

Interstate Coordination Water Commission of Central Asia	<b>BULLETIN No. 1 (33)</b>	April 2003
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**35-th MEETING OF INTERSTATE WATER COORDINATION COMMISSION (ICWC) OF THE REPUBLIC OF KAZAKHSTAN, THE KYRGYZ REPUBLIC, THE REPUBLIC OF TAJIKISTAN, TURKMENISTAN AND THE REPUBLIC OF UZBEKISTAN**

7-8 February 2003 in Hudjand, Tajikistan under chairmanship of the Minister of Reclamation and Water Resources of Tajikistan A.A.Nazirov 35-th ICWC meeting has been held with participation of Chairman of the Committee of Water Resources of the Ministry of Agriculture of the Republic of Kazakhstan A.D.Ryabtsev, Deputy Director General of Water Department the Ministry of Agriculture and Processing Industry of the Kyrgyz Republic K.K.Beishekeev, Authorized Representative of the Minister of Water Resources of Turkmenistan A.Muhamedov, First Deputy Minister of Agriculture and Water Resources of the Republic of Uzbekistan A.A.Jalalov, Director of SIC ICWC Kazakh Branch N.K.Kipshakbayev, Director GEF Agency R.A.Giniatullin, Director SIC ICWC V.A.Dukhovny, Head of BVO "Amudarya" Yu.Hudaibergenov, Head of BVO "Syrdarya" M.H.Khamidov, Director KMC ICWC O.S.Makarov, ICWC Secretary G.A.Negmatov, Deputy Director General of Water Department of the Ministry of Agriculture and Water Resources of the Republic of Uzbekistan H.H.ishanov, Director of SIC ICWC Tajik Branch N.K.Nosirov, Deputy Director SIC ICWC, Director of ICWC Training Center P.D.Umarov, leading specialists of BVO "Amudarya" M.Saparbayev and S.B.Baratov.

Following questions were considered:

Results of growing season 2002 and reservoir operation and water intake limits from Amudarya and Syrdarya for hydrological period of 2002-2003.

- 1.BVO "Amudarya" activity and measures of its improvement.
- 2.Measures on ICWC activity perfection.
- 3.Preparation of scientific-applied conference in Almaty on 5-7 May, 2003.
- 4.Place and agenda of 36-th ICWC meeting.
- 5.Cost breakdown approval (with grounds) for ICWC executive bodies for 2003 (in accordance with 34-th ICWC meeting decision, item 34, 2.2).
- 6.Measures on realization of the Heads of State decision dated 6.10.2002 «About main directions of Program of concrete actions on ecological and social situation improvement in the Aral Sea basin».
- 7.Perfection of limited water use principles under agriculture structuring reforms.
- 8.Project GEF «Water resources and salts management at regional and national level» sub-component A1 implementation.

Participants accepted information of BVO "Amudarya" and BVO "Syrdarya" about intake limits and reservoir operation regime on Syrdarya and Amudarya for growing season 2002.

Water intake limits and reservoir operation regime on Syrdarya and Amudarya for non-growing season 2002-2003 and growing season 2003 were approved. Suggestion of

A.D.Ryabtsev on speeding up consideration of interstate agreements on rational use of water-power resources of Naryn-Syrdarya cascade in 2003 at expert level was endorsed..

Information about BVO «Syrdarya» activity was considered and comments were made. «Program of SIC ICWC, BVO «Amudarya» and «Syrdarya» activity perfection» prepared by SIC ICWC with participation of BVO «Amudarya» and «Syrdarya» and linked with «Program of concrete actions» approved by the heads of State of Central Asia on 6.10.2002 was also considered.

ICWC members have endorsed activity of Organizing Committee working group activity on preparation to scientific-applied conference in Almaty «Ecological sustainability and advanced approaches to water resources management in the Aral Sea basin». Working group is charged to inform ICWC members about progress in this preparation. ICWC members will help in financing water organizations participation in the conference.

Next 36-th ICWC meeting agenda has been approved with regard for comments and additions. Next ICWC meeting will be held in Almaty in May 2003 together with scientific-applied conference.

ICWC members have approved cost breakdown of ICWC executive bodies for 2003.

In accordance with IFAS decision, countries-participants organized working groups on «Program of concrete actions». Taking into accounting importance of this decision fulfillment, joint participation of all ICWC members and bodies will be organized. Decision has been made to create working group for proposals preparation including representatives of each ICWC member in position of deputy head of water related organizations as well as leaders of BVO and SIC ICWC.

SIC ICWC is charged to create conditions for working group activity in February-beginning of March to submit joint proposals to EC IFAS.

It is noted, that due to agricultural enterprises restructuring and private farms creation water resources management and effective use at in-farm level became more difficult. BVO «Amudarya» and «Syrdarya» are charged to submit proposals water resources management and effective use to SIC ICWC within 2 months for summarizing. SIC ICWC is charged to prepare programs on states and search sponsors for funding these programs.

Participants noted that international consultant on sub-component A1 «Royal Haskoning» together with regional and national working groups fulfilled: general report № 1 of 25 November 2000 and addition to it of 2 March 2001; regional report № 1 (Phase II) «principles and directions of regional and national planning»; regional report № 2 (Phase III) «Regional needs and restrictions»; national report № 1 (Phase IV) «National water requirements and versions of their management». ICWC working group assessed these reports, after this Conciliation Commission consisting of consultant, Regional working group and ICWC working group have made appropriate decision on general report № 2. Republic of Tajikistan by its letter dated 4 October 2002 № 02-078 expressed its special opinion.

Necessity of further study and consultation on water allocation based on collaboration in water-power resources management and use with respect for ecological and sanitary needs of the Aral Sea and Priaralie is recognized expedient.

It is noted that consultant during project realization developed range of proposals on principal directions for future discussion by states:

- inventory of transboundary water objects and structures of Naryn-Syrdarya reservoir cascade has been prepared;
- alternatives of Naryn-Syrdarya reservoir cascade operation are suggested;
- set of models for national strategies assessment has been created;
- irrigation importance in land productivity increase is clearly defined.

Consultant proposal on expediency of water conservation, desalinization of land and water resources economic ground is accepted.

Taking into accounting, that each phase reports are the next step for project fulfillment and Regional report № 3 and national reports № 2 based on «Measures on phase IV of Action Plan», it is expedient to continue further work on project implementation.

It is expedient to submit results of Phase VII together with ICWC to IFAS Board consideration.

## *Third World Water Forum*

### **THE STATEMENT OF THE HEADS OF DELEGATIONS OF ARAL SEA BASIN COUNTRIES**

#### **Regional partnership in management of joint water resources in Central Asia.**

Delegations of Central-Asian countries participating in the Third World Water Forum have heard with big attention and satisfaction speech of the President of the Republic of Tajikistan, IFAS Chairman Emomali Rahmonov.

Central-Asian countries work to establish effective mechanism of interstate cooperation in water resources rational use and protection. Main directions of the Program of concrete actions on improvement of ecological and socio-economic situation in the region by 2010 has been approved by the Heads of State of Central Asia in October 2002 in Dushanbe.

Taking into account complexity of transition period, international organizations and separate developed countries could make their assistance in this issue solution more active. It can not be allowed that water issues lead to serious conflicts and crises with dangerous consequences.

This assistance should be in compliance with situation and prevent socio-economic and ecological issues emerging. Giving UN status to IFAS will be pledge of constant attention of the world community to Aral sea basin problem.

Remarkable event within Clean Water Year will be International Forum to be held on August 29-31, 2003 in Dushanbe, which will give new impulse to our joint efforts in field of water resources preservation and people living standard rising.

Water resources problem should be permanently in centre of our attention/ It is necessary to support initiative of the President of the Republic of Tajikistan, IFAS Chairman Emomali Rahmonov to declare decade of clean water starting with 2005.

Ministries, governmental representatives, leaders of regional organizations like IFAS, ICWC and SDC, NGO representatives, donor organizations and international community met on March 18, 2003 to discuss regional cooperation problems in water resources management in Central Asia.

In result of this meeting:

- global forum of all parties concerned in water resources management and ecological and socio-economic situation improvement has been established where key issues were discussed and submitted to the world community;
- overall discussion of lead local and international experts on political, organizational and technical issues was carried out giving recommendations on their solution;

-role and importance of international community in complicated issues solution were underlined and proposals on closer cooperation in international assistance to the region were made.

Time of analysis, crying, sympathy, and critiques has passed. It's high time for real actions. It is necessary to create basis for peace, well-being, and improvement of environment, which should be transferred to next generation. We must make principal attempts:

1. Creation of mutual understanding, longing for consensus among all participants of water use, management, and conservation, "hydrosolidarity" instead of "hydroegoism" demand formation of appropriate political climate – both at international and national level, to disseminate principles of integrated water resources management at basin, national, and local levels.

2. Mutual understanding among all parties interested in fact that planning, management, and conservation of water resources can't be grounded on temporary decisions: water penetrates in every point of society and environment, and we must reject everything that brings damage, rifts, and failures. Only properly balanced long-term decisions regarding future may increase activity in our situation!

3. Information network development not only at different levels of water resources management hierarchy, but also in environmental organizations and NGOs with broad communication network will open the window to the world for water users, water managers, and all stakeholders. Primary priority for such activity in region is contribution of donors.

4. Training and education should be concentrated on creation of knowledge and experience of targeted groups of expert-practicians as well as formation of traditional attitude to water as shrine for all CAR peoples beginning from the childhood.

5. International water right should be stricter and obligatory for fulfillment. Some principal provisions could be useful for solving international transboundary issues:

- Ecologically permissible water use level in every basin;
- Criteria of equitable water allocation;
- Diplomatic status of regional water organizations.

6. Donors' contribution in Aral Sea basin program is very important part of support of cooperation between states as well as dissemination of integrated water resources management. Broader involvement of local experience, priority in promotion of ecological projects would be good response for requirements of WWF-3.

We are greeting proceeding assistance of international community in such important areas as preparation and implementation of Aral Sea Basin Program-2, development of interstate agreements and building capacity of regional organizations.

Donors, in particular ADB, World Bank, USAID, CIDA, UN and others, manifested increasing interest to assisting Aral Sea basin states in deciding complex tasks of water resources management, their use and water-related issues to provide long-term political, economical, and social stability in region. Donors reached understanding about that basin countries should mobilize coordinated efforts at high political level to support regional cooperation, having taken real actions and financial responsibilities".

## **STRATEGIC WATER PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT**

Moscow meeting resolution (5-6 March 2003)

WE, representatives of Eastern Europe, Caucasus and Central Asia (EECCA), countries-EC members, Switzerland, European Commission, international organizations and NGO, gather in Moscow, Russian Federation 5-6 March 2003 in International Fresh Water Year in order to discuss status, problems and tasks of «Strategic water partnership for sustainable development», stated on Earth Summit on sustainable development in Johannesburg in September 2002.

