Interstate
Coordination
Water
Commission
Central Asia

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CONTENTS

PROTOCOL N 13
of the conference of the Interstate Coordination Water Commission (ICWC) of Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan and Republic of Uzbekistan.

January 19, 1996 Chardjou

Participants:

Sarsenbekov T.T	Chairman of the Committee on Water Resources of Kazakhstan Republic
Zulpuev M.Z.	Minister of Water Management of Kyrgys Republic
Eshmirzoev I.E.	Minister of Land Restoration and Water Management of Tajikistan Republic
Ilamanov A.I.	Minister of Land Restoration and Water Management of Turkmenistan
Giniyatullin R.A.	Minister of Land Restoration and Water Management of Uzbekistan
Kamalov T.K.	Chief of RO “Karakalpakvodhoz”

Invited:

Odeev P.O.	Khakim of Lepab viloyat
Altiev T.A.	First Deputy Minister of Water Management of Turkmenistan
Kenshimov A.K.	Chief of the department of the Committee of Water Resources of Kazakhstan
Bekenov A.E.	Chief of Glavvodexpluatazii of the Ministry of Water Resources of Kyrgys Republic
Ovezov A.O.	Chief of Glavvodexpluatazii of the Ministry of Water Resources of Turkmenistan
Atadjanov V.K.	Deputy Chief of PO”Lebapremvodhoz”
Buranov U.K	Chief Engineer of lavvodexpluatazii of the Ministry of Water Resources of Uzbekistan Republic
Turaev A.I.	Chief of Bukhara Obvodhoz
Inileev A.I.	Responsible official of the Executive Committee of Interstate Council
Kalandarov I.D.	Chief of BWO “Amudarya”
Sayatov K.A.	First Deputy Chief of BWO “Amudarya”
Muhamedov A.M.	Chief of Chardjou UG BWO “Amudarya”
Shaymardanovv S.Sh.	Chief of Kurgantube UG BWO “Amudarya”
Khamidov M.H.	Chief of BWO “Syrdarya”
Tolstunov J.V.	Deputy Chief of BWO “Syrdarya”
Dukhovny V.A.	Director General of SPA SANIIRY

Rakhimov Sh.H.	Deputy Director General of SPA SANIIRY
Negmatov G.A.	Chief of Secretariat, ICWC

Chairman of the conference Ilamanov A.I. - Minister of Land Restoration and Water Management of Turkmenistan.

Agenda:

1. Forecasting analysis, regulation of limits and regime of operation of water reservoirs, improvement of water distribution mechanism of Amudarya and Syrdarya rivers in 1995-1996 hydrological year(including dry period of 1995 year) (responsible BWO "Syrdarya" and BWO "Amudarya").
2. Admission of ICWC to the International Commission of Irrigation and Drainage (ICID) as a collective member (responsible SIC ICWC).
3. On activities of ICWC state-members of towards implementation of the "Program of concrete actions..." including articles 9,10, adopted at Nukus conference of Central Asian states' leaders (responsible ICWC secretariat, BWO "Syrdarya", BWO "Amudarya").
4. Appeal to Economic and Social Commission of Asia and Pacific Ocean (ESCAP) about opening of the representation of this Commission in one of the capitals of Central Asian states (responsible ICWC, SIC ICWC).
5. Analysis of "main positions and principles of water strategy in the Aral Sea Basin" with consideration of comments and proposals of ICWC members (responsible SIC ICWC).
6. About the Agenda of the next ICWC conference.

Following the presentations of the participants of the working meeting and exchange of opinions, members of the Interstate Coordination Water Commission decided:

On the first item.

1. For calculation of Amudarya and Syrdarya rivers water-related complex's operational regime in vegetation period of 1996 to ensure water security at the existing level of vegetation period in 1995.
2. To approve water discharge limits from Amudarya and Syrdarya for 1995-1996 hydrological year including fallow period and water-supply volumes to the Aral Sea and adjacent areas.

Water discharge limits from Amudarya river are to be 10% lower in comparison with the limits on vegetation period of previous years. BWO "Amudarya" should undertake adjustment and correction according to approved limits of water discharge in vegetation period.

3. To take for base operational regime of water reservoirs flow of Amudarya and Syrdarya rivers for 1995-1996 hydrological year. BWO "Amudarya" and BWO "Syrdarya" after obtaining forecasts on water security of vegetation period of 1996 from Hydrometeorological Departments of Central Asia Republics should correct operational regime of water reservoirs flow during vegetation period and adjust it according to decisions of ICWC members.
4. Members of ICWC should request their governments to sign by February 15, 1996 the interstate agreement on water-energetic resources use of Naryn-Syrdarya flow of hydropower stations and on mutual delivery and accounting for electric energy, gas and coal among the Republics of Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan according to the draft of this Agreement and Proceedings of the conference in Bishkek (December 19-21, 1995).

5. Given the possibility of reaching a critical level of water security (less than 90% security of natural runoff) ICWC members should request their governments to instruct the organizations supervising the reservoirs to operate reservoirs in the regime of discharge and filling based on strict coordination with the appropriate BWO.

6. Aimed at improving water distribution mechanism for Amudarya and Syrdarya rivers under the charge of BWO "Syrdarya", BWO "Amudarya", SIC ICWC has proposed:

to elaborate the unique methodology of water balance and adjust the water-balance plots' control transects' location with ICWC;

to elaborate the methodology of water resources assessment for Amudarya and Syrdarya rivers taking into account the dynamics of water masses movement and watershed transformation.

7. Members of ICWC should request their governments to endorse the agreement for unobstructed flow of water resources according to limits, along the rivers and canals on the territory of the Central Asian states and transmission to the borders of adjacent states taking into account natural losses and watershed transformation.

On the second item.

1. To recommend to Republics of Kazakhstan, Tajikistan, Kyrgyzstan and Turkmenistan to set up National Committees of the Commission for Irrigation and Drainage and to join the International Commission of Irrigation and Drainage (ICID).

On the third item.

To require the ICWC secretariat (Negmatov G.A.) to prepare within 10 days the list of persons for obtaining certificates and diplomatic immunity according to the standard of international laws in Executive Committee of ICAS. This list should include the members of ICAS, ICWC (including ICWC experts), Deputy Ministers of Water Management, Deputy Chairman of Committee of Water Resources of Republic of Kazakhstan, chiefs of operational departments, chiefs of oblast water management departments, chiefs of BWO "Amudarya" and BWO "Syrdarya", chiefs of their local departments, Director and Deputy Director of SIC ICWC.

On fourth item.

1. To recommend to every ICWC state-member through their Ministries of Foreign Affairs to apply to the UNEconomic and Social Commission for countries of Asia and Pacific Ocean (ESCAP) with request to establish its representation in the capitals of the Central Asian states.

On fifth item.

Given that the regional water strategy is a combination of national water strategies, to request the ICWC members to revise within 10 days the national water strategies taking into account the approved principles of interstate water distribution,in order to enable SIC ICWC to incorporate them into the regional water strategy.

The next ICWC (XIV) conference will be held in Khodjent, Republic of Tajikistan in April 1996.

Agenda of the next ICWC conference:

1. To clarify the discharge limits and operational regime of water reservoirs cascades in Amudarya and Syrdarya rivers and the volume of water supply to the Aral Sea and adjacent areas in 1995-1996 hydrological year (responsible BWO “Amudarya” and BWO “Syrdarya”).
2. On technical conditions of the entities passed for temporal maintenance to Basin Water Management Associations (responsible BWO “Amudarya” and BWO “Syrdarua”).
3. On the progress of the SIC ICWC 1995 working plan and consideration of the plan for 1996-1998 (responsible SIC ICWC).
4. On the working plan and arrangement of works under WARMAP - II phase program, including preliminary discussion of juridical documents, worked out by ICWC organizations under the WARMAP program and program 1.1. (responsible SIC ICWC).
5. On improvement of SIC ICWC structure (responsible: SIC ICWC and leading institutions of the ICWC state-members).
6. On the agenda of the next ICWC conference.

For Republic of Kazakhstan	Sarsenbekov T.T.
For Kyrgyz Republic	Zulpuev M.Z.
For Republic of Tajikistan	Eshmirzoev I.E.
For Turkmenistan	Ilamanov A.I.
For Republic of Uzbekistan	Giniyatullin R.A.

PROTOCOL DECISION

of Interstate Coordination Water Commission (ICWC) Conference.

January 19, 1996 Chardjou

Given that the dry period can continue during several years to make BWO “Amudarya” and BWO “Syrdarya” responsible for preparation of forecast calculations of water reservoirs cascades operation during the irrigation regime for 1996-2000 with participation of interested ministries and departments of the Central Asian states to be reviewed by the heads of states.

Signed by:

For Republic of Kazakhstan	Sarsenbekov T.T.
For Kyrgiz Republic	Zulpuev M.Z.
For Republic of Tajikistan	Eshmirzoev I.E.
For Turkmenistan	Ilamanov A.I.
For Republic of Uzbekistan	Giniyatullin R.A.

Annex to
decision of ICWC meeting
January 19, 1996 ,Chardjou

Discharge limits from Amudarya and Syrdarya rivers
for 1995-1996
and water supply into the Aral Sea and rivers deltas

River basin. state	Discharge limits, km^3		
	Total for year from 10.01.95 till 10.01.96	including fallow (from 10.01.95 till 04.01.96)	including on vegetation (from 10.01.96 till 04.01.96)
Total from Syrdarya river	19,57	3,07	16,50
including			
Republic of Kazakhstan	7,365	0,50	6,865
Republic of Kyrgyzstan	0,199	0,02	0,179
Republic of Tajikistan	1,803	0,20	1,603
Republic of Uzbekistan	10,182	2,35	7,832
Besides:			
supply into the Aral Sea	4,00	3,00	1,00
Total from Amudarya river	48,34	15,70	32,64
including			
Republic of Tajikistan Tajiki-	7,33	3,20	4,13
Republic of Kyrgyzstan	0,15	-	0,15
From Amudarya river (delivered to Kerk hydropost)	40,86	12,50	28,36
Turkmenistan	20,43	6,25	14,18
Republic of Uzbekistan	20,43	6,25	14,18
Besides:			
water supply to Aral Sea adjacent areas accounting irrigation flushes and collector drainage water	8,50	3,50	5,00
supply of sanitary-ecological flushes into irrigation systems of			
Dashkhavuz vilayat	0,15	0,15	
Horezm region	0,15	0,15	
Republic of Karakalpakstan	0,50	0,50	
Total into Aral Sea and adjacent areas	12,50	6,50	6,00

Note. 1. Discharge limits stipulate water supply to irrigation, industrial-municipal and other needs. Under changing water security of the basins, discharge limits are corrected accordingly.

