

## **SUMMARY REPORT**

**THE ICWC TRAINING CENTRE**

**“TRANSBOUNDARY WATERS: STRATEGIES FOR IMPROVEMENT  
OF REGIONAL COOPERATION”**

## **WORKSHOP**

**Held at the Central Office of the BWO “Syrdarya”**

**From 24<sup>th</sup> to 29<sup>th</sup> of May, 2001**

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**Tashkent**

## TABLE OF CONTENTS

1. Executive Summary
2. Introduction
3. Workshop Activities
  - A. Workshop objectives
  - B. Opening of the workshop
  - C. Workshop papers
  - D. Workshop moderators
  - E. Workshop participants
  - F. Discussions
    - i. Topic I: GEF Project “Water Resources and Environmental Management”, its tasks in strengthening cooperation and realization - by R. A. Ginuyatullin (GEF Project Leader).
    - ii. Topic II: “Interaction of the World Bank and IFAS donor organization” – by David Pearce, World Bank Mission in Central Asia.
    - iii. Topic III: Water and Energy in Provision of Central Asian States and Coordination of its Schedules with Water Demands in the Region – by I. D. Ametov, Central Dispatching Office, Republic of Uzbekistan.
    - iv. Topic IV: Medicines Sans Frontiers (MSF) in the Aral Sea Area – the past, present and future activities – by Ian Small (MSF Tashkent).
  - G. Gender Participation
  - H. Questionnaire results
  - I. Memorandum
4. Conclusions

## Appendices:

- A. Workshop agenda
- B. Curriculum vitae of workshop moderators
- C. Curriculum vitae of workshop participants

## **I. EXECUTIVE SUMMARY**

This report follows a successful completion of the ICWC Water Resources Management Training Center's workshop on "Transboundary waters: strategies for improvement of regional cooperation" that held from May 24 to 29, 2001 in the ICWC Training Centre in Tashkent, Uzbekistan.

Central Asian countries recognized that water is a key natural resource for future prosperity and stability and it is important to identify mechanisms and instruments to support the use of water as a catalyst for regional cooperation rather than a source of potential conflict. This is especially important since the need for cooperative management of shared water resources will increase significantly with the demands from expanding populations and economic growth.

The new border situation in Central Asia created not only classical clear-cut upstream-downstream situations between different independent countries, but also between a whole series of now politically separated irrigation networks that withdraw water from the same source.

Realizing the importance of the issues involved between countries, ICWC Training Centre for the second time hold a workshop on "Transboundary waters: strategies to improve regional cooperation" where representatives from all basin countries and other interested parties took the chance to discuss critical questions and exchanged opinions. In this workshop participants included from Ministries of Agriculture and Water Resources Management, from Environmental Protection Agencies, from Interstate organizations and Non-governmental organizations (NGOs) of the Aral Sea basin countries. It should be noted that there is a general trend in Central Asia to involve public participation in water resources management. Worldwide experience shows that, and which is repeatedly stated in international documents, public participation is very important factor in achieving sustainable environmental management. Several distinguished scientists, both local and foreign, also participated in the workshop.

Outputs from the workshop shows that countries of the basin realize the importance for cooperation and participants outlined the plan of actions to improve regional cooperation. In addition, the minutes of the workshop lists a number of recommendations that should be carried out and implemented for rational water resources management in the Aral Sea Basin.

## **II. INTRODUCTION**

The cause for conflicts between up – and downstream riparians seems to be clear: "Measures taken by upstream countries influencing the river flow diminish the possibilities of downstream countries to use the river for their development." Water storage for hydropower production or a deterioration of the water quality has severe consequences for water-dependent activities (agriculture, industry, fresh water supply) in the lower reaches of a river. Especially in arid regions, usable water in river flows is progressively scarce and rivalrous because drainage run-off degrades the quality and river diversion reduces the amount of water. While the upstream users may not be affected by poor water quality, the users downstream face a different set of constraints.