We confirm again our aspiration to collaboration in water issues between East and West and strategic partnership as its component aimed at Partnership «East-West» water policy in environment realization, start for which was laid by Earth Summit.

We recognize problems and tasks of EECCA countries in water supply and sanitation, sustainable water resources management including transboundary watercourses and regional seas as well as other directions noted in Declaration of strategic partnership.

We support structure of partnership proposed in the document «EC water initiative, EECCA component» discussed at the meeting in Moscow and role of Denmark as a leading country in this initiative development – EC coordinator as well as role of Russian Federation and other EECCA countries in its promotion.

We understand necessity of effective mechanisms creation for further perfection of Partnership coordination and interaction. We ask Organizing Committee to help provisional Secretariat and working groups established at Moscow meeting and continue its activity until UN EEC Conference of Ministers of Environment in Kiev in May 2003.

We appeal to working group leaders to continue activity directed to further development of strategic partnership until creation of appropriate mechanism.

We note with interest final document of Consultative meeting on environment, water and security in Central Asia «Invitation to partnership» (Almaty, Kazakhstan, January 30-31, 2003) presented at the meeting and reflecting sub-regional approach to strategic partnership.

We call upon all EECCA countries and other concerned partners to join this initiative and take part in further development of strategic partnership participation, for example, in working groups' activity. We greet big interest and active participation of civil society in meeting's final documents preparation and confirm our intention to collaborate with all concerned parties in strategic partnership further development and realization.

We call upon Denmark and Russian Federation to present strategic partnership on behalf of EC and EECCA countries on the Third World Water Forum in Kyoto on March 21, 2003, as well as in the Conference of Ministers of Environment in Kiev.



We express our deep gratitude to the Ministry of natural Resources of Russian Federation, Danish Environment Agency (DEPA), DHI Institute and Russian regional ecological center for organization of this meeting.

Is accepted in Moscow on March 6, 2003

## GLOBAL WATER PARTNERSHIP TECHNICAL COMMITTEE MEETING

(Almaty, the Republic of Kazakhstan, November 15-19, 2002)

GWP Technical Committee (GWP TC) forms ideology and works out practical policy of Global Water partnership aimed at development and introduction of the principles of integrated water management and information and experience exchange in global, national and regional scale.

Taking into accounting that Central Asia and Caucasus are going to join Global Water Partnership family, GWP leadership decided to carry on its next meeting in our region. This decision has two objectives: to acquaint with people making core of global partnership and to speed up region involvement in GWP activity.

At the working meeting of regional technical committees chairmen conducted by GWP Deputy Secretary General Per Bertilsson different issues were discussed:

- working interlinks between regions and Secretariat in Stockholm;
- issues of regional partnership activity financing (experience exchange on work with donors);
- preparation to 3-rd World Water Forum in Japan (GWP strategic role on Forum).

At GWP TC meeting under chairmanship of Torkil Jonch-Klausen (GWP Chairman) following issues were considered:

- report on participation in Earth Summit on sustainable development in Johannesburg (September 2002);
- GWP contribution in the report of World Water Development. Report is prepared by WWC and described action program on strengthening global water movement on examples of specific decisions;
- reports of regional TCs about their activity after meeting in Accra, Ghana (June 2002);
- report of special expert group on report preparation «Goals of millennium's development» (Roberto Lenton, UNDP). Expert group proposed format of report. Each state-UN member should submit national report by 2004;
- preparation of brochure on effective water management. Final draft of concept paper was presented prepared by Peter Rodgers and Alan Hall on behalf of GWP TC. Integrated approach to water management and ways of management efficiency increase are presented in this paper.

Dialogue status under GWP auspice:

- Dialogue «Water, food and environment» (coordinated by IWMI, Sri Lanka). Two aspects are of high interest: a) development of food world market and access to it of developing countries; b) growing water deficit – conflict between society and environment;
- dialogue «Water and climate change» was initiated by Bonn Conference of December 2001. Dialogue is coordinated by International Steering Committee on climate change (Jens Fugl, DHI). Goal – deepen understanding of climate change processes and possible consequences; evaluate role of IWRM in mitigating these consequences;

- dialogue «Water infrastructure financing». World faces issue of investments increase in water sector development because this latter losses sustainability;
- international panel leaded by former Executive Director of International Monetary Fund Michel Camdessus has been established under GWP and WWC initiative. Information has been presented by Ivan Cheret on behalf of panel, in which measures and ways of investments attraction in water sector were described. These proposals are subject of dialogue – how to realize them.

Within ToolBox development – set of tools for IWRM principles realization. ToolBox – specially developed under GWP auspice set of tools and mechanisms helping establish specific «rules of game» realizing IWRM principles in specific conditions. Set consists of three blocks:

Block A. Tools forming environment necessary for IWRM principles realization.

Block B. Tools determining IWRM organizational set up.

Block C. Tools and mechanisms of management.

Toolbox is a package of recommendations on separate tools realization.

At the meeting proposals on tools extension were considered. Package is accompanied by practical examples (Case studies) from different regions with analysis of lessons learned (positive and negative). In this context necessity of further presentation of examples from another regions was considered. In particular, Case study for our region was suggested. Instruction on Case study preparation can be taken from: jan@dhi.dk (Jan Hassing), hilarysunman@cs.com (Hilary Sunman), r.hafkenscheid@nwp.nl (Raimond Hafkenscheid).

Publication of GWP TC series: Water and poverty elimination (Albert Right). This paper shows role of water sector in poverty elimination.

Publication of GWP TC series: IWRM and ecosystems (Malin Falkenmark, Pole Roberts). Document considers approaches to ecosystem water requirements accounting within IWRM concept. It is based on concept of adapted water management. In this case hydrographic system is subdivided into hydrodynamic zones (zones of return flow formation), which interact with set of ecosystems and form watershed: malin.falkenmark@siwi.org.

GWP associated programs:

GWMate – special program on sustainable ground water exploration supported by the World Bank;

CAPNET (capacity building network) – information network for IWRM strengthening. This network gathers and summarizes information according to following scheme: from the regions information is gathered about IWRM methodological issues, advanced experience, training; from various institutes and organizations – information on case studies (description of separate problems and examples), training programs; from regional committees – information about IWRM support actions; from associated programs – information about advanced experience; from various external agencies – information about funds and financing. Network exchanges information with some international programs: GIWA (assessment of water resources in international basins), IPTRID (international information network on irrigation and drainage), etc. All this information is of high interest for water sector potential strengthening (www.cap-net.org или по e-mail: info@cap-net.org).

At joint meeting of GWP TC and Regional Committee for Central Asia and Caucasus tentative program for the region was presented and IWRM principles were considered.

*Main theme for discussion was: «Water conservation and water productivity increase in IWRM context as a main direction for survival in dry regions».*

Main outcomes of the meeting

GWP TCCAC members received official congratulations on occasion of our region acceptance to GWP family. Opinion was expressed that our region has big potential and will make significant contribution in global water partnership strengthening and development.

Decision has been made on official name of the region of Central Asia and Caucasus – CACENA. This abbreviation should be used in all official GWP documents.

Ivan Cheret, member of GWP Financial Committee applied with request to prepare proposals on financial investments in water sector at global and regional level to support measures on water conservation and water productivity increase.

It is necessary to ground trend of investment increase in following activities: a) support of water users initiative in water conservation, b) water charging as motivation of state and water users for productive and effective water use, c) investments in water supply systems reconstruction aimed at unproductive water losses reduction, d) investments in new technologies directed to water conservation and productivity increase.

## **MEMORANDUM OF UNDERSTANDING BETWEEN SIC ICWC AND UN PEACE UNIVERSITY**

January 14, 2003

Tashkent

Negotiating parties:

Peace University represented by

Dr. William Garner, senior advisor to rector.

SIC ICWC represented by

Director, Prof. V.A. Dukhovny;

Deputy Director, Dr. P.D. Umarov

Interstate Water Coordination Commission (ICWC) has been established according to agreement of February 18, 1992 signed in Almaty between Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Commission is collective parity body of Central-Asian states building its activity on principles of equity, equality and consensus. ICWC is included in International Fund for Aral Sea saving (IFAS) and has status of international organization.

Leaders of water sectors are ICWC members. It allows ICWC to present single structure capable to organize real water collaboration both at regional and national level including interaction with NGO in each country.

SIC ICWC carries on its activity together with network of scientific and design institutes of five countries, which organize scientific and information exchange at national level.

Peace University has been established as contractual organization with own status described in international agreement. This agreement is approved by UN General Assembly by resolution 35/55 dated December 5, 1980. Its program «Peace building in Central Asia - 2003» started in 2001 is being developed by Regional Forum, which deals with regional water resources issues through research and dialogue.

Officials, politicians, water and security experts and scientists from five Central-Asian countries and Afghanistan are invited to participate in the forum.

Forum will be realized through working groups activity jointly with national governments and regional and international organizations including NGO. Specifically it will strive to liquidate gap between technical and political expert evaluation of regional water issues and promote unofficial dialogue like Treck-2 between water sector leaders and politicians forming regional policy.

This process is aimed at activating process of understanding of the World Bank initiative on collective investments in regional water and power resources as well as definition of potential possibilities to give IFAS and ICWC UN status as it was underlined by the

president I.Karimov and supported by the presidents of two countries at Dushanbe meeting held on October 5-6, 2002.

### **Peace University and SIC ICWC**

Noting with satisfaction that they solve similar tasks aimed at strengthening of the regional collaboration;

Driven by willing to make joint contribution in research on theme «regional water resources»;

Giving big importance to professional potential strengthening though training;

Taking into accounting importance of public awareness in water resources management, use and protection;

Considering necessary to introduce multidisciplinary approach to water and environmental issues solution based on mutual participation.

MADE DECISION to sign present Memorandum of Understanding, which reflects their common intention to establish collaboration between two international organizations and allows undertake joint measures on following directions:

### **SIC ICWC measures:**

- organize and conduct events on regional consultative and expert evaluation, discussions and workshops on base of ICWC Training Center with participation of experts and specialists in water resources management and other organizations including NGO.
- find and select experts and specialists in water resources management and conflict resolution. Conduct appropriate thematic scientific research with consequent training in international water law and negotiations on joint water use with regard for interests of all parties;
- ensure access to regional data and knowledge bases to participate in development of educational materials for courses on peace building within framework of transboundary water use and management.
- involve SIC ICWC and TC specialists in training of trainers in order to disseminate peace building ideas among concerned parties, introduce multidisciplinary participatory approach to water and ecological issues solution.

