Interstate **C**ommission for **W**ater **C**oordination of Central Asia	**BULLETIN № 4 (66)**	December 2014

TABLE OF CONTENT

JOINT STATEMENT OF THE PRESIDENT OF TURKMENISTAN GURBANGULY BERDYMUKHAMEDOV AND THE PRESIDENT OF UZBEKISTAN ISLAM KARIMOV

(extract)

At the invitation of the President of Turkmenistan Gurbanguly Berdymukhamedov, the President of Uzbekistan Islam Karimov made an official visit to Turkmenistan during 23-24 October 2014.

In the course of friendly talks, the heads of state exchanged opinions on all areas of bilateral cooperation and the scope of engagement on the international stage. The Presidents confirmed that they arrived at an understanding on a wide range of issues.

The Parties view the International Fund for Saving the Aral Sea (IFAS) as a universal platform for cooperation of the region's countries under environmental and research projects and programs aimed at improving the environmental conditions in the areas affected by the Aral Sea catastrophe and overcoming the socio-economic problems.

Turkmenistan and the Republic of Uzbekistan expressed support to the regional efforts directed to effective implementation of the Aral Sea Basin Program-3 (ASBP-3) and the Program of Measures on eliminating the consequences of drying up of the Aral Sea and averting the catastrophe of ecosystems in Prearalie as adopted at the 68th session of the UN General Assembly as an official document.

In this context, the parties welcomed the adoption of the ASBP-3 Joint Action Plan between the Republic of Uzbekistan and Turkmenistan at top level.

The heads of state emphasized a need for further implementation of joint measures to ensure equitable and efficient water use in Central Asia in line with the universally recognized rules and principles of international law and based on the interests of all countries in the region. It is recognized that given the intensive melting of glaciers, growing water scarcity in Central Asia and the complex situation in Prearalie, any actions affecting the natural transboundary river flow, including construction of new large hydraulic structures that could lead to negative socio-economic and environmental consequences should be subject to independent, unbiased and transparent international expertise under the aegis of UN agencies and approved by all concerned parties.

The Presidents are at one in thinking that in the international arena any disputes and disagreements should be solved only in peaceful manner, in accordance with the basic international norms and principles set in the UN Charter.

JOINT STATEMENT OF THE PRESIDENT OF KAZAKHSTAN NURSULTAN NAZARBAEV AND THE PRESIDENT OF KYRGYZSTAN ALMAZBEK ATAMBAEV

(extract)

At the invitation of the President of Kazakhstan Nursultan Nazarbaev, the President of Kyrgyzstan Almazbek Atambaev made an official visit to Kazakhstan on the 7th of November 2014.

In the course of the visit, the President of KR A.Atambaev had a meeting with the President of RK N.Nazarbaev and the fourth meeting of the Supreme Interstate Council of KR and RK, during which, confidently and friendly, the parties discussed the main issues of the Kyrgyz-Kazakh cooperation, identified the key areas and prospects of development of their relations and strategic partnership, and exchanged opinions on pressing challenges of the regional and international agenda.

While valuing highly the positive development of interstate policy dialogue and strategic cooperation between the two countries on bi- and multilateral basis, as well as the implementation of agreements earlier achieved at the top level, seeking to strengthen friendly relations between the two countries and fraternal nations, expressing content with gradual development of the Kyrgyz-Kazakh relations on the basis of the Treaty of 25 December 2003 on allied relationship between Kyrgyzstan and Kazakhstan, noting mutual aspirations towards security in the Central Asian region and in the world in general, understanding their responsibility for solid peace and sustainable economic development in Asia, and advocating an effective international organization to be established on the basis of the Conference on Interaction and Confidence-building in Asia with the aim to ensure regional security and enhance economic ties, by underlining a need for further development of the Eurasian integration and the Eurasian economic union for creation of favorable conditions for sustainable socio-economic development in Eurasia,

The heads of state have stated the following:

The Parties give priority to rational water and energy sharing in the region and to mutually beneficial cooperation in the fuel and energy field and consistently will render comprehensive assistance in this area.

JOINT STATEMENT OF THE PRESIDENT OF THE REPUBLIC OF KAZAKHSTAN NURSULTAN NAZARBAEV AND THE PRESIDENT OF THE REPUBLIC OF UZBEKISTAN ISLAM KARIMOV

(extract)

At the invitation of the President of the Republic of Kazakhstan Nursultan Nazarbaev, the President of the Republic of Uzbekistan Islam Karimov made an official visit to Kazakhstan during 24-25 November 2014.

In the course of friendly talks in an open way, the heads of state discussed the key issues related to further development of relations between the two countries, the prospects of enhancement of bilateral cooperation in trade-economic, culture-humanitarian and other fields, as well as the topical regional and international matters of mutual interest.

The leaders of the countries placed emphasis on strengthening of economic ties.

The Parties considered the International Fund for Saving the Aral Sea (IFAS), which is a unique and universal platform for cooperation of the region's countries under research and practical projects and programs aimed at improving the environmental conditions and overcoming the socio-economic problems in the areas affected by the Aral Sea catastrophe.

Uzbekistan and Kazakhstan have supported and continue supporting the regional and international efforts aimed at effective implementation of the Aral Sea Basin Program (ASBP-3). In this context, the Republic of Kazakhstan gives a high rating to the international conference "Development of Cooperation in the Region of the Aral Sea to Mitigate Consequences of the Ecological Catastrophe" held under the chairmanship of Uzbekistan in IFAS in the city of Urgench in October 2014.

MINUTES OF THE 65TH MEETING OF THE INTERSTATE COMMISSION FOR WATER COORDINATION (ICWC) OF THE REPUBLIC OF KAZAKHSTAN, KYRGYZ REPUBLIC, REPUBLIC OF TAJIKISTAN, TURKMENISTAN, AND THE REPUBLIC OF UZBEKISTAN

11 December 2014 Almaty city

Chairman:

Nysambaev Yerlan Nuraliyevich	Vice-Minister of Agriculture, Republic of Kazakhstan

ICWC members:

Zhusumatov Esen Zhusumatovitch	Deputy Director General, Department for Water Resources and Land Reclamation at the Ministry of Agriculture and Land Reclamation (DWRLR MALR), Kyrgyz Republic
Rakhimzoda Sulton Nurmakhmadpur	First Deputy Minister of Energy and Water Resources, Republic of Tajikistan (MEWR RT)
Khamraev Shavkat Rakhimovich	Acting Chairman of EC IFAS, Deputy Minister, Head of Central Water Resources Administration, Ministry of Agriculture and Water Resources, Republic of Uzbekistan (MAWR RUz)

ICWC executive bodies:

Dukhovniy Viktor Abramovich	Director, SIC ICWC
Babadjanova Malika Pulatovna	Head of ICWC Secretariat
Kholkhuzhaev Odil Akhmedovich	Acting Head of BWO Syrdarya
Makhramov Makhmud Yakhshibaevitch	Acting Head of BWO Amudarya

Beglov Iskander Ferdinandovich	Head of Information division, SIC ICWC
Boirov Khamid	Director, Tajik branch SIC ICWC
Kipshakbaev Nariman Kipshakbayevich	Director, Kazakh branch SIC ICWC

Invited:

Khasanov Khomidjon Usmonovich	Director, Land Reclamation and Irrigation Agency at the Government of Tajikistan
Kuchkarov Sharifzhon Zikrillaevich	Head of Water Resources and Advanced Water Saving Technologies Administration, MAWR of the Republic of Uzbekistan
Ryabtsev Anatoliy Dmitrievich	Advisor to the Chairman of the Committee for Water Resources, MEWR of the Republic of Kazakhstan, Chairman of the Board of Managers of Kazgiprovodkhoz Institute
Shatanov Konurbay Tilepbergenovich	Director, Dzhambul branch of RGP Kazvodkhoz, Ministry of Agriculture, Republic of Kazakhstan
Arystanbayev Bolat Sabyrovich	Director, Kyzylorda branch of RGP Kazvodkhoz, Ministry of Agriculture, Republic of Kazakhstan
Karlykhanov Adilkhan Karlykhanovich	Head of the Aral-Syrdarya BWI, Committee for Water Resources, Ministry of Environment and Water Resources of the Republic of Kazakhstan
Seisenov Sembai Baymenovich	Director, South Kazakhstan branch of RGP Kazvodkhoz, Ministry of Agriculture, Republic of Kazakhstan
Ospanov Medet Ospanovich	Director, Executive Direction of IFAS in the Republic of Kazakhstan
Kenshimov Amirkhan Kadirbekovich	Deputy Director, Executive Direction of IFAS in the Republic of Kazakhstan
Zhienbaev Musilim Rysmakhanovich	Head of Division, Ministry of Agriculture, Republic of Kazakhstan

Alseit Asanbai Sheiberkuly	Director of Administration for operation of Big Almata canal, RGP Kazvodkhoz, Ministry of Agriculture, Republic of Kazakhstan
Sukataev Serekaly Mukhamedkarimovich	Head of Balkhash-Alakol Basin Inspection, Ministry of Agriculture, Republic of Kazakhstan
Nikolayenko Alexandr	Regional advisor, German Society for International Development (GIZ), Central Asian Transboundary Water Management Program)
Khadjiev Batyr	UNECE Advisor on economic matters, Deputy Head of UNECE Office in the Republic of Kazakhstan

Agenda

1. The results of the growing season 2014 for the Amudarya and Syrdarya River Basins.

2. Schedule-regime forecast of operation of the reservoir cascade and state quotas of water withdrawals in the Amudarya and Syrdarya River Basins for the non-growing season 2014-2015.

3. Agenda and venue of the next 66th ICWC meeting.

Decisions on the first item:

1. Take note of the information of BWO Amudarya and BWO Syrdarya about fulfillment of water quotas and operation of the reservoir cascade during the growing season 2014 in the Amudarya and Syrdarya River Basins.

2. BWO Syrdarya and BWO Amudarya should give references in their reports to supporting documents and the documents themselves. The complete package if actual data, as well as slide materials in forms of graphs and diagrams should be used when preparing the report.

3. BWO Syrdarya should analyze the mismatch in figures (between the BWO models and the actual data of Tajikistan) and find the discrepancies, identify how the data are submitted and clarify the authorities of persons who sign the documents containing the data.

Decisions on the second item:

1. Approve the schedule-regime forecast of operation of the reservoir cascade and state quotas of water withdrawals in the Amudarya and Syrdarya River Basins for the non-growing season 2014-2015.

Decisions on the third item:

1. Propose holding the regular 66th ICWC meeting in the city of Ashkhabad in Turkmenistan. The date of the meeting should be set and final agreement should be reached with the Turkmen side in the regular course of business.

2. Agree upon the agenda of the regular 66th ICWC meeting.

Agenda of the regular 66th ICWC meeting

1. The results of the non-growing season 2014–2015.

2. Consideration and approval of water withdrawal quotas and operation regimes of the reservoir cascades for the next growing season 2015 in the Amudarya and Syrdarya River Basins.

2. Consideration of proposals and comments received in the course of inter-departmental approval at the national level of the draft Agreement between the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan, and the Republic of Uzbekistan on the Information and Analytical Support of the Water Management, Use, and Protection o in the Aral Sea Basin and the Arrangement of Interstate Exchange of Information.

3. Hearing a progress report of BWO Amudarya.

4. Agenda and venue of the regular 67th ICWC meeting.

Republic of Kazakhstan	**Ye.N.Nysanbaev**
Kyrgyz Republic	**E.Zh.Zhusumatov**
Republic of Tajikistan	**S.N.Rakhimzoda**
Turkmenistan	**N. Ghyrlov**
Republic of Uzbekistan	**Sh.R.Khamraev**

THE RESULTS OF THE GROWING SEASON 2014 IN THE AMUDARYA AND SYRDARYA RIVER BASINS[1]

Amudarya River Basin

The actual water availability at the Atamurat gauging station upstream of Garagumdarya during the growing season in the Amudarya river basin was 89.2 % of the norm. Given the norm of 47,592 Mm^3, the actual value was 42,439 Mm^3. In the past season, the water availability was 82.3%.

The use of the approved water withdrawal quotas during the growing season under review with a breakdown by Central Asian states is as follows:

- Totally in the basin, 86% of the approved water withdrawal quota was used, while the quota was 39,615 Mm^3, the actually used volume was 34,440.2 Mm^3, including:

- Republic of Tajikistan used 82.4% of its approved water withdrawal quota: of the quota of 6,895 Mm^3, 5,678.8 Mm^3 was actually used;

- Republic of Uzbekistan used 86.8% of its water withdrawal quota: of the quota of 17,220 Mm^3, 14,939 Mm^3 was actually used;

- Turkmenistan used 89.2% of its water withdrawal quota: of the quota of 15,500 Mm^3, 13,822.4 Mm^3 was actually used.

Downstream of the Atamurat gauging station, which is upstream of Garagumdarya, 85.7% of the approved water withdrawal quota was used; of the quota of 31,520 Mm^3, 27,825.5 Mm^3 was actually used, including:

- Republic of Uzbekistan used 87.4 % of its water withdrawal quota approved: of the quota of 16,020 Mm^3, 14,003.1 Mm^3 was actually used,

- Turkmenistan used 89.2 % of its water withdrawal quota approved: of the quota of 15,500 Mm^3, 13,822.4 Mm^3 was actually used.

The Prearalie and the Aral Sea received 2,817 Mm^3 of water during the growing season.

The use of the approved water withdrawal quotas broken down by river sections is as follows:

1. Upper reach – 81.7%, of which: 82.4 % - Republic of Tajikistan; 78.0 % - Republic of Uzbekistan.

[1] Information on the first item of the 65th ICWC meeting agenda

2. Middle reach – 90%, of which: 90.6 % - Republic of Uzbekistan; 89.7 % – Turkmenistan.

3. Lower reach – 86.4%, of which: 85.6 % - Republic of Uzbekistan; 88 % – Turkmenistan.

The actual water volume in the Tuyamuyun reservoir by the end of the growing season 2014 was 3,265 Mm^3.

More detailed information is given in Tables 1.1-1.3.

Table 1.1

Analysis of the use of the water withdrawal quotas during the growing season 2014 in the Amudarya river basin

Mm^3

Name	Quota for the growing season	Actually used	%%
Upper-Amudarya Administration			
(upper reach)	8,095.0	6,614.7	81.7
of which:			
Tajikistan	6,895.0	5,678.8	82.4
Uzbekistan	1,200.0	935.9	78.0
Diversions from the Amudarya River			
at the Atamurat gauging station (Kerki)	31,520.0	27,825.5	88.3
of which:			
Turkmenistan	15,500.0	13,822.4	89.2
Uzbekistan	16,020.0	14,003.1	87.4
Middle-Amudarya (Srendeamudarya) Administration	16,207.0	14,592.6	90.0
(Middle reach), of which:			
Turkmenistan	10,472.0	9,395.5	89.7
Uzbekistan	5,735.0	5,197.1	90.6
Lower reach:	15,313.0	13,232.9	86.4
of which:			
Turkmenistan	5,028.0	4,426.9	88.0
Uzbekistan	10,285.0	8,806.0	85.6
Total for the basin:	39,615.0	34,440.2	86.9
of which:			
Tajikistan	6,895.0	5,678.8	82.4

Name	Quota for the growing season	Actually used	%%
Turkmenistan	15,500.0	13,822.4	89.2
Uzbekistan	17,220.0	14,939.0	86.8

Table 1.2

Actual operation regime of Tuyamuyun reservoir (April 2014 to September 2014)

Tuyamuyun reservoir	Unit	Actual						Total
		IV	V	VI	VII	VIII	IX	
Volume: Beginning of the period	Mm3	2,668	2,413	3,052	4,294	4,745	3,898	2,668
Inflow to the reservoir	m3/s	460	957	1,452	1,890	1,280	705	
	Mm3	1,192	2,564	3,764	5,063	3,427	1,827	17,836
Water releases from the reservoir	m3/s	559	718	973	1,722	1,596	949	
	Mm3	1,448	1,924	2,522	4,611	4,275	2,459	17,239
Volume: End of the period	Mm3	2,413	3,052	4,294	4,745	3,898	3,265	3,265
Accumulation (+), drawdown (-)	Mm3	-255	640	1,242	451	-848	-632	597

Table 1.3

Information on water supply to the Aral Sea and the Amudarya River Delta during the growing season 2014

Mm^3

	IV	V	VI	VII	VIII	IX	Actual supply from 01.04.14 to 30.09.14
From the Amudarya river, at the Samanbay gauging station	46	52	55	93	102	95	443
Total discharge from the system of the Kyzketken and Suenli canals	223	326	351	429	301	186	1816
Collector and	124	89	53	82	116	94	558

	IV	V	VI	VII	VIII	IX	**Actual supply from 01.04.14 to 30.09.14**
drainage network							
TOTAL:	393	467	459	604	519	375	2817
Cumulative, Mm3	393	860	1319	1923	2442	2817	

Note: the data on water supply to the Priaralie (coastal) region are agreed with the State Hydrometeorological Service (Hydromet) of the Republic of Uzbekistan.

Syrdarya River Basin

The forecast regime of the Naryn-Syrdarya reservoir cascade (NSRC) and the quotas of water withdrawal from the Syrdarya river during the growing season 2014 were considered at the 63rd ICWC meeting in the Tashkent city on 18-19 April 2014. According to Hydromet's forecast, the water availability in the Syrdarya river basin was expected to be about 85% of the norm. As water shortage was expected, the forecast regime of NSRC was taken into account, with 10% restriction of water supply. The water withdrawal quotas were not approved.

