

Interstate Commission for Water Coordination of Central Asia	BULLETIN № 1 (94)	January 2023
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Minutes of the 83rd 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 22, 2022

Ashgabat, Turkmenistan

Chairman of the meeting:

Genjiyev Durdi Meymanovich	Chairman of the State Committee for Water Resources, Turkmenistan
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ICWC members:

Khamraev Shavkat Rakhimovich	Minister of Water Management, Republic of Uzbekistan
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Shoimzoda Jamshed Shodi	First Deputy Minister of Energy and Water Resources, Republic of Tajikistan
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Mukataev Serikaliy Mukhametkarimovich	Vice Minister of Ecology, Geology and Natural Resources, Republic of Kazakhstan
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EC IFAS

Rakhimzoda Sulton Nurmakhmadpur	Chairman of the IFAS Executive Committee
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ICWC executive bodies:

Nazarov Umar Abdusalomovich	Head, ICWC Secretariat
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Makhramov	Head, BWO "Amu Darya"
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Makhmud
Yakhshibaevich

Kholhujaev Odil
Akhmedovich BWO “Syr Darya”

Ziganshina Dinara
Ravilievna Director, Scientific-Information Center (SIC) of ICWC

Rajabov Salokhiddin
Shamsovich Chief expert, ICWC Secretariat

Invited:

Turkmenistan

Yazmyradov
Annageldi
Orazberdievich Deputy Chairman of the Cabinet of Ministers,
Turkmenistan

Ataev Serdar
Orazmuradovich Deputy Chairman of the State Committee for Water
Resources, Turkmenistan

Paschiev Yanov
Durdievich Head of Water Use Department of the State Committee
for Water Resources, Turkmenistan

Nurgeldiev Tirkesh
Yollievich Head of Water Use Department of the State Committee
for Water Resources, Turkmenistan

Chariev Saparmurat
Kurbandurdievich Chief Specialist of Digital Technology Department and
Information Security of the State Committee for Water
Resources, Turkmenistan

Tajikistan

Ziyozoda Sulaymon
Rizoi Deputy Prime Minister of the Republic of Tajikistan

Farrukh Sharifzoda Ambassador of the Republic of Tajikistan in
Turkmenistan

Abdurazokzoda Head of Water and Energy Policy, Science and
Daler Abdukhalok Technology Development Department of the Ministry
of Energy and Water Resources, Tajikistan

Uzbekistan

Ganiev Shukhrat Deputy Prime Minister of the Republic of Uzbekistan
Madaminovich

Ishpulatov Zokir Head of Information Analytical and Resource Center of
Eshkurbonovich the Ministry of Water Management, Uzbekistan

Madiboev Nodirbek Chief Specialist of Water Use Department of the
Jamolidinovich Ministry of Water Management, Uzbekistan

Kazakhstan

Tajibaev Askar Ambassador of the Republic of Kazakhstan in
Erlikovich Turkmenistan

Jakanbaev Arsen Director of Transboundary Rivers Department,
Armanovich Ministry of Ecology, Geology and Natural Resources,
Republic of Kazakhstan

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Shalmaganbetova Saule Serikovna	Head of Water Resources Regulation Division of the Committee for Water Resources, Ministry of Ecology, Geology and Natural Resources, Republic of Kazakhstan
Duzbaeva Kalamkas Serikovna	Head of Transboundary Rivers Division of the International Legal Department, Ministry of Ecology, Geology and Natural Resources, Republic of Kazakhstan
Imangaliev Mereke Erkanatovich	Deputy Head, BWO Syr Darya
Elzhasov Altay Aralbaevich	General Director, RSE “Kazvodkhoz”

Agenda of the 83rd ICWC meeting

1. Results of the use of water withdrawal limits and operation of the reservoir cascades in the Amu Darya River and Syr Darya River basins during the growing season 2022.
2. Approval of the country water withdrawal limits and forecast operation regimes of the reservoir cascades in the Amu Darya River and Syr Darya River basins for the non-growing season 2022-2023.
3. Progress on proposals and initiatives raised at the Summit of the Heads of IFAS founder-states in the city of Turkmenbashi.
4. Agenda and venue of the regular 84th ICWC meeting.
5. Matter related to application of modern water accounting and monitoring equipment in the Amu Darya River basin.

Decision on the first item:

1. Take into consideration the reports of BWO Amu Darya and BWO Syr Darya on the results of the use of water withdrawal limits and operation regimes of reservoir cascade during the growing season 2022 in the Syr Darya and Amu Darya River basins.
2. The Kazakh and Uzbek sides shall continue the work on determining the actual data on inflow to the Shardara reservoir in order to eliminate discrepancies between the data of hydrometeorological services of the parties.
3. Kazakh and Uzbek sides agreed to submit the report to BWO Syr Darya on actual water withdrawals from the Karadarya and Chirchik rivers and in the reach from Shardara reservoir. BWO Syr Darya shall include the above data in the report on the results of the non-growing season 2022-2023 and growing season 2023.

Decision on the second item:

1. Approve water withdrawal limits of the countries for the non-growing season 2022-2023 in the Amu Darya and Syr Darya River basins (Appendix 1, 2).
2. Take into consideration the forecast operation regimes of the reservoir cascade for the non-growing season 2022–2023 in the Amu Darya and Syr Darya River basins, as proposed by BWO “Amu Darya” and BWO “Syr Darya”.
3. Turkmen and Uzbek sides agreed to create a Working Group to determine water withdrawals from the Amu Darya river for Syrkhandarya province of the Republic of Uzbekistan. Decisions on water withdrawals for Syrkhandarya province shall be accepted by the conclusion of the Working Group and notification of the Tajik side.

Decision on the third item:

1. Take into consideration the information of SIC ICWC on implementation of proposals and initiatives raised at the Summit of the Heads of IFAS founder-states (Turkmenbashi city, August 24, 2018).

2. ICWC members and ICWC executive bodies shall intensify efforts in implementation of the initiatives raised by the IFAS founder-states and submit information to regular ICWC meetings.

Decision on the fourth item:

1. Hold the next regular 84th ICWC meeting in April 2023 in Dushanbe, Republic of Tajikistan. The date of the next regular ICWC meeting should be agreed in working order.

2. Propose the next agenda for the regular 84th ICWC meeting:

- 1) On the results of the use of water withdrawal limits and operation regimes of reservoirs in the Syr Darya and Amu Darya River basins for the non-growing season 2022-2023;

- 2) On approval of country water withdrawal limits and forecast operation regime of the reservoirs in the Syr Darya and Amu Darya River basins for the growing season 2023;

- 3) On progress in implementation of proposals and initiatives raised at the Summit of Heads of IFAS founder-states in the city of Turkmenbashi.

- 4) Additional issues;

- 5). On the agenda and venue of the next 85th ICWC meeting.

Decision on the fifth item:

Take into consideration the views of the parties to support the adoption of modern water accounting and monitoring equipment in the Amu Darya and Syr Darya River basins as well as attraction of investment for the implementation of the project proposal “Improvement of water accounting and monitoring systems in the Amu Darya and Syr Darya River basins” included in ASBP-4 .

Republic of Kazakhstan

S. M. Mukataev

Kyrgyz Republic

Republic of Tajikistan

D.Sh. Shoimzoda

Turkmenistan

D.M. Gendjiev

Republic of Uzbekistan

Sh.R. Khamraev









Appendix 1

Limits of water withdrawal from the Amu Darya River and water supply to the river delta and the Aral Sea for the non-growing season 2022-2023

NN	River basin, state	Water withdrawal limit, mcm	
		Total annual (1.10.22- 1.10 .23)	Including non- growing season (1.10.22-1.04.23)
	Total withdrawal from the Amu Darya river	55 391	15 708
	including:		
1	Republic of Tajikistan	9 821	2 858
2	Republic of Uzbekistan	1 570	370
	From the Amu Darya River to the nominal Kerki gauging station	44 000	12 480
3	Turkmenistan	22 000	6 500
4	Republic of Uzbekistan	22 000	5 980
	In addition:		
5	- water supply to the river delta and the Aral Sea, including irrigation water releases and CDW	4 200	2 100
6	- sanitary and environmental flow into irrigation systems:	800	800
	Dashoguz province	150	150
	Khorezm province	150	150
	Republic of Karakalpakstan	500	500

Appendix 2

Water-user state	By request mcm
Republic of Kazakhstan (Dustlik canal)	452
Kyrgyz Republic	47
Republic of Tajikistan	365
Republic of Uzbekistan	3347
Total from Syr Darya river	4211

Results of the use of water withdrawal limits and operation regimes of the reservoirs in the Amu Darya and Syr Darya River basins for the growing season 2022¹

I. Amu Darya River basin

The actual water availability in the Amu Darya River basin at the nominal Kerki gauging station (upstream of Garagumdarya) was 88.3% of the norm over the growing season 2022. The estimation were made by taking into account the natural flow in the Vakhsh River and flow regulation by the Nurek reservoir. During the growing season 2022, this figure was 87.7 % of the norm. The water availability was rather ambiguous: if in April –May it was within the norm, then since June water availability decreased to 85-65% and remained below the norm until the end of the period.

The use of approved water withdrawal limits over the reporting growing season is as follows (breakdown by states).

In the current water context, in total, approved water withdrawal limits for the basin were used by 79.1% of the total limit, while the limit was 39 683.3 mcm, the actually used volume was 31 375.6 mcm of which:

Republic of Tajikistan: actually used 6639.5 mcm or 95.3% of the total limit;

Turkmenistan: actually used 12 910.6 mcm or 83.3 % of the total limit;

Republic of Uzbekistan: actually used 11825.6 mcm or 68.7 % of the total limit;

¹ Information on the first item of the 83rd ICWC meeting's agenda

Water user state	Water withdrawal limits, growing season 2022	Actual mcm	%% of use
Republic of Tajikistan	6963.3	6639.5	95.4
Turkmenistan	15500	12910.6	83.3
Republic of Uzbekistan	17220	11825.6	68.7
Total	39683.3	31375.7	79.1

The use of water withdrawal limits downstream of the nominal Kerki gauging station (upstream of Garagumdarya) was 75.9 % of the total limit for the growing season 2022, including:

Republic of Uzbekistan: actually used 11 017.4 mcm or 68.8 % of the total limit;

Turkmenistan: actually used 12 910.6 mcm or 83.3 % of the total limit;

Water user state	Water withdrawal limits, growing season 2022	Actual mcm	%% of use
Downstream of the nominal Kerki GS	31520	23928.0	75.9
Turkmenistan	15500	12910.6	83.3
Republic of Uzbekistan	16020	11017.4	68.8

The actual use of the approved limits is as follows by river reach:

1. Upper reaches – 8163.3 mcm or 91.2 % of the total limit, including Tajikistan – 6639.5 mcm or 95.3 % of the total limit, Uzbekistan – 808.2 mcm or 67.3 % of the total limit.

2. Middle reaches – 14 657.5 mcm or 90.4% of the total limit, including Turkmenistan – 9709.6 mcm or 92.7% of the total limit, Uzbekistan – 4947.9 mcm or 86.3% of the total limit.

3. Lower reaches– 9270.4 mcm or 60.5 % of the total limit, including Turkmenistan – 3201 mcm or 63.7 % of the total limit, Uzbekistan – 6069.4 mcm or 59.0% of the total limit.

