Interstate
Coordination
Water
Commission
of Central Asia

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April 2002

CONTENT

PROTOCOL No 31
ICWC MEETING OF THE REPUBLIC OF KAZAKHSTAN, KYRGYZ REPUBLIC, THE REPUBLIC OF TAJIKISTAN, TURKMENISTAN AND THE REPUBLIC OF UZBEKISTAN

February 20, 2002 Almaty

Attendees:

ICWC members

Ryabtsev A.D.	Chairman Committee of Water Resources of the Republic of Kazakhstan
Koshmatov B.T.	Deputy Minister, Director General Water Department, the Kyrgyz Republic
Nazirov A.A.	Minister of Reclamation and Water Resources of the Republic of Tajikistan
Altyev T.A.	Chairman EC IFAS, ICWC member
Jalalov A.A	First Deputy Minister of Agriculture and Water Resources, Head Water Department

Honorable ICWC members

Kipshakbayev N.K.
Nurov A.N.
Zulpuyev M.Z.

From ICWC organizations

Khudaiberganov Yu.Kh.	Head BWO “AmuDarya”
Khamidov M.Kh.	Head BWO “SyrDarya”
Dukhovny V.A.	Director SIC ICWC
Umarov P.D.	Deputy Director SIC ICWC, Director ICWC Training Center
Negmatov G.A.	Head ICWC Secretariat
Makarov O.S.	Head ICWC Metrological Center

Invitees

Bart Shultz	President ICID
Chandra Madramootoo	Vice President ICID, Director Brace Center of McGill University
Polad-Zade P.A.	Director JV “Vodstroi”, Russian Federation
Roschupkin V.P.	First Deputy Minister of Natural Resources, Russian Federation
Mikheyev N.N.	Adviser to Minister of Natural Resources, Russian Federation

Askarov Kh.A.	Committee of Water Resources of Kazakhstan, Department Chief
Pulatov Kh.P.	Director “Yugvodkhoz”
Kuthanov A.K.	Director ”Kzylordavodkhoz”
Tolebayev K.	Khakim Makhtaaral rayon, South-Kazakhstan oblast
Jalooboyev A.Sh.	Director SIC ICWC Kyrgyz branch
Sarybayev A.Zh.	Head Issyk-Kul Water Administration
Nasirov N.K.	Director SIC ICWC Tajik branch
Sharipov J.Sh.	First Deputy Head of Syrdarya oblselvodkhoz
Jurabekov Z.Kh. .	Head BWO “Zerafshan”

Chairman- Ryabtsev A.D.- Chairman Committee of Water Resources of Kazakhstan.

AGENDA

1. T.Altyev election as ICWC Honorable member.
2. Aly Shady, Chandra Madramootoo and Walter Furst decoration with memorable pectoral symbol “Honorable ICWC member”.
3. Making more precise water reservoir cascade operation regime and water diversion limits in AmuDarya and SyrDarya basin on non-growing season of 2001-2002 (responsible: BWO “SyrDarya”, BWO “AmuDarya”).
4. Donors and ICWC members joint meeting.
5. ICWC next meeting agenda and place.

Having heard participants’ speeches and exchanged opinions ICWC members have decided:

On the first question “T. Altyev election as ICWC Honorable Member”

To agree with suggestion of ICWC member A.Jalalov: taking into account role in ICWC establishing and organization, IFAS contribution in ICWC development as a body of interstate relations, to elect Tekebay Altyev Honorable ICWC member decorating him with memorable pectoral symbol “ICWC Honorable Member”.

On the second question “Aly Shady, Chandra Madramootoo and Walter Furst decoration with memorable pectoral symbol “Honorable ICWC member”

To agree with suggestion of ICWC member A. Jalalov:
a) taking into account CIDA contribution in training and other water related activities in Central Asia to award with memorable pectoral symbol “ICWC Honorable Member”
- Aly Shady, CIDA senior political adviser
- Chandra Madramootoo, Director Brace Centre of McGill University
b) taking into account SDC contribution in water resources management in Central Asia, initiation of the range of projects implemented by ICWC organizations to award
- Walter Furst, Director SDC
with memorable pectoral symbol “ICWC Honorable Member”.

On the third question "Making more precise water reservoir cascade operation regime and water diversion limits in AmuDarya and SyrDarya basin on non-growing season of 2001-2002":

1. To accept BWO "AmuDarya" and BWO "SyrDarya" information on water diversion limits realization and reservoirs regime.
2. Recommend to correct Naryn-SyrDarya cascade of interstate water reservoirs operational regime up to April 1, 2002 according to Annex 1.
3. ICWC members from Kazakhstan Kyrgyzstan, Tajikistan and Uzbekistan to facilitate interstate agreement conclusion on power-water resources rational use in SyrDarya basin for growing period of 2002.
4. ICWC members to organize work on making more precise draught subsequences for relevant decision preparation.

On the fourth question "Donors and ICWC members joint meeting":

1. To conduct meeting of donors with ICWC members on February 22, 2002 to work out measures on joint work effectiveness increase.
2. To charge Mr. A.D. Ryabtsev to be Co-Chairman on behalf of ICWC. To accept information that Mr. D. Pearce will be Co-Chairman from donors.
3. Ask Mr. T. Altyev to make presentation on behalf of ICWC and IFAS.

On the fifth question "Next ICWC meeting agenda and place":

To conduct the next 33rd ICWC meeting at the end of April in Tashkent

Agenda

1. Results of water resources use in non-growing period, water diversion limits and interstate water reservoirs cascade operational regime for growing season of 2002 (responsible: BWO "SyrDarya", BWO "AmuDarya").
2. Implementation of recommendations and decisions of ICWC Jubilee Scientific-Applied Conference (responsible: SIC ICWC).
3. Scientific-research activity within ICWC program (responsible: SIC ICWC and ICWC MC).
4. ICWC 34th meeting agenda.

ICWC members

For the Republic of Kazakhstan	Ryabtsev A.D.
For the Kyrgyz Republic	Koshmatov B.T.
For the Republic of Tajikistan	Nazirov A.A.
For Turkmenistan	Altyev T.A.
For the Republic of Uzbekistan	Jalalov A.A.

Annex 1
to the ICWC meeting protocol 32, third question

SCHEDULE-FORECAST
of Naryn-SyrDarya cascade operation regime
since October 1, 2001 till March 31, 2002

		October	Novem-ber	Decem-ber	January	February	March	Total
		fact	fact	fact	fact			mln m^3
Toktogul reservoir								
Inflow to reservoir	m^3/s	291	243	199	178	190	173	
	mln m^3	779	630	533	477	460	463	3342
Volume: beginning	mln m^3	12100	11943	11566	10425	9316	8445	
end of period	mln m^3	11943	11566	10425	9316	8445	7770	
Release from reservoir	m^3/s	318	393	619	573	550	425	
	mln m^3	852	1019	1658	1535	1331	1138	7532
Kairakkum reservoir								
Inflow to reservoir	m^3/s	409	661	968	826	876	686	
	mln m^3	1095	1713	2593	2212	2119	1837	11570
Volume: beginning	mln m^3	1195	1389	1558	2358	3149	3372	
end of period	mln m^3	1389	1558	2358	3149	3372	3418	
Release from reservoir	m^3/s	398	696	814	731	800	687	
	mln m^3	1066	1804	2180	1958	1935	1840	10784
Chardara reservoir								
Inflow to reservoir	m^3/s	311	790	971	796	974	909	
	mln m^3	833	2048	2601	2132	2356	2435	12404
Volume: beginning	mln m^3	786	1014	1577	3332	4395	4898	
end of period	mln m^3	1014	1577	3332	4395	4898	5350	
Release from reservoir	m^3/s	245	592	375	380	380	480	
	mln m^3	656	1534	1004	1018	919	1286	6418
Release to Kyzylkum canal	m^3/s	3	4	5	5	5	5	
	mln m^3	8	10	13	13	12	13	71
Release to Arnasai depression	m^3/s	0	0	0	0	380	250	
	mln m^3	0	0	0	0	919	670	1500
Water supply to Aral sea	m^3/s	26	66	65	65	74	158	1191
Charvak reservoir								
Inflow to reservoir	m^3/s	116	115	87	82	74	98	
	mln m^3	311	298	233	220	179	262	1503
Volume: beginning	mln m^3	1089	957	914	789	674	635	
end of period	mln m^3	957	914	789	674	635	617	
Release from reservoir	m^3/s	157	118	120	111	90	105	
	mln m^3	421	306	321	297	218	281	1844
Andijan reservoir								
Inflow to reservoir	m^3/s	62	82	76	68	62	72	
	mln m^3	166	213	204	182	150	193	1107
Volume: beginning	mln m^3	559	513	701	884	1017	1138	
end of period	mln m^3	513	701	884	1017	1138	1216	
Release from reservoir	m^3/s	71	9	6	18	12	43	
	mln m^3	190	23	16	48	29	115	422

MAKING MORE PRECISE WATER RESERVOIR CASCADE OPERATION REGIME AND WATER DIVERSION LIMITS IN AMUDARYA AND SYRDARYA BASIN ON NON-GROWING SEASON OF 2001-2002[1]

Severe draught 2001 created most difficult conditions for agricultural producers in the Amu-Darya basin. Only due to operative measures undertaken by state it became possible to save part of cotton, rice and other crops yield.

Predicted water related situation for 2002 is unsatisfactory: only for leaching and recharge irrigations water deficit will amount for 3bln.m^3 on the territory under BWO "AmuDarya" administration. Very dangerous fact is that only 2511mln.m^3 of water or 43% of average long-term (last 12 years) value (5840 mln.m^3) or 82.5% of last year level (3042 mln.m^3) have been accumulated in Tuyamuyun water reservoir. It threatens to winter wheat irrigations and leaching. Predicted situation during growing season is not better. According to Gidromet forecast, at Kerki site upstream Garagum canal water probability is expected to be during growing season within the limits of 76.4-82.7% or 83.0% on average (actual probability in last year was 68.1%).

Taking into account unfavorable water related situation, BWO "AmuDarya" asks ICWC members to consider at national level cropping pattern for 2002 for meeting irrigation needs under draught and effective water use.

By 01.0.2002 water volume in Nurek water reservoir amounted for 8633 mln.m^3 (8462 mln.m^3 in last year). For in-system reservoirs volumes were 2714 mln.m^3 (3018 mln.m^3 in last year).

At Kerki site upstream Garagum canal water probability by 01.0.2002 amounted for 49.75 of norm and by 11% less compared with expected probability for IV quarter of 2001.

Expected water probability forecast for I quarter of 2002, according to Gidromet, will amount for 52.6-76% or 64.3% on average.

On preceding ICWC meeting decision has been made to cut previously established limits by 25% taking into consideration difficult water related situation. For three months of current non-growing period under reduced limit of 4617.1 mln.m^3 actually 5015.8 mln.m^3 were used. This information is shown in table 1, 2.