The normal inflow to upper reservoirs of the Naryn-Syrdarya cascade is 18,508 Mm^3 since April 1 to October 1, 2014. According to Hydromet's forecast, this inflow was expected to be 15,862 Mm^3 (86 % of the norm). Practically, the upper reservoirs received 14,366 Mm^3 of water (Table 2.1).

The normal lateral inflow to the Syrdarya channel up to Shardara reservoir is 11,650 Mm^3. Hydromet forecasts that lateral inflow would be 9,961 Mm^3 (86% of the norm). The actual lateral inflow was 9,719 Mm^3. This is 242 Mm^3 lower than the forecast.

The total normal inflow along the Syrdarya channel is 30,158 Mm^3 of water. According to Hydromet, the forecast was 25,823 Mm^3 (85% of the norm). The actual inflow was 80% of the norm only or 24,085 Mm^3. This was 6,073 Mm^3 lower than the norm and comparable with the total water demand of Tajikistan, Uzbekistan, and Kazakhstan in the middle reach during the growing season.

Table 2.1

Reservoir	Volume, mln m^3 (01.04.14 to 01.10.14)			actual/ forecast (%)	actual/ norm (%)
	norm	**forecast**	**actual**		
Inflows to upper reservoirs					
Toktogul	9,588	8,637	7,188	83	75
Andijan	3,095	2,461	1,791	73	58
Charvak (total of 4 rivers)	5,825	4,764	5,387	113	92
Total:	**18,508**	**15,862**	**14,366**	**91**	78
Lateral inflow					
			(est.)		
Toktogul – Uchkurgan	1,184	1,060	1,064	100	90
Uchkurgan, Uchtepe-Kayrakkum	3,526	3,198	2,871	90	81
Andijan – Uchtepe	2,660	2,147	2,104	98	79
Kayrakkum – Shardara	3,337	2,816	2,787	99	84
Gazalkent – Chinaz (w/o Ugam)	943	740	893	121	95
Total:	**11,650**	**9,961**	**9,719**	**98**	**83**
Grand total:	**30,158**	**25,823**	**24,085**	**93**	**80**

According to the NSRC operation schedule, which was approved at the ICWC Session, 4,073 Mm^3 of water was planned to be released from the Toktogul reservoir since April 1 till October 1, 2014. In fact, 4,293 Mm^3 of water was released, which is 220 Mm^3 more than planned.

Water releases from the Andijan reservoir amount to 2,535 Mm^3 according to the schedule. Given the extremely low inflow, 2,205 Mm^3 of water could be discharged from the reservoir (less by 330 million). Moreover, the reservoir was emptied as it fed the downstream canal and the river channel at the same time.

Releases from the Charvak reservoir, according to its operation schedule, were to be 3,950 Mm^3. In fact, 4,850 Mm^3 were released, or 900 Mm^3 more than planned.

Releases from the Kayrakkum reservoir, according to its operation schedule, were to be 6,932 Mm^3. In fact, 6662 Mm^3 were released, or 270 Mm^3 less than planned. Bulk water releases from the reservoir took place in April and fist ten days of May, when the inflow was high and irrigation water demand was low. Moreover, most of water was not delivered to canals but transported via the Farkhad hydroscheme and Farkhad HPP escape to the Shardara reservoir.

Releases from the Shardara reservoir, according to its operation schedule, were to be 5,216 Mm^3. In fact, 6,924 Mm^3 were released. Because of increased inflow from the Chirchik River, 1,708 Mm^3 more water was released from the reservoir.

In general, it was planned to release 22,706 Mm^3 of water according to the schedule. While actually 24,934 Mm^3 were released, that is 2,228 Mm^3 more than planned (Table 2.2).

Table 2.2.

Reservoir	Water releases, Mm^3 (from 01.04.2014 to 01.10.2014)		Actual/ scheduled (%)
	According to the approved NSRC operation schedule	actual	
Toktogul	4,073	4,293	105
Andijan	2,535	2,205	87
Charvak (discharge from Gazalkent HPP)	3,950	4,850	123
Kayrakkum	6,932	6,662	96
Shardara	5,216	6,924	133
Total:	**22,706**	**24,934**	**110**

Water was supplied to water user states in the following amounts from April 1 to October 1, 2014 (Tables 2.3 and 2.4):

- Kazakhstan 460 Mm^3 (65% of quota);
- Kyrgyzstan 169 Mm^3 (76%);
- Tajikistan 1,476 Mm^3 (86%);
- Uzbekistan 6,551 Mm^3 (83%).

Table 2.3

Reach, water user state	Water withdrawal, Mm^3 (from 01.04.14 to 01.10.14)		
	Water quota cut by 10%	**Actual**	**%%**
Toktogul – Uchkurgan hydroscheme, including:	**3,552**	**2,994**	**84**
Kyrgyzstan	146	96	66
Tajikistan	213	75	35
Uzbekistan	3,193	2,823	88
Uchkurgan – Kayrakkum hydroscheme, including:	**970**	**1,029**	**106**
Kyrgyzstan	76	73	96
Tajikistan	404	502	124
Uzbekistan	490	454	93
Kayrakkum hydroscheme – Shardara reservoir, including:	**6,037**	**4,633**	**77**
Kazakhstan	702	460	65
Tajikistan	1,098	899	82
Uzbekistan	4,237	3,274	77

Table 2.4

Water user state	Water withdrawal, Mm^3 (from 01.04.14 to 01.10.14.)			
	Water quota 100%	**Water quota cut by 10%**	**Actual**	**% Actual/ reduced quota**
Kazakhstan (Dostyk canal)	780	702	460	65
Kazakhstan	246	222	169	76
Tajikistan	1,905	1,715	1,476	86
Uzbekistan	8,800	7,920	6,551	83

As scheduled, inflow to the Shardara reservoir was expected to be 3,940 Mm^3. The actual inflow was 5,640 Mm^3.

1,900 Mm^3 of water was expected to flow into the Aral Sea and Priaralie. The actual inflow was 1,863 Mm^3 at Karateren gauging station (Table 2.5).

Table 2.5

Parameter	Scheduled from 01.04.14 to 01.10.14, Mm3	Actual from 01.04.14 to 01.10.14, Mm3
Supply to the Aral Sea	1,900	1,863
Discharge into Arnasai depression	0	0
Inflow to Shardara reservoir	3,940	5,064

By the end of the growing season by 1st of October, the amount of water in upper reservoirs was 13,817 Mm^3 or 1,841 Mm^3 less than the scheduled amount, 15,658 Mm^3 (Table 2.6).

The upper reservoirs accumulated water as follows:

Toktogul - 11,921 Mm^3,

Andijan - 392 Mm^3,

Charvak - 1,504 Mm^3.

Table 2.6

Reservoir	Reservoir volume, Mm^3		
	by 01.04.14	scheduled by 01.10.14	actual by 01.10.14
Toktogul	9,009	13,518	11,921
Andijan	788	703	392
Charvak	591	1437	1,504
Total:	**10,388**	**15,658**	**13,817**
Kayrakkum	3,478	1,436	1,120
Shardara	4,127	1,117	933
Total:	**17,993**	**18,211**	**15,870**

It should be noted that low air temperatures were observed in April and inflow to the Toktogul reservoir was low, while water releases from the reservoir were higher than scheduled. The amount of water in the Toktogul reservoir decreased by 369 Mm^3.

The Kayrakkum reservoir maintained its full volume and operated in transit regime.

In May, the regime of Toktogul reservoir became normalized. Inflow to the Kayrakkum reservoir decreased gradually. In order to maintain inflow to Akdjar gauging station, the Uzbek side reduced its diversions in the upstream area up to 15%

of its quota since 20th of May. The Tajik side took measures to maintain full water volume in the Kayrakkum reservoir.

In June, inflow to the Toktogul reservoir was less than scheduled. However, despite this fact, the Kyrgyz side did not reduce releases of water from the reservoir and followed the schedule. The Kayrakkum reservoir kept its full volume until 13th of June and then the storage started to be decreased to meet growing demands.

Generally, in the first half of the growing season, thanks to joint agreed actions, the storage in the Kayrakkum reservoir was maintained by the time of intensive irrigation.

Decreased inflow was observed in the Syrdarya basin during the second half of the growing season. As a result, irrigation water shortage took place in the middle reaches. In this context, the concerned parties took measures to increase inflow to the Kayrakkum reservoir through additional water releases from upper reservoirs.

The Kazakh party reached an agreement with the Kyrgyz party and received electric energy from the Naryn cascade of hydropower stations that resulted in additional releases of almost 114 Mm^3 of water from the Toktogul reservoir from 1st to 15th August. The Uzbek party decreased storage in the Andijan reservoir in the amount of 254 Mm^3 to feed the basin. Despite the decreased inflow, during the peak of the growing season, the Tajik party executed water releases by formula “Akdjar+238” instead of “Akdjar+200”, i.e. 35-40 m^3/s higher.

Thanks to joint actions, the inflow to Kayrakkum reservoir increased on average to 188 m^3/s in July and 242 m^3/s in August. Water releases amounted to 426 m^3/s in July and 396 m^3/s in August.

The operation schedule of the Naryn-Syrdarya reservoir cascade from April 1 to October 1, 2014 is shown in Table 2.7.

Table 2.7

Operation schedule of the Naryn-Syrdarya reservoir cascade from April 1 to September 30, 2014 (10% cut of water quotas)

Toktogul reservoir		**April**	**May**	**June**	**July**	**August**	**Septemb.**	**Total**
		(actual)	**(actual)**	**(actual)**	**(actual)**	**(actual)**	**(actual)**	**Mm3**
Inflow to the reservoir	m3/sec	210.47	616.74	725.53	557.61	346.74	265.70	
	Mm3	545.53	1 651.88	1 880.58	1 493.51	928.71	687.31	7 187.53
Volume: beginning of the period	Mm3	**9 009.00**	**8 463.00**	**9 492.00**	**10.77**	**11 617.00**	**11 800.00**	
end of the period	Mm3	**8 463.00**	**9 492.00**	**10 773.00**	**11 617.00**	**11 800.00**	**11 921.00**	
Release from the reservoir	m3/sec	425.13	244.19	227.77	239.23	278.71	215.97	
	Mm3	1 101.95	654.05	590.37	670.74	746.50	559.79	4 293.38
Kayrakkum reservoir		**April**	**May**	**June**	**July**	**August**	**Septemb.**	**Total**
		(actual)	**(actual)**	**(actual)**	**(actual)**	**(actual)**	**(actual)**	**Mm3**
Inflow to the reservoir	m3/sec	660.40	412.61	300.10	188.61	241.52	227.57	
	Mm3	1 711.76	1 105.14	777.86	505.18	646.88	589.85	5 336.67
Volume: beginning of the period	Mm3	**3 478.00**	**3 487.00**	**3 414.00**	**3 070.00**	**2 049.00**	**1 357.00**	
end of the period	Mm3	**3 487.00**	**3 414.00**	**3 070.00**	**2 049.00**	**1 357.00**	**1 120.00**	
Release from the reservoir	m3/sec	663.50	415.06	386.92	425.68	395.95	241.83	
	Mm3	1 719.79	1 111.69	1 002.89	1 140.13	1 060.51	626.81	6 661.83
Shardara reservoir		**April**	**May**	**June**	**July**	**August**	**Septemb.**	**Total**
		(actual)	**(actual)**	**(actual)**	**(actual)**	**(actual)**	**(actual)**	**Mm3**
Inflow to the reservoir	m3/sec	728.47	398.08	392.47	166.60	89.62	162.74	
	Mm3	1 888.19	1 050.15	1 017.29	446.22	240.03	421.81	5 063.70
Volume: beginning of the period	Mm3	**4 127.00**	**3 983.00**	**3 881.00**	**3 838.00**	**2 250.00**	**936.00**	
end of the period	Mm3	**3 983.00**	**3 881.00**	**3 838.00**	**2 250.00**	**936.00**	**933.00**	
Release from the reservoir	m3/sec	790.17	342.10	314.67	541.29	510.16	126.43	
	Mm3	2 048.11	916.28	815.62	1 449.80	1 366.41	327.72	6 923.93
Release to the Kzylkum canal	m3/sec	65.50	32.58	44.00	121.77	35.32	12.00	
	Mm3	169.78	87.26	114.05	326.16	94.61	31.10	822.96
Release to	m3/sec	0.00	0.00	0.00	0.00	0.00	0.00	

the Arnasay depression	Mm3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water supply to the Aral Sea	m3/sec	205.67	137.53	58.90	78.30	79.26	149.33	
	Mm3	533.09	368.37	152.67	209.72	212.28	387.07	1 863.20
Charvak reservoir		**April**	**May**	**June**	**July**	**August**	**Septemb.**	**Total**
		(actual)	**(actual)**	**(actual)**	**(actual)**	**(actual)**	**(actual)**	**Mm3**
Inflow to the reservoir (total of the 4 rivers)	m3/sec	237.74	630.32	561.94	311.90	175.24	123.87	
	Mm3	616.21	1 688.26	1 456.56	835.38	469.37	321.06	5 386.85
Volume: beginning of the period	Mm3	**591.00**	**939.00**	**1 807.00**	**2006.00**	**1 914.00**	**1 661.00**	
end of the period	Mm3	**939.00**	**1 807.00**	**2 006.00**	**1 914.00**	**1 661.00**	**1 504.00**	
Release from the reservoir (release from the Gazalkent HEPS)	m3/sec	139.43	327.26	514.97	398.48	276.16	181.50	
	Mm3	361.41	876.53	1334.79	1067.30	739.67	470.45	4 850.15
Andizhan reservoir		**April**	**May**	**June**	**July**	**August**	**Septemb.**	**Total**
		(actual)	**(actual)**	**(actual)**	**(actual)**	**(actual)**	**(actual)**	**Mm3**
Inflow to the reservoir	m3/sec	98.63	185.29	228.93	74.81	48.22	44.90	
	Mm3	255.66	469.28	593.40	200.36	129.16	116.38	1 791.24
Volume: beginning of the period	Mm3	**788.00**	**810.80**	**939.60**	**1126.61**	**610.25**	**391.70**	
end of the period	Mm3	**810.80**	**939.60**	**1 126.61**	**610.25**	**391.70**	**392.20**	
Release from the reservoir	m3/sec	97.12	140.89	156.42	266.69	128.99	42.85	
	Mm3	251.73	377.35	405.45	714.31	345.48	111.08	2 205.39

FORECAST OPERATION SCHEDULE FOR THE RESERVOIR CASCADE AND COUNTRY WATER WITHDRAWAL QUOTAS IN THE AMUDARYA AND SYRDARYA RIVER BASINS FOR THE NON-GROWING SEASON 2014-2015[2]

Amudarya River Basin

As of December 1, 2014, the actual water availability in the Amudarya River basin over the non-growing season 2014-2015 was about 92% of the norm. Given the norm of 5,503 Mm^3, the actual value was 5,065 Mm^3. Water availability reached 80% during the last season.

Over 2 months of the current non-growing season, the Tyuyamuyun reservoir was filled up to 3,815 Mm^3. Good weather conditions have allowed successful start of leaching irrigation in the Amudarya River lower reaches since December 2014.

The use of the country water withdrawal quotas for the reporting non-growing season as of 01.12.14 is as follows:

- The water withdrawal quota set for the basin as a whole was 87.3 % at the quota of 5,305.3 Mm^3, i.e. the actual withdrawal was 4,632.1 Mm^3, of which:

- the Republic of Tajikistan used 84.1 % of the quota set at 1,117.9 Mm^3, i.e. 940.4 Mm^3 were actually used;

- Turkmenistan used 99.6 % of the quota set at 2,032.1 Mm^3, i.e. 2,023.4 Mm^3 were actually used;

- the Republic of Uzbekistan used 77.4 % of the quota set at 2,155.3 Mm^3, i.e. 1,668.3 Mm^3 were actually used.

86.9% of the quotas set at 4,001.6 Mm^3 was used downstream of the "Atamyrat" point, upstream of Garagumdarya, i.e. 3,475.7 Mm^3 were actually used, of which:

- the Republic of Uzbekistan used 73.7 % of the quota set at 1,969.5 Mm^3, i.e. 1,452.3 Mm^3 were actually used;

- Turkmenistan used 99.6 % of the quota set at 2,032.1 Mm^3, i.e. 2,023.4 Mm^3 were actually used;

The riparian countries requested the following water quotas for the non-growing season 2014-2015:

[2] Information on the second item of the ICWC 65th meeting agenda

1. Republic of Tajikistan – 2,851 Mm^3

2. Turkmenistan – 6,500 Mm^3

3. Republic of Uzbekistan – 6,350 Mm^3

including Surkhandarya province – 370 Mm^3

Generally, under conditions of normal water availability, it was requested to set water withdrawal quotas at 15,701 Mm^3 in the Amudarya River basin.

For the non-growing season 2014-2015, it is planned to deliver 2,100 Mm^3 of water to Prearalie and the Aral Sea.

Taking into account the water availability forecast and the current water situation in the region, water withdrawal quotas for the non-growing season 2014-2015 were submitted to ICWC members for consideration (Table 1.4).

Table 1.5 presents the operation regime of the Tuyamuyun reservoir.

