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REPORT ON 79th ICWC MEETING

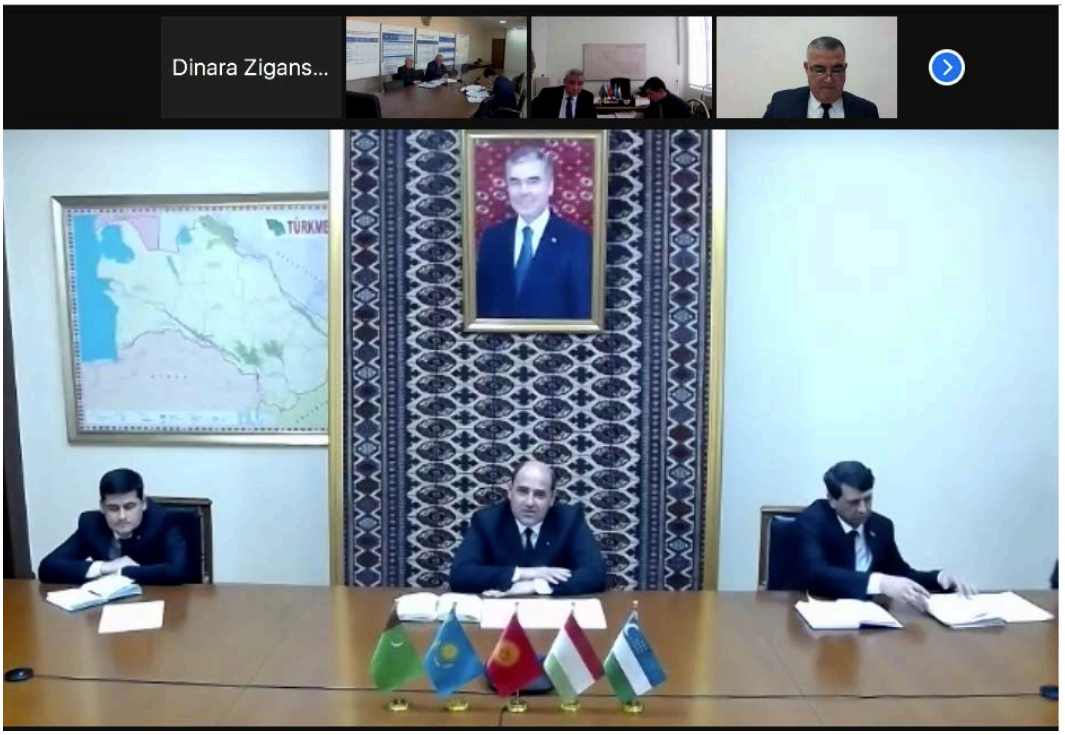
The 79th meeting of the Interstate Commission for Water Coordination (ICWC) of the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan and the Republic of Uzbekistan was held by video conferencing on the 24th of November 2020.

ICWC members from Kazakhstan (Ye.N. Nysanbayev), Tajikistan (D.Sh. Shoimzoda) and Uzbekistan (V. M. Akhmadjonov, by proxy) participated in the meeting chaired by G.N. Baydjanov, ICWC member from Turkmenistan. ICWC executive bodies in the face of their heads took part in the meeting as well: BWO Amu Darya (M.Ya. Makhramov), BWO Syr Darya (O.A. Kholkhujaev), SIC ICWC (V.A. Dukhovniy), Secretariat (U.A. Nazarov), and IFAS Executive Committee (S.N. Rakhimzoda).

The agenda of the meeting included the following items:

1. Results of the use of water withdrawal limits and the operation regimes of reservoirs in the Syr Darya River and the Amu Darya River basins for the growing season 2020.
2. Approval of the country water withdrawal limits and forecast operation regimes of the reservoir cascades in the Amu Darya and the Syr Darya River basins over the non-growing season 2020-2021.
3. Progress on implementation of the proposals and initiatives voiced at the Summit of the Heads of IFAS founder-states in Turkmenbashi.
4. Agenda and venue of the next regular 80th meeting of ICWC.
5. Additional matters

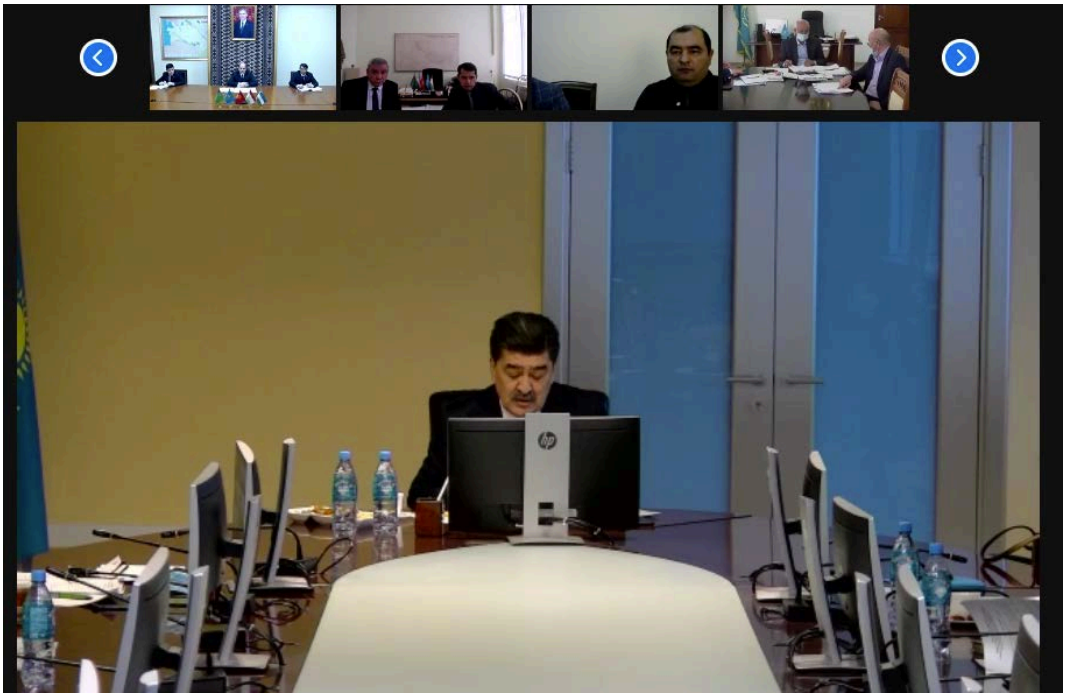
The meeting was opened by the Chairman of the Turkmenistan State Committee of Water Management Mr. Baydjanov. ICWC members approved the agenda and welcomed Ye.N. Nysanbayev and D.Sh. Shoimzoda appointed as ICWC members and S.N. Rakhimzoda as the Chairman of EC IFAS.



On **the first item**, BWO Amu Darya and BWO Syr Darya reported on the fulfillment of water withdrawal limits and the operation regimes of reservoir cascades in the Syr Darya River and the Amu Darya River basins over the growing season 2020.

In the course of discussion, the ICWC members noted the complex hydrological situation during the growing season. They underlined huge efforts made by both BWOs and all the countries for coordinated work during the low-water period. Particularly complex situation was observed in the Syr Darya River basin, the Fergana Valley. A trilateral protocol between Kazakh, Tajik and Uzbek water agencies and a bilateral protocol between Tajik and Uzbek water agencies were concluded for quick solution of issues faced and coordination of actions to increase available water supply.

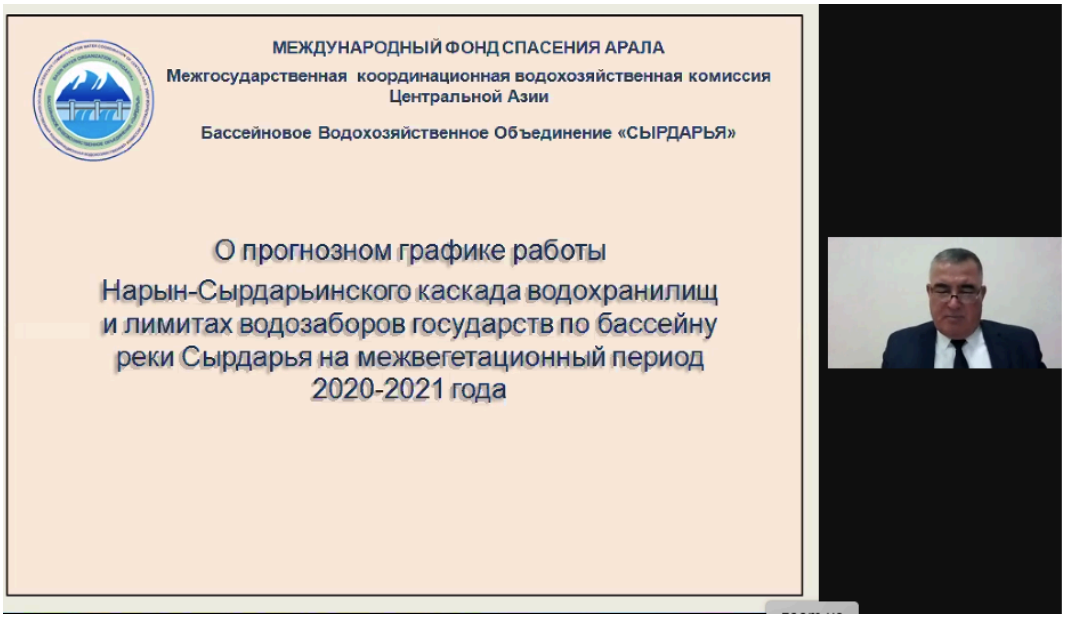
Mr. Nysanbayev note with appreciation the well coordinated work among the three countries but called on his colleagues to start preparing for the growing season 2021 early in the beginning of the year.



Mr. Dukhovniy focused on three points. *First*, in February 2020 SIC warned in written form the countries that water availability was expected to be within 80% but water withdrawal limits were set on the base of more optimistic forecasts by hydrometeorological services. Inaccuracy of flow forecast was 4 km^3 for the Amu Darya, and return flow was not reliably forecasted along the Syr Darya and the gap amounted to 1.5 km^3. The ICWC members should communicate such substantial errors in forecasts to hydrometeorological services. The *second point* related to deviations of actual water withdrawals from the limits in ten-day dimension that reached 50%. Along the Amu Darya, the undersupply in the reach from Nurek to Atamurat was 2 billion m^3. This is seemingly because of increased withdrawal of water from the Panj River by Afghanistan. According to statistics, the irrigation area was 510 thousand ha in the Northern Afghanistan in 2019. That required about 5 billion m^3 of water. Therefore, it is proposed to establish communication with Afghan colleagues on matters related to flow forecasting. The *third* point refers to reduction of inflow to the Aral Sea from both the Amu Darya and the Syr Darya. The evidence that the Northern Sea has got only about 1.5 km^3 of water during the growing season raises serious concerns.

Mr. Akhmadjonov supported Mr. Dukhovniy and told on a need for water reserves and better preparedness.

On **the second item**, BWO Amu Darya and BWO Syr Darya put their proposals on water withdrawal limits and operation regimes of reservoir cascades in the Syr Darya River and the Amu Darya River basins over the non-growing season 2020-2021.



Mr. Nysanbayev proposed to supplemet Table 2.2 in BWO SyrDarya's report by water limits from the Karadarya and the Chirchik rivers as foreseen in the Master Plan and agreed in the Protocol between the Kazakh Minister of ecology, geology and natural resources M. Mirzagaliev and the Uzbek Minister of water management Sh. Khamraev. He also notified on assignments of representatives of Kazakhstan as deputies to BWO SyrDarya as provided for by the rotation procedure.

Mr. Akhmadjonov proposed discussing in routine order on how to incorporate limits of water withdrawal from the Karadarya into ICWC reports. The Uzbek side works with Kyrgyzstan on Karadarya on bilateral basis. He also indicated that the data on the Syr Darya lower reaches was not available. He suggested that SIC developed full water balance of the Syr Darya in line with the Master Plan.

Mr. Nysanbayev told that a task should be put before BWO SyrDarya to draw the water budget with the engagement of all riparian countries. Work groups that investigated hydrotechnical structures in Kazakhstan and Uzbekistan after the Sardoba dam failure would contribute to that task. He also appealed to ADB to support this work and requested incorporating this matter into the

minutes.

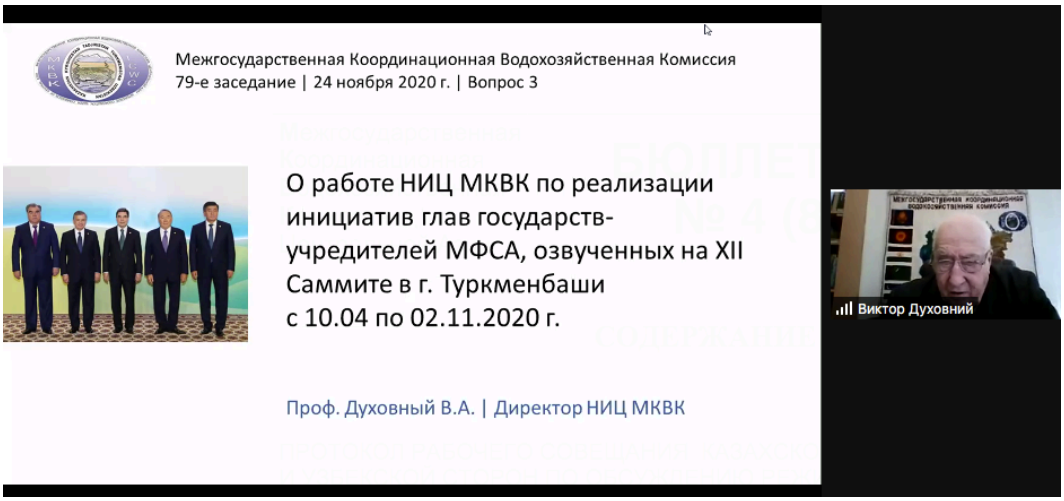
Mr. Akhmadjonov told that they supported the idea, especially taking into account that it was addressed in the Regional program of water conservation and rational water use, development of which was initiated by the President Sh. Mirziyoyev. He also proposed to come back to development of draft agreements as offered by the Regional Centre for Preventive Diplomacy for Central Asia.

Mr. Dukhovniy. SIC together with Kazgiprovodkhoz developed balance for the Syr Darya a few years ago but excluding the Koksaray. Based on this balance, the inflow in the amount of 8-10 km^3/year is provided for the Aral Sea. We have all available materials and are ready to be engaged in this work.

Mr. Shoimzoda addressed three points. *First*, he expressed interest in exploring the mechanism of rotation at BWO SyrDarya for potential assignment of a Tajik representative. *Second*, to ensure transparency, he proposed making efforts for development of water budgets for the both rivers. *Third*, he expressed a wish that the parties informed on concluded bilateral agreements, in particular between Kazakhstan and Uzbekistan as this may concern the whole basin.

Mr. Baydjanov expressed satisfaction with BWO's report and thanked colleagues for fruitful collaboration.

On **the third item**, *Prof. Dukhovniy* reported on the work done by SIC ICWC in the course of implementation of the proposals and initiatives voiced at the Summit of the Heads of IFAS founder-states in Turkmenbashi.