2. Low drawdown limit of Kayrakkum reservoir is 1489 mln m^3 (working conditions of Machram pump station).

COMMUNIQUE OF THE 13 MEETING OF THE INTERSTATE COORDINATION WATER COMMISSION OF THE ARAL SEA BASIN

On January 19, 1996 another meeting of the Interstate Coordination Water Commission was held, that discussed the issues on water allocation of the Central Asian states in Amudarya and Syrdarya basin for 1996; action plan implementation in the Aral Sea basin approved by the Heads of Central Asian States.

Regime and limits of work, distribution of water resources along Syrdarya and Amudarya for 1996 were considered and approved. It was noted, that in accordance with the forecast and filling of reservoirs, 1996 would have lower flow, than 1995 lower flow. Especially sharp water deficit is expected in Syrdarya river, where supply of outflow is limited. Transference of the river to irrigation regime is stipulated with implementation of significant volume compensatory measures. The complex of measures is stipulated in Minwodkhoz for water saving and strict water limitation for all needs, because there is the danger of water deficit in long-term regulation of river basin.

In connection with current water related situation in the region, caused by river discharge decreasing, special attention is given to the necessity of more coordinated actions on regimes management of water resources entities, water resources economy, considerable reduction of water losses, adjustment of the crop lands. The decision and recommendations adopted at the ICWC meeting , would enable to reduce losses from lower flow to rational use of region water resources for the benefit of five states.

In connection with the end of preparatory works, under the 1 stage of “Regional strategy development”, in accordance with the Heads of states decision of January 11, 1994, the main comments of the republics, the period during which the comments are to be taken into account; development of the working plan for the 2 stage were considered. Measures on promotion of the ICWC role in future planing of works in the basin were determined.

CONSIDERATION OF FORECAST, ESTABLISHMENT OF LIMITS, REGIMES OF RESERVOIRS WORKS AND IMPROVEMENT OF WATER DISTRIBUTION MECHANISM ON THE AMUDARYA RIVER IN 1994-1995 HYDROLOGICAL YEAR GIVEN 1995

Main objective BWO Amudarya in water management activities in 1994-1995 hydrological year was to undertake international water distribution and operational control of observance established limits of waterintake approved at the ICWC meeting, as well as improving technical conditions and management entities maintenance.

The water management situation in 1994-1995 hydrological year was rather different, especially in vegetation, which passed in hard waterless, however the waterusers were fully provided with water.

Waterforecasting in the intervegetation 1994-1995 period in the area of hydropost Kerky above KKC was expected to be about 109-119% from quota, the real waterless was in the limits of 134% of quota.

Waterforecasting in the vegetation 1995 period was expected to be about 90-100% from quota, the real water availability was below quota in the limits of 83%, especially hard water management situation was in the second quarter current of the year, with low water about 75% of quota and exhausted stoke of water in reservoirs.

In the period from 10.1.1994 till 10.1.1995. with established limits water intake from the Amudarya river in volume of 44000,0 mln/m^3, actually 42166,1mln/m^3 were taken out or limit using at 9,58%, including by Republic of Uzbekistan limit 22000,0 mln/m^3, actual take out 21012 mln/m^3 or 95,5% by Turkmenistan limit 22000,0 mln/m^3, in fact take out 21154 mln/m^3 or 96,2% of limit.

At limit 7900,0 in fact take out 7013 mln/m^3, which amounts to 88,8% by Republic of Tadjikistan.

During the period from 10.1.1994 till 10.1.1995 to the Aral sea and delta of Amudarya, under the plan 8500 mln/m^3 it was given 7091 mln/m^3, which amounts 83,4% of the plan, including 5584 mln/m^3 river water (CollectorDrainageWater) 1109 mln/m^3 and irrigation flood- flush 398 mln/m^3.

According to given above dates in spite of low water availability all waterusers could use waterintake limits allocated to them

River basin , state	Limit, km^3		Fact, km^3		
	Total for a year (from 10.1.94 till 10.1.95)	including for vegetation (from 04.10.95 till 10.1.95.)	Total for a year (from 10.1.94 till 10.1.95)	including for vegetation (from 04.10.95 till 10.1.95)	
Total from Amudarya river including	52,05	38,36	49,18	34,54	90%
Republic of Tadjikistan	7,9	5,81	7,01	5,45	93,8%
of Kyrgyz Republic	0,15	0,15			
From Amudarya river (post Kerky)	44,00	32,40	42,17	29,09	89,7%
Turkmenistan	22,00	15,90	21,15	14,26	89,6%
Republic of Uzbekistan		16,50	21,01	14,83	89,8%
Besides: duty of water into the Aral Sea area taking into account irrigation flush and Collector Drainage Water	8,50		7,09		

Water fllow to reservoirs in the Amudarya river basin in intervegetation period amounts to:

Reservoir	Hydropost	1994-1995	Percent from quota
Nureksky	Komsomol-Abad	3,3	94
Tujamoyounsky	Dargan-Ata	12,7	128

In vegetation period amounts to:

Reservoir	Hydropost	1995	Percent from quota
Nureksky	Komsomol-Abad	13,2	85
Tujamoyounsky	Dargan-Ata	21,14	77

If at the begining of intervegetation filling of reservoirs of the Amudarya rivers basin amounts to:

Reservoir	Total volume	Useful volume	Percent from quota
Nyreksky	10350	3850	105,5
Tujamoyounsky	4236	2036	110
Intrasystemes	4924	4319	96,5
Total	15253	6448	

Then to the end of intervegetation filling of reservoirs of the Amudarya river amounts to:

Reservoir	Total volume	Useful volume	Percent from years
Nureksky	5600	-700	82,8
Tujamoyounsky	3254	1054	75,4
Intrasystemes	1931	1326	80,5
Total	16517	7712	

Such a situation at the beginning of vegetation period caused extremely unfavourable situation.

Comparative analysis of factual regime of work of reservoirs (Nureksky and Tuymounsky), with given forecasted regimes, prepared on the basic of hydro-service forecast, shows, that Nureksky reservoir in intervegetation flood-flush water regime was preserved in whole, however the volume of reservoir was below death volume in vegetation period.

The winter of 1995 was warm, so leaching low lying lands began considerably early several years, thus flood-flush from Tuymousky reservoir exceeded at 1,5km3 against of planned and as a result is was impossible to collect enough water storage in reservoir.

Extremely difficult situation in regime of Tuymounsky reservoir work arised in vegetation period, especially in the second quarter of 1995, the water storage was almost executed in reservoir in June.

The 1995 experience of flood-flush shows that in spite of difficult conditions if coordinated policy it is possible to solve the problems of water supply to waterusers in small areas, strictly following the principals of water distribution. The practice of operative meetings with participation representatives of all interested sides at the level of holders helped to fast solving of the problems and reducing the tension in relationships of waterusers. According to dates of Hydromet service, water forecast on the vegetation 1995-1996 period is expected about 98% of quota.

Given the expected waterless period it is suggested that the limit of waterintake at the level of several years in republics should be used.

Based on water forecast and suggested limits forecasted working mechanism of Nureksky and Tuymounsky reservoirs is developed. (supplement 3,4)

Aimed at improving water distribution regime in the Amudarya river, BWO Amudarya, in elaboration with Hydromet service every 10 days measures water balance of river sections.

Results show that some river sections have high unproductive loss of water and meters data is not precise.

Analysis show that loss of water occurs in section of Termez-Kerka and especially between hydroecological points of Dapgan-ata and Tuymoun. Aimed at exposing of reasons and eliminating arising misunderstanding, BWO "Amudarya" jointly with Minvodhoz of Turkmenistan and Uzbekistan and with hydrological services of these republics organized operative groups for undertaking of control instrumental gauges along the Amudarya river, beginning with Termez hydrologic-post and along big water intakes.

But in spit of all agreements, BWO "Amudarya" representative meet some difficulties while undertaking jointly control instrumental gauges in the up flow of Amudarya river.

Daily analysis of water utilization limits is undertaking by the organization and every 10 days with adjusted practice for the effective water supply to water consumers according to approved limits at ICWC meeting, taking into account water management, and hydrologic situation on the river, weathers, readiness of lands, and solving the arising problems, and disagreements, operative meeting on water division with participation of water organization heads was held at the end of every decade with BWO "Amudarya".

At the meetings they consider the issues on providing water to regions according to limits, on adding required corrections, to the regime of work of reservoirs, on taking urgent measures irrigation systems. Taking in to account the current situation and for maximum supply of water to water consumers, and aimed at quick decision of water division, technical meetings on water division problems were hold every month with participation of the First Deputy Ministries of water resources management of Uzbekistan and Turkmenistan in BWO "Amudarya".

Water resources management work promoted maximum supply of water to waterusers in the factual limits of waterless.

Hydro-points and amalgamation staff undertake regular control on water use limits observation.

Under the plane of 1700, 1690 gauges were carried out.

At present the amalgamation installs computer techniques, creates local network , modern technical equipment, which will enable solving of all questions.

Total analysis of hydrological year and preliminary forecast of water availability 1995-1996 intra vegetation period, BWO "Amudarya" offers:

1. To ratify an offering limit and co-ordinated regimes of work of water reservoirs.

2. Future development of adopted principle of water distribution mechanism on the river, give a work out to technique of joint gauging along the whole length of the river. Ask ICWC members to assist in improving joint activity of BWO and national Hydromet services.

3. To promote the improvement of Tadjikhydromet activity on collecting and changing of information on discharges of Amudarya river flows, that has declined to minimum, resulting in some problems, due the difficulties in forecasting of total water availability of Amudarya river.

The information on timely and uninterrupted supply of all waterusers according to established limits and plans of water supply on the Amudarya river from 10.1.94 till 10.1.95 .