Table 1.4

Quotas of water withdrawal from the Amudarya River and water supply to the Aral Sea and the river delta for the non-growing season 2014-2015

NN	River basin, country	Water withdrawal quota, Mm^3	
		Total annual (1.10.14 to 1.10 .15)	including non-growing season (1.10.14 to 1.04.15)
	Total withdrawal from the Amudarya River	55 070	15 701
	of which:		
1	Republic of Tajikistan	9 500	2 851
	From the Amudarya River to Atamurat point	44 000	12 480
2	Turkmenistan	22 000	6 500
3	Republic of Uzbekistan	22 000	5 980
	Additionally:		
4	Surkhandarya province	1 570	370
	Plus:		
5	- water supply to Prearalie, including irrigation water and CDW	4 200	2 100
6	- sanitary and environmental water releases to irrigation systems in:	800	800
	Dashkhovuz province	150	150
	Khorezm province	150	150
	Republic of Karakalpakstan	500	500

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

Table 1.5

Forecast operation of the Tuyamuyun reservoir (October 2014 to March 2015)

Tyuamuyun reservoir	Unit	Actual		Forecast				Total
		X	XI	XII	I	II	III	
Volume: beginning of the period	Mm3	3,265	3,132	3,815	4,196	5,074	4,775	3,265
Inflow to the reservoir	m3/s	422	444	556	499	464	380	
	Mm3	1,131	1,152	1,488	1,337	1,122	1,018	7,248
Water releases from the reservoir	m3/s	472	181	413	172	587	886	
	Mm3	1,264	469	1,107	460	1,420	2,373	7,093
Volume: end of the period	Mm3	3,132	3,815	4,196	5,074	4,775	3,420	3,420
Accumulation (+), drawdown (-)	Mm3	-133	683	381	878	-299	-1355	155

Syrdarya River Basin

On 27th of September 2014, the Hydrometeorological service submitted forecasts for the non-growing season 2014-2015 and adjusted forecast for the forth quarter. According to this information, inflow to the Toktogul reservoir is expected to be 96 % of the norm, to the Andijan reservoir, 85 % of the norm, to the Charvak reservoir, 95 % of the norm, and the total lateral inflow is to be 91 % of the norm (Table 2.8).

Table 2.8

Parameters according to the forecast from the Hydrometeorological service for the non-growing season 2014 -2015	Volume, Mm3				% of the norm		
	norm	Range of forecast values		average	Range of forecast values		Average
		min	max		min	max	
Inflow to upper reservoirs:							
Toktogul	2721	2299	2929	2614	84	108	96
Andijan	925	710	860	785	77	93	85
Charvak (total from 4 rivers)	1405	1180	1490	1335	84	106	95
Sub-total:	**5051**	**4189**	**5279**	**4734**	**83**	**105**	**94**
Lateral inflow							
Toktogul – Uchkurgan	398	336	430	383	84	108	96
Uchkurgan-Uchtepe-Kayrakkum	4234	3770	4400	4085	89	104	96
Andijan-Uchtepe	2548	1890	2360	2125	74	93	83
Kayrakkum – Shardara	2956	2360	2990	2675	80	101	90
Gazalkent-Chinaz g/s-Chirchik (excl.Ugam)	858	730	840	785	85	98	91
Sub-total:	**10994**	**9086**	**11020**	**10053**	**83**	**100**	**91**
Total:	**16045**	**13275**	**16299**	**14787**	**83**	**102**	**92**

In general, flow of the rivers in the Syrdarya basin is forecasted as 92% of the norm or 14.8 billion m^3.

In this context, taking into account the water storage in the reservoirs (Table 2.9), available water resources amount to 23.1 billion m^3 for the non-growing season.

Table 2.9

Water storage in reservoirs, excluding dead storage	8,357
Toktogul	6,421
Andijan	242
Charvak	1,078
Kayrakkum	203
Shardara	413

The forecast of water withdrawals was adjusted, taking into account water user requests and water supply practices during non-growing seasons in the past years.

Expected water withdrawal quotas of the riparian countries are shown in the Table below.

Table 2.10

Country water withdrawal quotas for the non-growing season 2014-2015 (Mm^3)

Total from the Syrdarya River	3,286
of which:	
Republic of Kazakhstan	400
Kyrgyz Republic	37
Republic of Tajikistan	365
Republic of Uzbekistan	2,484
Plus, water supply to the Aral Sea and Prearalie	2,489

The actual water situation during the non-growing season to date was the following.

The inflow to upper reservoirs (Table 2.11) was 2.1 billion m^3 or 292 Mm^3 more of the forecast.

1,174 Mm^3 of water, that is 108 Mm^3 more than forecast, flew into the Toktogul reservoir, 385 Mm^3, that is 96 Mm^3 more than forecast, flow to the Andijan reservoir, and 589 Mm^3, that is 88 Mm^3 more than forecast, flew to the Charvak reservoir. The total inflow in the basin was 5.5 billion m^3, including lateral inflow in an amount of 3.3 billion m^3. Over the similar period of the past year (2013-2014), these amounts were 5.3 and 3.4 billion m^3, respectively.

Reservoirs released 6,935 Mm^3 of water against scheduled 6,121 Mm^3, i.e. 814 Mm^3 more than the forecast (Table 2.12).

As of December 1, 2014, volumes of water in the reservoirs amounted to: 10.5 billion m^3 in Toktogul; 480 Mm^3 in Andijan; and, 1.3 billion m^3 in Charvak. Generally, the water storage in upper reservoirs is 12.2 billion m^3 (Table 2.13).

Water supply to the riparian states was recorded as follows by 01.12.2014 (Tables 2.14 and 2.15):

Kazakhstan, Dostryk canal	0
Kyrgyzstan	18 Mm^3 (78%)
Tajikistan	25 Mm^3 (15%)
Uzbekistan	887 Mm^3 (94%)

Water was delivered in line with water requests from users.

Generally, 2,065 Mm^3 of water flew to the Shardara reservoir.

The Aral Sea and Prearalie received 538 Mm^3 of water by 01.12.14 (Table 2.16).

Proceeding from the water situation at the beginning of December and taking into account the forecast from the Hydrometeorological services and actual water withdrawals over the non-growing season to date, BWO Syrdarya prepared the forecast operation of the Naryn-Syrdarya reservoir cascade till April 1, 2015 (Table 2.17).

Table 2.11

Parameter	**Volume (01.10.2014 to 01.12.2014), Mm^3**			**Volume (01.10.2013 to 01.12.2013), Mm^3**
	forecast	**actual**	**%%**	**Actual**
Inflow to the upper reservoirs:				
Toktogul	1,066	1,174	110	1,189
Andijan	289	385	133	229
Charvak (total from 4 rivers)	501	589	118	495
Sub-total:	**1,856**	**2,148**	**116**	**1,913**
Lateral inflow:		(calculated)		
Toktogul – Uchkurgan	140	85	61	145
Uchkurgan, Uchtepe - Kayrakkum	1,263	1,301	103	1,328
Andijan – Uchtepe	763	822	108	769
Kayrakkum – Shardara	750	770	103	762
Gazalkent-Chinaz g/s-Chirchik (excl.Ugam)	245	364	149	395
Sub-total:	**3,161**	**3,342**	**106**	**3,397**
TOTAL:	**5,017**	**5,490**	**109**	**5,310**

Table 2.12

Reservoir	Water releases (01.10.2014 to 01.12.2014), Mm3		%%
	schedule	actual	
Toktogul	1,840	2,592	141
Andijan	291	293	101
Charvak (discharge from Gazalkent HPP)	712	816	115
Kayrakkum	1,706	1,854	109
Shardara	1,572	1,380	88
TOTAL:	**6,121**	**6,935**	**113**

Table 2.13

Reservoir	Water volume in reservoir, Mm3			
	by 01.10.14.	schedule by 01.12.2014	actual by 01.12.2014	actual by 01.12.2013
Toktogul	1,1921	11,138	10,494	14,777
Andijan	392	389	480	454
Charvak	1,504	1,287	1,274	1,214
Kayrakkum	1,120	2,423	2,839	2,732
Shardara	933	1,410	1,680	1,569
TOTAL:	**15,870**	**16,647**	**16,767**	**20,746**

Table 2.14

Reach, water user state	Water withdrawals, Mm3 (01.10.14 to 01.12.14)		
	quota	**actual**	**%%**
Toktogul – Uchkurgan hydroscheme, of which	**502**	**470**	**94**
Kyrgyzstan	16	15	94
Tajikistan	26	0	
Uzbekistan	460	455	99
Uchkurgan – Kayrakkum hydroscheme, of which	**86**	**46**	**53**
Kyrgyzstan	7	3	43
Tajikistan	40	1	3
Uzbekistan	39	42	107
Kayrakkum hydroscheme – Shardara reservoir, of which	**548**	**414**	**75**
Kazakhstan	0	0	
Tajikistan	102	24	24
Uzbekistan	446	390	87

Table 2.15

Water user state	Water withdrawals, Mm3 (01.10.14. to 01.12.14)		
	quota	**actual**	**%%**
Republic of Kazakhstan (Dostyk canal)	0	0	
Kyrgyz Republic	23	18	78
Republic of Tajikistan	168	25	15
Republic of Uzbekistan	945	887	94

Table 2.16

Parameter	Schedule, 01.10.14 to 01.12.14, Mm3	Actual, 01.10.14 to 01.12.14, Mm3
Water supply to the Aral Sea	600	538
Discharge into Arnasay depression	0	0
Inflow to the Shardara reservoir	2,134	2,065

Table 2.17

Operation schedule of the Naryn-Syrdarya reservoir cascade from October 1,2014 to March 31, 2015

Toktogul reservoir		**October**		**November**		**December**	**January**	**February**	**March**	**Total**
		(forecast)	**(actual)**	**(forecast)**	**(actual)**					**Mm3**
Inflow to the reservoir	m3/sec	216.58	**254.52**	187.35	**190.07**	**153.64**	**144.30**	**142.33**	**152.01**	
	Mm3	580.09	**681.70**	486.60	**492.65**	411.50	386.48	344.32	407.15	**2 723.80**
Volume: beginning of the period	Mm3	11 921.00	**11 921.00**	11 693.01	**11 528.00**	**10 949.00**	**9 616.71**	**8 717.18**	**7 899.99**	**11 921.00**
end of the period	Mm3	11 693.01	**11 528.00**	11 137.93	**10 949.00**	**9 616.71**	**8 717.18**	**7 899.99**	**7 369.39**	**7 369.39**
Release from the reservoir	m3/sec	300.00	**398.39**	400.00	**588.17**	**480.00**	**480.00**	**480.00**	**350.00**	
	Mm3	803.52	**1 067.04**	1 036.80	**1 524.53**	1 285.63	1 285.63	1 161.22	937.44	**7 261.49**
Kayrakkum reservoir		**October**		**November**		**December**	**January**	**February**	**March**	**Total**
		(forecast)	**(actual)**	**(forecast)**	**(actual)**					**Mm3**
Inflow to the reservoir	m3/sec	425.70	**513.78**	712.05	**843.27**	**814.84**	**731.15**	**740.64**	**485.84**	
	Mm3	1 140.19	**1 376.10**	1 845.63	**2 185.75**	2 182.46	1 958.31	1 791.76	1 301.26	**10 795.64**
Volume: beginning of the period	Mm3	1 120.00	**1 120.00**	1 841.69	**2 133.90**	**2 839.60**	**3 323.96**	**3 418.00**	**3 418.00**	**1 120.00**
end of the period	Mm3	1 841.69	**2 133.90**	2 422.68	**2 839.60**	**3 323.96**	**3 418.00**	**3 418.00**	**3 418.00**	**3 418.00**
Release from the reservoir	m3/sec	153.23	**132.74**	500.00	**578.17**	**650.00**	**717.76**	**763.32**	**497.59**	
	Mm3	410.41	**355.53**	1 296.00	**1 498.61**	1 740.96	1 922.46	1 846.63	1 332.75	**8 696.93**
Shardara reservoir		**October**		**November**		**December**	**January**	**February**	**March**	**Total**
		(forecast)	**(actual)**	**(forecast)**	**(actual)**					**Mm3**
Inflow to the reservoir	m3/sec	224.10	**210.49**	591.79	**579.20**	**791.96**	**876.44**	**874.08**	**568.04**	
	Mm3	600.23	**563.77**	1 533.92	**1 501.28**	2 121.19	2347.46	2 114.57	1 521.44	**10 169.72**
Volume: beginning of the period	Mm3	933.00	**933.00**	952.03	**1 209.00**	**1 679.84**	**2 421.66**	**3 403.13**	**4 283.92**	**933.00**
end of the period	Mm3	952.03	**1 209.00**	1 410.27	**1 679.84**	**2 421.66**	**3 403.13**	**4 283.92**	**4 697.94**	**4 697.94**
Release from the	m3/sec	200.00	**114.93**	400.00	**413.81**	**500.00**	**500.00**	**500.00**	**400.00**	

reservoir	Mm3	535.68	**307.84**	1036.80	**1 072.60**	1 339.20	1 339.20	1 209.60	1 071.36	**6 339.80**
Release to the Kzylkum canal	m3/sec	5.00	**5.00**	5.00	**5.00**	**5.00**	**5.00**	**5.00**	**6.77**	
	Mm3	13.39	**13.39**	12.96	**12.96**	13.39	13.39	12.10	18.14	**83.38**
Release to the Arnasay depression	m3/sec	0.00	**0.00**	0.00	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	
	Mm3	0.00	**0.00**	0.00	**0.00**	0.00	0.00	0.00	0.00	**0.00**
Water supply to the Aral Sea	m3/sec	105.48	**117.45**	122.30	**119.46**	**178.93**	**173.20**	**187.00**	**185.20**	
	Mm3	282.52	**314.58**	317.00	**309.65**	479.25	463.90	452.39	496.04	**2 515.81**
Charvak reservoir		**October**		**November**		**December**	**January**	**February**	**March**	**Total**
		(forecast)	**(actual)**	**(forecast)**	**(actual)**					**Mm3**
Inflow to the reservoir (total of the 4 rivers)	m3/sec	100.00	**114.95**	90.00	**108.45**	**85.00**	**69.00**	**67.00**	**94.01**	
	Mm3	267.84	**307.88**	233.28	**281.10**	227.66	184.81	162.09	251.80	**1 415.34**
Volume: beginning of the period	Mm3	1 504.00	**1 504.00**	1 393.46	**1 388.80**	**1 274.00**	**1 126.10**	**394.33**	**756.76**	**1 504.00**
end of the period	Mm3	1 393.46	**1 388.80**	1 287.09	**1 274.00**	**1 126.10**	**934.33**	**756.76**	**686.88**	**686.88**
Release from the reservoir (release from the Gazalkent HEPS)	m3/sec	140.00	**159.58**	130.00	**150.07**	**140.00**	**140.00**	**140.00**	**120.00**	
	Mm3	374.98	**427.42**	336.96	**388.97**	374.98	374.98	338.69	321.41	**2 226.44**
Andizhan reservoir		**October**		**November**		**December**	**January**	**February**	**March**	**Total**
		(forecast)	**(actual)**	**(forecast)**	**(actual)**					**Mm3**
Inflow to the reservoir	m3/sec	50.00	**68.71**	60.00	**77.50**	**55.00**	**42.54**	**42.26**	**55.99**	
	Mm3	133.92	**184.03**	155.52	**200.88**	147.31	113.94	102.23	149.98	**898.37**
Volume: beginning of the period	Mm3	392.20	**392.20**	**338.07**	**363.60**	**480.05**	**600.02**	**695.13**	**777.93**	**392.20**
end of the period	Mm3	338.07	**363.60**	389.37	**480.05**	**600.02**	**695.13**	**777.93**	**767.12**	**767.12**
Release from the reservoir	m3/sec	70.00	**77.42**	40.00	**32.87**	**10.00**	**7.00**	**8.00**	**60.00**	
	Mm3	187.49	**207.36**	103.68	**85.19**	26.78	18.75	19.35	160.70	**518.14**

ANALYSIS OF WATER-MANAGEMENT SITUATION IN THE SYRDARYA AND AMUDARYA RIVER BASINS OVER THE GROWING SEASON 2014

1 Syrdarya River Basin

The actual inflow to upstream reservoirs in the Syrdarya basin (Toktogul, Andizhan, and Charvak reservoirs) was 14.366 km^3 or 91 % or 101.6% of the forecast and 78 % of the norm during the growing season. The total lateral inflow to the Naryn and Syrdarya rivers (reaches up to Shardara reservoir) was 9.72 km^3. By the end of the growing season, 13.817 km^3 or 88 % of BWO Syrdarya's scheduled amount were accumulated in upstream reservoirs, including 11.92 km^3 in Toktogul reservoir, i.e. 4 km^3 less as compared to the same date in 2013. Water releases from the Toktogul reservoir amounted to 4.29 km^3 or 105 % of the schedule. The largest amount of 1,102 km^3 (126 % of plan) of water was released in April, then in May the amount decreased to 654 km^3, and water releases dropped to 590 km^3 (98 % of plan) in June. Water releases were 641 km^3 in July, increased to 747 km^3 (114.7 %) in August and again decreased to 560 km^3 (88 %) in September (see Table 1.4, which compares water releases from the Toktogul HPS with water availability in the Toktogul-Uchkurgan reach) and Uchkurgan- Kairakkum.