The disintegration of the Soviet Union in 1991 led to the collapse of the centralized planning and management of water resources in Central Asia. Two major rivers of the region, Amudarya and Syrdarya Rivers became international rivers with subject to use and manage by cooperative actions of all the five basin countries. This created specific problems related both to quantity allocation and quality standards of the transboundary water resources. It turned out that upstream and downstream countries have different priorities in utilization of these river water resources therefore creating conflicting situations between water users. In the post Soviet period, the needs of the downstream countries for the irrigated agriculture do not correspond to the needs of the upstream countries for generation of maximum energy. Several draft agreements were signed by

the heads of the member countries where all declared that both rivers subject to joint management and each country accepted definite responsibilities for reasonable utilization of transboundary water resources for the benefit of their national interests. However, cooperation of the basin countries on this very important activity has not been successful to this time. There is no reliable mechanism that can be used for cooperation over management of transboundary water resources. Some argue that agreements do not cover all the aspects of transboundary water resources management and others point to the fact that a decade of work on these type work is not enough, usually it takes more to develop sound laws and reliable mechanisms.

For the Aral Sea basin countries where three out of five heavily depend on the external water resources on one degree or another it is very important to reach the consensus between upstream and downstream countries in joint utilization of the basin water resources. While available water resources in the region is fixed population growth is becoming one of the other major concerns, especially for Uzbekistan, when water availability per capita is rapidly decreasing. The present population in the Aral Sea basin is about 39.5 million inhabitants and it is being forecasted that it will double in the next 25 years.

One of the goals for establishing the Training Centre for water resources management in the Aral Sea Basin was to improve a cooperation on water resources management in the basin. It was planned to host two training workshops on transboundary water resources management where representatives from the ministries of water resources management, environmental protection and energy would meet to have round table discussion on most critical issues related to basin's water resources allocation. Disputes over water allocation among the basin countries call for negotiations and at the same time it is also a challenging task.

The current workshop gathered representatives from Ministries of Agriculture and Water Resources Management, Environmental Protection and NGOs. For the five-day period participants had a chance to meet their counterparts, exchange opinions and discuss most related issues on water resources allocation in the basin and protection of transboundary water resources. Moderators of the workshop repeatedly stated that only by cooperative efforts the problems related to water resources can be solved and regional cooperation stands as a key element for region's prosperity and stability. Moderators also emphasized that the principles of integrated water resources management (IWRM) and international water law should be area of discussions for getting as much benefit as possible from these principles and utilize them into present conditions of the Aral Sea Basin countries.

This report outlines activities of the ICWC Training Centre second workshop on “Transboundary waters: the strategies for improvement regional cooperation”.

### **III. WORKSHOP ACTIVITIES**

#### **A. Workshop Objectives**

The main objectives of the workshop on “Transboundary waters: the strategies for improvement regional cooperation” were:

- Acquaint participants with present problems of transboundary water resources management in Central Asia and the World.
- Acquaint participants with the main concepts of the international water law such as equitable and reasonable utilization and no harm principles;
- Acquaint participants with up-to-date advanced technologies in the management of water resources.
- Create an environment and arrange round table discussions for representatives to discuss openly the critical problems related to water resources management in Central Asian.

- Development of recommendations and guidelines at some degree to ease the present tension between water users and energy production sectors and also meet environmental standards.
- Development and improvement of contacts among representatives of the five states of the region.
- Exchange of views and experiences in the field of water resources management.
- Involve public participation in water resources management and protection through encouraging representatives of the NGOs to deliver to the general public the urgency of the issues involved in present days.

## **B. Opening of the Workshop**

Prof., Viktor A. Dukhovny, the Director of the SIC ICWC, chaired the opening session of the workshop. He welcomed the participants and spoke about the history of the creation of the ICWC Training Center, and about Canadian International Development Agency (CIDA). He said that water resources management training project in the Aral Sea basin is the five year CIDA funded project in the region and listed the long term and short-term goals of the project. Prof., Dukhovny stated that training is one of the key elements for the integrated water resources management and he thanked the project sponsors for the aid and called participants to use this given chance to improve regional cooperation.