[1] Information on the third question of the meeting's agenda

Table 1

Name	Limit	Increasing by 01.01.02		Over diverted	Saved	Fulfillment %	Total limit %
		limit	fact				
Kyrgyz Republic	0	0	0		0		
Verkhnedaryinsk board (upstream)	2314	1381	1627,5	-246,5		117,8	70,3
including:							
Republic of Tajikistan	2164	1231	1294,6	-63,6		105,2	59,8
Surkhandarya oblast	150	150	332,9	-182,9		221,9	221,9
Water diversion from AmuDarya at Kerki gauging station	9360	3236,1	3388,3	-152,2		104,7	36,2
Republic of Uzbekistan, total:	4484	1449	1626,7	-177,7		112,3	36,3
a) middle stream							
Karshi main canal	1275	728,2	862,8	-134,6		118,5	67,7
Amu-Bukhara main canal	1046	521,8	579,6	-57,8		111,1	55,4
Total for middle stream:	2321	1250	1442,4	-192,4		115,4	62,1
б) downstream							
Khorezm oblast	926	89,8	83,8		6	93,3	9,0
Karakalpakstan Republic	1237	109,3	100,5		8,8	91,9	8,1
Total for downstream	2163	199,1	184,3		14,8	92,6	8,5
Turkmenistan, total:	4876	1787,1	1761,6		25,5	98,6	36,1
a), middle stream							
Garagumdarya	2858	1216,1	1216,2	-0,1		100,0	42,6
Labap veloyat	968	350	324,5		25,5	92,7	33,5
Total for middle stream	3826	1566,1	1540,7		25,4	98,4	40,3
б) downstream							
Tashauz veloyat	1050	221	221		0	100,0	21,0
Total for basin	11674	4617,1	5015,8	-398,7		108,6	43,0
Verkhnedaryinsk board							
upstream	2314	1381	1627,5	-246,5		117,8	70,3
middle stream	6147	2816,1	2983,1	-167		105,9	48,5
downstream	3213	420,1	405,3		14,8	96,5	12,6
Intakes in AmuDarya downstream							
total:	3213	420,1	405,3		14,8	96,5	12,6
Incl. Khorezm oblast	926	89,8	83,8		6	93,3	9,0
Karakalpakstan Republic	1237	109,3	100,5		8,8	91,9	8,1
Tashauz veloyat.	1050	221	221		0	100,0	21,0
Sanitary-ecological releases	600	302,4	319,1	-16,7		105,5	53,2
Uzbekistan:	487,5	222,7	222,4		0,3	99,9	45,6
Inckl. Khorezm	112,5	83,4	83,9	-0,5		100,6	74,6
Karakalpakstan Republic	375	139,3	138,5		0,8	99,4	36,9
Turkmenistan:	112,5	79,7	96,7	-17		121,3	86,0
Incl. Tashauz	112,5	79,7	96,7	-17		121,3	86,0
Water spply to Aral sea and delta	1500	750	38		712	5,1	2,5
Incl. From river	1125	562,5	26		536,5	4,6	2,3

Table 2

Name	Limit	Increasing by 01.01.02		Over di-verted	Saved	Fulfillment %	Total limit %
		limit	fact				
Verkhnedaryinsk board:	2314	1381	1627,5	-246,5		117,8	70,3
Republic of Tajikistan	2164	1231	1294,6	-63,6		105,2	59,8
Republic of Uzbekistan	150	150	332,9	-182,9		221,9	221,9
Srednedarinsk board	6147	2816	2983,1	-167,1		105,9	48,5
Turkmenistan	3826	1566	1540,7		25,3	98,4	40,3
Republic of Uzbekistan	2321	1250	1442,4	-192,4		115,4	62,1
Upradik:	1912	246	252,2	-6,2		102,5	13,2
Khorezm	926	90	83,8		6,2	93,1	9,0
Karakalpakstan Republic	382	84	96	-12		114,3	25,1
Total for the Republic of Uzbekistan	1308	174	179,8	-5,8		103,3	13,7
Tashauz (Turkmenistan)	604	72	72,4	-0,4		100,6	12,0
Nizhnedarinsk board	1301	174	153		21	87,9	11,8
Turkmenistan	446	149	148,5		0,5	99,7	33,3
Republic of Uzbekistan	855	25	4,5		20,5	18,0	0,5

Established limit is used by Uzbekistan by 112.3% (1626.7 against 1449 mln.m^3); by Turkmenistan –98.6% (1761.6 against 1787.1 mln.m^3); by Tajikistan-105.2% (1294.6 against 1231 mln.m^3).

Over river sites water allocation is as follow:
1. Upper reaches-117.8%;
2. Middle reaches-105.9%, including Uzbekistan-115.4%, Turkmenistan-98.4%;
3. Lower reaches- 96.5%, including Uzbekistan-92.6%, Turkmenistan-100%.

Over water major consumers water allocation is as follow:
1. Khorezm-93.3%;
2. Dashhovuz-100.0%;
3. Karakalpakstan-92.7%.

Water supply to the Aral sea is fulfilled by 5.1% (38 against 750 mln.m^3) (table 3).

Table 3

Water supply to the Aral sea and AmuDarya delta
for October-December non-growing period 2001-2002

Name	October	Novem-ber	Decem-ber	Water supply since 01.10.01 till 01.01.02		Fulfillment %
				schedule	fact	
Samanbai g/s	10	8	8	562,5	26	4,6
Total release from canal Kyzketken and Suenli system	0	0	0		0	
Collector-drainage network	7	5	0	187,5	12	6,4
Total:	17	13	8	750	38	5,1
Increasing	17	30	38			

Sanitary-ecological releases are used by 105.5% (319.1 against 302.9 mln.m^3) (table 1). In spite of efforts undertaken by the BWO "AmuDarya", Minvodkhoz of Turkmenistan and Minselvodkhoz of Uzbekistan water supply evenness could not be fully avoided.

Preliminary calculations of AmuDarya reservoir cascade regime shows:
1. Expected water probability by Kerki site upstream Garagum canal during non-growing period will be within the limits of 8.3km^3 or 58% of norm (14.5%). Last year it was 10.9 km^3 or 2.6 km^3 more.
2. River flow at Kerki site is expected about 12.1 km^3 that is 2.3 km^3 less.
3. River flow at Darganata site is expected about 5.6 km^3 or 1.3 km^3 more.
4. Middle reaches limits will be used by 100%, in lower reaches-by 75-80%.

Water diversion limits alternatives for non-growing period 2001-2002 are presented in table 4.

Table 4

Correction alternatives of water diversion limits from AmuDarya and water supply to the Aral sea and delta on non-growing period 2001-2002 (with regard for limit use by 01.02.02)

River basin, state	Water intake limit, km^3					
	Total per year (since 0110.00.till 01.10. 2001)	Incl. non-growing period 2001				
		Limits acc. to states request	Approved limit reduced by 25%	1 option limit reduction by 30%	2 option limit reduction by 35%	3 option limit reduction by 40%
Total from AmuDarya	55,020	15,965	11,974	11,176	10,377	9,579
including:						
Kyrgyz Republic	0,450	0,000	0,000	0,000	0,000	0,000
Verkhnedaryinsk board	10,570	3,485	2,614	2,440	2,265	2,091
Republic of Tajikistan	9,170	2,885	2,164	2,020	1,875	1,731
Surkhandarya oblast	1,400	0,600	0,450	0,420	0,390	0,360
From Amudarya					0,000	0,000
at Kerki g/s	44,000	12,480	9,360	8,736	8,112	7,488
Turkmenistan	22,000	6,500	4,875	4,550	4,225	3,900
Republic of Uzbekistan	22,000	5,980	4,485	4,186	3,887	3,588
Besides:						
	5,000	2,000	1,500	1,400	1,300	1,200
Sanitary-ecological releases						
In irrigation systems	0,800	0,800	0,600	0,560	0,520	0,480
Tashauz veloyat	0,150	0,150	0,113	0,105	0,098	0,090
Khorezm veloyat	0,150	0,150	0,113	0,105	0,098	0,090
Karakalpakstan Republic	0,500	0,500	0,375	0,350	0,325	0,300
Total to the Aral sea and Priaralie						

Note: 1. Water intake limits foresee water supply for irrigation, domestic-industrial and other needs. Under water availability change limits will be revised respectfully. 2. Under water availability increase all water volume will be released to the Aral sea.

BWO “AmuDarya” has worked out version of Tuyamuyun reservoir operation regime for non-growing period under 65% probability and average flow 13.4 km^3 at Kerki site (table 5). BWO’AmuDarya together with Center “Energy” has worked out version of Nurek reservoir operation regime for non-growing period 2001-2002 (table 5).

Taking into account current situation, is proposed to establish plan of water supply to the Aral sea and Priaralie, with regard for collector-drainage waters, 1400mln.m^3 .

In conclusion BWO “AmuDarya” suggests:
1. To consider and accept water diversion alternative for non-growing period 2001-2002.
2. To approve submitted to ICWC AmuDarya reservoir cascade regime for non-growing period 2001-2002.

Table 5

Nurek and Tuyamuyun reservoir working regime since October 2001 till March 2002

Nurek water reservoir	Unit	Fact				Forecast		Total
		October	November	December	January	February	March	
Inflow	m^3/s	318	242	217	167	170	200	3455
Water losses	m^3/s	0	0	14	1	17	0	82
Volume: beginning	mln. m^3	10357	10051	9462	8633	7786	6825	10357
End of period	mln. m^3	10051	9462	8633	7786	6825	6022	6022
Accumul. (+), release (-)	mln. m^3	-306	-589	-829	-847	-961	-803	-4335
Altitude: end of period	m	903,48	899,95	890,8	880,3	868,18	857,38	
Release from reservoir	m^3/s	432	469	512	501	550	500	7709

Nurek water reservoir	Unit	Fact				Forecast		Total
		October	November	December	January	February	March	
Inflow	m^3/s	270	293	410	447	367	371	5660
Water losses	m^3/s	76	40	45	46	65	43	826
Volume: beginning	mln.m^3	1710	1692	1950	2511	3243	3152	1710
End of period	mln.m^3	1692	1950	2511	3243	3152	1708	1708
Accumul. (+), release (-)	mln. m^3	-18	258	561	732	-91	-1444	-2
Altitude: end of period	m	116,28	120,68	124,7	127,88	127,5	117	
Release from reservoir	m^3/s	201	154	156	128	340	867	4842
Incl. to river	m^3/s	166	123	127	120	239	571	3527

ABOUT WATER DIVERSION LIMITS FULFILLING FOR NON-GROWING PERIOD 2001-2002[2]

Water diversion limits and Naryn-SyrDarya reservoir cascade operation regime for 2001-2002 are approved by ICWC at the meeting in Kurgan-Tube (Protocol No 31 of November 23, 2001).