The total water withdrawal from the Naryn and Syrdarya rivers in the reaches up to Shardara reservoir was 8.66 km^3 or 82 % of the quota cut by 10%. During the growing season 2014, 1.9 km^3 less water was diverted against the schedule of BWO Syrdarya. Water shortage (against the quota cut by 10%) was 242 Mm^3 for the Republic of Kazakhstan, 53 Mm^3 for the Kyrgyz Republic, 239 Mm^3 for the Republic of Tajikistan, and 1,369 Mm^3 for the Republic of Uzbekistan (along the Dustlik canal). Water was distributed unevenly among the states and river reaches (see Table 1.1). This shortage was particularly acute in the river's midstream in Kairakum-Shardara section and reached 23 %. In some ten-day periods water availability of decreased to 42…48 % (July) for the Republic of Kazakhstan, and to 33…37 % (late May-early June) for the Republic of Uzbekistan.

Water availability in the Syrdarya midstream depends on releases of water from the Kairakkum reservoir. Given the inflow of 1,712 Mm^3, 1,720 Mm^3 (or 113.5 % of BWO's schedule) were released from the reservoir in April, 1,112 Mm^3 in May, and 1,003 Mm^3 (77.4 %) in June. The lowest water releases (590 Mm^3) from the Toktogul reservoir were observed in June as well; while the inflow to reservoir was maximum (1,880 Mm^3). The ten-day analysis of water releases from the Kairakkum reservoir against water availability in the midstream is shown in Table 1.5.

Inflow to the Shardara reservoir was 5.06 km^3, while water releases from the reservoir were 7.75 km^3, including 6.92 km^3 released into the river; water did not reach the Arnasay reservoir. According to Aralo-Syrdarya Basin Water Administration's data, the Koksaray reservoir accumulated water only in April (146 Mm^3) and released the earlier accumulated flow in the amount of 2949 Mm^3 in other

months (May-September).

The analysis of reservoirs' water balances (Table 1.3) indicated to unaccounted inflow to Charvak reservoir in the amount of 0.38 km^3. Losses identified for Kairakkum and Shardara reservoirs amounted to 1.42 km^3 in total.

According to Kazgidromet's data (at Karateren gauging station), water supply to the Aral Sea and Prearalie amounted to 2.0 km^3 during the growing season.

Table 1.1

Water availability in the Syrdarya River basin countries for the growing season 2014

Water user	Water volume, km^3		Water availability, %	Deficit (-), surplus (+) km^3
	BWO schedule / quota *	actual	season	season
1 Total water withdrawal	10.56	8.66	82	-1.90
2 By state:				
- *Kyrgyz Republic*	0.222	0.1683	76	-0.05
- *Republic of Uzbekistan*	7.920	6.551	83	-1.37
- *Republic of Tajikistan*	1.715	1.476	86	-0.24
- *Republic of Kazakhstan*	0.702	0.460	66	-0.24
3 By river reach				
3.1 Toktogul reservoir-Uchkurgan hydroscheme	3.55	2.99	84	-0.56
of which:				
– *Kyrgyz Republic*	0.1455	0.0955	66	-0.050
– *Republic of Tajikistan*	0.2129	0.0751	35	-0.138
– *Republic of Uzbekistan*	3.1933	2.8238	88	-0.370
3.2 Uchkurgan hydroscheme – Kayrakkum hydroscheme	0.97	1.03	106	0.059
of which:				
– *Kyrgyz Republic*	0.0763	0.0728	95	-0.004
– *Republic of Tajikistan*	0.4039	0.5024	124	0.099
– *Republic of Uzbekistan*	0.4897	0.4539	93	-0.036
3.3 Kayrakkum hydroscheme – Shardara reservoir	6.04	4.63	77	-1.41
of which:				
– *Republic of Kazakhstan*	0.7022	0.4601	66	-0.24
– *Republic of Tajikistan*	1.0978	0.8982	82	-0.20
– *Republic of Uzbekistan*	4.2371	3.2735	77	-0.96
4 In addition:				
– Inflow to the Shardara reservoir	3.94	5.06	129	1.12
– Discharge into Arnasay	0.00	0.00		0.00
– Water supply to the Aral Sea and Priaralie	1.90	2.00	105	0.10

*) Quotas cut by 10% for the growing season 2014

Table 1.2

Syrdarya River channel water balance for the growing season 2014

Balance item	Water volume, km3		Deviation (actual-plan)
	forecast/plan	actual	
1 Inflow to the Toktogul reservoir	8.64	7.19	-1.45
2 Lateral inflow at the river reach Toktogul reservoir-Shardara reservoir (+)	2.69	9.03	6.35
of which:			
a. Release into the Karadarya river	1.47	1.51	0.05
b. Release into the Chirchik river	1.22	0.94	-0.28
c. Lateral inflow from CDF and small rivers		6.58	6.58
3 Flow regulation in the reservoirs: inflow (+) or diversion (-)	-2.47	-1.44	1.02
of which:			
– *Toktogul reservoir*	-4.51	-2.89	1.61
– *Kairakkum reservoire*	2.04	1.45	-0.59
4 Regulated flow сток (1+2+3)	8.86	14.78	5.92
5 Water diversion at the reach Toktogul-Shardara (-)	10.56	8.66	-1.90
6 Water losses (-) or unrecorded inflow to the channel (+) at the reach Токtogul-Shardara	5.64	-1.06	-6.70
Including % of the regulated flow	-64	7	
7 Inflow to the Shardara reservoir	3.94	5.06	1.12
8 Flow regulation in the Shardara reservoir: inflow (+) or diversion (-)	2.48	2.68	0.20
9 Water release from the Shardara reservoir into the river	5.22	6.92	1.71
10 Diversion to the Kzylkum canal (-)	1.21	0.82	-0.38
11 Diversion to the Kzylkum canal (-)	0.00	0.00	0.00
12 Water supply to the Aral Sea and Priaralie	1.90	2.00	0.10

Table 1.3

Water balance of the Syrdarya River basin reservoirs for the growing season 2014

Balance item	Water volume, km^3		Deviation (actual-plan)
	Forecast/plan	actual	
1. Toktogul reservoir			
1.1 Inflow to the reservoir	8.637	7.188	-1.45
1.2 Water volume in the reservoir:			
- beginning of the season (April 1, 2014)	9.009	9.009	0.00
- end of the season (October 1, 2014)	13.518	11.921	-1.60
1.3 Release from the reservoir	4.073	4.293	0.22

Balance item	Water volume, km^3		Deviation (actual-plan)
	Forecast/plan	actual	
1.4 Unrecorded inflow (+) or losses (-)	-0.055	0.018	0.073
% of inflow to the reservoir	-0.6	0.2	0.88
1.5 Flow regulation: inflow (+) or diversion(-)	-4.509	-2.894	1.61
2. Andizhan reservoir			
2.1 Inflow to the reservoir	2.461	1.791	-0.67
2.2 Water volume in the reservoir:			
- beginning of the season (April 1, 2014)	0.788	0.788	0.00
- end of the season (October 1, 2014)	0.703	0.392	-0.31
2.3 Release from the reservoir	2.535	2.205	-0.33
2.4 Unrecorded inflow (+) or losses (-)	-0.011	0.018	0.03
% of inflow to the reservoir	-0.4	1.0	1.47
2.5 Flow regulation: inflow (+) or diversion(-)	0.085	0.414	0.33
3. Charvak reservoir			
3.1 Inflow to the reservoir	4.878	5.387	0.51
3.2 Water volume in the reservoir:			
- beginning of the season (April 1, 2014)	0.641	0.591	-0.05
- end of the season (October 1, 2014)	1.437	1.504	0.07
3.3 Release from the reservoir	4.03	4.85	0.82
3.4 Unrecorded inflow (+) or losses (-)	-0.05	0.38	0.42
% of inflow to the reservoir	-0.98	6.99	7.97
3.5 Flow regulation: inflow (+) or diversion(-)	-0.797	-0.537	0.26
3 Kairakkum reservoir			
4.1 Inflow to the reservoir	5.53	5.34	-0.19
4.2 Lateral inflow	0.300	0.231	-0.07
4.3 Water volume in the reservoir:			
- beginning of the season (April 1, 2014)	3.48	3.48	0.00
- end of the season (October 1, 2014)	1.44	1.12	-0.32
4.4 Release from the reservoir	7.36	7.02	-0.35
of which:			
- release to the river	6.93	6.66	-0.27
- water diversion from the reservoir	0.433	0.357	-0.076
4.5 Unrecorded inflow (+) or losses (-)	-0.50	-0.91	-0.40
% of inflow to the reservoir	-9.1	-17.0	-7.89
4.6 Flow regulation: inflow (+) or diversion(-)	2.042	1.45	-0.59
5 Shardara reservoir			
5.1 Inflow to the reservoir	3.94	5.06	1.12
5.2 Lateral inflow	0.0	0.0	0.00
5.3 Water volume in the reservoir:			
- beginning of the season (April 1, 2014)	4.127	4.127	0.00
- end of the season (October 1, 2014)	1.117	0.933	-0.18
5.4 Release from the reservoir	6.42	7.75	1.33
of which:			
– *Discharge into Arnasay*	0.00	0.00	0.000
– *Release to the river*	5.22	6.92	1.71
– *water diversion from the reservoir*	1.21	0.82	-0.38

Balance item	Water volume, km^3		Deviation (actual-plan)
	Forecast/plan	actual	
5.5 Unrecorded inflow (+) or losses (-)	-0.53	-0.51	0.02
% of inflow to the reservoir	-13.4	-10.1	3.32
5.6 Flow regulation: inflow (+) or diversion(-)	2.48	2.68	0.20
TOTAL flow regulation by reservoirs: inflow (+) or diversion (-)	-0.70	1.12	1.82
TOTAL losses (-), unrecorded inflow (+)	-1.14	-1.00	0.14

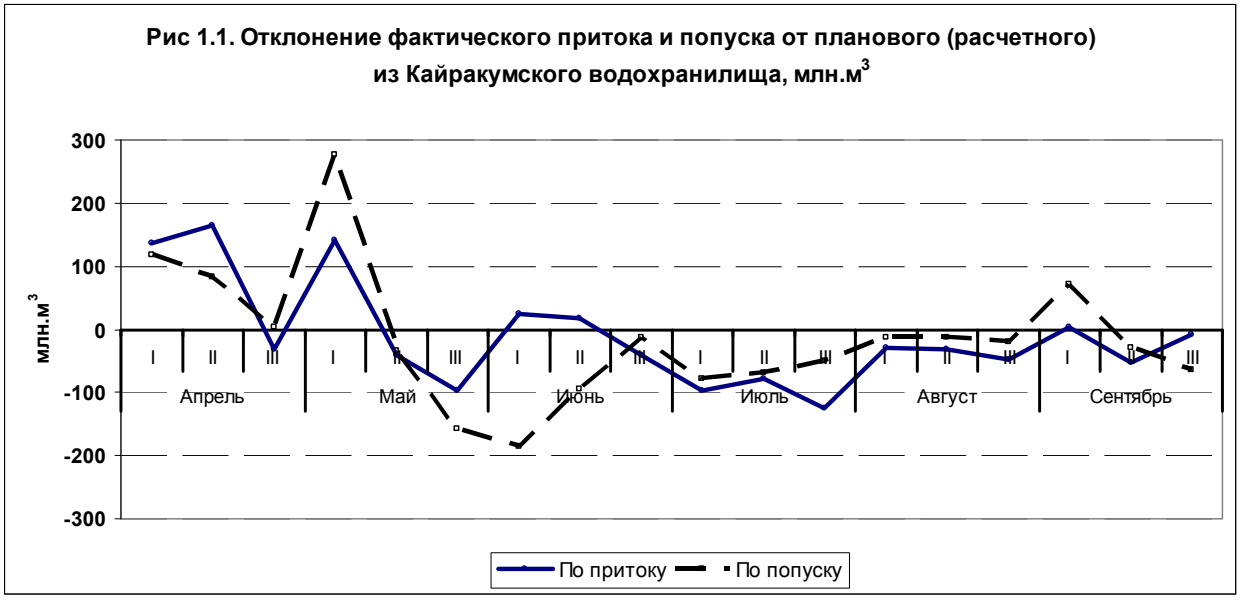

Figure 1.1. Deviation of actual inflow and releases from planned (design) values in Kairakkum reservoir, Mm3

Positive values (+) of deviation of actual inflow from planned out indicate to unrecorded inflow, while negative values (-) indicate to non-fulfillment of obligations to ensure inflow to reservoir and (or) to unrecorded losses (water diversion). Negative values (-) of deviation of actual releases from the reservoir from planned ones mean failure to observe accords on water releases.

Table 1.4

Ten-day analysis of water releases from the Toktogul reservoir and water availability (W/A) in the Toktogul-Kairakkum reach in 2014

Reach	Republic	Indicators	April			May			June			July			Agust			September			*Grow. season Mm³*
			I	***II***	***III***	***I***	***II***	***III***	***I***	***II***	***III***	***I***	***II***	***III***	***I***	***II***	***III***	***I***	***II***	***III***	
Release from Toktogul reservoir		Plan, m^3/s	**337**	**337**	**337**	**252**	**252**	**252**	**232**	**232**	**232**	**238**	**238**	**238**	**243**	**243**	**243**	**245**	**245**	**245**	**4073**
		Actual, m^3/s	**451**	**468**	**356**	**240**	**241**	**251**	**222**	**220**	**241**	**241**	**243**	**234**	**367**	**303**	**177**	**184**	**206**	**258**	**4293**
		Actual/Plan %	*134*	*139*	*106*	*95*	*95*	*100*	*96*	*95*	*104*	*101*	*102*	*98*	*151*	*125*	*73*	*75*	*84*	*105*	*105*
Toktogul-Uchkurgan	Uzb	Quota, m^3/s	**134**	**158**	**178**	**200**	**190**	**190**	**210**	**228**	**242**	**270**	**284**	**280**	**260**	**222**	**193**	**152**	**120**	**119**	**3193**
		Actual, m^3/s	**158**	**170**	**188**	**194**	**208**	**200**	**172**	**220**	**237**	**146**	**226**	**153**	**182**	**197**	**164**	**147**	**127**	**128**	**2824**
		W/A, %	*118*	*108*	*105*	*97*	*109*	*105*	*82*	*97*	*98*	*54*	*80*	*55*	*70*	*89*	*85*	*97*	*106*	*107*	*88*
	Taj	Quota, m^3/s	**9.9**	**11.7**	**12.6**	**13.5**	**14.4**	**14.4**	**15.3**	**15.3**	**15.3**	**15.3**	**15.3**	**15.3**	**15.3**	**15.3**	**13.5**	**11.7**	**9.9**	**8.1**	**212.9**
		Actual, m^3/s	**3.7**	**8.9**	**3.5**	**6.7**	**6.9**	**4.0**	**2.1**	**4.4**	**7.1**	**2.4**	**2.9**	**7.2**	**7.8**	**7.2**	**5.8**	**2.3**	**1.9**	**0.6**	**75.1**
		W/A, %	*36.9*	*76.2*	*27.7*	*49.3*	*47.9*	*27.4*	*13.5*	*29.0*	*46.3*	*15.9*	*19.0*	*47.2*	*50.7*	*47.2*	*42.7*	*19.7*	*18.9*	*7.3*	*35.3*
	Kyrg	Quota, m^3/s	3.2	4.0	4.0	5.7	6.8	9.2	11.6	11.3	12.3	13.2	13.2	13.9	13.1	11.9	11.5	8.3	6.6	5.2	145.5
		Actual, m^3/s	2.0	2.5	3.5	3.8	4.1	4.7	6.8	8.1	9.5	9.6	9.6	8.4	7.4	7.0	6.9	5.0	4.8	4.8	95.5
		W/A, %	60.2	63.1	88.4	67.0	61.3	51.6	58.6	71.2	77.4	72.6	72.6	60.3	56.2	58.8	59.9	60.7	73.1	92.0	65.6
Uchkurgan-Kairakkum	Uzb	Quota, m^3/s	**22.4**	**23.4**	**23.5**	**24.3**	**24.3**	**25.2**	**30.6**	**33.5**	**36.0**	**45.7**	**50.4**	**50.4**	**46.8**	**38.0**	**27.1**	**22.5**	**18.9**	**13.5**	**489.7**
		Actual, m^3/s	**32.1**	**29.8**	**31.7**	**26.9**	**23.8**	**24.8**	**28.7**	**29.6**	**30.7**	**29.5**	**33.9**	**36.1**	**36.8**	**34.9**	**27.3**	**22.7**	**19.5**	**17.6**	**453.9**
		W/A, %	*143.3*	*127.4*	*134.9*	*110.9*	*97.9*	*98.2*	*93.8*	*88.4*	*85.3*	*64.5*	*67.2*	*71.6*	*78.6*	*91.9*	*101*	*101*	*103*	*131*	*92.7*
	Taj	Quota, m^3/s	**0**	**11**	**20**	**24**	**24**	**29**	**33**	**38**	**38**	**38**	**38**	**32**	**32**	**29**	**23**	**18**	**17**	**15**	**404**
		Actual, m^3/s	**0**	**0**	**6**	**37**	**36**	**38**	**39**	**40**	**43**	**44**	**41**	**40**	**42**	**39**	**38**	**36**	**28**	**22**	**502**
		W/A, %		*0*	*33*	*153*	*147*	*133*	*118*	*107*	*113*	*116*	*109*	*125*	*134*	*135*	*160*	*201*	*161*	*145*	*124*
	Kyrg	Quota, m^3/s	**2.5**	**2.5**	**3.4**	**4.1**	**4.1**	**4.1**	**5.4**	**5.4**	**5.7**	**6.8**	**6.8**	**5.9**	**5.7**	**5.7**	**5.1**	**5.1**	**4.5**	**4.1**	**76.3**
		Actual, m^3/s	**0.0**	**0.0**	**0.5**	**4.7**	**5.2**	**5.2**	**5.5**	**5.7**	**5.6**	**5.2**	**6.1**	**5.8**	**6.0**	**5.4**	**5.9**	**6.0**	**5.3**	**4.6**	**72.8**
		W/A, %	*0.0*	*0.0*	*15.2*	*115.3*	*128.9*	*128*	*102*	*105.9*	*98.4*	*75.3*	*89.2*	*98.1*	*106*	*95*	*114*	*116*	*118*	*113*	*95.4*