ICWC Training Centre was honored by the participation of the Prof., Januzsh Bogardy, Water Resources Division of the UNESCO, in the opening session of the workshop. Prof., Bogardy said that he was impressed by the results of the efforts of the CIDA and ICWC to establish the Training Centre for water resources management. He said that UNESCO will look forward to fruitful cooperation with the ICWC Training Centre in the future. Prof., Bogardy talked about the UNESCO prepared Water Related Vision for the Aral Sea Basin that was presented in the Second World Water Forum in the Hague in March 2000. One of the first tasks of the UNESCO Prof., Bogardy said in the Aral Sea Basin was to support scientists to enable them to continue their research related to the Aral Sea. It created Scientific Advisory Board on the Aral Sea Basin Problems (SABAS), whose members are the representatives of the scientific community of the basin.

Mr. Kipshakbaev, former minister of water resources of Kazakhstan, director of the Kazakh branch of the SIC ICWC, explained that some of the Central Asian's priorities in water resources development were corresponding perfectly with the objectives of the workshop, namely, investments in training of water specialists and bring together them to cooperate in the management of regional water resources. He stated that while available water resources of the basin are fixed and there is growing water demand in the basin there should be rational water management with integrated approaches to improve the present situation.

## **C. Workshop Moderators and Participants**

The participants of the workshop included officials who have either director or deputy director positions of the water management organizations. The following table gives a full list of participants, organizations they work for and positions.

### **KAZAKHSTAN**

- |  |   |
|--|---|
| 1. Kipshakbaev Nariman Kipshakbaevich,<br>Director of the Kazakh Branch of the SIC<br>ICWC | 2. Kubakov Yerdos Kubakovich, Chief<br>Engineer "Kazagidromet", Ministry of<br>Environmental Protection |
|--|---|

3. Umarov Galy Kasymuly, Assistant to the Secretary, Interstate Committee for Sustainable Development

4. Yelubaeva Sayran Amanjolovna, Engineer, State Enterprise “Astana-su”

### **KYRGYZ TAN**

5. Rodina Yelena Mikhaylovna, NGO “Sustainable Environmental Use”
7. Abduldaev Maksat Sekenovich, Ministry of Environment and Emergency Situations

6. Abduldaeva Kenjebubu Abduldaevna, Kyrgyz Women’s Association for Environmentally Sustainable World

### **TAJIKISTAN**

7. Akramov Fayzullo Raufovich, Member of the Executive Committee of the International Fund for saving the Aral Sea
9. Negmatov Shavkat Gayratovich, ICWC Secretariat
11. Isomatinov Sayfullo Ikramovich, NGO “Biosphere”

8. Khasanov Khomidjon, Ministry of Agriculture and Water Resources Management
10. Salimov Talbak Orzuevich, Head of the Tajik National Working Group, GEF Agency Project

### **TURKMENISTAN**

12. Orazov Alty Ballyevich, NGO Society for Environment Protection in Turkmenistan
14. Saparov Usman Bayramklychevich, Technical Director of the EC IFAS

13. Aganov Stanislav Yefremovich, Project “Turkmengiprovodhoz”

### **UZBEKISTAN**

17. Mukhamednazarov Lutfullo, Member of Executive Committee of the International Fund for Saving the Aral Sea from Uzbekistan
19. Kamalov Yusup, NGO Union for Protection of the Aral Sea and Amudarya River
21. Domuladjanov Ibragim Khodjimiratovich, NGO Association “For ecologically cleaner Fergana”.

18. Kolmuradov Utemurad, Deputy Minister of Agriculture and Water Resources Management of the Karakapakistan

20. Popspirova Nitsa Mikhialis, NGO Association “For ecologically cleaner Fergana”.

22. Kurbanbaev Yerejep, NGO Eco-Priarale

### **E. Paper Presentations**

The list below includes papers for transboundary waters program and other presentations that were made during the workshop.

Victor A. Dukhovny: Water in Central Asia: development and problems.

David Pearce: Interaction of the World Bank and IFAS Donor Organizations.

N. K. Kipshakbaev: Key factors considered in the water development scenarios: economic development; demographic pressure; technological changes; social needs and regional priorities,

environment and water quality, institutional aspects. Possible uncertainties of further development. Possible future scenarios.

R. K. Ikramov and M. G. Khorst: Results of the project on water saving (A-2 GEF) and agricultural production management and water use (WUFMAS).

I. D. Ametov: Water and energy in securing the countries of Central Asia and its operation coordination with water management.

