

REPORT

on virtual discussion organized by the CARNet network and
the CAWater-Info portal

“INTEGRATED WATER RESOURCES MANAGEMENT – THE BASIS FOR CONFLICT PREVENTION IN THE REGION”

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General information ¹

Three themes were suggested for discussion:

1. Problems related to implementation of integrated water management in the region

Attendances – 2318, responses – 41

2. Strengthening the capacities of existing regional water-management institutions

Attendances – 816, responses – 11

3. Establishment of open and accessible system of information on regional water and land resources

Attendances – 946, responses – 16

Total attendances – 4080, responses - 68

In order to create initial direction for discussion, moderator Iskander Beglov together with national facilitator of CARNet from Uzbekistan Alexey Kobzev have prepared introductory paper. In addition, the following papers were placed in web-site:

- Azizov A.: **Water management challenges in Central Asia**
- Muradov Ch.O.: **Solution of Central Asian water problems through ecologization of irrigated agriculture systems**
- Krutov A.: **Playing with fire under lack of water**
- Dukhovny V.A.: **Syrdarya – what is the reason for concern?**

¹ As for the beginning of July 2005

Participants of discussion

Representatives of Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, and Russia, as well as a number of non-registered users from Europe, Asia, and America took part in the discussion. *We express our thanks for their participation in and contributions to the discussion.*

*Participants from **Kazakhstan**:*

Ryabtsev A.D., Chairman of the Committee for Water Resources, Ministry of Agriculture, the Republic of Kazakhstan;

Nikolaenko A., UNDP Project “IWRM Plan in Kazakhstan”, Project manager;

Filonov M., CARNet-Kazakhstan facilitator;

Aset (unknown name and job).

*Participants from **Kyrgyzstan**:*

Baikhodjoyev M., PhD in biology, consultant of the Prime Minister on sustainable development;

Bekbolotov J.B., Director General, Department of Water Resources, Ministry of Agriculture, Water Resources and Processing, the Kyrgyz Republic;

Sakhvayeva Ye.P., Department of Water Resources, Ministry of Agriculture, Water Resources and Processing;

Orolbayev E., UNDP NCSA Project manager, leading expert in water problems;

Shalpykova G., Institute of Water Problems and Hydropower at the National Academy of Sciences;

Grebnev V., CARNet-Kyrgyzstan facilitator;

Modlaliyev O., Director, Research Center “Sedep”;

Demidenko A.A. (unknown job);

Yakimov V.M., Institute of Water Problems and Hydropower at the National Academy of Sciences.

*Participants from **Tajikistan**:*

Ulugov U., CARNet-Tajikistan facilitator.

Participants from Turkmenistan:

Muradov Ch.O., Ph.D. (unknown job).

Participants from Uzbekistan:

Dukhovny V.A., PhD, Professor, Director of Scientific Information Center of ICWC;

Khamrayev Sh.R., Ph.D., Deputy Minister, Chief of Central Administration for Water Resources, Ministry of Agriculture and Water Resources, the Republic of Uzbekistan;

Rysbekov Yu.Kh., Ph.D., Assistant Director, SIC ICWC of Central Asia;

Beglov I.F., PhD, Scientific Information Center of ICWC, information-publishing division, leading specialist, CAREWIB project manager;

Kobzev A., CARNet-Uzbekistan facilitator;

Ziganshina D.R., Scientific Information Center of ICWC, legal adviser;

Kamalov Yu.S., NGO «Union for Aral and Amudarya Protection»;

Aimbetov I., NGO «Union for Aral and Amudarya Protection»;

Oleg (unknown full name and job).

Participants from Russian Federation:

Krutov A.N., (unknown job).

Results of the first discussion round

While summarizing responses given during the forum, the following points of agreement may be emphasized:

- Major attention in CA region is paid to water and power problems, whereas the environment is not adequately addressed. In order to solve problems connected with basin water use, we need an integrated approach, which encompasses both power and environmental components, i.e. the integrated water management with involvement of all stakeholders.
- Effective and rational use of deficient water resources calls for establishment of clear-cut water limits for riparian countries. Moreover, we should seek for technical, economic, and institutional mutually beneficial ways to observe those limits, on the basis of the international experience and law, rather than trying to revise them.