### **Peace University measures:**

- commissioning preparation of research reports in regional water resources management in Central Asia and associated power issues;
- promote training of Central-Asian experts on regional water negotiations conducting;
- assist to working group activity in educational documents preparation, international workshop conducting on theme «Regional water resources» and «Peace building»;

- facilitate further mutual understanding of potential possibilities coming out from Central-Asian proposals on «establishing ICWC special status and its transformation in UN structure» (I. Karimov, 05.12.02, Dushanbe);
- assist to collaboration with representatives of both the Uzbek Government and SIC ICWC in conducting final plenary meeting of the Regional Forum, which is planned to be carried out in Uzbekistan together with quarterly ICWC meeting in Tashkent in the end of autumn 2003.

For Peace University  
William B. Garner,  
Senior Advisor

For SIC ICWC  
Victor A. Dukhovny,  
Director

## MEMORANDUM OF UNDERSTANDING ON CURRENT AND FUTURE JOINT ACTIVITY OF BRACE CENTER AND SIC ICWC

8 - 10 January 2003 Tashkent

### Participants

from the Brace Center

Director Prof. Chandra Madramootoo

from SIC ICWC

Director Prof. Victor Dukhovny

Deputy Director Dr. Pulat Umarov

Scientific researchers

Mr. M. Horst

Dr. G. Stulina

Director of the Brace Centre of the McGill University Prof. Chandra Madramootoo visited Tashkent on January 7-11, 2003, analyzed work of ICWC Training Center, participated in the workshop for specialists of "IWRM project in Fergana Valley", delivered a presentation, and discussed future training activity, especially, the project "ICWC - McGill - Adaptation to climate change", financed by CIDA, and other activities.

As a result of this, the Parties have agreed on the following items:

Overview of TC activities: The following courses are to be delivered from January to June 2003.

- January 9 - 10 - Information system of IWRM - Ferghana project (IWMI and SDC)
- January 20 - 23 - Advanced irrigated agriculture (USAID)
- February - Advanced irrigated agriculture (USAID)
- Accounting workshop (MRC)
- NGO workshop (February 10 - 15)
- Procurement workshop (last week of February - early March; McGill and the World Bank)

Workshop in TC branches (IWMI):

- March - Advanced irrigated agriculture (USAID)
- Conflict resolution workshop (McGill) early March
- April - Drainage problems in arid zones and new approaches to development of drainage networks in Central Asia (EU, FAO, CIDA)
- May - Strategy of regional irrigated development with consideration of climate changes and potential for water use reduction (OSCE)

Conducting research in the field of water resources and irrigated agriculture management (INTAS)

- June - Wetlands management in the Amudarya and Syrdarya deltas (NATO, INTAS).

We also reviewed the 23 courses, which have been delivered so far, the topics presented and the number and types of participants (see the attached Table of courses).



Action Plan for 2003.

The two Parties have agreed on the following:

- i) to intensify their training activities at TC in workshops on conflict resolution, accounting, procurement, drainage problems in Central Asia (CA) and ecological aspects of water resources.
- ii) to implement the project on climate change, drought and water scarcity with pilot demonstration and experimental sites in Uzbekistan and Kazakhstan and possibly in Tajikistan (after the decision of the Swiss Fund Jury).
- iii) to set up a TC branch in Urgench with funding from CIDA.
- iv) to establish a three-lateral agreement between Dundee University, Brace center and SIC ICWC to publish a book on water law.
- v) to work together on the feasibility study of using radar to estimate snow depth in the CA mountainous regions.
- vi) to collaborate with IPTRID on assessing the drainage needs for Central Asia and present papers from the April 2003 workshop at ICID drainage workshop in September 2003 and the ASAE drainage symposium in March 2004.
- vii) to develop a framework for the Brace Centre - SIC ICWC non-profit joint venture in the form of a training center to execute projects in training, capacity building, institutional strengthening, technology transfer and implementing research and innovation.
- viii) to support the mission of McGill specialists to the region in February 8 - 20, 2003.
- ix) to expand collaboration between the McGill Brace Centre and SIC ICWC by having McGill staff and students participating in joint training activities and by being stationed in Central Asia for extended periods (6 - 8 months per year).

Courses on ecology issues

SIC ICWC prepared contents and description of the course titled "Objectives of Environment protection in the Central Asian region", related to water ecology. Its agenda has been agreed with the State Committee of Environment Protection of Uzbekistan and Commission of Sustainable development of Central Asia. The Brace Centre shall analyze this program and involve in it the UNEP GEMS program from Canada (Dr. Richards Roberts). Possible time for courses is September - November 2003, and April - May 2004. Expected number of courses is 3...4. On agreeing the program, the Parties shall define the final schedule, lectures and materials, which shall be prepared in February.

Project management and procurement courses

The Brace Centre (BC) introduced to SIC ICWC the draft of contents and timetable of procurement courses for trainers, which shall be provided by a Canadian lecturer. SIC ICWC introduced to BC its view on the program, CV of the local high level procurement specialist Dr. Fazlitdin Rahimov, who works as a regional procurement specialist in the WB office, and the business plan with marketing study as applied to the similar program.

The Parties have decided:

- to conduct the training course with duration of one week in the period between 21 February and 3 March;
- both lecturers shall meet 5 days before inception of courses, prepare a joint common program, agenda and distribute presentations between themselves. Preliminary distribution might be done as follows: - "General concept of procurement system", "Public pro-

- curement” – to a Canadian Consultant, “Familiarization with the World Bank and ADB procurement rules” - to Dr. F. Rakhimov;
- both lecturers shall prepare training materials and guidance for disseminating them between would-be trainers; SIC ICWC shall carry out copying them and preparation for handing over to participants;
  - payment of Dr. F. Rakhimov shall be agreed between him and the Brace Centre taking into account the time needed for preparation, conducting the training, providing and making presentation of papers during the workshop;
  - The Training Center shall develop the budget for transferring these courses to the commercial basis in order to return advance from McGill University; Mr. Baker shall check and approve permitted costs, which are to be returned after two-three years of activity.

#### Training in conflict resolution:

Mr. Baker shall revise this training program with the trainer, Professor Richard Paisley, taking into consideration the following:

- there is to be no overlap between this course and the one previously given by Patricia Wouters of Dundee University, since the participants for both courses are to be the same;
- detailed daily schedule is to be prepared indicating the topics and a lecturer for each hour, time for discussion etc.
- more emphasis is to be placed on conflict resolution rather than various international water laws.
- no need to make copies of all international agreements available, since this was done by the Dundee course.
- consideration is to be given to exercises in conflict resolution, how to handle conflict in times of water scarcity given all different water uses (irrigation, hydropower, ecology), with application of computer modeling, etc.
- given other training activities and the McGill mission in February, the course shall be delivered in early March 2003.

#### Training in accounting:

This can take place as soon as possible. Mr. Baker shall contact Lorna Smith at MRC to finalize, and advise Mr. V. Dukhovny and Mr. Ch. Madramootoo as soon as possible.

#### Financial issues in training activities

Detail financial analysis was done by SIC ICWC with the following results for the period of 1 June 2000 - 31 December 2002:

- cost estimation of all activity approved in the first draft of financing SIC ICWC by CIDA for 5 years was equal to 539 891 USD from total cost of 1 487 209 USD, the new budget for SIC ICWC is approved as 397 728 USD from total budget of 1 499 944 USD. For the present time real expenses of CIDA for SIC ICWC are 183 435 or 46 % of the revised sum, but some items of the budget remained unexpended and some of them were overdrawn. Taking this into consideration, Dr. Umarov and Mr. Baker together shall prepare the proposal as to replacement of various items of the budget for their balancing. At the same time, contribution in kind by SIC ICWC is equal to 178 218 USD and financial contribution made by different donors (USAID, NATO, SDC, UNDP, IWMI) constitutes 80 829 USD (see the attached Tables). The financial budget shall be modified by CIDA, taking into account new expenses of the Training Center branch in Urgench.

Prof. Chandra Madramootoo has received the budget defined for TC branch in Urgench from Prof. Victor Dukhovny. He shall present it to CIDA HQ next week and ask for its approval and including in the contract between CIDA and McGill.

Patricia Wouters of Dundee University has presented information on the book entitled "International Water Law: The Aral Sea Basin" to be published by Kluwer. Prof. Chandra Madramootoo has agreed to provide 1000 USD for editing the book, if an acceptable three-lateral agreement can be reached between McGill, Dundee and ICWC, indicating McGill as a coeditor of this book.

Addressing water scarcity caused by droughts. Meetings were held with Mr. Horst, Dr. G. Stulina and Dr. Vilma Horinkova of IWMI to discuss the project. We agreed to the following:

### **Plot selection**

During the next month, project participants from SIC ICWC shall select 4 representative plots in 2 republics (Uzbekistan and Kazakhstan) within Ferghana and South-Kazakhstan provinces. Two control plots are to reflect traditional crop irrigation and cultivation practices. Two other plots designed to demonstrate methods of crop irrigation and cultivation management that permits maintaining agricultural crops productivity under possible drought.

Plot size shall be defined depending on an irrigation scheme accepted in farms (1-5ha).

Mr. Horst and Dr. G. Stulina shall undertake field investigations and determine possible sites by the time of the forthcoming Mission of McGill specialists in February 8 - 20, 2003. We shall decide on a Tadjikistan site after having a decision from the Swiss Fund Jury.

### **Agricultural crops**

Preferable crops include: vegetables, maize, melons and sunflower. Final crop pattern shall be defined after field visits to selected plots and contacts with farmers.

### **Management methods**

The following methods of moisture conservation will be applied within demonstration plots:

- (a) Mulching. It is planned to use three types of films cover: ordinary polyethylene films (white), dark photo-destroyed films and tunnel film covers (for vegetables).
- (b) Deficit irrigation of vegetables, wheat, maize in Uzbekistan
- (c) As irrigation technology (depending on plot specific conditions), successive irrigation of dry and wet furrows, surge irrigation and irrigation over fields with unplanned slopes.

Prof. Madramootoo shall meet with the ICARDA representative in Tashkent on Friday January 10 to discuss ICARDA research activities on drought resistant crop varieties to assess what crop varieties can be used in the project. This shall be followed up by McGill plant scientist, Dr. Dan Smith.

For each technology tested we shall have one control plot with farmer's regular practices, so that we can measure improvements in crop yield, assess soil moisture and soil temperature, and evaluate water savings.

### **Equipment**

Pilot plots will be equipped for collecting climatic parameters, soil moisture and salinity data, and crop growth/development monitoring. SIC ICWC provides the following equip-

ment: evaporative pans-2, piezometers, water accounting devices. A Computer with a printer-1 and spare parts for another computer shall be purchased at the expenses of the project budget.

CIDA shall deliver an automated weather station -1, conductivity meters-2, a device for taking transpiration measurements -1.

SIC ICWC is to try to purchase plastic films of local production.