Republic, region, Waterintake	For intervegetation of 1994-1995 (October,November, Desember)			For intervegetation of 1994-1995 (Junuary, February, March)			Total for vegetation 1994-1995			For vegetation of 1995			Tota of hydrologic year			Percent of using
	limit	corre-cted limit	fact	limit	corre-cted limit	fact	limit	corre-cted limit	fact	limit	corre-cted limit	fact	limit	corre-cted limit	fact	corre-cted limit.
TURKMENISTAN (total)	2116,0	2304,3	2304,3	4584,1	4595,8	4588,8	6700,1	6900,1	6893,1	15100,0	15099,9	14260,7	21800,1	22000	21153,8	96,2
Karakumsky chenal	1845,5	1860,0	1860,0	2154,5	2090,0	2076,9	4000,0	3950,0	3936,9	7351,0	6662,0	5948,6	11351,0	10612	9885,5	93,2
Lebapskuy veloyt (total)	270,5	444,3	444,3	929,6	855,8	848,3	1200,1	1300,1	1292,6	2916,0	3137,0	3062,9	4116,1	4437,1	4355,5	98,2
Dashkhousky veloyt (total)	0	0	0	1500,0	1650,0	1663,6	1500,0	1650,0	1663,6	4833,0	5300,9	5249,2	6333,0	6950,9	6912,8	99,5
Besides, flush	150,0	150,0	237,7	0	87,7	0	150,0	237,7	237,7	0	0	0	150,0	237,7	237,7	100
UZBEKISTAN (total)	1986,4	2088,1	2088,1	3963,7	4091,9	4089,6	5950,1	6180,0	6177,7	15500,0	15820,0	14834,6	21450,1	22000	21012,3	95,5
Karshunsky chenal	875,2	1107,9	1107,9	694,9	827,1	826,5	1570,1	1935,0	1934,4	2800,0	2800,0	2729,3	4370,1	4735	4663,7	98,5
Amybysharsky chenal	437,3	513,5	513,5	1012,8	901,5	902,3	1450,1	1415,0	1415,8	2700,0	3120,0	3117,6	4150,1	4535	4533,4	100,0
Khorezmsky region (total)	0	0	0	1280,0	1180,0	1171,5	1280,0	1180,0	1171,5	3500,0	3400,0	3189,2	4780,0	4580	4360,7	95,2
Besides, flush	51,6	150,0	155,2	98,4	5,2	0	150,0	155,2	155,2	0	0	0	150,0	155,2	155,2	100
KARAKALPAKISTAN	674,0	466,7	466,7	976,0	1183,3	1189,3	1650,0	1650,0	1656,0	6500,0	6500,0	5798,5	8150,0	8150	7454,5	91,5
Besides, flush	288,6	500,0	509,9	211,4	9,9	146,4	500,0	509,9	656,3	0	0	0	500,0	509,9	656,3	128,7
Total from Amudarya	4102,4	4392,4	4392,4	8547,8	8687,7	8678,4	12650,2	13080,1	13070,8	30600,0	30919,9	29095,3	43250,2	44000	42166,1	95,8
Besides Sykhardaruinsy region	147,1	167,2	167,2	52,9	32,8	36,9	200,0	200,0	204,1	1200,0	1200,0	1038,6	1400,0	1400	1242,7	88,8
Tadjikistan (total)	1676,2	1049,4	1049,4	1547,8	584,6	513,8	3224,0	1634,0	1563,2	6463,0	6266,0	5449,7	9687,0	7900	7012,9	88,8
Pyandj river	152,9	110,3	110,3	125,1	8,7	8,9	278,0	119,0	119,2	1453,0	1453,0	1304,3	1731,0	1572	1423,5	90,6
Vakhy river	1434,7	852,1	852,1	1353,3	504,9	504,9	2788,0	1357,0	1357,0	4417,0	4220,0	3659,8	7205,0	5577	5016,8	90,0
Kaphitnigan river	88,6	87,0	87,0	69,4	71,0	0	158,0	158,0	87,0	593,0	593,0	485,6	751,0	751	572,6	76,2
TOTAL FROM BASIN OF RIVER	5925,7	5609,0	5609,0	10148,5	9305,1	9229,1	16074,2	14914,1	14838,1	38263,0	38385,9	35583,6	54337,2	53300	50421,7	94,6

Water supply of into the Aral sea and the Amudarya river deltas
within1994-1995 hydrological year

Name	Month												Duty of water from 10.1. 94 . till 10.1. 95 .		Percent of execution
	X	XI	XII	I	II	III	IV	V	VI	VII	VIII	IX	plan	fact	
Samanby	1657	814	710	1178	314	281	98	60	45	114	161	242	7000	5584	79,8
Total escapage from Kyzketken and Lenin channels system		133	174			91								398	
CDW	69	41	57	66	77	127	104	73	76	136	145	138	1500	1109	73,9
Total	1636	988	941	1244	391	499	202	133	121	250	306	380	8500	7091	83,4
Increasing	1636	2624	3565	4809	5200	5699	5901	6034	6155	6405	6711	7091			

The note: Water supply data into the Aral Sea area agreed with Glavhudromet Republic of Uzbekistan

Plan of Nurek and Tuyamuyun water reservoirs work during the period from Octoder 1994 till April 1995

Nurek reservoir	Measurement unit	Fact						Total
		October	November	Desember	Junuary	February	March	
Affluent to reservoir	m^3/s	233	225	193	193	193	211	3269
Loss of waters in reservoir	m^3/s	-110	-37	-36	12	50	2	-313
Volume: the begining of period	mln m^3	10350	10181	9719	8776	7616	6562	10350
the end of period	mln m^3	10181	9719	8776	7616	6562	5804	5804
collected.(+), drawdown (-)	mln m^3	-169	-462	-943	-1160	-1054	-758	4546
Marker: the end of period	m	906,92	902,46	892,38	878,70	865,23	854,66	
Flush from reservoir	m^3/s	406	440	582	614	579	491	8157

Tuyamuyun reservoir	Measurement unit	Fact						Total
		October	November	Desember	Junuary	February	March	
Affluent to reservoir	m^3/s	832	727	833	908	814	629	12430
Loss of waters in reservoir	m^3/s	79	68	-30	-1	144	113	981
Volume: the begining of period	mln m^3	4236	4045	4666	5207	5725	4628	4236
the end of period	mln m^3	4045	4666	5207	5725	4628	3254	3254
Collected.(+), drawdown (-)	mln m^3	-190	621	541	518	-1097	-1374	982
Marker: the end period	m	124,21	126,39	127,31	128,44	124,74	121,45	
Flush from reservoir	m^3/s	824	419	661	715	1124	1029	12504

Plan of works of the Nurek and Tuyamuyun reservoirs from October 1995 till March 1996.

Nurek reservoir	Measurement unit	Forecast						Total
		October	November	December.	Junuary	February	March	
Affluent to reservoir	m^3/s	310	225	185	178	167	194	3300
Water losses in reservoirs	m^3/s	4	0	0	5	25	7	107
Volume: the begining of period	mln m^3	10497	10246	9663	8819	7753	6589	10497
the end of period	mln m^3	10246	9663	8819	7753	6589	5964	5964
Collected.(+), drawdown (-)	mln m^3	-251	-583	-844	-1066	-1164	-625	4533
Marker: the end of period	m	907,50	901,90	892,80	880,39	865,57	857,00	
Flush from reservoir	m^3/s	400	450	500	571	623	420	7769

Tujamoyoun reservoir	Measurement unit	Forecast						Total
		October	November	December	January	February	March	
Affluent of reservoir	m^3/s	707	637	736	628	505	546	9852
Water losses of reservoir	m^3/s	70	84	91	106	141	90	1526
Volume:the begining of period	mln m^3	3520	4069	4725	5783	6512	5119	3520
the end of period	mln m^3	4069	4725	5783	6512	5119	3622	3622
Collected.(+), drawdown (-)	mln m^3	549	656	1058	729	-1393	-1497	-102
Marker: the end of period	m	124,10	126,50	127,80	129,50	129,127	122,45	
Flush from reservoir	m^3/s	432	300	250	250	940	1015	8351

ANALYSIS OF WATER-MANAGEMENT COMPLEX WORK IN THE SYRDARYA RIVER BASIN DURING THE VEGETATION PERIOD OF 1995

Vegetation period of the completed water-management year passed under exceptionally complicated conditions and was a serious examination of water management sufficiency in Syrdarya river basin under a very low water level condition.

Since Naryn-Syrdarya cascade regime is determined by Tocktogul carry-over reservoir, its regime changing brought about a critical situation in cascade work. Unplanned power flushes created inflow to Chardarya reservoir during intervegetation at 14 km^3, because of channel unreadieness below the Chardarya and due to impossibility of taking large amounts in winter conditions. As a forced measure, since January 22, 1995 excessive volume of water has been let into Arnasay drawdown with all the ensuing negative consequences. In-all, before March 24, 3.97 km^3 were thrown down which would have been enough to cover shortage during the vegetation period.

On September 16, 1994 at the ICWC meeting in Osh, the regime of the Narym-Syrdarya cascade of reservoirs was initially approved for the period under review, and the value of intake limits was formed at 18.5 km^3, including 1.0 km^3 supply to Aral; for some water consumers:

Kazakhstan	7.7 km^3
Kyrgyz Republic	0.2 km^3
Tadjikistan	1.8 km^3
Uzbekistan	8.8 km^3

These indices were confirmed at the ICWC meeting on February 17, 1995 in Shimkent, and the regime of cascade was clarified by Uzglavhydromet forecasts of March 7 and April 7, 1995. With changing of situation, limits and regime were corrected at the ICWC meeting on June 27, 1995 in Bukhara.

Thus, the vegetation period of 1995 was different, first by sharp deviation of real intake regime from calculated, determined on the basis of excessive Uzglavgidromet forecasts; second by management irritability and instability, caused by separation and badly coordinated actions of all the wateruser states, and also current management mechanism of the basin water management complex has not allowed BWO "Syrdarya" to coordinate properly the storage and organization of intakes and flushes. It is clear from table 1 and other facts, which will be listed below.

1. Difference between forecasted and actual water resources values.

Forecasts of Uzglavhydromet of the Republic of Uzbekistan concerning side affluentness to Syrdarya on the vegetation of current year have been found excessive. From table 2 you can see, that initially forecasted values of affluentness to reservoirs and side affluentness exceeded mainly normal perennial rate. As a matter of fact, actual side affluentness amounted for different parts of river from 57 to 80 per cent of forecasted and only for Chirchik river it was near the expected index. During the vegetation of 1995 difference between forecasted and actual water recourses values amounted to about 6.39 km^3.

Table 1

ICWC LIMITS AND REAL INTAKES FROM SYR-DARYA RIVER IN VEGETATION 1995 .

User	ICWC limits, km^3			Actual intakes in vegetation	Ratio of limits and actual intake volumes		
	16.IX.94	17.II.95	27.YI.95		lim 27.YI/lim 16.IX	real intake/lim 16.IX	real intake/lim27.YI
Kyrgyzstan	0,20	0,20	0,162	0,185	0,81	0,92	1,15
Uzbekistan	8,80	8,80	7,141	7,484	0,81	0,85	1,05
Tajikistan	1,80	1,80	1,461	1,811	0,81	1,00	1,24
Kazakhstan	7,70	7,70	6,398	7,100	0,83	0,92	1,11
including in the zone of BVO "Syrdarya" activity	0,80	0,80	0,649	0,595	0,81	0,74	0,92
Besides, supply into the Aral Sea	1,0	1,0	2,05*	1,693			

*- in account with real water supply in Aral till 1.07.95 ã. and necessity to undertake sanitary flushes to the end of vegetation.