Mr. Nysanbayev. "Due to pandemic, we couldn't reply on time. The letter of 4th of August has not been received. In general, we support the idea of establishing the Central Asian expert platform and the consensus panel with

Kyrgyzstan (we work with them in this regard). We acknowledge existing problems underlined in USAID's note and ready to work with the countries on bi- and multilateral basis to remove them. We support draft regulations and are ready to start country-level approval process if colleagues agree. The SIC's work is positively evaluated".

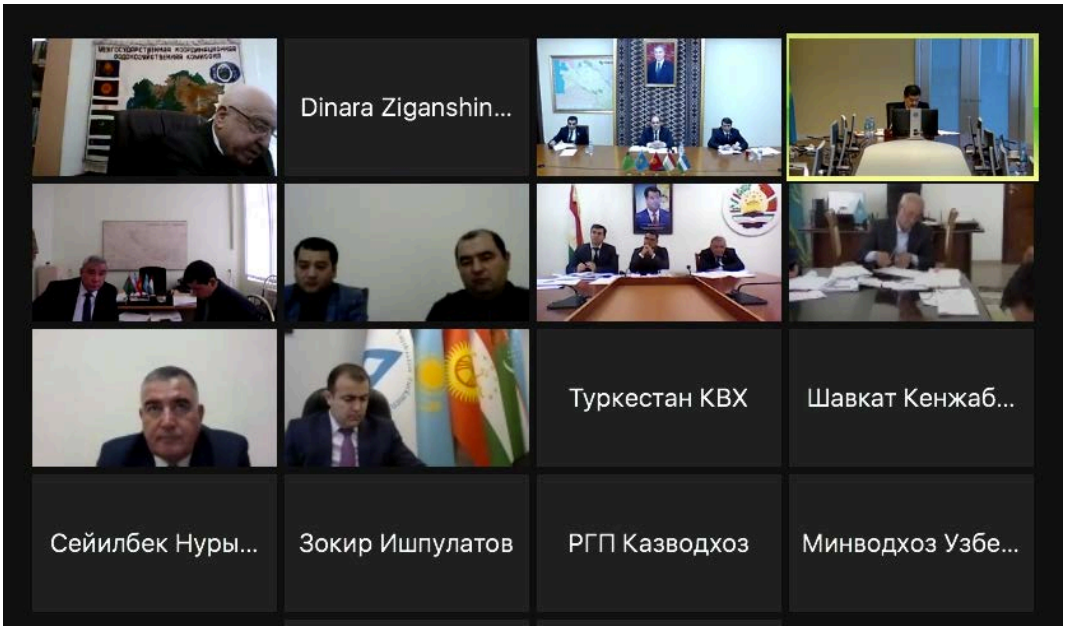
Mr. Shoimzoda thanked Mr. Dukhovniy for the material and proposed to discuss the matter of reforming IFAS under the Fund's umbrella.

Mr. Akhmadjonov thanked SIC for huge work done and for uneasy efforts in searching funds and developing projects that adapt needs of the countries and donors. "As a whole, we support all proposals. As to revision of water consumption norms, we suggest first to thoroughly examine everything as this is the basis for determination of water withdrawal limits in the Master Plan. It is not advisable to refer runoff discrepancy immediately to the country, where it is formed. Penalties for breach of water withdrawal limits should be also introduced carefully. Finally, water conservation should be encouraged everywhere and it is important to engage donors in this work.

Mr. Pashiev noted that Mr. Dukhovniy addressed relevant issues on rational water use. Losses along Dargonata raise concerns. Thus, this work should be undertaken as part of ASBP-4.

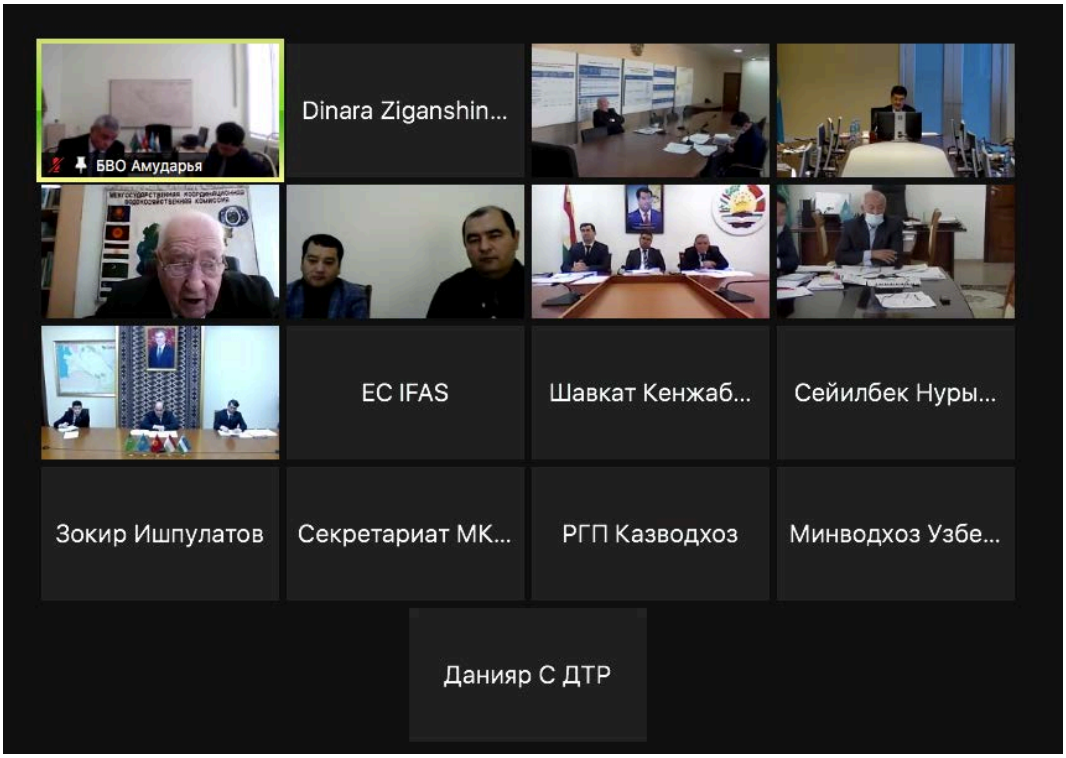
Mr. Rakhimzoda welcomed the colleagues. "I am glad that despite complex water situation the growing season was completed successfully" said Mr. Rakhimzoda and congratulated the ICWC members. He also congratulated with appointments to ICWC of Ye. Nysanbayev (with coming back) and D. Shoimzoda. He thanked Mr. Dukhovniy for advice and recommendations. Mr. Rakhimzoda reported that the office of EC IFAS in Tajikistan started functioning. Representatives of Kazakhstan and Tajikistan have been assigned. One of major tasks is to reintegrate Kyrgyzstan back into IFAS, also by reforming the Fund. Information from Turkmenistan was requested to ensure succession of work. He expressed the hope that the working group on the legal and institutional improvement of IFAS would be reactivated and activity on consultation and approval of ASBP-4 would be resumed. Another key priority of EC IFAS in Tajikistan is engaging Afghanistan in activities of IFAS. Greetings were also extended to Tajik colleagues on the occasion of the Flag Day and to Turkmen colleagues with the Neutrality Day to be celebrated.


Dinara Zigans...
EC IFAS


Dinara Ziganshin...
Туркестан КВХ
Шавкат Кенжаб...
Сейилбек Нуры...
Зокир Ишпулатов
РГП Казводхоз
Минводхоз Узбе...

As to **the fourth item**, the next meeting of ICWC is to be held in Tajikistan in April 2021; the date will be negotiated in due course.

The minutes of the meeting will be approved by the Parties by voting.



RESULTS OF THE USE OF WATER WITHDRAWAL LIMITS AND OPERATION REGIMES OF THE RESERVOIR CASCADES IN THE AMUDARYA AND SYRDARYA RIVER BASINS OVER THE GROWING SEASON 2020[1]

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 81.3 % of the norm over the 2020 growing season. The estimations were made taking into account the natural flow in the Vakhsh River and regulation by the Nurek reservoir. In the past season, this value was 100.9 % of the norm.

For the 2020 growing season water availability was rather mixed: while in April-May it was within and above normal (90-129%), from the middle of June water availability decreased from 80-60% and in the first decade of July it was only 57.7 % of the norm.

The use of the approved water withdrawal limits over the growing season under consideration is as described below.

Taking into account the current water situation, 81.9 % of the approved water withdrawal limits was used totally in the basin. While the limit was 39,672 mcm, the actually used volume was 32,504.5 mcm, of which:

Republic of Tajikistan actually used 6,136.6 mcm or 88.3 % of the total limit;

Turkmenistan actually used 13,512.4 mcm or 87.2 % of the total limit;

Republic of Uzbekistan actually used 12,855.5 mcm or 74.7 % of the total limit.

Over the 2020 growing season, the use of water limits downstream of the nominal Kerki gauging station upstream of Garagumdarya was 81.4 % of the total limit, of which:

Republic of Uzbekistan actually used 12,157 mcm or 75.9 % of the total limit

Turkmenistan actually used 13,512.4 mcm or 87.2 % of the total limit.

[1]Information on the first item of the 79th ICWC Meeting's Agenda

Table 1

Water user state	Water withdrawal limits, growing season 2019	Actual, mcm	%% of use
Republic of Tajikistan	6,952	6,136.6	88.3
Turkmenistan	15,500	13,512.4	87.2
Republic of Uzbekistan	17,220	12,855.5	74.7
Total	**39,672**	**32,504.5**	**81.9**
Downstream of the nominal Kerki GS	31,520	25,669.4	81.4
Turkmenistan	15,500	13,512.4	87.2
Republic of Uzbekistan	16,020	12,157	75.9

The actual use of water against limits is as follows:

Upper reaches – 6,835.1 mcm or 83.8 % of the total limit, including 6,136.6 mcm or 88.3 % in the Republic of Tajikistan and 698.5 mcm or 58.2 % in the Republic of Uzbekistan.

Middle reaches – 15,042.8 mcm or 91.2 % of the total limit, including 9,994.5 mcm or 95.4 % in Turkmenistan and 5,048.3 mcm or 88 % in the Republic of Uzbekistan.

Lower reaches – 10,626.6 mcm or 69.4 % of the total limit, including 3,517.9 mcm or 70 % in Turkmenistan and 7,108.7 mcm or 69.1 % in the Republic of Uzbekistan.

Water supply to the Amu Darya delta and the Aral Sea was planned to be 2,100 mcm for the growing season. However, actual supply was 1,040 mcm or 49.5 %.

Table 2

Water user state	Water withdrawal limits, growing season 2020	Actual, mcm	%% of use
Upper reaches	**8,152**	**6,835.1**	**83.8**
Republic of Tajikistan	6,952	6,136.6	88,3
Republic of Uzbekistan	1,200	698.5	58.2
Middle reaches	**16,207.0**	**15,042.8**	**92.8**
Turkmenistan	10,472.0	9,994.5	95.4
Republic of Uzbekistan	5,735.0	5,048.3	88.0
Lower reaches	**15,313.0**	**10,626.6**	**69.4**
Turkmenistan	5,028.0	3,517.9	70.0
Republic of Uzbekistan	10,285.0	7,108.7	69.1

The forecast regimes of the Nurek and Tuyamuyun reservoirs were calculated for conditions of normal water availability. The actual regime of reservoirs significantly differs from the planned one under water availability of 82% of the norm. The Nurek reservoir, in its multiyear operation regime, achieved full accumulation of water by 15 August, while in the 2020 growing season this occurred in early September.

The inflow to the Nurek reservoir was expected to be 17,768 mcm in the growing season; however, the actual inflow was 13,298 mcm or 74.8 %. Water releases from the reservoir were planned to be 13,984 mcm; the actual releases were 9,470 mcm or 67.7 %.

By the end of the growing season, water storage in the reservoir was to be 10,554 mcm. The actual volume was 10,574 mcm or 100.2 %.

The inflow to the Tuyamuyun reservoir was expected to be 20,128 mcm; however, the actual inflow was 13,804 mcm or 68.6 %. Water releases from the reservoir were planned to be 19,695 mcm; while the actual water releases were 14,148 mcm or 71.8 %.

By the end of the growing season, water storage in the reservoir was planned to be 3,236 mcm; however, the actual storage was 2,458 mcm or 76 %

Table 3

Item		unit	Nurek reservoir	Tuyamuyun reservoir
Volume: beginning of the season		mcm	6,129	2,801
Inflow to the reservoir	forecast	mcm	17,768	20,128
	actual	mcm	13,298	13,804
		%%	74.8	68.6
Water releases from reservoir	forecast	mcm	13,984	19,695
	actual	mcm	9,470	14,148
		%%	67.7	71.8
Volume: end of the season	forecast	mcm	10,554	3,236
	actual	mcm	10,574	2,458
		%%	100.2	76
Accumulation (+), drawdown (-)	forecast	mcm	4,425	435
	actual	mcm	4,445	-343
		%%	100.5	44.1

More detailed information is provided in Tables 4-6

Table 4

Analysis of the use of adopted water withdrawal limits in the Amu Darya River basin during the 2020 growing season, mcm

Item	Limit, growing season	Actual	%%
Upper Amu Darya Administration			
Upper reaches	8,152.0	6,835.1	83.8
of which:			
Tajikistan	6,952.0	6,136.6	88.3
Uzbekistan:	1,200.0	698.5	58.2
Water withdrawals from the Amu Darya River			
at nominal Kerki gauging station	31,520.0	25,669.4	81.4
of which:			
Turkmenistan	15,500.0	13,512.4	87.2
Uzbekistan:	16,020.0	12,157.0	75.9
Middle Amu Darya Administration			
Middle reaches	16,207.0	15,042,8	92.8
of which:			
Turkmenistan	10,472.0	9,994,5	95.4
Uzbekistan:	5,735.0	5,048,3	88.0
UPRADIK* and Lower Amu Darya Administration			
Lower reaches:	15,313.0	10,626.6	69.4
of which:			
Turkmenistan	5,028.0	3,517.9	70.0
Uzbekistan:	10,285.0	7,108.7	69.1
Total for the basin	39,672.0	32,504.5	81.9
of which:			
Tajikistan	6,952.0	6,136.6	88.3
Turkmenistan	15,500.0	13,512.4	87.2
Uzbekistan	17,220.0	12,855.5	74.7

Table 5

Actual operation regimes of the Nurek and Tuyamuyun reservoirs (April – September 2020), mcm

Nurek reservoir	unit	Actual						total
		April	May	June	July	Aug	Sep	
Volume: beginning of the season	mcm	6,129	6,295	7,003	7,423	8,444	10,430	6,129
Inflow to the reservoir	m^3/s	478	770	933	1,026	1,173	650	
	mcm	1,239	2,063	2,418	2,749	3,143	1,685	13,298
Water releases from the reservoir	m^3/s	432	580	804	663	516	601	
	mcm	1,119	1,555	2,083	1,774	1,382	1,557	9,470
Volume: end of the season	mcm	6,295	7,003	7,423	8,444	10,430	10,574	10,574
Accumulation (+), drawdown (-)	mcm	166	708	420	1,021	1,986	144	4,445

Tuyamuyun reservoir	unit	Actual						total
		April	May	June	July	Aug	Sep	
Volume: beginning of the season	mcm	2,801	2,851	3,242	3,335	2,626	2,500	2,801
Inflow to the reservoir	m^3/s	595	1,017	1,238	927	816	641	
	mcm	1,542	2,723	3,209	2,483	2,186	1,661	13,804
Water releases from the reservoir	m^3/s	576	870	1,202	1,192	863	657	
	mcm	1,493	2,331	3,116	3,192	2,313	1,704	14,148
Volume: end of the season	mcm	2,851	3,242	3,335	2,626	2,500	2,458	2,458
Accumulation (+), drawdown (-)	mcm	50	391	93	-709	-126	-42	-343

Table 6

Water supply to the Aral Sea and the Amu Darya River delta over the 2020 growing season, mcm

	IV	V	VI	VII	VIII	IX	Actual, since 01.04.20 till 30.09.20
From the Amu Darya River, at Samanbay GS	104	103	100	102	72	62	543
Total water discharge from Dustlik and Suenli canal system							0
CDF	113	107	93	85	54	45	497
Total:	217	210	193	187	126	107	1,040
Cumulative	217	427	620	807	933	1,040	

The data on water supply to the Amu Darya delta was agreed with UzHydromet.