Predicted water resources for last four months are characterized as follow (table 1):

Table 1

Water resources, mln.m^3

Parameters	Norm	since 1.10.2001 till 31.03.2002.		since 1.10. 2001till 31.01. 2002		
		forecast	Fulfillment %	fore-cast	fact	Fulfill-ment %
Inflows to upper reservoirs						
Toktogul	2720	2987	109,8	2302	2404	104
Andizhan	921	865	93,9	603	745	123
Charvak	1195	1179	98,7	884	1061	120
Ugam river	157	157	100	94	117	123
Total	4993	5188	103,9	3883	4327	111
Lateral inflows						
Toktogul-Uchkurgan	393	413	105	271	307	113
Uchkergan-Uuchtepe-Kairakkum	3804	3458	90,9	2493	3015	121
Andizhan-Uchtepe g/s	2075	1965	94,7	1341	1823	136
Kairakkum-Chardara	2830	2358	83,3	1782	2251	126
Gazalkent-Chinaz g/s (Chirchik river)	885	865	97,7	585	778	113
total	9987	9059	90,7	6472	8174	126
Grandtotal	14980	14247	95,1	10355	12501	120

From the table can be seen, that actual inflow since October 1 till January 31 exceeded forecast and amounted for 111%. Lateral inflow along Naryn, Karadarya and SyrDarya river was 126%.

For Naryn-SyrDarya cascade as a whole inflow was by 20% higher than expected. Water intakes for passed period are presented in table 2.

[2] Information on the third question of the meeting's agenda

Table 2

Actual water intakes over republics, mln.m^3

Republic	ICWC limit 1.10.2001-1.04.2002	Fact by 01.02. 2002	Fulfill-ment %
Uzbekistan	2350	1360	57,8
Kyrgyzstan	20	37	185
Tajikistan	200	116	58
Kazakhstan			
Dustlik and Kyzylkum canal)	500	80	16
Total	3070	1593	52

Releases from Toktogul in October-January match to ICWC schedule for non-growing period 2001-2002:

Releases from Toktogul, mln.m^3	October	November	December	January	Total
Acc. to ICWC schedule	318	430	560	630	5140
fact	318	393	619	573	5064
Fulfillment %	100.0	91.0	110.0	91.0	98.5

It worth to note, that release from Toktogul reservoir during current non-growing period is significantly approached to figures recommended by ICWC and by 1.2-1.5 km^3 less compared with last year.

With regard for current water related situation since October 2001 till March 2002, BWO "SyrDarya" suggested revised Naryn-SyrDarya cascade regime (Annex 1 to Protocol No 32), where releases from Toktogul reservoir are equal to 7.5 km^3. By April 1 2002 Rairakkum and Chardara reservoir volume is 3.4 and 5.3 km^3, respectfully, iflow to Chardara reservoir-12.4 km^3.

Water intake limits remain the same.

Taking into account, that lateral inflow is higher than expected one and Chardara reservoir has not free volumes, release to Arnasai sink is expected in February-March. To avoid this Kazakhstan should take measures to pass water downstream Chardara reservoir. Otherwise, Kazakhstan together with Uzbekistan must consider water release to Arnasai.

Water supply for irrigation during growing season 2002 has not been yet decided and should be decided as soon as possible.

Protocol
of joint meeting of ICWC and donors "About donor aid efficiency increase in water resources management in Central Asia"

February 22, 2002 Almaty

Attendees:

From donor organizations:

The World Bank	Ahmad Masud, David Pearce, Anatolyi Krutov
The Asian Development Bank	Woter Linclaen Ariens, B.Tumordzava
CIDA	Najeeb Mirza, Nailya Okda, Chandra Madramootoo
IWMI	Vilma Horinkova
SDC	URS Heren, Johan Gely
US State Department	Robert Wots, Tatyana Lim
USAID	Alexander Kalashnikov, Nina Kavetskaya
UN EC	Bo Libert
ESCAP	David Zhezef
ICID	Bart Shultz

From IFAS and ICWC:

EC IFAS Chairman	Tekebai Altiev
ICWC members	Anatolyi Ryabtsev, Baratali Koshmatov, Abdukohir Nazirov, Abdurahim Jalalalov
ICWC bodies	Mahmud khamidov, Victor Dukhovny, Pulat Umarov

Co-chairmen: David Pearce, Tekebai Altiev.

International donors community paying attention to ICWC activity permanently assists in integrated water resources management introduction, training activity development, water conservation, flow forecast and account improvement. It worth to mention such organizations as the WB, EU, CIDA, SDC, DFID, USAID, etc. At the same time, high qualification of local specialists and their knowledge about modern approaches to water resources management allow to increase confidence to local national and regional organizations and trust them projects implementation without participation of expansive expatriate experts.

ICWC fruitful collaboration with ICID during 8 years helps in acquaintance with world experience in irrigation and drainage. ICID National Committees turn in mighty potential of water related organizations uniting both specialists and institutes.

Participants have indicated:

1. Until now “Aral sea Program” does not have clear provisions for coordination between donors and ICWC (IFAS). There are examples of duplication, parallelism and even contradictions.

2. Efficiency of donor programs is different. Mostly it depends on:
- agreed selection of topical themes;
- executors appointment on behalf of donors;
- work program and its methodology determination jointly with beneficiaries;
- orientation on results and strict payment depending on results planned jointly by donor and beneficiary.

Those programs are the most effective and productive, where main work is done by local specialists and donor takes responsibility only for control and monitoring functions.

3. ICWC and IFAS have prepared the following project proposals for the regional programs financing which were submitted to donors:
- action program for regional water collaboration in Central Asia;
- transboundary return waters in the Aral sea basin-environmentally sustainable management of reservoir and wetland system and their biodiversity;
- social-economic situation and action plan on sustainable agrarian-industrial development in lower reaches of the Aral sea basin;
- program of hydraulic facilities on AmuDaya river modernization and automation;
- modeling;
- project “SyrDarya and AmuDarya upper watershed situation improvement”.

After opinions exchange participants agreed on the following:

1. Organize donors coordination creating Coordination Council which will meet periodically (once a half year) for joint plans and results discussion.

2. Based on results of mentioned meetings, Coordination Council will meet with ICWC members and exchange information about work progress, plan the most effective ways of funds utilization.

Leadership in the Council should be built on rotation principle changing Council composition each half a year. Simultaneously, Council representatives will be invited to ICWC meetings.

3. To rise responsibility for final result it is expedient to organize Steering Committee for each project including donors, concerned ministries and water users representatives. It is necessary to work out order of their activity and responsibility degree for final result.

4. Projects passed to donors and representing regional programs will be considered by the end of April 2002 and results will be said to ICWC members during the next meeting. It is expedient to elaborate and agree procedure for priority projects submitting to donors for financing.

SCIENTIFIC-APPLIED CONFERENCE "WATER RESOURCES OF CENTRAL ASIA"

Scientific-Applied Conference "Water Resources of Central Asia" took place on February 20-22, 2002 in Almaty and was devoted to 10-year ICWC jubilee. More than 200 scientists and participants from 20 countries took part in the conference. Here were plenary (17 papers) and 4 section sessions:

- Water resources management and water right (22 papers);
- Water for municipal needs, water quality and health (25 papers);
- Water for environment and food (41 papers);
- Water for industry, power engineering and technology of its application (32 papers).

During plenary session presentation were made by ICWC members, leaders of ICWC executive bodies, Russian Federation, international organizations representatives.

It can be said that the conference became a "picture" reflecting modern status and issues in water sector of Central Asian countries. Range of interests was very wide: IWRM, sustainable development, Transboundary water resources, mathematical modeling, water saving, drinking water supply, water quality, water source ecology, hydropower engineering, water reservoir and pumping station operation, etc.

Journal "Melioratsia i Vodnoye Khozyaistvo" (No 1' 2002), issued especially for ICWC jubilee and containing papers of ICWC members, leaders of its executive bodies, was presented to all participants.

Special collections and leaflets, reflecting ICWC 10-year activity, were prepared and issued before the conference.

Conference has decided:

Decision of Scientific-Applied Conference devoted to ICWC 10-year jubilee

1. ICWC establishing on February 18, 2992 and its approval by the Heads of State on April 26, 1993 is excellent reflection of deep understanding by governments of the Central-Asian states the role of joint water resources use and preservation management in all countries development, providing water and environment conditions for all countries.

2. 10 years of joint work on water use based on mutually benefit conditions has proved that collaboration and co-ordination, based on understanding of water resources limitation and taking into account sovereign interests of the countries, is only right decision permitting population of the region to survive under emerging destabilizing factors like population growth, economic development and climate changes.

3. ICWC organizations (BWO "SyrDarya" and BWO "AmuDarya", SIC ICWC, Secretariat) permanently developing and strengthening their potential have proved their viability and practical value in water resources use and development in the region. Included in interstate

bodies and based on PKTI "Vodavtomatika and Metrologia" ICWC Commission takes relevant place in hydrometric works.

4. Permanently analyzing its achievements and shortcomings, ICWC improves its activity as follow:

- Organizing thematic groups on legal, institutional, technical and financial aspects;
- Training activity development as a base for consensus building between the countries, economic branches, governments and NGOs;
- Transition to IWRM within the basin and sub-basin as well as irrigation systems according to hydrographic principles with equal participation of all administrative, oblast, rayon, local water users, including WUA network development;
- Orientation for water conservation as only way for ecological and social-economic issues solution;
- Wide introduction of computerization, water recording and forecast as well as models use in operational and prospective aspects.

At the same time, ICWC members and its bodies understand very well necessity of transparency, openness and equity in water allocation, overcoming misunderstanding between water users interests in upper water shed and lower reaches, irrigation and power engineering, water users and environment. From this point of view, For ICWC is obligatory the following:

- Wide development of public participation;
- Attention to prospective development;
- Revealing reserves in water use with maximum reduction of organizational losses;
- Involvement in water resources management of power engineering, environmental, water supply and hydromet services;
- Creation of human potential through young specialists training in water management, informatics, economy and legislation.

5. International donor community permanently helps ICWC in IWRM introduction, training activity, water saving, river flow recording. Among others especially should be mentioned the World Bank, EU, CIDA, SDC, DFID, USAID, etc. At the same time, it was underlined during the conference, that high professionalism of local specialists and understanding modern approaches to water resources management allows to increase confidence to local national and regional organizations capability to implement projects by own without prevailing expensive expatriate experts, that permit to use limited financial resources.

6. ICWC collaboration with ICID gave big help in understanding the world experience in drainage, irrigation and information exchange and is successfully continuing during 8 years. ICID national committees turned into non-governmental potential uniting water highly qualified specialists and institutions.

7. Conference participants hope that donor community will strengthen its participation coordination to avoid duplication, ineffective use of financial means and will finance the following ICWC priority programs:

- Water collaboration development;
- Improving water resources management in Amudarya basin;
- Improving water resources management in Syrdarya basin;

- IWRM in Zerafshan basin;
- Improving social-economic and environmental situation in AmuDarya lower reaches;
- Creation of the set of models for operational and perspective planning of BWOs' activity.

