

CONTENTS

STATEMENT OF HEADS OF STATES: REPUBLIC KAZAKHSTAN REPUBLIC KIRGHIZIA AND REPUBLIC UZBEKISTAN ABOUT THE USAGE OF WATER- ENERGETIC RESOURCES	2
DECISION OF INTERSTATE COUNCIL ON THE PROBLEMS OF ARAL SEA BASIN	4
REGIONAL CONSULTATIVE MEETING IN MANILA	13
INTERNATIONAL CONFERENCE ON CONTROLLING INFORMATION SYSTEMS BY WATER AND LAND RESOURCE	15
PROCEEDINGS OF REGIONAL AND NATIONAL WORKING GROUPS SEMINAR EXECUTING THE 2-ND WORKS PHASE ON LAWFUL AND ORGANIZING ASPECTS WARMAP PROJECT	17
PROCEEDINGS OF SEMINAR DECISION OF THE CAR STATES SPECIALISTS PARTICIPANTING IN DEVELOPMENT ON INFORMATION SYSTEM WARMIS.	18
PROCEEDINGS OF MEETING-SEMINAR OF CREATIVE GROUP ON THE PROGRAMME 1.1	19
INFORMATION REPORT ABOUT THE MEETING OF TECHNICAL WORKING GROUP ON PRICE-FORMATION IN WATER-USE	24
6-TH INTERNATIONAL ICID SEMINAR "DRAINAGE AND ENVIRONMENT"	24
THE COMPLEX OF TECHNICAL MEANS AND PROGRAMME SUPPLY BY HYDROUNITS AUTOMATISATION	28

STATEMENT
OF HEADS OF STATES: REPUBLIC KAZAKHSTAN REPUBLIC
KIRGHIZIA AND REPUBLIC UZBEKISTAN ABOUT THE USAGE OF
WATER-ENERGETIC RESOURCES

Kazakhstan Republic President N.A.Nazarbaev, Kirghizia Republic President A.A.Akaev and Uzbekistan Republic President I.A.Karimov, discussing on 6-th may 1996 in Bishkek the problems, connected with the usage of water-energetic resources of transfrontiered waterflows:

- realizing, that the guard rational use of water-energetic resources of transfrontiered waterflows are urgent and important problems, which effective decision may be guaranteed by the way of close cooperation,

- approving the efforts have undertaken by this time Republics Kazakhstan, Kirghizia and Uzbekistan to consolidate the cooperation in management of water-energetic resource use and environment protection,

- admitting before signed and operating agreements, regulating the questions of water-energetic resource use and noting the necessity to accelerate the development of water-sharing new strategy and economical levers of management in this field,

have come to next mutual understanding:

The status of transfrontiered waterflows have the sovereign rights to use their water-energetic resources, according to their politics in the field of environment and development and bear responsibility for their activity does not cause damage environment of the other states.

The improvement of water-energetic resources use of Syr-Daria river basin will be favour the decision of Aral Sea problems.

The status of transfrontiered waterflow existing in region demands of three states the development of coordinated strategy of water-sharing and management by its water-energetic resource for the purpose of investigating of their reasonable use form namely:

- introduction of coordinated approach to use of water-energetic resources of Toktagul HES cascade with the aim of irrigation and ecology needs, taking into account of mutual economically substantiated deliveries of electric energy, gas, coal and oil products.

- planning of rational use of water-energetic resource with allowance for requirements of economic development of states-participants:

Strengthening of appropriate organizing, lawful and financial mechanisms in order to politics in the field of water-use and its realisation promote to acceleration of stable social progress and economical growth in region.

States heads agreed, that perfecting of water-energetic resource of the Syr-Daria river use will demand the realisation of the complex of measures to provide water transit in its lower and Aral Sea .

Imparting the important significance to elaboration of coordinated development politics and utilisation of water-energetic resource. taking into account the preventing of negative influence on the environment, heads of states stressed the necessity the to consider the question about the joining of three Syr-Daria river basins countries to UNO European Economic Commission convention on protection and usage of transborder waterflows and international lakes.

Bishkek , 6-th may 1996.

For Kazakhstan Republic

For Kirgizia Republic

For Uzbekistan Republic

DECISION
OF INTERSTATE COUNCIL ON THE PROBLEMS OF ARAL SEA BASIN

19-th April 1996

Kizyl-Orda.

ABOUT THE CHANGES IN THE STAFF
OF INTERSTATE COUNCIL AND IN THE STAFF
OF COMMISSION ON STABLE DEVELOPMENT

1.1. To agree with the next changes in the staff of Interstate Council on the problems of Aral Sea Basin

On Kazakhstan Republic:

Instead of leaving Esimov Achmedjan Smagulovich to introduce Karibjanov Janibek Salimovich - vice prime minister.

Instead of leaving Shauchmanov Seilbek Shauchmanovich to introduce Sapparbaev Berdubek Mashbekovich - chokim of Kizyl-Orda region.

Instead of leaving Kipshakbaev Nariman Kipshakbaevich to introduce Sarsenbekov Tulegen Tadjibaevich the chairmen of Committe on water resource .

Instead of leaving Medvedev Sviatoslav Alexandrovich to introduce Baev Nikolai Ivanovich - minister of ecology and bioresources.

Instead of leaving Sagadiev Kenjagali Abenovich to introduce Shkolnik Vladimir Sergeevich - minister of sciense, president of national Academy of Science.

On Kirghizia Republic:

Instead of leaving Amanbaev Djumgalbek Becksultanovich to introduce Talgarbekov Beckbolta - vice prime minister.

Instead of leaving Muratalin Iskander Sadykovich to introduce Bakombaev Kulbeck Joomartovich - minister of guarding of environment.

Instead of leaving Zulluev Merajidin to introduse Beckbultov Djenishbeck - minister of water economy.

Instead of leaving Fisher Jan Efimovich to introduce Abulov Mametjunus- minister on extreme situation and civil defence.

On Turkmenistan:

Instead of leaving Ilmanov Amannazar Ilmanovich to introduce Odeev Perkuli Odeevich - vice-chairmen of Turkmenistan cabinet of ministers.

Instead of leaving Kurbanov Durtkuly to introduce to introduce Kurbanov Pirjan Kurbanovich - minister of nature-use and envirotnment protection.

Instead of leaving Abalakov Muchamed Chodjamuchamedovich to introduce Altyev Tekebai Altyevich - vice-minister of water economy.

On Uzbekistan Republic:

Instead of leaving Djumaniasov Bachrom Iadgarovich to introduce Avesmetov Saparbay Yuldachovich - the chairmen of Kara Kalpak Republic Ministry Council.

Instead of leaving Salachitdinov Machmud Salachitdinovich to introduce Djuraev Tochtamurad Djuraevich - the chairmen of Academy of Science.

1.2 Insert in the staff of Interstate Commission on stable development according to proposals of Central Asia States.

On Kazakhstan Republic:

Instead of leaving Sarsenbekov Tulegen Tadjibaevich - Kudaibergenov Kolbolsyn - vice chairmen of water resources committee.