II. Syrdarya River basin

I. Forecast of inflow

According to the Hydromet's forecast, during the 2020 growing season, water content was expected to be 85-95% of the norm in the basins of the Naryn and Chirchik Rivers (on average 90 %), 90-100% in river basins in the southern Fergana Valley (on average 95%), 80-90% (on average 85 %) in the basins of Akhangaran, Karadarya, in the rivers of the northern Fergana Valley .

The Coordination Dispatch Center "Energy" provided the forecast operation regime of the Toktogul reservoir for the growing season on 27 March 2020. Forecast work schedules for the Andijan and Charvak reservoirs have been received from the Ministry of Water Management of Republic of Uzbekistan.

According to the data by UzHydromet, the forecast inflow to upper reservoirs was:

- 90% of the norm to the Charvak reservoir;
- 70% to the Andizhan reservoir;
- 90% to the Toktogul reservoir;

Total lateral inflow – 92 % of the norm.

Totally in the Syr Darya basin, river water content was expected to be 89% of the norm.

The actual water situation since the 1st of April till 30th of September 2020 is characterised as follows.

II. Total inflow (Table 2.1)

The norm of total inflow to the Syr Darya River is 29,383 mcm for the growing season. According to the Hydromet's forecast, the total inflow was expected to be 26,062 mcm or 89 % of the norm.

The actual total inflow amounted to 23,012 mcm, this is 3,050 mcm less or 88% of the forecast (in 2019, the total inflow was 27 728 mcm over the growing season).

III. Inflow to upstream reservoirs (Table 2.1)

Over the growing season, the norm of inflow to the upstream reservoirs of the Naryn-Syrdarya cascade is 18,360 mcm.

The forecast inflow was expected to be 15,915 mcm.

The actual inflow to upstream reservoirs was 14,278 mcm, this is 1,637 mcm less or 90% of the forecast (78% of the norm) (in 2019, the inflow to reservoirs was 16 991 mcm for the same period).

- Inflow to **Toktogul** reservoir:

The norm is 9,620 mcm;

The forecast inflow was expected to be 8,656 mcm;

the actual inflow was 8,679 mcm, this is 23 mcm more or 100% of the forecast (90% of the norm).

- Inflow to **Andizhan** reservoir:

The norm is 2,992 mcm;

The forecast inflow was expected to be 2,083 mcm; the actual inflow was 1,200 mcm, this is 883 mcm less or 58% of the forecast (40% of the norm).

- Inflow to **Charvak** reservoir:

The norm is 5,748mcm;

The forecast inflow was expected to be 5,176 mcm;

The actual inflow was 4,399 mcm, this is 777 mcm less or 85% of the forecast (77% of the norm).

IV. Lateral inflow (Table 2.1)

The lateral inflow to the Syr Darya River up to the Shardara reservoir is 11,023 mcm by the norm.

According to the Hydromet's forecast, lateral inflow was expected to be 10,147 mcm or 92 % of the norm.

The actual lateral inflow was 8,734 mcm, this is 1,413 mcm less or 86% of the forecast (79 % of the norm) (in 2019, the lateral inflow was 10,737 mcm in the growing season).

1. Toktogul – Uchkurgan reach:

The norm is 1,216 mcm;

The forecast inflow is 1,144 mcm;

The actual lateral inflow was 1,076 mcm or 68 mcm less than the forecast inflow (94%).

2. Andizhan – Uchtepe reach:

The norm is 2,521 mcm;

The forecast inflow is 2,211 mcm;

The actual lateral inflow was 2,081 mcm or 130 mcm less than the forecast inflow (94%).

3. Uchkurgan, Uchtepe - Bakhri Tochik reach:

The norm is 3,362 mcm;

The forecast inflow is 3,159 mcm;

The actual lateral inflow was 2,227 mcm or 932 mcm less than the forecast inflow (70%).

4. Bakhri Tochik – Shardara reach:

The norm is 3,020 mcm;

The forecast inflow is 2,843 mcm;

The actual lateral inflow was 2,454 mcm or 389 mcm less than the forecast inflow (86%).

5. Gazalkent – Chinaz reach (excluding Ugam):

The norm is 904 mcm;

The forecast inflow is 790 mcm;

The actual lateral inflow was 896 mcm or 106 mcm more than the forecast inflow (113%).

Table 2.1

Name	Growing season, mcm April 1 – September 30												
	2020							2019					
	norm	forecast	forecast/ norm (%)	actual	actual/ forecast (%)	actual/ norm (%)		norm	forecast	forecast/ norm (%)	actual	actual/ forecast (%)	actual/ norm (%)
Inflow to upstream reservoirs													
Toktogul	9620	8656	90	**8679**	100	90		9620	9332	97	**8806**	94	92
Andizhan	2992	2083	70	**1200**	58	40		2915	2680	92	**1945**	73	67
Charvak (4 rivers in total)	5748	5176	90	**4399**	85	77		5751	5464	95	**6240**	114	109
Total	**18360**	**15915**	87	**14278**	**90**	**78**		**18286**	**17476**	96	**16991**	97	93
Lateral inflow													
Toktogul – Uchkurgan	1216	1144	94	**1076**	94	88		1216	1180	97	**1294**	110	106
Andizhan – Uchtepe	2521	2211	88	**2081**	94	83		2529	2371	94	**2451**	103	97
Uchkurgan, Uchtepe – Bakhri Tochik	3362	3159	94	**2227**	70	66		3368	3320	99	**3069**	92	91
Bakhri Tochik – Shardara	3020	2843	94	**2454**	86	81		3020	2846	94	**2855**	100	95
Gazalkent-Chinaz (excluding Ugam)	904	790	87	**896**	113	99		909	949	104	**1068**	112	117
Total	**11023**	**10147**	92	**8734**	**86**	**79**		**11042**	**10666**	97	**10737**	101	97
Overall (total inflow)	**29383**	**26062**	89	**23012**	**88**	**78**		**29328**	**28142**	96	**27728**	99	95

Table 2.2

Parameter	Growing season, mcm from 1 April to 30 September 2020				Growing season, mcm from 1 April to 30 September 2019			
	scheduled	actual	actual/ schedule (%)	difference (actual-schedule)	scheduled	actual	actual/ schedule (%)	difference (actual-schedule)
Inflow to in-stream reservoirs								
Inflow to the Bakhri Tochik reservoir	6,185	5,134	83	-1051	6,315	6,291	100	-25
Inflow to the Shardara reservoir	6,441	3,121	48	-3,320	4,602	5,241	114	640
Supply to the Aral Sea								
Supply to the Aral Sea	1,053	468	44	-585	1,409	1,077	76	-333

V. Inflow to in-stream reservoirs, water supply to the Aral Sea and water releases from reservoirs (Tables 2.2-2.3)

The inflow to the Bakhri Tochik reservoir was scheduled to be 6,185 mcm over the growing season 2020.

The actual inflow to the reservoir was 5,134 mcm or 1,051 mcm less than the scheduled amount (in 2019, inflow to the reservoir was 6,291).

The inflow to the Shardara reservoir was scheduled to be 6,441 mcm.

Actual inflow to the reservoir was 3,121 mcm or 3,320 mcm less than the scheduled amount (in 2019, inflow to the reservoir was 5,241 mcm).

The inflow to the Aral Sea and the Aral Sea region was scheduled to be 1,053 mcm. The actual inflow to the Aral Sea and the Aral Sea region as measured at the Karateren gauging station was 468 mcm.

According to the forecast operation regimes of the Naryn-Syrdarya reservoir cascade, 27,159 mcm were to be released from reservoirs over the growing season 2020.

The actual water releases were 20,410 mcm, this is 6,749 mcm or 75% less than the schedule (in 2019, 25,549 mcm were released from reservoirs).

Water releases from reservoirs were as follows:

– Toktogul reservoir – water releases were scheduled to be 5,676 mcm. The actual water releases were 5,154 mcm or 522 mcm less (91 %) than the scheduled amount.

– Andizhan reservoir – water releases were scheduled to be 2,172 mcm. The actual water releases were 1,611 mcm or 561 mcm less (74 %) than the scheduled amount.

– Charvak reservoir – water releases were scheduled to be 3,947 mcm. The actual water releases were 3,236 mcm or 711 mcm less (82 %) than the scheduled amount.

- Bakhri Tochik reservoir – water releases were scheduled to be 6,645 mcm. The actual water releases were 5,519 mcm or 1,126 mcm (83 %) less than the scheduled amount.

– Shardara reservoir – water releases were scheduled to be 8,719 mcm. The actual water releases were 4,890 mcm or 3,829 mcm (56 %) less than the scheduled amount.

Table 2.3

Reservoir	Releases, mcm from 1 April to 30 September 2020		actual/ schedule, %	Releases, mcm from 1 April to 30 September 2019		actual/ schedule, %
	Forecast operation schedule for NSRC	Actual		Forecast operation schedule for NSRC	Actual	
Upstream reservoirs						
Andizhan	2,172	1,611	74	2,545	2,193	86
Charvak (water releases from the Gazalkent HPP)	3,947	3,236	82	4,418	4,607	104
TOTAL:	**11,795**	**10,001**	**85**	**12,429**	**11,938**	**96**
In-stream reservoirs						
Bakhri Tochik	6,645	5,560	84	6,421	6,218	97
Shardara	8,719	4,890	56	6,793	7,393	109
TOTAL:	**15,364**	**10,450**	68	**13,214**	**13,611**	103
OVERALL:	**27,159**	**20,451**	**75**	**25,643**	**25,549**	**100**

VI. Water storage in reservoirs (Table 2.4)

By the beginning of the growing season, the actual water storage in the Naryn-Syrdarya reservoir cascade was 20,880 mcm.

In the reservoirs, the scheduled water storage was to be 20,139 mcm.

By the end of the growing season, however, the actual water storage was 19,380 mcm or 759 mcm less than the scheduled amount.

In the upstream reservoirs, the scheduled water storage was to be 17,039 mcm by the end of the growing season.

The actual water storage by the end of the growing season was 16,867 mcm or 172 mcm less than the scheduled amount.

The upstream reservoirs accumulated:

Toktogul reservoir –15,202 mcm or 594 mcm more than the scheduled amount (schedule - 14,608 mcm).

Andizhan reservoir –383 mcm or 348 mcm less than the scheduled amount (schedule -731 mcm).

Charvak reservoir –1,282 mcm or 418 mcm less than the scheduled amount (schedule - 1,700 mcm).

In-stream reservoirs - the scheduled water storage is 3,100 mcm by the end of the growing season.

The actual water storage by the end of the growing season was 2,513 mcm or 587 mcm less than the scheduled amount.

The in-stream reservoirs accumulated:

Bakhri Tochik reservoir - 1,684 mcm or 70 mcm less than the scheduled amount (schedule -1,754 mcm).

Shardara reservoir - 829 mcm or 517 mcm less than the scheduled amount (schedule - 1,346 mcm).

Table 2.4

Reservoir	Water volume, mcm								
	Actual, as of 1 April 2020	Scheduled, as of 1 October 2020	Actual, as of 1 October 2020	Difference (actual - schedule)		Actual, as of 1 April 2019	Actual, as of 1 October 2019	Difference (1 October - 1 April)		Difference (actual 1.10.2020 - actual 1.10.2019)
Upstream reservoirs										
Toktogul	**11,641**	14,608	**15,202**	594		13,563	17,214	3,651		-2,012
Andizhan	**820**	731	**383**	-348		969	706	-263		-324
Charvak	**470**	1,700	**1,282**	-418		548	1,751	1,203		-469
TOTAL:	**12,931**	17,039	**16,867**	-172		**15,080**	**19,671**	4,591		-2,805
In-stream reservoirs										
Bakhri Tochik	**3,070**	1,754	**1,684**	-70		2,825	2,154	-671		-470
Shardara	**4,879**	1,346	**829**	-517		5,175	1,134	-4,041		-305
TOTAL:	**7,949**	3,100	**2,513**	-587		**8,000**	**3,288**	-4,712		-775
OVERALL:	**20,880**	20,139	**19,380**	-759		**23,080**	**22,959**	-121		-3,579

VII. Water supply to the states (Table 2.5)

Water was supplied to the user states based on approved water withdrawal limits and submitted requests.

Over the growing season, water supply was:

- Republic of Kazakhstan: limit – 878 mcm, actual – 610 mcm;
- Kyrgyz Republic: limit – 246 mcm, actual – 141 mcm;
- Republic of Tajikistan: limit – 1,905 mcm, actual – 1,455 mcm;
- Republic of Uzbekistan: limit– 8,880 mcm, actual – 6,699 mcm;

Actual total water withdrawals by user states amounted to 8,904 mcm.

Table 2.5

Water user state	Water withdrawals, 1 April to 30 September 2020, mcm		
	limit	actual	%
Republic of Kazakhstan (Dustlik canal)	878	610	69
Kyrgyz Republic	246	141	57
Republic of Tajikistan	1,905	1,455	76
Republic of Uzbekistan	8,800	6,699	76
Total	**11,829**	**8,904**	75

VIII. Execution of the Protocol of the Working meeting by Kazakh, Tajik and Uzbek parties of 30 June 2020 and the Protocol of Work Group meeting between the Republic of Tajikistan and the Republic of Uzbekistan over July-August 2020 (Table 2.6).

Water availability in the Syr Darya basin was predicted to be 89% of the norm. Due to the expected low water level, the Republic of Kazakhstan held negotiations with the Kyrgyz Republic and reached an agreement on additional water release through the Uchkurgan HPP in the amount of 330 million m^3 by

receiving electricity for the Republic of Kazakhstan, with subsequent return to the Kyrgyz Republic.

The Republic of Kazakhstan and the Republic of Uzbekistan took measures and signed a trilateral protocol between the Republic of Kazakhstan, Tajikistan and Uzbekistan on additional water releases from the Bakhri Tojik reservoir.

According to the trilateral protocol, the Republic of Kazakhstan concluded an agreement with the Republic of Tajikistan on additional releases from the Bakhri Tojik reservoir in the amount of 306 million m^3 of water, at the expense of receiving electricity in the amount of 12.2 million kWh, with subsequent return to the Republic of Tajikistan.

A significant decrease in lateral inflow, compared to the forecast data in June and July, led to great difficulties in providing the necessary inflow to the Bakhri Tojik reservoir.

In this context, the Republic of Uzbekistan signed a Protocol with the Republic of Tajikistan on the additional drawdown of the Bakhri Tojik reservoir by 170 million m^3 than it was stipulated by the trilateral protocol.