- There is a solid base for implementation of IWRM in the region. In particular, besides mentioned experience in the Choo-Talas basin, practically all Central Asian countries demonstrate political will expressed in legislation. For example, Water Codes of Kazakhstan and the Kyrgyz Republic make provisions for implementation of a number of IWRM principles, starting from basin management towards environmental releases.

- The region lacks adequate understanding and enforcement of international water laws. In order to solve water problems, it was proposed to develop convention on transboundary water use in Central Asia, which would set clearly water user's rights and responsibilities, as well as nature's rights. The mandatory requirement is that market mechanisms and integrated water management principles must be put in the convention. As an alternative, it is proposed that as soon as possible CA countries officially ratify Convention on Conservation and Use of Transboundary Waterways and International Lakes (Helsinki, 1992).

- Transboundary waterways management system should be brought to a new level, i.e. to a level of International Water and Power Consortium, which is aimed at rational hydroresource use in the region, effective joint operation of water-management entities in order to improve water-supply in the countries on mutual economically sound basis.

- In opinion of A. Ryabtsev from Kazakhstan, multilateral agreements based on and as a follow-up to the Agreement of February 18, 1992 could give a new boost to constructive dialogue and cooperation on joint basin water use, including:

- joint use of water and power resources in the Aral Sea basin rivers, implementation mechanism of water-power and energy carrier supplies (here, the agreement of March 17, 1998 should be extended, with appropriate amendments aiming at improvement of implementation mechanism, or a new one, which is more improved should be considered);
- legal status and operation regime of the interstate water and power management authorities, the implementing agencies of interstate authorities and their executives and staff;
- legal status of water and hydropower entities of interstate importance, as well as of the Aral Sea and its coastal zone (Priaralie);
- procedures and scope of observations over hydrological and hydrochemical parameters in transboundary waterways, and by-pass of the specified flow quantities through state boundaries;
- exchange of information on qualitative and quantitative state of transboundary water resources, as well as on operation mode and state of water-management and hydropower entities;

- financing of interstate institutions and joint efforts on repair and maintenance of the interstate water-management and hydropower entities, interstate survey, design, and research works, as well as environmental conservation efforts, etc.

- Water and land use efficiency will depend mostly on water resource and water use charges. At the same time, economic mechanisms of water conservation and of water use will be prevalent over others. Efficiency of water use, like the efficiency of any other action, is determined by the ratio of the benefits received as a result of action and the costs required for this action. Therefore, financing of irrigation and drainage system O&M in full, thorough accounting of these costs, and establishment, on their base, of effective tariffs on water supply services are among the first-priority tasks. The equally important task is to develop mechanism for calculation and collection of water charges. Solution of those tasks would also allow us to quantitatively estimate water use efficiency.

- Existence of the regional agencies reduces likelihood of conflicts. Thus, as D. Ziganshina (Uzbekistan) noted, activity of ICWC demonstrated ability of national water leaders to solve quite effectively different issues without conflicts and considerable financial investments.

- A mechanism should be developed to control and monitor implementation of the interstate agreements.

- The only key to solve the exceptionally complex problem of water management is the integration, which should start from the upper level and link all hierarchical levels in management of surface and ground waters. The integration should be based on mutually beneficial aspirations of the partners. In practice, upstream users call for compensation of costs for upper watershed maintenance, while downstream users require maintenance of quality and environmental releases and compensation for breach of river flow regimes.

- One of the most important challenges for Central Asian water sector is modernization, application of up-to-date technique and technology, rather than rehabilitation of irrigation infrastructure. Moreover, as A. Krutov from Russia believes, first, infrastructure modernization options should be considered in context of both meeting present-day needs and finding radical solution to meet demand of future generations. This concerns the infrastructure as a whole, including water entities, hydrostructures, and the management and operating personnel.

- Particular attention should be paid to social aspects of water and land management.

- Current system of collection, processing and dissemination of information on water resources does not meet the requirements of the users. Assistance, including financial, in collection, processing and

dissemination and information openness may become a basis for regional cooperation in this direction.

- Information exchange implies creation of general information area, within which all stakeholders work under uniform information and technical standards. This area should be comprised of both water and land data and information bases on stakeholders and partners. IWRM is impossible without coordination of the activities of most institutions involved in the process. In this context, it is important to have common information system allowing for search of institutions and stakeholders that operate in this domain.