V. A. Dukhovny: Transboundary water resources and approaches to solve the issues from the viewpoint of water law.

T. A. Altyev and U. B. Saparov: Main functions of regional water management organizations. Coordination of national interests and basin constraints. Roles of international organizations and donor-countries in development of regional cooperation strategies.

V. I. Sokolov: World experience in hydrographic management of water resources

V. I. Sokolov, Y. Ukhalin, and L. Tiy: Information systems and databases in water management within hydrographic areas

A. G. Sorokin: Modeling of Amudarya and Syrdarya River Basins

A. I. Tuchin: Tasks and Models of River Flow Management under the Conditions of Uncertain Flow

A. A. Djalalov: Management of National Water Resources of Uzbekistan in Coordination with Regional Problems.

Victor A. Dukhovny: Economics of regional cooperation for management, protection and use of transboundary water resources. Fund raisings and financial inter-relationships of regional water management organizations in joint and separate water uses for operational requirements. Funding of joint projects for` water resources development.

R. G. Lyubar: Frequent Irrigation Techniques.

M. T. Ruziev, V. Prikhodko: Aral Sea Basin Management Model.

## H. Group Discussions

**Topic I: Global Environmental Facility (GEF) Project “Water Resources and Environmental Management”, its tasks in strengthening cooperation and realization.**  
By R. A. Giniyatullin, GEF Project Leader, Uzbekistan

The GEF Agency of the International Fund for Saving the Aral Sea for management of the Aral Sea Basin projects was established in 1998 for implementation of the GEF International Project “Water and Environmental Management in the Aral Sea Basin” on the territory of the five Central Asian States, and priority national projects, programs and projects of urgent assistance for the Aral Sea area population.

Mr. Rim A. Giniyatullin, the Global Environmental Facility (GEF) Project leader in Central Asia, shared his views of problems of water resources management in Central Asia. He said that

GEF globally is helping to developing nations and countries with economies in transition to conserve their freshwater and work together in addressing their transboundary basins. He outlined the five components of the GEF activities in Central Asia:

Component A: Water and Salt Management Component that is in turn divided into:

A1. Regional and National Water and Salt Management Strategies - prepares the integrated regional water and salt management strategy on the basis of national strategies;

A2. Public Participation in Water Conservation - disseminates the experience of farms, water users' associations and rayon water management organizations in water conservation.

Component B: Public Awareness in Water Conservation - educates the general public to conserve water and to accept burdensome political decisions.

Component C: Dam Safety and Reservoir Management - raises reliability of operation and sustainability of dams.

Component D: Transboundary Water Resources Monitoring - creates the basic physical capacity to monitor transboundary water flows and quality.

Component E: Wetlands Restoration - rehabilitates a wetland area near the Amu Darya delta (Lake Sudoche) and contributes to global biodiversity conservation.

Mr. Rim A. Giniyatullin encouraged the participants look real into growing issues of water management problems and added that this Training Centre is the best place to gather real world water people of Central Asia to discuss these issues and build strategies for further water development.

### **Topic II: Interaction of the World Bank and IFAS donor organization**

by David Pearce, World Bank Mission in Central Asia.

Mr. David Pearce, a representative of the World Bank Mission in Central Asia, spoke about the World Bank's activities in the region. He emphasized the significance of the integrated water resources management for Central Asia. He also spoke about the WB projects in the field of water and environment and their priorities in the following areas: political, economics, technical, and diplomatic, etc.,

A part of Mr. Pearce's speech was devoted to the Aral Sea crisis and Bank's projects that were implemented in the coastline of the sea.

Mr. Pearce also listed donor organizations (donors of the IFAS) which are involved in activities on addressing the water resources problems in the region, those are: United Nations (World Bank, UNDP, UNEP, UNESCO, etc., ), US Agency for International Development (USAID), Canadian International Development Agency, European Commission (EC Technical Assistance to the Commonwealths of Independent States (TACIS)), European Bank for Reconstruction and Development, Asian Development Bank.

Mr. Pearce said that he hopes the investments to the region will increase and countries will further put more efforts to strengthen the roles of regional water management organizations such as IFAS, ICWC and BWOs.