Prof. Madramootoo shall check specifications and prices on equipment and provide this information to Prof. V. Dukhovny and Dr. Stulina, prior to making purchases in Canada.

### **Protocol**

The protocol of measurements shall be discussed by McGill specialists and finalized with ICWC staff during the February Mission.

### **Staff**

Some research staff and students of McGill University will work with the ICWC staff on the field work, and help with training on use of the equipment etc.

We will have two seasons of field work commencing in March 2003.

Ms. Catherine Senecal of BC will prepare materials for gender analysis and questionnaire and discuss with the ICWC team in February 2003, for implementation.

The McGill Mission to Central Asia will be undertaken from February 8 - 20. The main members of the Mission will be: Prof. Chandra Madramootoo, Prof. Dan Smith, Ms. Catherine Senecal, Mr. Robert Baker and one other technical specialist. The itinerary is as follows:

Arrive Tashkent on February 8.

Work at ICWC, Tashkent - February 9, 10, 11.

Visit field sites - February 12, 13, 14.

Work in Tashkent - February 15, 16.

Visit Samarkand, Bukhara and Urgench - February 17, 18, 19.

Leave Tashkent - February 20.

ICID Drainage Workshop in September 2003 and ASAE Drainage Symposium in March 2004.

We have agreed to present papers at those two international workshops after seeing presentations and papers prepared for the IPTRID workshop in April 2003.

We have agreed to intensify the mutual partnership and collaboration between ICWC and McGill/BC. This will start with the placement of more McGill staff in the Region on a permanent basis to work with ICWC on TC activities and climate change project.

We will also establish framework to create a joint not - for - profit TC to implement joint activities in training, research, technology transfer and innovation in water resources.

## **PROCEEDINGS OF ICWC TRAINING CENTER AND MACGILL UNIVERSITY (CANADA) WORKSHOP “DIALOGUE ON WATER AND CLIMATE ON EXAMPLE OF ARAL SEA BASIN”**

December 4-6, 2002

Tashkent

Specialists of water related organizations, representatives of power, meteorological and planning ministries and agencies from Central-Asian republics took part in the workshop.

Papers demonstrating results of climate changes impact on water resources assessment, possibilities of water requirement reduction and water productivity increase on example of other projects; providing sustainable development of the region based on collaboration in water management, cooperation in food production under climate changes using model of the Aral Sea basin management with and without regard for global climatic changes.

Workshop participants with big satisfaction accepted papers and presentations including assessment of possible climatic changes impact and set of measures necessary to be undertaken in connection with climatic changes.

It was noted, that water conservation possibilities exceed possible changes in water availability caused by climate changes during next 20 years. It was underlined that expected climatic changes could improve agro-climatic conditions if necessary technological principles would be followed and favorable conditions for farmers would be created.

Workshop participants consider it expedient for survival under water growing deficit:

- strengthening collaboration between region's countries in conducting common policy in water and nature conservation.
- creation of appropriate juridical and financial mechanism of effective water use and distribution;
- public opinion development, upbringing and education to fight «hydroegoism»;
- working out and introducing set of measures on integrated water resources management;
- increasing accuracy of long-term forecast of climatic and hydrological indicators.

In the second part of the workshop participants acquainted with prepared papers, presentations and discussed set of models for the Aral Sea basin management.

During the workshop participants were informed about set of models structure, possibilities, purposes and appropriation consisting of hydrological, social-economic, Planning zone and Aral Sea models. Each model capability and model interconnection order were described in detail. Results of models use for optimistic scenario and scenarios based on national visions/strategies of prospective development of each state of the Aral Sea basin. Simultaneously, participants had possibility to exercise model by themselves.

Following information was disseminated among participants: collection of papers and CD with «Dialogue on water and climate on example of the Aral Sea basin» and last version of the Aral Sea basin model with its brief description.

Participants noted that last version of the Aral Sea basin model is accessible for understanding and permits to planning bodies orient decision-makers on recommended deci-

sions. It is expedient to send materials to all ministries of agriculture, water resources, economy and environment and translate full manual and model description in Russian.

Set of models last version presentation including hydrological, social-economic, planning zone models with single interface presents higher degree of model having no analogue in the Aral Sea basin. At the same time, necessity of additional models connection with models of ODC «Energy» and power organizations of Kazakhstan and Tajikistan for power and ecological block of model development with respect for biodiversity and bio-productivity.

It is expedient to specify planning zone model for broad utilization as a tool for searching priority capital investments in national production and optimization of crop pattern under drought.

It is recommended to SIC ICWC to place all models on its website.

## **PROCEEDINGS OF ICWC TRAINING CENTER AND MACGILL UNIVERSITY (CANADA) WORKSHOP “INTEGRATED WATER RESOURCES MANAGEMENT ON EXAMPLE OF FERGHANA VALLEY”**

December 24-26, 2002

Tashkent

Participants acquainted with papers and presentations and discussed regional and national water issues. They elaborated practical recommendations on water resources rational use and protection, water management perfection at various levels with regard for different methods, forms and directions of water sector reforms in each country. Johan Gely from SDC took part in the workshop.

Participants represented oblast authorities, oblast and basin water departments, leading specialists of water related organizations of Central Asia, «Aralconsult», Institute of Sociology and Law of Uzbek Academy of Science.

First Deputy Minister of Agriculture and Water Resources of Uzbekistan A.A. Jalalov and SIC ICWC Director prof. V.A.Dukhovny were moderators. Course program and papers were preliminary disseminated among participants that facilitated discussions.

Presentations were accompanied by training in modern computer and video technologies and materials of «IWRM-Ferghana» regional project. Participants noted broad scope of issues including rational water use in various economic branches. Participants underlined historical and geographic community of CAR countries united by Amudarya and Syrdarya and necessity of further development of regional collaboration positively assessing regional organizations collaboration.

Participants supported necessity of clear delimitation of management functions, tasks and authorities at all management levels and wide public involvement in management process with redistribution and transfer of some functions. In this connection, positive trend of new democratic organizations establishing like associations of water users. In some countries agricultural reform was conducted without regard for water sector and WUA establishing was forced response to agrarian reform. Water sector reform should be carried on together with agricultural one and be supported by state in economic and social aspect.

Prof.V.Dukhovny in his presentation underlined that developed recommendations efficiency would be much higher if they will be developed with farmers participation.

Participants have heard «IWRM-Ferghana» regional project's coordinators and 1, 2 and 7 components' leaders as well as representatives of other water uses like municipal water supply and fish-breeding. Brief presentations of participants on specific themes were heard and discussed.

Participants also noted that presently regional organizations have no sufficient rights for successful work. Rights of water organizations at the national level should be also foreseen as well as water users rights. For IWRM legal base should be prepared, which ensure IWRM introduction in CAR.

Johan Gely expressed opinion that accumulated experience dissemination to south parts of the region would facilitate water resources use productivity increase and their conservation.

Participants were satisfied with lectures content, technical equipment, accommodation, and express their wish to attend courses on fish production in irrigation systems. They noted necessity of more active work with public, population involvement in water management and mass-media use for propaganda of rational water use, especially in dry years. It was proposed to attract student to «IWRM-Ferghana» regional project.

Participants made following recommendations and proposals:

At regional level:

- strengthening regional collaboration through speeding up agreement signing on information exchange and organizational structure of interstate organizations;
- development and strengthening training activity in water resources management at modern level;
- organization of regional conferences and workshops on IWRM;
- At national level:
  - water legislation, investment and taxation policy perfection;
  - training activity improvement;
  - elaboration of incentives mechanism for water conservation: bonuses, tax privilege and other incentives;
  - development of extension service for farmers.

At local and farm level:

- establishing WUA and state support of their activity at least on first stage;
- introduction of water conservation technologies;
- broad use of GIS technologies in crop pattern planning;
- strict observance of agro-reclamation requirements;
- organization of in-farm accounting and irrigation regime observance;
- field certification.

Participants noted necessity of close cooperation with ICWC Training Center and speeding up its branches establishing and functioning.

Participants expressed gratitude to TC personnel, lecturers and moderators, SIC ICWC, BVO «Syrdarya» and the Ministry of Agriculture and Water Resources of Uzbekistan for well prepared courses permitting participants to acquaint with best practice in water sector and IWRM principles.



## **PROCEEDINGS OF ICWC TRAINING CENTER AND MACGILL UNIVERSITY (CANADA) WORKSHOP AND MOUNTROAL COLLEGE “IRRIGATED FARMING PERFECTION IN CENTRAL ASIA”**

January 25, 2003

Tashkent

Next workshop on irrigated farming in Central Asia conducting is caused by growing need for scientific and practical knowledge dissemination under transition to market economy in agricultural and water sector. Recent dry years underline necessity of immediate water conservation and IWRM introduction. Workshop program and thematic were approved by ICWC and oriented to conditions creation for advanced experience exchange in irrigated agriculture among specialists and scientists of high and medium level.

Participants represented water organizations, agricultural enterprises, scientific-research institutes, NGO of Central Asia.

Workshop lasted since January 21 till January 25 2003. Program foreseen opinion exchange on the following issues delimited in five modules:

- general issues of irrigated agriculture;
- irrigated agriculture economy;
- irrigation;
- reclamation;
- program complexes for irrigation management.

Papers were handed to all participants for preparation and participation in thematic discussions.

Introduction has been made by First Deputy Minister of Agriculture and Water Resources of Uzbekistan A.A. Jalalov and SIC ICWC Director Prof. V.A.Dukhovny.

Director General of IWMI Tashkent Office Mrs. Vilma Horinkova has made presentation on the workshop.

Participants noted high level of workshop preparation, high professional level and broad scope of lectures and thematic materials. They expressed satisfaction with technical equipment and accommodation and wish to adapt some papers, in particular dedicated to modeling of different situations in irrigated agriculture, to daily needs of water end users.

In participants' opinion, training helps to better understand existing problems and systematize accumulated knowledge. Presented information helps to develop concrete measures on irrigation systems management, WUA establishing, water pricing and management structure improvement. Training made possible to understand better financial-economic situation in water sector, technical equipment and reclamation conditions as well as irrigation water productivity efficiency assessment and develop necessary decisions.

Participants noted necessity of water users awareness about water conservation and advanced water conservation methods introduction. In result of discussion revealed that transition to market economy in irrigated agriculture, which is irregular in different countries, nevertheless, has common for all states issues: agriculture restructuring, water deficit, irrigation and drainage network wearing, water and land quality deterioration due to salinization.