Consideration of the first discussion round at the conference in Dushanbe

The discussion was continued at the International Conference on Regional Cooperation in Transboundary River Basins.

The CARNet network and the intermediate results of the virtual discussion dedicated to "Integrated water resources management – the basis for conflict prevention in the region" were presented at the conference in Dushanbe city (Tajikistan) on May 30-31, 2005.

Representatives of ICWC, SIC ICWC, EC IFAS, as well as of international organizations, NGOs, ministries and departments from Japan, USA, Russia, Afghanistan, Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, and other countries took part in the presentation.

Great interest was shown in the network and its activities and the virtual discussion results during presentation as prepared by the national facilitators V.Grebnev (Kyrgyzstan) and A.Kobzev. This was the reason for initiation of the next following discussion among the professionals.

Conference discussion was moderated by Yu.Kh.Rysbekov (SIC ICWC). He suggested the following topics for discussion: allocation of water limits among the CA countries; collection of information for more accurate forecasting; water market – is it expedient for CA; and a number of other issues.

Speech of a representative of the Ministry for Nature Conservation in Afghanistan was noted as very interesting, as well as his active participation in the discussion. The representative presented activities as undertaken in relevant direction in his country. Taking into account that Afghanistan plans to develop new lands, the country raised an issue of national rights to a certain annual water limit. In expert's opinion expressed during debates, the estimated but now not used water quantity would meet even potential needs of Afghanistan up to 2010. Moreover, the representative of the country underlined that land development forecasts are based on the current state of irrigation canals and present

level of agricultural development; however, this situation could rapidly change in three years.

The dialogue was held in constructive and friendly atmosphere.

Besides, most experts expressed their wishes to take training in ICT, as well as to be provided with reports, research results and other materials prepared within the framework of the network.

The discussion results were also presented by P. Umarov, Deputy Director of SIC ICWC and S. Zhakenova, CARNet portal administrator (www.caresd.net) at the conference session "Public participation in transboundary water management". Many participants also became interested in Network activities. B. Yesekin, Chief Executive of the Central Asian Regional Environmental Center suggested to focus on raising public awareness about progress made within implementation of Aarhus Convention and its decisions as made during the Second Conference of the Convention's ratifiers (Almaty, May 25-27, 2005).

Yusup Kamalov raised an issue regarding application of water market in Central Asia. In his opinion, a need for water market results from limited amount of water resources and high water demands. Due to traditional agricultural focus of the national economies and rapid population growth in Central Asia, the countries have to search for ways of rational water use, particularly in irrigation.

At the same time, evident, at first sight, measures that are usually undertaken to improve production efficiency, such as water charges, economic incentives for water saving, etc. do not have any effect. This is explained by the fact of centralization as it took place during socialism era.

The Central Asian regional faces both technical and philosophical challenges to introduce water market. Those also relate to change in ideology. In particular, market laws require that status of good's master be strictly defined. This master is fully responsible for good quantity and quality and for timely delivery to consumer. Who could take full responsibility as a water master to collect charges from water consumers? Could states or international consortiums take this role?

Results of the second discussion round

- At present, agriculture in Uzbekistan is undergoing the third stage of reforms on transition to market relations. There is an intensive agricultural restructurization: private farms are being formed on the basis of former collective and shirkat farms. Currently, private farms amount to 90 thousands. Transition to private farming forms becomes more intensive every year. This process of restructurization predetermined and made for

reforms in water sector. Restructurization in water sector is realized in three directions:

1. Improvement of on-farm water management in place of re-organized farms. It was become complicated to manage water at on-farm level due to abrupt increase in water users and a need to establish water monitoring and accounting. A need arose for creating relevant structures to perform on-farm water management and control over water distribution. The optimal solution is establishment of water user associations (WUA). At present, number of WUAs is more than 600 in the republic. Establishing WUA is a very complex task since it relates to support of minimum permanent staff and organization of conditions for their functioning. Now WUAs cover more than 1.7 Mha of irrigated lands.
2. General water resources management in the republic is also under reforms in order to link WUAs with upper water hierarchies.
3. Modernization of hydraulic structures that were constructed 50-60 years ago and have deteriorated and become obsolete. Particularly difficult is to maintain operability of pumping stations constructed in 1970-1980-s and became outdated regarding modern requirements in terms of equipment, production of main units and components, as well as of automation.