Table N 2

THE COMPERATIVE SHEET FOR FORECASTED AND ACTUAL WATER RESORCES EVALUATION FOR VEGETATION 1995 , m^3/s

Item or part of the river	Norm	Glavhydromet forecast			Actual quantity for period of IY - IX 95 ã.
		from 03.07	till 04.07	adjusted (YI-IX)	
AFFLUENT TO THE UPPER RESERVOIRS					
To Tocktogul reservoir	594	500- 700	460-640	500 - 600	505
To Andijan reservoir	179	140- 180	130-170	95 - 135	111
To Charvac reservoir (3 rivers' affluent)	318	300- 400	300- 400	250 - 350	278
TOTAL	1091	940-1280	890-1210	845 -1085	894
Affluent to the upper reservoirs,mln m^3		17543			14181
SIDE AFFLUENTNESS					
From Tocktogul to Uch-Kurgan (left Karasu and right Karasu)	73,3	70 - 84	66 - 78	40 - 60	56
From Uch-Kurgan, Uchtepe to Kairakkum reservoir	198	200 - 240	200 - 240	100 - 140	130
From Kairakkum to Chardara reservoir	153	150 - 200	150 - 200	80 - 140	144
From Andijan reservoir to Uchtepe	146	130 - 170	130 - 170	110 - 130	114
Side affluent from Charvac to mouth of the Chirchik river	74,3	70 - 90	70 - 90	55 - 75	75
TOTAL	645	620 - 784	616 - 778	385 - 545	519
Side affluentness, mln m^3		11035			8003

2. Non-coordination of regime of the Tocktogul hydrounit with interests of land management and river sanitary condition.

With the establishment of new independent states of Central Asia and market economy relations between them, some difficulties arose with fuel supply from Republics of Uzbekistan and Kazakhstan to HEP (heating electroplant) of the Kyrgyz Republic and irregularities with necessary electrical energy flow to Kyrgyzstan from Central Asia NPS (nuclear power station). Accordingly, since 1993 in Kyrgyzstan electrical energy on Tocktogul HEP has grown at the expense of increase of loads in autumn-winter period. Such deviation from project and transition of largest reservoir cascade to energetic regime, which completely opposite to natural stream flow regime, caused a number of negative consequences.

Changing regime of water management complex of the Syrdarya river concerns not only irrigation, but the whole ecological situation in the region with multimillion population and for this region such phenomena will entail of life supplying crisis, and besides epidemiological conditions change for the worse, especially in low river flow.

To get over a serious consequences of Tocknogul hydrounit transition to the energetical regime and expected shallowness in vegetation 1995, at the meeting of energy systems and water management complex managers from Uzbekistan, Kazakhstan and Kyrgyzstan on February 7, 1995 in Bishkek it was recommended to accomplish energetical resources supply from Kazakhstan and Uzbekistan to Kyrgyzstan in winter followed by compensation of energy in summer. Simultaneously, provision of irrigation flushes along the river was foreseen not lower than 500 m^3/s. BWO "Syrdarya" elaborated regime of Naryn-Syrdarya cascade taking into account the decisions of the meeting approved by ICWC on February 17, 1995.

Unfortunately, recommendations of Bishkek meeting has not been followed for a long time, and under this pretext Kyrgyz energy company formed regime of Toktogul hydrounit taking into account only their own needs and causing hard conditions for low-lying areas. Flushes from Toktogul were reduced before the summer, contrary to those indices, which energy company managers promised to keep.

Only at the end of May - early June flushes from Toktogul begun to grow up, because protocol in addition to Agreement of trade-economic collaboration in 1995 was signed, where increase of natural gas quantity on to 200 mln m^3, supplied from Uzbekistan to Kyrgyzstan; and energy supply in summer from Kyrgyzstan to Uzbekistan were stipulated. Kazakhstan signed this Agreement only in the middle of June.

3. Deviation of channel reservoirs filling regime from planned schedule.

In spite of difficult water management situation, regime of Kairakkum and Chardara reservoirs was carried out counter to confirmed by ICWC schedule and thus by the beginning of vegetation Kairakkum reservoir was lacking of about 420 mln m^3 to meet the fixed capacity and in Chardarya - accordingly 180 mln m^3 (see table 3). Besides that, water flow into Aral delta by September 1 formed 1.53 km^3 under the limit of ICWC in 1 km^3. So, 1.1 km^3 of Syrdarya water was lost for irrigated land management only because of above-mentioned factors.

4. Deviation in indices of river discharges

Statistics of energetics on hydro-electric plants escapages and discharges, fixed by Uzglavhydromet hydroposts, below the above-mentioned HEP differ from each other within several tens of cubic meters in second up to 100 m^3/s and more - for example, between Uchkurgan HEP and Uchkurgan hydropost of Uzglavhydromet. Such difference results in

COMPARISON OF ACTUAL AND APPROVED FORECAST RESERVOIRS REGIMES
OF THE NARYN-SYRDARYA CASCADE IN VEGETATION 1995, mln m^3
(Data of BWO "Syrdarya").

RESERVOIR	Water volumes in reservoirs											
	April		May		June		July		August		September	
	forecast	fact	forecast	fact	forecast	fact	forecast	fact	forecast	fact	forecast	fact
TOCKTOGUL	14175	14198	13926	13873	14960	14736	16279	15391	16917	15308	17265	15596
	13926	13873	14960	14736	16279	15391	16917	15308	17265	15596	17452	15770
ANDIJAN	1055	1046	1016	1105	1155	1190	1189	1164	994	852	753	585
	1016	1105	1155	1190	1189	1164	994	852	753	585	760	578
CHARVAC	1074	1079	1367	1117	1750	1597	2000	1811	1847	1569	1419	1362
	1367	1117	1750	1597	2000	1811	1847	1569	1419	1362	1367	1247
KAIRAKKUM	3418	2997	3418	2781	3418	2334	2868	1651	2145	1142	1602	677
	3418	2781	3418	2334	2868	1651	2145	1142	1602	677	1796	659
CHARDARA	5400	5221	5400	4799	4471	3126	3378	1647	1921	683	1000	510
	5400	4799	4471	3126	3378	1647	1921	683	1000	510	1039	694

NOTE. Numerator - at the begining of month, denominator - at the end of month

systematic character and energetics data exceed regularly reading of hydroposts, that not only make difficult checking water distribution, but do not allow to plan exactly intake regime and reservoirs cascade work. Attempts to find the cause of above-mentioned difference have been repeatedly made. So, in first decade of June control hydrometrycal measurement was made in Uchkurgan by proposal of Minwodkhoz of Uzbekistan. After comparison of data on three concrete dates - June 1 (before control measurement), June 6 (control measurement) and June 9 (after control measurement) - we can see, that discrepancy is primarily accounted by distortion (to the increase) of volumes thrown down through the Uchkurgan HEP (table 4).

Table N 4.

WATER BALANCE AT THE SITE FROM UCHKURGAN HYDRO-ELECTRO PLANT UP TO UCHKURGAN HYDRO-POST IN THE PERIOD OF CONTROL MEASUREMENT, m^3/s (Vegetation 1995; data of BVO "Syrdarya").

The articles of balance	Before the control measurement	The control measurement	After the control measurement
	June 1	June 6	June 9
Uchkurgan HEP's escapage	250	258	300
Intake - old head BFC	28	42	38,5
Uchkurgan Hydropost	181	216	210
Balance for the site Uchkurgan HEP - Uchkurgan h/p	-41	0	-51.5

Above mentioned caused arising of crisis situation, way out of which was searched by joint efforts of BWO "Syrdarya" and water management entities from ICWC state - members. In the middle June channel reservoirs were proved to be drawdown in the most part, and the minimal discharges were on Syrdarya channel. Situation changed for the worse, when the decisions of extraordinary ICWC and energetic ministries and departments of Kazakhstan, Kyrgyzstan and Uzbekistan joint meeting on May 27, 1995 in Shimkent have not been implemented, that recommended to put flush in June from Tocktogul reservoir at 450 m^3/s., and in July - August - at 300 m^3/s.

Since crisis has remained to the moment of next ICWC meeting at the end of June in Bukhara, necessity to correct intake limits has arisen. Calculations showed, that taking into account the rest of water resources, intake limits should be reduced on average up to 82 % from initial value. These limits were approved at ICWC meeting on June 27, 1995 in Buchara.

At the same days, the next and the last flush schedule from Tocktogul reservoir was agreed, being a result of understanding between Kazakhstan and Kyrgyzstan, by which from June 22 till July 5 900 m^3/s should be thrown off and then discharges should be reduced up to 450-500 m^3/s till the end of summer. Circumstances, impeded proper execution of flushes, are follow: under results of channel balances the real values of flushes from Tocktogul hydrounit were considerably less than registered by energeticians; periods of discharge running up to control points are settled upon condition that channel is filled and we consider it as measured process. In case of belated flushes from Tocktogul reservoir river channel is actually emptied and time and extra water volumes are needed for transformation of runoff in channel to pass additional discharges.

Therefore, the above-mentioned agreement was implemented properly only since July 21: from August 21 till August 5 average of flushes amounted to 902 m^3/s. and Tocktogul waters had reached Chardarya reservoirs.

At the same time, deviations were observed from state-waterusers intake regime (table 5), if it run counter to republics or government departments interests. So, in June - July the energy company "Barky Todjik" delayed water volumes from Tocktogul, instead of assistance in transference it to Chardara reservoir. As a way from crisis situation, by the decision of Minvodhoz of Uzbekistan, a transference was carried out into Chardara from Charvak reservoir at 250 mln m^3, that is one of the good examples of coordinated activities of Central Asian Republics.

Thus, Tocktogul water came into Chardara 3-4 weeks later, than expected, and in less volume than calculated. Even without calling in question reliability of flush values from Tocktogul reservoir, we should say, that difference between actual value of HEP escapage and fixed in agreement of June 22 amounted to 900 mln m^3. If take into account, that charges, coming into Syrdarya, is fixed by Uchkurgan hydropost, it becomes clear, why Chardara reservoir has not got yet expected volumes. Tocktogul reservoir role, as one of long lasted regulation, is contained in deficit covering, if there would be not enough resources of side affluent to meet irrigation needs. Deficit amounted to 2.7 km^3 in vegetation 1995, and Tocktogul reservoir - instead of its purpose - accumulated 1.572 km^3 at the same period.

Finally, implementation of the decision on water transference from Tocktogul into Chardara, which was adopted in 1995 with large delay and implemented partially as compared with agreement, could be characterize by following digital indices: there amounted to 3513 mln m^3 of entering in Chardara reservoir in vegetation 1995, and besides, share of side affluent was 2958 mln m^3, including 681 mln m^3 entered in Chirchik, and from Tockogul to Chardara 555 mln m^3 were transfered, instead of expected 960 mln m^3.

In conclusion, BWO "Syrdarya" and SIC ICWC, on the basis of experience in conducting vegetation 1995, offer:

1. Forecasting of year water availability, as well as planning of the Naryn-Syrdarya reservoirs cascade regime for hydrological year, as a whole, should carried out on the basis of long-term forecast of water resources and cascade regime, that allow to increase reliability of operation of reservoirs of long lasted regulation.