Table 1.5

Ten-day analysis of water releases from the Kairakkum reservoir and water availability (W/A) in the Kairakkum-Shardara reach in 2014

Republic	Indicator	April			May			June			July			Agust			September			*Grow. season Mm^3*
		I	***II***	***III***	***I***	***II***	***III***	***I***	***II***	***III***	***I***	***II***	***III***	***I***	***II***	***III***	***I***	***II***	***III***	
Releases from Kairakkum reservoir	Plan, m^3/s	**585**	**585**	**585**	**384**	**384**	**384**	**500**	**500**	**500**	**500**	**500**	**500**	**413**	**413**	**413**	**250**	**250**	**250**	**6932**
	Actual, m^3/s	**721**	**681**	**589**	**703**	**343**	**219**	**286**	**390**	**485**	**410**	**419**	**446**	**397**	**399**	**392**	**333**	**216**	**177**	**6662**
	Actual/Plan %	*123*	*116*	*101*	*183*	*90*	*57*	*57*	*78*	*97*	*82*	*84*	*89*	*96*	*97*	*95*	*133*	*86*	*71*	*96*
Uzb	Quota, m^3/s	**217**	**226**	**240**	**242**	**245**	**266**	**356**	**401**	**401**	**405**	**405**	**405**	**333**	**261**	**189**	**107**	**71**	**48**	**4237**
	Actual, m^3/s	**196**	**133**	**274**	**312**	**243**	**87**	**131**	**210**	**293**	**276**	**253**	**278**	**237**	**234**	**187**	**164**	**124**	**101**	**3274**
	W/A, %	*90*	*59*	*114*	*129*	*99*	*33*	*37*	*52*	*73*	*68*	*62*	*69*	*71*	*90*	*99*	*153*	*174*	*209*	*77*
Taj	Quota, m^3/s	**9**	**54**	**73**	**74**	**74**	**80**	**83**	**86**	**86**	**86**	**86**	**86**	**86**	**86**	**74**	**54**	**36**	**32**	**1098**
	Actual, m^3/s	**0**	**0**	**7**	**50**	**69**	**63**	**70**	**77**	**78**	**78**	**81**	**85**	**77**	**75**	**75**	**57**	**39**	**34**	**898**
	W/A, %	*0*	*0*	*10*	*68*	*94*	*78*	*85*	*89*	*90*	*91*	*94*	*98*	*90*	*87*	*102*	*106*	*107*	*109*	*82*
Kaz	Quota, m^3/s	**14**	**14**	**14**	**14**	**18**	**18**	**45**	**54**	**72**	**81**	**90**	**90**	**90**	**90**	**72**	**21**	**0**	**0**	**702**
	Actual, m^3/s	**16**	**12**	**14**	**17**	**20**	**26**	**26**	**29**	**35**	**34**	**43**	**50**	**45**	**50**	**50**	**39**	**13**	**4**	**460**
	W/A, %	*116*	*87*	*102*	*124*	*109*	*145*	*58*	*53*	*48*	*42*	*48*	*56*	*50*	*56*	*69*	*186*			*66*

2 Amudarya River Basin

The actual water availability along the Amudarya River in the Atamyrat gauging station (upstream of intake to Garagumdarya) was 41.52 km^3 or 1.42 km^3 less than expected by BWO Amudarya schedule (see Table 2.2). Inflow to Nurek HPP turned to be higher by 0.29 km^3 than the forecast and water releases from the reservoir were 12.46 km^3 or 0.21 km^3 more than planned amount. Water releases from the Nurek reservoir amounted to 1.064 km^3 (or 101% of plan) in April, 2.78 km^3 (128 %) in May, 3.41 km^3 (88.5%) in June, 4.46 km^3 (101 %) in July, 3.18 km^3 (85 %) in August, and 1.91 km^3 (113 %) in September. Withdrawal of river flow at the expense of accumulation in the Nurek reservoir amounted to 4.37 km^3.

Under such water-related situation, the established quotas of water withdrawals into canals in the Amudarya River basin were 87.5% used; the total water withdrawal was 34.44 km^3, including 27.83 km^3 downstream of Atamyrat gauging station (starting from intake to Garagumdarya). Water withdrawals were met 82 % in Tajikistan, 89 % in Turkmenistan, and 87 % in Uzbekistan, whereas the lower reaches of Uzbekistan received 86% of water and the Surkhandarya province - 78% (Table 2.1).

Water losses, calculated by balance method, along the Amudarya river from the Atamyrat gauging station to inflow point to Tuyamuyun hydroscheme were 6.56 km^3 or 16% of the flow in the Atamyrat section. Water losses from the inflow point to Tuyamuyun hydroscheme to the point of water delivery to the Aral Sea and Prearalie were 1.19 km^3 or 7% of inflow to Tuyamuyun hydroscheme.

Through flow to Samanbay gauging station plus discharge of collector-drainage water, 2.82 km^3 of water were delivered to Prearalie and the Aral Sea during the growing season.

Table 2.1

Water availability in the Amudarya River Basin countries for the growing season 2014

Water user	Water volume, km3		Water availability, %	Deficit (-), surplus (+) km3
	Quota/ Schedule	Actual	Season	Season
1. Total water withdrawal	39.6	34.4	86.9	-5.2
2. By state:				
Kyrgyz Republic	-	-	-	-
Republic of Tajikistan	6.9	5.7	82.4	-1.2
Turkmenistan	15.5	13.8	89.2	-1.7
Republic of Uzbekistan	17.2	14.9	86.8	-2.3
3. Downstream of Atamyrat GS *)	31.5	27.8	88.3	-3.7
of which:				
Turkmenistan	15.5	13.8	89.2	-1.7

Water user	Water volume, km3		Water availability, %	Deficit (-), surplus (+) km3
	Quota/ Schedule	Actual	Season	Season
Republic of Uzbekistan	16.0	14.0	87.4	-2.0
4. By river reach:				
Upstream	8.1	6.6	81.7	-1.5
of which:				
Kyrgyz Republic	-	-	-	-
Republic of Tajikistan	6.9	5.7	82.4	-1.2
Surkhandarya province, Uzbekistan	1.2	0.9	78.0	-0.3
Midstream	16.2	14.6	90.0	-1.6
of which:				
Turkmenistan	10.5	9.4	89.7	-1.1
Republic of Uzbekistan	5.7	5.2	90.6	-0.5
Downstream	15.3	13.2	86.4	-2.1
of which:				
Turkmenistan	5.0	4.4	88.0	-0.6
Republic of Uzbekistan	10.3	8.8	85.6	-1.5
5. In addition:				
Emergency and environmental releases to canals within lower reaches	0.0	0.0		
of which:				
Turkmenistan	0.0	0.0		
Republic of Uzbekistan	0.0	0.0		
Water supply to the Aral Sea and Priaralie **	2.1	2.8	134.1	

***)** Atamyrat gauging station – located upstream of the water intake to Garagumdarya along the Amudarya
**) Taking into account CDF

Table 2.2

The Amudarya River channel water balance for the growing season 2014

Статьи руслового баланса	Water volume, km3		Deviation (actual-plan)
	Forecast/Plan	Actual	
1. Water content of the Amudarya river -non-regulated flow at the Atamyrat GS *	42.94	41.52	-1.42
Flow regulation in the Nurek reservoir: 2. accumulation (+) or release (-)	-4.27	-4.30	-0.03
3. Water diversion in the midstream (-)	-16.21	-14.59	1.61
4. Midstream return CDF (+)	1.38	1.76	0.39
5. Water losses (-) or unrecorded inflow to the channel (+)	-5.31	-6.56	-1.25
% of the flow at the Atamyrat GS	-12.36	-15.79	-3.42
6 Inflow to the TMHS (Bir-Ata GS)	18.54	17.84	-0.70
Flow regulation at TMHS: 7 accumulation (+) or release (-)	-0.67	-0.60	0.07
8 Losses (-) in the TMHS reservoirs, lateral inflow (+)	0.00	0.21	0.20
% of inflow	0.02	1.15	1.13

Статьи руслового баланса	Water volume, km3		Deviation (actual-plan)
	Forecast/Plan	Actual	
9 Releases from TMHS (including water diversion from the reservoir)	18.42	17.24	-1.18
10 Downstream water diversion, including diversion from TMHS (-)	-15.31	-13.23	2.08
11 Downstream return CDF (+)	0.00	0.00	0.00
12 Emergency and environmental water releases to canals (-)	0.00	0.00	0.00
13 Runoff losses (-) or unrecorded inflow to the channel (+)	-0.46	-1.19	-0.73
% of the flow at the Tuyamuyun downstream	-2.5	-6.9	-4.41
14 Water supply to the Priaralie and Aral Sea	2.10	2.82	0.72
TOTAL losses:	-5.76	-7.54	-1.78
% of water content of the river	-13.42	-18.2	-4.74

* Water content is calculated as the total of the flow at the Kerki section, the Kerki upstream water diversions (without Tajikistan and Surkhandarya province) and the accumulation in the Nurek reservoir

Table 2.3

Water balance of the Amudarya River Basin's reservoirs for the growing season 2014

Balance item	Water volume, km3		Deviation (actual-plan)
	Forecast/Plan	Actual	
1 Nurek reservoir			
1.1 Inflow to the reservoir	16.51	16.81	0.29
1.2 Water volume in the reservoir:			
- beginning of the season (April 1, 2014)	6.00	6.24	0.24
- end of the season (October 1, 2014)	10.51	10.56	0.05
1.3 Release from the reservoir	12.25	12.46	0.21
1.4 Lateral inflow (+) or water losses (-)	0.24	-0.03	-0.27
In % of the inflow to the reservoir	1.46	-0.19	-1.64
1.5 Flow regulation: accumulation (+) or release (-)	-4.27	-4.35	-0.08
1 TMHS reservoirs			
2.1 Inflow to the TMHS	18.54	17.84	-0.70
2.2 Water volume in the reservoirs:			
- at the beginning of the season (April 1, 2014)	2.66	2.67	0.00
- at the end of the season (October 1, 2014)	3.34	3.47	0.13
2.3 Release from the TMHS	17.87	17.24	-0.63
of which:			
- release into the river	12.85	12.56	-0.30
- water diversion	5.57	4.68	-0.89
2.4 Lateral inflow (+) or water losses (-)	0.00	0.21	0.20
% of the inflow to the reservoir	0.0	1.15	1.1
2.5 Flow regulation: accumulation (+) or release (-)	-0.67	-0.60	0.07
TOTAL flow regulation by the reservoirs: accumulation (+) or release (-)	-4.94	-4.95	-0.01
TOTAL losses (-), unrecorded inflow (+)	0.24	0.17	-0.07

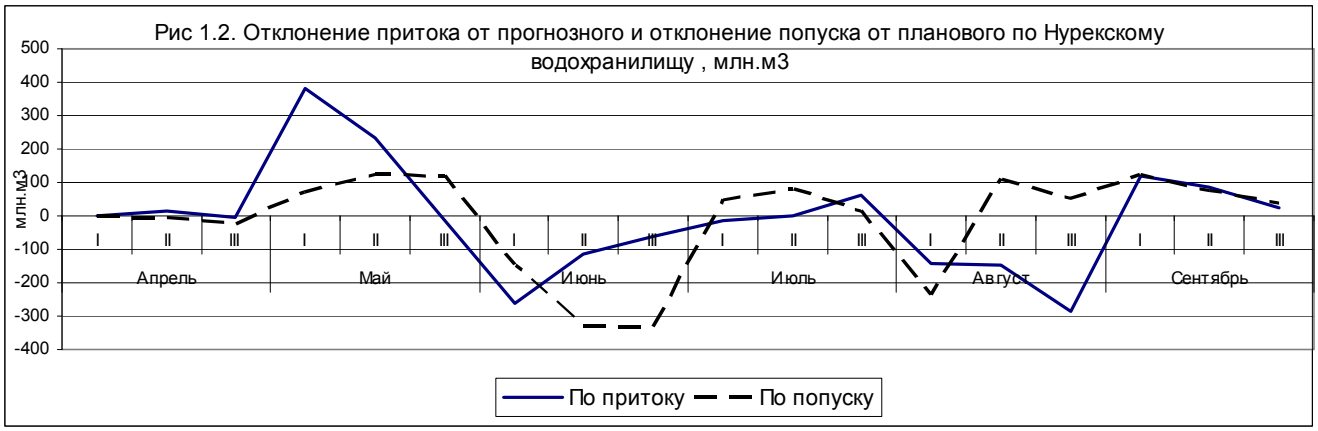

Figure 1.2. Deviation of inflow from forecast and deviation of water releases from plan in Nurek reservoir, Mm3

INTERNATIONAL CONFERENCE "DEVELOPMENT OF COOPERATION IN THE ARAL SEA BASIN TO MITIGATE CONSEQUENCES OF THE ENVIRONMENTAL CATASTROPHE"

Initiated by President of the Republic of Uzbekistan Islam Karimov, an international conference "Cooperation in the Region of the Aral Sea Basin to Alleviate the Impact of the Environmental Catastrophe" took place on October 28-29 in the city of Urgench.

The forum seeks to mobilize the efforts of the world community to implement programs and projects dedicated to improving the environmental and socio-economic situation in the region of the Aral Sea and to boosting the international cooperation to weather the negative repercussions of the ecological disaster.

It was attended by officials of 24 prominent international and regional organizations, financial institutions, among them being the United Nations, the Shanghai Cooperation Organization, the UN Regional Center for Preventive Diplomacy for Central Asia, the International Groundwater Resources Assessment Center, the Asian Development Bank, the Islamic Development Bank, the World Bank, the Organization for Economic Cooperation and Development, the Organization of Petroleum Exporting Countries, as well as scientists and experts in the fields of environmental sciences, climate change, water resources management from 26 nations, including Austria, Hungary, Germany, Spain, China, Latvia, Malaysia, the United States, France, Switzerland, South Korea, Japan among others.

The welcoming speech of Islam Karimov, President of the Republic of Uzbekistan and Chairman of the International Fund for Saving the Aral Sea was read out by the First Deputy Prime Minister of the Republic of Uzbekistan Rustam Azimov.

In his video message to the international conference, Secretary General of the United Nations Ban Ki-moon stressed the importance of this forum to address issues of the ecological crisis in the region of the Aral Sea, a disaster that has been recognized as one of the most wide-scale anthropogenic catastrophes and that which has inflicted a considerable damage to the health of millions of people and the environment.

The gathered at the event were demonstrated a video film narrating the problems associated with the unfolding situation in the basin of the Aral Sea as well as those concerning the realization of region-wide projects.

The greeting message of UNESCO Director General Irina Bokova was read out by the Deputy Director General of UNESCO – Director of the UNESCO Regional Office for Sciences in Asia-Pacific Hubert Gijzen.

Speaking at the forum, Executive Secretary the United Nations Economic Commission for Europe Christian Friis Bach, UNDP Deputy Administrator Ayse Cihan Sultanoglu, Deputy Executive Secretary of ESCAP Shun-ichi Murata, Director of ADB Division for Environment, Natural Resources and Agriculture Akmal Siddiq, Head of the Regional Office of the IDB Hisham Taleb Maruf and others noted that in terms of its ecological-climatic, socio-economic and humanitarian repercussions, the Aral crisis poses a direct threat to the sustainable development of the Central Asian region, to the health, gene pool and the future of the residents of this area. In circumstances when the frontiers of the environmental crisis zone keep expanding, the Aral problem can acquire an even greater disastrous nature without attracting the attention of the world community to addressing it.

One of the reasons behind Aral's drying out is associated with mismanagement and thoughtless waste of natural resources in the Soviet era, which was underscored at the conference.

The consequences of atmosphere pollution are being reinforced by the fact that Aral is located on the way of powerful air flow from the West to the East, which leads to the removal of aerosols to the upper atmosphere.

Speaking from high rostrums over and again, Uzbekistan's President Islam Karimov repeatedly stressed the importance of taking effective measures to weather the repercussions of the Aral disaster, the consequences that have long gone beyond the borders of one region. Thus, practically in the very wake of national independence, Uzbekistan became one of the initiators of establishing the International Fund for Saving the Aral Sea. At the 48th session of the UN General Assembly on 28 September 1993, Islam Karimov raised this issue and drew the attention of the world community to the Aral Sea problems. During the UN Millennium Summit in New York on 8 September 2000, the President of Uzbekistan came up with an initiative to set up a council for the Aral Sea and surrounding areas under the auspices of the UN Environment Program.