Set of recommendations and proposals was suggested to participants for effective irrigated farming perfection in Central Asia. In particular, attention was drawn to necessity of further development of agricultural crops growing technologies on irrigated lands. Main directions are as follows:

1. Irrigated plots certification based on large scale soil-reclamation survey fixing plot use, its surface state, boundary conditions determining its productivity and potential possibilities;
2. Set of measures (agrotechnique and reclamation) providing plot's evenness:
  - surface leveling;
  - soil water-physical parameters improvement by available agrotechnical and reclamation measures;
3. Peculiarities of irrigation technique and regime ensuring required water-salt regime for specific agricultural crop, leaching regime and moistening evenness;
  - necessity and parameters of drainage;
  - special measures on field spottiness elimination.

It was underlined that modern possibilities (computers, sensors) and programming whole process of soil fertility and agricultural production make such technological schemes not only topical but also real and necessary for main goal achievement – irrigated field reserves use as a base of high and sustainable fertility of irrigated lands.

Because of unstable financing many demonstration plots are out of operation. Taking into accounting, that advanced experience demonstration leads to significant water conservation, it is necessary to restore these demonstration plots.

Following methods of water resources re-use were proposed:

- use of collector-drainage water with regard for its salinity and feasibility;
- winter ploughing land under snow;

Among measures directed to irrigation water losses reduction were following:

- strict observance of crop irrigation regime in accordance with plot certification;
- introduction of intensive methods of soil water-physical properties rehabilitation (deep loosening, reclamation chemical application) and their fertility rehabilitation through organic fertilizers application, deep ploughing and crop rotation;
- ensuring even moistening though optimization of plot size and leveling;
- selection of crops with regard for ecological, economic and social conditions of the region;
- regular cleaning and maintenance of inter-farm and on-farm collectors;
- state support of drainage network and inter-farm collectors;
- training of young specialists in irrigation and drainage systems operation.

Following organizational measures are suggested:

- ICWC status improvement;

- introduction of basin and hydrographic principles in water management;
- state support and measures on technical structures state improvement;
- support of agricultural producers to provide their competitiveness on the world market.

Following measures are suggested as economic lever:

- at water users level – water charge increase for exceeding established consumption level (fee for resource formation);
- at interstate level – fine introduction for exceeding established limits of water diversion from sources;
- incentives for water users if diversion is less than established limits – bonuses in amount of resource formation cost, tax privileges or other stimulation. This should stimulate intensification of agricultural production and new technologies introduction in agricultural crop production (film application, mulching);
- permission on selling established limits to other water users;
- bonus system for water organizations for water conservation.

Following organizational measures can be undertaken:

- gradual water diversion limits reduction at country and irrigation systems level;
- establishing public control bodies including all levels from basin (public committees) to system, rayvodhoz level;
- establishing WUA at aggregated farms (municipal in cities) level. Special WUA task – participation in strict water rotation and limited water use;
- gradual transition to water use planning with regard for water expenses per production unit.

Participants expressed understanding of current geopolitical, economic and social changes in the region and necessity of new approaches to all level direct and joint participation of all water users (from field to basin) in water resources management, broader farmers and WUA involvement. It was noted that interstate participation in water structures maintenance in upper watershed might ensure water distribution among upper and lower reaches' water users.

Simultaneously, participants noted some unsolved issues:

- organization of water transfer from one country to another registration through interstate systems to avoid distortions in water accounting;
- broad GIR and information systems application in water resources management.

Need in links with Training Center and its national branches and Kyzyl-Orda, Kazakhstan and Amudarya lower reaches establishing was repeatedly expressed.

Paper dedicated to computer modeling in irrigated agriculture was positively evaluated by participants. In this connection, necessity for modern information technologies introduction and training in their application in water management was underlined.

In participants' opinion, this will be facilitated by inclusion of computer skills training. Some participants ask for assistance in all water related structures technical equipment.

Participants express their gratitude to CIDA, McGill University, Training Center staff, all lecturers and moderators, SIC ICWC and BVO "Syrdarya" and noted necessity to follow up with this course.

## **PROCEEDINGS OF ICWC, MCGILL UNIVERSITY AND OSCE OFFICE IN TASHKENT WORKSHOP “INTERGATED WATER RESOURCES MANAGEMENT IN CENTRAL ASIA”**

February 11-15, 2003

Tashkent

Participants have acquainted with papers, presentations of moderators and actively discussed regional and national water related issues. They worked out practical recommendations on water resources rational use and protection, water management perfection at various levels of hierarchy with regard for different forms, methods and directions of water sector structuring in each country.

Participants represent oblast administrations, oblast agriculture and water departments, regional and international NGOs.

In opening ceremony took part: Head of OSCE Office in Tashkent Ahmet Erozan, First Secretary of CIDA in Central Asia, Ambassador of Canada in Kazakhstan Linda Klutie. In working session took part: Director of IWMI Office Vilma Horinkova and Director of Ecotech Resource Joop de Schutter.

As moderators were involved: Director SIC ICWC Prof. V.Dukhovny, Training Center Director P.Umarov. Course program and lectures were preliminary disseminated among participants that facilitated discussion organization. Presentations were accompanied by modern means of education based on computer technique and technology: video on different aspects of water management in Central Asia and following projects implementation: «IWRM-Ferghana», ASB-mm, Sudochie, NATO «Science for peace», etc.

Participants supported necessity of clear delimitation of management functions, tasks and authorities at all management levels and wide public involvement in management process with redistribution and transfer of some functions. In this connection, positive trend of new democratic organizations establishing like associations of water users. In some countries agricultural reform was conducted without regard for water sector and WUA establishing was forced response to agrarian reform. Water sector reform should be carried on together with agricultural one and be supported by state in economic and social aspect.

Prof. V.Dukhovny in his presentation underlined that developed recommendations efficiency would be much higher if they will be developed with farmers participation.

Participants noted that current levers of NGO involvement stimulation are insufficient. They also noted that regional organizations have no rights enough for successful activity. It is necessary to establish rights of national organizations and water users.

For integrated water resources management ensuring it is necessary to prepare legal base.

It was noted that each man can right to live in favorable environment and use water resources and must protect nature for present and future generations.

Participants were satisfied with information content, technical equipment and organization.

Participants noted necessity of more active work with public, population involvement in water management, active use of mass-media especially in dry years for water rational use propaganda.

Participants noted that for human potential development farmers social mobilization should be made WUA establishing.

Participants suggested following recommendations and proposals for water sector sustainability increase:

4. At regional level:

- to establish public council of basin regulation;
- ensure sanitary releases in rivers;
- development and strengthening human potential in water management;
- organization of regional conferences, workshops on IWRM concept with NGO involvement;
- preparation and dissemination of materials on IWRM concept for public awareness with NGO assistance.

5. At national level:

- perfection of water legislation, investment and taxation policy facilitating IWRM introduction;
- development of clear ground of water users interest in water conservation;
- perfection of WUA legal base;
- technical equipment of WUA;
- development of legislation with regard for local provisions;
- training improvement;
- work out mechanism of water users stimulation by bonuses for water conservation in amount of state expenses for resources formation, tax privilege and other incentives;
- development consultative services for farmers on fields certification;

6. At local and farm level:

- WUA establishing and state support to their functioning at least at initial stage;
- dissemination of water conservation technologies;
- wide application of information technologies and programs in planning and control over crop water consumption;
- strict observance of agro-reclamation requirements;
- organization of in-farm water accounting and irrigation regime observance;
- field certification;
- stimulation of public council development including water users of different levels;
- ensuring stable water supply to avoid uneven soil moistening and irrational water use;
- revealing traditional methods of irrigation and water conservation in pilot rayons and their introduction in the region with assistance of regional organizations;
- creation of ecologically sustainable and economically profitable wetlands using winter releases.

Participants noted necessity of close cooperation with Training Center and acceleration of TC branches establishing.

Participants express their gratitude to CIDA, McGill University, Training Center staff, all lecturers and moderators, SIC ICWC, OSCE Office in Tashkent and BVO “Syrdarya” and noted necessity to follow up with this course.

## **PROCEEDINGS OF SIC ICWC, BRITISH COLUMBIA UNIVERSITY (CANADA) WORKSHOP “INTERNATIONAL AND NATIONAL WATER RIGHT – ABILITY TO REACH CONSENSUS AND MAKE DECISION”**

March 7, 2003

Tashkent

Participants acquainted with prepared papers and actively discussed international, regional and national legal aspects with regard for theory and practice of negotiation and mediation. In result, participants developed practical recommendations on perfection of collaboration in water resources management. At that, necessity of strict accounting of national interests and regional trends with respect for international right were underlined.

Participation of all concerned parties in topical decisions development and making in transboundary water resources management in the Aral Sea basin was considered as very important. Participants represented regional organizations (EC IFAS, SIC ICWC, BVO «Amudarya» and «Syrdarya»), state water bodies as well as ministries of foreign affairs.

As moderators Head of BVO «Syrdarya» M.Kh.Khamidov, Program Director prof.Richard Pasley and Endrew Thompson (British Columbia University). Text of papers was circulated in advance that facilitated discussion. Presentation was accompanied by modern technical means utilization like computer technique and technologies.

In workshop opening participated: Director SIC ICWC Prof. V.Dukhovny, Honorable Consul of Canada in Uzbekistan A.Ye.Antonov, First Deputy Ministr of Agriculture and Water Resources of Uzbekistan A.A.Jalalov, Minister of Agriculture, Water Resources and Processing Industry of Kyrgyzstan Zh.B.Bekbolotov, Head of BVO «Syrdarya» M.Kh. Khamidov.

Participants noted broad thematic scope of the workshop directed to understanding of approach used in the world and national practice, principles and methods of water resources development, use and protection. This approach permits analyze all totality of water relations from end user to regional and global level.

This, in turn, helped participants to see both reasons of issues emerging and effective ways of their resolution.

Participants underlined historical and geographical community of CAR countries, importance of equality principle observance and strengthening during negotiations, necessity of clear procedures development. They assessed positively measures undertaken in the region aimed at strengthening of collaboration between regional organizations.

Though five CAR countries collaborate in this direction based on people traditions, it is necessary to develop further legal aspects in connection with transition to democratic market relations. Participants have confirmed growing ability of water specialists to negotiations, readiness to search consensus, development of water legislation and interstate agreements.

Participants expressed their gratitude to British Columbia University (Prof. R.Pasley) and World Economy and Diplomacy University (Prof. G.A.Hidoyatov) familiarized participants with international and Muslim water right.

Participants noted that for ensuring wise and equal water resources use it is expedient to develop measures on rapprochement of national laws and interstate agreements.

Growing role of parity principle in water relations and need in strict regulation of procedures and processes.

Participants were interested with ability to carry on negotiations and mediation process in water relations. Lecturers demonstrated practical meaning of this ability during all stages of negotiations preparation and conducting.