Instead of leaving Abdugapirov Ilachbeck - Baev Nikolai Ivanovich - minister of ecology and bioresources.

On Kirghizia Republic:

Instead of leaving Kulumbaev Temir Ablievich - Bookombaev Kulubeck Djomartovich - minister of environment protection.

Instead of leaving Epstein Liubov Alexandrovna - Klimakova Galina Nikolaevna - The Chief expert of infrastructure department of economic ministry industrial complex.

On Turkmenistan:

Instead of leaving Kurbanov Dartkuli Muchamedovich - Kurbanov Pirjan Kurbanovich - minister of nature use and environment protection.

For Republic Kazakhstan

For Kirghiztan Republic

For Republic Tajikistan

For Turkmenistan

For Republic Uzbekistan

DECISION
of Interstate Council on problems of Aral Sea Basin

19-th April 1996

Kizyl-Orda

ABOUT THE COURSE OF REALIZATION OF THE CONCRETE ACTIONS
PROGRAMME ON THE IMPROVING OF ECOLOGICAL CONDITIONS IN ARAL SEA
BASIN

2.1. Take the information that on the preparing stage of 1-st phase of concrete action programme on the improving of ecological conditions in Aral Sea Basin the work has been done.

2.2. To oblige the executive Committee jointly with World Bank to make more active the work on attracting of state-donors to carry out the program of concrete actions for improving of ecologic situation in Aral Sea Basin, which was adopted by Heads of Central Asia States. To inform about the work has done on the next ISC meeting. In the staff of projects working out it is necessary to foresee the creation of experemental-industrial sections, wich choice to realize jointly wich interested organisations of Central Asia States.

Considering the experience, accumulated under development of 1-st Programme phase concrete action on improving of ecological situation in Aral Sea Basin and high scientific-technical level of local specialists, to ask the World Bank and DPUNO the next work carrying out to realize, mainly by the man- power of local specialists with attraction, of necessity, foreign consultants.

Conducting the tenders for purchase of equipment and consulting to carry out in agreement with Interstate Council execute committee.

2.3. To Execute Committee to organize the independent expertise of elalorated, in accordance with the Programme of concrete action proects and to decide the questions about experts work finance.

1) ISC coordinates with the of Central Asia States.

2) The heads of independent expertise from every state on national and regional elaboration according to Programme of Concrete Actions

To charge of ISC Excute Committee under development the Programme 1.3 to consider question about stability of Sarez-lake in Tajikistan.

For Republic Kazakhstan

For Kirghizia Republic

For Tajikistan Republic

For Turkmenistan

For Republic Uzbekistan

DECISION
of Interstate Council on the problems of Aral Sea Basin

19-th April 1996

Kisyl-Orda

ON THE ACTIVITVTY OF EXECUTIVE COMMITTEE OF ISC FOR CURRENT
PERIOD

- 3.1. To approve of the Executive Committee activity for current period
- 3.2. To note that Executive Committee insufficiently realizes the coordination of its activity with ICWC and commission on stable development

For Republic Kazakhstan
For Republic Kirghizia
For Republic Tajikistan
For Turkmenistan
For Republic Uzbekistan

DECISION
of Interstate Council on the problems of Aral Sea Basin

19-th April 1996

Kizyl-Orda

ON THE CONFIRMING OF EXECUTIVE COMMITTEE STRUCTURE, ITS BUDGET
AND STAFF SCHEDULE ON 1996 YEAR

4.1. To confirm the structure and staff schedule of Executive Committee within the limits of 21 men.

4.2. To confirm the Executive Committee estimate on 1996 in sums 3876997 - 3 millions eight hundreds ninety seven sums.

Rate of exchange of Republic Uzbekistan national currency on 15.03.96 to US dollar: 1=36,5 sum.

For Republic Kasakhstan
For Republic Kirghizia
For Republic Tajikistan
For Turkmenistan
For Republic Uzbekistan

DECISION
Of Interstate Council on the problems of Aral Sea Basin

19-th April 1996

Kizyl-Orda

CONFIRMATION OF EXECUTIVE COMMITTEE COUNCIL STATUTE AND
CANDIDATURES OF COUNCILS MEMBERS

5.1. To Confirm the statute of Executive Committe Council

5.2. To introduce in staff of Executive Committee Council plenipotentiaries of states

From Kazakhstan Republic-Kenshimov Amirkhan Kadyrbekovich.
From Kirghizia Republic-Sulaimanov Muktarbeck.
From Tajikistan Republic-Aslov Sirajiddin Muchriddinovich.
From Turkmenistan
From Uzbekistan Republic-Buranov Usman Kurganovich.

5.3. To take into account, that Usbekistan Republic Government has charged Tashkent Khokimiat to provide the members of Council with service premises and dwelling for their families.

For Republic Kazakhstan
For Republic Kirghizia
For Republic Tajikistan
For Turkmenistan
For Republic Uzbekistan

DECISION

Of Interstate Council on the problems of Aral Sea Basin

19-th April 1996

Kizyl-Orda

ON THE PROJECT OF AGREEMENT BETWEEN THE GOVERNMENT OF KAZAKHSTAN REPUBLIC, GOVERNMENT OF KIRGHIZIA REPUBLIC, GOVERNMENT OF TAJIKISTAN REPUBLIC, GOVERNMENT OF TURKMENISTAN AND GOVERNMENT OF USBEKISTAN REPUBLIC.

About the status of Interstate Council on the problems of Aral Sea (ISC) and its organisations and International Fund of Aral Sea saving (IFAS) and its organisations.

6.1. To approve in common the prepared Agreement project

6.2. To ask the Central Asia States government to bring the Agreement Project in their states parliaments for consideration by corresponding commissions and following sign by parties governments.

For Republic Kasakhstan
For Republic Kirghizia
For Republic Tajikistan
For Turkmenistan
For Republic Uzbekistan

DECISION

Of Interstate Council on the problems of Aral Sea Basin

19-th April 1996

Kizyl-Orda

THE PROJECT OF INTERNATIONAL CONVENTION ON THE STABLE DEVELOPMENT OF ARAL SEA BASIN

7.1. To accept the information about the developed by Uzbekistan Republic MFA project of International Convention on the stable development of Aral Sea Basin.

7.2. To create the commission from representatives of Central Asia States (up to 3 men from each State) and International organisations for completing of conven-

tion project. ISC Executive Committee in monthly period to coordinate the commission staff with the Central Asia States Governments and international organisations.

7.3. To Kommission in 3 monthly period to carry the document above mentioned on the consideration of ISC executive committee council for following consideration on the meeting of Interstate Council.