### **Topic III: Water and Energy in Provision of Central Asian States and Coordination of its Schedules with Water Demands in the Region.**

by I. D. Ametov, Central Dispatching Office, Republic of Uzbekistan.

During the Soviet period a large-scale projects were implemented to develop irrigated agriculture in Central Asia. Large size reservoirs were built to satisfy the needs of agriculture and

hydropower generation. Not only irrigated agriculture was developed in integrated way but also energy sector. In 1980s, the United Energy System (UES) of Central Asia was established that since has a common operation scheme, centralized dispatching and information offices. Mr. Ametov, a representative of energy sector, gave a brief review of energy sector development in Central Asia. Since the economies of the Central Asian countries are in transition in order to supply with successive transfer to the new conditions, Central Asian countries agreed to follow the old Soviet rules related to water and energy resources management. As distinct from the water sector, the energy is chargeable that includes supply of energy, its transit, services in frequency regulation and etc.

At present, as Mr. Ametov stated, the existing relationship between water and energy sectors does not satisfy any country located along the rivers. He said that only by mutual efforts the problems can be solved and therefore commitments of the parties to negotiate in finding the optimal ways is very important and at the same time the best way to do it. Mr. Ametov supported the idea of the creation of Water – Energy Consortium that would deal specifically with the problems of water and energy in Central.

#### **Topic IV: Medecins Sans Frontieres (MSF) in the Aral Sea Area – past, present and future activities**

By Ian Small, Head of MSF Mission in Uzbekistan

The Aral Sea is one of the world's largest inland seas. Over the last fifty years, the shoreline has receded some 70 miles and the sea has been half its former size. This environmental disaster is the result of the diversion of river water for large-scale irrigation. The overuse of pesticides has had a devastating effect on public health.

A guest speaker from MSF-Uzbekistan, Dr. Small outlined MSF mission activities in the Aral Sea Area. She said that MSF's medical program is based in Muynak, Karakalpakstan.

At the end of 1997, MSF established itself in the area and is now carrying out six projects involving medical aid (tuberculosis (TB) control, improvements in the prevention and control of acute respiratory infections (ARI) and diarrheal diseases, epidemiological support to the Ministry of Health), operational research into possible effect of this environmental disaster on public health, health education through local television, training and activities in the area of drinking water, sanitation and hygiene. To draw attention to the problems in the area, the team regularly gives lectures for international organizations.

MSF is the only international medical aid organization on the scene of what some have called the "worst environmental disaster in the world".

#### **I. Gender Participation**

McGill University and Mount Royal College are committed to CIDA's policy with respect to gender equality. Although the issues related to gender equality were not specifically addressed in this workshop, the active participation of women was encouraged.

SIC ICWC has been open to McGill's suggestions regarding the participation of women in all aspects of this project. Women were involved in all of the workshop activities, and at varying capacities including:

- Workshop participants (presented paper, active during question period).
- Planning and logistics.
- Translations (workshop documents and simultaneous translation of presentations)
- Assisted in the preparation of presentations.
- Accounting.
- Secretary services.

Table I illustrates the participatory role of women in the workshop.

**TABLE I**  
**WOMEN PARTICIPANTS**

No	Name	Title	Participation
1	Larisa Tiy	SIC ICWC Regional Information Centre Leading Specialist	Presented paper. Actively participated during discussions
2	Irina Juravleva	Assistant to Director SIC ICWC	Actively participated during organization
3	Larisa Averina	SIC ICWC Specialist	Presented paper. Participated during discussions
4	Ludmila Muhina	Head Bookkeeper	Actively participated during organization
5	Sayran Yelubaeva	Participant from Kazakhstan	Been actively involved in the discussion periods
6	Yelena Rodina	Participant from Kyrgyz Republic	Been actively involved in the discussion periods
7	Kenjebubu Abduldaeva	Participant from Kyrgyz Republic	Been actively involved in the discussion periods
8	Nitsa Popspirova	Participant from Uzbekistan	Been actively involved in the discussion periods

### J. Questionnaire results

The participants were encouraged to provide feedback to the ICWC Training Centre staff with respect to the overall organization and management of the workshop. Information was obtained from informal discussions with the participants, and through the use of a questionnaire. The questionnaire was developed by ICWC Training Centre staff, and distributed after the completion of the workshop activities.