Participants made some comments and proposed following recommendations:

At national level:

- water legislations of all countries need in renewing and amendments with regard for democratization and transition to market. With acceptance of legislation in other economic branches some contradictions emerge between water use regulations in different sectors interests. Coordination of land and water laws is especially important especially in relation to irrigation;
- with growing water deficit it is expedient to search more affective juridical levers of influence on water conservation incentives. They should be combined with growing technical level of water structures, charges for water limits exceeding including water resources formation cost;
- structural changes of social–economic character induced by transition to market create new requirements to legislation including responsibilities, competencies and especially obligations, (first of all. State bodies) for timely water delivery to water users. Individual user’s right on correspondent water amount and quality needs to be protected by law. It is wide field of activity for all five countries with foreign experience use;
- obligatory water accounting by all water users and consumers on their own. Foresee fines for water metering devices absence. Disciplinary role can be played by «Water police» to control water amount and quality with right of sanctions.

At regional level:

- to increase level of juridical knowledge in international water right in interstate water relations. To strengthen national juridical groups participation in development of regional collaboration through speeding up signing agreements on information exchange, organizational structure of interstate organizations, water use management in the basin, etc.;
- facilitate decision making based on all states participation in international conventions devoted to water relations regulation with regard for region’s peculiarities;
- coming out from existing methods of water commissions establishing under UN auspice to give diplomatic status to ICWC under UN auspice;
- promote harmonization process between new and revised national legislations in water right. Ensure elimination of contradictions between existing water laws current and proposed interstate agreements and treaties;
- consistently and principally stay for approach to water as natural resource, which is not pure good or object of trade but is only substance taking form of good and having simultaneously social and economic value;



- following current trends in the world practice require to be reflected both in national and regional water law:
- transition to integrated water resources management foresees inter-sector coordination of plans and actions, transition from territorial to hydrographic method, wide water users participation both in water management and financing;
  - introduction of market mechanism includes privatization, water concession and water selling aspects, which should be reflected in legislation of five countries;
  - strengthening openness and awareness of all water use and management participants;
  - responsibility for water overtaking and damage should be fixed in legislation.

Easier and accessible form of training combined with benevolent atmosphere permitted to be familiar with new knowledge and ideas.

Participants noted necessity of close cooperation with Training Center and acceleration of TC branches establishing.

Participants express their gratitude to CIDA, McGill University, British Columbia University, NRMP project, USAID, Training Center staff, all lectors and moderators, SIC ICWC, OSCE Office in Tashkent and BVO "Syrdarya" and noted necessity to follow up with this course.

## PROCEEDINGS OF EDUCATIONAL WORKSHOP “WATER ACCOUNTING IN CANALS, WUA AND PRIVATE FARMS”

November 28-29, 2002

Osh

Workshop is organized to teach oblast executors and WUA hydrometrists technically trained water accounting and water metering equipment on canals and outlets. Big attention is paid to control of gauging stations construction quality and their preparation to calibration and certification.

Following presentations were made:

- R.R. Masumov «Water discharge measurement on secondary canals (with discharge less than 1 m<sup>3</sup>/s) and their branches using standard water meters.
- U.R. Rasulov «Water discharge measurement on main canals and collector-drainage network».
- V.N. Sharov «Gauging station preparation to calibration and certification».
- A.S. Satibaldiev «Modern state of water accounting in Pakistan, land property types, water allocation between farms».

Participants having heard papers noted topicality and importance of considered issues and made following decisions:

1. Before money allocation by the ministries on repair works for 2003, oblast and rayon executors should start preparatory work (channel cleaning and aligning) by own force since December 2, 2002 on outlets in farms in pilot WUA.
2. On main canals: South-Ferghana, Aravan-Akbura, Gulyakandoz start since December 2, 2002 preparatory work on metering sticks replacement, cleaning of observation wells and gauging stations. Prepare head gauging stations to Press-M (PKTI, Bishkek) meters installation.
3. Oblast and rayon executors to carry out inventory of existing gauging stations on pilot objects (WUA canals, private farms) and put in compliance with technical documentation.
4. Oblast and rayon executors and private farms to prepare existing gauging stations of «IWRM-Ferghana» to certification and regular calibration.
5. Because of small experience in new gauging stations construction, their preparation to calibration and certification, technicians and observers need methodological assistance since December 15, 2002 till March 15, 2003 from consultants R.Masumov, U.Rasulov and ICWC KMC representatives.
6. Oblast and regional executors to prepare applications to the ministries for money allocation for repair and calibration of current meters and gauging stations (existing and planned) calibration.
7. Oblast executors to report to Leaders of activity 1, 2 and 7 on December 25, 2002, January 25, 2003, February 25, 2003 and March 25, 2003 about this proceedings fulfillment.
8. To forward proceedings copy to national executors for acquaintance and practical assistance in pilot canals equipment and certification.

9. In connection with necessity of new gauging stations on pilot canals calibration and certification to ask ICWC KMC to include in plan-2003 financing of executors training by KMC branches personnel.
10. Carry on workshops in pilot WUAs on water accounting for farmers.
11. Apply to «IWRM-Ferghana» project's leadership to provide executors with equipment for calibration and certification under KMC leadership.

## MINUTES OF THE PROJECT STEERING COMMITTEE MEETING, 2003 FOR THE PROJECT "INTEGRATED WATER RESOURCES MANAGEMENT IN THE FERGANA

Valley-(IWRM-Fergana)"

Date of Meeting: 29 January 2003

Venue: Osh Oblovodkhoz

Chair: Mr. Urs Herren, Head of COOF, Bishkek, Kyrgyzstan

1. To approve the progress report for 2002
2. To approve the Yearly Plan of Operations, 2003
3. To approve the Statement of Expenditures for 2002
4. To approve the financial plans for 2003
5. Information about the pilot canal automation project
6. Fixing the date of the next Project Steering Committee Meeting
7. Any other item proposed by the members

The Project Steering Committee (PSC) was informed that Mr. Mokhinuddinov represent the member from Tajikistan for this meeting as per the letter of the

Mr. Herren welcomed the members of the committee and presented the agenda to members, and requested the members for any suggestions/ additions to the agenda presented.

### **Agenda Item 1:** Approval of the progress report 2002

The members reviewed and approved the progress report with a vote of thanks for the IWMI-SIC Association.

### **Agenda Item 2:** Approval of the Yearly Plan of Operations 2003

The chair noted that while 2002 was the year of preparation, 2003 is the first year of real implementation. The PSC reviewed the Yearly Plan of Operations for 2003 (YPO 2003) and made following observations/ comments:

**a)** the adjustments discussed and agreed during the planning and review workshop should be incorporated in the YPO regarding various activities and their timeframe. The terminology should also be adjusted and made consistent. Likewise, the changes discussed and agreed to various activities in the project log-frame need to be incorporated by the end February. While these changes were only made for the activities, these yet need to be made for the results. Some of the activities presented in the annexes need to be described in the main text of the YPO. A glossary of terminology needs to be prepared in both Russian and English explaining various terms used.

**b)** the PSC needed some clarifications about IWMI's structure and staffing. It was clarified that the time of the IWMI's project co-manager was presented in the YPO as his two roles in the project as a manager and as a researcher contributing to the project activities. The PSC unanimously resolved to convey its concerns to IWMI's management through this protocol about the serious implications of Vilma's resignation for the IWRM-Fergana project, and request IWMI's management that the PSC and the donors of the project expect IWMI to provide high level managerial and input support from IWMI for the project.

They have also expressed a desire to keep Vilma on the project. SDC and SIC-ICWC have already conveyed their concerns to IWMI, and SIC will take it up with ICWC.

c) it has been the understanding of the donors and the partners that since it is a field oriented implementation project, the field staff should receive enough support from the management of the project. Therefore, IWMI and SIC managerial staff should spend more time in the field. SIC and IWMI were requested to clarify. SIC clarified that its 70% of the staff is based in the field, and all the decision-making and planning is done together with them. Vilma endorsed the concerns of the PSC and ensured that IWMI will increase its field presence for both the technical and institutional aspects by frequent visits of the staff to the field. The PSC decided to include this point in the PSC minutes and the YPO.

d) as a number of revisions have to be made in the YPO, people have an opportunity to comment on it. The revised version will be sent to the PSC members in 4 weeks (February 28). If there will be no comments, it will be considered as the final version.

### **Agenda Item 3: Approval of the Financial Statement for 2002**

The members reviewed the summary of expenditures for 2002 presented to them, sought several clarifications, and approved the statement. A suggestion was made to report the expenditures in future in more details by the line items.

### **Agenda Item 4: Approval of the Financial Plans for 2003**

The PSC approved the planned budget subject to presentation of detailed budgetary calculations presented as an annex to the YPO, 2003. The Swiss consultant Mr. Juerg Kraehenbuehl requested a narrative for budget items. On another point, the chair ensured the PSC will follow-up with the three national Hydrometry services to provide hydro-meteorological data to the project.

### **Agenda Item 5: Information about the Pilot Canal Automatisation Project.**

The PSC received the joint presentation by SIC-ICWC, and the BVO. All members of the PSC positively received the selection of priorities, and identified needs for more detailed clarification and specification of works. SIC-ICWC informed the PSC about the volume of works accepted by the three MAWRs for civil and mechanical works. The proposal will further be discussed and finalized in the light of comments made by SDC. The members noted the USAID conditionally about their contribution to automation if only USA made devices were used. For the PSC this approach appears unacceptable and it was decided to request USAID and NRMP leadership to return to the use of SIGMA products.

### **Agenda Item 6: Invitation for May Conference organized by ICWC and SDC and date for next PSC Meeting:**

Mr. Urs Herren announced the ICWC May 4-6 conference to be held in Almaty, which is supported by the SDC, in the view of 2003 being the year of water. The PSC agreed to

hold an interim meeting during September 2003 coinciding with the Global Water Summit in Dushanbe, Tajikistan. The Annual PSC Meeting will be held in the last week of January 2004 in Khojent.

**Conclusion:**

The chair close i ths PSC meeting with a vote of thanks for participants from the US Embassy, SDC and Swiss Government and people, Mr. Alisher Satybaldiev and his team for organization of the event, and for the moderators.

Reviewed and Approved:

Mr. U. Herren, Head COOF, Kyrgyzstan, Bishkek. Chairman PSC

Mr. G. A. Neghmtov, Head of ICWC Secretariat, Co-chairman, PSC

## **PROCEEDINGS OF FINAL SDC, IWMI AND SIC ICWC WORKSHOP FOR 2002 “INTEGRATED WATER RESOURCES MANAGEMENT IN FERGHANA VALLEY”**

January 27-29, 2003

Osh

In accordance with plan of joint activity on the project «IWRM-Ferghana» DSC, IWMI and SIC ICWC jointly carried on workshop-meeting with project participants presenting all levels of water management in four oblasts of three republics: Kyrgyzstan, Tajikistan and Uzbekistan, including farmers, WUA, WRO, representatives of BVO «Syrdarya» and ministries, project personnel and its beneficiaries, local administration and NGO. Totally 80 persons attended workshop.