Underlying necessity of GEF project "Improvement of water resources and environment management in the Aral sea basin" completion to link regional and five national water strategies, participants suggest to link GEF and other programs and attract USAID to this work completion.

FINAL DOCUMENT OF SCIENTIFIC-APPLIED CONFERENCE "WATER RESOURCES OF CENTRAL ASIA" DEDICATED TO ICWC 10-YEAR JUBILEE

1. Establishing Interstate Water Coordination Commission witnesses the state leaders deep understanding of necessity to unit efforts in water management in interest of sustainable development of all countries and the region as a whole, their care about population water supply and environment.

Ten years of joint work showed, that only cooperation and co-ordination in water management, based on responsibility before society, with regard to water resources limitation, will allow to the region to survive under conditions of population growth, industrial and agrarian development and climate warming.

ICWC bodies – BWO AmuDarya and SyrDarya, SIC ICWC, Secretariat proved their viability and practical usefulness in water management in the region. More active role is played by another regional body PKTI "Vodavtomatika".

Big assistance in the world experience introduction including training activity, IWRM, water conservation, flow forecast and account improvement is given by the international organizations such as WB, EU, USAID, CIDA, SDC, DFID and ICID.

2. Based on analysis of achievements and shortcomings ICWC is improving its activity:

- Organization of thematic working groups on major directions (legal, institutional, technical, financial);
- Development of training activity as a base for consensus building between countries, branches, governments and NGO;
- Transition to IWRM within a basin and sub-basin;
- Orientation on water conservation as a single way to solve socio-economic and environmental issues;
- Computerization of account and forecast system as well as models use in operational and perspective planning.

At the same time, specialists and scientists of the region clearly understand necessity of information transparency, equity in water allocation, overcoming contradictions between upstream and downstream water users, irrigation and power engineering, water users and environment.

Main task of this conference is attraction of wide audience as well as decision makers' attention to issue of water supply sustainability under water deficit and pollution.
Central-Asian country should solve the following issues:

- Population needs satisfaction in water and sanitary-hygienic situation improvement;
- Population provision with food based on more effective and equitable water distribution within the basin;
- Natural complexes and ecosystems protection through sustainable water resources management;
- Flood, draught and other natural events control;
- Water management with regard for its economic, social, ecological and cultural value for all kinds of water use.

It is very important to strengthen collaboration between the countries of the region based on regional and inter-branch co-ordination with regard for mutually beneficial use of common water resources and water users involvement in water management.

GWP REGIONAL CONFERENCE FOR THE COUNTRIES OF CENTRAL ASIA AND CAUCASUS

International Conference of the parties from Central Asia and Caucasus interested in water partnership has been held in Almaty on February 22-24, 2002 in Almaty. It worth to note, that since GWP establishing (1996) its major activity was devoted to approaches to IWRM and concentrated in 8 regions of the world: Europe, Mediterranean, South-East Asia, South Asia, West Africa, Central America, South America. The goal of Almaty conference was determination of possibilities for GWP activity in Central Asia and Caucasus. It became possible after Steering Committee and Secretariat decision on GWP network extension for Central Asia and Caucasus. Danish Agency for Ecological Cooperation in East Europe (DANCEE) financially supported this conference.

Delegations from 8 states took part in the conference (Azerbaijan, Armenia, Georgia, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan). Each delegation included officials from water and environmental organizations, NGO and WUA representatives. Besides, representatives of the regional organizations participated in the conference: IFAS, ICWC, CSD, regional ecological centers, etc. Total number of participants amounted for 75 persons.

On behalf of Kazakhstan Government Conference was opened by Anatoly Ryabtsev, Chairman of Committee of Water Resources of the Ministry of Natural Resources and Environment of the Republic of Kazakhstan. On plenary session the following papers were presented:

- Review of IWRM issues in Central Asia and Caucasus. Victor Dukhovny, Director SIC ICWC.
- Review of GWP activity including IWRM toolbox, Torkil Jonch-Claussen, Chairman GWP Technical Committee.
- Report on preparatory process to WWF-3, Masamo Toyama, Vice Secretary General WWF-3.

During the second working day partnership organization in the region was discussed. Four papers were presented:

- About NGO and WUA participation in IWRM. Sestrager Aknazarov, Chairman “Biosphere ecology”.
- Water saving and rational water use – main direction of sustainable development in the region, Vadim Sokolov, Deputy Director SIC ICWC.
- Interstate collaboration in the region in IWRM introduction, Tekebai Altiyev, Chairman EC IFAS.
- Capacity building in water sector, Mahmud Khamidov, Head BWO “SyrDarya”.

Detail discussion of partnership took place in 6 working groups. Decision has been made on regional consultative technical group (RTAC) and regional water partnership establishing in the region. It was agreed that RTAC will include one representative from each state, ICWC representative, one representative from each regional ecological centers of Central Asia and Caucasus and two representatives of NGO (totally 13 persons). RTAC composition should be determined in April 2002 and its first meeting will be held in May in Tbilisi. Program of priority actions in water partnership will be discussed on this meeting.

Taking into account that Danish Government changed its priorities in foreign policy, participants were informed, that further financial support to the region is not expected. Only first meeting in Tbilisi will be supported. That is why GWP Secretariat and DANCEE invited representatives from 25 international organizations including World Bank, EU, CIDA, SDC, DFID, USAID, UNDP, UN/ECE, UN ESCAP, IWMI, OSCE, ICARDA. Special meeting of GWP Secretariat with potential donors was conducted. As the first step, Mrs. Vilma Horinkova suggested to place RTAC Secretariat in her office in Tashkent and support it by IWMI as GWP resource center.

MEMORANDUM
OF WORKING MEETING OF THE GOVERNMENTAL WATER MANAGEMENT BODIES LEADERS OF THE CENTRAL-ASIAN COUNTRIES ON REALIZATION OF GEF PROJECT A-1 COMPONENT "WATER AND ENVIRONMENT MANAGEMENT IN THE ARAL SEA BASIN"

March 26-27, 2002 Tashkent

1. Component A-1 implementation is performed by international consultant Royal Haskoning and national working groups (NWG) won the tender and started since July 2000. Project duration is 26 months (deadline is August 31, 2002).

2. Governmental water related bodies' leaders (ministers, committee chairmen, water department directors general) have indicated:

2.1. Project "Water and environment management in the Aral sea basin" is adopted by Heads of State decision (Presidents N. Nazarbayev, A. Akayev, E. Rakhmonov, S. Niyazov and I. Karimov) and Ashgabat Declaration (09.04.1999).

2.2. Heads of state have made Tashkent Statement (December 28 2001), where item 3 indicates: "heads of state are convinced, that coordinated and agreed actions in mutually beneficial use of water and power resources and facilities based on international right will serve as a base for effective use of agricultural and power potential of each country and its people".

Heads of state commissioned their governments to speed development of mechanism for transboundary water use amplification.

3. This statement lies in line with Heads of state decision of April 9, 1999, fully confirms project objectives and ICWC rights as regional body for water resources management.

3.1. To assess regional report No.2 and national reports as successive and work stage of the project implementation with regard for working meeting opinion exchange.

4. Having heard information of international consultant Royal Haskoning: Leader and Coordinator (G Sluimer) and national group leaders (T.Sarsembekov, K.Beishekeyev, S.Kamolov, A.Hatamov, U.Abdullayev); ICWC bodies (M.Khamidov, Yu.khudaibergenov, V.Dukhovny), participants (N.Kipshakbayev, R.Gingyatullin) and basing on assessment of previous reports, working meeting considers:

4.1. To consider comments and amendments of the working meeting at the next ICWC meeting on April 19, 2002 (Bukhara) and determine major directions of realization.

4.2. To inform the World Bank, that project prolongation maybe would be needed.

5. To recommend to international consultant Royal Haskoning: Leader and Co-ordinator (G. Sluimer) and national group leaders (T.Sarsembekov, K.Beishekeyev, S.Kamolov, A.Hatamov, U.Abdullayev) to include the following measures in the program of realization:

5.1. To analyze and revise proposals of the national reporters with regard for the regional possibilities and objectives;

5.2. To foresee use of accumulated experience of countries interaction as well as previous agreements and decisions. Take for a base IFAS and ICWC existing structure with CSD participation with regard for adaptation to changing conditions;

5.3. To analyze and assess experience in water-power resources joint management during last 10 years for each river basin. Foresee experience and assess mechanism of interaction.

6. Assess ecological river needs with measures on environment improvement and threat outside the region prevention.
To recognize necessity to consider region's environment starting with flow formation zone along all river including delta, Priaralie and sea itself as a sovereign water user. Simultaneously, to provide water quantity and quality monitoring within river basins.

6.1. To study factors (conditional and actual) regulating flow, share in services and costs over all river with evaluation of benefits and losses for each river site.

6.2. To evaluate all water sources including transboundary ones for all major basins in the region.

6.3. To calculate several realistic and feasible alternatives (models) of joint water resources management for present time and for perspective (5-10 years) based on actual economic development during recent years.

7. Apply to ministries of all countries, ICWC, CSD, SIC ICWC, BWO "AmuDarya" and BWO "SyrDarya" to help to international consultant, national groups and all project participants.

8. Control over these suggestions implementation to charge on Component A Director (Kazakhstan representative in GEF project) M.Ospanov, International Consultant G.Sluimer and national groups leaders (T.Sarsembekov, K.Beishekeyev, S.Kamolov, A.Hatamov, U.Abdullayev).

Chairman Working Meeting
Chairman Committee of Water Resources of the Republic of Kazakhstan
A. Ryabtsev

Co-chairman Working Meeting
Minister of Reclamation and Water Resources of the Republic of Tajikistan
A. Nazirov

SECOND PREPARATORY SEMINAR OF OSCE TENTH ECONOMIC FORUM "COLLABORATION FOR SUSTAINABLE DEVELOPMENT AND WATER QUALITY PROTECTION WITHIN OSCE CONCEPT" (Zamora, Spain, February 11-12, 2002)

Second seminar in Zamora (Spain) as preparatory one to the OSCE tenth economic forum planned for 28 May underlined importance of regional collaboration for strengthening trust and stability.

Event as organized by OSCE Coordination Centre on ecological and economic issues on behalf of Portuguese leadership together with the Ministry of Environment and Ministry of Foreign Affairs of Spain and Zamora city.

More than 100 participants from 32 countries took part in the seminar, 7 OSCE field offices, OSCE Parliament Assembly, European Commission, Council of EU Parliament Assembly, Commission on the Black Sea protection, Regional Ecological Centre, ICWC, Mekong Commission, UNDP and 13 NGOs. SIC ICWC Director Prof. V. Dukhovny also participated in this seminar.

General reports presented by A. Swain, Director Wilson University (Sweden), A. Moneda, Director General of the Ministry of Environment of Spain, G. Henriken, Director General of the Ministry of Environment of Portugal underlined role and meaning of international agreements in development of international collaboration and partnership, that should be sustainable, long-term and successive.

Water is a key issue of political program in many countries. It is necessary to elaborate mechanisms of collaboration in joint water resources use bringing benefit to all population strata.