Table II is a summary of the questionnaire results.

No	Questions	Yes	No	Comments / Suggestions / Recommendations
1.	Has the workshop come up to your expectations?			<ul style="list-style-type: none"> <li>▪ We are thankful for warm and kind reception.</li> <li>▪ I learnt late about the seminar and therefore was not prepared for its content.</li> <li>▪ I was surprised, did not know the workshop agenda.</li> </ul>
2	Are you satisfied with the contents of the given materials?			<ul style="list-style-type: none"> <li>▪ Not only with the content but also with the quality.</li> <li>▪ Distributed materials not fully maps the factual material.</li> <li>▪ Coordinate a link between surface and ground waters and consider water quality issues.</li> </ul>
3	Are you satisfied with the contents of lectures?			<ul style="list-style-type: none"> <li>▪ Some papers were cognitive for enhancement the views.</li> <li>▪ It was necessary to include papers that would have more practical characters (not scientific).</li> </ul>

				<ul style="list-style-type: none"> <li>▪ Yes, include additional materials related to Central Asia.</li> <li>▪ Not all presentations were interesting to listen though the papers are.</li> <li>▪ There are no clearly defined conclusions and appendices, for the NGOs because of our narrow specialty it is hard to come up with conclusions.</li> </ul>
4	Are you satisfied with trainers?			<ul style="list-style-type: none"> <li>▪ More lecturers should be invited from ministries.</li> <li>▪ Update the tables and maps.</li> <li>▪ All of them possess the knowledge but some lack the presentation skills.</li> <li>▪ I am grateful for the bringing the professionals and high officials.</li> <li>▪ Yes, I am satisfied but not with all of them.</li> </ul>
5	Are you satisfied with the premises of the Training Center?			<ul style="list-style-type: none"> <li>▪ I would be good to show the video materials on the present conditions of the Aral Sea Area and Amudarya and Syrdarya Rivers.</li> </ul>
6	Are you satisfied with the equipping of the Training Center?			<ul style="list-style-type: none"> <li>▪ It is necessary to install AC. Необходим кондиционер.</li> </ul>
7	Are you satisfied with the agenda of training?			<ul style="list-style-type: none"> <li>▪ Sometimes the agenda was not followed.</li> </ul>
8	Are you satisfied with the duration of the workshop?			<ul style="list-style-type: none"> <li>▪ The most acceptable duration of the workshop would be 5 days: from Monday to Friday, or from 6 days: from Monday to Saturday.</li> </ul>
9	Are you satisfied with your accommodation during the workshop?			<ul style="list-style-type: none"> <li>▪ Organization of the workshop was great but accommodation would be good in the hotels.</li> <li>▪ It was good that we have been located close to the Training Centre.</li> </ul>
10	Are you satisfied with meals during the workshop?			<ul style="list-style-type: none"> <li>▪ It is preferable to have a dinner at 7 or 8 PM.</li> <li>▪ Please pay attention to the aesthetics of meal.</li> <li>▪ It would be enough to organize 2 meals per day since the breakfast could be had in the apartments.</li> <li>▪ Include in the meals the national foods of the Central Asian countries.</li> <li>▪ The meal plan should have been organized according to the preferences of the participants.</li> </ul>
11	Are you satisfied with the administrative personal of the Training Center?			<ul style="list-style-type: none"> <li>▪ Wish them good luck!</li> </ul>

12	Are the training/supporting materials you received sufficient?		▪ It would be good to have the copy of the materials in electronic formats.
13	What topics would you recommend to include in the training program?		<ul style="list-style-type: none"> <li>▪ Water resources and their role in sustainable development in the Aral Sea basin.</li> <li>▪ Water factor in human health in Aral Sea Region since it reflects the ecosystem condition.</li> <li>▪ BWO Syrdarya and Amudarya statuses for implementation of their functions on water resources management.</li> <li>▪ Water saving in inter-farm level.</li> </ul>
14	What topics are not interesting for you and can be removed?		<ul style="list-style-type: none"> <li>▪ Each presentation added something new into my knowledge.</li> <li>▪ Papers should be corrected according to participants questions and comments.</li> <li>▪ In terms of information there are no uninteresting papers.</li> </ul>
15	What training is required for your organization and staff?		<ul style="list-style-type: none"> <li>▪ Regional cooperation.</li> </ul>
16	Do you have any ideas on commercialization of the Training Center activities? If you have them, we would be grateful to you for your suggestions.		<ul style="list-style-type: none"> <li>▪ Opening the branch of the Training Centre in Tajikistan.</li> </ul>