Meeting was greeted on behalf of ICWC by Deputy Minister of Agriculture and Water Resources of Kyrgyzstan Zh.B.Bekbolotov, Deputy Governor of Osh oblast S.S.Atjanov, SDC Senior Specialist Mr.Kraehenbuehl.

Participants have heard review of project activity for 2002 made by Director of SIC ICWC Prof. V.Dukhovny as well as V.Horinkova (IWMI), M.Pinkhasov, V.I.Sokolov, A.I.Tuchin, R.R.Masumov, Sh.Sh.Muhamejanov, S.A.Nerozin (SIC ICWC), Mehmood Ul Hassan (IWMI).

Discussion has been organized by moderator Mrs. Birgit Fogt in three groups: canal management, WUA and private farms led to following conclusions:

1. In general, project participants successfully fulfilled the first year task.
2. Doubtless project achievement is successful organization allowing include all links of project in its activity, in particular:
  - project personnel is selected on competition base with participation of all countries, oblasts, organizations included at the first meeting.
  - communication system is equipped with computers and e-mail;
  - training is carried out and ToR is prepared for all project executors;
  - system of financing is organized for uninterrupted conduction of all measures;
  - with assistance of MAWR of Kyrgyzstan Training Center and field office in Osh has been established, which conducted 7 workshops with project participants and NGO during 2002;
  - project activity is systematically highlighted in ICWC press-releases and on special website in Internet.
3. Project participants achieved full mutual understanding and consensus between all concerned parties on main positions, in particular:
  - IWRM conception endorsement and coordination with regard for canal management and WUA establishing and development;
  - preparation and signing of alternative structure for selected pilot canals and WUAs;
  - analysis and creation of methodological material (certification of private farms) allowing find reserves in water and land productivity and water conservation.

4. At the same time, certain lags are noted, which should be eliminated in the nearest future:

- juridical coordination issues;
- information system establishing;
- proposals on water use perfection;
- irrigated area and water demand specification;
- water metering equipment installation;
- operation water losses reduction.

5. Meeting considered action plan for 2003 and endorsed it as a whole. If 2002 was year of searching and coordination, 2003 is year of action determining IWRM introduction efficiency. Special attention should be paid to following aspects:

- creation of initiative groups and preparatory work on canal management based on hydrographic principle (canal committees, their executive bodies) including juridical formulation;
- social mobilization and WUA establishing before irrigation in Tajikistan, Uzbekistan and to the end of the year in Aravan rayon of Kyrgyzstan.
- information system establishing and data exchange organization;
- water use plan preparation and correction in all links of water management;
- selection and introduction of water distribution methods on pilot canals, WUA providing water supply evenness and stability;
- undertaking set of measures on demonstration plots to increase land productivity by 20% and water productivity by 30%.

6. Participants endorsed proposal prepared by BVO «Syrdarya» and SIC ICWC on technical perfection of water distribution system on pilot canals with regard for selected priorities for submission to SDC.

7. Correction in log-frame relating to management and planning system were made.

SDC Representative	J. Kraehenbuehl
Co-Director of project from IWMI	V.Horinkova
Co-Director of project from SIC ICWC	V.Dukhovny

MAWR representatives:

Kyrgyz Republic	A.S. Satibaldiev
Tajikistan	A. Ahrorov
Republic of Uzbekistan	U. Azimov



## ABOUT ASSOCIATION OF WATER USERS (WUA) ESTABLISHING

Within the framework of «IWRM-Ferghana» project constituent assembly on WUA establishing was held on March 28 in Kuva rayon, Ferghana oblast and on April 11 in J.Rasulov rayon, Sogd oblast. WUA are organized according to system principle. In Kuva rayon it is established around secondary canals Akbarabad-1 and Akbarabad-2, RP-1 taking start from South-Ferghana canal (SFC).

These watercourses irrigate part of area of fatted farm, full area of shirkat farm «Navoy», part of farm «Al-Farghony» with adjacent private farms. Listed farms were founders of WUA.

Other WUA founder was Kuva rayselvodhoz transferred to WUA inter-farm canals Akbarabad-2 and RP-1 and obliged to finance during 5 years their operation and maintenance.

In J.Rasulov rayon WUA is established around secondary canals Akkalya and Bistrotok taking start from Gulyakandoz canal. These canals irrigate 12 dehqan farms of former collective farm «Bobo Hamdamov» and one dehqan farm of «Leningrad» farm. Listed farms are WUA founders.

Other WUA founder was J.Rasulov rayselvodhoz transferred to WUA inter-farm canals Akkalya and Bistrotok and obliged to finance during 5 years their operation and maintenance.

At constituent assembly UWA Council, inspection and arbitration members, Council Chairman and WUA Executive Director were elected. Decision has been made to give Kuva WUA name «Akbarabad» and J.Rasulov WUA - «Oby Zerafshan».

WUA organizational structure consists of common meeting of members (highest body), WUA Council, inspection and arbitration. WUA Director reports to WUA Council.

WUA «Akbarabad» irrigated area is 2820 ha including hydrosite №1 – 953 ha (canal Akbarabad-1 and Akbarabad-2), hydrosite №2 – 832 ha (canal RP-1), hydrosite №3 – 1033 ha (canal RP-2). Annual expenses per 1ha of irrigated lands paid by WUA members amount for 3150 soum/ha.

WUA «Oby Zerafshan» irrigated area is 1050 ha including hydrosite №1 – 453 ha (canal Akkalya), hydrosite №2 – 597ha (canal Bistrotok). Annual expenses per 1ha of irrigated lands paid by WUA members amount for 11,2 somony/ha.

## **ACQUAINTANCE WITH FRENCH EXPERIENCE IN WETLAND MANAGEMENT**

Since 24 till 27 February 2003 Uzbek delegation including SIC ICWC Director prof.V.Dukhovny, Director SXSITM Dr.A.Tuchin, Deputy Director SXSITM Dr. K.Gromiko and SIC ICWC Division Head Dr.A.Sorokin visited Montpellier (France) to acquaint with French experience in wetland management.

From French side Phillipp Veng (BRGM), Benua Frances (COSEL), Pierre Chevallier (ILEE), Michele Solie (VERSeau) and Stephan Dominges (Montpellier University) accompanied Uzbek delegation.

Delegation familiarized with measures undertaken in environment protection, wetland management, mathematic modeling of water-salt flows of surface and ground water, popularization of ecological achievements in wetland restoration, biodiversity maintenance, ecological resources use for recreation and economic activity by the following institutions:

BRGM (Bureau of geological survey), COSEL (Scientific Commission for coastal area of Langedok-Russillion study), EID (Inter-sector organization to fight moskitos), private scientific-research institute «TOUR DU VALAT», «VERSeau Association» and ILEE (Langedok Institute of Water Problems). Field trip to wetlands «Little Camargue», «Petite Camargue» and «Or' lagune» was done.

In Montpellier University's conference-hall presentation of Uzbek delegation members on the Aral Sea basin problems took place. Presentation was accepted with attention and endorsement from university students, post graduates and professors. In conclusion discussion on visit results, meetings and presentations was carried on. All attendees endorsed results of activity and active role of meeting initiators - Phillipp Veng, Benua Frances and Pierre Chevallier was underlined.

## **WAYS OF WATER RESOURCES IMPROVEMENT**

On January 28, 2003 regular Water Council of Uzbekistan was held. According to agenda, report of SANIIGMI Deputy Director S.V.Myagkov «Ways of water accounting improvement» has been heard. In Council Decision underlined:

- reliable water accounting in Central Asia including Uzbekistan and its systematic assessment under growing water deficit is very important for sustainable development of Uzbekistan and neighboring countries.
- in connection with Amudarya and Syrdarya transfer to transboundary status range of objective and subjective conditions are emerging causing negative effect on amount and quality of statistical data (meteorological, hydrological, hydraulic) used for water resources assessment.

- for the period of 1991-2000 in neighboring with Uzbekistan countries 115 gauging stations were closed (80 % from existed) having no analogue with other posts ( for instance, Hojibakirgan, Kyrgyzstan); it prevent receiving data about current flow and in-flow-outflow along the river on boundary between two states.
- water metering devices are physically and morally backward, current meter calibration is not available, there is lack of personnel, etc.
- direct measurements and observations of snow packs and glaciers as well as reservoirs sedimentation, natural lakes and swamps regime were ceased during last 10-15 years. Above constituents are interconnected and impact significantly on river run-off.
- Water Council supported main conclusions, namely:
  - under complicated river run-off in Central Asian rivers when main water resources are formed in three states' mountains (Kyrgyzstan, Tajikistan and Afghanistan) and they used by 6 countries, coordinated actions are needed on water resources assessment, experience exchange, coordination of measurement methods, data publication in single format, common equipment and devices.
  - without reliable accounting of river run-off in neighboring republics reliable accounting in Uzbekistan is impossible.

Council charges:

- «Uzgidromet» and MAWR Water Department by joint efforts to find possibilities for two gauging stations (Termez and VerhneAmudarya) rehabilitation on Amudarya river.
- «Uzgidromet» together with MAWR Water Department to appeal to Cabinet of Ministers of Uzbekistan with proposal to accept special provision on water resources accounting and assessment and their use.
- «Uzgidromet» to consider question of single methodologies and guidelines development on river and canal flow measurement suitable for existing equipment.
- Water Department to allocate money for scientific research on contractual base with scientific-research and design institutes on reservoir sedimentation.
- Council addressed its members to strengthen their activities according to WC status. In particular, to do it within the framework of measures dedicated to the World Water Day (March 22 each year).

## **WATER WORRIES: HOW IS A LIFELINE TO BE SHARED IN POLITICALLY TURBULENT TIMES, WHILE CATERING TO CONFLICTING ECONOMIC INTERESTS?<sup>1</sup>**

*Fatemah Farag considers the challenges discussed at the First Regional Conference on Perspectives of Arab Water Cooperation.*

Water shortages in the Middle East are expected to become more frequent and more severe. By the year 2030, water deficiency is expected to reach approximately 155 billion square meters per year, which amounts to 60 % of the current total water sources.

"The Arab world is currently facing one of the most severe water scarcities in the world," says Egypt's Minister of Water Resources and Irrigation Mahmoud Abu Zeid. "Most of the Arab region lies in an arid and semi-arid zone where rainfall is mostly low, variable and unpredictable. About 60 % of the fresh water resources in Arab countries comes from outside the region."