2. It is necessary to elaborate and adopt an agreement, which includes a whole complex of management treatment for Syrdarya river upon condition of different water availability and provides:

order of determination, adoption and correction of water limits for year, season, month with taking into account changing of water availability, water stock in reservoirs and intake for watering;

order of execution of channel reservoirs regime, admited (by concordance) deviations from it, limits of emptying of reservoirs, idle and hydroenergetical flushes;

sanitary regime values for each part of river in different periods of year, terms of their observance;

order of flush transformation registration in the result of channel losses and, vice versa, changing of channel inflow.

3. Declare, that upon critical water availability a daily management of all reservoirs under regime and filling shall be carried out only on the basis of activities, coordinated with BWO "Syrdarya".

4. Approve "Convention of responsibility for non-observance of agreed regime and cascade work limits" which was presented as a project half year ago.

Table N 5

COMPARISION OF ACTUAL INTAKES AND ICWC LIMITS IN VEGETATION 1995 , mln m^3
(Data of BVO "Syrdarya").

I N T A K E S	Before updating of intake limits									After updating of intake limits								
	April			May			June			July			August			September		
	limit	actual.	% from limit	limit	actual	% from limit	limit	actual	% from limit	limit	actual	% from limit	limit	actual	% from limit	limit	actual	% from limit
General intake in the zone of BVO "Syrdarya",including	1083	1264,36	117	1325	1544,49	117	2098	2025,19	96	2282	2637,43	116	1781	1870,41	105	546	736,5	135
Uzbekistan	866	1080,12	125	853	1078,37	126	1485	1476,24	99	1785	1977,44	111	1352	1341,97	99	393	528,4	134
Kazakhstan	17	25,82	152	95	102,43	108	164	120,93	74	206	197,11	96	163	141,25	87	29	7	24
Kyrgyzstan	17	8,72	51	30	19,36	64	41	36,76	90	43	50,99	119	36	45,02	125	22	24,3	110
Tajikistan	183	149,7	82	347	344,33	99	408	391,26	96	248	411,89	166	230	342,17	149	102	176,8	173
Up to Uchkurgan hydrounit, including	443	395,16	89	396	428,35	108	566	691,54	122	663	879,83	133	507	576,55	114	218	260,9	120
Uzbekistan	398	354,1	89	335	379,43	113	491	633,32	129	609	796,46	131	455	516,36	113	185	234	126
Tajikistan	37	34,5	93	43	38,49	90	47	32,82	70	27	46,31	172	27	27,04	100	20	9,6	48
Kyrgyzstan	8	6,56	82	18	10,43	58	28	25,4	91	27	37,06	137	25	33,15	133	13	17,3	133
From Uchkurgan hydrounit up to Kairakkum, including	111	107,23	97	157	144,42	92	225	229,23	102	226	272,78	121	181	215,99	119	79	98	124
Uzbekistan	62	66,98	108	67	59,25	88	102	105,73	104	144	145,6	101	118	118,16	100	53	53	100
Kyrgyzstan	9	2,16	24	12	8,93	74	13	11,36	87	16	13,93	87	11	11,87	108	9	7	78
Tajikistan	40	38,09	95	78	76,24	98	110	112,14	102	66	113,25	172	52	85,96	165	17	38	223
From Kairakkum reservoir up to Chardara,including	529	756,97	143	772	971,72	126	1307	1104,42	84	1393	1484,82	106	1093	1077,87	99	249	377,6	152
Uzbekistan	406	659,04	162	451	639,69	142	892	737,19	83	1032	1035,38	100	779	707,45	91	155	241,4	156
Kazakhstan	17	25,82	152	95	102,43	108	164	120,93	74	206	197,11	96	163	141,25	87	29	7	24
Tajikistan	106	72,11	68	226	229,60	102	251	246,3	98	155	252,33	163	151	229,17	152	65	129,2	199
Kyzyl-Kum channel	73	32,4	44	302	307,15	102	320	254,45	80	292	198,71	68	221	174,52	79	8	52,27	653
Below the Chardara	362	751,1	207	1460	1498,1	103	1391	1476,3	106	1540	1192,6	77	682	383,2	56	49	186,5	381

5. Elaborate and sign at government's heads level an interstate agreement on guaranteed pass of water resources limits through the territories of border states, taking into account losses under above-mentioned discharges pass during their delivery to each consumer.

6. Uchkurgan hydropost of Uzglavhydromet will be a control station for volumes, coming from Naryn to Syrdarya. Outline needed quantity of additional hydropost at interstate level in case of necessity.

MEMORANDUM ON THE RESULTS OF THE STUDY TOUR OF THE MINISTERS - MEMBERS OF ICWC AND ICAS TO BELGIUM , ITALY AND GERMANY UNDER THE EU-TACIS WARMAP PROJECT

The Ministers of water resources and land reclamation of the Central Asian Republics (CAR), members of ICAS and members of ICWC, in the framework of the program of activity of Phase II of the WARMAP Project, were invited by the European Union to visit the headquarters of the European Union in Brussels. During the visit they met with the EU TACIS officials and also made a study tour to some regions of Italy and Germany.

Members of the delegation: Kipshakbaev N. K., Chairman of the State Committee for water resources management of Kazakhstan; Zulpuev M. Z., Minister of water resources and land reclamation of Kyrgyzstan; Eshmirzoev M., Minister of water resources and land reclamation of Tadjikistan; Altiev T., First Deputy Minister of water resources of Turkmenistan; Giniyatullin R. A., Minister of water resources and land reclamation of Uzbekistan; Bobko Y. V., First Deputy Chairman and Technical Director of EC ICAS; Khamidov M. K., Director of the BWO "Syrdarya"; Kalandarov I. D., Director of the BWO "Amudarya"; Dukhovny V. A., Professor, Director of SIC ICWC; accompanied by the Director of the WARMAP Project, Dr. Arrigo Di Carlo. In Italy and Germany the delegation visited a number of institutions, enterprises and other entities with different forms of ownership.

As a result of the trip and based on exchange of opinions and discussions, the participants agreed on the following:

1. The financial assistance of the European Union through the WARMAP Project, in co-operation with the development of the "Water strategy" within Program 1 of the Aral Sea Basin Program (International Bank of Reconstruction and Development), enables to define the main guidelines for improvement of water resources management, that should be developed and implemented in the interests of all countries in the region, and simultaneously to start real projects (management information systems, supply of equipment, training on water management legislation, etc.).

The activities that will be financed include: preparation of legal, normative and regulatory documents, that will improve the stability of water resources management and also preparation of methodological materials at the regional level for the development of national water strategies; creation of MIS and its initial implementation in all institutions or agencies of ICWC; providing the interstate institutions of ICWC with equipment and new technologies; training and preparation of high and medium level staff for water resources management; providing analytical and research works for detailed analysis of water productivity in agriculture, assessment of its potential improvement and at the same time implementation of water saving measures.

2. The members of ICWC - Ministers of the five Central Asian Republics, evaluate as a positive factor the beginning of financing of the WARMAP programme by the EU and express their gratitude for the intention of the EU to further develop this assistance, to support joint activities of ICWC on improvement of water management.

From their side, the Ministers, realising their responsibility for the solution of the Aral Sea crisis which is unprecedented, in history, for its scale and difficulties, announce that:

the member states of ICWC have a unified understanding of the mutual tasks for the improvement of the common basin water resources management for the well-being of their countries and for the Aral Sea coastal areas as an independent water user;

the member states of ICWC, on the basis of their previous agreements, taking into account the joint works and directions of the WARMAP Project and Programme 1 on water strategy, clearly realise the ways for solution of these tasks; they are purposeful in elaborating joint, simultaneous measures for implementation both at interstate and national levels; those measures will form a basis for creating non-conflictual mechanisms for development and use of water resources;

the member states of ICWC have an excellent understanding of the importance of water management as a main factor for the management of environment in the region and they are ready for the joint improvement of the regional water resources.

3. Taking into account the current problems in local financing for a large number of activities, which have been defined as necessary in Phase 1 of the WARMAP Project, and in view of the needs to implement real action, the members of ICWC make the following requests to the EU:

to increase the financing of Phase 2 of the WARMAP Project for creation of MIS capabilities (not only for the top levels of water management bodies but also for middle and lower levels of agricultural bodies for joint measures aiming at increasing the productivity of water) and also for creation of permanent satellite monitoring of river beds, the deltas and the Aral Sea itself taking into account the existing international experience;

to allocate finances for creation and development in all the countries a set of pilot projects on improvement of water use technology for irrigated agriculture according to the recommendations of Phase 1 of the WARMAP Project. These pilot projects will become the standard examples of water use and will serve for the training of water users;

taking into account the acute needs for elaboration of unified approaches for the evaluation of existing and potential water use under growing water limitation, to request funds for the above under the WARMAP Project.

4. During the study tour the members of the delegation were able to gain experience in many fields, which can be used in the conditions of the CAR: the activity of semi-autonomous consortiums of the first and second levels for land reclamation; the creation of information systems based on satellite pictures of existing nature-anthropogenic objects in the Venice Lagoon; the creation of information-consulting services for irrigated agriculture; the organisation and development of the co-operative activities in agriculture under market economy conditions.

5. The meetings with representatives of regional administrations, major industrial and agricultural organisations enabled to outline the activities for the actual implementation of different commercial projects, which are of main importance for the final increase of water productivity: the organisations of polyethylene production on the basis of available gas resources; the organisation of polyvinylchloride production together with development of calcium water deposits in the Aral Sea surroundings; the production of meters for water and gas; the processing of agricultural products, especially fruits, with Italian technology; the production of ceramics and glass with Italian technology.

6. Taking into account the importance of further co-ordination of all future works under the WARMAP Project, the Ministers decided to have a direct participation in the co-ordination of these activities as leaders of the national programmes.

7. Considering the usefulness of the study tours for high level officials, such as Deputy Ministers and heads of departments, to study technical and economic aspects of water management development, they request the EU to continue such trips to countries with the best decision making experience concerning shortage of the arrangement of water resources and related issues.

8. The creation of a training centre for the water management sector in the CAR is of a vital importance, especially related to the development and use of information systems, improvement of linguistic, legal and economic education of the personnel. In this connection the Ministers request the EU and the ENI Group, which have experience in the establishment of such centres, to undertake institutional, financial and technical support in the organisation of the training centre of ICWC and in the training of the personnel. Proposals concerning the programme, location and conditions of the activity of the Centre will be defined by ICWC in agreement with ICAS.