For Republic Kazakhstan
For Republic Kirghizia
For Republic Tajikistan
For Turkmenistan
For Republic Uzbekistan

DECISION

Of Interstate Council on the problems of Aral Sea Basin

19-th April 1996

Kizyl-Orda

ON THE ACTIVITY OF INTERSTATE COORDINATION WATER-ECONOMY COMMISSION (ICWC) FOR 1995

8.1. To take into account the information about ICWC has carried out work for the current period.

8.2. To ask the Central Asia States governments in accordance with confirmed statute on ICWC and its organisation to charge the Ministries of economics and finances to provide the means release on their activity.

To charge ICWC to next ISC meeting to develop the order of ICWC organisation financing at the cost of Central Asia States payments in International Fund of Aral Sea rescue.

8.3. Until the confirmation of regional water strategy be influenced by ICWC adopted water-share principle, established by "Agreement between Republic Kazakhstan, Republic Kirghizia, Republic Uzbekistan, Republic Tajikistan and Turkmenia about cooperation sphere of joint management by usage and protecting of interstate springs water resources" from 18-th February 1992.

8.4. To recommend to executive committee of ICWC, creative and working groups under complete of national and regional programmes of water strategy and connected with them projects to concentrate upon:

Establishment in region the limited water-consumption rates in the production of agriculture units, and industrial production; to which the states have to aspire reduction of drainage waters and use them for purposes which do not demand deep biological and chemical purifying.

8.5. Considering the exhausting of water resource in Aral Sea Basin, ICWC to secure the regulation of water consumption and also its united coordination and limiting in interstate relations .

For Republic Kazakhstan
For Republic Kirghizia
For Republic Tajikistan
For Turkmenistan

For Republic Uzbekistan

DECISION
Of Interstate Council on the problems of Aral Sea Basin

19-th April 1996

Kizyl-Orda

ABOUT THE WORK OF INTERSTATE COMMISSION ON SOCIAL-ECONOMIC
SCIENTIFIC-TECHNICAL AND ECOLOGICAL COOPERATION (COMMISSION ON
STABLE DEVELOPMENT).

9.1. To note that Interstate Commission on social-economic, scientific-technical and ecological cooperation (Commission on stable development) of Interstate Council on the problems of Aral Sea Basin up to now has not develop its activity, because of unsolved questions of financing.

9.2. To address in administration of Aral Fund to realize the financing of Secretariate and Research-information centre of commission from the means of International Fund of Aral Sea Saving .

9.3. Till 31-th of May 1996 to present to executive committee of Interstate Council the program of commission work on 1996-1997 years.

9.4. In accordance with Nukus Declaration the Commission on social-economic research-technical and ecologic cooperation rename in commission on stable development (CSD).

9.5. To introduce in Commission on stable development staff the first managers of ministries and departments on ecology and environment protect from Central Asia States.

For Republic Kazakhstan
For Republic Kirghizia
For Republic Tajikistan
For Turkmenistan
For Republic Uzbekistan

DECISION
Of Interstate Council on the problems of Aral Sea Basin

19-th April 1996

Kizyl-Orda

INFORMATION OF IFAR EXECUTIVE DIRECTION ABOUT THE WORKS
COORDINATION BETWEEN THE EXECUTIVE COMMITTEE OF ISC AND THE
EXECUTIVE DIRECTION OF IFAR AND ABOUT THE FORMING OF
INTERNATIONAL FUND OF ARAL SAVING MEANS.

10.1. To take into account the information of executive director of Executive Direction of Aral Sea saving International Fund (IFAS) mr. Nurushev A.N. about the work coordination between the executive committee of Interstate Council on the problems Aral Sea Basin and Executive Direction (IFAS) as well on forming of International Fund of Aral Sea saving means.

10.2. To address with request to World Bank, UNEP, UNDP, WPHO, UNISEF, UNESCO, FAO, WMO to intensify the work on attraction of financial means to decision of Aral Sea problems

10.3. Executive Direction of Aral Sea saving International Fund make more active the attraction of states-establishers means on development of concrete projects for rendering the help assistance to disastrous regions of Aralside .

For Republic Kazakhstan
For Republic Kirghizia
For Republic Tajikistan
For Turkmenistan
For Republic Uzbekistan

DECISION

Of Interstate Council on the problems of Aral Sea Basin

19-th April 1996

Kizyl-Orda

ABOUT THE DISTRIBUTION OF SPECIAL GRANT MEANS ON THE MEASURES OF URGENT HELP.

1. Grant 2 million US dollars on the measures of urgent help is done: for decision of urgent needs of Kazakhstan - 35%, Kirghizia - 5%, Tajikistan-5%, Turkmenistan - 27,5%, Uzbekistan - 27,5%

Up to of new distribution order, above mentioned principle will operate.

2. Executive Committee of ISC together with IFAS till 1-st July 1998 to develop and coordinate with Sides the order of World Bank special grants distribution and the other international organisations.

For Republic Kazakhstan
For Republic Kirghizia
For Republic Tajikistan
For Turkmenistan
For Republic Uzbekistan

DECISION

Of Interstate Council on the problems of Aral Sea Basin

19-th April 1996

Kizyl-Orda

ON THE APPOINTMENT OF ISC EXECUTIVE COMMITTEE PERMANENT CHAIRMEN

To charge to the chairmen of Interstate Council on the problems of Aral Sea mr Karibjonov J.C in on week term to direct the letters to Central Asia States Heads asking them for recommendation of permanent chairmen of ISC Executive Committee candidature.

For Republic Kazakhstan
For Republic Kirghizia
For Republic Tajikistan
For Turkmenistan
For Republic Uzbekistan

REGIONAL CONSULTATIVE MEETING IN MANILA

From 10 to 15-th may 1996 in Manila the regional consultative meeting took place, organized by Asia Bank of reconstruction and development (ABD) and devoted to trends of politics of management and development by water resources in Asia Region and Pacific.

In the conference, about 150 men participated, including from 24 regions states, 10 international organisations etc. From middle Asia region 3 delegation participated: Kazakhstan (President of State Committee of water resource Sarsanbekov.T, L.N.Dmitriev, O.Medetov), Kirghizia Republic (Minister J.Beckbolatov, prof. D.Mamatkanov), Uzbekistan (Yu.Gorshkov, U.Abdullaev, M.Akzamov) and SIC ICWC prof. Duchovny V.A .

In his report in connection with Bank opening Bank President mr. M.Sato stressed, that for 30-40 past years (interval of one generations life) relative abundance of water in the world changed to relative deficiency. This in turn caused water deficit, pollution increase, competition and other ecological pressures. Prices increase to solve all these problems lay down by hard load on ecological development.

Meeting work passed in 4 directions:

Exchange opinions and consultations directly with countries-participants of ABD:

Attendance by Bank Missions of some countries;

Discussions with international organisation, such as WBKD, UNDP;

Open discussions inside (ABD) of some certain questions (national organising contexts, pond aspects of management, urbanisation, ecological and financial contexts).

On the meeting, some common points were formulated of ecological and social development.

