting demands (WG-MWSCD)
- WG on climate change and agricultural water management (WG-CLIMATE)
- WG on adaptive flood management (WG-AFM)
- WG on irrigation and drainage in the states under socio-economic transformation (WG-IDSST).
- WG on water, food, energy nexus (WG-WFE-N)
- Task Force on transboundary water (TT-TBW-AWM)

On the irrigation scheme theme, the below working groups have gathered together:

- WG on institutional and organizational aspects of irrigation/drainage system management (WG-IOA)
- WG on modernization and revitalization of irrigation schemes (WG-M&R)
- WG on irrigation development and management (WG-IDM)
- WG on water saving in irrigated areas (WG-WATS)
- WG on rain water harvesting (WG-RWH)
- WG on land drainage (WG-LDRG)

On the on-farm theme, the meetings of the following working groups took place:

- WG on sustainable on-farm irrigation system development (WG-SON-FARM)
- WG on use of non-conventional water resources for irrigation (WG-NCWRI)

On the knowledge theme, the below working groups gathered:

- ICID Journal Editorial Board (EB-JOUR)
- WG on history of irrigation, drainage and flood control (WG-HIST)
- Task Force to guide ICID inputs to 10th World Water Forum (TF-WWF10)
- WG on value engineering (WG-VE)
- Task Force for updating and maintenance of multilingual technical dictionary (TF-MTD)
- WG on capacity development, training and education (WG-CDTE)

On November 8, as part of the 74th IEC meeting, the new ICID President and three ICID Vice-Presidents were elected for the period 2024-2026.

Head of IFAS Agency Vadim Sokolov
represents the Uzbekistan National Committee on Irrigation and Drainage
at the 74 IEC meeting

The new elected officials are:

ICID President: Dr. Marco Arcieri (Italy), who replaced the retired Prof. Dr. Ragab Ragab (Great Britain)

ICID Vice Presidents:

Dr. Fuqiang Tian (China);

Dr. Vadim Sokolov (Uzbekistan);

Dr. Watchara Suiadee (Thailand)

Newly elected Vice President Vadim Sokolov (Uzbekistan),
Honorary Vice President Irina Bondarik (Russia)
and newly elected President Marco Arciery (Italy),
from left to right

3rd Almaty Energy Forum[77]

On November 6, 2023, representatives of Central Asian Ministries, energy industry experts as well as international organizations, such as UNECE, ESCAP and UNDP in Kazakhstan gathered together discuss how to accelerate energy transition in Central Asian.

Participants of the dialogue intend to promote regional cooperation, provide technical capacity support and help the countries in Central Asia to innovate and modernize their regional infrastructure and build resilient energy systems that are secure, affordable and deliver on net-zero targets.

The session on "Water-energy nexus and energy system resilience"

The session on "Water-energy nexus and energy system resiliency" was organized as part of the 3rd Almaty Energy Forum in Almaty, Kazakhstan on November 6, 2023. The participants addressed relationships between energy production and water management, challenges and opportunities for enhanced cooperation between water and energy management at the national and regional levels.

Mr. Shoimzoda, Deputy Minister of Energy and Water Resources of Tajikistan and J. Keinhorst, Chair of the UNECE Committee on Sustainable Energy delivered welcome speeches on challenges and opportunities for enhanced cooperation on water and energy in Central Asia.

Director of SIC ICWC, Dinara Ziganshina delivered the keynote report on "Prospects for water and energy nexus in Central Asia". She, particularly, presented the main provisions of the diagnostic report "Rethinking institutional and financial mechanisms on water and energy cooperation in Central Asia", where new elements, nexus and mechanisms of coordination, harmonization and service delivery were proposed for the existing schemes in order to ensure long-term sustainability and mutual benefits.

[77] Source:https://kbtu.edu.kz/ru/latest-news/3880-v-kbtu-startoval-tretij-almatinskij-energeticheskij-forum

Two panel discussions were organized:

The first panel on “National and regional initiatives towards enhanced coordination between energy and water sectors in Central Asia” was moderated by D. Shoimzoda. The second panel on “International financing and projects for enhanced cooperation between Central Asia’s energy and water sectors” was moderated by D. Ziganshina.

Presenters highlighted the following key points:

- the need to strengthen analytical work on water and energy issues (data, forecasts, modeling);
- the importance of strengthened institutional mechanisms at all levels (status, authorities, personnel);
- holistic and systems approach to addressing current challenges (strategic, technical, institutional, regulatory, financial, educational and other measures);
- step-by-step and consistent actions across the board;
- the importance of mobilizing private sector and making water and energy sectors more attractive for investments;
- assessing the costs and benefits of cooperation as a basis for future actions;
- integrating renewable energy sources into the unified system.

Developing a National Adaptation Planning Process in Turkmenistan

The series of workshops as part of the UNDP project "Developing a National Adaptation Planning Process in Turkmenistan" were held. The workshops were organized jointly with the Scientific-Information Center of the Interstate Commission for Water Coordination (SIC ICWC), the Scientific-Information Center of the Interstate Commission on Sustainable Development (SIC ICSD) of IFAS, and the Ministry of Environmental Protection of Turkmenistan.