Water user state	Water withdrawal limits, growing season 2022	Actual mcm	% % of use
Upper reaches	8163.3	7447.7	91.2
Republic of Tajikistan	6963.3	6639.5	95.4
Republic of Uzbekistan	1200	808.2	67.3
Middle reaches	16207.0	14657.5	90.4
Turkmenistan	10472.0	9709.6	92.7
Republic of Uzbekistan	5735.0	4947.9	86.3
Lower reaches	15313.0	9270.5	60.5
Turkmenistan	5028.0	3201.0	63.7
Republic of Uzbekistan	10285.0	6069.5	59.0

Water supply to the river delta and the Aral Sea was planned to be 2100 mcm during the growing season. However, actual supply was 938 mcm or 44.7%.

Forecast operation regimes of the Nurek and Tuyamuyun reservoirs were calculated based on normal water availability. Forecast for the Nurek reservoir operation regime as a whole was proven true and full volume of the reservoir was accumulated in August. Since water availability was within 88.3% of the norm, the actual regime of the Tuyamuyun reservoir significantly differed from the planned one, and the correctness of the forecast regime was within 75%.

Inflow to the Nurek reservoir was expected to be 15 276 mcm during the growing season; however, the actual inflow was 16 403 mcm or 107.4%. Water releases from the reservoir were planned in the volume of 12 125 mcm, and actually it was 13 029 mcm or 107.5%.

Volume of water in the reservoir by the end of the growing season 2022 was planned to be 10 564 mcm and actually made up 10 569 mcm or 100%.

Inflow to the Tuyamuyun reservoir was expected to be 17 342 mcm during the growing season and the actual inflow was 12 823 mcm or 73.9%. Water releases from the reservoir were planned in the volume of 16 353 mcm while the actual water releases were 12 969 mcm or 79.3 %.

Volume of water in the reservoir was planned to be 3450 mcm by the end of the growing season and actually it was 2315 mcm or 67.1%.

Item		Unit	Nurek reservoir	Tuyamuyun reservoir
Volume: beginning of the season		mcm	6624	2461
Inflow to the reservoir	forecast	mcm	15276	17342
	actual	mcm	16403	12823
		%%	107.4	73.9
Water releases from the reservoir	forecast	mcm	12125	16353
	actual	mcm	13029	12969
		%%	107.5	79.3
Volume: end of the season	forecast	mcm	10564	3450
	actual	mcm	10569	2315
		%%	100.0	67.1
Accumulation (+), drawdown (-)	forecast	mcm	3940	989
	actual	mcm	3945	-146
		%%	100.1	14.8

More detailed information is provided in Tables below:

**Analysis of the use of water withdrawal limits in the Amu Darya
River basin over the growing season 2022**

Item	Water withdrawal limits, growing season, mcm	Actual mcm	%%
Upper Darya Division			
(Upper reaches)	8163.3	7447.7	91.2
including:			
Tajikistan	6963.3	6639.5	95.4
Uzbekistan:	1200.0	808.2	67.3
Water withdrawals from the Amu Darya River at nominal Kerki GS	31520.0	23928.0	75.9
including:			
Turkmenistan	15500.0	12910.6	83.3
Uzbekistan:	16020.0	11017.4	68.8
Middle Darya Division			
(Middle reaches)	16207.0	14657.5	90.4
including:			
Turkmenistan	10472.0	9709.6	92.7
Uzbekistan:	5735.0	4947.9	86.3
Department for Interstate Amu Darya Irrigation Canals and Lower Darya Division			
(Lower reaches):	15313.0	9270.5	60.5
including:			
Turkmenistan	5028.0	3201.0	63.7
Uzbekistan:	10285.0	6069.5	59.0
Total for the basin	39683.3	31375.7	79.1
including:			
Tajikistan	6963.3	6639.5	95.4
Turkmenistan	15500.0	12910.6	83.3
Uzbekistan:	17220.0	11825.6	68.7

**Actual operation regime of the Nurek reservoir
(April-September 2022, mcm)**

	unit	April	May	June	July	August	September	Total
Volume: beginning of the season	mcm	6624	6904	7807	8697	10337	10570	6624
Inflow to the reservoir	m ³ /s	607	850	1002	1735	1185	824	
	mcm	1573	2278	2598	4646	3173	2136	16403
Water releases from the reservoir	m ³ /s	530	574	699	1196	1108	824	
	mcm	1373	1537	1812	3202	2969	2137	13029
Volume: end of the season	mcm	6904	7807	8697	10337	10570	10569	10569
Accumulation(+),drawdown(-)	mcm	280	903	890	1639	233	-1	3945

**Actual operation regime of the Tuyamuyun reservoir
(April-September 2022, mcm)**

	unit	April	May	June	July	August	September	Total
Volume: beginning of the season	mcm	2461	2293	2576	2259	2318	2646	2461
Inflow to the reservoir	m ³ /s	413	958	718	1034	1165	553	
	mcm	1070	2566	1862	2770	3121	1433	12823
Water releases from the reservoir	m ³ /s	478	852	841	1012	1043	681	
	mcm	1239	2282	2180	2710	2794	1764	12969
Volume: end of the season	mcm	2293	2576	2259	2318	2646	2315	2315
Accumulation(+),drawdown(-)	mcm	-168	284	-318	60	328	-331	-146

**Water supply to the Amu Darya river delta and the Aral Sea
for the growing season 2022, mcm**

Item	April	May	June	July	August	September	Water supply 01.04.22 - 30.09.22 Actual
From the Amu Darya river to Samanbay GS	51	57	89	70	113	58	438
Total water discharge from Dustlik and Suenli canal system							0
Drainage flow	137	61	73	74	68	87	500
TOTAL:	188	118	162	144	181	145	938
Cummulative mcm	188	306	468	612	793	938	

II. Syr Darya River basin

I. Forecast of inflow

By the forecast of UzHydromet, the water availability for the growing season 2022 in the river basin was expected to be: 90-100% (95%) of the norm in the south of Fergana Valley; 80-90% (85%) in Narin; 70-80% (75%) in Karadarya, Chirchik and Akhangaran; and 80-90% (85%) in rivers in the north of the Fergana Valley.

By March 31, 2022, the planned operation regime for the Toktogul reservoir for the growing season 2022 was provided by Coordination Dispatch Center (CDC) “Energy”. The forecast operation schedule of the Andijan and Charvak reservoirs was also provided by the Ministry of Water Management of the Republic of Uzbekistan and agreed with the Ministry of Energy of the Republic of Uzbekistan and JSC “Uzbekhydroenergy”.

The forecast operation schedule of the Shardara reservoir was agreed with the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan.

According to the forecast data and taking into account the actual data for 15 days in April of this year, the inflow to the upper reservoirs is expected to be as follows:

- Toktogul reservoir -96%;
- Andijan reservoir – 73%;
- Charvak reservoir (4 rivers in total) – 79% of the norm.

The total lateral inflow is expected to be – 84% of the norm.

Overall, the water availability is expected at the level of 86% of the norm in the Syr Darya River basin.

The forecast operation schedule of the Narin – Syr Darya reservoir cascade for the growing season was taken into account at the 82th ICWC meeting and water withdrawals limits of water-user states in the Syr Darya River basin were approved.

The actual water situation from April 1st to September 30, 2022 is characterized as the following (Table 2.1):

II. Total inflow

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

According to the norm - 29 469 mcm.

According to Uzhydromet forecast, the total inflow is 25 329 mcm or 86% of the norm.

Actual total inflow is 26 928 mcm, which is 1599 mcm more or 106% of the forecast and 91% of the norm.

III. Inflow to upstream reservoirs

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

The inflow is expected to be 16 096 mcm.

Actually, 18 015 mcm is received by upstream reservoirs or 112% of the forecast (97% of the norm).

IV. Lateral inflow

The lateral inflow to the Syr Darya River up to Shardara reservoir:

According to the norm – 10 963 mcm.

According to Uzhydromet forecast, the lateral inflow is expected to be 9233 mcm or 84% of the norm.

The actual lateral inflow is 8913 mcm or 97% of the forecast (81% of the norm).

Table 2.1

Water body	Growing season, mcm April 1 – September 30											
	2022						2021					
	norm	forecast	forecast/ norm (%)	actual	actual/ forecast (%)	actual/ norm (%)	norm	forecast	forecast/ norm (%)	actual	actual/ forecast (%)	actual/ norm (%)
Inflow to upper reservoirs												
Toktogul	9802	9406	96	10429	111	106	9620	8175	85	8762	107	91
Andijan	2927	2133	73	3014	141	103	2927	1772	61	1719	97	59
Charvak (4 rivers in total)	5777	4557	79	4572	100	79	5777	4428	77	3863	87	67
Total:	18506	16096	87	18015	112	97	18324	14375	78	14344	100	78
Lateral inflow												
Toktogul – Uchkurgan	1216	1110	91	1120	101	92	1216	1095	90	1040	95	86
Andijan – Uchtepe	2511	2063	82	1783	86	71	2511	2053	82	2100	102	84
Uchkurgan, Uchtepe – Bakhri Tojik	3349	2907	87	2616	90	78	3349	2685	80	2321	86	69
Bakhri Tojik – Shardara	2985	2412	81	2595	108	87	2985	2211	74	1834	83	61
Gazalkent- Chinaz (excluding Ugam)	902	741	82	799	108	88	902	632	70	827	131	92
Total:	10963	9233	84	8913	97	81	10963	8676	79	8122	94	74
Overall (total inflow):	29469	25329	86	26928	106	91	29287	23051	79	22466	97	77

Table 2.2

Water object	Growing season, mcm April 1 – September 30							
	2022				2021			
	schedule	actual	actual/ schedule (%)	deviation (actual "-" " schedule)	schedule	actual	actual/ schedule (%)	deviation (actual "-" " schedule)
Inflow to in-stream reservoirs								
Inflow to the Bakhri Tojik reservoir	5161	5579	108	418	5050	5284	105	234
Inflow to the Shardara reservoir	3904	4504	115	600	4084	2315	57	-1769
Supply to the Aral Sea								
Supply to the Aral Sea	815	339	42	-476	1262	201	16	-1061

* inflow to the Shardara reservoir amounted to 3940 mcm, according to RSE "KazHydromet".

Table 2.3

Reservoir	Water releases, mcm April 1- September 30					
	2022			2021		
	Operation schedule NSRC	Actual	Actual / schedule %	Operation schedule NSRC	Actual	Actual / schedule %
Upper reservoirs						
Toktogul	5153	4677	91	5107	5167	101
Andijan	2393	3151	132	1832	1998	109
Charvak (discharge of Gazalkent HPP)	3806	4284	113	3437	3461	101
TOTAL:	11352	12112	107	10376	10626	102
In-stream reservoirs						
Bakhri Tojik	5969	6859	115	6131	6383	104
Shardara	6574	5692	87	6764	4255	63
TOTAL:	12543	12551	100	12895	10638	82
OVERALL:	23895	24663	103	23271	21264	91

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

The inflow to the Bakhri Tojik reservoir was expected to be 5161 mcm according to the forecast schedule for the growing season 2022 (Table 2.2).