1. Strategic planing of water resource development and their management on the national level has to take into account intersector and interbranch interest and also investments

2. Common guidance by water resource on the state level is carried out by administration, managing all water sector or its part. Water has the great state, social and economic importance. The state has no right to stand aside of management and development of water resource.

3. Very important that rights of property and belonging of national water resource were clearly protected in agreements and laws. It is unclear how to understand the recognition of equal rights on water, declared on all international and state levels.

4. Very important to elaborate the strategies of complex management and development of water resource as the base for grounded and legalized society demands to water.

5. We need in new models of social (state) administration which along with existing function allow to eliminate the possibilities of collision of purposes conflicting between themselves.

6. It is necessary to attract more widely for water problems decision private sector, especially in questions of building and exploitation.

7. Drawing and intensification of water-users role is necessary on the all levels

on state (example Israel People Council on water, which is the social organ of Knesset, and other organs of Israel water commission).

on zonal, district and regional level-social council of water-usage, presented by common water consumption also on the level of direct water-users, their associations, unions etc.

8. The estimation of water resource every state dispose of, has to base on the allowance of all resource, local and transfrontiering, and underground, it is necessary also to remember possible resource of throw and return water.

9. Though they say a lot about the necessity of full transition to payment for water in interests of water-supply, but world experience very slightly confirms the possibility to cover all expenditures at the cost of water-users. From this point of view it is necessary to take into account and introduce special, very low percentage rates on the credits and on the loans, because USA and other countries experience shows clearly impossibility of usual credit rates.

10. In elaboration of National water strategy and separate projects it is necessary to remember the next components:

main works direction, their main point, principal policy aspects:

the choice of priority criteria of development and direction:

ecological and social effects and economic analysis:

stability of strategy and criteria development:

objects inspection:

financial and human resource:

system of pilot projects.

INTERNATIONAL CONFERENCE ON CONTROLLING INFORMATION SYSTEMS
BY WATER AND LAND RESOURCE

29-th April 1996

Tashkent, RIU MARII

At present, the information on water and land resource is deconcentrated through different departments of each state (Hydrometeorology, Ministry of water economy, Ministry of Agriculture etc). There are a number of department information systems which have no interconnection. Mainly they are the bases of data, created on different technological level - from paper carriers to computer high power calculators.

The scientists of Central Asia region have come to common opinion about the necessity to create united information system of complex usage and protection of water resource (IS CUWRP) of five states.

Current IS according to scientists and specialists opinion has to include the next components:

textual base of data providing collection, keeping, primary treatment of them as well as information, their simplest analysis:

geographic base of data (GIS) allowing perform the introducing, keeping, analysis visualization of cartographic and any graphic material, intercorrelated with textual base of data.

telecommunication between the deconcentrated base of data or owners of primary information:

programme providing of different problems of regional and local level to analyse and prognoses of process considered and calculation of possible technical decisions variants on controlled environment (water, land etc) to choice among them the rational and economically reasonable:

technical means, methods and ways of reliable information obtaining and its transfer from control point to its primary collection station.

International conference "Scientific substantiation and practical use of information systems controlling water and land resource" carried out in Tashkent on 29-th April 1996 in RIU MARII was devoted to exchange of views on the questions discussed.

In conference work, the specialists of Uzbekistan Republic, Russia, Kirghizia, England and Germany (WARMAP) expressed wish to participate.

On the conference 35 reports were presented on four sections:

1. Conceptual and common approaches to creation of controlling information systems.
2. The constitution of information parameters, algorithms and data bases.
3. Programme provision and models of particular problems.
4. Technical means of water-distribution management and reception of reliable information.

It was stated, that creation and development of IS CUWRG of Central Asia states is hindered by absence of standard and juridical rules and agreements for interrepublic and department information exchange, by elaborating of applied programmes packets on regional and particular problems on different languages and in different, in most cases incompatible, systems and technical means.

The reports presented on meeting have shown the necessity of more scientific proving of some IS CUWRP development aspects. Between them, the meeting participants singled out:

development of information model of water economy has to be based on detailed investigation of regions water resources formation process, the peculiarities of management by usage and protection of water-land resources.

As the main water-consumer in region is the irrigated agriculture, for its information reflection it is necessary to develop the investigation on analysis of rich practice of regional meliorative science on the new methodical base:

on the base of study of foreign experience GIS (geoinformation systems) use, it is to develop the home school in this direction (training of native specialists, creating of native GIS or adaptation of advanced world samples to native conditions etc.)

It is necessary the new approaches to investigation in field of hydrometry, automatising of hydrological calculations, cartography, the existing regions authority in the field of applied mathematical modelling need to be developed:

Increased attention demand new for workers of water economy scientific directions, such as nature protection, information systems, social-economic information, information on the joint with agriculture production et al.

The accumulated theoretical and practical experience in the field of water economy informatisation has to find appropriate reflection in educational programmes of high and middle-technical educational institution of region, preparing the specialists of water economy.

To decide the organizing character problems, conference participants necessary:

1. To recommend the scientific-information centre of Interstate Coordinating Water Economy Commission (SIC ICWC) as a head coordinator of scientific-investigating works for IS CUWORP

2. To charge the SIC ICWC:

to prepare the proposals for presentation to ICWC and WBD on agreement of the question of communication between regional, national and department bases of data, regulations of information exchange and perfecting of technical level of primary information obtaining and its transference:

to prepare the proposition in Executive Committee of Interstate Council of Central Asia States on inserting in Central Asia States heads meeting agenda the question about creation function of information systems.

3. To ask ICWC, Ministries of agriculture and state committees of nature of Central Asia States to address to their departments and organisation heads, as well as research and project institutes with the request on necessity of organizing, staff and financial support for creation and functioning of information systems.

4. To ask the SCST of Republic Uzbekistan and corresponding systems of other Central Asia States about supporting of regular (not less than 1 time a week) carrying out of international conferences on developing of information system in water economy of region.

5. To recommend for organisations and specialists wishing to connect on the every stage of Information system of complex use and protection of Central Asia states water resources creation and decision of regional or particular tasks of water resources prognosis and management, to perform their developments in systems compatible with ACCESS and EXEL on industrial computer IBM-type.

PROCEEDINGS

of regional and national working groups seminar executing the 2-nd works phase on lawful and organizing aspects WARMAP project

2-3-th May 1996

Tashkent

Regional and national groups gathered on present seminar to discuss the work course on fulfilment of 1-st stage 2-nd phase project.

Agenda

1. Information on fulfilment course of regional working group technical task. Speaker Sh.H.Rahimov, the leader of regional working group.

2. Information on fulfilment course of national working groups technical task. Speakers - the leaders of national working groups.

3. Adoption of seminar decision.

Hearing the information and exchanging by opinions on all agenda questions proceeding participants decided:

1. To note, that national working groups of Kazakhstan, Uzbekistan and Turkmenistan carried out 1-st stage of 2-nd phase of works on lawful and organizing aspects of WARMAP project. National working groups of Kirghizia and Tajikistan carried out 1-st stage of 2-nd phase not completely.