Signatures:

N. Kipshakbaev
M. Zulpuev
I. Eshmirzoev
T. Altiev
U. Giniyatullin

PROTOCOL OF THE WORKSHOP ON LEGAL AND INSTITUTIONAL ASPECTS OF THE WARMAP PROJECT

December 6, 1995 Tashkent,

Agenda:

1. Consideration of the remarks on legal and institutional aspects of the WARMAP Project (Phase 1, Volume). Reporter - regional co-ordinator of the WARMAP Project Prof. Dukhovny V.A.

2. Contents and plan of works on legal and institutional aspects of the WARMAP Project in Phase 2. Reporter - Prof. Dukhovny V.A.

After the opening of the workshop Ministers Giniyatullin R.A. and Eshmirzoev I.E. made their reports.

Giniyatullin R.A. highlighted in his report:

- ICWC expect considerable results from the elaboration of the complex juridical and legal documents as common for all “Rules of the game”, which must be followed by all participants of the management and use of water resources. Their elaboration should be of evolution character which should be used as a “guiding star”, counting the national interests and oriented on the line of regional require-

ments, will orient the permanent search for the stable consensus. The readiness for concessions for each other in assessment of national and regional aspects is the only provision.

- It is very important to determine the priority of elaboration from the positions, which are actually required at the present moment and without which our common activity is complicated, but we must be careful and prevent arising of the issues which could cause unnecessary conflict during their discussion.
- Foreign experience pays attention not to forced measures on interstate organs for implementation of international regulations and rules, but to responsibility of the governments and states for their observing and mutual responsibility and influence on each other with involvment of public opinion. These mechanisms of transition to modern level of civilised approaches should be also used and foreseen by us.
- It is necessary to refer very carefully to overloading of interstate organisations with direct activity, trying to prevent their turning into the huge concerns; giving them more functions of planning, co-ordination, control and information, than direct management.

Eshmirzoev I.E. thanked in his report the leaders of the WARMAP Project for organisation of the study tour to Belgium and Italy, from which all the participants of the tour learnt a lot for themselves. However he warned, that experience of these countries can not be taken as the program of our activities. Greeting the present workshop, which will determine the required immediate interstate agreements on the regional level he emphasised, that two provisions of successful work of our interstate and national water administration organs should take place:

- The governments of the states-participants should display the importance of the priority of common interstate interests and approaches, in order to achieve the maximum of success for their countries on the way of integration and agreed actions.
- ICWC should be extended in its rights and obligations, in order to link quickly all national interests in maximum working order.

With this purpose, during the elaboration of the project (draft), it is very important to collect legislation on water, land, natural resources of all states and link them into one whole, counting (if required) necessary corrections and explanations.

On the first item of the agenda Prof. Dukhovny V.A. underlined that we - SIC ICWC - have some notes on preliminary text of subprojects 1 and 6 - legal and institutional aspects of the WARMAP Project, which are adopted and will be taken into consideration in final text of the report. During the study tour the ICWC members and leaders of the WARMAP Project had agreed that structure of ICWC should not be changed. Elaboration of legal and institutional bases of water resources management at the regional level is the most important in our further joint activity. The counting of ecological requirements in agreements elaborated by us is obligatory . It is necessary to improve the institutional structure of the water resources management at the national level and to prepare the relevant note on it, which on behalf of international organisations is to be provided to the states of the Central Asian regions. The following features of water resources are required to be highlighted in the note. First of all, it is supposed to elaborate the first four agreements (17.4.1, 17.4.2, 17.4.3, 17.4.4), mentioned in section 17 “Improvement of juridical base of international administration” of regional water strategy.

The proposal of Prof. Dukhovny V.A. was supported by representatives of all states of the Central Asian region: Ospanov M. - Kazakhstan, Yudakhin N.N. - Kyrgyzstan, Nosirov

N.K. - Tadjikistan, Krokhmal V.P. - Turkmenistan, also by representatives of interstate organisations: Khamidov M.H. - BWO “Syrdarya”, Sayatov K.S. - BWO “Amudarya” and Bobko Y.V. - EC ICAS.

It was resolved:

I. First of all to elaborate the following interstate agreements:

1. Agreement on extension of rights and responsibility of ICWC:

2. Agreement on water resources use in present conditions:

3. Agreement on provision of ecological stability in the region, protection of water resources, rules of their quality control.

4. Agreement on joint planning and use of water resources.

To strengthen and elaborate juridical aspects of all ICWC organisations with their full relevance to regulations of international water law.

Juridical and institutional documents should be oriented on providing ICWC with authority and power functions in order to turn it into water government of the region.

While finalizing of institutional regulations the amplifying of participation of all states in executive organs and establishment of their subdivisions in each country should be considered.

II. To work in the following order:

till the February 1 of the next year the regional working group should prepare the first draft of these agreements, but national working groups should provide their view of contents of these documents for including them into the agreement;

at the beginning of the February (1-10) to hold the working meeting for determination of the first variant of the draft of these agreements;

till May 1, 1996 to finish the elaboration of linked and agreed with working groups variant of agreements;

till 1.02.96 to submit to regional groups their proposals of improvement of their regulations in accordance with requirements of international regulations, given in materials of the workshop on international organisation of national groups.

To determine the expenditures of the regional groups for this purpose: 10 man/month - regional groups, 5 man/month - national groups.

III. Expert of the WARMAP Project on legal and institutional aspects Nanni M. and Leader of the regional working group Rakhimov Sh.H. till 15.12.95 should elaborate the final TOR and draft of contracts on work implementation.

IV. Regional group should prepare jointly with Leaders of the Project (Arigo Di Carlo) the draft of recommendations on behalf of the WARMAP Project on the base of world experience summary:

on strengthening of institutional structure of water administration at national level from position of complex management in conditions of amplifying of water resources scarcity and involving of initiatives of water users at local level;

on economic and financial provision of water management work and participation of water users in it.

Till March 15 these projects are to be provided for discussion at the national level; expenditures on these works of the regional group are to be determined accordingly 6 and 5 man/month.

V. To determine, that direct leadership of all these works in the WARMAP Project is to be carried out by the Director of the Project Dr. Arrigo Di Carlo and Co-ordinator of the Project Prof. Dukhovny V.A.

PROTOCOL OF THE WORKSHOP OF PROGRAM GROUPS ON PROJECT 2.2 OF THE ARAL SEA BASIN PROGRAMS

October 16-20, 1995 Tashkent

Chairman: Deputy Director General of SPA SANIIRI Mr. Ikramov R.K

Attend:

1. BWO "Surdarya"	Simonov D.I
2. Kazgiprowodkhoz	Nurtazin M.M
3. TadjimNIGIM	Navruzov S.T
4. Kyrgyzgiprowodkhoz	Macarov O.S
5. GLAVgydromet	Torsky M.M
6. GLAVgydromet	Borovicova L.M
7. Wodproject	Kuleshov G.M
8. Uzgipromeliwodkhoz	Nepomnushih S.T
9. Minwodkhoz	Pernabecov S.T
10. SPA SANIIRI	Dukhovny V.A
11. SPA SANIIRI	Ikramov R.K
12. SPA SANIIRI	Sorocina I.A
13. SPA SANIIRI	Socolov V.I
14. Tyrkmengiprovodhoz	Vecher U.I
15. GLAVgydromet	Ivanov U.I
16. EC ICAS	Solodennicov D.F

Agenda:

On the final text of description of project 2.2 and terms of reference for preparatory period.

Exchanging opinions, the participants decided:

1. Adopt "Regional unified information system of measurement, using of water resources and hydroecological monitoring" as corrected name of project 2.2.
2. Approve the final text of description of project 2.2 and terms of reference for prepatory period, and submit it to the Executive Committee of ICAS for bringing as a proposal to donors countries.

EC ICAS	Solodennicov D.F
Republic of Kazakhstan	Nurtazin M.M

Republic of Kyrgyzstan	Makarov O.S
Republic of Tadjikistan	Navruzov S.T
Republic of Turkmenistan	Vecher A.A
Republic of Uzbekistan	Pernabecov S.T
SIC ICWC	Dukhovny V.
	Ikramov R.K
	Sorokina I.A
	Socolov V.I
Hydromet	Torsky M.M
	Borovicova L.M
	Ivanov Y.N
PO“Wodproject”	Kuleshov G.M
“Uzgepromeliwodkhoz”	Nepomnyshih B.V
BWO “Surdarya”	Simonov D.I

THE PROTOCOL OF THE WORKSHOP RESOLUTION OF CENTRAL ASIAN COMPUTER SPECIALISTS PARTICIPATED IN DEVELOPMENT OF INFORMATION NETWORK "WARMIS"

01.31.96 - 02.01.96 SANIIRI, Tashkent

1. Approve the "Proposals on designing of the IC WARMIS" as a whole, prepared by the regional group and experts of the WARMAP.

The regional group should generalize the proposals and comments of national groups and make appropriate corrections in the final text of the document.

2. Acknowledging, that the problems of use of encoding information system is one of the important moments for designing of WARMIS database, taking into account that specialists couldn't elaborate the common approach at the current moment, the workshop considers it necessary to ask the regional group to:

- collect (with assistance of national groups) and compare existing and developed encoding systems from all Ministries and Departments, whose information of water, land and other resources will be included in the WARMIS database.
- make proposals on encoding system, taking into account discussions held at the workshops of water experts (02.12. 96) and economists (02.21.96).
- generalize all proposals, including recommendations of experts from WARMAP, and prepare main version of encoding system.

3. Work, connected with preparing of cartography materials for GIS (Global Information System), should be delayed until receiving and putting into operation the equipment and GIS software in national centers. Due to difficulties in receiving maps of Censtab 1: 500000 series at local level, ask WARMAP to assist the national groups of Tadjikistan, Turkmenistan, Kyrgyzstan in provision them for above mentioned planed materials. (3 copies per country)

4. Take into consideration questions of official access and receiving information from different Ministries and Departments one both at the national , and regional levels as one of the key problems of creation WARMIS, ask the regional group to prepare appropriate proposals to be included into the agenda of the work of ICWC.

5. The regional group should:

- analyze the materials, presented by the national groups on TORs for the first and second workshops on the WARMIS and give their proposals and recommendations.
- prepare the TOR for third workshop on the WARMIS (till 02.12.96), study appropriate forms, formats of input and output database and provide the national groups with the materials at water experts workshop.

6. The national groups should:

- pass to the regional group their proposals on technology of updating, correction and amalgamation of WARMIS database in ACCESS;
- verify and enter into database materials, prepared in 1 phase of works on WARMIS (diskettes with initial data, on their countries, distribute at water experts seminar).

7. In terms of reference, given to national groups, consider as expedient explanation of supposed distribution of laber costs on kinds of work.