The actual inflow to the reservoir was 5579 mcm, which is more by 418 mcm than forecast schedule.

The inflow to the Shardara reservoir was expected to be 3904 mcm of the forecast schedule.

Actually, 4504 mcm were supplied to the reservoir according to UzHydromet; this is more by 600 mcm or 115% of the forecast schedule.

At the same time, 3940 mcm were supplied to the reservoir, which is 36 mcm more or 101% of the forecast schedule according to RSE “KazHydromet”

The inflow to the Aral Sea and the Aral Sea region was expected to be 815 mcm according to the forecast schedule, the actual inflow to Karateren gauging station was 339 mcm.

VI. Water releases from the reservoirs

According to forecast operation schedule of the Narin-Syr Darya reservoir cascade, 23 895 mcm were to be released from the reservoirs over the growing season (Table 2.3).

The actual water releases were 24 663 mcm, which is more by 768 mcm or 103% of the forecast schedule.

VII. Water storage in the reservoirs

The water storage in the Naryn-Syr Darya reservoir cascade actually was 17 878 mcm by the beginning of the growing season (as of April 1st, 2022), (Table 2.4).

The water storage was expected to be 17 114 mcm by the end of the growing season according to the forecast schedule.

The actual water storage was 19 151 mcm, which is more by 2037 mcm of the forecast schedule.

In the upper reservoirs, the water storage was 9556 mcm by the beginning of the growing season.

The water storage was expected to be 14 379 mcm by the end of the growing season according to the forecast schedule.

The actual water storage amounted to 16 104 mcm, which is more by 1725 mcm of the forecast schedule.

By the beginning of the growing season, water storage was 8322 mcm in the in-stream reservoirs.

The expected water storage was 2735 mcm by the end of the growing season according to the forecast schedule.

The actual water storage amounted to 3047 mcm, which is more by 312 mcm of the forecast schedule.

Table 2.4

Reservoir	Water volume in reservoir, mcm					
	Actual as of April 1, 2022	Schedule as of October 1, 2022	Actual as of October 1, 2022	Difference (actual minus schedule)	Actual as of October 1, 2021	Difference (actual as of October 1, 2022 minus actual as of October 1, 2021)
Upper reservoirs						
Toktogul	7851	12109	13620	1511	12304	1316
Andijan	1062	805	911	106	500	411
Charvak	643	1465	1573	108	1249	324
TOTAL:	9556	14379	16104	1725	14053	2051
In-stream reservoirs						
Bakhri Tojik	3320	1696	1710	14	1587	123
Shardara	5002	1039	1337	298	667	670
TOTAL:	8322	2735	3047	312	2254	793
OVERALL:	17878	17114	19151	2037	16307	2844

VIII. Water supply to the states

According to the approved limits and submitted operational requests of water consumers, water was supplied to the following countries in the following amounts (Table 2.5):

- Republic of Kazakhstan at the limit 903 mcm, actual – 701 mcm;
- Kyrgyz Republic at the limit 246 mcm, actual – 157 mcm;

- Republic of Tajikistan at the limit 1905 mcm, actual – 1560 mcm;
- Republic of Uzbekistan at the limit 8800 mcm, actual – 7756 mcm.

The actual total volume of water withdrawal by water user states amounted to 10174 mcm.

Table 2.5

Water user state	Water withdrawals, mcm April 1- September 30, 2022	
	Limit	Actual
Republic of Kazakhstan (Dustlik canal)	903	701
Kyrgyz Republic	246	157
Republic of Tajikistan	1905	1560
Republic of Uzbekistan	8800	7756
Total	11854	10174

IX. Execution of Protocol decisions on mutual energy supply and supplementary water releases through Uchkurgan HPP and operation regime of the Bakhri Tojik reservoir from June to August 2022.

Taking into account the expected water availability in the Syr Darya river basin during the growing season 2022, to prevent the Toktogul reservoir from drawdown to a critical level, to ensure inflow to the Bakhri Tojik reservoir and to improve water availability in the upper and middle reaches of Syr Darya River, a decision was made and a protocol of the meeting of heads of water and energy agencies of the Kyrgyz Republic, Republic of Kazakhstan and Republic of Uzbekistan on water and energy cooperation was signed on March 7, 2022

The schedule on mutual power supply between the Republics and water discharge from Uchkurgan HPP was agreed in the protocol (Table 2.6, 2.7).

From June to August 2022, it was planned to return 300 M kWh of electric power from the Kyrgyz Republic to the Republic of Kazakhstan according to the protocol, including supplementary water releases which were

expected in the volume of 330 mcm from Uchkurgatn HPP. In fact, from June 1 to August 29, 300 MkWh of electric power were returned and supplementary water releases amounted 346 mcm from Uchkurgan HPP, according to the data of CDC "Energy".

From June to August of the current year, the return of electric power in the volume of 250 MkWh was scheduled from Kyrgyz Republic to the Republic of Uzbekistan by protocol and supplementary water releases from the Uchkurgan HPP were expected in the volume of 275 mcm. In fact, from June 1 – August 17, the return electric power amounted to 250 mcm according to CDC “Energy” data and supplementary water releases actually were 278 mcm from Uchkurgan HPP.

Operation regime of the Bakhri Tojik reservoir from June to August 2022

Taking into account the projected water situation in the Syr Darya river basin, the Uzbek, Kazakh and Tajik parties took a decision and signed mutually beneficial trilateral protocol on supplementary water discharge from the reservoir Bakhri Tojik on June 8, 2022 (Table 2.7).

According to the protocol, from June 11- August 31, the inflow to the reservoir was scheduled to be 2125 mcm, and actual inflow amounted to 2283 mcm, which is more by 158 mcm than it was indicated in the protocol.

The water releases from the Bakhri Tojik reservoir (including Akdjar+) in June 11 - August 31 were scheduled at 3399 mcm according to the protocol; however, actual water release amounted 3783 mcm, which is more by 384 mcm than by the protocol.

Additionally, supplementary water releases from the reservoir were to be 1274 mcm from June 11 to August 31.

In fact, supplementary water releases amounted to 1500 mcm or more by 226 mcm than in the protocol. This made it possible to improve water supply of the Syr Darya River middle reaches at the peak of the growing season.

Table 2.6

Analysis of water discharge from Uchkurgan HPP according to the Protocol of March 7, 2022.

unit	April		May		June		July		August		September		Total, mcm		
	by protocol / schedule based on actual data for 15 days	actual	by protocol / schedule	actual	by protocol / schedule	actual	by protocol - / schedule	actual	by protocol / schedule	actual	by protocol /schedule	actual	by protocol / schedule	actual	%
Total discharge from Uchkurgan HPP															
m ³ /s	295	258	383	355	461	445	456	453	387	360	196	182			
mcm	765	668	1027	951	1196	1152	1221	1213	1036	964	509	472	5753	5420	94
including: for domestic needs of the Kyrgyz Republic															
m ³ /s	295	258	383	355	398	371	353	343	325	308	196	182			
mcm	765	668	1027	951	1031	962	946	919	871	824	509	472	5148	4796	93
including: supplementary water releases for Uzbekistan															
m ³ /s					42	48	41	46	21	12					
mcm					110	123	110	123	55	31			275	278	101
including: supplementary water releases for Kazakhstan															
m ³ /s					21	26	62	64	41	41					
mcm					55	67	165	170	110	109			330	346	105

Table 2.7

Bakhri Tojik reservoir according to the Protocol from June 11 to August, 2022

	unit	June			June			July				August				Total mcm	
		I	II	III	II	III	avr. 11- 30	I	II	III	avr. month	I	II	III	avr. month		
Inflow	m ³ /s	38.5	53	44.5	300	300	300	300	300	300	300	300	300	300	300	300	2125
	mcm	33.3	45.8	38.4	259	259	518	259	259	285	804	259	259	285	804		
Water releases	m ³ /s	38.5	53	44.5	400	450	425	540	540	540	540	510	460	400	455	3399	
	mcm	33.3	45.8	38.4	346	389	734	467	467	513	1446	441	397	380	1218		
Akdjar + by Protocol	m ³ /s	38.5	53	44.5	100	150	125	240	240	240	240	210	160	100	155	1274	
	mcm	33.3	45.8	38.4	86	130	216	207	207	228	643	181	138	95	415		

Table 2.7 (continued)

Bakhri Tojik reservoir, actual, from June 11 to August, 2022

	Unit	June			June			July				August				Total, mcm
		I	II	III	II	III	avr. 11- 30	I	II	III	avr. month.	I	II	III	avr. month.	
Inflow	m ³ /s	38.5	53	44.5	411	370	390	321	314	304	313	289	306	270	288	
	mcm	33.3	45.8	38.4	355	320	675	278	271	289	838	250	264	257	771	2283
Water releases	m ³ /s	38.5	53	44.5	500	500	500	557	557	589	568	580	580	415	521	
	mcm	33.3	45.8	38.4	432	432	864	482	481	560	1523	501	501	394	1396	3783
Akdjar + by fact	m ³ /s	38.5	53	44.5	89	130	110	236	243	285	256	291	275	145	234	
	mcm	33.3	45.8	38.4	77	112	189	204	210	271	685	251	237	137	626	1500

Table 2.8 shows the forecast operation schedule of the Naryn-Syr Darya reservoir cascade for the growing season 2022 and Table 2.9 shows the actual operation schedule of the Naryn-Syr Darya reservoir cascade for the growing season 2022

According to the protocol decision of the 82nd ICWC meeting, the working group consisting of representatives of the Ministries, Hydrometeorological Services of Kazakhstan and Uzbekistan, SIC ICWC, and BWO Syr Darya made joint measurements of water discharge at gauging stations and detailed analyses of measurements and proposals were submitted to the concerned agencies on May 26-27, 2022.