- Regional issues to be solved:

1. Putting the IWRM concept into practice;
2. Elaborating measures to fight salinity of irrigated lands and ensure water conservation (leaching and leaching irrigation; improved repair; reconstruction and building of irrigation canals, drainage systems; capital and routine land leveling; irrigation technique and technologies; advance of water use management) for improvement of regional and national water management. This would allow water saving and increase of land and water productivities in each planning zone and would serve as the basis for investments.
3. Developing environmental measures through minimization of interaction between river and irrigated area, between surface and ground waters. National policies, strategies, and programs should consider plan of aid to mitigate the Aral Sea crisis (supporting the sea and its coastal zone - Priaralie);
4. Developing computer simulation of water-related, ecological, and economic processes to predict results, identify trade-offs and mutually beneficial actions per planning zone and river reach;
5. Enhancing water-power cooperation in the region. Elaborating clear-cut and detailed mechanisms of interaction and legitimating them through respective amendments or protocols, or agreements that would relief from a need to sign annual agreements. Those documents should itemize the

following: terms for maintenance of ecological releases and water shares for the nature; accounting of long-term regulation; national water shares and electric energy and fuel obligations; responsibility for mutual obligations; evaluation of regional and national projects and activities;

6. Ensuring clear-cut rules for basin exploitation, with consideration of all hydrological conditions; sharing responsibilities for implementation of decisions made, at all levels; ensuring adequate budget, access to relevant data (including daily discharge and withdrawal), and tools for monitoring over implementation;

7. Developing regional and national information systems, their interface and procedures for exchange of on-line and analysis information, especially regarding data as obtained under drought and flood conditions; integrating data from BWOs, hydromet services, and Ministries of Water Resources (or Ministries of Agriculture and Water Resources), particularly as concerns immediate communication about changes in discharge and level in the rivers;

8. Enhancing institutional framework of water management at both regional and national levels.

It should be noted that large-scale dissemination of the integrated water resources management concept as the most effective approach to sustainable development entails a range of tasks to be solved in time. In this context, provision of the legal framework for this process is the key since water law is an important tool in support to IWRM. Therefore, for successful enforcement of the law, the lawmaker needs to realize full responsibility and to extend his/her knowledge in given area, particularly regarding history and ways to solve this issue, economic and political aspects of the problem, etc. At the same time, both legal mechanisms and measures for their effective implementation need to be elaborated and adjusted.

Moreover, the scale and complex character of the water-related problems required that integrated and multi-sectoral approach be implemented and cooperation between the CA countries and the international society be developed.

At present, it is necessary to inform water managers, as directly involved in this process, and users, including decision-makers about the key management positions. National and regional socially-acceptable policy is needed and should be implemented in line with sustainable development and water use objectives and aimed at effective fulfillment of relevant functions by various actors/users involved in the process.

A legal framework for innovations and regulation basis for water policy should be ensured at lawgiving level. All water users representing both public and private sectors should be involved in the process of creating new or amending existing laws. The main idea of IWRM consists in active

participation of water users (decentralization). Therefore, it should be ensured that all actors take part in development, guidance, and political support of IWRM. In particular, higher responsibility for sustainable development is shifted to private sector. A significant condition is their involvement in given process at earlier stage, for instance, at a stage of decision-making. This would help to identify issues that, otherwise, could be neglected and, at the same time, be found important for some of the actors or for item being discussed as a whole. In this context, the legal framework and conciliatory mechanisms such as the ground for dialogue, cooperation, and conflict resolution need to be reinforced.

The development of regional legal framework is an important direction in elaboration of water law under transition period. This process is critical for improvement of law effectiveness and for consideration of regional specificities. While introducing integration in any area, one of the key prerequisites of success is harmonization of laws. Therefore, jurisprudence should more actively study international legal problems referring to water management and use and cover government activities as undertaken to solve these problems. Use of comparative-legal method for identification of positive sides in application of such law in other basins, with account for local conditions, would contribute to law effectiveness. However, signing, acceding to or ratification of regional agreements is only an intermediate, initial result followed by implementation of the agreement itself, that is practical regulation of respective social relations. By studying the effect of agreement, one can evaluate its effectiveness, expediency, scientific reasonability and other important factors. In turn, this has a feedback effect on development of standards and regulations and allows clarification, correction and amendment of current provisions and improvement of their status through practical experience.