According to this protocol, the Republic of Uzbekistan in return provided material-technical support in the form of pumps and fuel-lubricants for canal cleaning.

As a result of the above measures, including signing of trilateral and bilateral protocols, implementation of all protocol decisions by the Republics of Kazakhstan, Tajikistan, Kyrgyzstan and Uzbekistan, repeated working meetings by ICWC members and thanks to coordinated measures and joint efforts, water supply to irrigated land in the middle reaches of the Syr Darya River was uneasily provided.

Table 2.6

Comparative analysis of inflow into and releases from the Bakhri Tojik reservoir during the 2020 growing season

Trilateral protocol (additional releases Akjar+)	**July**			**Mean monthly**	**August**			**Mean monthly**
	220	220	220	**220**	155	155	50	**118**
Bilateral protocol (additional releases Akjar +)	**July**			**Mean monthly**	**August**			**Mean monthly**
		15	30	**15**	45	45	50	**47**
Total additional releases from the Bakhri Tojik reservoir by protocols (releases minus inflow)	**July**			**Mean monthly**	**August**			**Mean monthly**
	220	235	250	**235**	200	200	100	**165**
Actual	**July**				**August**			
	I	**II**	**III**	**Mean monthly**	**I**	**II**	**III**	**Mean monthly**
inflow	**242**	**193**	**224**	**220**	**231**	**241**	**280**	**252**
releases	**448**	**429**	**476**	**451**	**440**	**448**	**382**	**423**
difference (total Akjar +)	206	236	252	**231**	209	207	102	**172**

IX. Actual water delivery along the Dustlik Canal to the Kazakh territory, in line with the trilateral Protocol of 30 June 2020 (Table 2.7).

Table 2.7

Item	Unit	July				August			
		I	II	III	Mean monthly	I	II	III	Mean monthly
Protocol	**m^3/s**	**80**	**80**	**80**	**80**	**70**	**60**	**50**	**60**
	mcm	69	69	76	214	60	52	48	160
	cumulative	69	138	214		275	327	374	
Actual	**m^3/s**	**74**	**77**	**80**	**77**	**70**	**60**	**50,8**	**60**
	mcm	64	66	76	206	60	52	48	161
	cumulative	64	130	206		266	318	367	

Table 2.8 shows forecast schedule of operation of the Naryn-Syrdarya reservoir cascade for the 2020 growing season (taken into consideration at the 78th ICWC meeting).

Table 2.9 shows the actual operation regime of the Naryn-Syrdarya reservoir cascade in the 2020 growing season.

Table 2.8

Forecast-schedule of the Naryn-Syrdarya reservoir cascade for the growing season 2020

		April	May	June	July	August	September	Total, mcm
Toktogul reservoir								
Inflow to the reservoir	m3/s	266	572	871	750	521	298	
	mcm	689	1,532	2,258	2,009	1,395	772	8,656
Volume: beginning of the season	mcm	11,641	11,201	11,732	12,990	13,954	14,360	
end of the season	mcm	11,201	11,732	12,990	13,954	14,360	14,608	
Water releases from the reservoir	m3/s	435	373	385	389	368	202	
	mcm	1,128	999	998	1,042	986	524	5,676
including: 1. Internal needs	m3/s	435	373	343	348	327	202	
of the Kyrgyz Republic	mcm	1,128	999	888	932	876	524	5,346
2. Additional releases	m3/s			42	41	41		
(energy receipt)	mcm			110	110	110		330
Bakhri Tochik reservoir								
Inflow to the reservoir	m3/s	607	487	357	293	302	304	
(Akdjar GS)	mcm	1,574	1,304	925	786	810	787	6,185
Volume: beginning of the season	mcm	3,070	3,410	3,397	2,992	2,155	1,606	
end of the season	mcm	3,410	3,397	2,992	2,155	1,606	1,754	
Water releases from the reservoir	m3/s	471	450	440	523	432	200	
	mcm	1,221	1,205	1,141	1,402	1,158	518	6,645
Water withdrawals from the reservoir	м3/с	18	37	51	53	42	27	
Shardara reservoir								
Inflow to the reservoir	m3/s	700	600	450	250	200	250	
	mcm	1,814	1,607	1,166	670	536	648	6,441

		April	May	June	July	August	September	Total, mcm
Volume: beginning of the season	mcm	4,879	5,154	5,144	4,530	2,871	1,439	
end of the season	mcm	5,154	5,144	4,530	2,871	1,439	1,346	
Water releases from the reservoir	m3/s	530	550	600	720	650	250	
	mcm	1,374	1,473	1,555	1,928	1,741	648	8,719
Releases into the Kyzylkum canal	m3/s	57	32	46	106	51	11	
	mcm	147	85	119	285	136	28	800
Water discharge into Arnasay	m3/s	0	0	0	0	0	0	
depression	mcm	0	0	0	0	0	0	0
Water releases from the reservoir	m3/s	200	350	400	500	420	200	
(by BWO Syr Darya calculations)	mcm	518	937	1,037	1,339	1,125	518	5,475
Water releases	m3/s	485	339	294	580	446	139	
(avg. from 2013 to 2016)	mcm	1,257	908	762	1,553	1,195	360	6,035
Water releases from the reservoir	m3/s	623	460	382	634	489	151	
(avg. from 2013 to 2017)	mcm	1,615	1,232	990	1,698	1,310	391	7,236
Supply to the Aral Sea	m3/s	75	70	65	60	60	70	
	mcm	194	187	168	161	161	181	1,053
Charvak reservoir								
Inflow to the reservoir	m3/s	245	431	538	394	222	132	
(sum of 4 rivers)	mcm	635	1,155	1,394	1,055	596	342	5,176
Volume: beginning of the season	mcm	470	708	1,228	1,862	1,985	1,807	
end of the season	mcm	708	1,228	1,862	1,985	1,807	1,700	
Water releases from the reservoir	m3/s	153	237	293	348	289	173	
(Releases from Gazalkent HPP)	mcm	397	634	760	932	773	449	3,947
Andizhan reservoir								
Inflow to the reservoir	m3/s	104	189	247	163	45	44	
	mcm	269	505	639	436	120	113	2,083
Volume: beginning of the season	mcm	820	886	1,050	1,275	1,103	748	
end of the season	mcm	886	1,050	1,275	1,103	748	731	

		April	May	June	July	August	September	Total, mcm
Water releases from reservoir	m3/s	78	127	160	227	177	50	
	mcm	203	341	415	608	475	130	2,172

Table 2.9

		April (actual)	May (actual)	June (actual)	July (actual)	August (actual)	September(actual)	Total, mcm
Toktogul reservoir								
Inflow to the reservoir	m3/s	365	646	639	579	648	409	
	mcm	946	1,730	1,656	1,552	1,735	1,060	8679
Volume: beginning of the season	mcm	11,641	11,675	12,672	13,490	14,036	14,874	
end of the season	mcm	11,675	12,672	13,490	14,036	14,874	15,202	
Water releases from the reservoir	m3/s	371	274	316	376	339	279	
	mcm	962	734	819	1,006	908	724	5,154
including: 1. Internal needs	m3/s	371	274	302	311	297	279	
of the Kyrgyz Republic	mcm	962	734	783	834	795	724	4,833
2. additional releases	m3/s			14	64	42		
(energy receipt)	mcm	0	0	36	172	113	0	321
Bakhri Tochik reservoir								
Inflow to the reservoir	m3/s	551	346	275	220	252	310	
(Akdjar GS)	mcm	1428	926	714	588	674	804	5,134
Volume: beginning of the season	mcm	3,070	3,516	3,516	3,026	2,162	1,419	
end of the season	mcm	3,516	3,516	3,026	2,162	1,419	1,684	
Water releases from the reservoir	m3/s	412	313	365	451	423	142	
	mcm	1,068	837	947	1,209	1,132	367	5,560
Shardara reservoir								

		April (actual)	May (actual)	June (actual)	July (actual)	August (actual)	September(actual)	Total, mcm
Inflow to the reservoir	m3/s	453	354	81	63	90	146	
	mcm	1,174	947	210	170	240	379	3121
Volume: beginning of the season	mcm	4,879	4,857	4,633	3,510	1,688	881	
end of the season	mcm	4,857	4,633	3,510	1,688	881	829	
Water releases from the reservoir	m3/s	255	329	358	543	277	86	
	mcm	661	882	929	1,453	741	224	4,890
Releases into the Kyzylkum canal	m3/s	53	24	39	95	34	8	
	mcm	137	63	100	255	92	20	667
Supply to the Aral Sea	m3/s	46	42	27	28	10	26	
	mcm	119	112	69	75	26	67	468

**the year 2017 – wet year*

Charvak reservoir								
Inflow to the reservoir	m3/s	239	399	418	281	200	131	
(sum of 4 rivers)	mcm	620	1,069	1,083	752	536	339	4,399
Volume: beginning of the season	mcm	470	754	1,392	1,779	1,603	1,377	
end of the season	mcm	754	1,392	1,779	1,603	1,377	1,282	
Water releases from the reservoir	m3/s	115	152	265	297	247	149	
(Releases from Gazalkent HPP)	mcm	298	408	686	796	661	386	3,236
Andizhan reservoir								
Inflow to the reservoir	m3/s	89	110	75	46	76	60	
	mcm	229	294	193	124	203	156	1,200
Volume: beginning of the season	mcm	820	781	760	613	356	338	
end of the season	mcm	781	760	613	356	338	383	
Water releases from reservoir	m3/s	101	115	130	140	81	42	
	mcm	262	308	338	375	217	110	1,611

ON APPROVAL OF WATER WITHDRAWAL LIMITS AND OPERATION REGIMES OF THE RESERVOIR CASCADES IN THE AMUDARYA AND SYRDARYA RIVER BASINS FOR THE NON-GROWING SEASON 2020-2021[2]

I. Amudarya River basin

Table 1

Limits of water withdrawal from the Amu Darya River and water supply to the Aral Sea and the river delta for the non-growing season 2020-2021, mcm

River basin, state	Water withdrawal limits, mcm	
	Total annual (1.10.20-1.10.21)	Including non-growing season (1.10.20-1.04.21)
Total withdrawal from the Amu Darya River	55,424	15,730
of which:		
Republic of Tajikistan	9,854	2,880
Republic of Uzbekistan	1,570	370
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
Plus:		
- water supply to the river delta and the Aral Sea, including irrigation water releases and CDW	4,200	2,100
- sanitary and environmental releases into irrigation systems in:	800	800
Dashoguz province	150	150
Khorezm province	150	150
Republic of Karakalpakstan	500	500

[2]Information on the second item of the 79th ICWC meeting agenda

Table 2

Forecast operation regimes of the Nurek and Tuyamuyun reservoirs (October 2020 to March 2021)

Nurek reservoir	unit	Actual	Forecast					Total
		X	XI	XII	I	II	III	
Volume: beginning of the season	mcm	10,574	10,313	9,766	8,904	7,876	6,781	10,574
Inflow to the reservoir	m3/s	289	238	200	230	233	253	
	mcm	774	617	536	616	563	678	3,783
Water releases from the reservoir	m3/s	378	444	521	570	600	402	
	mcm	1,012	1,151	1,395	1,527	1,451	1,077	7,613
Volume: end of the season	mcm	10,313	9,766	8,904	7,876	6,781	6,217	6,217
Accumulation (+) drawdown (-)	mcm	-261	-547	-862	-1,028	-1,095	-564	-4,357

Tuyamuyun reservoir	unit	Actual	Forecast					Total
		X	XI	XII	I	II	III	
Volume: beginning of the season	mcm	2,458	2,416	2,934	4,009	4,895	4,305	2,458
Inflow to the reservoir	m3/s	444	389	570	550	541	500	
	mcm	1,189	1,008	1,527	1,473	1,308	1,339	7,844
Water releases from the reservoir	m3/s	460	189	169	219	785	941	
	mcm	1,232	490	453	587	1,899	2,520	7,180
Volume: end of the season	mcm	2,416	2,934	4,009	4,895	4,305	3,122	3,122
Accumulation (+) drawdown (-)	mcm	-42	518	1,075	886	-590	-1,183	664

II. Syrdarya River basin

I. Forecast of inlfow

On the 28th of September 2020, UzHydromet provided the forecast for the non-growing season 2020-2021.

Moreover on the 6th of October 2020, the expected operation regimes of the Toktogul reservoir were provided by the Coordination Dispatch Center (CDC) “Energy”, including the forecast operation regimes of the Andizhan and Charvak reservoirs by the Ministry of Water Mangement of the Republic of Uzbekistan.

According to the data, the inflow to upstream reservoirs was expected as follows:

- 100% to the Toktogul reservoir;
- 88% to the Andizhan reservoir;
- 101% of the norm to the Charvak reservoir (sum of 4 rivers), including inflow to the Charvak reservoir by sum of 3 rivers - 102 % and inflow from the Ugam River – 95 % of the norm.

The total lateral inflow is expected to be 99 % of the norm.

In total, water content is expected to be 99% of the norm in the Syr Darya basin.

II. Total inflow (Table 2.10)

Over the non-growing season, the norm of total inflow in the Syr Darya basin is 16,278 mcm. The forecast inflow is 16,075 mcm (99% of the norm).

For the past 2019-2020 non-growing season, the total lateral inflow in the Syr Darya basin was forecasted to be 15,689 mcm. The actual inflow was 15,860 mcm, which is 172 mcm more than the forecast or 101% of it.

III. Inflow to upstream reservoirs (Table 2.10)

The norm of inflow to the upstream reservoirs of the Naryn-Syrdarya cascade is 5,203 mcm over the non-growing season. The inflow is forecasted to be 5,102 mcm (98% of the norm).

The norm of inflow to the Toktogul reservoir is 2,861 mcm. It is forecasted to be 2,861 mcm (100% of the norm).

The norm of inflow to the Andizhan reservoir is 934 mcm. It is forecasted to be 822 mcm (88% of the norm).

The norm of inflow to the Charvak reservoir (sum of 4 rivers) is 1,408 mcm, including from the Ugam River – 166 mcm. The forecast inflow is 1,419 mcm (101% of the norm), including 158 mcm from the Ugam River.

IV. Lateral inflow (Table 2.10)

The norm of lateral inflow is 11,075 mcm. The forcast lateral inflow is 10,973 mcm (99% of the norm).

Table 2.10

Name	Non-growing season, mcm							
	2020-2021			2019-2020				
	norm	**forecast**	**forecast/ norm (%)**	**norm**	**forecast**	**forecast/ norm (%)**	**actual**	**actual / forecast** (%)
Inflow to upstream reservoirs								
Toktogul	2,861	2,861	100	2,875	2,875	100	3,131	109
Andizhan	934	822	88	938	813	87	684	84
Charvak (sum of 4 rivers) including:	1,408	1,419	101	1,414	1,425	101	1,502	105
- Charvak (sum of 3 rivers)	1,243	1261	102	1,248	1,267	102	1,365	108
- Ugam River	166	158	95	166	158	95	137	86
Total	5,203	5,102	98	5,227	5,113	98	5,317	104
Lateral inflow								
Toktogul – Uchkurgan	398	398	100	400	380	95	399	105
Andizhan – Uchtepe	2,518	2,360	94	2,530	2,610	103	2,681	103
Uchkurgan, Uchtepe – Bakhri Tochik	4,365	4,396	101	4,391	4,107	94	4,223	103
Bakhri Tochik – Shardara	2,953	2,985	101	2,971	2,608	88	2,378	91
Gazalkent–Chinaz (excluding Ugam)	841	833	99	846	870	103	862	99
Total	11,075	10,973	99	11,138	10,575	95	10,543	100
Overall (total inflow)	16,278	16,075	99	16,365	15,689	96	15,860	101

V. Water storage in the reservoirs (Table 2.11)

As of October 2020, the total water storage in the reservoirs is 19,380 mcm (including 7,963 mcm of dead storage). The water storage, excluding dead storage, is 11,417 mcm.