Discussing water problems it is important to pay attention to security issues.

Spain-Portugal successful collaboration experience in transboundary water management since 1912 was demonstrated. In 1912 treaty has been signed determining water allocation, joint power engineering development. Water is considered as simulator of socio-economic cooperation between two countries.

Mr. Yuakov Kendar, Director Department of Israeli MFA drew as an example trilateral collaboration between Israel, Palestine and Jordan, where water management even in complex political situation is developing successfully. All countries use allocated resources and the measures on water conservation overcoming chronic deficit.

Report of Prof. V. Dukhovny "Collaboration of the Aral sea basin countries under water resources exhaustion" was presented and positively accepted by audience. Kazakh MFA representatives (Bahram Aukasov, Aidar Shakenov), Kyrgyz Vice Prime Minister Bazarbai Mambetov, Deputy Minister of MFA of Tajikistan Abdukarim Kurbanov, Turkmen MFA representative Bekmurad Astarov supported main provisions of this report.

Talmak Salimov from Tajikistan stated that ICWC successfully distributes water when there is plenty of it, otherwise it only regulate actual water diversion. In EU document it was stated, that "long-term prepared agreements non-signing witnesses of political will absence to collaborate".

In general collaboration in the Aral sea basin was positively evaluated.

Referring to President I. Karimov statement at the session of UN General Assembly, proposals of Tajikistan president E. Rakhmonov in 2000, it was underlined, that OSCE as UN organization could take initiative to support Central-Asian countries cooperation in food provision, food market development including Afghanistan, joint development of power potential.

OSCE together with ICWC could also support coordination of donor aid, improve collaboration effectiveness and water partnership. All these proposals meet main directions of cooperation between Central-Asian countries and President I. Karimov's statement at Almaty Summit on March 2, 2002.

Summary of the OSCE Second Preparatory Seminar [3]

1. Second Seminar in Zamora, as preparatory one to the Tenth Economic Forum, planned for 28 May, underlined importance of regional collaboration in sustainable water use to strengthen trust and guarantee stability.

Event as organized by OSCE Coordination Centre on ecological and economic issues on behalf of Portuguese leadership together with the Ministry of Environment and Ministry of Foreign Affairs of Spain and Zamora city.

More than 100 participants from 32 countries took part in the seminar, 7 OSCE field offices, OSCE Parliament Assembly, European Commission, Council of EU Parliament Assembly, Commission on the Black Sea protection, Regional Ecological Centre, ICWC, Mekong Commission, UNDP and 13 NGOs. SIC ICWC Director Prof. V. Dukhovny also participated in this seminar.

2. Prof. A. Swain stated, that international water agreement positively impact peace and cooperation. In his report he underlined, that such international agreements are necessary though they are not satisfactory to keep stability.

Alvares Moneda indicated, that Prof. Gonsalves Henriken indicated, that where river basin is coming out EU countries-EU members should try to create common plan international basin management.

Discussing water problems it is important to pay attention to security issues, Mark Baltes, OSCE Environmental Coordinator said.

[3] Zamora, Spain, February 11-12, 2002

3. In 5 work group sessions participants have discussed benefit from collaboration in water management in OSCE region, directive on water structure for countries-candidates and countries-partners as well as role of civil society in promoting ecological consciousness and legal and institutional structures.

1st and 2nd work group meeting: experience of transboundary water management in five important regions was presented. In each region most important challenges, achievements and issues and methods of collaboration development were distinguished.

3rd work group meeting: EU Water Directive was presented. 'EU Model' can be used as supporting material but it is not a standard. River basin commissions are very important for water management at basin level. It was suggested, that EU and international community provide technical and financial assistance to these commissions.

4th work group meeting: participants had opportunity to follow five reports on EU involvement in water problems, which provided good basis for discussion and recommendations elaboration. Five reporters from countries, being on different stage of partnership with EU, considered this issue from different regional and institutional perspective.

3rd work group meeting: EU Directive fulfillment is a complex process and public participation is necessary to obtain good results.

NGO play active role in access to information at the national and international level, participation in decision-making. NGO representatives, enterprises and users indicated necessity of wider involvement of civil society in all aspects of water management. Water is a key issue of political program in many countries. It is necessary to elaborate mechanisms of collaboration in joint water resources use bringing benefit to all population strata.

4. On plenary session reporters presented proposals and recommendations prepared by speakers and participants. Recommendations serve for OSCE actions priority determination and help to form agenda of the OSCE Tenth Economic Forum.

Participants underlined that OSCE is political body created for support of states-participants in positive decisions achievement and it should facilitate wider collaboration and destabilizing crisis prevention.

Dispute arose among participants if OSCE could play coordinating role in consensus maintaining and stronger economic collaboration among Central-Asia countries as well as among international donors and programs in the region.

Some participants applied to OSCE with request to support agreements conclusion between Central-Asian countries on economic and environmental issues including water management. Creation of special fund for this purpose has been suggested, but some delegations indicated that the seminar has not enough authority for such decision.

Common transboundary management requires effective local management. OSCE has experience in trust establishing between various ethnic groups and this experience can be useful in water issues solution. Participants asked OSCE to consider its possibilities in water issues solution.

Some reporters underlined importance of public participation in water management strategy development. Local communities and NGO participation at the earliest stages is guarantee of success. Some underlined OSCE role in support of regional and international conventions like Aarhuss Convention, which was accepted in Ukraine with OSCE support. Based on this positive experience, working group will be organized with government and public representatives involvement.

Participants underlined, that OSCE should more effectively introduce concept "Platform of collaboration" in current activity, be a catalyst in context of "platform of collaboration for security".

In area of water management participants determined OSCE role as follow: promoting database creation and support of development projects.

OSCE should consider how to make better relations with countries-partners and facilitate links with other international organizations including EU.

5. Bernardo Weinstain indicated, that found solutions in water sustainable use and quality protection are very important for OSCE. He underlined, that water issues solution can help OSCE to better implement "Platform of collaboration" because it facilitates joint actions and prevents duplication.

Ervan Fuere (European Commission) underlined possibilities for data and experience exchange during such seminars. This seminar's recommendations will be useful for preparation to the Tenth Economic Forum.

Mark Baltes has closed the meeting reminding some ideas coming from grass-root level. Trust strengthening is a critical point for OSCE. It can change its approaches to understanding of destabilizing factors and promote consensus among the states including support and assistance in agreements signing.

PROTOCOL OF JOINT WORK MEETING OF ICWC THEMATIC FINANCIAL-ECONOMIC, TECHNICAL AND LEGAL GROUPS

January 26, 2002 Tashkent

Attendees:

V. Dukhovny, P. Umarov, V. Sokolov, V. Prihodko	SIC ICWC
A. Jailoobayev	Director SIC ICWC Kyrgyz branch
A. Berdiev	Expert EC IFAS
A. Tachnazarov	Minvodkhoz of Turkmenistan
N. Nasirov	Director SIC ICWC Tajik branch
S. Ahmetov	Head Water management Division, Committee of Water Resources, Kazakhstan
O. Lysenko	BWO "AmuDarya"

Participant have discussed the following:

In accordance with ICWC 31st meeting decision in Kurgan-Tube on November 23, 2001 (item 6 of protocol), "Program of actions for regional collaboration establishing in Central Asia" has been adopted. It is recognized expedient to organize work of ICWC thematic working groups (consisting of leading specialists of the region) to search agreed solution of specific issues in integrated water resources management and use. It is proposed to create three thematic groups:
- technical aspects and training;
- legal and institutional issues;
- financial-economic aspects.

Each thematic group should realize assessment of issue and elaborate plan of specific actions in own direction discussing it with broad public to work out common recommendations for decision-makers in connection with other thematic directions.

Based on results of discussion participants have decided:

A) For financial-economic working group

1) To ask ICWC members to make more precise working group composition.

Working group participants from Turkmenistan, Uzbekistan and BWO "SyrDarya" are not defined. Participation of Mrs. N. Gorshkova from Kazakhstan is impossible because her work cessation. Tajikistan representative participation is also doubtful.

Country	Participant
Kazakhstan	N. Gorshkova
Kyrgyzstan	I. Jeroyev
Tajikistan	H. Khasanov
BWO “AmuDarya”	O. Lisenko
SIC ICWC	V. Prihodko

2) The following issues are determined as priority ones:

To work out procedure of “polluter pays” principle application in combination with mechanism of shared participation of concerned countries in water protection measures;
- To elaborate legal, economic and institutional mechanisms of paid services on flow regulation, flood protection, water supply, etc.;
- Organization and mechanisms of water-power consortium.

In accordance with priority issues:
- Ask representatives of Kazakhstan and Uzbekistan together with BWO to develop recommendations on “polluter pays” principle application procedure in combination with mechanism of shared participation of concerned countries in water protection measures;
- Ask representatives of Kyrgyzstan and Tajikistan to prepare recommendations on legal, economic and institutional mechanisms of paid services on flow regulation, flood protection, water supply, etc.;
- Ask SIC ICWC to prepare recommendations on approaches to Water-Power Consortium development.

3. Ask ICWC members to provide preparation of preliminary opinions on above mentioned questions by March 20, 2002.

B) For legal working group:

During the first meeting decision has been made:

To analyze water legislations of own states related to water resources (on first stage) and by-laws (second stage). On the third question-to continue work with agreements:
No. 1 – “About institutional structure of transboundary water resources joint management, protection and development in the Aral sea basin”;
No. 5 – “About Transboundary water protection, their quality control and economic sustainability provision in the region”;
On the fourth question decision is made on item 4, 5, 6 – work on agreements 2, 3 is to be included in working group plan for second half of 2002.

Taking into account, that interstate agreements development is stopped and conclusion on agreement 4 is received only from Uzbekistan, working group members consider as necessary:
- Ask EC IFAS to send letter repeatedly to members of IFAS Board from the states on information exchange agreement coordination;
- Simultaneously, members of technical group consider as necessary to ask ICWC members to renew actions of agreeing commissions. At the moment such commissions are working only in Uzbekistan and Tajikistan;

- Ask ICWC members to consider possibility to include MFA and Ministry of Justice representatives in working groups;
- Ask ICWC members to consider possibility to carry out juridical seminar with involvement of all parties concerned in Kyrgyzstan for further consideration of prepared agreements text;
- Ask ICWC members to consider recommendations and proposals of juridical workshop with participation of Dundee University (Scotland), being held in Tashkent on January 21-26, 2002, in order to take its conclusions into account during further legal base development in the region (Annex 1).
- Ask ICWC members to assist in regional convention's model project development on transboundary water resources management by Dundee University and ICWC; to conduct series of seminars on ecological right and legislation;
- Ask ICWC members to facilitate acceleration of Training Center's branches establishing and functioning and consider expediency to attract CSD to legal thematic group activity.

C) For technical working group:

Urgent measures unfulfilled timely (until January 21, 2002) were determined by the protocol of technical group meeting of December 19, 2001 with request to speed up proposals submission on the following questions.