The systemic measures taken in our country are particularly instrumental in ameliorating the environmental situation in the Aral Sea region and alleviating the impact of the ecological crisis. Laws have been passed that regulate the use of natural resources and designed to uplifting the effectiveness of nature protection activities. Uzbekistan has acceded to principal international documents in this realm, including the Convention on the Protection and Use of Trans-boundary Watercourses and International Lakes. Wide-ranging projects are being implemented to address issues concerning the shortage of water resources and desertification, rational water consumption, combat salinization and degradation of crop lands, improvement in the access of population to drinking water, formation of essential infrastructure to treat diseases resulting from the mounting negative impact of the environmental and climate change.

Thus, the realization of the first stage of a project entitled "Creation of Local Reservoirs in the Amudarya Delta" has facilitated the construction of five water outlet structures, 45 kilometers of bank-protection dams, creation of ponds in the total area of

70 thousand hectares and with a capacity of 810 million cubic meters, regulated with engineering prowess. Within the last 15 years, 180 thousand hectares in the Amudarya delta have been filled with water and local lakes have been created, the total area of which it is intended to expand up to 230 thousand hectares in the future.

In the Aral crisis impact zone, plantations have been carried out on 740 thousand hectares of land, including that on the site of the exposed seabed over an area of 310 thousand hectares. In 1997-2012, modern outpatient clinics were commissioned in the Republic of Karakalpakstan, Khorezm and Bukhara regions, medical institutions for 5.8 thousand beds have been erected or reconstructed, and 840 rural medical units are operating in these areas. Owing to the measures taken, the number of congenital anomalies in the Republic of Karakalpakstan has diminished 3.1 times, maternal mortality decreased twofold, and child mortality declined 2.4 times compared to indicators of the year 1997.

Instrumental in ameliorating the ecological situation in the Aral Sea region has been the international conference "Aral Problems, Their Impact on the Gene Pool of the Population and on the Flora and Fauna, and International Cooperation in Alleviating Their Repercussions" that took place in 2008 in Tashkent under the initiative of President Islam Karimov and with support from the UN. The action plan worked out at that conference constituted the basis for the third Program for Assistance to Aral Basin Countries for 2011-2015.

The World Bank facilitates the implementation of this program, according to World Bank Regional Director for Central Asia Saroj Kumar Jha. "It is designed to improve the environmental and water resource situation and achieve sustainable development in the Aral Sea basin. The total volume of investments assigned by us to the implementation of national and regional projects has exceeded one billion US dollars. This international conference will allow us to define new dimensions of cooperation and coordinate the efforts of all interested parties in addressing the existing ecological issues in the region."

During panel sessions of the conference, participants discussed adopting additional measures to preserve the gene pool and boost the health of the population residing in the environmental risk zone, mobilizing necessary economic stimuli and mechanisms for bolstering the living standards and quality in the Aral area, restoring the ecological system and the biodiversity in the region.

The conference participants appreciated highly the organization of the forum in Urgench and expressed confidence that it will afford a new impetus to bolstering the international cooperation in weathering the impacts of the drying out Aral Sea.

Participants approved a final document of the international conference.

Source: UzA

TO PARTICIPANTS OF THE CONFERENCE "DEVELOPMENT OF COOPERATION IN THE REGION OF THE ARAL SEA TO MITIGATE CONSEQUENCES OF THE ECOLOGICAL CATASTROPHE": WELCOME BY THE CHAIRMAN OF THE INTERNATIONAL FUND FOR SAVING THE ARAL SEA I.A.KARIMOV

Dear guests!

Distinguished participants of the Conference!

It gives an enormous satisfaction to welcome the delegations of the member-states of the International Fund for Saving the Aral Sea, representatives of international organizations and financial institutions, governments of the donor countries, ecological organizations, diplomatic corps, respected scientists and high-profile experts who are participating in the International Conference "Development of Cooperation in the region of the Aral Sea to Mitigate Consequences of the Ecological Catastrophe".

The forum, which opens up today, is dedicated to discussing the issues related to one of the most complex problems for the region of Central Asia – the ecological catastrophe of the Aral Sea and the toughest consequences brought about by this tragedy for the gene pool and health of the population, its living standards, flora and fauna of the Aral Sea region.

Rather recently the important role belonged to the Aral Sea in terms of the development of economy of Central Asia, production of food, ensuring population's employment and formation of a steady social infrastructure. The annual fish catch in the basins of the Aral Sea region used to make up 35 thousand tons. The fertile lands of the delta of Amudarya and Syrdarya, high-yield pastures and basins ensured jobs for millions of people in the sphere of cattle-breeding, poultry farming, fish breeding and production of agricultural crops.

However, thoughtless construction of the large-scale hydrotechnical facilities on the largest rivers of the region and overregulation of the natural watercourse of transboundary rivers of Amudarya and Syrdarya turned out to be one of the biggest planetary ecological catastrophes in the recent history. The Aral Sea – once unique, most beautiful and one of the largest inland basins of the world – has in fact during a lifetime of one generation found itself on the verge of full disappearance which turned out to be an unprecedented calamity and caused an irreparable damage to the life of local population, eco-system and biodiversity of the Aral Sea region.

For over the past 50 years the cumulative runoff of the rivers of Amudarya and Syrdarya into the Aral Sea decreased nearly 5 times, the volume of water mass of the

Aral Sea was reduced more than 14 times and the level of its salinity increased almost 25 times which has led to nearly full extinction of fish and marine organisms that had earlier dwelt in the waters of the Aral Sea.

The locally growing vegetation and population of wildlife are rapidly diminishing in the Aral Sea region which was recently famous for its enormous biodiversity. 12 species of mammals, 26 types of birds and 11 types of plants are on the brink of full extinction. The new sand desert of Aralkum of more than 5,5 million hectares of area, which emerged on the place of basin, is steadily spreading to the entire Aral Sea region annually poisoning the atmosphere by about 100 million tons of dust and poisonous salts carried by sandstorms and hurricanes far beyond the Aral Sea region.

However, the bare listing of statistical figures are not able to describe the entire scale of the humanitarian catastrophe unfolded in the Aral Sea region and convey the feelings and aspirations of millions of people living here. The shortage of water resources and poor quality of potable water, degradation of lands, climatic changes, growth of population's, and firstly, children's diseases and the most complex set of related socio-economic and demographic problems – this is a severe reality which the population of adjacent regions of Uzbekistan, Kazakhstan and Turkmenistan is facing on daily basis.

Drying up of the Aral Sea brought about the dramatic changes in the climate of entire Central Asia which provoked the exacerbation of shortage of water resources, aggravation of seasonal droughts and length of the cruelest winters, rapid melting of the mountain glaciers of Pamir and Tien-Shan and worsening of the conditions of land farming in the countries of Central Asia.

To enormous regret, today it has become obvious that it is impossible to fully recover the Aral Sea.

The most important task for now is to reduce the baneful effect of the Aral crisis on environment and life of millions of people living in the Aral Sea region, including by implementing the deeply thought-out and targeted projects backed up by appropriate sources of funding.

In our opinion, the main reserves are in the following directions:

First, to preserve today's fragile ecological balance of the Aral Sea region, struggle against desertification and improve the system of management, prudent and reasonable use of water resources;

Second, to create conditions for reproduction and preserving the gene pool and health of the population of the Aral Sea region, develop the social infrastructure, broad network of medical and educational institutions;

Third, to create necessary social and economic mechanisms and incentives to raise living standards of population, develop the base infrastructure and communications. I think that everybody will agree that we don't have a right to let people living here to nurture the feelings of despair, and our duty is to create for them

all conditions for a decent living, develop their own businesses, ensure new jobs and sources of income.

Fourth, to preserve and recover the biodiversity of wildlife and vegetation, including by establishing the local water basins, preserve the unique flora and fauna of this region.

It is these key issues that remain in the focus of attention of the «Program of Measures on Eliminating the Consequences of Drying up of Aral and Averting the Catastrophe of the Ecological Systems in the Aral Sea Region» proposed by us from the high rostrum of the United Nations which was disseminated as an official document of the Sixty Eighth Session of the UN General Assembly.

This speaks about the fact that the world community considers the tragedy of the Aral Sea as a global ecological catastrophe and recognizes the high topicality to urgently react to the challenges of ecological and social security of the region's population of many millions.

The support by the United Nations and other development partners extended to the International Fund for Saving the Aral Sea, established in 1993 by the UN and five Central Asian states, testifies about the aforementioned. During the past period, the IFAS implemented two programs for a total amount of over 2 billion dollars to render assistance to the countries of the Aral Sea basin supported by the international donor community.

In this regard, allow me to express gratitude to the institutions and partner countries which extended assistance in tackling the most acute problems faced by the states and population of the Aral Sea region. Among such active partners are the Asian Development Bank, the World Bank, the UN agencies, the Islamic Development Bank, the USAID, the European Union, as well as Japan, Korea, China, Germany, France, Switzerland, Kuwait and others.

Since 2013 the International Fund for Saving the Aral Sea with the support of the United Nations, European Union, leading international organizations and financial institutions has been implementing the Third Assistance Program to the countries of the Aral Sea basin that includes over 300 projects for the implementation of which it is necessary to mobilize over 8,5 billion dollars.

At the same time, we must openly recognize that despite ongoing projects and programs a lot more needs to be done. The countries of the region do not fully possess the sufficient own funds or material and technical capacities to overcome the ecological, socio-economic and humanitarian consequences of the Aral catastrophe on the environment and life of people residing here. In this regard, it is obvious that without substantial assistance on the part of the United Nations, other international organizations and development partner states it is impossible to address this planetary problem.

The broad spectrum of grave consequences of the Aral tragedy requires formation of new multifaceted assistance program aimed at effective overcoming the

multiple challenges faced by the population, economy, social sphere and environment of the Aral Sea region.

The key role in developing and implementing such a comprehensive assistance program to the Aral Sea region must belong, above all, to the international organizations – the United Nations, financial institutions such as the World Bank, the Asian Development Bank, the Islamic Development Bank and high-profile international ecological organizations. This will allow to attract resources of not only international organizations and financial institutions, but also capacities of friendly partner countries to implement this program.

Practically all IFAS member-states, as much as other countries of Central Asia are implementing their national programs of water saving, recovery and development of the Aral Sea region. The principles of integrated water resource management and modern water-saving technologies are being widely introduced; the measures are taken to diversify the agricultural production, and many others.

A special attention is paid to the quality and standards of life of people, development of housing, social and transport-communication infrastructure, construction of modern rural houses, secondary schools and vocational colleges, medical stations, construction and reconstruction of automobile roads in the Aral Sea region. The programs on improving the reclamation condition of lands are being implemented.

I am convinced that the targeted, multifaceted and systemic interaction between the states, UN structures, international financial and ecological organizations, which are not indifferent to the destiny of the Aral Sea region and its population, will allow to develop and implement the efficient programs and projects aimed at addressing the most acute problems in the Aral Sea region.

Dear participants of the International Conference!

Allow me to express to all of you our sincere gratitude for deep understanding of the large-scale catastrophic consequences of drying up of the Aral Sea and your tangible contribution to the cause of saving the ecosystem of the Aral Sea region.

I wish all participants of the conference a productive work, sound health and success in your noble endeavors.

Sincerely,

Islam Karimov,

President of the Republic of Uzbekistan,

Chairman of the International Fund for Saving the Aral Sea

ALL-RUSSIAN SCIENTIFIC-PRACTICAL CONFERENCE "WATER MANAGEMENT IN RUSSIA: ACHIEVEMENTS, CHALLENGES AND PROSPECTS"

On 7-10 October 2014, in Yekaterinburg, the All-Russia Scientific-Practical Conference “Water Management in Russia: Achievements, Challenges and Prospects” was held, on the basis of the Federal State Unitary Enterprise "Russian Scientific Research Institute of Integrated Use and Protection of Water Resources" on the occasion of its 45th foundation.

During the first conference day, the key reports were delivered. Koronkevich N.I., Professor from the Institute of Geography under the Russian Academy of Science, delivered the report “The stable and changed state of water resources in the world and Russia”. Alekseevskiy N.I., Professor of the Moscow State University, told about parameterization of hydrologic characteristics when solving water-sector objectives. Yasinskiy S.V., Institute of Geography under RAS, described the structure of the hydrologic cycle of the Volga basin in various phases of water content for a long-term period. Gareev A.M., Professor of the Bashkir State University, presented a long-term dynamics of changing the climatic and hydrological characteristics and their economic and environmental effects. Gaev A.Ya., Institute of Ecological Problems of the Hydrosphere under the Orenburg State University, stressed the necessity for activation of efforts to solve water-sector and ecological problems. He noted, for example, cases when a natural increase in forest areas is not documented, and this allows for building in these areas without required permission.

Burlibaev M.Zh., Professor of the Kazakh Agency of Applied Ecology, told about the present regime of hydrochemical and toxicological parameters of the transboundary flow of the Ural River and the character of its transformation within the territory of Kazakhstan. Gabrielyan B.K., Director of the Scientific Center of Zoology and Hydroecology of the National Academy of Science of Armenia, presented the integral evaluation of the ecological state of Lake Sevan. The reporter mentioned positive tendencies to restore the ecological balance through increasing the lake level. Pakhomov A.V., CRICUWR in Belarus, shared results of evaluation of transboundary pollution with biogenic substances and measures on its abatement in the basin of the Baltic Sea in the territory of the Republic of Belarus. Ziganshina D.R., SIC ICWC, highlighted issues of transboundary water cooperation based on principles and regulations of the international law.

The second day of the conference was organized as four panel sessions.

The session “Water sector: challenges and ways of solution” discussed present problems of integrated water resources management in Russia, among which there is development and approval of schemes for integrated water resources use and protection (SIWRUP) to be ready till 2015. The problem is the insufficient regulatory

and methodological base to develop and execute schemes, delay the process of their approval. For example, SIWRUP for the Kama River was developed from 2008 to 2010, based on data of 2007, however, it was approved in 2014 only when urgency of many issues changed. Reporters told about the problem of data collection and access. In conformity with the legislation, information providers, among which there are basin authorities as well, should provide information to a single monitoring system. Complication is that information is collected not for all water courses (small rivers and streams are practically not considered), generalized poorly, and access is not provided to this information, even for providers of initial information. One of reporters noted that there is no monitoring as a function of the operating department, but only observation. Reporters mentioned the necessity to combine administrative and basin approaches to water resources management and certainly consider the regional specifics. For water quality, the following issues were touched upon: maximum permissible concentrations, and need for consideration of appropriateness of substitution them with baseline indicators, which should be elaborated in view of specifics of a water body.

In the session "Development of Water Management Science", representatives of academic, applied, sectoral and institutional science participated. Among the issues discussed: financing of scientific works, problems of introducing and evaluating of research efficiency, relation of science and practice, participation of students in R&D, difference of capital and regional institutes. Experience in development of water management science in Belarus (CRICUWR) and specificity of financing and the thematic scope of SIC ICWC in Central Asia were presented as well.

The session "Water Sector Activity" considered a wide spectrum of problems related to use, management and protection of water resources, among which there is state of treatment plants, fee for pollution and water use, vagueness of functions related to water resources (in particular, a role of the Ministry of Emergency) in some bodies and agencies. Reporters discussed how Law 219 on Introduction of the Best Accessible Technologies is executed.

The Session "Perspectives of Water Sector Development" discussed issues of economy of water use and transboundary issues. Reporters mentioned that at present time, fees are composed of three elements: a water tax, a fee for water use, and fees for negative impact. The problem is that these fees are currently "dissolved" in a budget. It is necessary to revisit fees for use of water bodies and their entry. An investment component, not only operating is required to be included in revisited tariffs. There is an idea to start from measures, which are built in the scheme and meant to define fees for use of water bodies. Public and private partnership was stated by the participants, as the most desirable option. But the issues is remained – is it possible to shift a public and private partnership scheme to management of river basins and water-management systems?

Ryabtsev A.D. (Kazgiprovodkhoz) focused on issues of transboundary water use between Russia and Kazakhstan and called for using the integrating processes and strengthening the transboundary cooperation. National strategies are being developed without taking into account transboundary issues: these issues are not included in the

Russian and Kazakh strategies for the water sector.

During the third day of the conference, development of the Water Scientific Center for the countries of the Eurasian Economic Union under the Russian Research Institute of Water Resources was discussed. The mission of the Center is to rehabilitate and strengthen relations, provide scientific and information support to governing bodies of the Supranational Union and individual countries, achieve convergence in, modernize and increase the competitive ability of the water sector in the Eurasia. "At the beginning, the Center will function as a public organization — voluntary integrartion of scientific, design and production organizations active in this field within the EAEC space and a number of countries, which intend to join the Union. Then, it will be transformed in an official administrative structure", Nadezhda Prokhorova, the Director of RRIWR.

The electronic system for regular (online) biomonitoring of water, which was purchased by the Ministry of Natural Resources of Sverdlovsk province, was introduced to the conference's participants. The uniqueness of the apparatus is that a sensor, which makes analysis of water through using hundreds of indicators simultaneously, is a living organism – a bivalve mollusk built in a workstation.

SEVENTH MEETING OF THE TASK FORCE ON WATER AND CLIMATE UNDER UNECE WATER CONVENTION

The Task Force on Water and Climate under the UNECE Water Convention on the Protection and Use of Transboundary Watercourses and International Lakes took place in Geneva, on October 13, 2014. The seventh meeting of the Task Force on Water and Climate aimed to review the progress and discuss further implementation of the activities on water and climate.