2. To note, that regional working group carried out the first variants of 3 agreement:

Agreement between Republic Kazakhstan, Republic Kirghizia, Republic Tajikistan, Turkmenistan and Republic Uzbekistan on development of cooperation and elimination of interstate organisations function and protection, management and development of water resource in Aral Sea Basin:

Agreement between Republic Kazakhstan, Republic Kirghizia, Republic Tajikistan, Turkmenistan and Republic Uzbekistan on the use of water resource in present conditions:

Agreements between Republic Kazakhstan, Republic Kirghizia, Republic Tajikistan, Turkmenistan and Republic Uzbekistan on the joint planning and the use of water resources

This agreements texts have discussed in detail with allowance for all existing proposals and additions and corrections of national working group have entered in them.

3. To direct the concerted by all meeting participants the versions of three agreements in ministries of water economy of Central Asia States for agreement and corrective inserting as the preparatory stage to examination of these agreements on meeting of ICWC.

Signed:

Cordinator of WARMAP project
Cordinator of WARMAP project
Manager NRG
Manager NRG Kazakhstan
Manager NRG Kirghizia
Manager NRG Tajikistan
Manager NRG Turkmenistan
Manager NRG Uzbekistan

D.Rothwell
V.A.Duchovny
Sh.Kh.Rakhimov
A.Kenshimov
N.N.Yudachin
A.Kamalitdinov
V.P.Krochmal
U.K.Buranov

PROCEEDINGS

of seminar decision of the CAR states specialists participating in development on information system WARMIS

2-3 July 1996

MARII, Tashkent

An present, WARMIS is in the stage of working projecting over three blocks. Water resources, Land resources, Economy. By all republics, cordinated and present planning zones (water-economical) and economic (one or more planning unit). To national groups put up on computer the first elaboration-Reference base. Its saturation is completed.

The development of electronic forms of operative information introducing begins. In all Republics the serious problems have arose with information collection in ministries of water economy and especially in other departments.

Seminar participants, specialists on water and land resources, economists and specialist on bases of data, exchanging opinions, decided:

1. To regional group till 1.09.96 prepare the project of documents on the Republic information change. Present this packet on coordination of Republics. Until the confirming of this packet, to address to ministers-members ICWC for help in filling of WARMIS data base with constant and operative information, in first from Ministries of water economy, Hidromets and Ministries of agriculture.

2. For calculation of demands on irrigation may be recommended the FAO methods on use jointly with WARMIS for planning purposes. Till 10.07 this methods distribute to all national groups and discuss it on 20 of July on seminar by programme1. In course of this programme accepting by all Republics, to ask WARMAP to find means for FAO method adaptation in every republic.

3. Taking into consideration the connction between underprojects 4 and 2 to consider necessary to charge regional group jointly with task-manager S.Gann and K.Nee to determine the place of data on programme Wufmas in common WARMIS base of data and pick out the necessary means to include these data in IS. Also group presents recommendation about the connection between dotted WUFMAS data and data of regional character.

PROCEEDINGS

of Meeting-Seminar of creative group on the programme 1.1

Settl. Boztery, Kirghizia

22-25 July 1996

THE LIST OF SEMINAR PARTICIPANTS

Antonov Vadim Igorevich	General director of PU "Waterproject member of Uzbekistan MWE board
Afanasenko Lev Borisovich "	GEP, institute "Kirghizgiprowatercon
Bekenov Alek Esembecovich	Chief of department, the member of Kirghizia MM and WE guard
Duchovny Victor Abramovich	Director of SIC ICWC, programme co-ordination
Zemliannikov Alexandr Vladimirovich	Chief-engineer of Institute
Ikramov Rakhimjan Karimovich	General Director RIU MARII
Kasymov Abdukarim Kasymovich	Tajik branch of SIC ICWC
Kipshakbaev Nariman Kipshakbaevi	The member of creative group
Krochmal Victor Petrovich	Vice-chief-engineer of "Turkmengiprowaterecon"
Malosiev Renat Ismailovich	The chief of department of "Kirghizgiprowaterecon"
Mamatkhanov Dushen Mamatkhanovich	Director of IWP (Academ.Sci) of Kirghizia
Nasyrov Nabi Kasymovich	General Director of RIU TajNIIGiM
Obezov Amangeldy	The chief of office the member of Turkmenistan Ministry of water economy board
Petrov Georgii Nikolaevich	Director of "Tajenergoproject institute
Pulatov Abbas Ganievich	The manager of editorial-publishing department SIC ICWC
Rachmatilloev Rakhmonkul Rachmatilloevich	Director of TajNIIGiM institute
Rohtvel Jeff	Coordinator of WARMAP project
Saparov Bairam Saparovich	Director of IWP Academ.sci of Turkmenistan
Sarbaev Telman Sarbaevich	Director of institute "Kirghizgiprovodkhoz"
Sarkisov Moses Michaaailovich	Director of institute "Turkmengiprovodkhoz"
Sokolski Yuri Ivanovich	The chief of technical office MWE of Tagikistan
Turgunbekov Ermek Turgunbekovich	Vice-minister of water economy of Republic Kirghizia
Fino	The chief of WARMAP project group
Khamidov Makhmud Khamidovich	Director the "Syr-Daria" BWU
Khamraev Najim Rachimovich	director, academic of UAA WPI of Uzbekistan

Shapiro Albert Mozelevich
Shapp Onno
Yudachin Nikolai Nikolaevich

Chief-specialist SIC ICWC
collaborator of WARMAP project
The chief of technical office of Kirghizia ministry of water economy

Agenda:

Monday 22.07

Speech with the greeting of first vice-minister of water economy of Kirghizia Turgunbeckov Ermek Turgunbeckovich Greeting and announcement of seminar works order of the seminar organizer, Kirghizian giprovodhos director Sarbaev Telman Sarbaevich

Current condition of works on Aral Sea problem and programme 1 importance, speaker Dukhovny V.A

Discussion of technical tasks on 2-nd stage of 1-st working phase, speakers-authors of TT

Tuesday 23.07

Coordination of TT final variance of national groups, speaker-Chief-specialist of SIC ICWC Shapiro A.M

Discussion on the coordination of questions of 2-nd stage works conception "Pilot project", speaker Dukhovny V.A.

Method of works on preparation Pilot projects TEB in programme WARMAP, speakers Ikramov R.K , Rothvel D.

Wednesday 24.07

Suggestions for stable development Commission on development of demands to water strategy. speaker Khamraev N.R.

Development and coordination of technics of transfrontier waters estimation, speakers Mamatkhanov D.M Sorokin A.I

Thursday 25.07

Criteria of water resources use. Correlation of economic and juridical aspects of water strategy, speaker Dukhovny V.A.

Discussion of proposals TG 3 according to works plan on 2-nd stage of programme 3.1.

Development of common terms vocabulary in application to common water strategy, speaker Antonov V.I.

About the method of water-use estimation on regional level speaker Dukhovny V.A.