Improvement of water management, as was mentioned repeatedly, is a challenge calling for institutional changes. It is a question both of updating the interstate and national laws and of establishing institutions adapted to new conditions, setting their organizational structure, rights and responsibilities. Such institutions are country-specific and, hence, cultural and political contexts must be considered. Particular attention should be paid to law and policy provisions regarding activities of water-related organizations and their key functions. Thus, the process entailing development of legal frames for various basin organizations is very complex and slow.

Only active public participation can be the guarantee for successful solution of the addressed issues. The people should understand that every step is a common effort in one direction. Therefore, it is necessary to ensure large-scale implementation of the concept "water is everybody's business" and not only in form of slogans but also as real actions undertaken by each concerned side. This is a good concept but we should be careful so that to avoid such situation when everybody's business is nobody's business. This means that real coordination of all stakeholders'

activities is needed. Success of any endeavor depends on effective contribution from each participant and water management is no exception. As is proven by modern management science, priority of motivation need to be applied - everyone has to know what induces him/her to strive for better implementation, i.e. a desire and a need for application of given mechanisms should be inwardly motivated at all levels.

The conflict of interests of CA countries when sharing transboundary waters should be perceived as an objective phenomenon. However, in order to achieve sustainable development in the region, it is critical to find the mutually acceptable balance between the national interests of each of the Central Asian republics and the regional interests as a whole, as well as the positive aspect of this conflict of interests. When applying constructive approach, the conflict of interests allows the following:

- determination of special (countries) and general (the region) strategic development goals;
- identification of key problems hampering the achievement of those goals;
- identification of and agreement upon moot aspects;
- correction of actions on mutually acceptable basis.

It seems that the main management objective of ICWC should be provision of consensus between the CA countries regarding serving of national and regional interests in transboundary water management. Mutual understanding could be reached if the parties wish to apply voluntary mechanisms of conflict resolution by avoiding relevant legal tools. At the same time, it is necessary to develop legal grounds for conflict resolution. This would allow national actions to be undertaken, based on legal platform. As a rule, if any dispute occurs and respective agreements are available, the parties focus on the agreement's provisions that were broken and do not appeal to the third party. The available solid international legal platform for transboundary water management in the region also keeps in emotions and excludes pointless disputes.

Activities related to the development of the draft interstate agreements on various aspects of transboundary water management in the region as stipulated by the Program of Concrete Actions for Improvement of Environmental and Socio-Economic Conditions in the Aral Sea Basin for 2003-2010 (ASBP-2) and to their submission for consideration by relevant authorities are not enough proactive. ASBP-2 envisages both a number of key priorities and preparation of draft interstate agreements aiming at reinforcement of the international legal platform for transboundary water management in CAR. As a whole, ASBP-2 includes 14 positions regarding preparation of draft international legal acts (ILA), within the region, by agencies of ICWC, IFAS, together with relevant national ministries.

Actually, draft statutory-legal acts should be much more than 14 since a number of positions entail development of several regional ILA drafts. The process is hindered since almost every Party insists on including exactly its comments into the ILA drafts. At the same time, many comments and suggestions of the Parties (conceptual system, implementation of draft Agreements following the single format and many other points) should be considered carefully and call for joint working over and examination. In many cases, the fact that the Parties are not ready for negotiation is an obstacle in the way of more active development of the draft Agreements. Willingness to negotiate is a key positive factor of international relations.

Current situation regarding implementation of the ASBP-2 Program in terms of its legal positions should be recognized as very complicated. It is necessary to brisk up the work in this direction, start development together with concerned parties and find possibilities to fulfill ASBP-2 as concerns the draft Agreements. In addition, the condition that the draft Interstate Agreements on ASBP-2 are to be developed by order of the Head of Central Asian states should serve as the starting point.