8. Participants consider as necessary:

- to include into equipment for the developers of WARMIS in regional and national centers the tablet scanner format A4, type HP ScanJet ZS and Dataswich (type "Solectec") for connection of several peripheral devices to one computer;

- in connection with permanent variant reading in terminology, used at preparation of the documents in English and Russian languages, that strongly complicates dialogue of local and foreign experts, ask the Project WARMAP to provide the national groups with English - Russian and Russian-English dictionaries (including thematic).
- foresee in calculation of costs under the tasks and seminars also the costs on technical works, including costs on account materials and communication (including telephone and use e-mail services) .

9. To agree with the offer of the experts from WARMAP about approbation of system of short-term training of the experts from national centres at WARMAP office for execution of joint works on individual tasks and training at the same time (with rotation of the experts of all specialities).

10. To ask WARMAP experts to prepare explanations for the experts from national groups on GIS work: with grouped and schematized linear and square objects at imposing of thematic layers.

THE PROTOCOL OF THE WORKSHOP RESOLUTION OF CENTRAL ASIAN WATER MANAGEMENT SPECIALISTS PARTICIPATED IN DEVELOPMENT OF INFORMATION NETWORK (IN) "WARMIS"

February, 13-14 1996 **SANIIRI, Tashkent**

WARMIS is a developing information system, which is covering the estimation of situation of annual and prospective planning, use and development of water resources, at the regional basin level. The participants of creation Information Network (IN) consider its further development on underliening hierarchical levels (including immediate up to system-region-district level) and next connection up to field level. In the process of development, the estimation of connection "basin-system-economy-field" will be determined in reconciling with the results of the pilot(standard) projects and inclusion them in WARMIS.

As borders of administrative and water management regions do not coincide, as a rule, the analysis and next integration, should be carried out by water management parameters in connection with the irrigation systems, pointing out transmiting inputs and outputs from other sources of wateruse, and by economic and agriculture parameters in comparison with administrative and water management borders on regions or farms levels. Within each water management region, the national groups pick out components of irrigation system, and on the basis of their generalization, integration carried out up to water management regions level and, simultaneously, reception and generalization of data by appropriate administrative units (region or its part, district).

The participants agreed, that as the planning unit at the basin level would be considered the area, covered by irrigation system, belonged to Water management region (WMR), brought to water management part of the river, taken for planing and management in the BWO system. By that, here included the lands, united by each form and water sources. The planning unit at the national level is to be area of irrigation system within administrative region.

1. Agree with definition of planning units on the regional and national levels, given above.

2. Approve, as a whole, the "Offers on Information Network (IN) WARMIS", prepared by the regional group and by the experts from WARMAP. The regional group should generalize the offers and comments of national groups and make appropriate corrections in the final text of the document.

3. Approve the decision of CAR countries experts on computer engineering techniques (31.01-01.02.96), except point 7 of protocol.

4. Agree with suggestion of the regional coordinator and task-manager of the project WARMAP about principles of funds distribution, provided for development WARMIS-2 (permanent part - 15 man/month per national group, other part is divided in proportion to irrigation areas).

№	Kazakhstan	Kyrgyzstan	Tadjikistan	Turkmenistan	Uzbekistan	Total:
1	15	15	15	15	15	75
2	7,5	5	7	12,5	40	72
Total:	22,5	20	22	27,5	55	147

5. After revision of comments and proposals of the regional group, reported at the workshop, the work of national groups on TOR-1 and TOR-2 should be considered completed.

6. In the period from February 15 to April 5, 1996, the national groups should carry out the work in accordance with the TOR, approved at the workshop.

THE PROTOCOL OF WORKSHOP RESOLUTION OF CENTRAL ASIAN SPECIALISTS PARTICIPATED IN DEVELOPMENT OF WARMIS ON THE "ECONOMIC DATA" BLOCK

February 28, 1996

Exchang the opinions, participants decided:

1. The administrative and territorial unit, on which economic data will be collected and prepared, is to be an administrative district.

2. It is expedient to collect economic data for basic 1990 and 1995, crop yield for 1980; 1985; 1990-1995.

3. Economic data, prepared under WARMIS, are for the analysis, an estimation of actual water-land resources use and short-term plans of use of water-land resources (for the next year).

4. It is necessary to coordinate collection of economic data under WARMIS with materials of investigation of entities and development of the "pilot projects" (WARMAP subproject 4)

5. Due to the absence in CAR countries of the agreed methodical approaches to an estimation of economic efficiency, elaboration economic models of water- land resources use, taking into account market economy, it is necessary to carry out a methodical, training workshop on economic problems:

structure of feasability study and main estimation methods of projects, measures, plans ("Net Present Value", Internal Rate of Return").

mathematic models, programmes for calculation, forecasting of agroeconomic parameters;

economic aspects of water resources management (especially in connection with development of " Water Strategy" in the Aral sea basin). Workshop should be carried out in April-May 1996.

1. Till April 5, 1996 national groups execute the work according to items 1.4 and 1.5 of Terms of reference, given at the workshop of February 13-14, 1996. Moreover, it is necessary to give offers on amount and borders of economic zones of planning before the workshop of April 5, 1996. The economic zone of planning - this is one or several water management units of planning with similar nature-economic conditions.

WARMAP Co-ordinator	Arrigo Di Carlo
Regional Co-ordinator	Dukhovny V.A.
Leader of regional group	Sorokina I.A.
Expert of regional group	Michaylov V.V.
From national groups:	
Kazakhstan	Tverdovsky A.I.
Kyrgyzstan	Smanova D.
Tadjikistan	Tashmatova H.
Turkmenistan	Aganov S.E.
Uzbekistan	Pesna N.A.

PROTOCOL
of the workshop-meeting of Program group of Programme 1, adopted by Central Asian Heads of States at the conference in Nukus on 11 January 1994 "Elaborate integrate strategy of waterdivision, rational wateruse and water resources protection in the Aral Sea Basin

March 14-15, 1996 Tashkent

Program group of Programme 1 gathered for its final meeting to sum up the first stage of the first phase of preparatory works with participation EC ICAS, representatives from WARMAP, USAID programs, World Bank staff, etc.

List of participants of the workshop-meeting and Agenda are attached (Annexes 1, 2).

1. Participants mention, that in result of complicated and sufficiently organized work of five states' representatives, headed by members of Creative group, the whole programme

for this stage was realised, which finished by presentation of “Basis statements of the Regional water strategy” as summary report and five national reports.Summary report was carried out on the basis of generalization of five national reports and elaborations, presented in 4 regional reports on “Water resources”, “Land resources”, “Social-economic aspects” and “Water resources management” groups. Report of “Ecological group” is backward, which has presented a summary report only in separate issues. At this moment this report is completed.

Such successful independent work became possible owing to highqualified and human sides of Prof. J.Kindler, who skillfully used experience and skills of local organisations and professionals.

2. ICWC conclusions on summary reports are received, and also governments of CAR (except Uzbekistan, that’s considering this materials).All conclusions recommend this work as the basis for development of regional strategy in first and next work phases.

3. ICWC conclusion marks, that as basis of water resources calculation on economy fields should be placed disposed water resources of transborder and local waters, and water deficit should be covered at the expense of using own reserves (re-use collector-drainage and waste waters, implement watersaving, technologies, range of agrotechnical measures, etc).

As the basis of CAR states’ joint policy should be adopted common “game rules”, including legal, economical, institutional and technical measures to achieve sustainable management by water resources and for united, primarily synchronous watersaving rates in the region, competent to:

achievement of overall efficiency not lower than 0,75;

creation and supporting reliable drainage background;

approaches to specific evapotranspiration, competent to biological needs of plants;

use waste and drainage waters in admitted, economical and ecological acceptable rates.

At the same time ICWC emphasized, that :

Water strategy in the basin, presented and prepared by ICWC with branches, interested in wateruse, is the principal direction of all activities of states and wateruse’s branches to provide sustainable and successful development of CAR states, as tool for work coordination, financing and prospects for other projects and subprograms of mentioned “Action Plan ...” joint with EC ICAS, realized the main executive and procedure functions.

4. In accordance with comments of the World Bank the text is completed, especially chapter 20 in part of elaboration, contents and plan of works of 1st phase’s second stage for next 1,5 - 2 years , linking with all programmes; the “Brief report on Regional water strategy“, distributed by members of Creative group, and issue of strategy on measures for provision and execution of regional water strategy are prepared.

5. To complete works of 1st phase’s 1st stage for two weeks:

Co-ordinator of works Prof. Dukhovny V.A. and candidate of geographic science Socolov V.I. should insert all necessary corrections on the text observations of regional Water strategy, received from governments and members of ICWC, and prepare observations summary, received from all review bodies and distribute it to national and regional groups;

national groups should insert necessary corrections into summary report and produce it’s text in account with all remarks, especially about more accurate definition of water requirements, and also summary of all data on united forms;

ecological group (Mr. Saparov and Mr. Bekenov) should present final text of regional program report;

members of Creative group in 5 days - till 19 march should send fax to Prof. Kindler and Prof. Dukhovny about all observations on “Brief report” and “Mechanism of strategy realizations”, which will be insert into final material for next presentation in InterState Soviet for confirmation;

national group of Uzbekistan is requested to accelerate presentation of conclusion of Uzbekistan's government.

6. As widespread information of public opinion and interested organisations is very important in popularisation of ideas, methods and principles of elaborated water strategy, heads of national and regional groups are requested to organize publication of these principles in popular form.After agreement with members of Creative group and finishing of brief report Prof. Dukhovny V.A. should distribute it to all interested organisations in Central Asian States and Russia, including Academy of Science and other national organisations, publish it as addition to "ICWC bulletin", and Prof. J.Kindler should organise it's distribution among international organisations and state-donors. Executive Committee is requested to fund these expenses.

7.Meeting approved plan, schedule and costs of works, suggested by co-ordinators on 1st phase's second stage of strategy. The work of national groups should be organized as "National aspects of republic ... in Regional water strategy of the Aral Sea Basin". Special attention should be paid on the next stage to:

a) development of legal documents , including agreements, criterions and rules of management, use and protection of water resources;

b) preparation of united methodical approaches to appraisal of evapotranspiration rates, on which basis can be analyzed system of water use in irrigated farming and public economy;

c) development and application of information system of water resources management on all hierarchy levels from basin to field;

d) creation of pilot-project's system;

e) mathematical modeling of management processes.

At this moment, due to unremitting nature of financing, adopted by European Unit in WARMAP programme, and supplement of line, advanced by ICWC members during their visit to General office of EU in Brussel in the form of additional financing in amount of 1 mln. ecu, elaboration has began of points 7a, c, d .

The meeting considers as necessary the such financing from the World Bank and GEF Fund for all works on programme 1, programme 2.2, which are an integral part of the whole complex, and for mathematical modeling of water resources management . Acknowledge urgency of the development , suggested in transition stage of united for all programs "Dictionary of terms and attributes", used in work on Aral Sea Programs.