As of the 1st of October 2019, water storage in the reservoirs was 22,959 mcm (including 7,963 mcm of dead storage). The water storage in the reservoirs, excluding dead storage, was 14,996 mcm.

By the beginning of the growing season 2019-2020, the water storage was 3,579 mcm more than by the beginning of the non-growing season 2020-2021.

Available water resources of the Naryn-Syrdarya reservoir cascade (total inflow plus water storage in the reservoirs, excluding dead storage) are **27,492 mcm** for the non-growing season 2020-2021.

(16,075 mcm+11,417 mcm=27,492 mcm)

Table 2.11

Reservoir	Reservoir storage, mcm		
	Actual as of October 1, 2020	Actual as of October 1, 2019	Dead storage
Upstream reservoirs			
Toktogul	15,202	17,214	5,500
Andizhan	383	706	150
Charvak	1,282	1,751	426
TOTAL:	16,867	19,671	6,076
In-stream reservoirs			
Bakhri Tochik	1,684	2,154	917
Shardara	829	1,134	970
TOTAL:	2,513	3,288	1,887
OVERALL:	19,380	22,959	7,963

VI. Water releases from reservoirs (Table 2.12)

According to the forecast operation regime of the Naryn-Syrdarya reservoir cascade, 29,247 mcm is planned to be released from the reservoirs in the non-growing season 2020-2021.

According to the forecast operation regime of the Naryn-Syrdarya reservoir cascade for the non-growing season 2019-2020, 32,879 mcm were planned to be released. However, actual releases from the reservoirs were 30,170 mcm (2,709 mcm less than the scheduled amount).

Table 2.12

Reservoir	Water releases, mcm		
	Forecast schedule, 2020-2021	Forecast schedule, 2019-2020	Actual, 2019-2020
Upstream reservoirs			
Toktogul	8,679	9,415	8,699
Andizhan	480	618	555
Charvak (discharge of the Gazalkent HPP)	1,637	2,477	2,465
TOTAL:	10,796	12,510	11,719
In-stream reservoirs			
Bakhri Tochik	11,256	11,926	11,896
Shardara	7,195	8,443	6,555
TOTAL:	18,451	20,369	18,451
OVERALL:	29,247	32,879	30,170

VII. Water withdrawal limits (Table 2.13)

Taking into account requests submitted by water user states, the following water withdrawal limits are proposed for the non-growing season.

The total water withdrawal limits of all states are 4,257 mcm for the non-growing season.

Table 2.13

Water user state	Based on scheme	Based on request	Difference (scheme-request)
I reach –Toktogul - Uchkurgan			
Total to Uchkurgan	1,235	1,376	141
Including Republic of Uzbekistan	1,172	1,252	80
Republic of Tajikistan	58	84	26
Kyrgyz Republic	5	40	35
II reach – Uchkurgan - Bakhri Tochik			
Total to Bakhri Tochik	311	247	-64
Including Republic of Uzbekistan	152	171	19
Kyrgyz Republic	15	7	-8
Republic of Tajikistan	144	69	-75
III reach – Bakhri Tochik - Shardara			
Total to Shardara	2,684	2,635	-49
Including Republic of Uzbekistan	2,023	1,924	-99
Republic of Kazakhstan	430	498	68
Republic of Tajikistan	231	212	-19
Total Toktogul - Shardara			
Syrdarya (to Shardara)	4,230	4,257	27
Including Republic of Uzbekistan	3,347	3,347	0
Republic of Kazakhstan	430	498	68
Kyrgyz Republic	20	47	27
Republic of Tajikistan	433	365	-68

According to the long-term annual average data, water supply to the Aral Sea and the Aral Sea region is expected to be 2,402 mcm in the non-growing season.

Over the non-growing season 2019-2020, water supply to the Aral Sea and the Aral Sea region, as measured at Karateren GS, was 1,952 mcm.

The schedule of operation regime of the Naryn-Syrdarya reservoir cascade over the period from 1 October 2020 to 31 March 2021 was developed according to the forecast and based on water storage in the reservoirs and requests submitted by water user states (Table 2.14).

Table 2.14

Forecast operation schedule of the Naryn-Syrdarya reservoir cascade, 1 October 2020 to 31 March 2021

		October	November	December	January	February	March	Total, mcm
Toktogul reservoir								
Inflow to the reservoir	m3/s	237	202	168	159	158	166	
	mcm	635	524	450	426	382	445	2,861
Volume: beginning of the season	mcm	15,202	14,812	13,944	12,707	11,392	10,274	
end of the season	mcm	14,812	13,944	12,707	11,392	10,274	9,371	
Water releases from the reservoir	m3/s	383	535	630	650	620	500	
	mcm	1,025	1,386	1,687	1,741	1,500	1,339	8,679
Bakhri Tochik reservoir								
Inflow to the reservoir	m3/s	455	871	968	936	941	727	
(Akdjar GS)	mcm	1,218	2,259	2,592	2,507	2,276	1,948	12,799
Volume: beginning of the season	mcm	1,684	2,617	3,037	3,264	3,368	3,472	
end of the season	mcm	2,617	3,037	3,264	3,368	3,472	3,439	
Water releases from the reservoir	m3/s	105	720	900	920	920	750	
	mcm	281	1,866	2,411	2,464	2,226	2,009	11,256
Shardara reservoir								
Inflow to the reservoir	m3/s	175	667	902	950	971	780	
	mcm	470	1,728	2,415	2,544	2,348	2,089	11,594
Volume: beginning of the season	mcm	829	995	2,076	2,790	3,848	4,732	
end of the season	mcm	995	2,076	2,790	3,848	4,732	5,092	
Water releases from the reservoir	m3/s	86	247	630	550	600	640	
	mcm	230	639	1,687	1,473	1,452	1,714	7,195
Supply to the Aral Sea	m3/s	18	82	195	225	210	190	
	mcm	49	212	522	603	508	509	2,402
Charvak reservoir								
Inflow to the reservoir	m3/s	109	97	83	73	72	105	
(sum of 4 rivers)	mcm	292	253	222	196	175	281	1,419
Volume: beginning of the season	mcm	1,282	1,213	1169	1,122	1,058	1,015	
end of the season	mcm	1,213	1,169	1,122	1,058	1,015	1,055	

		October	November	December	January	February	March	Total, mcm
Water releases from the reservoir	m3/s	134	113	100	96	90	90	
(Discharge from the Gazalkent HPP)	mcm	358	294	268	258	218	241	1,637
Andizhan reservoir								
Inflow to the reservoir	m3/s	32	48	65	55	53	60	
	mcm	85	125	174	147	129	161	822
Volume: beginning of the season	mcm	383	263	290	447	578	693	
end of the season	mcm	263	290	447	578	693	725	
Water releases from the reservoir	m3/s	77	38	6	6	6	48	
	mcm	206	98	16	16	15	129	480

SIC ICWC's ACTIVITIES AS A FOLLOW UP TO INITIATIVES OF THE HEADS OF IFAS FOUNDER-STATES VOICED AT XII SUMMIT IN TURKMENBASHI[3]

General information

XII meeting of the Council of Heads of IFAS Founder-States took place in the city of Turkmenbashi on the 24th of August. The Heads of State put forward a number of initiatives to address existing problems. The follow up to these initiatives is discussed at ICWC meetings.

SIC ICWC reported on the item "On implementation of the proposals and initiatives voiced at the Summit of the Heads of IFAS founder-states" at 77th (November 5-6, Almaty) and 78th (April 10, videoconference) meetings. Decisions of the last meeting say that the information was duly taken into consideration.

[3] Information of the third item of 79th meeting's agenda

SIC ICWC's activity as a follow up to the initiatives

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

As part of the second call for proposals announced by the UN Multi-Partner Human Security Trust Fund (MPHSTF) for the Aral Sea region, SIC ICWC developed project proposals on (1) Automation of Tuyamuyun reservoir's structures (Amu Darya River); (2) Automation of gauging stations and hydraulic structures along the Syr Darya River. The projects did not receive funding due to refocusing of funds on the fight with coronavirus.

In this context, SIC ICWC continued (1) negotiations with the Uzbek Ministry of Investments and Foreign Trade to get support for the Syr Darya project as part of Uzbekistan's initiatives and agreements of IFAS founder-states on joint work for mobilization of donors' funds for automation of gauging stations all over the Syr Darya basin; (2) promotion of project proposals through UNDP mission in Uzbekistan.

2. Establishment of an international water-energy consortium

SIC ICWC developed proposals on the establishment of a water-energy consortium of Central Asia that were published in SIC's collection of scientific papers (issue 17, 2020).

The possibility of establishing a water-energy consortium or other economic mechanism was addressed in the project "Regional mechanisms for the low-carbon, climate-resilient transformation of the energy-water-land Nexus in Central Asia" (Government of German, International Climate Initiative 2020, partners – OECD, EBRD, UNECE, SIC ICWC).

3. Water diplomacy and IWRM implementation

SIC developed the following policy briefs: (1) Lessons and vision for adoption of participative and hydrographic approaches in the Central Asia water sector; (2) Basin planning: theory and practices; (3) Establishment and functioning of National Water Councils: theory and practices; (4) Water pricing systems in far abroad countries and in Central Asia; (5) Operating procedures of Basin Councils (submitted to ICWC members and head of executive bodies for feedback).

SIC ICWC made assessment of the degree of implementation of IWRM in Uzbekistan in line with the methodology and approaches proposed by UNEP

on Goal 6.5.1. It was underlined that in assessing the effectiveness of IWRM it is necessary to consider all IWRM principles and also the actual effect on water and land productivity and water conservation.

A discussion paper on regional organizations under IFAS umbrella was drafted for the East-West Institute and the Conrad Adenauer Foundation programme "Multinational Development Policy Dialogue" that planned to organize a high-level conference on international hydro-diplomacy.

There is ongoing analysis of how frequently the water issues have been addressed in CA country statements during general debates of the UN General Assemblies since 1992 to 2020.

4. Water conservation and rational water use

SIC in partnership with the Wurzburg University developed an online tool "Water Use Efficiency Monitor in Central Asia" (WUEMoCA), which allowed monitoring of water use efficiency in irrigated zones and operational planning and correction of water use. As a follow up of this work, SIC together with German partners develops a project proposal "Digital innovations for sustainable irrigation water distribution and water conservation in the Aral Sea basin" under the call for Uzbek-German joint scientific projects.

As part of the improvement of ICWC activity on Direction 1 "Water conservation", SIC ICWC prepared the policy brief "Using advanced FAO methodology for assessment of crop water requirements in irrigated agriculture of Central Asia." The Center also finalizes the review of Uzbekistan' experience in water conservation and collects data and materials in this area in other CA countries.

Based on the results of first analytical review on water consumption norms, it is proposed to consider a need for complete revision of the norms using the FAO methodology adjusted for contribution from groundwater, which as implementation in the IWRM-Fergana Project showed helped to reduce substantially irrigation water withdrawal and manage successfully the dry year 2008. This will make good contribution to mitigation and adaptation measures.

5. Water accounting

SIC *keeps ten-day monitoring* of water balance in the Amu Darya and Syr Darya basins and regularly informs on balance discrepancies, if any.

Table below shows the results of analysis of runoff discrepancy over 2015-2020. The analysis produces quite illogical – in terms of river channel hydraulics – results: in wet years, when runoff and discharge along the river are

maximal, runoff discrepancies are minimal. Accordingly, along the Amu Darya, the runoff discrepancy is 7.83 km^3 in wet year and 12.5-16.2 km^3 in other years. The similar situation is for the Syr Darya basin: 3.22 km^3 or close to design value under the Master plan in 2016-2017 and 6.44-8.25 km^3 in other years. It may be advisable to come back to rating losses by each river reach, proceeding from long-term annual losses and past data, while the difference between runoff discrepancy and loss rates would be assigned to a country (or countries), in the territory of which this discrepancy occurred. It is suggested to form a commission among stakeholders.

On the Syr Darya Basin. The Kazakh Minister of ecology, geology and natural resources M. Mirzagaliev met with the Uzbek Minister of water management Sh. Khamraev and agreed on joint work on the water balance of the Syr Darya River (May 14, Shymkent). In pursuance of the protocol decision, SIC ICWC and BWO Syr Darya made and analysis and provided the results of analysis of water and open-channel balance by water-management area for the growing season 2019-2020, with detailed explanations and calculations.

In line with a contract with BWO Syr Darya, SIC completed: (1) research on more accurate determination of open-channel balance items for the Syr Darya and balance items for reservoirs located along the reach of Toktogul reservoir – Uchkurgan hydroscheme – Bakhri Tojik reservoir, Farkhad hydroscheme – Chardara reservoir and development of a calculation routine; (2) Research on more accurate determination of open-channel balance items for the Karadarya and the Chirchik rivers and development of a calculation routine.