Table 2.8

**Forecast operation schedule of the Naryn-Syr Darya reservoir cascade
(April 1- September 30, 2022)
(with account of actual data for 15 days of April)**

		April (with account of actual data)	May	June	July	August	Sept	Total, mcm
Toktogul reservoir								
Inflow to the reservoir	m ³ /s	505	579	887	768	524	306	
	mcm	1309	1549	2298	2056	1402	792	9406
Volume: beginning of the period	mcm	7851	8647	9356	10595	11481	11838	
end of the period	mcm	8647	9356	10595	11481	11838	12109	
Water releases from the reservoir	m ³ /s	200	314	409	437	390	201	
	mcm	518	840	1059	1170	1045	521	5153
Water discharge from Uchkurgan HPP (by protocol)	m ³ /s	295	383	461	456	387	196	
	mcm	765	1027	1196	1221	1036	509	5753
including: 1. for domestic needs of the Kyrgyz Republic	m ³ /s	295	383	398	353	325	196	
	mcm	765	1027	1031	946	871	509	5148
2. supplementary water releases – electric power reception								
Uzbekistan	m ³ /s			42	41	21		
	mcm			110	110	55		275
Kazakhstan	m ³ /s			21	62	41		
	mcm			55	165	110		330
Bakhri Tojik reservoir								
Inflow to the reservoir	m ³ /s	404	389	312	300	300	252	
(Akdjar GS)	mcm	1047	1043	809	804	804	654	5161
Volume: beginning of the period	mcm	3320	3514	3502	2976	2134	1581	
end of the period	mcm	3514	3502	2976	2134	1581	1696	

		April	May	June	July	August	Sept	Total,
Water releases from the reservoir	m ³ /s	344	350	440	530	435	160	
	mcm	893	937	1140	1420	1165	414	5969
Shardara reservoir								
Inflow to the reservoir	m ³ /s	454	350	215	160	150	155	
	mcm	1177	937	557	429	402	402	3904
Volume: beginning of the period	mcm	5002	4997	4662	3628	2125	1233	
end of the period	mcm	4997	4662	3628	2125	1233	1039	
Water releases from the reservoir	m ³ /s	380	420	520	570	400	200	
	mcm	985	1125	1348	1527	1071	518	6574
Water releases into Kyzylkum canal	m ³ /s	58	33	53	107	50	5	
	mcm	150	88	137	287	134	13	810
Supply to the Aral Sea	m ³ /s	80	70	30	20	40	70	
	mcm	207	187	78	54	107	181	815
Charvak reservoir								
Inflow to the reservoir	m ³ /s	286	388	449	320	180	107	
(4 rivers in total)	mcm	740	1038	1163	856	481	278	4557
Volume: beginning of the period	mcm	643	1065	1544	1964	1919	1653	
end of the period	mcm	1065	1544	1964	1919	1653	1465	
Water releases from the reservoir	m ³ /s	150	209	287	336	279	180	
(Water discharge from Gazalkent HPP)	mcm	389	560	743	901	746	467	3806
Andijan resevoir								
Water releases from the reservoir	m ³ /s	246	225	170	89	42	40	
	mcm	637	602	441	238	111	104	2133
Volume: beginning of the period	mcm	1062	1394	1565	1522	1091	831	
end of the period	mcm	1394	1565	1522	1091	831	805	
Water releases from the reservoir	m ³ /s	119	161	187	250	139	50	
	mcm	307	431	484	670	372	130	2393

**Actual operation regime schedule
of the Naryn-Syr Darya reservoir cascade
(April 1- September 30, 2022)**

		April	May	June	July	August	September	Total mcm
Toktogul reservoir								
Inflow to the reservoir	m ³ /s	550	906	940	731	511	314	
	mcm	1425	2425	2437	1959	1370	813	10429
Volume: beginning of the period	mcm	7851	8900	10682	12148	12913	13288	
end of the period	mcm	8900	10682	12148	12913	13288	13620	
Water releases from the reservoir	m ³ /s	148	252	375	440	370	184	
	mcm	383	674	973	1179	991	476	4677
Water discharge from the Uchkurgan HPP	m ³ /s	258	355	445	453	360	182	
	mcm	668	951	1152	1213	964	472	5420
including: 1. for domestic needs of the Kyrgyz Republic	m ³ /s	258	355	371	343	308	182	
	mcm	668	951	962	919	824	472	4796
2. supplementary water releases - electric power reception								
Uzbekistan	m ³ /s			48	46	12		
	mcm			123	123	31		278
Kazakhstan	m ³ /s			26	64	41		
	mcm			67	170	109		346
Bakhri Tojik reservoir								
Inflow to the reservoir	m ³ /s	375	467	420	313	288	255	

(Akdjar GS)	mcm	971	1251	1088	838	771	660	5579
Volume: beginning of the period	mcm	3320	3512	3580	3301	2502	1761	
end of the period	mcm	3512	3580	3301	2502	1761	1710	
Water releases from the reservoir	m ³ /s	307	461	520	568	521	217	
	mcm	797	1234	1348	1523	1396	562	6859
Shardara reservoir								
Inflow to the reservoir	m ³ /s	483	491	270	182	125	161	
(Ch-Syr Darya +Bozsu+Keles)	mcm	1251	1315	699	489	335	416	4504
Volume: beginning of the period	mcm	5002	4900	4792	3752	2055	1272	
end of the period	mcm	4900	4792	3752	2055	1272	1337	
Water releases from the reservoir	m ³ /s	343	351	537	573	274	78	
	mcm	889	941	1392	1534	734	203	5692
Water releases into the Kyzylum canal	m ³ /s	45	25	29	89	23	5	
	mcm	118	66	75	238	62	13	572
Water supply to the Aral Sea	m ³ /s	62	30	5	15	18	0	
	mcm	160	81	12	40	47	0	339
Charvak reservoir								
Inflow to the reservoir	m ³ /s	314	429	411	299	162	119	
(4 rivers in total)	mcm	814	1149	1064	800	434	309	4572
Volume: beginning of the period	mcm	643	1254	1692	2006	1926	1684	
end of the period	mcm	1254	1692	2006	1926	1684	1573	
Water releases from the reservoir	m ³ /s	165	331	356	356	254	159	
(Water releases from the reservoir)	mcm	427	886	923	953	682	413	4284
Andijan reservoir								
Inflow to the reservoir	m ³ /s	264	377	254	149	54	46	
	mcm	684	1009	659	400	144	118	3014
Volume: beginning of the period	mcm	1062	1429	1611	1574	1267	931	
end of the period	mcm	1429	1611	1574	1267	931	911	

*According to RSE "KazHydromet", inflow to the Shardara reservoir amounted 3940 mcm

Approval of country water withdrawal limits and forecast operation regime of reservoir cascades for non-growing season 2022-2023 in the Amu Darya and Syr Darya River Basin²

I. Amu Darya River Basin

Water withdrawal limits from the Amu Darya River and water supply to the river delta and the Aral Sea for the non-growing season 2022

N	River basin, state	Water withdrawal limits, mcm	
		Total annual (1.10.22-1.10.23)	Including non-growing season (1.10.22-1.04.23)
	Total withdrawal from the Amu Darya River	55 391	15 708
	including:		
1	Republic of Tajikistan	9 821	2 858
2	Republic of Uzbekistan	1 570	370
	From the Amu Darya River to the Kerki nominal gauging station	44 000	12 480
3	Turkmenistan	22 000	6 500
4	Republic of Uzbekistan	22 000	5 980
	Additionally:		
5	- water supply to the river delta and the Aral Sea, including irrigation water releases and CDW	4 200	2 100
6	- sanitary and environmental flow into irrigation systems:	800	800

² Information on the second item of the 83rd ICWC meeting agenda

N	River basin, state	Water withdrawal limits, mcm	
		Total annual (1.10.22-1.10.23)	Including non- growing season (1.10.22-1.04.23)
	Dashoguz province	150	150
	Khorezm province	150	150
	Republic of Karakalpakstan	500	500

**Forecast operation regime of the Nurek and Tuyamuyun reservoirs
(October 2022 – March 2023)**

Nurek reservoir	Unit	Actual	Forecast					Total
		October	November	December	January	February	March	
Volume: beginning of the reservoir	mcm	10569	10540	9979	9091	7866	6955	10569
Inflow to the reservoir	m ³ /s	347	253	230	180	180	201	
	mcm	929	656	616	482	436	539	3659
Water releases from the reservoir	m ³ /s	358	443	523	600	521	426	
	mcm	959	1148	1401	1607	1260	1140	7515
Volume: end of the season	mcm	10540	9979	9091	7866	6955	6337	6337
Accumulation(+), drawdown(-)	mcm	-29	-561	-888	-1225	-911	-618	-4232

Tuyamuyun reservoir	Unit	Actual	Forecast					Total
		October	November	December	January	February	March	
Volume: beginning of the season	mcm	2315	2239	2734	3430	3840	3532	2315
Inflow to the reservoir	m ³ /s	242	323	384	314	399	414	
	mcm	648	837	1029	841	965	1110	5430
Water releases from the reservoir	m ³ /s	271	132	124	161	526	765	
	mcm	726	341	332	431	1272	2049	5151
Volume: end of the season	mcm	2239	2734	3430	3840	3532	2594	2594
Accumulation (+),drawdon(-)	mcm	-76	495	696	410	-308	-938	279

II. Syr Darya River basin

I. Forecast of inflow

On September 27, 2022, UzHydromet provided the forecast for non-growing season 2022-2023.

On October 5, 2022 the planned operation regime of the Toktogul reservoir was provided by Coordination Dispatch Center (CDC) “Energy”. The forecast operation schedule of the Andijan reservoir was provided by the Ministry of Water Management of the Republic of Uzbekistan and agreed with JSC “Uzbekhydroenergy”.

The forecast operation schedule of the Charvak reservoir was developed based on forecasted inflow to the reservoir provided by UzHydromet and water releases on the basis of average annual data.

The forecast operation schedule of the Shardara reservoir was agreed with the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan.

According to the received forecast data, inflow to the upper reservoirs is expected as follows:

- at the level of 100% to the Toktogul reservoir;
- 84% to the Andijan reservoir;
- 89% of the norm to the Charvak reservoir (4 rivers in total);

The total lateral inflow is expected to be 90% of the norm.

In general, the water content of the Syr Darya River basin is expected to be at the level 91% of the norm.

II. Total inflow

The norm of the total inflow in Syr Darya basin for the non-growing season is 16 363 mcm (Table 2.10).

By the forecast, the total inflow is expected to be 14 906 mcm (91% of the norm).

The total inflow of the Syr Darya basin was expected to be 14 145 mcm according to the forecast for the last non-growing season 2021-2022. The actual inflow was 14 428 mcm (which is more by 283 or 102% of the forecast).

III. Inflow to upper reservoirs

The norm of inflow to upper reservoirs of the Naryn-Syrdarya cascade is 5233 mcm for the non-growing season (Table 2.10).

According to the forecast, 4925 mcm is expected (94% of the norm).

The norm of inflow to the Toktogul reservoir is 2882 mcm.

According to the forecast, 2882 mcm is expected (100% of the norm).

The norm of inflow to the Andijan reservoir is 929 mcm

According to the forecast, 782 mcm is expected (84% of the norm).

The norm of inflow to the Charvak reservoir (4 rivers in total) is 1422 mcm.

And by forecast, 1261 mcm is expected (89% of the norm).

IV. Lateral inflow

The norm of the lateral inflow is 11 130 mcm. According to the forecast, the lateral inflow is expected to be 9981 mcm (90% of the norm) (Table 2.10).

Table 2.10

Water body	Non-growing season, mcm								
	2022-2023			2021-2022					
	norm	forecast	forecast/ norm (%)	norm	forecast	forecast/ norm (%)	actual	actual/ forecast (%)	actual/ norm (%)
Inflow to upper reservoirs									
Toktogul	2882	2882	100	2945	2798	95	2824	101	96
Andijan	929	782	84	929	852	92	977	115	105
Charvak (4 rivers in total)	1422	1261	89	1422	1158	81	1176	102	83
Total:	5233	4925	94	5296	4808	91	4977	103	94
Lateral inflow									
Toktogul – Uchkurgan	398	398	100	398	382	96	348	91	87
Uchkurgan, Uchtepe – Bakhri Tojik	4397	3925	89	4397	3611	82	3636	101	83
Andijan – Uchtepe	2533	2202	87	2533	2045	81	2306	113	91
Bakhri Tojik – Shardara	2969	2670	90	2969	2513	85	2387	95	80
Gazalkent- Chinaz (excluding Ugam)	833	786	94	833	786	94	774	99	93
Total:	11130	9981	90	11130	9337	84	9451	101	85
Overall (total inflow):	16363	14906	91	16426	14145	86	14428	102	88

V. Water storage in the reservoirs (Table. 2.11)

As of October 1, 2022, the total water storage was 19 151 mcm in the reservoirs (including 7963 mcm of dead storage). Water storage in the reservoirs excluding dead storage was 11 188 mcm.