The overall goal of the series of workshops was to build capacities of city and etrap divisions of the Ministry of Environmental Protection, the State Committee of Water Management, and local governments on sound use and protection of water resources.

Workshop "Adaptation of urban and rural water supply to climate change"

On November 13-15, 2023, a three-day workshop titled "Adaptation of Urban and Rural Water Supply to Climate Change" was held in Dashoguz city.

During the workshop, special attention was paid to the topic of climate change impact on water at the national and regional levels and the effects of climate change on water supply. The participants discussed water use planning at the farm level, the impact of climate change on crop irrigation regime, the vulnerability of water and agricultural sectors to climate change, the practical application of the IWRM concept using the “Berzen” water management system as a case study, etc. Discussions highlighted the relevance of topics raised, given the climate vulnerability of the Dashoguz velayat, a region located in the Turkmen part of the Aral Sea region.

The participants also had the opportunity to visit experimental plots of the Turkmen Agricultural Institute and get acquainted with multimedia programs used in agricultural automation, advanced solutions for agricultural mechanization offered by CLASS company, and GIS technologies applied in cartography.

Workshop “National legislation, policies and institutions on water and adaptation to climate change”

The workshop on “National legislation, policies and institutions on water and adaptation to climate change” was held in Ashgabat, Turkmenistan on November 16-17, 2023.

This workshop was the fourth in a series of six rounds of two-day trainings for decision-makers on integrating adaptation into water planning.

The main objective of the first day of the workshop was reviewing the water laws and policies on adaptation to climate change. Experts from SIC ICWC, SIC ICSD, UNECE and Kazakh-German University addressed the following aspects in their presentations:

- To what extent do European water laws and policies improve resilience in adapting to climate change?
- General aspects of national water and adaptation policies, legislation, and institutions;
- National laws and policies on adaptation to climate change in the countries of Central Asia, focusing on water;
- National water policy dialogue in Turkmenistan;
- Gender-sensitive adaptation in agriculture and water management.

Building effective institutions dealing with adaptation and water management is important. These institutions should have sufficient capacity to implement policies and legislation and should be well coordinated and informed.

The second day of the workshop was focused on institutional mechanisms of adaptation.

Finally, decision-makers have improved their understanding of adaptation aspects: climate issues shall be included in national strategies and laws, integrated into operations of existing institutions. Such integration will enhance coordination across various sectors and create conditions for adaptation through climate-resilient strategies, legal and institutional framework and closer cooperation. Only joint efforts of governments, authorities, civil society and all other stakeholders can lead to successful adaptation to climate change and preservation of water resources for future generations.

UN Special Program for the Economies of Central Asia (SPECA)

The SPECA Program was launched in 1998 to facilitate cooperation in the Central Asia region and integration of the latter into the world economy. The SPECA participating countries are Azerbaijan, Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. UNECE and ESCAP jointly provide overall support to the activities under the Program.

Azerbaijan chairs the SPECA Program in 2023.

XXVI session of the SPECA Working Group on water and energy

The XXVI session of the Working Group on Water, Energy and Environment within the governing structure of the UN Special Program for the Economies of Central Asia (SPECA) was held in Almaty, Kazakhstan on November 7, 2023.

The XXVI session of the Working Group was moderated by Zulfiya Suleimenova, Special Advisor of the President of Kazakhstan on International Environmental Cooperation.

At the beginning of the meeting, representatives of UNECE and ESCAP talked on the activities done in 2022-2023 and the work planned for 2024-2025.

Further, the information on the current state on water-food-energy nexus in the region was presented. Director of SIC ICWC, Dinara Ziganshina reported on the main provisions of the discussion paper “Rethinking institutional and financial mechanisms on water and energy cooperation in Central Asia". OECD representative, Takayoshi Kato shared the plans to study financing of the water-energy-land nexus in Central Asia as part of IKI project “Regional mechanisms for the low-carbon, climate-resilient transformation of the energy-water-land nexus in Central Asia”.

Representatives of UNECE and OECD made presentations on green hydrogen in Central Asia. Green hydrogen is seen as an important factor in the global transition to sustainable energy and a net-zero emission economy. However, hydrogen production is a very water- and energy-intensive process, which requires thorough study of the nexus aspects.

Representatives of Central Asian countries talked on challenges and achievements under the water-food-energy nexus focusing on innovative solutions and successful practices.

In conclusion, relevant decisions and recommendations were made.

Resolution adopted by the General Assembly dedicated to commemoration of the 25th anniversary of the United Nations Special Programme for the Economies of Central Asia[78]

On November 20, 2023, the UN General Assembly unanimously approved the Resolution on the 25th anniversary of the UN Special Program for the Economies of Central Asia.

The Resolution was co-sponsored by Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan,Turkmenistan, and Uzbekistan.