Dynamics of water losses (-) and unrecorded inflow (+) estimated as residual items of water balance (discrepancy) for the Amu Darya and Syr Darya basins by season, 2016 - 2020

River, reservoir		2015-2016			2016-2017			2017-2018			2018-2019			2019-2020		
		non-grow	grow	year	non-grow	grow	year	non-grow	grow	year	non-grow	grow	year	non-grow	grow	year
1. Amu Darya Basins																
1.1.Reservoirs																
Nurek	km^3	0.03	0.01	**0.04**	0.021	0	**0.02**	-0.02	0.02	**0.00**	-0.489	0.641	**0.15**	-0.68	0.62	**-0.06**
	%	0.72	*0.1*	*0.2*	*0.55*	*0*	*0.1*	*0.5*	*0.1*	*0.0*	*13.0*	*4*	*0.7*	*16*	*5.0*	*0.3*
Tuyamuyun	km^3	-2.2	-2.64	**-4.80**	0.17	0.014	**0.18**	-1.53	-2.28	**-3.81**	-2.133	-7.64	**-9.77**	-0.761	-3.12	**-3.88**
	%	25	*14*	*-18*	*-3*	*0*	*0.5*	*24*	*15*	*18*	*24*	*25*	*25*	*11*	*18.0*	16
1.2.Amu Darya																
Middle reaches	km^3	-3.1	-2.64	**-5.78**	0.19	-4.27	**-4.08**	0.47	-4.23	**-3.75**	-0.52	-0.09	**-0.61**	-0.46	-3.95	**-4.41**
	%	19.16	*7*	*11.0*	*2*	*9*	*7*	*4*	*13*	*8.1*	*3*	*0*	*1.0*	*3*	*12*	*9.1*
Lower reaches	km^3	1.49	-3.48	**-1.99**	-1.32	-2.63	**-3.96**	-1.76	-3.83	**-5.59**	-1.58	-4.36	**-5.94**	-2.03	-2.98	**-5.01**
	%	-23.3	*28*	*-10.7*	*30*	*13*	*-16*	*36*	***40***	***-38***	***37***	*29*	*-31*	*34*	*30*	32
TOTAL in the basin	km^3	**-3.80**	**-8.75**	**-12.5**	**-0.94**	**-6.89**	**-7.83**	**-2.84**	**-10.3**	**-13.2**	**-4.72**	**-11.5**	**-16.2**	**-3.93**	**-9.43**	**-13.4**
2.Syr Darya Basin																
2.1.Reservoirs																
Toktogul, Andizhan, Charvak	km^3	-0.1	0.04	**-0.05**	-0.26	-0.68	**-0.93**	-0.34	0.24	**-0.10**	-0.46	-0.46	**-0.93**	-0.34	-0.34	**-0.68**
	%	2	*0.2*	*0.2*	4	*-3*	*6.5*	*5*	*1.4*	*0.4*	*2.7*	*-3*	*2.9*	*6*	*2*	*3.5*
Bakhri Tojik	km^3	-0.8	-0.61	**-1.41**	-0.37	-0.31	**-0.68**	-0.46	-0.66	**-1.12**	-0.32	-0.32	**-0.65**	0.36	-0.54	**-0.18**
	%	7	*11*	*8*	3	*3*	*5*	*3*	*10*	*5*	*5*	*5*	*3*	*3*	*11*	*1*
Shardara	km^3	-0.4	-1.55	**-1.96**	0.78	1.04	**1.82**	0.77	-1.37	**-0.60**	-0.79	-0.79	**-1.58**	0.06	-1.61	**-1.55**
	%	4	*25*	*11*	6	*11*	*16*	*6*	*39*	*4*	*15*	*15*	*1*	*1*	*52*	*12*
Syr Darya	km^3	-1.9	-1.07	**-3.02**	-2.05	-1.38	**-3.43**	-3.89	-1.28	**-5.17**	-3.72	-0.87	**-4.58**	-4.74	-1.11	**-5.85**

River, reservoir		2015-2016			2016-2017			2017-2018			2018-2019			2019-2020		
		non-grow	grow	year	non-grow	grow	year	non-grow	grow	year	non-grow	grow	year	non-grow	grow	year
	%	11.73	*7*	*9*	11	*6*	*17*	*20*	*8*	*15*	*20*	*6*	*14*	*26*	*8*	*19*
Total in the basin	km^3	**-3.26**	**-3.19**	**-6.44**	**-1.90**	**-1.32**	**-3.22**	**-3.92**	**-3.07**	**-6.99**	**-5.29**	**-2.44**	**-7.74**	**-4.65**	**-3.6**	**-8.25**
GRAND TOTAL	km^3	**-7.05**	**-11.9**	**-19**	**-2.84**	**-8.21**	**-11.1**	**-6.76**	**-13.4**	**-20.1**	**-10.02**	**-13.9**	**-23.9**	**-8.59**	**-13.0**	**-21.6**

SIC ICWC develops a project proposal “Development of modern technology for water accounting at large structures and canals” together with the German partner (SEBA Hydrometrie & Co. KG) for submission under the call for Uzbek-German joint scientific projects.

On the Amu Darya Basin. SIC ICWC prepared and submitted to ICWC members and heads of executive bodies: (1) analytical materials on expected irrigation expansion in the Amu Darya basin, taking into account increasing water withdrawal by Afghanistan; (2) analytical report on available water supply in the Amu Darya River basin as of 1st of August and a proposal to consider at next ICWC meeting the issue related to adoption of penalties for over-withdrawal and excessive water losses in the territories of riparian countries. No answer has been received.

SIC negotiated terms for more precise definition of the Amu Darya river channel balance items and development of relevant calculation routine for BWO Amu Darya. The Center supports BWO’s proposal for carrying out surveys to determine more precisely actual water losses along the Amu Darya and other balance items. SIC believes that particular attention should be paid to the river reach from Birata section to Tuyamuyun section, where reservoirs of TMHS are located and supplement the surveys by calculations of open-channel water balance.

Comments were given on the analysis of situation in the Amu Darya and Syr Darya basins carried out by the Economists Intelligent Unit’s Blue Peace Index methodology (https://bluepeaceindex.eiu.com/).

For implementation of work plan of the working group “Improvement of quality and accuracy of water accounting”, SIC ICWC:

(1) developed project proposals “Development of a feasibility study for the automation of Tuyamuyun reservoir on the Amu Darya River” and “Development of a feasibility study for the automation of gauging stations and hydraulic structures along the Syr Darya River”;

(2) agreed with members of working group from BWO AmuDarya and BWO SyrDarya the Guidelines on measuring flow rates in canals. The review of water measurement devices for pressure pipelines and open canals and the note on automation of the Amu Darya and the Syr Darya (smart rivers) are finalized.

Two new sections “Water-management situation in the Amu Darya Basin” and “ Water-management situation in the Syr Darya Basin” were added to the ICWC web-site. These sections will contain analytical notes on situation in basins every ten-day. This should increase transparency and openness of ICWC activity.

6. Drafting the Regional program for rational water use in CA

As a follow up to the proposal of the President of Uzbekistan Sh. Mirziyoyev, SIC ICWC with the engagement of CA country experts and the support of OECD and financing by German Government developed the Diagnostic Report on rational water use in Central Asia as of 2019 as the basis for the Regional program for rational water use in CA.

The Diagnostic Report has got positive feedback from a range of water agencies, research institutes, higher educational institutions and regional organizations of CA countries.

The Diagnostic Report finalized on the basis of the comments received was published as a discussion document under the title “Overview of the use and management of water resources in Central Asia” (https://issuu.com/oecd.publishing/docs/final_report_eng_issuu).

The following is in process:

(1) negotiations with the Center for Central Asia Research of Corvinus University, Budapest for joint work under preparation of the research program “Water as a driver of sustainable recovery: economic, institutional and strategic aspects of water resources management in Central Asia” aimed to address economic, financial, and strategic aspects of water cooperation in CA. SIC ICWC submitted its opinion to Uzbek MFA and had video-discussion with Marton Krasznai, Scientific Director of the Center;

(2) preparatory work to the project “Regional mechanisms for the low-carbon, climate-resilient transformation of the energy-water-land Nexus in Central Asia” (Government of German, International Climate Initiative 2020, partners – OECD, EBRD, UNECE, SIC ICWC).

7. Mitigation of the Aral Sea disaster

Regular RS-based monitoring (once in 2 months) is conducted over the status of lakes and wetlands in the Aral Sea and the Aral Sea region. The monitoring results are uploaded on the Portal - www.cawater-info.net. In case of deterioration of the situation, the Center timely informs relevant ministries. For instance, SIC informed concerned agencies on the deteriorating status of lakes in the Aral Sea region and the exposed seabed by 1st of August that was related with failure to fulfill the ICWC plan on water supply to the delta. In this context,

SIC insisted on elaboration of a project for getting 3 km^3 of drainage water of Ozerniy collecting drain back into the Amu Darya delta.

The project proposal “Development of the system of monitoring over water resources and natural environment in the Aral Sea region and on the exposed seabed (Karakalpakstan)” was updated and submitted under the call for proposals announced by MPHSTF for the Aral Sea region.

The second ground-based expedition (May 28 – June 26) was organized to the exposed Aral Sea bed in partnership with UNDP- MPHSTF under the project “Addressing the urgent human insecurities in the Aral Sea region through promoting sustainable rural development”. The expedition covered 500-600 thousand ha (from Djiltyrbas to Kok-Darya). A summary report was drafted on the results of the expedition. The publication titled “Monitoring of the exposed Aral Sea bed” is under preparation.

The book “Aral Sea and the Aral Region” was published by UNESCO with the involvement of SIC ICWC. The book summarizes SIC’s work on monitoring of the status and analysis of the socio-economic situation in this area since 1994 to 2018 (https://unesdoc.unesco.org/ark:/48223/pf0000374222).

8. Scientific cooperation

As a follow up to Uzbek President’s initiative on undertaking joint multidisciplinary research on the basis of SIC ICWC and SIC ICWC, efforts were continued on the establishment and development of the Central Asian Expert Platform for water security, sustainable development and future studies. In this context, the following work was completed:

SIC ICWC applied to Uzbek MFA with the proposal to establish the Platform and SIRSI proposed to organize a work meeting for further discussion. A meeting was held with participation of representatives of Uzbek MFA, SIRSI and SIC ICWC leadership for promotion of the establishment of the Expert Platform. The Conceptual note on the establishment of the Platform was finalized based on the received feedback.

Information was disseminated among ICWC members and heads of executive bodies on work done on the Platform, focusing on the need for elaboration. No feedback has been received.

The first meeting of Platform’s experts was held in June 2020 in the format of videoconference. Heads of national teams from CA countries and SIC ICWC participated in the meeting. The information on progress in the formation of the Platform was presented and near-term tasks were set.

The project “Support to the network of Russian speaking water management organizations of countries in Eastern Europe, the Caucasus and Central Asia” is under negotiation with UNECE. The project plans a set of activities on the development of the Expert Platform with the engagement of country experts: (1) development of a free database of experts on water, environment and sustainable development; (2) generalization of best practices on transboundary water cooperation; (3) analytical research “Water resources, environment and transboundary cooperation in UNGA general debates: statements of CA countries, 1992-2020” and drafting of recommendations for wider cooperation.

SIC ICWC together with partners from OECD, UNECE and EBRD made efforts to launch the preparatory phase of the Project “Regional mechanisms for the low-carbon, climate-resilient transformation of the energy-water-land Nexus in Central Asia” (Government of German, International Climate Initiative 2020). The project addresses also the development of the Expert Platform.

This initiative of scientific cooperation was voiced at the following workshops: (1) Water diplomacy: a tool for climate action? (https://adelph.it/WATCHwaterdiplo) as part of SIWI World Water Week (24.08.2020); (2) Adoption of green technology and innovations in the Aral Sea region as part of the new EU strategy for Central Asia: cooperation between Uzbekistan and the European Union, organized by the Strategic and Inter-regional Studies Institute and the European Institute for Asian Studies (22.10.20).

9. Drafting ASBP-4

According to the final document of the 3rd meeting of RWG on ASBP-4 (25-26.11.19, Ashgabat), EC IFAS was to submit the draft ASBP-4 for approval by the countries at the beginning of December 2019 and for further approval by IFAS Board.

At the second consultative meeting of the Heads of CA State (29 November, Tashkent), the chairmanship of IFAS was transferred to Tajikistan for a period from 2019 to 2022.

10. IFAS reformation

According to the final document of the 3rd meeting of RWG on institutional and legal improvement of IFAS, members of the Group were recommended to submit country proposals.

SIC ICWC prepared and distributed among ICWC members and heads of executive bodies:

(1) proposal to elaborate on measures for radical improvement of ICWC activity for consideration at the next meeting;

(2) proposals on development and radical improvement of ICWC activity to enhance its role in regional water cooperation, including activation of working groups;

(3) published comments by Prof. Ibatullin, former head of EC IFAS in Kazakhstan, on participation of Kyrgyzstan in activities of IFAS and ICWC to K.Larionov's paper "Central Asia transboundary water: place of Kyrgyzstan in saving the Aral Sea" (CABAR asia 14.07.20).

In this context, SIC ICWC reminded on earlier submitted to ICWC members List of measures, which also indicated to a need for reaching consensus with the Kyrgyz party on broadening of powers of regional organizations, improvement of their performance and a procedure for fulfillment of mutual obligations of regional and national bodies. SIC ICWC put forward the initiative to establish a consensus panel (or group) among representatives of ICWC members to elaborate feasible solutions under umbrella of ICWC.

In continuation of works on strengthening ICWC and other regional organizations' attention to development of prospective strategic activity in accordance with the challenges of time, critical statements published in Indian Times and Geneva Water Hub, directly pointing to the need for "concrete actions towards a long-term, positive vision of water resources", and a proposal to discuss these issues at the 79th ICWC meeting were distributed among ICWC members and heads of executive bodies.

ANALYSIS OF HYDROLOGICAL CONDITIONS IN THE SYR DARYA AND AMU DARYA RIVER BASINS OVER THE GROWING SEASON 2020[4]

1 Syr Darya River basin

The actual inflow to the upstream reservoirs in the Syr Darya basin (Toktogul, Andizhan, and Charvak reservoirs) was 14.3 km³ or 90% of the forecast and 78% of the norm for the growing season. The total lateral inflow to the Naryn and the Syr Darya (in the reaches up to the Shardara reservoir) was 7.6 km^3, including 1.52 km^3 from the Karadarya River, 0.31 $км^3$ from the Chirchik River, and 5.79 km^3 from collector-drainage flow, CDF (return flow) and small rivers.

By the beginning of the growing season, the upstream reservoirs (Toktogul, Andizhan, and Charvak) have accumulated 12.93 km³. By the end of the growing season, the total capacity in the upstream reservoirs was 16.87 km³, i.e. 3.93 km^3 were diverted from the rivers.

The inflow from the Naryn River to the Toktogul reservoir was 8.68 km^3. This figure almost coincides with the forecast. Water releases from the reservoir were 5.15 km³ or 91% of the volume scheduled (planned) by BWO Syr Darya. Water diversion into the reservoir from the Naryn River amounted to -3.53 km^3, which is 18% more than scheduled by BWO Syr Darya.

Water storage in the Bakhri Tochik reservoir was 3.07 km³ by the beginning of the growing season and 1.68 km³ by the end of the growing season. The inflow to the Bakhri Tochik reservoir and water discharge into the river amounted to 5.13 km³ and 5.52 km³, respectively. Analysis of operation of the Bakhri Tochik reservoir showed that water supply to the reservoir was 1.05 km³ less than planned by BWO Syr Darya, and water releases from the reservoir were 1.13 km³ less than scheduled by BWO Syr Darya. Water losses from the reservoir, calculated by the water balance method, amounted to 0.54 km^3, which almost coincided with the forecast volume.

In the Shardara reservoir, water storage was 4.88 km³ by the beginning of the growing season and 0.83 km³ by the end of the growing season. The inflow to the Shardara reservoir was only 3.12 km³ or 52% of the forecast (this is due to

[4] Prepared in SIC ICWC by A. Sorokin and I. Ergashev

high withdrawal from the Toktogul reservoir as compared to the planned schedule and lower lateral losses than expected); water releases from the reservoir were 5.56 km³, including 4.89 km³ into the river; no water was released into the Arnasay reservoir from the Shardara hydroscheme. The balance discrepancy of the reservoir was -1.61 km^3; which indicates to water losses in the reservoir and perhaps inaccurate accounting of the flow into the reservoir (excessive flow).

According to the Aral-Syrdarya Basin Water Administration's data, the Koksaray reservoir almost have not accumulated water in the growing season. However, 1, 774 Mm^3 were drawn down from April till July.

Water supply to Aral and the Aral Sea region (Karateren GS) amounted to 0.484 km^3 by the data from Kazhydromet and 0.468 km^3, according to BWO Syr Darya and the Committee for Water Resources of the Republic of Kazakhstan. The latter figure was used in the calculations of the channel balance.

The total water withdrawal from the Naryn River and the Syr Darya River was 8.93 km³ or 75% of the limit in the reaches up to the Shardara reservoir. Over the growing season 2020, water withdrawal was 2.9 km^3 less than planned limits approved by the ICWC meeting.

Water withdrawal from the Dustlik canal was 610 Mm^3 for the Republic of Kazakhstan, 141 Mm^3 for the Kyrgyz Republic, 1,455 Mm^3 for the Republic of Tajikistan, and 6,699 Mm^3 for the Republic of Uzbekistan.