As of October 1st 2021, the water volume was 16 307 mcm (including 7963 mcm of dead storage). Water storage in the reservoirs excluding dead storage was 8344 mcm.

Available water resources of the Narin-Syr Darya reservoir cascade are 26 94 mcm (total inflow plus water storage in the reservoirs excluding dead storage) for the non-growing season 2022-2023.

$$(14\ 906\ \text{mcm} + 11\ 188\ \text{mcm} = 26\ 94\ \text{mcm})$$

Table 2.11

Reservoir	Water volume in reservoirs, mcm			
	Actual as of October 1, 2022	Actual as of October 1, 2021	Difference 2022 minus 2021	Dead storage
Upper reservoirs				
Toktogul	13620	12304	1316	5500
Andijan	911	500	411	150
Charvak	1573	1249	324	426
TOTAL:	16104	14053	2051	6076
In-stream reservoirs				
Bakhri Tojik	1710	1587	123	917
Shardara	1337	667	670	970
TOTAL:	3047	2254	793	1887
OVERALL:	19151	16307	2844	7963

VI. Water releases from reservoirs (Table. 2.12)

According to the forecast operation schedule of the Naryn-Syr Darya reservoir cascade, 24 719 mcm were planned to be released from the reservoirs in the non-growing season 2022-2023.

According to the forecast operation schedule of the Naryn-Syr Darya reservoir cascade, 26 216 mcm were planned to be released for the non-growing season 2021-2022, and the actual water releases were 22 651 mcm (which is less by 3565 mcm than forecast schedule).

Table 2.12

Reservoir	Water releases, mcm		
	Forecast schedule 2022-2023	Forecast schedule 2021-2022	Actual 2021-2022
Upper reservoir			
Toktogul	6639	8745	7265
Andijan	681	383	399
Charvak (discharge of the Gazalkent HPP)	2097	1670	1773
TOTAL:	9417	10798	9437
In-stream reservoir			
Bakhri Tojik	8386	9765	9693
Shardara	6916	5653	3521
TOTAL:	15302	15418	13214
OVERALL:	24719	26216	22651

VII. Water withdrawal limits (Table. 2.13)

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 4211 mcm during the non-growing season.

Table 2.13

Water user state	By request, mcm
Republic of Kazakhstan (Dustlik canal)	452
Kyrgyz Republic	47
Republic of Tajikistan	365
Republic of Uzbekistan	3347
Total from Syr Darya River	4211

Based on average long-term data, water supply to the Aral Sea and Aral Sea region is expected to be 1585 mcm for the non-growing season.

The actual inflow was 235 mcm to the Aral Sea and Aral Sea region through Karateren gauging station for the non-growing season 2021-2022.

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 developed for October 1, 2022 – March 31, 2023. This schedule was submitted for consideration to ICWC members (Table 2.14).

Table 2.14

**Forecast operation schedule of the Naryn – Syr Darya reservoir cascade
(October 1, 2022- March 31, 2023)**

		October	November	December	January	February	March	Total mcm
Toktogul reservoir								
Inflow to the reservoir	m ³ /s	237	202	168	159	160	172	2882
	mcm	635	524	450	426	387	461	
Volume: beginning of the season	mcm	13620	13639	13027	11878	10836	9970	9862
end of the season	mcm	13639	13027	11878	10836	9970	9862	
Water releases from the reservoir	m ³ /s	230	438	597	548	518	212	6639
	mcm	616	1135	1599	1468	1253	568	
Bakhri Tojik								
Inflow to the reservoir	m ³ /s	403	673	843	742	746	361	9840
(Akdjar GS)	mcm	1079	1745	2257	1987	1804	968	
Volume: beginning of the season	mcm	1710	2410	3008	3375	3328	3411	3487
end of the season	mcm	2410	3008	3375	3328	3411	3487	
Water releases from the reservoir	m ³ /s	196	450	720	780	730	340	8386
	mcm	526	1166	1928	2089	1766	911	
Shardara reservoir								
Inflow to the reservoir	m ³ /s	195	590	880	925	835	700	10779
	mcm	522	1529	2356	2477	2020	1875	
Volume: beginning of the season	mcm	1337	1651	1975	2992	4130	4892	

		October	November	December	January	February	March	Total
end of the season	mcm	1651	1975	2992	4130	4892	5160	
Water releases from the reservoir	m ³ /s	77	450	500	500	520	600	
	mcm	206	1166	1339	1339	1258	1607	6916
Supply to the Aral Sea	m ³ /s	8.0	50	100	120	150	180	
	mcm	21	130	268	321	363	482	1585
Charvak reservoir								
Inflow to the reservoir (4 rivers in total)	m ³ /s	96	86	74	65	65	94	
	mcm	256	224	198	175	156	252	1261
Volume: beginning of the season	mcm	1573	1444	1276	1099	897	738	
	mcm	1444	1276	1099	897	738	695	
Water releases from the reservoir (Discharge from the Gazalkent HPP)	m ³ /s	130	150	140	140	130	110	
	mcm	349	389	375	375	314	295	2097
Andijan reservoir								
Inflow to the reservoir	m ³ /s	40	47	55	47	48	62	
	mcm	107	121	147	125	117	166	782
Volume: beginning of the season	mcm	911	750	677	808	916	985	
	mcm	750	677	808	916	985	1012	
Water releases from the reservoir	m ³ /s	100	75	6	6	20	52	
	mcm	268	194	16	16	48	140	681

SIC ICWC work on implementation of initiatives of the Heads of IFAS founder-states raised at the XII Summit in the city of Turkmenbashi.³

(as of October 31, 2022)

General information

The XII 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 a number of initiatives aimed at a comprehensive solution to the existing issues. Since the 77th ICWC meeting (November 5-6, 2019), implementation of these initiatives has been discussed at ICWC meeting on a regular basis. To address this issue, the following statement was included in the decision of the 82nd meeting: “To take into account the work of the ICWC Executive Bodies on implementation of proposals and initiatives of the Heads of IFAS founder-states, raised at the Summit in Turkmenbashi city”.

SIC ICWC activities on implementation of initiatives

1. Automation of gauging stations throughout the Amu Darya and Syr Darya River basins

Draft terms of reference for the development of feasibility study for the project of automation of gauging stations along the Syr Darya River, including small rivers in the basin (pursuant to the decision of the 80th ICWC meeting of May 11, videoconference), prepared by SIC ICWC, has been agreed on the part of Kazakhstan (No 05-09/9283 of 01.06.2022), Tajikistan (No 7-1122 of 08.06.2022) and Uzbekistan (No 01/17-1363 of 17.06.2022).

Organizations and candidates for coordination work have also been identified. Kazakh part proposed to reflect gauging stations located in the Syr Darya river from Toktogul reservoir to the North Aral Sea and its main tributaries in the draft terms of reference (including the reaches of Kazakhshtan part: Shardara reservoir – the North part of the Aral Sea; Shardara reservoir – downstream of Shardara reservoir; Syr Darya – Bayrkum river gauging station;

³ Materials for the third issue of the 83rd ICWC meeting agenda

Aris – Shoulder river GS; Syr Darya –Koktyube GS; Syr Darya – Kazali GS; Syr Darya-Karateren with RSE “KazHydromet” involvement). As of October 31, 2022 it was recommended to “KazHydromet” to develop 37 gauging stations. The consolidated budget in the amount of \$74 765 for the development of feasibility study has been submitted. Materials from other countries are expected.

The task "Automation of gauging stations along the Syrdarya River, implementation of SCADA systems at BWO Syrdarya facilities" is included in the project "Regional mechanisms for the low-carbon, climate resilient transformation of the energy-water-land use nexus in Central Asia"⁴ (hereinafter the OECD project "Regional mechanisms for transformation"). The project is scheduled to start in early 2023.

Inclusion of measures on implementation of automation of gauging stations in accordance with the decision of the 80th ICWC meeting in the upcoming project "Water Resources Management in Central Asia in the context of Climate Impact" was discussed with representatives of the German Society for International Cooperation (GIZ) (October 14).

2. Water and energy regulation

According to the agreement with OECD, preparation of a Discussion Paper on possible institutional and financial coordination and cooperation mechanisms for mutually beneficial use of water and energy resources under conditions of growing water scarcity in Central Asia was started.

The purpose of the Discussion Paper is to provide an analytical basis for experts and decision makers to discuss possible formats for improving the financial and economic mechanisms for coordinated use of water and energy resources in the region.

It is hoped that it will contribute to institutional and legal improvement of IFAS, which is currently being carried out by the countries of the region on behalf of the heads of states. Approaches to drafting the Discussion Paper were discussed at the working meeting of the Expert Platform on water security, sustainable development and future studies held in Taraz on October 28, 2022.

SIC ICWC took part in the discussion of the report “Regulation of the Water and Energy Complex in Central Asia” prepared by the EDB Center for Sector Analysis to address the issue of regulation of water and energy complex in Central Asia in a comprehensive way (August 24, videoconference).

⁴ Government of Germany, International Climate Initiative 2020, partners - OECD, EBRD, UNECE, SIC ICWC

3. Implementation of IWRM, water conservation and rational use of water resources

The collection of papers “Improvement of irrigated agriculture: international experience” has been prepared and published.

The 1st edition of the policy brief “Irrigation system operation management” has been completed and submitted for approval. Next policy brief “Assessing the state-of-affairs in water management” is under preparation.

In line with proposals of the President of Uzbekistan to adopt a Regional program for rational water use in Central Asia, the work is underway with national and international partners. Particularly, the issues of coordination of possible regional actions on rational water use in CA are included in the OECD project “Regional mechanisms for transformation”.

4. Water accounting

Water balance monitoring in the Amu Darya and Syr Darya River basins is conducted by SIC jointly with BWO Amu Darya and BWO Syr Darya each 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 Syr Darya River basin”, including weekly newsletter “Water management, irrigation and ecology in Eastern Europe, Caucasus and Central Asia” which is distributed among more than 70 recipients.

By the decision of the 82nd ICWC meeting on the “Results of the use of water withdrawal limits and operation regime of reservoirs for the non-growing season 2021-2022 in the Syr Darya and Amu Darya River basins” (April 27, 2022 Turkenistan), BWO Syr Darya jointly with SIC ICWC and hydrometeorological services of the parties were assigned to analyze data on gauging stations of hydrometeorological services in the countries and provide information when it is ready.

In pursuance of the order (1) The Working Group was established including specialists from the Ministry of Water Management of the Republic of Uzbekistan, Transboundary rivers department of the Ministry of Ecology, Geology and Natural Resources of the Republic of Kazakhstan, Turkistan branch of RSE “Kazvodkhoz”, SIC ICWC, BWO Syr Darya, Uzhydromet, Kazhydromet and others; (2) joint control measurements of water flow at “Chinaz - Syr Darya” g/s, inflow to the Syr Darya from Bozsu canal, etc. were made (May 26-27); (3) SIC ICWC and BWO Syr Darya submitted the inspection report, protocol and analysis of inflow up to the Shardara reservoir

based on UzHydromet and Kazhydromet data for April–May 2022 to the Prime Minister of Ecology, Geology and Natural Resources of the Republic of Kazakhstan, S.Kozhaniyazov (No 69 and No 01 of June 2, 2022).