Notes on T3 (TT) of programmes 1.2 and 1.3

Friday 26.07

Information on ICWC and SIC ICWC, speaker Dukhovny V.A

1. Over the V.A Dukhovny report the participants have noted:

1.1. At present, to decision of question by World Bank about the use of Dutch confidence fund on preparation TT II stage, I phase and on the works of transition period, has arose on further works continuation by programme 1.1, althong as comparing with continuous finance order, fulfilling by European Union, the long period of correlation practically hinder the successful notion of regional water strategy fulfilment as main programme of the "Plan of concrete action on decision of Aral problem" at the same time practically the TT working out well forestalled even the conclusion of treaty between the Executive Committee and creative group, aside from finance opening.

1.2. To charge the coordination (TG) V.A Dukhovny jointly with ISC Executive Committee to prepare the answer on Dutch MFA commission conclusion, noting its right and at the unsatisfactory coordination of programmms ES and 1 of Aral programme, inattention to the problem of Aral water-consumption etc. At the same time, to give attention of TG-1 members on necessity more wide attraction of SIU to work TG (and to development them they are not developed) and to programme as a whole.

1.3. To ask the ISC Executive Committee to bring to the end the mechanism of other programme coordination with TG-1.

1.4. To charge SIC ICWC and ISC Executive Council to distribute the final text of "Main regulations of regions water strategy" to all interested organisations, both governmental and not governmental and by all means to give the publication in press of all CAR five states.

2. Approve the presented TT on the 2-nd stage 1-st phase project taking into account of additions and notes. To ask all executors of TT to present the corrected text till 10-th of August this year to programme coordinator. On the base of questionnaire to determine the priorities of regional water strategy subprogrammes.

3. To agree with final text of national subprogrammes regional strategy TT bearing in mind the necessity and development of that or other aspects, depending on national features.

4. To consider the presence of two WBRD notes, about the pilot projects (mr Lenarts A) which, in significaut degree differ from the direction of pilot projects, put in "Main regulations of regional water strategy", the members of TG-1 till 15-th of August to examine the note project on "Pilot project", presented by V.A Dukhovny and give notes, proposals and corrections about it for official presentation of TG-1 official opinion to World Bank.

5. By report of mr Rothveld, Fino, Ikramov about the main stages of pilot projects TEB substantiation, the next decision has been accepted:

5.1. TT proposed and instructive materials of task on two types pilot projects TEB preparation - magistral and intraeconomy network of irrigating agriculture to take to execution.

5.2. National coordinators to 29-th of July to complete the NWG forming and to determine the general coordinator of both themes for pilot project on agreement with ministries interested.

5.3. To 30-th of August to prepare the account with proved objects choice to pilot projects type 1 and type 2 by one for every republic, which have to be officially correlated from the side of republics MAE and MMWE according to stuff and finance possibilities, with share republics participation (50%).

5.4. To 15-th of September to present the account objects for pilot project in order to regional group and project WARMAP coordinators will be able TT on previ-

ous TES of these objects for presentation in European Union till 15-th of October 1996.

6. By report of N.R Khamraev, to agree with note text of "Proposals for Stable Development Commission". To charge programme coordinator jointly with Executive Committee to direct this note in CSD (acad. Babaev A.G.) on behalf of SIC and TG to ask the Executive Committee of ISC to organise the joint meeting of CSD and SIC ICWC under the guidance of Executive Committee for developing of common works plane by fulfilment of "Plan of concrete action on sanitation ecology and consolidation of social-economic situation of Aral Sea Basin".

7. Discussing the report by D.Mamatkhanov and V.I.Sokolov "Development and coordination of transfrontier and local national water estimation method" based on the necessity of clear determination of object, sphere and volume of management and planning by interstate systems for sake of relief of the interstate water economy organs practice, the participants have decided:

7.1. To approve the main report theses, treated in account on subcontract 24.6

7.2. The object of common management, control and planning of Interstate Water commission and its organs are the transfrontier waters in accordance with coordinated definition on Chimkent meeting TG-1. On the base of water-economy balance the volume of located transfrontier water resources is established, with distributed and used as in interest of nature and participating states. In this case every state may disposes of its drain portion at its discretion.

7.3. Taking into consideration the peculiarities of forming and transformation of transfrontier waters in basin bound, to determine as the international sphere of scpre by monitoring information and control the systems of transfrontier waters, including water-collection and served areas on which they are formed, distributed (including for nature needs). This systems divided on objects of direct BWU management and objects which are under the action of coordinated regime and volumes of use and transfer of water under one of states direct management. In this case water volume, used on influx is included in coordinated volume of distributed water for the side given.

7.4. In this connection, in the next work on strategy to establish the distinct distribution of transfrontier water sphere objects on information and control zone and zone of direct management. In this case, the joints (volves) of interstate management have to be determined and in future, the clear parameters of drain resource transfer conditions by quantity and quality from national to interstate systems.

7.5. Transfrontier underground basins have to be the object of joint analysis, confirming and reserves distribution, licensing, control and determination of measures for preventing the damaging water action on neighbouring states territory.

8. The coordinators TG-1 report "Criteria of water resource use and coordinating of economic and juridical aspects of water strategy" to accept for information and thinking over V.A.Dukhovny to develop the approaches proposed and distribute to TG members for internal discussion.

9. D. Mamatkhanov expressed the indignation by repeated working out of TT or the programmes 1.2 and 1.3 after their confirmation on meeting in Sary-Agach one year ago and also unattraction him as curator of these programmes from TG to TT working out.

V.A Dukhovny explained, that TT revision was made by ISC Executive Committee in connection with demand on new task-manager from World Bank about the

TT working out taking into account the proposals of 5 energetics ministries regional organisations. ODY of Central Asia presented the powers from all energetic ministries and departments and jointly with AS "HydEP" introduced some changes in that of TT which, on TG-1 message were prepared by SIC ICWC collaborators V.A Skrylnikov and Kaiumov O.A and TG coordinated.

By meaning aspects of TT the speaker has no remarks. Some remarks are presented by Tajikistan.

With allowance of these remarks TT on the programmes 1.2 and 1.3 consider as repeatedly coordinated. To message to mr.Skrylnikov V.A and Kaiumov O.A to introduce in them the changes in accordance with notes.

10. By V.I Antonov report the decision was adopted:

the title "Slovník" to change for "The list of terms, notions and definitions in questions of management and protection of water-land resource suiting to Aral Sea Basin";

to regional working groups taking into account of mr.Antonov V.I remarks reconsider the list presented, throwing out of it, generally known terms and leaving only that of which may have different information;

this list to limit by 1000-1500 terms (200-300 terms on every group);

to group the terms by subject subdivisions.