## K. Memorandum

## MINUTES

of the ICWC Training Center Workshop “Transboundary waters: strategies for improvement of regional cooperation” held with participation of NGO’s representatives, water management and nature protection specialists from Central Asian countries

Tashkent

May 29, 2001

Between May 24 and 29, 2001 the workshop participants had been mastering the course of studies within the curriculum “Transboundary waters: strategies for improvement of regional cooperation”, they familiarized themselves in accordance with approved set of themes with prepared reports, listened to lecturers’ presentations and statements made by moderators, conducted active discussions of interlinked regional and national water management and environmental issues. As a result, the participants worked out practical recommendations as to efficient water resources use and nature protection, improvement of water resources management techniques in the region at various administrative levels taking into account national interests, as well as outlined the role played by NGOs in public awareness build up and public participation in decision making process on most vital problems pertinent to regional cooperation and transboundary water resources management.

Participants of the training course were represented by officials of regional organizations (EC IFAS, ISDC}, state water/ecology organizations, NGO members from central Asian countries (Annex 1).

Several prominent figures participated at the opening session addressing the trainees with comprehensive statements concerning the subject matter of discussions; among them: - Nailya Ogda, technical CIDA adviser on cooperation and Januzsh Bogardy – leading specialist of Water Resources department, UNESCO. A.N, Krutov (World Bank Regional Mission in Central Asia), A.A. Demidenko (Project Director, UNDP), U. Saparov (Technical Director, EC IFAS) and J. Small (MSF mission) met with participants and presented their reports.

The workshop moderators were: Prof. Kipshakbaev, Director of the Kazakh branch of SIC ICWC Djalalov A.A., First Deputy Minister of Agriculture and Water Management (the Republic of Uzbekistan), Saparov U.S. Technical Director of EC IFAS, Ametov I.D., Chief Controller of United Supervision Department “Energy”, Umarov G., Secretary of ISDC Chairman for CAR, academicians Khamraev N.R. and Tashmukhamedov B.A. (Academy of Sciences of Uzbekistan). The participants had been given in advance copies of reports for preliminary scrutinizing and working out opinions on their contents, thus facilitating discussions arranged by moderators. Lectures were presented in the form of main text with use of visual aids based on modern equipment and technologies: in particular, those related to various aspects of water resources use, tackling ecological problems in the world and in the Aral sea Basin, as well as concerning implementation of WARMAP, WUFMAS and GEF projects. The participants noted that the workshop topics included a wide range of water resources management issues, efficient water use in various sectors of economy, particularly, in irrigated agriculture. The trainees emphasized the historical and geographical unity of Central Asian States, united by common rivers – the Amu Darya and Syr Darya rivers of the aral Sea Basin. They said about regional cooperation and gave positive assessment to the measures undertaken in the region aimed at development of cooperation between regional organizations. The trainees positively perceived the necessity observing set limits of water use from transboundary water sources, agreed schedules of reservoirs operation modes, ecological requirements and strict fulfillment of obligations according to variants of compensations. The necessity was noted of further developing mathematical models as they apply to water resources management in the Aral Sea Basin, and of training specialists – users of these models, dissemination of such models in central asian countries. The participants acknowledged the objective necessity of improving hydrometeorologic service in various sectors of economy of Central Asian countries and in particular, on hydro posts located along transboundary rivers with the purpose of forecasting water content in the rivers and monitoring pollution of water. In this connection timeliness was noted as to ICWC decision on necessity to resume functioning of HM service posts on Fedchenko and Abramov glaciers, defining at that shares of each country’s contribution in resumption of their work.

The workshop participants attentively listened to reports delivered by Giniyatullin R.A., Head of GEF Agency and Khorst M., who is in charge of monitoring the competition being conducted within the framework of GEF subcomponent “A”.