According to the agreement with the Ministry of Innovative Development of the Republic of Uzbekistan, SIC ICWC in cooperation with the Institute of Geographic Sciences and Natural Resources Research of the Chinese Academy of Sciences and participation of BWO Amu Darya and its territorial divisions is implementing the Project “The e-rules development of flow regulation in the Amu Darya River basin”.

5. Mitigation of the Aral Sea disaster

RS-based monitoring has been conducted on a monthly basis by SIC ICWC specialists on conditions of the Southern Aral region and parts of the Large Aral Sea. This monitoring is based on satellite images and uses the new methodology developed by GIS group for remote monitoring (processing of satellite images) and assessment of the dynamics of water surface areas on the example of the western part of the Aral Sea (February 16, March 20, April 29, May 23, June 8, 24; July 18; August 27; September 20).

A decision of the Multi-Partner Human Security Trust Fund for the Aral Sea Region is expected on the project proposal “Continued monitoring of the dried bed of the Aral Sea as a part of the Third Call for proposals”, submitted by SIC ICWC through UNDP office in Uzbekistan.

The project “Development of Innovative Climate Resilient Technologies for Monitoring and Controlling of Water Use Efficiency and Impact of Salinization on Crop Productivity and Livelihood in Aral Sea region” was started jointly with UZGIP Institute as a leading partner, within the framework of the SATREPS-2020 program of the Japanese Government and financed by the Ministry of Innovative Development of the Republic of Uzbekistan.

6. Water diplomacy and scientific cooperation

As part of development of the initiative on joint multidisciplinary research on the platforms of SIC ICWC and SIC ICSD, the work on development of the Expert Platform on water security, sustainable development and future studies is continued. Some aspects of this work were also included in the OECD project “Regional mechanisms for transformation”.

7. ASBP-4

The IFAS Board meeting approved the ASBP-4 for 2021-2030, which includes 34 investment projects (June 29, Dushanbe). The following were instructed at the IFAS Board meeting on February 22, 2022, Dushanbe, which was held in a hybrid format:

“... (2) The Executive Committee of IFAS, ICWC and ICSD in cooperation with stakeholders and agencies of the founder-states of the Fund to intensify joint activities, including those with international partners, to ensure implementation of ASBP-4 and inform about its progress to the IFAS Board on a regular basis.

(3) In order to ensure monitoring of implementation of ASBP-4, the IFAS organizations and relevant ministries and agencies of the founder-states of the Fund shall provide information to the IFAS Executive Committee every six months”.

SIC ICWC is directly involved in 6 projects out of 34 investment projects included in ASBP-4: 4 projects – in the field of “Integrated use of water resources” and 2 projects – in the field of ecology. Currently, SIC ICWC is not involved in implementation of individual projects in these areas, but includes the issues mentioned therein in its activities and tries to attract financing to their implementation. In particular:

(1) objectives on inspection of gauging stations and development of a feasibility study for the automation of gauging stations in the Syr Darya River basin, including small rivers in the basin and improvement of regional information system (project 1.6, ASPB-4) included in regional OECD project “Regional mechanisms for transformation”;

(2) issues related to improvement of water accounting and monitoring in the Amu Darya and Syr Darya River basins (project 1.7, ASPB-4) are addressed jointly with Institute of Geographic Sciences and Natural Resources Research of the Chinese Academy of Sciences and BWO “Amu Darya” as a part of the project “The e-rules development of flow regulation in the Amu Darya River basin”;

(3) development of the system of environmental and water monitoring in the Aral Sea region and the dried bed of the Aral Sea (project 1.7, ASBP-4) has been continued as part of the project “Development of Innovative Climate Resilient Technologies for Monitoring and Controlling of Water Use Efficiency and Impact of Salinization on Crop Productivity and Livelihood in Aral Sea region”.

Information on the contribution of SIC to implementation of ASBP-4 was submitted to the Ministry of Water Management of the Republic of Uzbekistan in response to its inquiries (No. 02/17-8 of 06.01.2022., 15/24653 of 08.07.2022 and No. 2 of 08.01.22, 81 of 20.07.22).

SIC ICWC synthesizes information about activities of the countries and partners in the field of water resources development in the Water Year Book “Central Asia and Around the Globe” as part of its contribution to coordination work.

8. Improvement of IFAS activities

The working group on institutional and legal improvement of IFAS continues the 3rd stage of its work under the leadership of IFAS Executive Committee. This work focuses on defining the functions of existing and newly created organizations, agreeing on IFAS goals, objectives and tasks.

SIC ICWC as a member of Working Group, participated at (1) 7th meeting where the summary of reached agreements was discussed, including reports on the 1st and 2nd stages as well as options of the improved institutional framework of IFAS by having in consideration the international practices were presented. (June 23-24); 8th meeting (September 21-22, Tashkent); (3) consultive meeting with World Bank participation (August 19); (4) coordination meeting of EC IFAS with international development partners, which reviewed implementation of ASBP-4, the progress made in institutional and legal improvements of IFAS and other issues (September 20, Tashkent).

The survey “Assesment of financial flows in structural and substructural divisions of IFAS” was prepared and submitted based on the request of EC IFAS (August 16).

Meeting of the Board of the International Fund for Saving the Aral Sea

The 22nd meeting of the IFAS Board was held in Dushanbe, Tajikistan on November 28, 2022.

The meeting was attended by members of IFAS Board – Minister of Ecology, Geology and Natural Resources of the Republic of Kazakhstan, S. Brekeshev, Deputy Prime Minister of the Republic of Uzbekistan Sh. Ganiev, Deputy Prime Minister of the Republic of Tajikistan S. Ziyozoda, Deputy Chairman of the Cabinet of Ministers of Turkmenistan A. Yazmuradov, other officials of the governments of IFAS founder-states, members of IFAS Executive Committee, representatives of the embassies of Central Asia working in Tajikistan as well as representatives of structural divisions of IFAS.

The meeting of the IFAS Board was also attended by representatives of the Embassy of the Kyrgyz Republic in the Republic of Tajikistan as an observer.

The following issues were addressed at the IFAS Board meeting:

1. Preparation of the meeting of the Council of Heads of IFAS founder – states in Dushanbe, Republic of Tajikistan, September 14-15, 2023.
2. Organization and holding of the event dedicated to the 30th anniversary of IFAS.
3. The progress made in implementing the projects of the Action Plan to assist the countries of the Aral Sea Basin (ASBP-4)
4. Updated Work Plan of the IFAS Executive Committee during the period of Tajikistan’s chairmanship.
5. Progress of the Working Group on institutional and legal improvement of IFAS.
6. Preparations to the UN Water Conference in March 2023, New York (text of the Joint Statement of the Central Asian states for the UN 2023 Water Conference was agreed).
7. Results of participation at the 9th World Water Forum and the 2nd International High-Level Conference on the International Decade for Action “Water for Sustainable Development”, 2018-2028.

8. Adoption of advanced equipment for water accounting and monitoring in the Amu Darya and Syr Darya River basins.

9. Agenda of the next regular meeting of the IFAS Board.



Decision of the Board of the International Fund for Saving the Aral Sea

1. On the preparation of the meeting of the Council of Heads of IFAS Founder-States in Dushanbe, Republic of Tajikistan on September 14-15, 2023

1. Take into consideration the information of the Executive Committee of IFAS on preparation of the Council of Heads of IFAS founder-states in Dushanbe, the Republic of Tajikistan.

2. The Executive Committee of IFAS shall prepare proposals for the draft agenda of the meeting and submit for consideration by the Board.

3. The Executive Committee of IFAS, the Interstate Committee for Water Coordination, the Interstate Committee for Sustainable Development and relevant ministries and agencies of Central Asian countries shall assist in preparation and organization of the meeting of the Council of Heads of IFAS founder-states.

Republic of Kazakhstan

R. Sklyar

Kyrgyz Republic

Republic of Tajikistan

S. Ziyozoda

Turkmenistan

A. Yazmiradov

Republic of Uzbekistan

Sh. Ganiyev

2. On organization of commemorative events dedicated to the 30th anniversary of IFAS

1. Take into consideration the information of the Executive Committee of IFAS on organization of commemorative events dedicated to the 30th anniversary of IFAS.

2. Approve the Plan on the organization commemorative events dedicated to the 30th anniversary of IFAS.

3. Approve the Organizing Committee structure for organization of the 30th anniversary of IFAS.

4. The Executive Committee of IFAS shall fulfill the Plan on organization of commemorative events dedicated to the 30th anniversary of IFAS jointly with the Interstate Commission for Water Coordination and Interstate Commission for Sustainable Development, as well as with the involvement of relevant ministries and agencies of IFAS founder states.

Republic of Kazakhstan

R. Sklyar

Kyrgyz Republic

Republic of Tajikistan

S. Ziyozoda

Turkmenistan

A. Yazmiradov

Republic of Uzbekistan

Sh. Ganiyev

3. On progress made in implementing the projects of the Action Plan to assist the countries of the Aral Sea Basin (ASBP-4)

1. Take into consideration the information of the Executive Committee of IFAS on the progress made in implementation of the Aral Sea Basin Program (ASBP-4).
2. Executive Committee of IFAS, ICWC, ICSD shall continue their joint activities to ensure implementation of ASBP-4, with the involvement of relevant ministries and agencies of IFAS founder-states and regularly inform about the progress on its implementation to the Board of the Fund.
3. The IFAS structural divisions and relevant ministries and agencies of founder-states of the Fund shall provide information to the IFAS Executive Committee every six months to ensure monitoring of the progress made in implementation of ASBP-4.

Republic of Kazakhstan

R. Sklyar

Kyrgyz Republic

Republic of Tajikistan

S. Ziyozoda

Turkmenistan

A. Yazmiradov

Republic of Uzbekistan

Sh. Ganiyev

4. On the updated Work Plan of the IFAS Executive Committee for the period of Tajikistan's chairmanship

1. Take into consideration the information on the updated Work Plan of the IFAS Executive Committee for the period of Tajikistan's chairmanship.
2. Approve the updated Work Plan of the IFAS Executive Committee for the period of Tajikistan's chairmanship (taking into account a one-year extension of the presidency).
3. IFAS Executive Committee shall ensure fulfilment of the updated Work Plan and regularly inform the IFAS Board.

Republic of Kazakhstan

R. Sklyar

Kyrgyz Republic

Republic of Tajikistan

S. Ziyozoda

Turkmenistan

A. Yazmiradov

Republic of Uzbekistan

Sh. Ganiyev

5. On activities of the Working Group on Institutional and Legal Improvement of IFAS

1. Take into consideration the information of the IFAS Executive Committee about activities of the Working Group on institutional and legal improvement of the International Fund for Saving the Aral Sea.
2. Approve the Progress Report on institutional and legal improvement of IFAS.
3. The IFAS Executive Committee shall take measures to complete the process of institutional and legal improvement of IFAS jointly with Interstate Commission for Water Coordination, Interstate Committee for Sustainable Development and relevant ministries and agencies of the founder- states of the Fund as soon as possible.