1. Regarding action plan on 4 priority directions:

- Training center's order of work
- AmuDarya water losses reduction
- Flow prediction amplification
- Modeling development.

To give proposals on other directions of interest for the states (acc. to protocol of 19.12.2001).

2. Regarding course themes selection on irrigated agriculture (from proposed package of lectures in 6 blocks).

3. Regarding workshop on water consumption definition methodology in April 2002 together with Copernicus project.

4. To speed up preparation of project proposal for donors meeting (February 2002) on upper watersheds issues (Kyrgyzstan and Tajikistan).

5. Ask SIC ICWC to prepare report about thematic groups activity to the next ICWC meeting.

PROTOCOL OF STEERING COMMITTEE MEETING ON THE PROJECT "INTEGRATED WATER RESOURCES MANAGEMENT IN FERGHANA VALLEY"

February 28, 2002 Tashkent

Steering Committee meeting held in SIC ICWC on February 28, 2002.

AGENDA

1. Statement about inception phase completion after successful preparatory workshop.
2. Acceptance of revised project document.
3. Statement about beginning of project's main phase.
4. Adoption of revised Steering Committee composition for 3-year project phase.
5. Other questions.
6. Gratitude expression and conclusion.

Regarding the first question: Committee announces successful completion of inception phase of the project based on consensus and approve work done by ICWC and IWMI. Committee highly appreciates financial support from SDC and its commitment to finance 3-year phase of the project (March 1, 2002-February 28, 2005). Committee suggests to SDC to finance the second 3-year phase of this extremely important project.

Regarding the second question: Based on consensus Committee approves revised project document including outcomes and activity mentioned in the document.

To approve the following pilot objects:

Kyrgyz Republic – Aravanakbura canal in Osh oblast with WUA "Zhapalak" having possibility to establish WUA federation with inclusion of two neighboring WUAs from two rayons;

Republic of Tajikistan – Gulya-Kandoz canal in Sogd oblast with WUA establishing on Bistrotok-Akkala canal;

Republic of Uzbekistan – South-Fergana canal in Fergana oblast with WUA establishing on two canals (Akbarabad and RP-1) system.

In accordance with this choice to determine the following demonstrative farms:

Osh oblast:

- Aravan rayon, WUA Akbura, PF Musa;
- Karasu rayon, WUA Zhapalak, PF Kelechek;
- Karasu rayon, WUA Zhanarik, PF Toloikon.

Sogd oblast:

- *B.* Gafurov rayon, CF Bahoriston, PF Gadoiboyev;

- J. Rasulov rayon, CF Bobo Khamdamov, PF Sayod;
- J. Rasulov rayon, CF Samatov, DF "21".

Ferghana oblast:

- Kuva rayon, CF Navoy, PF Oganazar-Ota;
- Tashlak rayon, CF Navoy, PF Akmal-75;
- Ahunbabayev rayon, CF Niyozov, PF Sherzodbek.

Mentioned choice is agreed with Minselvodkhoz of Kyrgyz Republic and the Republic of Uzbekistan and with Minvodkhoz of the Republic of Tajikistan.

SIC ICWC and IWMI make more precise possibility to include in the project lands under command of South-Fergana canal.

Project will try coordinate its activity with USAID NRMP project on Pakhtaabad canal to stimulate joint program "Integrated water resources management in Fergana valley".

Regarding the third question: Committee announces the beginning of main phase of the project.

Regarding fourth question: Committee approves changes in its composition:

- three representatives (desirably deputy ministers from each state);
- one member from SDC;
- head/deputy head oblvodkhoz, where pilot object is located;
- IWMI representative;
- SIC ICWC representative (Steering Committee secretary);
- BWO "SyrDarya" representative;
- ICWC Secretariat representative.

SIC ICWC will act as Committee's secretariat. It will be responsible for meetings organization and agenda, reporting and proceedings preparation.

Regarding the fifth question: Steering Committee meeting is completed by expressing gratitude to SDC for project financial support and to IWMI for valuable contribution to the project.

Steering Committee members:

Urs Heren	E.Joroyev	A.Madaminov	M.Dusmatov
M.Mirzayev	A.baratov	H.Muhitdinov	N.Ernazarov
G.Negmatov	A.Zholdoshov	A.Rahmatillayev	P.Umarov

PROTOCOL OF THE FOURTH JOINT SEMINAR OF COORDINATION COMMITTEE ON RIVER FLOW FORECAST IN CENTRAL ASIA AND USAID, GEF PROJECT, SASM AND NRMP PROJECT

February 4-5, 2002 Dushanbe

Participants having heard and discussed information:

- About progress in component D (transboundary water monitoring stations) implementation;
- About progress in NRMP/USAID project;
- About information collection system based on meteor communication system;
- About SASM/RCH regional hydrologic center activity;
- About river flow forecast for 2002;
- About Coordination Committee's Almaty meeting (November 8-9, 2001) decisions fulfillment;
- About collaboration between water related organizations and hydromets.

Participants noted, that items 2, 3, 4 , 5, 6, 7, 8, 9, 10, 11, 14 of Almaty meeting have been fully fulfilled and items 1, 12 and 13 are under progress. Preliminary assessment of water availability in SyrDarya and AmuDarya basin is not enough reliable due to lack of information about snow stocks in flow formation zone.

Recognizing importance of forecast quality increase and monitoring system establishing based on remote sensing for hydrological forecast in 2002 it was decided:

1. Ask USAID to speed up computers procurement and local network installation by the end of March 2002;
2. Ask USAID to provide Gidromet with report on NWNSRFS model calibration by the international seminar on modeling to be held in April;
3. Gidromets of Kyrgyzstan and Tajikistan to determine place for 5 additional stations in flow formation zone and give the ground in NRMP/USAID project by February 20, 2002;
4. Ask USAID to organize individual 2-week training for specialists from Gidromet of Kyrgyzstan and Tajikistan in SANIGMI of Glavgidromet of the Republic of Uzbekistan;
5. While installing new current model, ask the GEF project component D leadership to organize measurements in parallel during the year;
6. Gidromet of the Republic of Kazakhstan to work out by March 1, 2002 draft agreement on exchange of information, which is obtained by equipment of NRMP/USAID project, between Gidromets of the Central-Asian countries and submit it to Coordination Committee (CC) meeting for consideration and approval;
7. NRMP to provide Gidromets with necessary technical data about equipment characteristics and meteor communication signal parameters for frequency obtaining;
8. Gidromet of the Republic of Kazakhstan to determine by March 15, 2002 two working frequencies and inform other Gidromets for coordination in local bodies;
9. Chairman of the Coordination Committee's fourth working seminar together with CC members to develop draft provision about committee and submit to the next Committee meeting;

10. Next CC meeting to conduct in June 2002 in Turkmenistan. Reserve place will be Almaty (Kazakhstan);
11. For period between meetings to appoint last meeting chairman as a CC chairman and charge him with control over protocol observance;
12. Ask GEF project component D leadership to speed up radio-station procurement for Glavgidromet and oblast centers by June 2002.

For the Republic of Kazakhstan	Ye.Kubakov, Chief Engineer Kazgidromet
For the Kyrgyz Republic	I.Myatskaya, Head of Department, Kyrgyzgidromet
For the Republic of Tajikistan	M.Safarov, Deputy Head Tajikgidromet
For Turkmenistan	B.Choshiev, Head of Department, Turkmengidromet
For the Republic of Uzbekistan	L.Vasilina, Head Hydromet, Uzglavgidromet

PROTOCOL OF THE TRAINING CENTER, MCGILL UNIVERSITY AND MOUNT-ROYAL COLLEGE WORKSHOP "IRRIGATED FARMING IMPROVEMENT IN CENTRAL ASIA" UNDER CIDA FUNDING

March 30, 2002 Tashkent

Conduction of next seminar "Irrigated agriculture improvement in Central Asia" is caused by increased necessity of disseminating available practical and research knowledge accumulated in five states of Central Asia in agriculture and water management complicated by last low water years and necessity of urgent water conservation technologies introduction. Seminar program and reports thematic approved by ICWC, focused on creation of conditions for exchange with advanced approaches to irrigated agriculture problems solution between experts-practitioners and high and middle level scientific employees. Seminar participants staff included specialists from water organizations, agricultural enterprises, non-governmental organizations of five countries of Central Asia. Mass media highlighted seminar activity.

Seminar was held from March 25 till March 30, 2002. The training program provided exchange of opinions on problems incorporated within framework of 6 modules:

- General irrigated agriculture issues;
- Irrigated agriculture economy;
- Irrigation;
- Irrigation systems operation;
- Reclamation and ecology; and
- Programming complexes for irrigation management

Total number of reports amounted for 27; reports were disseminated among participants.

CIDA Director General on policy, planning and finance K. Bregg, First Secretary of Embassy of Canada in Almaty on technical assistance to the countries of Central Asia N. Mirza, Regional Adviser for USAID water-power issues K. Anderson, Director of project Natural resources management improvement in Central Asia M. Biddison, Director General of IWMI Tashkent Office on Central Asia and Caucasus V. Horinkova, Minister of Water Management of Republic of Tajikistan A.A. Nazirov, Chairman of Committee for Water Resources of Republic of Kazakhstan A.D. Ryabtsev, First Deputy Director General of Water Department of the Kyrgyz Republic K.K. Beishikeyev, Deputy Minister of Agriculture and Water Management of Uzbekistan of A.S. Nisnevich, honorable ICWC member, Director of SIC ICWC Kazakh Division, Prof. N.K. Kipshakbayev and SIC ICWC Director, Prof. V.A. Dukhovny participated in seminar opening and addressed to participants on tasks decided by seminar.

In seminar participants opinion, training promotes better understanding of existing problems, allows students to systematize their knowledge and also to expand outlook. The utility of information, given by reporters, for development of concrete measures on improving irrigation systems' operation was noted. The data and information received during discussions, which concern daily activity of water experts, have deepened understanding of national features of creation of Water Users Associations, elaboration of water tariffs, hydrometeorology and management structure. Given training has given ability to understand better financial and economic situation in water sector, technical equipment and general situation in sphere of recla-

mation, and also features of irrigation ways zoning, water use efficiency assessment in irrigated agriculture and take necessary decisions.

The students have noted necessity of activating work on forestation in water users' consciousness of ideas of economical attitude both to water expenditure and wider and consecutive introduction in best practices of water conservation in irrigated agriculture.

As a result of discussions it was revealed that transition to the market relations in irrigated agriculture, which is non-uniform in the countries of Central Asia, nevertheless, common for all states problem: re-structuring of agriculture, water resources deficiency, deterioration of irrigation and drainage networks, deterioration of water and land quality in result of salinity.