The representatives of the pilot projects and other basins in the global network working on climate change adaptation in transboundary basins informed about their activities, challenges and lessons learned. Facilitators invited all interested basins to join the global network working on climate change adaptation in transboundary basins. The network aims to facilitate the exchange of information and knowledge.

The participants of the meeting were presented the project "Collection of lessons learned and good practices on climate change adaptation in transboundary basins". The publication, prepared by a drafting group coordinated by UNECE and the

International Network of Basin Organizations (INBO) is expected to be launched at the seventh World Water Forum (Daegu/ Gyeongbuk, Republic of Korea, on April 12-17 2015) and will serve as a complement to the Guidance on Water and Adaptation to Climate Change. Commentaries and remarks are to be submitted to the Convention Secretariat within two weeks.

A number of the partners, such as the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations, the European Commission, the United Nations International Strategy for Disaster Reduction (UNISDR), the Alliance for Global Water Adaptation (AGWA), the Stockholm International Water Institute (SIWI), the Organization for Economic Cooperation and Development (OECD), the Global Water Partnership (GWP), the World Meteorological Organization (WMO) and UN-Water presented their ongoing activities on water and adaptation to climate change and their suggestions for promoting the transfer of lessons learned and a broader exchange under the global platform.

Subsequently, the Task Force discussed proposals for the future programme of work on water and climate change under the Water Convention. The Task Force discussed proposed points, such as updating the Guidance: the role of ecosystems in adaptation measures; synergy of adaptation and mitigation measures; risk management with the aim to prevent disaster; “twinning” of basins with similar problems such as droughts, floods and sedimentation. Proposals for the future program can be submitted to the Secretariat.

FIFTH WORKSHOP ON WATER AND ADAPTATION TO CLIMATE CHANGE IN TRANSBOUNDARY BASINS ADAPTATION STRATEGIES: WHICH MEASURES FOR WHICH OUTCOMES AT TRANSBOUNDARY LEVEL?

The meeting was opened by Mr. Christian Friis Bach, Executive Secretary, UNECE. He noted the importance of water issues in the climate programs. He also quoted the speech of the President of Swiss Confederation during the opening session of the Forum “Investing in the future: Sustainable cities roundtable”, which was held in Geneva, on October 13-16, 2014 .The speech was about the significance of water and a need to incorporate water into sustainable development goals as a separate goal.

As introduction to the seminar Mr. Pascal Peduzzi, UNEP, made a presentation on “Climate change impact on water resources: a summary of recent findings”. The second speaker Mr. Casey Brown, Alliance for Global Water Adaptation, addressed

the question “How to ensure resilience and robustness in adaptation, including water infrastructure?” He presented a of new AGWA book named “Beyond downscaling”: a bottom-up approach to climate adaptation for water resources management. The book is available for online reading: http://alliance4water.org/resources/AGWA_Beyond_Downscaling.pdf.

The first session was dedicated to discussion of development and implementation of transboundary adaptation strategies on the examples of the Dniester and Nile river basins. The representative of the World Bank told about the activity on promoting resilience in African river basins.

Subsequently, participants of the workshop were divided into groups for role play: Negotiations on water infrastructure and climate change adaptation.

The role play was developed and presented by Mr. Pieter van de Zaag, *UNESCO-IHE*, and Ms. Marloes Mul, *International Water Management Institute*. The participants, divided into representatives of upper and lower reaches, were to find out a possible course of transboundary basin management of imaginary Shariva River, based on expected consequences of climate change. The possible course would allow reducing the risk of emergencies and satisfying energy demand in the countries.

The second day of the workshop included the session on the development of basin-wide scenarios. The participants presented reports on requirements for basin-wide scenarios *(Institute for Environmental Sciences (ISE),* University of Geneva), Modelling impacts of climate change and water use in the Zambezi basin *(“Hydrosolutions”),* Development of basin-wide scenarios and an adaptation strategy by the Mekong River Commission Climate Change Adaptation Initiative *(MRC-CCAI)*.

The session “Marketplace of tools: adaptation measures” began with introductory presentations such as “Adaptive water management: adaptation pathways approach and economic analysis” of *Deltares* and “Integration of ecological and engineering approaches”, *AGWA,* which addressed the integration of ecological and technical approaches for sustainable water management. The first speaker, concluding the speech, noted that the water demand scenarios are much more important then climate change impact. Afterwards, round tables were organized to discuss the following points:

- Assessing the impact of flood risk reduction measures in the Rhine basin, *International Commission for the Protection of the Rhine (ICPR)*
- Green infrastructure solutions for water management: tools and case studies from the Green Infrastructure Guide, *UNEP-DHI*
- Groundwater, a buffer against climate change: Managed Aquifer Recharge (MAR) and Ecosystem-based Adaptation (EbA),*International Groundwater Resources Assessment Centre* (IGRAC)
- Water and climate change adaptation projects in Central Asia, *SIC ICWC and GWP CACENA*

- Drought management from the perspective of the United Nations Convention to Combat Desertification, *United Nations Convention to Combat Desertification (UNCCD)*
- Climate change adaptation in the Danube delta, *WWF Romania*
- Climate change in transboundary basins in Peru, *Peru*
- Water management and hydropower in the Congo basin, *Commision Internationale du Bassin Congo- Oubangui- Sangha*
- Presentation of the Operational Recommendations for the sustainable management of the North-Western Sahara Aquifer System, *Sahara and Sahel (OSS)*

During the fifth session "Maximizing synergies between adaptation and mitigation" Belarus and Lithuania presented their experience of cooperation on development of models, transboundary vulnerability assessment and a strategic framework for basin adaptation in the Neman basin. Subsequently, the representative of the India Water Foundation told about the application of the water-food-energy in transboundary basin cooperation using a case study on climate change adaptation in Meghalaya state in India. The representative of the Alpine Convention water platform presented the climate change action plan for the Alpine region. Adopted in 2009, the plan included adaptation measures as well as mitigation measures (reduction of emissions). The representative of the Adaptation Fund Board told about activity of the fund. He noted the necessity for a differentiated approach - developed countries must focus on mitigation measures, while developing countries must focus on adaptation measures. Overall, the session focused on maximizing synergies between adaptation measures and emissions reduction.

During the final session the participants were divided into groups again in order to discuss examples of adaptation measures and classify them into three categories: (1) adaptation measures that are also mitigation measures (afforestation, wetland restoration etc.) (2) adaptation measures which impact on climate (dam construction) (3) "neutral" adaptation measures.

16th GOVERNING COUNCIL MEETING OF THE ASIA-PACIFIC WATER FORUM AND 2nd PREPARATORY MEETING OF THE ASIA-PACIFIC REGION FOR THE 7th WORLD WATER FORUM

The 16th Governing Council Meeting of the Asia-Pacific Water Forum (APWF) and the 2nd preparatory meeting of the Asia-Pacific regional process for the 7th World Water Forum were held in Seoul on the 19th of November 2014 and attended by 44 representatives from the APWF lead organizations.

The program of the meeting was focused on the regional preparatory process for the 7th World Water Forum.

Three presentations were made by the organizers of WWF7 in the first part of the meeting. Mr. Yangjin Oh, Director, the National committee for the World Water Forum gave general information on preparations to the Forum. Mr. Youn-Gil Kim from the Daegu Convention Bureau told about accommodation plans for forum participants and transportation (how to get to the venue by plane, train or car from the Incheon International Airport). Ms. Sue-yong Kim, Manager of the national committee presented the approved 54 regional process sessions and last amendments in the regional process, as well as explained an idea of merging regional sessions presented by different regions under the same topic into sub-regional blocks.

The second part of the meeting included hearing and adoption of the 8 regional APWF sessions and two synthesis sessions under umbrella of APWF as approved by the International Regional Process Committee (10 sessions in total):

Session 1 – “Water and cities” presented by UNESCO (Indonesia) and the organization group members.

Session 2 – “Water and green growth” presented by K-Water and UNESCAP.

Session 3 – “Water and Food” presented by FAO.

Session 4 – “Climate change, water related disasters and mountain water security” presented by ICIMOD and ICHARM.

Session 5 – “IWRM” presented by the Network of Asian River Basin Organizations (NARBO).

Session 6 – “Rural water and sanitation” presented by ADB.

Session 7 – “Development of cooperation in the Aral Sea Basin to mitigate consequences of the environmental catastrophe” presented by V.Sokolov, regional coordinator of GWP CACENA.

Session 8 – “Transboundary problems of Northeast Asia” presented by the Korean Water Forum.

Session 9-10 – Asia-Pacific Regional Synthesis and Commitment Session at the 7th World Water Forum was presented by the APWF Secretariat - the Japanese Water Forum. They demonstrated a draft program of the regional synthesis session, where the results of the above eight regional sessions would be presented and recommendations on follow-up steps for policy makers would be given.

The third part of the meeting included presentations of two additional proposals for other two sessions within the framework of the APWR regional process:

Session 11 – "Trilateral Forum on Water Cooperation between China, South Korea and Japan" presented by the Trilateral Cooperation Secretariat.

Session 12 – "Hydrological services in Asia under rapidly changing conditions (climate, water management, policies, etc.)" presented by Korea Institute of Civil Engineering and Building Technology.

The participants came to an agreement that those proposals should be included additionally in the agenda of WWF7 after consultation with the Forum organizers and the International Committee of the Regional Process.

The following reports were made during the fourth and final part of the meeting:

- Future schedule of APWF
- Progress updates on the ADB's initiative including the Asian Water Development Outlook (AWDO-2017) and Asia 2050 Study
- Preparation to the 3rd Asia-Pacific Water Summit. It is planned to hold the 3rd APWF Summit in May-June 2017. The host country of the Summit is to be decided until December 2015.
- Progress report of the new science and technology process
- Call for partnership to strengthen the Asia-Pacific Citizen's Forum.

12th EUROPEAN CONFERENCE ON THE IMPLEMENTATION OF THE EU WATER FRAMEWORK DIRECTIVE

The European Conference "EUROPE-INBO 2014" was held in Bucharest, Romania from 12 to 15 November 2014.

The Conference was dedicated to implementation of the EU Water Framework Directive, to which 28 EU member-states and associated states joined. The Framework Directive is accompanied by 7 various directives linked to water-related activity (directives on measurement methods, sampling frequencies, information exchanges on surface water quality, fisheries, groundwater, and dangerous substances in water).

One should note that implementation of WRD progresses according to the European Union's plan on rivers, which is not related with large-scale water use, especially in dry areas. The Directive targets the countries at maintaining biological natural well-being indicators. However, it turned unfeasible to achieve the main targets of WRD by 2015 as was planned. Now, the national water plans and river basin management plans are to be prepared by 2027.

Public participation is currently in the focus as the interests of different water user groups should be taken into account when taking efforts for the achievement of water quality indicators. It is particularly important to involve stakeholders in implementation of river basin plans. The tasks undertaken previously under the Directive lacked public involvement, and failures of WRD often became evident only by the deadlines of measures undertaken by the members of the European Union. Thus, it was decided to enhance this work by organizing annually two conferences per basin, with wider involvement of all stakeholders.

Another significant shortage in implementation of the Directive is an inadequate pricing mechanism for ensuring sustainability of the water sector. This concerns the both pricing principles in the Directive, i.e. the user pays (for quantity) and the user pays for quality (depending on degree of pollution). Another bottleneck of directives is a poorly developed mechanism of transboundary river use. As far as the quality of transboundary river water is concerned, the communities are willing to take joint actions. However, when water allocation is at stake, the directives do not work. In Europe, there are 110 large river basins, of which 40 ones are transboundary. The representative of Portugal paid attention to complex relations between Portugal and Spain in context of such river basins, despite the decade-long effective treaties. The use of transboundary water for hydropower is addressed poorly in the European laws (representative of Belgium Mr. Lefebure), although energy regimes contribute to destabilization of river flow regimes. Among the problems related to transboundary water are the information exchanges that are similar to those in Central Asia. Exchange of information takes place at will of the informing parties and cannot be

provided online. For instance, Turkey presented claims to Bulgaria that the information from this country was delivered with significant delays.

The representative of the Mediterranean Network Mr. Constantin noticed in his report that the success in the involvement of stakeholders was to be built only through thorough work with them. They should not be allowed to act only on their own initiative – NGOs in the water-related field should learn together with professionals so that the former could not forward irresponsible decisions and would understood what could and could not be advised on behalf of water users at the national and interstate levels.

The "Europe-INBO" President Mr. N. Karnolski underlined that the positive development trends were achieved for such rivers as Meuse, Schelde, and Rhine, where water allocation was not at stake, but basin approach was not implemented in the plans everywhere. Moreover, even in places, where it was developed and implemented, it is necessary to renew it every 6 years and evaluate its effectiveness.

The Conference of the International Network of Basin Organizations (INBO) was opened on the 13th of November by Mr. Madine on behalf of the INBO President Mr. Kamara, High Commissioner of the Organization for the Development of the Senegal River. Mr. Madine stressed a need for seeking additional motivation, besides information exchange, for wider involvement of water agencies in the Network's activities.

All regional branches reported during the meeting of the INBO World Liaison Bureau. The report of the EECCA Network underlined that the membership of this Network increased to 80 members by joining the representatives of 12 countries in the last year. Taking into account financial restraints, the Network mainly functions for exchange of information, development of Knowledge base, and organization of joint events together with the GWP CACENA and also with the ICID Working Group for the Countries under Transition. Nevertheless, the Network takes an active part in the events organized in context of water management and land reclamation in the region. During the last year, 7 various events were held with participation of the EECCA Network, including the Conference "Issues related to development of land reclamation and water management in Russia", 22-25 April in Moscow, where the Network President Mr. Polad-zade took the floor; the Conference "Pure water in Russia" held in May 2014 in Yekaterinburg by RosNIIVIKH; the Conference "Land, water, and climate in Siberia and the Arctic" on 21 March 2014 in the Tyumen city. The 12th International Drainage Conference organized by the Land Reclamation Department of the Russian Ministry of Agriculture in June 2014 was very successful and brought together a lot of the EECCA Network members. The Network's transactions are published regularly and the newsletters of INBO and the International Office for Water are offered in Russian for the general public. The raise of tensions in context of transboundary waters that has been observed in the region since the collapse of USSR was noticed in the report. Moreover, whereas initially cooperation between the countries was kept mainly through the earlier established professional relations and the inertia of joint work, the last decades the centrifugal forces of the countries enhanced significantly. This is mainly evident in the development of future projects on the use of

water resources, and, to a certain degree, affects information exchange. Therefore, as early as 3 years ago, the region put forward an initiative for elaboration of the Water Charter as a set of rules similar to the road regulations that govern the traffic all over the world in order to have the universal rules for the use and development of transboundary water. A need for such document is felt in all parts of the world as the pressure of upstream countries using mainly hydropower resources, which is based on absolute national sovereignty, gradually grows. Hence, INBO was called to act as a platform to drive this proces.

In addition, during the opening, all regional networks welcomed the Conference participants and Prof. Dukhovny, Executive Secretary of EECCA NWO, on behalf of the Network President Mr. Polad-Zadeh, took the floor and stressed that the issues related to transboundary water use became especially pressing and pointed to a need for enhancing the role of INBO as a leading organization of water governance for further strengthening of international regulations in the area of water use and development.

The representative of the European Commission, DG Environment Mr. Jorge Rodriguez Romero in his welcome underlined that water quantity, besides water quality, became a very important issue for water use, as well as all-round observance of environmental demands.

The General Director of Apele Romane (Romanian National Water Administration) Mr.Gabor made a very interesting and informative presentation. “When we speak about water, we touch everything that is related to water, and this means that we speak generally about the lives of our people. Although Romania is well supplied with water from the rivers flowing in the Carpathian Mountains, we take an active part in activity of the Danube River Commission. Water quality and quantity and management of these two major indicators of water well-being are in our focus. In 2009, we developed the Water Resource Development Plan in Romania but as early as in 2014 we revised the Plan in context of information exchange, which is maintained through every basin authority. Although the population was strongly against water pricing, we adopted the water fee system, which is based on license payments. This license indicates both water quantities and water use schedules for every user.”

Many participants noticed that most European countries still fail to fulfill their own plans and criteria of environmental well-being in water bodies. France, for example, failed to reduce the nitrite content, while Belgium shows 22% higher pollutant content against new criteria.

One of serious concerns for all European countries is the achievement of financial self-sufficiency of the water sector; however, this is quite a complex task as this area is still strongly subsidized, especially irrigated agriculture.

Finally, the Conference adopted the Declaration to enhance implementation of the European Water Framework Directive. Prof. V.Dukhovny in his comments to the Declaration noted that this document is quite effective for national legislations; however, as far as transboundary water is concerned, it does not demonstrate the concerns and imminent threats occurring due to inadequate implementation of

integrated water resources management at the interstate level. Failure to provide information or hiding of information by one riparian country to other countries should be considered inadmissible as such closing of information virtually can be treated as offence against humanity. The task of INBO and its membership is to develop hydrosolidarity and synergies, first of all, along transboundary water.

UNECE AND GLOBAL WATER PARTNERSHIP WORKSHOP ON THE WATER-ENERGY-FOOD-ECOSYSTEMS NEXUS ASSESSMENT TO PROMOTE A MORE SUSTAINABLE USE OF NATURAL RESOURCES IN THE SYRDARYA RIVER BASIN

From 2 to 4 December 2014, a workshop was held in Almaty, Kazakhstan, to assess the intersectoral and transboundary aspects of managing the water, land, ecosystem and energy resources of the SyrDarya River Basin shared by Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan.