Republic of Kazakhstan

R. Sklyar

Kyrgyz Republic

Republic of Tajikistan

S. Ziyozoda

Turkmenistan

A. Yazmiradov

Republic of Uzbekistan

Sh. Ganiyev

6. On preparation to the UN Water Conference in March, 2023, New York

1. Take into consideration the information of the IFAS Executive Committee on preparation to the UN Water Conference in New York in March 22-24, 2023.
2. Approve the Joint Statement of the Heads of Central Asian States for the 2023 UN Water Conference.
3. Approve the proposal of the IFAS Executive Committee on organization of a side event on water cooperation in the Central Asian region in New York.
4. The IFAS Executive Committee shall actively participate in the work of the Conference jointly with the Interstate Commission for Water Coordination, the Interstate Committee for Sustainable Development, with the involvement of relevant ministries and agencies of the founder-states of the Fund.

Republic of Kazakhstan

R. Sklyar

Kyrgyz Republic

Republic of Tajikistan

S. Ziyozoda

Turkmenistan

A. Yazmiradov

Republic of Uzbekistan

Sh. Ganiyev

7. On results of participation at the 9th World Water Forum and the 2nd High Level International Conference on the International Decade for Action “Water for Sustainable Development”, 2018-2028

1. Take into consideration the information of the IFAS Executive Committee on the results of participation at the 9th World Water Forum and the 2nd High Level International Conference on the International Decade for Action “Water for Sustainable Development”, 2018-2028

2. Adopt as a guidance the outcomes of the 9th World Water Forum and the 2nd High Level International Conference on the International Decade for Action "Water for Sustainable Development", 2018-2028 in activities of the IFAS Executive Committee.

Republic of Kazakhstan

R. Sklyar

Kyrgyz Republic

Republic of Tajikistan

S. Ziyozoda

Turkmenistan

A. Yazmiradov

Republic of Uzbekistan

Sh. Ganiyev

8. On adoption of modern water accounting and monitoring equipment in the Amu Darya River basin

1. Take into consideration the opinion of stakeholders on supporting the adoption of modern water accounting and monitoring equipment in the Amu Darya and Syr Darya River basins.

2. The IFAS Executive Committee jointly with the Interstate Commission for Water Coordination shall assist in mobilizing investments for implementing the project proposal “Improvement of water accounting and monitoring systems in the Amu Darya and Syr Darya River basins” included in the Aral Sea Basin Action Program (ASBP-4).

Republic of Kazakhstan

R. Sklyar

Kyrgyz Republic

Republic of Tajikistan

S. Ziyozoda

Turkmenistan

A. Yazmiradov

Republic of Uzbekistan

Sh. Ganiyev

9. On the agenda of the next regular meeting of the IFAS Board

The next regular meeting of the Board of the International Fund for Saving the Aral Sea is to consider the following issues:

- preparation of the meeting of the Council of Heads of IFAS founder-states in Dushanbe, Republic of Tajikistan, September 14-15, 2023;
- implementation of the Plan for preparation and celebration of the 30th anniversary of the IFAS, including preparation of the International Conference;
- implementation of ASBP- 4;
- activities of the Working Group on institutional and legal improvement of IFAS;
- activities of the IFAS Executive Committee in 2022;
- results of participation at the UN Conference on the mid-term comprehensive review of the implementation of the goals of the International Decade for Action “Water for Sustainable Development”, 2018-2028 (March 22-24, 2023, New York);
- agenda of the next regular meeting of the IFAS Board.

Republic of Kazakhstan

R. Sklyar

Kyrgyz Republic

Republic of Tajikistan

S. Ziyozoda

Turkmenistan

A. Yazmiradov

Republic of Uzbekistan

Sh. Ganiyev

SIC ICWC celebrates its 30th anniversary

On December 5, 1992, by a decision of the 4th meeting of ICWC, the Central Asian Irrigation Research Institute (SANIIRI) was assigned a scientific-information center of ICWC for water issues. Later, in 1996, a separate organization – the Scientific-Information Center of ICWC (SIC ICWC) – was formed out of the Institute.



Along with other executive bodies, SIC renders organizational, technical and analytical support to ICWC meetings and to fulfillment of decisions made at the meetings. In particular, SIC as an executive body of ICWC is responsible for drafting decisions on prospective water development and policy, water management and use enhancement, and environmental improvement in the Aral Sea basin.

SIC conducts research and development as part of international, regional and national projects to promote innovative approaches and best practices in water management in the region.

Moreover, SIC focuses on collection, processing, analysis and dissemination of information. The main three tools of this information activity are: 1) “CAWater-Info” web-portal; 2) Regional Water and Land Information System; and, 3) Publishing.

Since formation and until 2021, ICWC has been led by Professor Victor Dykhovniy, a world-famous scientist, who raised a large number of followers. Currently, under the direction of Doctor Dinara Ziganshina, SIC is still open for cooperation and continues pursuing the path laid by Professor Dukhovniy to the benefit of people in Central Asia.

Analysis of water-related situation in the Syr Darya and Amu Darya River basins for the growing season 2022⁵

1. Syr Darya River Basin

The actual inflow to the upstream reservoirs in the Syr Darya River Basin (Toktogul, Andijan, Charvak) was 18.0 km^3 or 112 % of the forecast, 97 % of the norm and by 3.7 km^3 higher than during growing season 2021. Total lateral inflow to Narin and Syr Darya Rivers (in the reaches to the Shardara reservoir) was 8.5 km^3 (this is by 1.7 km^3 more than during growing season 2021), including: along Karadarya River (g/s Uchtepa) was 1.59 km^3 , Chirchik (g/s Chinaz-Chirchik) was 0.57 km^3 , based on Collector Drainage Network (CDN) (return flow) and small rivers were 6.33 km^3 .

At the beginning of the growing season, the upper reservoirs (Toktogul, Andijan, Charvak) accumulated water in the amount of 9.56 km^3 . By the end of the growing season, the full volume of water amounted to 16.1 km^3 in the upstream reservoirs, i.e. water accumulation was 6.55 km^3 in the upstream reservoirs.

Inflow to the Toktogul reservoir along the Narin River was 10.43 km^3 , which is more by 1.02 km^3 than forecasted (106% of the norm), water releases from the reservoirs were 4.68 km^3 or 91 % of the BWO “Syrdarya” schedule. The total water withdrawal from the Narin River by reservoir amounted to 5.75 km^3 , which is 35 % more than in the BWO “Syr Darya” schedule.

The volume of water in the “Bakhri Tojik” reservoir amounted to 3.32 km^3 at the beginning of the growing season and 1.71 km^3 by the end of the growing season. Inflow to the “Bakhri Tojik” reservoir was 5.58 km^3 during the growing season and discharge into the river was 6.86 km^3 . The analysis of the “Bakri Tojik” reservoir operation shows that more water came to the reservoir – by 0.42 km^3 that it was planned in the BWO schedule and accordingly, the water releases from the reservoir to the river were more by 0.89 km^3 than in the BWO schedule.

Total water withdrawal from Narin and Syr Darya Rivers to the Shardara reservoir reach made up 10.17 km^3 or 86 % of the established limit. For the growing season 2022, the water withdrawal was less by 1.68 km^3 than it was planned according to established limits by ICWC.

⁵ Prepared by SIC ICWC, November 2022

Water withdrawals amounted to, including: 0.7 km³ – Republic of Kazakhstan (through Dustlik canal), 0.16 km³ – Republic of Kyrgyzstan, 1.56 km³ – Republic of Tajikistan and 7.76 km³ – Republic of Uzbekistan.

The volume of water made up 5.0 km³ in the Shardara reservoir by the beginning of the growing season and 1.34 km³ by the end of the growing season. Inflow to the Shardara reservoir was 4.5 km³ or 115% of the forecast, discharge from the Shardara reservoir was 6.26 km³, including 5.69 km³ into the river; the water from Shardara g/s into Arnasay reservoir was not supplied.

According to Aral– Syr Darya Basin Water Management Board (BWMB), Koksaray reservoir had 542 mln. m³ volume of water. The reservoir was filled with 307 mln. m³. Drawdown in the amount of 749 mln. m³ was carried out in the reservoir in April and May.

Water supply to the Aral Sea and the Aral Sea region (Karateren g/s) was 0.34 km³ according to the Committee of Water Resources of Kazakhstan.

The amount of flow used in the lower reaches of the Syr Darya (including water intake, water loss minus lateral inflow) amounted to 6.37 km³.

Table 1.1

**Water consumptions of the countries in the Syr Darya River basin
for the growing season 2022**

Water user	Water volume, km ³	
	BWO Schedule/Limit	Actual
1 Total water withdrawal up to Shardara reservoir	11.85	10.17
2 Water withdrawal by state:		
– <i>Kyrgyz Republic</i>	0.25	0.16
– <i>Republic of Uzbekistan</i>	8.80	7.76
– <i>Republic of Tajikistan</i>	1.91	1.56
– <i>Republic of Kazakhstan</i>	0.90	0.70
3 Water intake by river reaches		
3.1 Toktogul reservoir – Uchkurgan hydroscheme	3.95	3.55
<i>Including:</i>		
– <i>Kyrgyz Republic</i>	0.16	0.08

Water user	Water volume, km ³	
	BWO Schedule/Limit	Actual
– <i>Republic of Tajikistan</i>	0.24	0.08
– <i>Republic of Uzbekistan</i>	3.55	3.38
3.2 Uchkurgan hydroscheme – Bakhri Tojik reservoir	1.08	1.22
<i>Including:</i>		
– <i>Kyrgyz Republic</i>	0.08	0.07
– <i>Republic of Tajikistan</i>	0.45	0.53
– <i>Republic of Uzbekistan</i>	0.54	0.61
3.3 Bakhri Tojik – Shardara reservoir.	6.83	5.41
<i>Including:</i>		
<i>Republic of Kazakhstan</i>	0.90	0.70
<i>Republic of Tajikistan</i>	1.22	0.95
<i>Republic of Uzbekistan</i>	4.71	3.76
4 In addition :		
5 Inflow to the Shardara reservoir	3.90	4.50
– Discharge into Arnasay	0.00	0.00
– Water supply to the Aral Sea and Aral Sea region ⁶	0.82	0.34
– <i>Республика Таджикистан</i>	1.91	1.56
– <i>Республика Казахстан</i>	0.90	0.70