The training participants offered number of the recommendations and proposals on effective irrigated agriculture improvement in Central Asia. In particular, attention to necessity of further development of agricultural crops cultivation technology on irrigated lands was paid. The basic directions of this work should be:

- Inventory of irrigated plots based on large-scale soil-reclamation survey.
- Set of measures (in reclamation and agronomic aspect) providing uniformity of irrigated plot as object of agronomic reclamation measures, which expediency is revealed by inventory. They are:
  - Leveling of irrigated plot surface;
  - Improvement of water-physical parameters of soil layer by means of available agronomic measures;
  - Creation and maintenance of permissible salt content in root-zone with account of salts toxicity and cultivated plants salt resistance;
  - Features of progressive agronomic technique of sowing cultivated crops;
  - Feature of irrigation technology;
  - Necessity and uniformity of draining.

It was emphasized that modern opportunities of the equipment and programming of monitoring of all process of soils fertility and agricultural production in general make similar technological schemes urgent for revealing and using irrigated field reserves as base of high and sustainable irrigated lands' fertility.

Following water conservation measures were proposed to introduce:

- Crop irrigation regime relevance with planned yield;
- Introduction of intensive methods of crop cultivation (deep plough, organic fertilizers and chemicals application, deep loosening and crop rotation);
- Even soil moistening and desalinization through irrigated plots size and leveling optimization;
- Revision of crop pattern with regard for ecological, economic and social conditions of the region;
- Strongly saline land retirement;
- Introduction of the best drainage machinery and irrigation technologies for in-farm water supply and proper root zone moistening;
- Regular cleaning of inter-farm and on-farm collectors;
- Necessary state support of drainage system and inter-farm collectors;
- Young specialists training.

As economic incentives, the following measures are proposed to introduce:

- At water user level - water use payment increase for water intake in volume exceeding technically achievable or biological consumption level;
- At interstate level - water use payment increase under exceeding water intake limit by any country, determined with account of requirement to maintain ecologically permissible water consumption level in basin and taking into account historically traditional share of participation (as payments to IFAS);
- Water users encouragement for water saving in cases, if water volume, diverted by them, is less than level permissible by most rigid water consumption norms;
- Sanction to sale of own water limits to other water users;
- Bonus system of payment for water bodies' work providing compensation for water economy.

Such organizational measures on water economical expenditure, deserve attention:

- Gradual limits' restriction at level of the countries, oblasts;
- Creation of public water use control bodies on system, including all levels - from basin to n to level of management by systems, rayvodkhozes;
- Creation of Water Users Associations at a level of aggregated farms. WUA special task - participation in organization of strict water rotation and limited water use;
- Gradual transition to water use planning given parameter of water discharge per production unit.

Participants expressed understanding of political, economic and social changes taking place in the region. In this connection, necessity of system approaches development in water management with farmers and WUA involvement in irrigation systems O&M.

Simultaneously, participants noted some unresolved problems:

- Complexity of interstate canals operation due to custom and frontier formalities;
- While transferring water from one country to another on interstate canal systems, it is necessary to introduce GIS and information systems in water resources management.

It was repeatedly emphasized, that close cooperation with Training Center and its branches establishing in Osh, Dushanbe, Kyzyl-Orda and AmuDarya downstream are needed. Computer skills course was positively evaluated by participants. In this connection, aspiration was expressed to develop this direction in order to teach computer literacy possible wider circle of specialists for data gathering, processing and analysis and assist in Training Center's branches computerization.

Participants express their gratitude to CIDA, NRMP/USAID, McGill University, Training Center staff, BWO "SyrDarya" and SIC ICWC.

WATER POLICY [4]

Aaron T.Wolf

Fresh water constitutes only 2.5% of total water on the earth. Available resources do not change since 4500 years ago. At the same time, global needs are growing continuously. During last 50 years planet's population grew from 2.5 to 6 billions while available resources per capita reduced by 58%. Besides, unlike oil and some other natural resources, fresh water can not be replaced by other resource. It is necessary to produce food, goods and human health preservation.

Water deficit leads to political pressure, which is often called water stress, and growing competition all over the world. Fourth of water relations during last 50 years were hostile. In 37 cases weapon was used.

One subject of conflicts in 20th century was water quantity because water quality was neglected. According to UN data, water demand is growing, ground water level is falling, surface water is polluted, water treatment facilities are ageing. Kofey Annan recently stated, that "Severe competition for fresh water could become source of conflict in the future ". Un Research Council report came to conclusion, that number of water related conflicts will increase during next 15 years as countries will face more deficit.

Key to collaboration

International basins cover 54.3% of earth surface and touch interests of 40% of the world population and encompass near 80% of global river runoff (Wolf et.al.,1999). These basins have certain characteristics, which make difficult their management. Particularly, it relates to regional policy trend, which makes problems of understanding and management more critical.

Contradictions between basin's countries bring additional difficulties in international water resources management. Therefore, development of projects, treaties and organizations often turns ineffective and sometime it becomes new source of tension.

Nevertheless, collaboration prevails. Problem solution by force is strategically irrational, hydrographically ineffective and economically unviable. Common interests usually prevail over characteristics causing conflicts.

Most dangerous is fact, that people and ecosystems all over the world face quality water deficit. Along with population growth water stress is increasing. By 2015 40% of population will live in the countries with water deficit, which will lead to strengthening competition for water.

Most dangerous imbalance will take place in Asia, where food production fully depends on irrigation. Near 60% world population now lives in Asia, which possesses only 36% of world water resources. China, India, Iran and Pakistan are facing ground water exhaustion, river flow deficit, land salinization or combination of these factors at the moment. Ground water exhaustion threats 10-20% reduction of grain production in China and India. Continuous

[4] Land and Water International, No. 101, 2002

ground water level falling is fixed in North Chinese Plain, where more than half of wheat and third of maize is produced, as well as in Indian Penjab province-country's main granary.

Water policy

Internal water stress will impact political unions and strengthen humanitarian crisis. Countries facing water stress more and more account for wheat and other food staff import re-distributing water for cities and industries, where more valuable goods are produced per water unit. Countries of Asia, Africa and Middle East import 26% of the world grain import. Along with additional billion during next 15 years demand for grain import will increase. Presently, China, India and Pakistan are self-sufficient for grain, but it is doubtful if they would remain in such position because of water and land resources deficit. For Sub-Saharan countries higher price for grain will mean wider spread hunger and demand for humanitarian aid.

Another challenge for international community is necessity to develop capacity building and collaboration culture in order to avoid long-term and expensive crisis, which threatens life, regional stability and ecosystems.

International water resources issues learn us three major lessons:

First: administrative boundaries crossing water cause tension between the countries using the same river basin. Only timely collaboration can prevent such tension.

Second: If international institutes are created, they are enough flexible even if conflict prevails over other problems.

Third: Gradual reduction of water quantity and quality is better than armed conflict. With a time it can destabilize situation in country and the region.

Conflict dynamics

During next 10 years about 17 river basins will be involved in conflicts and another 4 ones in complex negotiations, which are being carried out or will be conducted in the future. These basins cover 51 countries on five continents in various climatic zones. Consider, for instance, Salvin river basin, crossing South China, Myanmar and Thailand. Each of these countries plans to build the dams and develop water resources of this river and no plan is coordinated with other country. China voted against UN Convention of 1997, which established major rules and principles for international rivers use.

Other basins are at risk due to quick political changes. Soviet Union collapse and establishing new states do not facilitate conflict resolution because of weak capacity for negotiation. For example, in the Aral sea basin five states use common water resources. Dispute emerged how to distribute water in SyrDarya and AmuDarya basin and mitigate consequence of the sea desiccation. With help of international community the countries of the region undertake certain measures on existing problems solution.

In search of equilibrium

To provide water security is necessary to follow three main principles:

First: to undertake measures on water productivity increase along with water stress growth. Among these measures are the following: drip irrigation, crop pattern change, wastes treatment and re-use, water conservation systems in cities and industries. Irrigation water productivity increase is especially important. Where water conservation helps to avoid dam construction or decreases water diversion from the river, it helps to avoid tension and conflict. When ground and sea water desalinization becomes cheaper, it can give additional source of water and prevent a conflict.

Second: necessity of stronger policy in most of the countries to regulate ground water use, paid water use introduction in irrigation and municipal water supply. Badly regulated privatization of water services or uncontrolled dam construction can create more problems than to solve. World Dam Commission report-2000 is an important step forward. It calls for transparency of decision-making process involving all concerned, study of all alternatives; compensation to all lost in result of dam construction; regional collaboration on international rivers.

Third: governments and international organizations should act timely and effectively. Some water disputes continue during decades. Israel and Jordan have signed peace treaty in 1994 after 30 years of hostility. Agreement preparation between India and Bangladesh on Gang river water distribution took 20 years. Such approach is risky and ineffective. Key issue is to start collaboration before hostility creation.

Water management

Strong institutions change situation. Mekong Commission exists since 1947 after agreement conclusion between Kampuchea, Laos, Thailand and Vietnam. Information exchange took place even during the war in Vietnam. India and Pakistan after independence gaining almost started war for Indus river water allocation. After signing agreement on Indus river in 1960 it survived two wars without breaking agricultural and economic plans.

Long-term program of joint research, technical collaboration and other initiatives help to solve disputes when they appear. Global alliance for water security, which coordinates assistance to priority regions, can help countries to do more.

Humanity has developed technologies allowing change the nature. But this does not create water security in the world. Tension on rivers and in sphere of water resources is very high and can not be resolved by way of evolution. Measures should be undertaken prior tension and conflict take place.

NEWS FROM CENTRAL-ASIAN STATES

Turkmenistan helps Afghanistan in power projects realization [5]

Ashgabat (Interfax). Ministry of power engineering and industry of Turkmenistan will soon start multitude of projects with total cost of 500mln.USD. Long-term agreement between two governments signed during Hamid Karzai visit to Turkmenistan foresees electric energy delivery from Turkmenistan to Afghanistan.

According to this agreement, Turkmenistan will build and repair electricity transmission lines. At the first stage line Mary-Shibergan-Mazari-Sharif with capacity of 50Mwt will be built. Cost of construction is 1.5mln.USD.

At the second stage line will be built to Kabul with capacity of 200Mwt. Transmission line Mary-Serhetabad-Gerat-Kandagar with the same capacity and cost of 500mln.USD.

Ministry of power engineering and industry of Turkmenistan and Ministry of irrigation and power engineering of Afghanistan have signed a contract on 18.5mln.USD for electric lines construction and repair.

Kazakh parliament ratifies agreement on the WB loan for the Aral sea salvation [6]

Astana (Intefax). Kazakh parliament has ratified agreement on the WB loan for SyrDarya river's channel regulation and the Aral sea northern part rehabilitation.

As minister of natural resources and environment Andar Shukputov said, project is devoted to saving northern part of the Aral sea, increasing of SyrDarya river transport potential, improving ecological situation and biodiversity in its delta.

Minister noted, that salvation of the southern part of the sea because of high salt and silt concentration is impossible. To save Northern Aral sea dam construction is foreseen separating it from the southern part. Project cost is 85.79mln.USD. WB share will be 64.5mln.USD including 62.06mln.USD for construction works. Rest of money will be allocated from state budget.