The UNGA resolution emphasizes the important role of the Special Program as a regional program that promotes mutual understanding, economic cooperation and regional development of member states.

The document notes the progress made in Central Asian countries, their integration into the economies of Europe and Asia and their contribution to

[78] Source:https://www.newscentralasia.net/2023/11/22/generalnaya-assambleya-oon-prinyala-rezolyutsiyu-posvyashchonnuyu-25-letiyu-programmy-speka/

world economic growth.

At the same time, the resolution encourages SPECA countries to explore the possibility of establishing a United Nations multi-partner trust fund to mobilize financial resources for the implementation of projects under the Special Programme in an effective and timely manner.

The resolution also mentioned the need to further develop regional cooperation among the Central Asian countries in order to achieve the Sustainable Development Goals and develop friendly good-neighborly relations.

The United Nations Special Program for the Economies of Central Asia (SPECA) was established on 26 March 1998 by the Tashkent Declaration. At that time, the historic document was signed by the Presidents of the Central Asian countries and the Executive Secretaries of the United Nations Economic Commission for Europe (UNECE) and the United Nations Economic Commission for Asia and the Pacific (ESCAP).

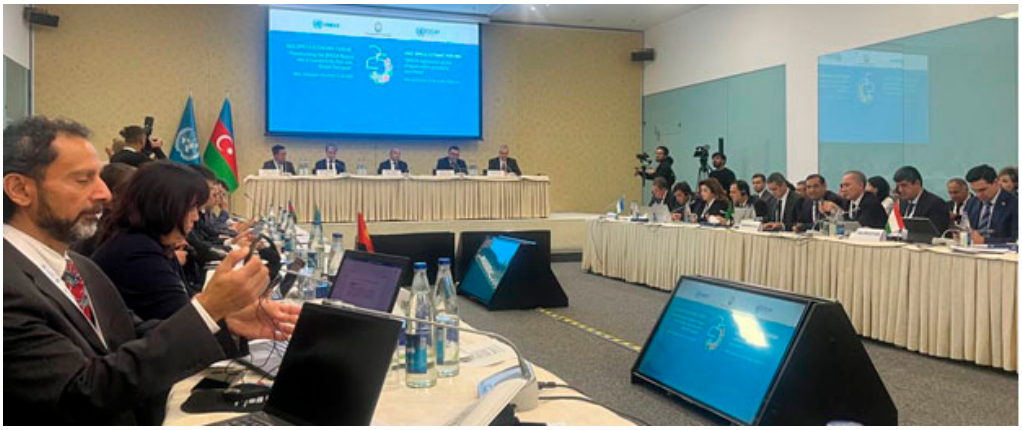
UNECE and ESCAP jointly provide full support to the activities of the Program in close cooperation with the UN Resident Coordinators in SPECA countries.

Azerbaijan is currently chairing the Program. Baku is hosting the SPECA Week. The forum discusses the region's important role in diversifying transit routes, digitalization, trade and transport development, and meeting the Sustainable Development Goals.

SPECA Economic Forum

On November 21-22, 2023, the SPECA Economic Forum was held in Baku, Azerbaijan under the theme "Transforming the SPECA Region into a Connectivity Hub with Global Outreach”.

2023 SPECA Economic Forum was focused on the increased significance of connectivity in the face of new challenges. The 2023 SPECA Economic Forum was co-chaired by H.E. Mr. Samad Bashirli, Deputy Minister of Economy of the Republic of Azerbaijan and Mr. Dmitry Maryasin, UNECE Deputy Executive Secretary.



The forum highlighted contribution of the digital transformation of data and document exchange along joint trade and transport route to making the economies of the region greener, circular and inclusive

A separate session was devoted to green energy connectivity in the SPECA region for resilient and carbon neutral energy systems. The regional energy system in Central Asia contains huge untapped potential and, together with partners in the region, SPECA participating States are working to diversify energy transit routes and sources to global markets.

The final session of the Forum featured academic and research institutions for a discussion on strategic foresight perspective for SPECA, with a long-term for harnessing international cooperation to consolidate economic cooperation and integration for the next 25 years.

Director of SIC ICWC, Dinara Ziganshina in particular noted the importance of including water in future SPECA activities, considering that water is the basis of economy and human well-being, and existing and upcoming challenges will have a significant impact on water availability.

Joint activities should be focused on:

- Data, modeling and research
- Planning, forecasting and decision support
- Water and energy use efficiency
- Climate adaptation and ecosystem protection
- Education, upbringing and awareness-raising
- Mobilizing private sector and public-private partnership mechanisms
- Institutional and legal mechanisms at national and regional level.

As a result of the Forum, a set of conclusions and recommendations on how to transform the SPECA region into a well-connected and sustainable hub

for trade and transport with global outreach, while achieving relevant SDGs was presented to the SPECA Governing Council.

Editorial Office:

SIC ICWC

Karasu- 4, B-11 A, Tashkent 100187, Republic of Uzbekistan

sic.icwc-aral.uz