11. By V.A Dukhovny report about water-consumption estimation method on regional level:

to agree with preposition to adopt FAO method as the base for development of united regional water-consumption rates. Every national group, using its existing nature observation and approbated rates may to organize the adaptation of FAO rates to their conditions and selection of corresponding coefficients;

Take into consideration that water-consumption rate on regional level had to form the foundation of water use criteria, water-distribution principles, water-economy balance, mathematical modelling, water-saving estimation etc, to ask MBRR at the pioneering financing of this themes in accordance with TT by the programme.

12. To note that the presented accounts draft on programme 3.1 prepared by TG-3 duplicates in many aspects the programme 1.1; besides there are duplications inside the programme itself. In this connection to consider reasonable to reconsider work plan on II step of I phase and exclude from the programme the questions of social-economic status of water economy objects, the creation of united information system, the building of pilot water-measuring stations, identification of underground basins, international legislation, economic mechanism and legislation on water questions, decrease of specific water consumption decrease of returned waters, as containing in programme 1.1 and WARMAP.

13. The meetings participants ask the Executive Committee of ISU to address to World Bank and EC with the request, except the payment to local staff to pay also overhead expenses in the rate 25% to compensate the expenditures where they carry out these works (telephone talks, faxes, amortisation and service of premises, use of equipment and instruments, archives and other services).

INFORMATION REPORT ABOUT THE MEETING OF TECHNICAL WORKING GROUP ON PRICE-FORMATION IN WATER-USE

21-29-th of June 1996 in Medeo (Kasakhstan) the meeting of technical working group on water-use took place, with participants of experts from five republics of Central Asia region and invited experts from USA. The meeting was conducted by USA Agency on international development USAID in the limits of project on nature-protection politics and technology (project-NPP).

Meetings aim discussion of paid water-use condition in region, methodical approaches to price-formation in water-use with attraction of foreign experts. To work out the price policy in water-use in course of transition to paid water-use in Central Asia region states and to acquaint of local experts with foreign experience of water quality management and price-formation policy in water-use.

On the meeting collective speeches of Central Asia regions experts on the problems of price-formation in water-use and transition to paid water-use were discussed the experts group (d-r Mamatkhanov D, d-r A. Kenshimov, d-r K.Shavva, d-r V.Bolotov, d-r O.Niyazov and d-r A.Rafikov) devoted their speeches to scientifically proved methods of price-formation in water-use.

To problem of price-formation in course of transition to paid water-use devoted their collective speech d-r V.Dukhovny, d-r M.Pinchasov, d-r N.Nosirov, d-r I.Umbetaev and d-r M.Sarkisov.

The reports discussions were concentrated on such questions as the creation of economic mechanism in irrigated agriculture and in other branches of water-use, state politic of Central Asia countries on the question of transition to paid water-use, analysis of paid water-use experience in Central Asia methodic Republics, conception of expenditure compensation in course of rendering of the water-economy service to agricultural water consumers, water price as the resource.

Foreign experts made the reports on economic policy in the field of water quality and water-use management (d-r Robert Anderson, d-r John Keet, d-r David Mckoln) to compromises in irrigation-energetic water-use (d-r Richard Brauning), price-formation policy in water-use (d-r John Keet) experience management by demand and water-users association part in installation of paid-formation in water-use (d-r Michael Boyd).

In this reports the strategic instruments of economic management by water quality and water-use compromise under establishing of dams and reservoirs exploitation regimes, methodical aspects of price-formation in water-use were discussed.

6-TH INTERNATIONAL ICID SEMINAR "DRAINAGE AND ENVIRONMENT"

21-29-th April 1996

Lubliany, Slovenia

The seminar was organised by International Commission on irrigation and drainage (ICID, President Dr.Shahrizaila bin Abdullah, Malaysia) in close cooperation with three working groups(WG) ICID:

1. WG on drainage (Dr. Daniel Zimmer, France)
2. WG on environment (Dr.Wayne O, Deason, USA)
3. WG on water-use (Dr.Luis S. Pereira, Portugal)

and National Committee ICID in Slovenia (prof. Dr.Brane Maticic)

The participation of Central Asia States representatives on seminar with the purpose of more deep acquaintance on the internation level of professionals in the field of irrigation and drainage with the problems of Aral Sea Basin and region on the whole was organized by EC ISC and SIC ICWC under financial support of World Bank (P.Withford, World Bank, USA).

The seminar consisted of 5 main directions:

Theme 1. Drainage effect on Hydrology and soil indices:

Drainage effect on hydrological regime;
Drainage of saline soils;
Influence of drainage outlet;
Drainage and systems of outlet cleaning
Use of CAD and GIS in designing and management.

Theme 2. Drainage effect on ecosystem:

Optimal management by ground water level;
Improvement of outlet formation conditions;
Negative drainage influence on waterlogged soils;
Construction and management by ecological drainage systems.

Theme 3. Social-economic aspects and public health.

Theme 4. Drainage and agricultural production:

Integrated approach;
Influence of field conditions on crop capacity;
Drainage and irrigation;
Re-use of drainage waters;
The questions and methods of drainage waters distribution;
The question of peat soils;

Theme 5. Special technical session on the problems of Aral Sea.

The composition of reports, presented on seminar was the next:

Theme	Papers amount	States
1	38	21
2	10	5
3	3	3
4	38	18
5	8	5

The general report on seminar presented mr.Burt Schultz (The Netherlands) on the point "drainage and environment", where noted the increasing in all the world the tendency, connected with the necessity of complex development of irrigation infrastructure taking into account of ecology factors.

On theme 1. Main report-William R. Johnson (USA) "Drainage influence on hydrology and soil features."

The report were presented connected with: desalination of clay soils (K.P.Groen, The Netherlands): influence of underground water management on soil biochemical composition (R.S.Kanwar, A.Melvin, P.K.Kalita, M.S.Mirijat, USA); importance and role of drainage in biologic purification systems (L.Vemes, Hungary); man-

agement by solinated drainage waters (S.K.Kamra, K.Rao, D.P.Sharma, M.Y.Kaledhonkar, India);

On theme 2. Main report - Laszlo Vermes (Hungary) "Drainage influence on ecosystem."

The report were presented, connected with rivers restoration on agricultural meliorate lands (S.Juvan, A.Kovacic, A.Borec, B.Kovacic, Slovenia); ornitologic importance of drainage channels (A.Sovine, Slovenia) influence of soil waters rising level on evapotranspiration (S.Kalsheva, Bulgaria);

On theme 3. Main report - A.Barbic (Slovenia) "Drainage-population, environment and social-economic aspects."

The reports were presented, connected with genotoxicity of industrial drains (M.Filipic, Slovenia); ecologic and economic aspects of draining estimation (K.Petrov, Bulgaria); estimation of drainage modulus in settlements (M.R.Farijood, A.K.Seepaskhan, P.Javaheri, Iran).