⁶ Committee of Water Resources of the Republic of Kazakhstan

Table 1.2

Water balance of the Syr Darya River for the growing season 2022

Balance item	Water volume, km ³		Deviation (actual-plan)	
	Forecast / plan	Actual	km ³	%
1 Inflow to Toktogul reservoir	9.41	10.43	1.02	11
2 Lateral inflow (LI) in the reach Toktogulk reservoir-Shardara reservoir (+)	8.30	8.49	0.19	2
<i>Including:</i>				
-Discharge from the Karadarya River (Uchtepa g/s)	1.43	1.59	0.16	11
-Discharge from the Chirchik (Chinaz-Chirchik g/s)	0.44	0.57	0.13	29
-Lateral inflow from CDN and small rivers	6.43	6.33	-0.10	2
3 Flow regulation by reservoirs: recharge (+) or diversion of flow (-)	-3.44	-4.47	-1.03	30
<i>Including:</i>				
– Toktogul reservoir	-4.25	-5.75	-1.50	35
– Bakhri Tojik reservoir	0.81	1.28	0.47	58
4 Regulated inflow (1+2+3)	14.26	14.44	0.18	1
5 Water intake in the Toktogul– Shardara reach (-)	-11.85	-10.17	1.68	14
6 Inflow to Shardara reservoir	3.90	4.50	0.60	15
7 Water releases from Shardara reservoir (into the river and water intake)	7.38	6.26	-1.12	15
8 Flow regulation in Koksaray reservoir: recharge (+) or diversion of flow (-)	0.50	0.44	-0.06	12
9 Water use (-) in the Shardara reservoir lowerreach (water withdrawal –lateral inflow + river water losses)	-7.07	-6.37	0.70	10
10 Water supply to the Aral Sea and Aral Sea region	0.82	0.34	-0.48	58

Table 1.3

**Reservoir water balance in the Syr Darya River basin
for the growing season 2022**

Balance item	Water volume, km ³		Deviation (actual-plan)	
	Forecast/ plan	Actual	km ³	%
1. Toktogul reservoir				
1.1 Water inflow to the reservoir	9.41	10.43	1.02	11
1.2 Water volume in reservoir:				
– beginning of the season (April 1, 2022)	7.85	7.85	0.00	0
– end of the season (October 1, 2022)	12.11	13.62	1.51	12
1.3 Water releases from the reservoir	5.15	4.68	-0.48	9
1.4 Flow regulation: recharge (+) or diversion of flow (-)	-4.25	-5.75	-1.50	35
2. Andijan reservoir				
2.1 Water inflow to the reservoir	2.13	3.01	0.88	41
2.2 Water volume in the reservoir:				
– beginning of the season (April 1, 2022)	1.06	1.06	0.00	0
– end of the season (October 1, 2022)	0.80	0.91	0.11	13
2.3 Water releases from the reservoir	2.39	3.15	0.76	32
2.4 Flow regulation: recharge (+) or diversion of flow (-)	0.26	0.14	-0.12	
3. Charvak reservoir				
3.1 Water inflow to the reservoir	4.56	4.57	0.01	0
3.2 Water volume in the reservoir:				
– beginning of the season (April 1, 2022)	0.64	0.64	0.00	0
– end of the season (October 1, 2022)	1.46	1.57	0.11	7
3.3 Water releases from the reservoir	3.81	4.28	0.48	13
3.4 Flow regulation: recharge (+) or diversion of flow (-)	-0.75	-0.29	0.46	62
4 Bakhri Tojik reservoir				
a. Water inflow to the reservoir	5.16	5.58	0.42	8
b. Lateral inflow	0.30	0.17	-0.13	43

Balance item	Water volume, km ³		Deviation (actual-plan)	
	Forecast/ plan	Actual	km ³	%
c. Water volume in the reservoir:				
– beginning of the season (April 1, 2022)	3.32	3.32	0.00	0
– end of the season (October 1, 2022)	1.70	1.71	0.01	1
d. Water releases from the reservoir	6.57	7.556	0.99	15
Including:				
– <i>water releases into the river</i>	5.97	6.86	0.89	15
– <i>water intake from the reservoir</i>	0.60	0.70	0.10	16
e. Flow regulation: recharge (+) or diversion of flow (-)	0.81	1.28	0.47	58
4. Shardara reservoir				
a. Water inflow to the reservoir	3.90	4.50	0.60	15
b. Lateral inflow	0.00	0.00	0.00	
c. Water volume in the reservoir:				
– beginning of the season (April 1, 2022)	5.00	5.00	0.00	0
– end of the season (October 1, 2022)	1.04	1.34	0.30	29
d. Water releases from the reservoir	7.38	6.26	-1.12	15
<i>Including:</i>				
– <i>discharge into Arnasay</i>	0.00	0.00	0.00	
– <i>water releases into the river</i>	6.57	5.69	-0.88	13
– <i>water intake from the reservoir</i>	0.81	0.57	-0.24	29
e. Flow regulation: recharge (+) or diversion of flow (-)	3.48	1.19	-2.29	66
TOTAL volume of flow regulation by reservoirs: recharge (+) or diversion of flow (-)	-0.46	-3.44	-2.98	

2. Amu Darya River basin

Actual water content in the Amu Darya River at nominal Kerki g/s (upstream of the water intake to Garagumdarya) amounted to 41.23 km^3 , which is less by 0.24 km^3 than expected and estimated value according to the schedule of BWO “Amu Darya” (Table 2.2). For comparison: actual water content of the river for the growing season 2021 amounted to 41.16 km^3 .

Inflow to the Nurek reservoir was 16.4 km^3 and was more by 1.13 km^3 than forecasted inflow, while water releases from the reservoir were 13.03 km^3 (more by 0.9 km^3 than BWO “Amu Darya” schedule). Diversion of river flow by filling of the Nurek reservoir amounted to 3.37 km^3 (Table 2.3.)

According to Darganata g/s, the inflow to the Tuyamuyun hydroscheme (TMHS) was 22.55 km^3 , which is more by 1.74 km^3 than expected; despite this, the plan for water accumulation in 3.45 km^3 during the growing season was not fulfilled in the reservoirs of Tuyamuyun hydroscheme (TMHS). The actual volume of water was 2.32 km^3 by the end of the growing season in the TMHS reservoirs and water releases from TMHS mounted to 12.97 km^3 .

In the current water management situation, the established water withdrawal limit for the canals in the Amu Darya River Basin was met by 79 % (Table 2.1). Total water withdrawal was 31.38 km^3 , including downstream of Kerki g/s (starting from the water intake to Garagumdarya) – 23.93 km^3 . The average value of water availability during the growing season in the Republic of Tajikistan was 95%, Turkmenistan – 83% and Uzbekistan – 69%; the water availability in the lower reaches (Turkmenistan – 64%, Uzbekistan – 59% and in Syrkhandarya region – 67%).

The water supply amounted to 0.94 km^3 reached in the Aral Sea region and the Aral Sea (Amu Darya river flow along Samanbay g/s plus CDN discharges) or 45% of the BWO schedule during the growing season.

Table 2.1

**Indicators of water supply of the countries in the Amu Darya River Basin
for the growing season 2022**

Water user	Water volume, km ³		Water availability, %	Shortage (-), Surplus (+), km ³
	Limit/ Schedule	Actual	Season	Season
1. Total water withdrawal	39.68	31.38	79	-8.3
2. Water intake by states:				
Kyrgyz Republic	-	-	-	-
Republic of Tajikistan	7.0	6.6	95	-0.3
Turkmenistan	15.5	12.9	83	-2.6
Republic of Uzbekistan	17.2	11.8	69	-5.4
3. Downstream of nominal Kerki g/s*	31.520	23.93	76	-7.6
<i>Including:</i>				
<i>Turkmenistan</i>	15.5	12.9	83	-2.6
<i>Republic of Uzbekistan</i>	16.0	11.0	69	-5.0
4. By river reach:				
Upper reaches	8.163	7.45	91	-0.7
<i>Including:</i>				
<i>Kyrgyz Republic</i>	-	-	-	-
<i>Republic of Tajikistan</i>	6.96	6.64	95	-0.3
<i>Syrkhandarya, Uzbekistan</i>	1.20	0.81	67	-0.4
Middle reaches	16.207	14.66	90	-1.5
<i>Including:</i>				
<i>Turkmenistan</i>	10.47	9.71	93	-0.8
<i>Republic of Uzbekistan</i>	5.73	4.95	86	-0.8
Lower reaches	15.313	9.27	61	-6.0
<i>Including:</i>				
<i>Turkmenistan</i>	5.03	3.20	64	-1.8
<i>Republic of Uzbekistan</i>	10.285	6.07	59	-4.2

Water user	Water volume, km ³		Water availability, %	Shortage (-), Surplus (+), km ³
	Limit/ Schedule	Actual	Season	Season
5. In addition:				
Sanitary-environmental flow to canals in the lower reaches	0	0		
<i>Including:</i>				
<i>Turkmenistan</i>	0	0		
<i>Republic of Uzbekistan</i>	0	0		
Water supply to the Aral Sea region and the Aral Sea**	2.10	0.94	45	-1.2

*) nominal Kerki section- in the Amu Darya River (upstream of the water intake to Garagumdarya)

***) including CDN discharges

Table 2.2

**Water balance of the Amu Darya River
for the growing season 2022**

Balance item	Water volume, km ³		Deviation (actual-plan)	
	Forecast /plan	Actual	km ³	%
1. Water content in the Amu Darya River – unregulated flow in nominal Kerki section*	41.47	41.23	-0.24	1
2. Flow regulation by the Nurek reservoir: recharge (+) or diversion of flow (-)	-3.15	-3.37	-0.22	7
3. Water intake in the middle reaches (-)	-16.21	-14.66	1.55	10
4. Return flow in the middle reaches (+)	1.60	1.03	-0.57	36
6. River flow at Darganat g/s	20.80	22.55	1.74	8
7. Water releases from TMHS (including water intake from the reservoir)	16.35	12.97	-3.38	21
8. Water intake in the lower reaches, including water intake from TMHS (-)	-15.31	-9.27	6.04	39
9 Return flow in the lower reaches (+)	0.00	0.00	0.00	
10 Emergency-environmental water releases to canals (-)	0.00	0.00	0.00	
11 Supply to the Aral Sea region and the Aral Sea (Samanbay g/s)	0.46	0.44	-0.02	5

* Amu Darya River flow (upstream of the water intake to Garagumdarya) at the domestic flow rate of Nurek HPS (excluding flow regulation of the Vakhsh River).

Table 2.3

**Reservoir water balance in Amu Darya River basin
for the growing season 2022**

Balance article	Water volume, km ³		Отклонение (факт-план)	
	Forecast / plan	Actual	km ³	%
1 Nurek reservoir				
1.1. Water inflow to the reservoir	15.28	16.40	1.13	7
1.2. Water volume in the reservoir:				
– beginning of the season (April 1, 2022)	6.62	6.62	0.00	0
– end of the season (October 1, 2022)	10.56	10.57	0.00	0
1.3. Water releases from the reservoir	12.13	13.03	0.90	7
1.4. Flow regulation: recharge (+) or diversion of flow (-)	-3.15	-3.37	-0.22	7
2 Reservoirs of TMHS				
2.1 River flow at Darganata g/s	20.80	22.55	1.74	8
2.2 Water volume in the reservoirs:				
– beginning of the season (April 1, 2022)	2.46	2.46	0.00	0
– end of the season (October 1, 2022)	3.45	2.32	-1.13	33
2.3 Water releases from the hydroscheme	16.35	12.97	-3.38	21
Including:				
– water releases into the river	11.41	9.48	-1.93	17
– water intake	4.94	3.49	-1.45	29
2.4 Flow regulation: recharge (+) or diversion of flow (-)	-9.39	-13.07	-3.68	39
TOTAL flow regulation by reservoirs: recharge (+), diversion of flow (-)	-12.54	-16.44	-3.90	31

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