Water availability was estimated at 76% for the Republic of Uzbekistan, 69% for the Republic of Kazakhstan, and 57% for the Kyrgyz Republic. Water availability in the Republic of Tajikistan was 76%. It was uneven by state and river reach (Tables 1.1 and 1.4).

Table 1.5 shows water allocation against limits, actual water withdrawal by balancing sites, in % of the total limits and water withdrawals in the basin. The Toktogul-Uchkurgan reach accounts for 38% of the total water withdrawal. That is 5% more than the water allocation limit, while the Bakhri Tochik - Shardara reach - 50% or 8% less than water allocation limit.

The highest shortage of water (% of the limit) was observed in the middle reaches in the Bakhri Tochik - Shardara reservoir reach - 34% (Table 1.4), and compared to the upstream reach, the shortage increased by 33 %.

Analysis of water balance in basin's reservoirs (Table 1.3) has revealed negative balance discrepancy (losses) -2.49 km³ in total, including 0.34 km^3 in the upstream reservoirs (Toktogul, Andizhan, and Charvak), 1.61 km^3 in the Shardara reservoir, and 0.54 km^3 in the Bakhri Tochik reservoir. Open-channel balance discrepancy in the Toktogul-Shardara reach was negative (losses) -1.11

km³ or 8% of regulated Syrdarya runoff in the growing season. In this context, total water losses in the Syr Darya River basin are estimated at 3.6 km^3 (calculated by water balance method). It should be noted that this estimation is given under the assumption that there are no errors in accounting of river flow at the boundaries of the balancing sites; otherwise, water losses can be estimated as lower in volume.

In the lower reaches of the Syr Darya River, runoff utilization was 6.19 km^3 (including water withdrawal, losses, minus lateral inflow).

Table 1.1

Water availability in the Syr Darya River basin countries over the growing season 2020

Water user	Water volume, km^3		Water availability, %	Deficit (-), surplus (+), km^3
	BWO schedule /limit	Actual	Season	Season
1 Total water withdrawal up to the Shardara reservoir	11.83	8.90	75	-2.93
2 By state:				
– Kyrgyz Republic	0.25	0.14	57	-0.11
– Republic of Uzbekistan	8.80	6.70	76	-2.10
– Republic of Tajikistan	1.91	1.45	76	-0.45
– Republic of Kazakhstan	0.88	0.61	69	-0.27
3 By river reach				
3.1 Toktogul reservoir – Uchkurgan hydroscheme	3.95	3.34	85	-0.60
of which:				
– *Kyrgyz Republic*	0.16	0.07	46	-0.09
– *Republic of Tajikistan*	0.24	0.10	42	-0.14
– *Republic of Uzbekistan*	3.55	3.17	89	-0.38
3.2 Uchkurgan hydroscheme-Bakhri Tochik reservoir	1.08	1.07	99	-0.01
of which:				
– *Kyrgyz Republic*	0.08	0.07	79	-0.02
– *Republic of Tajikistan*	0.45	0.51	114	0.06

Water user	Water volume, km^3		Water availability, %	Deficit (-), surplus (+), km^3
	BWO schedule /limit	Actual	Season	Season
– *Republic of Uzbekistan*	0.54	0.49	90	-0.06
3.3 Bakhri Tochik reservoir-Shardara reservoir	6.81	4.49	66	-2.31
of which:				
– *Republic of Kazakhstan*	0.88	0.61	69	-0.27
– *Republic of Tajikistan*	1.22	0.84	69	-0.38
– *Republic of Uzbekistan*	4.71	3.04	65	-1.67
4 In addition:				
– Inflow to the Shardara reservoir	6.44	3.12	48	-3.32
– Discharge into the Arnasay	0.00	0.00		0.00
– Supply to the Aral Sea and Aral Sea region[5]	1.05	0.47	45	-0.58

Table 1.2

Syr Darya River channel water balance in the growing season 2020

Channel balance item	Water volume, km^3		Disrepancy (actual-plan)	
	Forecast/plan	Actual	km^3	%
1 Inflow to the Toktogul reservoir	8.66	8.68	0.02	0
2 Lateral inflow to the river reach of Toktogul reservoir – Shardara reservoir (+)	9.78	7.59	-2.18	22
of which:				
– *Discharge from the Karadarya river*	1.54	1.52	-0.02	1
– *Discharge from the Chirchik river*	0.89	0.31	-0.58	65
– *Lateral inflow from CDF and small rivers*	7.35	5.76	-1.59	22
3 Flow regulation in the reservoirs: inflow (+) or withdrawal (-)	-2.52	-3.14	-0.62	25

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

Channel balance item	Water volume, km^3		Disrepancy (actual-plan)	
	Forecast/plan	Actual	km^3	%
of which:				
– *Toktogul reservoir*	-2.98	-3.53	-0.55	18
– *Bakhri Tochik reservoir*	0.46	0.39	-0.07	16
4 Regulated runoff (1+2+3)	15.91	13.13	-2.78	17
5 Water withdrawal in the Toktogul – Shardara reach (-)	-11.83	-8.90	2.93	25
6 Discrepancy: water losses (-) or unrecorded inflow to the river channel (+) in the Toктogul-Shardara reach	2.36	-1.11	-3.47	147
Including % of regulated runoff	15	8		
7 Inflow to the Shardara reservoir	6.44	3.12	-3.32	52
8 Water releases from the Shardara reservoir (into the river and water withdrawal)	9.52	5.56	-3.96	42
9 Flow regulation in the Koksaray reservoir: inflow (+) or withdrawal (-)	1.68	1.76	0.08	5
10 Runoff utilization (water withdrawal-lateral inflow+losses) (-)	-9.35	-6.19	3.17	34
11 Supply to the Aral Sea and Aral Sea region	1.05	0.47	-0.58	55

Table 1.3

Water balance of the Syr Darya River basin reservoirs in the growing season 2020

Water balance item	Water volume, km^3		Discrepancy (actual-plan)	
	Forecast/ plan	Actual	km^3	%
1.Toktogul reservoir				
1.1 Inflow to the reservoir	8.66	8.68	0.02	0
1.2 Water volume in the reservoir:				
– beginning of the season (1 April 2020)	11.64	11.64	0.00	0
– end of the season (1 October 2020)	14.61	15.20	0.59	4
1.3 Water releases from the reservoir	5.68	5.15	-0.52	9
1.4 **Discrepancy:** unrecorded inflow (+) or water losses (-)	-0.01	0.04	0.05	
% of inflow to the reservoir	0	0	0	
1.5 **Flow regulation:** inflow (+) or withdrawal (-)	-2.98	-3.53	-0.55	18
2. Andizhan reservoir				
2.1 Inflow to the reservoir	2.08	1.20	-0.88	42
2.2 Water volume in the reservoir:				
– beginning of the season (1 April 2020)	0.82	0.82	0.00	0
– end of the season (1 October 2020)	0.73	0.38	-0.35	48
2.3 Water releases from the reservoir	2.17	1.61	-0.56	26
2.4 **Discrepancy:** unrecorded inflow (+) or water losses (-)	0.00	-0.03	-0.03	
% of inflow to the reservoir	0	2	2	
2.5 **Flow regulation:** inflow (+) or withdrawal (-)	0.09	0.41	0.32	
3. Charvak reservoir				
3.1 Inflow to the reservoir	5.18	4.40	-0.78	15
3.2 Water volume in the reservoir:				
– beginning of the season (1 April 2020)	0.47	0.47	0.00	0

Water balance item	Water volume, km^3		Discrepancy (actual-plan)	
	Forecast/ plan	Actual	km^3	%
– end of the season (1 October 2020)	1.70	1.28	-0.42	25
3.3 Water releases from the reservoir	3.95	3.24	-0.71	18
3.4 **Discrepancy:** unrecorded inflow (+) or water losses (-)	0.0	-0.35	-0.35	
% of inflow to the reservoir	0	8	8	
3.5 **Flow regulation:** flow inflow (+) or withdrawal (-)	-1.23	-1.16	0.07	5
4 Bakhri Tochik reservoir				
4.1 Inflow to the reservoir	6.19	5.13	-1.05	17
4.2 Lateral inflow	0.30	0.18	-0.12	41
4.3 Water volume in the reservoir:				
– beginning of the season (1 April 2020)	3.07	3.07	0.00	0
– end of the season (1 October 2020)	1.75	1.68	-0.07	4
4.4 Water releases from the reservoir	7.25	6.15	-1.09	15
of which*:*				
– *water releases into the river*	6.65	5.52	-1.13	17
– *water withdrawal from the reservoir*	0.60	0.64	0.03	6
4.5 **Discrepancy:** unrecorded inflow (+) or water losses (-)	-0.55	-0.54	0.01	3
% of inflow to the reservoir	9	11	2	
4.6 **Flow regulation:** inflow (+) or withdrawal (-)	0.46	0.39	-0.07	16
5 Shardara reservoir				
5.1 Inflow to the reservoir	6.44	3.12	-3.32	52
5.2 Lateral inflow	0.00	0.00	0.00	
5.3 Water volume in the reservoir:				
– beginning of the season (1 April 2020)	4.88	4.88	0.00	0
– end of the season (1 October 2020)	1.35	0.83	-0.52	38

Water balance item	Water volume, km^3		Discrepancy (actual-plan)	
	Forecast/ plan	Actual	km^3	%
5.4 Water releases from the reservoir	9.52	5.56	-3.96	42
of which:				
– *Discharge into Arnasay*	0.00	0.00	0.00	
– *Water releases into the river*	8.72	4.89	-3.83	44
– *Water withdrawal from the reservoir*	0.80	0.67	-0.13	17
5.5 **Discrepancy:** unrecorded inflow (+) or water losses (-)	-0.45	-1.61	-1.16	
% of inflow to the reservoir	7	52	45	
5.6 **Flow regulation:** inflow (+) or withdrawal (-)	3.08	1.77	-1.31	43
TOTAL flow regulation by reservoirs: inflow (+) or withdrawal (-)	-0.58	-2.12	-1.54	
TOTAL losses (-), unrecorded inflow (+)	-1.02	-2.50	-1.48	

Table 1.4

Country water deficit in the Bakhri Tochik-Shardara reach, growing season 2020

Water balance item		April			May			June			July			August			September			Total for growing season, Mm^3
		I	II	III	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III	
Total water withdrawal in the reach	Limit, m^3/s	288	355	372	351	365	415	530	586	604	672	674	672	567	476	377	204	131	92	**6,806**
	Actual, m^3/s	311	117	239	117	140	198	284	357	362	428	408	452	430	420	368	202	128	140	**4,493**
	Deficit, %	**-**	**67**	**36**	**67**	**62**	**52**	**46**	**39**	**40**	**36**	**39**	**33**	**24**	**12**	**2**	**1**	**3**	**-**	**34**
Kazakhstan	Limit, m^3/s	20	20	10	10	20	40	50	50	60	120	120	120	115	105	100	20	10	0	**878**
	Actual, m^3/s	29	13	15	16	22	27	39	46	46	74	77	80	70	60	51	25	3	0	**610**
	Deficit, %	**-**	**38**	**-**	**-**	**-**	**33**	**23**	**8**	**24**	**39**	**36**	**33**	**39**	**43**	**49**	**-**	**75**	**-**	**31**
Tajikistan	Limit, m^3/s	10	60	81	82	82	89	92	96	96	96	96	96	96	96	82	60	40	35	**1,220**
	Actual, m^3/s	0	0	24	29	45	52	63	72	71	68	76	81	80	76	70	56	50	42	**841**
	Deficit, %	**100**	**100**	**71**	**65**	**46**	**41**	**31**	**25**	**26**	**29**	**21**	**15**	**17**	**21**	**15**	**7**	**-**	**-**	**31**
Uzbekistan	Limit, m^3/s	258	275	281	259	263	286	388	440	448	456	458	456	356	275	195	124	81	57	**4,708**
	Actual, m^3/s	281	104	200	73	73	119	182	239	245	286	255	290	280	284	248	122	76	99	**3,042**
	Deficit, %	**-**	**62**	**29**	**72**	**72**	**59**	**53**	**46**	**45**	**37**	**44**	**36**	**21**	**-**	**-**	**2**	**7**	**-**	**35**

Table 1.5

Water withdrawal by river reach, % of the total water withdrawal

Balancing site	Limit	Actual	Actual-Limit
Toktogul-Uchkurgan	33	38	5
Uchkurgan-Bakhri Tochik	9	12	3
Bakhri Tochik – Shardara	58	50	- 8

2. Amu Darya River basin

The actual water content in the Amu Darya River at the nominal Atamyrat gauging station (upstream of intake to Garagumdarya) was 38.0 km³ or 8.3 km³ less than expected by BWO Amu Darya (Table 2.2). The inflow to the Nurek HPP amounted to 13.3 km³ and turned to be lower of the forecast by 4.47 km³. Water releases from the reservoir were 9.47 km³ or 4.51 km³ less than scheduled by BWO Amu Darya. Water withdrawal from the river for accumulation in the Nurek reservoir amounted to 3.83 km³. Using the water balance method, a positive discrepancy of 0.62 $km^3$was found. This may be attributed to the unrecorded inflow to the Nurek reservoir and possible inaccurate data on releases from the reservoir (Table 2.3).

According to measurements at the Bir-Ata gauging station, the inflow to the Tuyamuyun hydroscheme (TMHS) was 16.92 km³ or 5.69 km³ less than expected. This did not allow accumulating planned volume of 3.24 km³ in TMHS reservoirs; schedule delay was 0.78 km^3. Water volume in TMHS reservoirs was only 2.46 km³ by the end of the growing season. Water releases from TMHS were 5.55 km^3 less (!) than planned and amounted to 14.15 km³. The balance method determined a negative of 3.12 km^3 discrepancy in the reach Bir-Ata – Tyuyamuyun. This indicates to water losses from TMHS reservoirs and possible inaccurate flow measurement at gauging stations.

Given such hydrological conditions, the established limit of water withdrawal into canals in the Amu Darya River basin was provided by 82% (Table 2.1). The total water withdrawal amounted to 32.5 km³, including 25.67 km³ downstream of the Atamyrat gauging station (starting from intake to Garagumdarya). During the growing season, the average water availability was 88% in the Republic of Tajikistan, 87% in Turkmenistan, and 75% in the Republic of Uzbekistan; in the lower reaches, water availability was 70% in

Turkmenistan, 69% in the Republic of Uzbekistan, including 58% in Surkhandarya province.

Water availability decreased from the middle to the lower reaches by 24%, including by 25% in Turkmenistan and by 19% in Uzbekistan. Table 2.1.1 shows the data on ten-day water availability in the lower reaches of the Amu Darya River, which were most affected by uneven distribution of water deficit in the basin.

The Amu Darya River main course balance discrepancy was 3.95 km^3 in the reach Atamyrat GS (nominal) – Bir-Ata GS or about 9% of river runoff at the nominal Atamyrat reach and 2.98 km^3 in the lower reaches (Tuyamuyun GS-Samanbay GS reach) or 30% of river runoff at Tuyamuyun GS.

In general, in the Amu Darya River basin, water balance discrepancy, including channel balance discrepancy and water balance discrepancy of reservoirs, was 9.43 km^3 or about 23% of river runoff at the nominal Atamyrat reach in the growing season.

Water in the amount of 1.04 km^3 was delivered to the Aral Sea region and the Aral Sea during the growing season (Amu Darya River runoff at the Samanbay GS plus discharged collector-drainage water) or 50% of BWO's schedule.