On theme 4. Main report - A.Musy (Switzerland) "Drainage and land productivity guarantee"

The report were presented, connected with drainage flowing of water-logged lands (W.J.Ochs, C.A.Madramooto, L.K.Swedema, USA, Canada); re-use of drainage waters in agriculture (M.N.Bhutta, M.A.Khan, W.Wolters, Pakistan); computer modelling and management by salination (J.W.Gowing, M.N.Ashghar, UK); system approach in drainage (D.Zimmer, M.P.Ariot, Y.Nedeles, France); influence of drainage projects on ecology (Samua EL-Guindy, Mohamed H. Amer, Egypt).

On theme 5. Special technical session on the problems of Aral Sea Basin.

Organising Committee of ICID taking into account the sharp necessity to work out of Central Asian region stable development strategy and stabilisation of ecological situation in Aral Sea Basin, has decree to carry out the special session with participation of representatives of Central Asia States.

On the base of joint discussion, change by opinions, discussions and analysis of report presented on drainage role in water strategy of Aral Sea Basin (Dukhovny V.A., Umarov P.D., Ruziev U.T. SIC ICWC) management with drainage on irrigated lands of Central Asia region (P.U.Ikramov, Republic of Uzbekistan), drainage influence on environment in Aral Sea basin (V.G.Nosonov, Rep. Usbekistan); two-side management by water-salt soil regime (K.M.Kulov, Rep. Kirghizia); water-saving principles in out-flow formation zone (K.Nasyrov, R.R.Rachmatilloev, Rep.Tajikistan); increase of desalination efficiency in conditions of increased water resources deficit (M.M.Sarkisov, Turkmenistan) were determined the perspectives of main scientific-technical and organising questions, promoting to effective decision of this problem, ICID noted conducive record on this meeting the importance of problem indicated and confirmed its intentions in active assistance to Aral Sea Basin states with attraction of international organisations and wide range of professionals in the field of water economy, irrigation and drainage.

CONCLUSION OF SPECIAL TECHNIC COMMISSION ON THE PROBLEM OF ARAL SEA 6-th SEMINAR "DRAINAGE AND ENVIRONMENT"

21-29-th April 1996

Liublana, Slovenia

1. The cooperation of Central Asia region states and ICID in the sphere of drainage and environment protection is the key to decision of ecological problem of Aral Sea Basin.

2. Interstate collector-drainage waters and transfrontier underground waters has to manage on interstate level.

3. It is necessary to develop the network of irrigation drainage projects with high technical-economic and ecological characteristics typical for Aral Sea Basin regions.

4. It is necessary to create the wide system of Aral Sea Basins staff training to improve the management by drainage systems and environment.

5. It is necessary to extend the base of data on water-ecological information for surface underground collector-drainage and throwing waters and also their quality.

6. It is necessary to develop the scientific investigations on problems of drainage, including:

The estimation of application conditions of prefect drainage types (closed horizontal, vertical and combined) with allowance for geologic-litological conditions, soil types, land-use and salts carrying out;

Estimation of interaction between drainage and ecosystem for the purpose of preventing the drainage negative influence on environment;

Projecting of new and reconstruction of existing drainage systems on the base of complex approach with allowance for water-saving technics and pouring technology and also ecological and social-economic requirements;

The improvement exploitation on the base of perfecting of information system and drainage safety increasing.

RECOMMENDATION OF SPECIAL TECHNICAL COMMISSION ON THE ARAL SEA PROBLEM 6-TH ICID SEMINAR "DRAINAGE AND ENVIRONMENT"

21-29-th April 1996

Liublany, Slovenia

1. In projecting and carrying out of drainage works it is necessary to consider them from position of environment protection, as a component of ecological systems of concrete territories and regions management.

2. To guarantee the creation of improved information base of data on drainage and environment and also corresponding system of decisions adoption.

3. To create the network of model pilot projects on irrigation and drainage, offering the preventing of negative influence on environment.

4. To organize the permanent acting training centre on programmes of water resource management and ecology for different level specialists from Aral Sea Basin countries and foreign states.

5. Considering the secular irrigation and drainage experience in Central Asia States, sharp deficit of water resource, ecological tension in Aral Sea basin, violation of scientific-technical and information connections, it is necessary to organize in Central Asia States the National Committee on irrigation and drainage and to include them in ICID structure.

THE COMPLEX OF TECHNICAL MEANS AND PROGRAMME SUPPLY BY HYDROUNITS AUTOMATISATION

In connection with the ceasing of equipment supply from Russia (after the SU breakdown) and in order to bring the Syr-Daria river information-technical means on qualitatively new technical and technological level from the point of information collecting and objects management on distance, the technical means complex and programme providing tests were carried out. The tests were carried out by creative collective staff of executors with the assistance of representatives from BWU the "Syr-Daria", SIC ICWC and RIU MARII.

To demonstrate the possibilities of new technics Upper-Chirchik hydrounit was chosen as the most representative water-economy object. In the operating model 5 hydrounit objects came, i.e. 1-st and 2-nd locks of left-bank Kara-Su river channel head construction, upper of Kara-Su bief river, lower bief of Chirchic river and lower bief of left-bank Kara-Su river channel. The experiments goal was to demonstrate obviously the possibilities of technical means (DEP series controllers), mathematical providing to them, their high reliability and simplicity to water-economy problems. The system was mounted and arranged during 5 days and during next 7 days worked continuously uninterruptedly. The precision of locks position measurements and water level were 0,15-0,2% .

The every minute, mean hours and mean days data of construction dynamics for all seven system working days were obtained. Moreover it was shown that the system was able to reflect in the form of graphs every minute state of controlled objects for the every of seven chosen by user days.

The main technical demands which were presented to system were:

Securing of data collecting on the automation object state and remote control by this object on two regimes;

The communication with automation object by radio communication.

Use of before mounted on the hydrounit the network of transmitters and converters to them;

Providing the signalling of work accidental regimes of water levels on construction, the conditions of maximal opening and maximal closing of locks, the presence of network supply et al;

To provide of IP CTM with equipment, connection means and transmitters indication converters normal work, hydrounit has to be equipped with source of continuous feed etc.

The programme provision "The system of management by DEP-controllers" must be tuned and supplied in volume, sufficient to allow:

to be compatible with "WARMIS" - information management system, developed by WARMAP project to improve the management by water resources of BWU "Amu-Darya", and BWU "Syr-Darya";

To carry out the testing regimes of controllers included in composition of IP CTM complex system;

To connect despatches personal computer to local calculation network and to perform the data transfer by telephone communication channels through the town and intertown telephone networks.

To provide distinguishing of called object etc. For estimation of economic effect, every hours data of hydrounit water discharge were fixed, measured by IP CTM and data of service exploitation observation. The difference in drain from 16.06.96 up to 21.06.96 was 1.37 mln m^3 that in scale on mean day amount to 274 thousands m^3 /day.

Thus, the introduction of IP CTM on Upper-Chirchik hydrounit allow to attract to regulation in addition 274 thousands m^3 /day.

With price of water; 1 m^3 - 0,01 US dollars ; economical effect will be 2740 US dollars/day, or about 500 thousands USA dollars annually.

The price of expenditures by this hydrounit is 30,4 thousands USA dollars.