The workshop was organized jointly with the Global Water Partnership and in cooperation with FAO, the Royal Institute of Technology (Sweden) under support of the Government of Finland via the Finnish Environment Institute (SYKE).

The aim of the workshop was to discuss issues related to coordination of the assessment, which would help to decide on how to move towards water security for all water-related sectors in the SyrDarya River Basin.

The workshop brought together more than 50 participants.

The Almaty workshop was held in a form of transboundary dialogue among a broad spectrum of stakeholders from the basin countries, including representatives of the agriculture and energy sectors, water and environment administrations, State companies and civil society. The programme was highly participatory, involving group work to develop ideas for an improved management of water, energy and agriculture. Possible future scenarios were also jointly discussed by the participants, with support from the Food and Agriculture Organization of the United Nations (FAO).

The workshop had ten sessions.

Opening of the workshop and four sessions took place in the first day (2 December).

The first session was dedicated to presentation of the water-food-energy-ecosystems nexus assessment technique and discussion of its applicability to the SyrDarya river basin.

The second session reviewed relevant developments in the SyrDarya river basin. Ms. Aigul Absametova from the Eurasian Development Bank made an overview of the energy sector while focusing on financial mechanisms of international banks that are applicable in the energy sector. However, a visible overview of problems in the energy sector was not made as such issues as sufficiency of electricity generation, effectiveness of energy consumption, and prospects left beyond this presentation.

Mr. Abbos Akhadov (FAO) presented an overview of agriculture in the SyrDarya river basin. Mr. Vadim Sokolov, on behalf of GWP CACENA, made a presentation on water resources and their use in the SyrDarya river basin. Ms. Svetlana Shivareva from the Regional Center of Hydrology presented experience of the intersectoral working group on water risks in the SyrDarya basin. Ms. Ekaterina Strikeleva (CAREC) presented the Aral-SyrDarya River Basin Management Plan. Ms. Katherine Himes gave a view of regional issues related to water-energy-food nexus from USAID's perspective.

The third session of the workshop dealt with the national development plans and sectoral goals in the SyrDarya river basin. National presentations were delivered by Mr. Serik Akhmetov from Kazakhstan, Mr. Erkin Oralbaev from Kyrgyzstan, and Mr. Daler Kholmatov from Tajikistan.

Discussion on priority components of the water-energy-food-ecosystems network was organized during the fourth session. Mr. Vadim Sokolov (GWP CACENA) moderated the session.

During the second day, at the fifth session, the participants discussed the results of group discussions in order to define recommended measures on the basis of intersectoral linkages.

In context of water use implications on land, the following lines of activity were proposed:

- Improvement of land productivity per unit water used and of irrigation technique
- Land reclamation and mitigation of desertification processes
- Water accounting, monitoring, and planning
- Food security and crop production specialization
- Reduction of water losses, breakthrough in wastewater/return water re-use
- Access to water and sanitation
- Adaptation to climate change – reconsideration of irrigation regimes
- Stricter legislation.

In context of water use implications on energy needs, the following lines of activity were proposed:

- Legislation – agreements, consensus among sectors and areas (upstream - downstream)
- Electric energy market – regional, basin
- Safety of large waterworks facilities
- New hydropower stations (Upper Naryn, Kambarata) - coordination of regimes with downstream countries
- Reconstruction of hydropower stations and pumping stations
- Alternative energy sources

In context of water use implications on ecosystems, the following lines of activity were proposed:

- Green growth, hydropower, including small hydro
- Setting water quotas for the delta and ecosystems
- Sanitary zones and water releases
- Control over water quality, health
- Drinking water supply and sanitation
- Water treatment, water recycling systems

During the sixth session the participants discussed impacts of the climate change and extreme weather events on the SyrDarya river basin. Two key reports were delivered by Prof. Igor Severskiy (Institute of Geography), who gave a general outlook of glaciation and hydrology in the upstream part of the SyrDarya basin, and by Lidia Nikifirova (KazHydromet), who showed real climate changes using the South Kazakhstan region as an example.

The seventh session was moderated by FAO and formulated possible scenarios of the future development in the basin.

Three sessions and closure of the workshop took place on the 4th of December. During the eighth session the participants discussed an idea raised by Mr. Tulegen Sarsenbekov about the second birth of Water-Energy Consortium in order to overcome problems in the SyrDarya basin. Most of the participants agreed that this idea is very ambiguous and therefore unviable.

The ninth session was dedicated to information and tools that could be used for the assessment. The key report was delivered by Mr. Vadim Sokolov on behalf of SIC ICWC, where he presented the ICWC information system and ASBmm model.

Further steps of the assessment were discussed at the tenth session. Those were agreed as follows:

1. The Royal Institute of Technology, Sweden (coordinator - Mark Howells) in cooperation with national and regional experts will prepare a draft assessment of the water-food-energy-ecosystems nexus in the SyrDarya basin (December 2014 - January 2015).

2. February-March 2015: UNECE will hold country consultation on the draft assessment.

3. The Task Force meeting will be held on 24-25 June 2015 in Geneve to discuss interim findings of the assessment on all basins, including SyrDarya.

4. In July-September 2015, the working group will summarize all materials of the assessment for publication of a stock-taking report for the Meeting of the Parties to the Water Convention.

5. Presentation of the assessment report to the 7th Session of the Meeting of the Parties to the UNECE Water Convention 1992, which will be held on 17-20 November 2015.

6. Further country consultations and possible publication of a stand alone report on the SyrDarya basin.

Summarizing the two and a half day discussions, the participants have agreed that the effectiveness of the current resource management is low mainly because of lack of coordination among sectors and countries. The shortage of electric energy and water is observed often in some parts of the basin and, at the same time, the basin's ecosystems are under heavy pressure of anthropogenic factors. The group discussions identified specific problematic aspects, where coordination of activities would lower pressures on water and other resources in the SyrDarya basin. Such joint efforts should be aimed at improving the use of water and energy resources, developing sectoral (energy, agricultural) markets at basin or regional level, and strengthening the legal framework of transboundary cooperation.

GLOBAL FORUM ON ENVIRONMENT: NEW PERSPECTIVES ON THE WATER-ENERGY-FOOD NEXUS

The Global Forum on Environment: New Perspectives on the Water-Energy-Food Nexus was organized in headquarters of the Organization for Economic Cooperation and Development (OECD) in Paris on 27-28 November 2014. The Forum was opened by Mr. Angel Gurria, Secretary General of OECD, who delivered an interesting speech by stressing an importance of trade-offs in all areas contributing to sustainable development, without compromising economic development. The speaker provided examples of inadequate attention to the water-energy-food nexus that affects most of all vulnerable population (because of inappropriate subsidies, overlooked exhaustion of natural resources in the long-term development visions, etc.).

The work of the Forum was organized in form of seven key sessions and a side-event for Eastern Europe, the Caucasus and Central Asia (EECCA) countries.

During Session 1 chaired by Ms. Ursula Schaefer-Preuss (GWP) the participants discussed risks and trade-offs for sustainable growth in context of interlinkages between water, energy and food. GWP and the OECD has launched the Global Dialogue on Water Security and Sustainable Growth to highlight the evidence of the current situation in the world and different development paths that countries can follow, based upon their water resource endowment. The Global Dialogue established a Task Force on water security and sustainable growth comprised of economists, water managers and experts in other associated areas. The Task Force works on a report Water Security and Sustainable Growth, which is to be presented at the Seventh World Water Forum in South Korea. Ms. Claudia Sadoff, lead economic of the World Bank presented preliminary results of the Task Force work.

Speakers of the panel discussion underlined that we should assess (economic, social, political, environmental) risks associated with water shortage and other factors in context of every country and region rather than simply look at water availability per capita at national level. Bill Cosgrove, Honorary President of the World Water Council, particularly focused on huge efforts that need to be made in order to ensure equitable economic growth and on incorporation of an individual goal of maintaining peace into the Sustainable development goals under discussion.

Session 2 was dedicated to integrating the nexus into national planning and development efforts. The permanent representative of the Netherlands to OECD noted that his country was planning to invest 20M Euros in preparation to a situation, which can occur under the worst possible scenario of 6°C rise in air temperature. Mr. Mike Muller, Commissioner of the National Planning Commission in South Africa, advocated a ‘silo’ approach. Much emphasis is now on a need to divert from isolated sectoral solutions in order to achieve integral and intersectoral solutions, he said. This

is crucial; however, should not compromise sectoral competence. Therefore, incorporation of "water" targets in all other sustainable development goals seems to be more advantageous than having one individual water goal. This would promote informed dialogue between water managers and other sectors. Mike Muller also noted that OECD should rigorously approach the development of rules and norms so that they were affordable for the countries outside the "club of the rich", which OECD represents per se. We cannot speak about "blind" transfer of experience. For example, Water Directive was developed by the European countries, whereas in Africa one of the key challenges is still poverty reduction.

The participants stressed an importance of planning. One of the speakers said that in the western world the word "planning" is interpreted ambiguously and associated with the socialistic model of development. Thus, we should bust this stereotype as certain elements of social planning are important. Adaptive management with the six-year cycle of monitoring is per se a planning model used in Europe.

During Session 3 the participants considered challenges and perspectives on the water-energy-food nexus in transboundary, regional, and local contexts. The representative from Brazil in his presentation focused on the water and energy nexus in context of hard drought affecting the country in the last year, while the representative from Vietnam stressed an importance of the water and food nexus. The CGIAR Program representative pointed to mismatches between local and national strategies and to a need for multilevel governance.

The speakers of panel discussion stressed an importance of rational resource use and innovative partnerships, where those facing problems cooperate closely with those who develop solutions.

Session 4 of the Forum allowed the participants to discuss the long-term trends and interactions. Representative of the Environmental Assessment Agency from the Netherlands reported on the assessment of long-term trends and their effect on country economic development. Representative of the International Energy Agency briefly described the report "World Energy Outlook 2014". She noted, in particular, that according to the main scenario, global energy demand would increase by 37% by 2040, and, at the same time, the growth of population and economy would be less energy-intensive as before. Water use in the energy sector would double, moreover now energy is the second largest water consuming sector after agriculture. Significant efforts are also needed to adapt the sector to negative effects of climate change.

During Session 5 the participants discussed how to get the incentives right for investment. The right economic instruments provide incentives to use water, energy, and food more efficiently and promote investment in resource-efficient options. Senior research associate from the King Abdullah Petroleum Studies and Research Center (KAPSARC) proposed to deal with the efficient use of resources in agriculture on the basis of the theory of production, from which followed that now the capital and labor costs were expensive, while resources (water and energy) were cheap. Therefore, the prices of water and energy carriers should be increased in order augment marginal benefit.

Speakers of the next session shared their experience with evaluating and promoting the nexus throughout the investment and asset management process. They underlined that one should think about *readiness to adopt innovations and new technologies* rather than about a need for new technologies. For example, even in the OECD Program for International Student Assessment, the issues related to resource use and environmental protection are poorly addressed. The Asian Development Bank announced that it would increase investments in education that were reduced 7 years ago to redirect them for infrastructure development.

The side-event "New Perspectives on the Water-Energy-Food Nexus in Eastern Europe, Caucasus and Central Asia" was organized by the Task Force of the OECD Environmental Action Program jointly with UNECE. Brief notes on the water-energy-food nexus were presented by the representatives of Kazakhstan, Moldova, Georgia, Executive Committee of IFAS, and Italy.

TRAINING WORKSHOP "LAND USE AND IRRIGATION PLANNING AND MONITORING"

The training workshop was held on the 2nd of December 2014 in the conference room of the Syrdarya-Sokh Basin Irrigation System Administration (BISA).

The aim of the training was to familiarize the staff of BISA, ISA and WUAs in Fergana, Andizhan and Namangan provinces with scientific outcomes, methods and analytical tools developed and applied in CAWA project activities.

The training workshop was organized by the CAWA Project partners: University of Giessen, Wuerzburg University, and SIC ICWC.

The training program included important practical issues and aroused much interest among the participants.

Yvonne Dernedde briefly described the fundamentals of the model Spare: Water application for irrigation planning.

Boris Gozhenko made an interesting report on the current socio-economic situation in the Fergana Valley and demonstrated the results of construction of future regional development scenarios that included a lot of factors, among which were demographic growth, changed cropping patterns, etc. The scenarios also consider probable climate change. The results of socio-economic development scenarios for Fergana Valley developed by our researchers allowed tracing trends, with orientation to food security and improvement of living conditions in the Fergana Valley. In turn, water factor plays a very important role in socio-economic development of every nations and it is especially relevant for the conditions of Central Asia.

Galina Stulina in her presentation “Hydromodule zoning improvement for irrigation planning. Adaptation to climate change” demonstrated a need for improvement of hydromodule zoning because of dynamical changes in parameters, which crop water requirements depend on. The presented zoning contributes to optimization of irrigation regime. One of the factors that impact irrigation depths in each hydromodule zone is climate change. Temperature rise leads to increased evaporation from the soil surface and from leaves. Therefore, one should take into account climate change scenarios in order to adapt to these changes.

The report of Yu.Ukhalin “Expected implications from climate projections” addressed issues related to probable changes in the Fergana Valley during the period from 2020 to 2050 in context of climate projections made within the CAWA Project in 2014. He described in details the methodology of assessment of expected changes - selection of climatic scenario REMO-0406, hydrological model WASA, agricultural development scenarios, crop water requirements models (CropWat, ASBmm), the model of flow regulation and water allocation between provinces in the Fergana Valley, assessment of impacts of hydropower stations on water supply for the Valley’s provinces under climate change, and presented a wide list of tools used in the project.

He addressed the issues related to an impact of climate change on crop water requirements and the effects of innovations on reduction of crop water requirements and improvement of crop yields (productivity), as the adaptation measures. Various water scenarios in irrigated agriculture were considered in light of climate projections.

This work is very relevant since it produces concrete results that can be used in daily practices and for future planning. For instance, the calculations indicated to an importance of the adoption of innovations (drip irrigation, sprinkling) and modern technologies in agriculture. Food security and orientation towards import substitution and export of agricultural products should be the main guiding lines in agricultural policies.

Flow regulation for energy-generation purposes remains the main destabilizing factor in 2020-2050, reducing water for irrigated agriculture; the long-term regulation under combined energy-irrigation regime is an important measure for adaptation to changes in the river flow and its regimes caused by climate changes.

Given the global challenges (climate impact, population growth), the strategy of Fergana Valley development (as coordinated development plans of individual provinces in the Valley’s countries) should be aimed at enhancement of water management effectiveness, prevention of conflicts related to flow regulation and water allocation, and improvement of water demand management.

Professional participants have shown their interest in the second Yvonne’s report “Spare: Water evaluation of land use scenarios and climate impacts on the water requirements”. An important part of this model is the possibility to evaluate water use effectiveness. As a result of the implementation, GIS maps were produced. The maps show (using WUA Akbarabad as an example) amounts of irrigation water and leaching water needed for each field.

Georgiy Solodkiy demonstrated the results of water requirement calculation

made using the ReqWat model. This model takes into account the components of water balance that are needed for calculation of irrigation depths for every crop, including groundwater contribution. The model uses the database developed for the three provinces in the Fergana Valley.

FIRST MEETING OF THE CORE GROUP ON REPORTING UNDER THE UNECE WATER CONVENTION

The meeting was held in Geneve, on 15-16 December.

During the negotiations on the establishment of the Implementation Committee (2010–2012), the need was raised for the introduction of a reporting mechanism to monitor progress under the Water Convention. In response, the Meeting of the Parties to the Convention mandated the Working Group on Integrated Water Resources Management (IWRM), in consultation with the Implementation Committee, to carry out an analysis on the needs for reporting under the Convention and prepare a proposal on the modalities of such mechanism to be submitted for consideration and possible adoption by the Meeting of the Parties at its seventh meeting.

Based on responses to a Questionnaire developed by the Bureau, the Secretariat prepared a draft analysis on the needs for reporting and submitted it to the Working Group on IWRM for consideration. Proceeding from the fact that the majority of the respondents supported the introduction of reporting, the Working Group decided to proceed with this work and established a Core Group on reporting, which was to elaborate concrete proposals on the reporting mechanism.

The Core Group included the representatives of the countries that are the Parties to the Convention (Azerbaijan, Kazakhstan, France, Finland), non-Parties (Turkey and Nigeria), as well as the representatives of international organizations (SIC ICWC) and non-governmental organizations (WWF). Two members of the Implementation Committee (Ms. Vanya Grigorova, Bulgaria; Mr. Johan Lammers, the Netherlands) took part at the meeting as well.

Before the meeting, the members of the Core Group received a consultant's report, which should serve as a basis for discussion; however, the discussion followed free modality. Consequently, the Secretariat, proceeding from discussions, formulated a list of preliminary questions to be included in the questionnaire on reporting. The members of the Core Group shared their preliminary comments on the list of questions. Based on the received responses and suggestions by the consultant, the Secretariat will renew the questionnaire and disseminate it among the members of the

Core Group in mid January for comments. The, the second version of the questionnaire will be prepared and submitted to the Bureau for consideration in mid February. On the basis of the comments to be received from the Bureau, third version of the questionnaire will be prepared and disseminated among the Parties to the Convention and other stakeholders. Relevant comments and responses received will be discussed by the Core Group and incorporated into a draft questionnaire, which then will be submitted to the Working Group on IWRM on 25 June 2015.

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