8. Approve suggested works distribution for nearest 3 months between national and regional groups. Ask World Bank and Executive Committee ICAS to accelerate funding as component part of program 1, prepared before technical task on subprogrammes 1.2, 1.3; as urgent, conflict dangerous and requiring immediate decision within next 1-2 years, and also subprogram 5.4.

9. In water strategy and WARMAP programme development , suggested on the 1st stage system of pilot-projects has multipurpose fixing as element of long term database and as experimental checking at "fields" level for Information system, and as criterion of evaluation and selection of watersaving methods in contemporary terms, and as the basis of demonstration and training of water-farming and agriculture staff.

It is worth while to carry out intentional processing of all problems of pilot-projects on intrafarm lots and main network within WARMAP project to TEB(technical-economical basis) of the projects. At the same time, ask World Bank to redeem a promise on funding for experience generalization and continue investigation of existence pilot-lots in CAR , and within programme 3 make funding of pilot-project works on salt mobilization and drainage water use.

Consider as correct WARMAP program policy for coordination pilot-projects with WARMIS on the basis of information system for creation and management by whole basin.

According with practice in CAR, participants consider as necessary to put the work of pilot-projects on organisations of Irrigation and Water Ministry with obligatory concordance the works with local bodies, agriculture and nature use bodies. Pay an attention to use of works of the Design Institute"Watersystemautomatic" for development of standard equipment for information modeling and information processing on pilot-projects.

10. Mark poor technological and principal coordination of all the works on Aral Sea problems programs, non-fulfillment of ICWC and Executive Committee direction decisions for work coordination on programme with Creative group on Programme 1, and also lag , especially in fulfillment and funding works on programs 2, 4, 6, 7, which are important for outlined by Government Heads "Action Plan for economical situation improvement in the Aral Sea basin". Ask EC ICAS and World Bank to elaborate mechanism of interaction and coordination works between programmes according with main principles of elaborated strategy.

11. Mark sharp deviation on equipment delivery for program1 from EC ICAS and World Bank side, ask to accelerate its realization.

12. Participants enjoyed presence of USAID representatives in changing opinions on program 1 and beginning of works' funding on paid wateruse as part of programme 1 at the expense of USAID, and also hope on development this participating as donors help on some aspects of progamme 1 decision (subprojects 1.1, 1.2, 1.3).

13. Establish, that realization of works on water strategy development in the next stage on national aspects is on National institute-coordinators, on regional aspects - on SIC ICWC and SIC Commission of sustainable development with other organisations,wide range of specialists, foreign experts, perhaps on tender basis. Coordinator of programme1 Prof. Dukhovny V.A. is responsible for concordance of distribution and order of works reconciling with SIC KUR ac. Babayev A.G.

14. Ask Mr. Peter Whitford and Mr. Januzs Kindler to accelerate funding from GEF, prior to donors' meeting for continuation of program 1, including 1.1, 1.2, 1.3, before July 1,1996, to provide continuous works.

Signature:
Bobko Y.V. - Technical Director of EC ICAS
Kindler J. - Task-Manager, World Bank
Members of Program group of Programme 1.1:
Dukhovny V.A. - Co-ordinator of Programme 1.1
Zemlannikof A.V. - Kazakhstan
Sarbaev T.S. - Kyrgyzstan
Udakhin N.N. -Kyrgyzstan
Mamatkanov D.M. - Kyrgyzstan
Nasyrov N.K. - Tadjikistan
Rahmatilloyv R. - Tadjikistan
Petrov G.N. - Tadjikistan
Sarkisov M.M. - Turkmenistan
Saparov B.S. - Turkmenistan
Antonov V.I. - Uzbekistan
Khamrayev N.R. - Uzbekistan
Sokolov V.I. - Uzbekistan

Annex 1 to protocol

March 14-15, 1996

AGENDA

1. Consideration of the results of the work under Program 1.1.
2. Consideration of preliminary TOR on the second stage of works (chapter 20 of regional report).
3. Consideration of necessary ammendments and additions of final materials of the 1st stage (national and regional reports) for presentation of results to donors meeting.
4. Preparatory steps for donors meeting.
5. Information on the progress of works under other programs of "Action plan ..."

Annex 2

LIST OF PARTICIPANTS

Bobko Y.V. - technical director of EC ICAS
Kindler J. - task-manager, World Bank
Members of Creative group on Programme 1.1:
Dukhovny V.A. - Co-ordinator of Programme 1.1
Zemlannikof A.V. - Kazakhstan
Sarbaev T.S. - Kyrgizstan
Udakhin N.N. -Kyrgizstan
Mamatkanov D.M. - Kyrgizstan
Nasyrov N.K. - Tadjikistan
Rahmatilloyv R. - Tadjikistan
Petrov G.N. - Tadjikistan
Sarkisov M.M. - Turkmenistan
Saparov B.S. - Turkmenistan
Antonov V.I. - Uzbekistan
Khamrayev N.R. - Uzbekistan
Sokolov V.I. - Uzbekistan

Presented:
Arrigo di Carlo - WARMAP
Rothwell D. - WARMAP
Prim B. - USAID
Drayer P. - USAID
Britten B. - USAID
Pyrnabekov S.T. - Minvodkhoz of Uzbekistan
Tolstunov U.V. - BVO "Syrdarya"
Alichanova T.H. - Mineconomic of Tadjikistan
Osipov A.R. - Turkmenistan
Ikramov R.K. - SPA SANIIRI
Rachimov S.H. - SPA SANIIRI
Jakubov H.I. - SPA SANIIRI

Umarov P.D. - SIC ICWC
Pinchasov M.A. - SIC ICWC
Michailov V.V. - SIC ICWC
Avakjan I.S. - SIC ICWC
Sorokin A.G. - SIC ICWC
Savizky A.G. - SIC ICWC
Belozerkovsky K.I. - SIC ICWC

PROTOCOL OF THE MEETING OF REPRESENTATIVES OF FUEL - ENERGY AND WATER MANAGEMENT COMPLEXES OF KAZAKHSTAN, KYRGYZSTAN AND UZBEKISTAN ON PROBLEM OF THE TOCKTOGUL CASCADE WATER-ENERGY RESOURCES USE IN 1996

December 19-21, 1995 Bishkek

Present:

Pridatkin A.A.	Chief of ODC "Energy"
Khamidov M.H.	Chief of BWO "Syrdarya"
	From Republic of Kazakhstan
Kudaybergenov K	Vice-president of Kazgoscomvodresource
Kenshimov A.K.	Head of Kazgoscomvodresource administration
Musagaliev T.H.	Vice-president of Kazakhstanenergo
	From Republic of Kyrgyzstan
Davydov I.A.	First vice-president of Kyrgyzgosenergoholding
Orozaliev K.A.	Director General of RPO "Kyrgyzgas"
Turgunbekov E.T.	Deputy minister of water management
	From Republic of Uzbekistan
Djalalov A.A.	First Deputy Minister of Land Reclamation and Water Management
Muratov T.S.	Deputy minister of energy and electrification
Guljamov A.H.	First Deputy Director General of UGO "Uztransgas"

Exchanging opinions, participants note:

1. Adopted in 1995 measures on efficient use of Tocktogul cascade water-energy resources (according to decisions of republics governments, as well as protocol of February 7, 1995, signed in Bishkek on the water management situation in the region), enabled to certain extent to improve water management situation in the region.

At the same time, non-execution of some positions of adopted decisions led to uncoordinated intake regime from Syrdarya river.

2. Expected water volume in Tocktogul reservoir on January 1, 1996 is forming 13,9 mld. m^3. In 1996 10 mld. m^3 of affluent to reservoir is forecasted. Under regime, outlined by Kyrgyzgosenergoholding, value of flushes from reservoir will form 12,1 mld. m^3, including 3,5 mld. m^3 in vegetation, that will lead to reservoir drawdawn. As a result, there will be 11,8 mld. m^3 of water on 1 January 1997.

In spite of this, in January-March 1996 flushes from reservoir will be more than 1,5 mld. m^3 than needs for water under BWO "Syrdarya" regime, and there will be 3 mld. m^3 water shortage in summer time, that lead to complication of vegetative waterings.

3. Last years, at the expense of hard limitation of wateruse and structure change of crops sowing, flushes from Tocktogul reservoir were reduced on 2,8 - 3,2 mld.m^3 in summer

period and in order to provide vegetative waterings in 1996, the necessary volume of flushes is to be 6,5 mld. m^3. To keep to this regime it's necessary in 1996 , for outlined by Kyrgyzgosenergoholding 3,5 mld. m^3, to release 3 mld m^3 from reservoir with generation of electricity in 2,2 mld. kbt/h over Kyrgyzstan own consumption. In spite of this, flushes from Tocktogul are proposed: April - 230 m^3/s, May - 270 m^3/s, June - 700 m^3/s, July - 700 m^3/s, August - 375 m^3/s, September - 190 m^3/s.

4. For the purpose of barring deep drawdown of Tocktogul reservoir, scour and flooding of lands and national economic units in the middle and lower reaches of Syrdarya river and providing water needs , it is worth while:

4.1. According to republics' share intake, generated electricity in April-September by Tocktogul HEPs cascade over and above the consumption of Kyrgyzstan in 2,2 mld. kvt/h volume should been taken into Kazakhstan energosystem -1,1 mld. kWh, Uzbekistan - 1,1 mld. kWh.

4.2. Provide mutual transactions for 2,2 mld kWh electricity, received from Kyrgyzstan, at the expense of delivery for Kyrgysgosenergoholding:

- from Uzbekistan - 600 mln kwh electricity (including per 200 mln kwh in 1 and 4 quarters, in April 150 mln kwh, September - 50 mln kwh), and also 300 mln m^3 gas (equal to 500 mln kwh electricity), including in quarters (1 quarter - 90 mln m^3, 2 quarter - 60 mln m^3, 3 quarter - 60 mln m^3, 4 quarter - 90 mln m^3 with equal delivery per month);

- from Kazakhstan 1064 th.t Karaganda coal, including in 1 quarter - 450 th.t, 2 quarter- 150 th.t, 3 quarter - 200 th.t, 4 quarter - 260 th.t.

At the same time, Kyrgysenergoholding offers to consider the issue of additional gas delivery to heating-electric plant of Bishkek in volume of 100 mln m^3 (1 quarter - 30 mln m^3, 2 quarter - 20 mln m^3, 3 quarter - 20 mln m^3, 4 quarter - 30 mln m ^{3}) for received electricity by Minenergo of Uzbekistan from Kyrgysenergoholding in vegetation period 1995.

4.3. ODC "Energy" and BWO "Syrdarya" should provide coordinated regimes without sharp fluctuation in regime through station of Uchkurgan HEP, except breakdown situations.

4.4. After coordination with republic governments to develop above-mentioned proposals into a suitable interstate agreement of Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan.

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