The participants pointed to high level of training materials and reports developed and delivered by SIC ICWC, as well as level of works and analyses carried out on the basis comprehensive and extensive information materials.

The trainees got satisfied with the choice of lectures, their contents, technical support, arrangements conducted for accommodation of guests and put forward a proposal to supplement lectures with materials on metrological topics, and involve ecologists to participate in activities of the Training Center.

The participants emphasized the necessity of more active work with the public at large bearing in mind various aspects of cooperation in the field of water use and ecology, solving environmental

problems, enlisting capacities of NGO for building up public awareness about issues of efficient water use, particularly, in extremely low water years.

Concerns were expressed as to ongoing decay of water infrastructure and shortcomings in the system of Central Asian water specialists training which cast doubt on sustainable functioning of water management systems already in medium term perspective.

The workshop participants also noted the necessity of raising responsibility and status of regional organizations with the purpose of attaining successful work.

The trainees developed the following recommendations and suggestions to be used in reaching advanced levels of transboundary water resources management, improving and further developing regional cooperation:

1. To note insufficient adequacy of measures aimed at improvement of lands irrigated for long periods, which could have increased crop yields, ensured higher labour productivity and, which is more important, raised degree of irrigation techniques efficiency and secured irrigation water saving.
2. To raise the status of regional water management bodies (ICWC, BWO), as well as level of their responsibilities and to extend the scope of their authorities; to press for complete introduction of the river basin principle into regional transboundary water resources management.
3. To regard as expedient conducting regular joint metering along the Amu Darya at the Kerky, Darganata, Tuya-Muyun and Kipchyak hydro posts by the BWO "Amu Darya", Hydrometeo Services of Turkmenistan, Uzbekistan, Ministry of Water Management of Turkmenistan, Ministry of Agriculture and Water management of Uzbekistan specialists with the purpose of limits observance inspection and specifying river bed losses.
4. It necessary to have a working program developed BWO "Amu Darya", SIC ICWC, Hydrometeo Services of Uzbekistan and Turkmenistan, envisaging arrangement of studies of the river bed losses under current conditions river flow and water scarcity.
5. Taking into consideration growing impact return flow on transboundary water quality, particularly in low water years, it is expedient to activate monitoring of river flow, ground water and drainage water quality.
6. For the sake of damping negative impact of drainage waters on environment it is expedient to carry out necessary scientific research organizational-propagandistic activities aimed at introducing most possible return water use in areas of their formation for crop irrigation, industry and other needs.
7. With the view of developing regional cooperation as it applies to water-ecology issues it is necessary to prepare and coordinate interstate agreements on strengthening regional organizations, conducting transboundary monitoring of water quality.
8. Taking into consideration that non-productive water use in irrigated agriculture has been taking place due to low educational level of water users, local specialists and member of WUA, it is expedient to direct efforts of water saving organizations and NGOs at carrying out large scale activities with the aim of explaining rules and regulations efficient water resources use.
9. To consider as one of the priorities attraction of specialists of Ministries of Foreign Affairs, regional and district organizations to the training at the ICWC Training Centre.
10. Taking into account important role of political will of the heads of the Central Asian States in rational and effective use of water resources, their protection, to consider expedient constant information delivery to government on existing critical water-environmental problems of the region.

11. To consider a priority task of providing drinking water supply of adequate quality to the Aral Sea Basin population.

## V. SUMMARY

The objective of the workshop was to improve regional cooperation in water resources management. A small group of representatives from each of the basin country had an opportunity to exchange opinions and build strong and friendly relationship. The topic of the workshop is considered very urgent for the Central Asian countries, especially when the region is facing severe drought years. Regional organizations responsible for transboundary water resources management in the Aral Sea basin such as IFAS, ICWC and BWOs have very difficult tasks and it is good that they put training as priority in their list. The cooperation in organization of training workshops received great importance among the water, environment and energy sectors officials and professionals. This led to the information exchange during these workshops. The successful completion of this workshop marks the essential step required to achieve the long term objectives of the Water Resources Training Project in Central Asia: strengthening cooperation at various levels of water resources management and sustainable development of water resources in the region.