It is this alarming state of affairs that drew specialists from across the Arab world to Cairo in late October 2002 to attend the First Regional Conference on Perspectives of Arab Water Cooperation organized by the National Water Research Centre (NWRC) with the cooperation of UNESCO. "There is an urgent need for concrete cooperation between Arab countries to exchange experiences, knowledge and relevant information under one common umbrella, which was one of the conference objectives. The ultimate goal is to optimize the use of Arab water and human resources efficiently and effectively," said Mona El-Kady, head of NWRC.

The challenges, however, are formidable. The Arab world is currently characterized by an annual population growth rate of about 3.0 %, topping the world average rate of 1.7 %. From 300 million inhabitants in 2001, population projections indicate that an estimated 375 million will inhabit the Arab world in 2010 and over 500 million by the year 2025. This not only generates a greater need for water, but also causes an expansion of urban areas and more pollution of water sources, in addition to desertification. Factor in poverty and unemployment and the picture is bleak indeed.

"With a population growth rate among the highest in the world and water consumption rising at a higher rate than is replenished naturally, by the year 2025, renewable water supplies in almost all countries of the region will fall below 700 cubic meters per capita per year [the lowest in the world]," said Ahmed Goweili, secretary-general of the Council of Arab Economic Unity.

The result of water scarcity is conflict. For some time now pundits have been predicting that water could prove to be a major source of future wars. Israel's disputes with the Palestinian Authority, Syria and Lebanon over water resources, are an obvious case in point. Further, Turkey and Syria continue to argue over the water of the Tigris and Euphrates.

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<sup>1</sup> International Rivers and Lakes, December 2002, No. 38.

With the political ramifications of water management clearly in sight, the conference focused on more technical issues such as use efficiency and consumption patterns.

"Despite some scope for greater efficiency in water use and recycling in the region, there is simply not enough water for expanding irrigated agriculture to meet the region's rising food needs," argued Goweili. Abu Zeid added that "Most potential water resources in Arab countries have already been developed. Several Arab countries are suffering from water deficiency and others are heading that way, with an annual population growth of about 3 % and rising levels of consumption due to socioeconomic development," he said.

This has dire consequences on food security in the region. Already, 30 to 50 % of the Arab world's food consumption needs are imported.

Contributing to the water shortage is the fact that low-value uses continue to account for much of consumption, and irrigation systems are still inefficient. Abu Zeid drove this point home by explaining that "growing tomatoes with traditional irrigation systems may require 40 % more water than growing tomatoes with drip systems... [Further] we can conserve water not only by altering how we choose to grow our food, but also by changing what we choose to eat."

A mere 10 % improvement in efficiency of water delivery for irrigation systems could conserve enough water to double the amount available for drinking, he said.

But even if consumption patterns were to change, would there be enough water to go around? Not according to Goweili. "While representing 10 % of the world's total surface area and 5 % of the total population of the world, the Arab countries contain only 0.5 % of global water resources," he said.

While rainfall estimates for the Arab countries amount to about 220 billion cubic metres per year, El-Kady pointed out, the usable amount is only about 103 billion cubic metres per year, since considerable amounts go into the wetlands.

Meanwhile, limited underground water resources have prompted the use of alternative aquifers, which are a source of potential conflict. "The enormous amounts of pure water below the deserts of Africa could help avert a future water crisis. But the underground aquifers cross international boundaries, raising the spectre of future water wars as populations increase and competition for water resources heats up in the absence of cooperation and good-will," El-Kady said.

The number of water-scarce Arab countries has risen from three countries (Bahrain, Jordan and Kuwait) in 1955 to 11 (Algeria, Palestine, Qatar, Saudi Arabia, Somalia, Tunisia, the United Arab Emirates and Yemen) today, with another seven anticipated to join the list by 2025.

In the meantime, the exorbitant cost of upgrading the efficiency of existing water supply systems, be they irrigation or municipal, stands as a major constraint. "The current annual investment in water programs is about \$80 billion. For the coming 10 years, the desired annual level of investment is estimated at \$280 billion," Abu Zeid said.

He suggests that part of the solution is to "promote, propagate and make available low-cost technologies for water storage, conveyance, distribution, treatment and use for agriculture, drinking and industrial application," instead of relying on expensive imported technology, as the Arab world does. Statistics cited at the conference show that the Arab re-

gion currently spends only 0.2 % of its GDP on research and development, against a world average of 1.4 %.

Among the recommendations for action that emerged from the conference debates were the need to establish a "Council of Arab Ministers" that would work on creating an integrated Arab vision for water resources, the improvement of water productivity of irrigation systems and the creation of a common fund for Arab water security to finance necessary research and water projects.

"A message that we must see coming out of this conference is a strong affirmation of our consensus, inspired by the values of solidarity and equity. The core of the message should be that we are now ready to move on to acting as true stewards of the environment," Abu Zeid said.

After all, as El-Kady made clear, "Water and sanitation are basic human needs, not a favour."

## **ZIMBABWE, MOZAMBIQUE SET TO LAUNCH JOINT WATER COMMISSION<sup>2</sup>**

Zimbabwe and Mozambique will soon establish a joint water commission to advise the two countries on conservation, development and use of shared water resources.

The two countries were expected to sign the agreement in late 2002, after the Zimbabwean Government approved proposals to establish the commission.

The commission would advise the governments of the two countries on use of shared water sources such as the Pungwe, Buzi and Save rivers.

A few years ago, the Zimbabwean Government rejected the establishment of such a commission, because Mozambique had not yet ratified the SADC protocol on shared water systems, which was signed in 1995.

Mozambique has now ratified the protocol, and the Government has approved a proposal by the Minister of Rural Resources and Water Development to sign the agreement. The commission will consist of not more than three members from each country and will meet at least once a year.

All decisions of the commission will be taken on the basis of consensus between the delegations. In the event the commission fails to reach consensus, the matter under discussion will be referred to the two governments for further negotiations.

Among other functions, the commission will advise the two governments on measures and arrangements to determine the potential of the water resources available from shared rivers and demand for water from the rivers.

It will also help the governments to collect and exchange information on the water resources and advise on the criteria to be used in conservation, allocation and utilisation of water.

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<sup>2</sup> International Rivers and Lakes, December 2002, No. 38.

The two governments will supply the commission with information and plans on how they intend to develop and use water from the rivers.

Disputes arising between the two countries on the implementation of the agreement shall be settled amicably and, if not, shall be referred for arbitration. The decision of the arbitrator, who is chosen by the two countries and will be a citizen of a different country, shall be final and binding.

In the event that the two countries fail to reach an agreement on the selection of an arbitrator reference will be made to the Helsinki rules on the use of waters of international rivers and the Convention on the Law of the Non-Navigational uses of international water courses.

## **PUBLIC WATER RESOURCES GOVERNANCE AND PUBLIC ORDER CREATION IN FERGHANA VALLEY**

*Brief description of 4-year experience of International Secretariat and Central –Asian Alliance on water resources*

This brief document is aimed at discussion on workshop organized by Swiss Cooperation Agency (SDC) in Osh on September 26-27, 2002. It is based on 4-year experience of International Secretariat and Central –Asian Alliance on water resources and their partners in 14 farms.

MCB project has been thought as common effort to gather all people at farm level and facilitate joint decision making on even water resources distribution and sanitary-hygienic issues.

This led to following issues emerging:

1. Lack of initiative and dependability syndrome: people in rural areas still rely on the government. On the other hand, government and local authorities do not strive to collaborate with them. In result, mistrust between people and government is growing.
  2. Water resources are considered as free of charge good and should not be paid. Besides, people think that donor projects should be subsidized.
  3. Lack of knowledge and experience in planning and management, public organizations and jointly made decisions.
  4. Spreading people poverty in rural locality during last decade, growing social inequality. On this base, social communities establishing is important.
  5. There was no water conflict in any project farm. In result of attempts to create public order and avoid conflicts facilitated by donors, MCB-CAA concept structure and experience were described.
1. Notion «conflict» should be considered carefully because it can be associated with antagonism and cruelty. In Kyrgyz and Uzbek language word “conflict” means “close to war” that is why this word pushes off many people. Because of this, we selected term “collective performance or collective decision making”. When they say “conflict”, people say that it does not exist. In Ferghana valley due to correct water resources management and even distribution less contradictions and conflicts emerge compared with land resources. Nevertheless, water system creation or rehabilitation at farm level can create contradictions if people are not informed about system design, technological choice, water supply delivery, water discharge distribution and pricing.
  2. Often it is difficult to understand character, type and seasons of conflicts at local level without knowing social dynamics. Sometime they occur because of ethnic belonging, relations within kindred/family, social inequality, fight for power, etc. To that, people do not say about them to strangers. Because of that, MCB and its partners needed time for creation of common review. We also made efforts to establish trust (i) fulfilling our obligations, (ii) setting up relations with farm representatives and (iii) helping in creation and strengthening confidential organizations (water committees and NGO). In re-



- sult, one year or more is needed until local partners will be ready for contact and will express their contradictions and conflicts to MCB-CAA people.
3. People do not know how to perceive future conflict and how to avoid it: they react passively or act emotionally. There is widely spread disadvantage to mistrust information and negotiate.
  4. Many follow “leader” and do not want to express their own views and opinions. Many hoped that “sustainable water committees are those where nobody conflicts”. Methods of collective decision making help people to express own opinion and strengthens group potential in problem solution as well as increases responsibility.
  5. Ideas taken from foreign partners and applied to avoid conflict situation do not fit our region.
  6. We invited expert from Georgia prepared in Harvard but her program appeared to be inorganic for our way of thinking. Models of conflict situations management can give pure theoretical base of this problem but experience show that it can be difficult to apply it in practice. Because of that any activity should be based on real situations.
  7. For real conflict situations and disputes there are formal and informal mechanisms at farm level, for example, court of elders (Aksakal soto). Any attempt to resolve dispute should take them into account not creating new ones.
  8. Water committees act as mechanism of conflict situation prevention because it involves people in joint activity and teach carry on disputes. Population accumulates experience in confusions and contradictions overcoming. Most contradictions occur due to confusions and summarizing.

### **INTEREST IS CONFIRMED<sup>3</sup>**

*As government press-service informed, Prime Minister Imangali Tasmaganbetov discussed with the World Bank Regional Director Dennis de Trey international water-power consortium establishing in Kyrgyz Republic.*

Interest of Kazakhstan to participate in project implementation is confirmed. Project includes construction of two Kambarata hydropower plants on Naryn river in Kyrgyzstan. Simultaneously, attention is drawn to necessity of preparatory works including legal base formation for Kazakhstan participation in project financing, construction and future management.

Project of Kambarata power plants construction has being developed about 30 years ago. For decision making independent audit and other measures are needed under permanent interest of our country in water and electricity receiving from Kyrgyzstan.

During discussion other spheres were also touched where WB and Kazakhstan interests coincide.

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<sup>3</sup>Kazakhstanskaya Pravda, January 30 2003.

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