Table 2.1

Water availability in the Amu Darya River basin countries over the growing season 2020

Water user	Water volume, km³		Water availability %	Deficit (-), surplus (+) km³
	Limit/ Schedule	Actual	Season	Season
1. Total water withdrawal	39.67	32.50	82	-7.2
2. By state:				
Kyrgyz Republic	-	-	-	-
Republic of Tajikistan	7.0	6.1	88	-0.8
Turkmenistan	15.5	13.5	87	-2.0
Republic of Uzbekistan	17.2	12.9	75	-4.4
3. Downstream of Atamyrat g/s*)	31.520	25.67	81	-5.9
of which:				
Turkmenistan	15.5	13.5	87	-2.0
Republic of Uzbekistan	16.0	12.2	76	-3.9
4. By river reach:				
Upper reaches	8.152	6.84	84	-1.3
of which:				
Kyrgyz Republic	-	-	-	-
Republic of Tajikistan	6.95	6.14	88	-0.8
Surkhandarya province, Uzbekistan	1.20	0.70	58	-0.5
Middle reaches	16.207	15.04	93	-1.2
of which:				
Turkmenistan	10.47	9.99	95	-0.5
Republic of Uzbekistan	5.73	5.05	88	-0.7
Lower reaches	15.313	10.63	69	-4.7
of which:				
Turkmenistan	5.03	3.52	70	-1.5
Republic of Uzbekistan	10.285	7.11	69	-3.2
5. In addition:				
Emergency and environmental water releases into canals in lower reaches	0	0		
of which:				
Turkmenistan	0	0		
Republic of Uzbekistan	0	0		
Water supply to the Aral Sea region and Aral Sea**	2.10	1.04	50	-1.1

***)** Atamyrat g/s nominal – section of the Amu Darya River upstream of water intake to Garagumdarya

**) including the discharged collector-drainage water

Table 2.1.1

Water availability in provinces in the lower reaches of the Amu Darya River

Month	Ten-day	Dashoguz (Turkmenistan)			Khorezm (Uzbekistan)			Republic of Karakalpakstan		
		Limit, m3/s	Water withdrawal, m3/s	Water availability, %	Limit, m3/s	Water withdrawal, m3/s	Water availability, %	Limit, m3/s	Water withdrawal, m3/s	Water availability, %
April	1	293	176	60	100	85	85	200	193	97
	2	300	148	49	120	64	53	250	138	55
	3	305	212	70	130	136	105	300	196	65
May	1	311	205	66	150	113	75	300	192	64
	2	316	219	69	150	139	93	400	226	57
	3	278	238	86	180	202	112	450	341	76
June	1	268	231	86	210	221	105	500	457	91
	2	297	232	78	250	208	83	600	498	83
	3	304	307	101	300	230	77	650	478	74
July	1	330	345	105	320	260	81	650	511	79
	2	336	290	87	340	220	65	650	395	61
	3	340	259	76	340	192	57	645	328	51
August	1	344	202	59	300	154	51	600	266	44
	2	356	202	57	270	149	55	500	287	57
	3	384	200	52	252	146	58	460	242	53
September	1	369	192	52	190	120	63	300	195	65
	2	304	174	57	170	82	48	200	157	78
	3	287	169	59	144	67	46	100	196	195
Total, Mm^3		5,028	3,518	70	3,450	2,456	71	6,835	4,653	69

Table 2.2

Amu Darya River channel water balance in the growing season 2020

Balance item	Water volume, km^3		Deviation (actual-plan)	
	Forecast /plan	Actual	km^3	%
1. Water content in the Amu Darya River - non-regulated flow at Atamyrat g/s nominal*	46.28	38.00	-8.29	18
2. Flow regulation in the Nurek reservoir: accumulation (+) or withdrawal (-)	-3.78	-3.83	-0.04	1
3. Water withdrawal in the middle reaches (-)	-16.21	-15.04	1.16	7
4. Return flow (collector-drainage) in middle reaches (+)	1.62	1.75	0.12	8
5. Water losses (-) or unrecorded inflow to the river channel (+)	-5.30	-3.95	1.35	25
% of flow at Atamyrat g/s nominal	11	9	-1	
6. River flow at Bir-Ata g/s	22.62	16.92	-5.69	25
7. Releases from Tuyamuyun hydroscheme (including withdrawal from reservoir)	19.69	14.15	-5.55	28
8. Withdrawal in lower reaches, including withdrawal from TMHS (-)	-15.31	-10.63	4.69	31
9 Return flow (collector-drainage) in lower reaches (+)	0.00	0.00	0.00	
10 Emergency and environmental water releases into canals (-)	0.00	0.00	0.00	
11 Flow losses (-) or unrecorded inflow to the channel (+)	-2.88	-2.98	-0.10	4
% of flow at Tuyamuyun g/s	20	30	9.80	
12 Supply to the Aral Sea region and Aral Sea (Samanbay GS)	1.51	0.54	-0.96	64
TOTAL losses:	-8.17	-6.93	1.24	15
% of river water content	18	18		

***** Amu Darya River runoff upstream of the intake to Garagumdarya, taking into account the estimated natural flow at the Nurek HPP (without regulation of the Vakhsh River runoff)**.**

Table 2.3

Water balance of the Amu Darya River basin reservoirs in the growing season 2020

Balance item	Water volume, km^3		Discrepancy (actual-plan)	
	Forecast /plan	Actual	km^3	%
1 Nurek reservoir				
1.1. Inflow to the reservoir	17.77	13.30	-4.47	25
1.2. Water volume in the reservoir:				
– beginning of the season (1 April 2020)	6.13	6.13	0.00	0
– end of the season (1 October 2020)	10.55	10.57	0.02	0
1.3. Water releases from the reservoir	13.98	9.47	-4.51	32
1.4. **Balance discrepancy:** unrecorded inflow (+) or losses (-)	0.64	0.62	-0.02	
% of inflow to reservoir	4	5	1.03	
1.5. **Flow regulation**: accumulation (+) or withdrawal (-)	-3.78	-3.83	-0.04	1
2 TMHS reservoirs				
2.1 Runoff at Bir-Ata g/s	22.62	16.92	-5.69	25
2.2 Water volume in the reservoirs:				
– beginning of the season (1 April 2020)	2.80	2.80	0.00	0
– end of the season (1 October 2020)	3.24	2.46	-0.78	24
2.3 Water releases from the hydroscheme	19.69	14.15	-5.55	28
of which:				
– releases into the river	14.24	9.93	-4.31	30
– withdrawal	5.45	4.22	-1.24	23
2.4 **Balance discrepancy**: unrecorded inflow (+) or losses (-)	-2.49	-3.12	-0.63	25
Including % of inflow to the reservoir	11	18	7	
2.5 **Flow regulation**: accumulation (+) or withdrawal (-)	-8.38	-6.99	1.38	17
TOTAL flow regulation by the reservoirs: accumulation (+) or withdrawal (-)	-12.16	-10.82	1.34	11
TOTAL losses (-), unrecorded inflow (+)	-1.85	-2.50	-0.65	35

MINUTES OF THE FIRST MEETING OF THE CENTRAL ASIAN EXPERT PLATFORM (CAEP) FOR WATER SECURITY, SUSTAINABLE DEVELOPMENT AND FUTURE STUDIES

July 9, videoconference

Meeting's saying: "*Water managers saved the regional unity, now they are to revive this unity"*
Ch. Uzakbaev

Participated:

Chairman of CAEP: S. Ibatullin (Kazakhstan)

Country representatives in CAEP: A. Ryabtsev (Kazakhstan), Ch. Uzakbaev (Kyrgyzstan), Ya. Pulatov (Tajikistan), V. Sokolov (Uzbekistan)

International organizations: Prof. V. Dukhovniy, D. Ziganshina, A. Galustyan (SIC ICWC)

Agenda

1. General information on planned projects and activity for CAEP development (Prof. V. Dukhovniy).

2. Information on progress on establishment of CAEP at present stage (D. Ziganshina).

3. Organizational matters (S. Ibatullin).

On the first item, Prof. Dukhovniy made a short presentation of ongoing projects:

(1) Research program of the Center for Central Asia Research of Corvinus University (Budapest) "Water as a driver of sustainable recovery: economic, institutional and strategic aspects of water resources management in Central Asia" aimed to address economic, financial, and strategic aspects of water cooperation in CA. Series of workshops is planned under the project. Our task is to prepare materials for discussion.

(2) “Regional mechanisms for the low-carbon, climate-resilient transformation of the energy-water-land nexus in Central Asia” as part of the International Climate Initiative 2020 (supported by the Government of German). The project will also strengthen the regional knowledge base and build research capacity, including expert knowledge on nexus in support of policy making. The kick-off meeting was held among the project partners - OECD, EBRD, UNECE, SIC ICWC (June 24-26). The meeting results and project materials will be disseminated among partners and the project’s preparatory project will be started soon.

The CAEP members are to once again discuss organizational matters and upcoming work plans.

On the second item, D. Ziganshina told about the progress in organization of CAEP and support from authorized organizations, in particular in Uzbekistan. She informed that as a trial work within the framework of CAEP, on the occasion of the 75th anniversary of the UN, SIC ICWC experts would summarize and analyze the statements made by official representatives of CA countries at the UN GA. The aim of the work is to identify what issues were raised by the countries during the general debates, what initiatives were proposed, how the issues changed over time, as well as what issues were not properly reflected.

On the third item, S. Ibatullin requested national team leaders to determine the final composition of experts from the countries in all focus areas and present a brief summary for each expert. In particular, it is necessary to involve national experts in the following areas not yet covered:

- Kyrgyzstan: political adviser, agriculture, water law;
- Tajikistan: political adviser, agriculture, water law;
- Turkmenistan: hydropower, economy, agriculture, hydrology;
- Uzbekistan: agriculture.

The chairman also made proposals on the beginning of work of expert groups. In particular, experts are invited to develop plans for policy briefs that include:

(1) analysis of the situation in each focus area, with particular emphasis on economic aspects;

(2) problems in given sector;

(3) solutions, scenarios of sectoral development, with account of water;

(4) possibilities for development and application of economic mathematical modeling;

(5) staffing problems: present state and needs by 2035-2040.

National team leaders are invited to elaborate on:

(1) possibilities of transferring Siberian rivers to CA;

(2) ways and possibilities of establishing a water-energy consortium of CA.

During the discussion, V. Sokolov, A. Ryabtsev, Ch. Uzakbaev, Y. Pulatov supported the initiative and proposals on organization of CAEP activity. Mr. Sokolov noted that on the threshold of the second anniversary of IFAS Summit in Turkmenistan it would be desirable for each country to get analysis of progress.

Necessary additional materials and requests on organizational issues will be sent to national team leaders in the regular course of work.

THE MOSCOW DECLARATION OF THE COUNCIL OF HEADS OF STATE OF THE SHANGHAI COOPERATION ORGANISATION
(extract)

The leaders of the member states of the Shanghai Cooperation Organisation (SCO), following the meeting of the SCO Council of Heads of State held via videoconference on 10 November 2020, declare the following.

[..]

The member states will continue to strengthen the SCO as one of the pillars of the emerging more representative world order based on the supremacy of international law, primarily the UN Charter, respect for the civilisational diversity and peoples' independent choice of the path of their political and socioeconomic development, equitable partnership of states in the interests of ensuring equal, joint, indivisible, comprehensive and stable security, progressive growth and prosperity in the SCO space, and the implementation for this purpose of the 2030.Agenda for Sustainable Development. They intend to intensify their political dialogue, collaboration and coordination, to promote contacts and cooperation between legislatures and executive agencies, and to encourage an exchange of the best practices in the sphere of state administration and development.

[..]

Trade and economic cooperation

[..]

The member states note the initiatives focusing on cooperation in strategic territorial and spatial planning, including exchange of practices and developing common approaches to developing remote and rural areas, including sparsely populated areas, building an urban environment, including by means of digital technology. They find it important to make practical steps in this area based on the Concept of Cooperation on the Development of Remote and Rural Areas in the Digital Age, as well as to develop an action plan for implementing the concept in line with the objectives and principles of the SCO Charter and other regulatory documents of the Organisation.

The member states emphasise the importance of cooperation between scientific, research and analytical centres on economic issues for the purpose of conducting a study and comprehensive analysis of the factors affecting economic cooperation within the SCO with due consideration of global and

regional processes. They welcome the establishment of the SCO Consortium of Economic Analysis Centres and the results of its first meeting in India.

The member states realise that the lack of access to sources of safe drinking water, basic sanitary services and healthy hygiene are serious problems in today's world, and note the importance of paying great attention to sustainable development and the integrated management of water resources.

The member states confirm their support of the Republic of Tajikistan's efforts with regard to the 2018‑2028 International Decade for Action on Water for Sustainable Development initiative, which seeks to facilitate achieving the Sustainable Development Goals and other water-related objectives. In this context, they note the preparations for the 2nd international high-level conference on the issue in Dushanbe.

[..]

The member states will further strengthen cooperation in agriculture, specifically focusing on the effective implementation of the SCO Cooperation Programme on Food Security (Dushanbe, 12 October 2018). They also consider it necessary to develop a package of measures aimed at improving cooperation in ensuring food security, primarily by creating an appropriate regulatory and legal framework, at conducting awareness and analytical work in this area, joint training of specialists and building cooperation with interested states and international organisations. The member states are confident that finalising and adopting a plan to implement this programme will be an important practical step.

Γ The member states noted the relevance of the initiative by the Republic of Uzbekistan to adopt a concept of the SCO member states' cooperation in smart agriculture and agricultural innovation.

The member states noted the initiative by the People's Republic of China to establish an SCO Demonstration Zone for agricultural exchanges and training in Yangling.

The member states think it necessary to strengthen the potential of technology parks, to jointly develop an innovation ecosystem, implement joint R&D projects, and start new digital projects in the SCO countries. They noted the initiative by the Republic of Kazakhstan to form a pool of modern technology parks in the SCO member states.

[..]

The member states express concern about the drastic impact of the desiccation of the Aral Sea and underscore the importance of further cooperation with the UN, as well as with other interested states and agencies in tackling the problems in the Aral Sea basin. Taking into account the positions of the parties,

they noted the initiatives by the Republic of Uzbekistan to prepare a draft resolution of the UN General Assembly declaring the Aral Sea region a zone of environmental technologies and innovations, as well as to establish the UN International Day for the Protection and Conservation of Ecosystems.

The member states noted the initiative of the Republic of Uzbekistan to develop the SCO Green Belt Programme to promote a broad introduction of resource-saving, environmentally friendly technologies.

Cultural, humanitarian and public exchanges

[..]

The member states emphasise the need to continue efforts to reduce the risks of disasters and develop emergency response potential. They intend to enhance their cooperation in areas such as the exchange of real-time information, personnel training, and holding of joint exercises on relief efforts following natural disasters and industrial accidents. They are also going to promote cooperation on early warning and disaster relief in border areas, in part, by involving SCO observers and dialogue partners in these efforts and developing cooperation with other multilateral mechanisms in this area.

The member states highly praised the results of the 10th SCO Meeting of Heads of Emergency Prevention and Relief Agencies and SCO Joint Exercise on Urban Earthquake Search and Rescue (New Delhi 4‑8 November 2019).

The member states pointed to the importance of implementing the SCO Concept of Cooperation in Environmental Protection for 2019‑2021 and the Programme for Developing Environmental Wellbeing of SCO Cities.

[..]

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