Loan is given for 20 years including 5-year privilege period. Dead line for investment in the project is February 8, 2007, which can be shifted by the WB.

[5] The Times of Central Asia, March 14, 2002
[6] The Times of Central Asia, March 14, 2002

Turkmen water reservoir threatens Tashkent [7]

Karina Insarova

Nukus. Karakalpakstan (IWPR). Uzbek scientists are seriously concerned of artificial lake in eastern part of Turkmenistan negative impact on environment near boarder with Uzbekistan. Observers are afraid that "Lake of golden century" built in Karashor depression of Karakum desert will create additional political tension in water allocation within Central Asia.

After its completion new lake will have area up to 3460sq.km and depth 130m. Project cost is 6bln.USD. According to Turkmen engineers, they will increase cultivated lands from 1.8 to 2.2mln.ha and produce 500 000t cotton, 300000t grain and hundreds thousand tons fruits. Uzbek scientists talk about serious consequences for certain rayons of Uzbekistan.

In spite of assurance of Turkmenistan, that the lake will be filled up with return water, Uzbek scientists are afraid that lake will be recharged from AmuDarya. Special concern is caused by conditions of drinking water supply to Priaralie-AmuDarya delta, which last 30 years suffered from ecological crisis.

During last 40 years the Aral sea level reduced by 20m and its area reduced by two third. According to prof.Yerezhep Kurbanbayev, Director NGO "ECO-Priaralie" the sea desiccation immediately influenced Priaralie, where catastrophic water deficit takes occurs with relevant social, economic and ecological consequences.

"Ecological catastrophe led to sharp living conditions worsening", Prof. Kurbanbayev said. "Many enterprises were closed and many people left the region". Due to draught last three years water deficit became stronger. Golden lake construction will reduce water supply to Priaralie even more.

Turkmen authorities do not bother about lake, which completion is foreseen in 2004. If Ashgabat would really implement the project, it inevitably lead to tension with Uzbekistan. Uzbekistan does not need this dispute, because it has one with Kyrgyzstan about Toktogul water reservoir. Tashkent states, that Bishkek cuts water allocated to Uzbekistan, but Bishkek rejects this statement and states that it needs more water for power generation.

Reforming power engineering sector of Kyrgyzstan[8]

Zamir Osorov

Bishkek (TCA). Since March 15, 2002 in Kyrgyzstan electricity price will be increased. It will be twice as mush – 0.43 som (0.01$US) per kWt/h within 150kwt/h a month. If this figure is exceeded, price will be 0.8 som/kwt/h (former tariff for enterprises). Taking into account, that average salary is low (1393 som or 30 $US), it will be difficult to pay for ordinary citizens.

[7] The Times of Central Asia, March 14, 2002
[8] The Times of Central Asia, , March 14, 2002

Since most industries do not work, population consumes most part of electricity (in developed countries situation is opposite). Government is forced to increase tariff in order to maintain power engineering.

Final goal of this unpopular measure is attraction of internal and foreign investments in power engineering – most difficult sector for reforming. Most citizens, parliament members and even power sector collaborates are against tariff increase.

National power agency jointly with USAID organized seminar on national strategy development for power engineering. Participants strongly criticized national energy program adopted in last July. According to USAID experts, this program does not contain proper economic analysis of existing situation and directed only to foreign investments attraction and does not foresee public involvement in strategy development.

Seminar participants including parliament and government members, local authorities, energy companies, international donors and NGO representatives have developed work plan for national program improvement.

State Power Engineering Agency director Udarbek Matyev says, that it is necessary to initiate all-national discussion of this program in order most citizens support it. This discussion will end at last and we will have opportunity to reform this most conservative sector of our economy. Then we can attract foreign investors, which will participate in development of rich power hydropower resources of our country.

Major social-economic indicators[9]

2001 in percentage to 2000	GNP (in sable prices)	Industrial production (in stable prices)	Gross agricultural product (in stable prices; all farms)	Transportation (without pipelines)	Capital investments (in stable prices; all sources of financing)
Azerbaijan	109,9	105,1	111	117	117
Armenia	109,6	103,8	112	113	114
Georgia	104,5	98,9	106	110	114*
Kazakhstan	113,2	113,5	117	123	121
Kyrgyzstan	105,3	105,4	107	97	84
Tajikistan	110,2	114,8	111	75	No answer
Uzbekistan	104,5	108,1	104,5	95,8	103,7

2001 in percentage to 2000	Industrial production (indexed prices)	Individual income	Individual consumer expenses	Index of consumer prices	Retail trade (in stable prices; all shops)
Azerbaijan	101,8	110,4	112,6	101,5	109,9
Armenia	99,6	109,7	115,5	103,1	115,5
Georgia	103,6	No answer	No answer	104,7	105,7
Kazakhstan	100,3	No answer	No answer	108,4	114,2**
Kyrgyzstan	111,2	111,5	113,3	106,9	105,9
Tajikistan	126,8	136,7*	143,9*	136,5	101,2
Uzbekistan	142,2	152	151,5	…	…

* - January - November
** - without public nutrition

Capacity building in Turkmenistan [10]

Rudolf Muijtens

Starting from April 2000 experts from NEDECO Royal Haskoning group are working on Tashauz water supply. Water Department solves technical and organizational tasks.

Tashauz oblast represents isolated agricultural oasis with population near 1mln., which economy is based on wheat and cotton production. Being close to the Aral sea oblast is subjected to negative impact including water deficit, ground water salinization and salt and dust storms causing population health problems.

In these difficult conditions Royal Haskoning tries to implement water supply project including technical and organizational components. Project foresees two water supply systems construction with total cost $20mln. and Tashauzveloyatsuv reforming. Main issues are as follows: responsibility transfer to rayon level, management improvement through modern technologies and methodologies introduction, new form of return, etc. Organizational component requires special creativity.

[9] The Times of Central Asia, March 21, 2002
[10] Land and Water International, No. 101, 2002

Royal Haskoning works with big group of local specialists closely collaborating with local authorities. Below sayings of some local specialists are presented.

Gennadyi Filimonovich (designer, Turkmennkommunproekt team leader): “I work for 20 years. I felt that I reach the top but it was mistake. I learned much from my colleagues from Royal Haskoning. Now I try to use more flexible approach. Access to new technologies and world standards is open for our specialists. I think our foreign colleagues also learned something from us. Joint work is useful for all”.

Azat Shermetov (designer and construction manager): “I like it very much to work with foreign specialists. I like most of all their serious attitude and accuracy. It was expressed very clearly during the bidding and subcontractors selection. We used to manage by means that we have. I am sure that this experience will help me in my future activity”.

Begench Jumayev (constructor): “It is my first experience of work with foreign specialists. I have learned much and want to learn more. My main problem is language barrier. I need interpreter to communicate with foreigners. I would like to learn English to communicate freely”.

We hired young people who speak English and have computer skills. They easy understand and accept modern technologies and methodologies. Old specialists are less receptive to all new. Dutch specialists also learned much from their Turkmen colleagues revaluating some provisions and reaching compromise.

Our relations with local power are somewhat tense, that is due differences in cultural traditions and communication problems. But overcome this together with Turkmen colleagues.

Integrated water resources management in the Aral sea basin [11]

Joop de Schutter, Victor Dukhovny

During 5 years Dutch resource Analysis and SIC ICWC are partners in the Aral sea basin. Common denominator of collaboration is integrated water resources and wetlands management under extreme water deficit in the basin. Ongoing project includes wetlands restoration, integrated hydrological and social-economic modeling and decision-making supporting system development for integrated water resources management.

After Soviet Union collapse new independent states started to search new ways of collaboration in water and environment management in the basin. Water and ecologic problem was a base for international donors attraction. In result of this Aral Sea Program coordinated by the World Bank has been launched in 1994. Many donor organizations (UNDP, EU-Tacis) and countries (including the Netherlands, Sweden, Canada, USA and Switzerland) participated in this program implementation.

Interstate Council, IFAS and SIC ICWC with BWO participation have taken responsibility for coordination of countries-recipients activity.

Program consisted of 7 blocks, one of which is dedicated to AmuDarya and SyrDarya deltas restoration. Joint projects of Resources Analysis and SIC ICWC took place within this block.

In 1995 project was initiated on wetlands restoration in AmuDarya delta. In 1998 Resource Analysis has received a contract from UNDP for capacity building project, which goal was to develop concept and tools for sustainable development as assistance to CSD. Project was very complicated because experts of different directions should understand each other ideas and methods. It was addressed to two main issues:

- Could negative ecological effect of the Aral sea desiccation be compensated by countermeasures?
- Could Aral sea ecological functions be restored in separate parts of the basin?

Resource Analysis suggested innovative concept including analysis of functional value for description of wetland functions and participatory principle approach to decision- making based on system analysis and consultative seminars. Project foresees research in 7 areas of knowledge. Central-Asian partners proposed new approach to infrastructure developed previously.

In June 1996 final report has been completed. It showed that though much has been done, yet much should be done in the future. Many experts could not come to conclusion at what extent ToR and strategy for delta were developed. Report indicated that cost-benefit analysis and expected water deficit (low AmuDarya flow) justify only limited investments in new engineering infrastructure. Local expert insisted on wide development of infrastructure and in-

[11] Land and Water International, No. 101, 2002

vestments. Important consequence of the project was better understanding each other and pilot project development for wetlands restoration (Sudochie lake).Then there were other initiatives.

World Bank decision to continue research within GEF project was favorable for SIC ICWC and Resource Analysis collaboration. Sudochie project was the first and then was project "Integrated water resources management for wetlands restoration in the Aral sea basin" funded by NATO program "Science for Peace", where GIS, remote sensing, hydrological modeling and decision-making supporting system were used.

Study of wetlands restoration requires reliable data about water and environment management policy within the basin. Resource Analysis and SIC ICWC used experience and knowledge obtained in UNDP project. Prototype combining hydrological and demographic data has been completed by July 2001. Modeling is being continued in 2002.

First synthesis of joint researches is presented in joint report on projects INTAS-REBR 1733 and NATO SfP 974357 "Assessment of social-economic damage due to the Aral sea desiccation". Reports determined total economic damage in the region as $145mln. Mostly suffered fishery, agriculture, employment and population health. Report proposes ways of problem solution including compensation for each cubic meter of lost water, based on interstate agreements on water allocation in the basin. Water resources needed for delta restoration are determined as $15km^3$.

Joint work of SIC ICWC and Resources Analysis shows growing understanding leading to success. SIC ICWC and Resource Analysis contribution is based on experience of participation in international projects, which opens new concepts and methodologies. Most staff gained experience of work in various regional projects like SANIIRI, Uzgipromeliovodkhoz and Academy of Science. Resources Analysis made its contribution in international projects organization, integrated water resources management, sustainable development supported by mighty software for concepts transformation into practical systems and models.

SIC ICWC and Resource Analysis greet achievements in collaboration providing success in research projects implementation. Necessity for these researches is very topical.

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