Addition

Polling on databases (DB) as organized by M. Filonov (Kazakhstan) in addition to discussion has shown the following:

- 100 % of respondents answered "yes" to question «Do we need the database (DB) on regional water and land resources?»
- 100 % of respondents answered "yes" to question «Will the DB be in great demand of professionals?»
- 100 % of respondents answered "yes" to question «Do the riparian countries need single template for collection of primary data?»
- there were different answers to the question «What standards should be used as a basis for construction of DB and for data collection?»: 38 % voted for international standards; 25 % - standards of former Soviet Union; and, 38 % - combination of standards (international and former Soviet Union's ones).
- as to the question «What data levels should be open for public use?», 41 % of respondents voted for public access to primary data, 18 % - for access to secondary data as well. 41 % of respondents wanted to use ready analysis results.

Unfortunately, the polling results cannot be considered as representative due to very limited number of respondents, but, undoubtedly, are of certain value for further analysis.

The participants offered a number of links to similar information resources:

- "Electronic base for concerned persons and organizations", under the project "Supporting the establishment of transboundary water commission for the rivers Chu and Talals between Kazakhstan and Kyrgyzstan".

<http://talaschu.org/db/index.php?IDLang=1&link=search/>

- Addresses of water-management and environmental institutions in Central Asia **<http://www.cawater-info.net/bd/>**

- TACIS base on projects implemented in the region

<http://www.tacis.uz/index.php?a=6&l=ru>

- NGO's base, Kyrgyzstan **<http://rus.gateway.kg/ngo>**

Addresses of water-management and environmental institutions in Central Asia: **<http://www.tajikistan.tajnet.com/business/agriculture.htm>**

Within the framework of CAREWIB Project (**www.cawater-info.net**), the Scientific-Information Center of ICWC has established the regional information system on water and land resources in the Aral Sea basin. Currently, the system is being intensively filled with data. It is expected that the IS would be accessible in full by the end of 2005. Some sections of IS are already accessible for wide range of specialists:

- **www.cawater-info.net/daily/** - on-line daily data from Uzgodrometcenter

- **www.cawater-info.net/amudarya/** - ten-day data on withdrawals in the Amudarya river basin

- **www.cawater-info.net/syrdarya/** - ten-day data on withdrawals in the Syrdarya river basin

- **www.cawater-info.net/aral/data/** - database on the Aral Sea

Prof. Gie le Moigne's article "Cooperation between the riparian countries in the Aral Sea basin and their development partners in area of joint water management: problems and opportunities", (**<http://www.cawater-info.net/library/rus/almaty/lemoigne1.pdf>**)

Conclusion

The discussion generated great interest in and outside the region.

Currently Central Asia can solve water and land related problems only through the large-scale implementation of IWRM, with involvement of all stakeholders. The participants proved the fact that the region has the basic background for IWRM.

In view of the international experience on limited water use, consumption limits should be set for all the riparian countries and mutually beneficial technological, economic, and institutional ways to ensure these limits should be found.

It is impossible to strengthen cooperation in joint transboundary water use without wider application of the international water law positions. The countries need to sign a number of multilateral agreements that would give clear-cut legal grounds for joint water and power use in the Aral Sea basin, including agreements on:

- implementation mechanism of water-power and energy carrier supplies,
- legal status and operation regime of the interstate water and power management authorities, the implementing agencies of interstate authorities and their executives and staff,
- legal status of water and hydropower entities of interstate importance, as well as of the Aral Sea and its coastal zone (Priaralie),
- procedures and scope of observations over hydrological and hydrochemical parameters in transboundary waterways, and on by-pass of the specified flow quantities through state boundaries,
- exchange of information on qualitative and quantitative state of transboundary water resources, as well as on operation mode and state of water-management and hydropower entities,
- financing of interstate institutions and joint efforts on repair and maintenance of the interstate water-management and hydropower entities, interstate survey, design, and research works, as well as environmental efforts.

While implementing IWRM, sustainable transboundary water management under bi- and multi-lateral agreements refers to very complex issues. Thus, the below principles should be followed to achieve this²:

1. In order to coordinate national actions regarding transboundary water use, a framework should be established in form of commissions, committees, etc.

A range of basic principles are prerequisite for successful performance of this framework:

- equal participation and representation;
- consensus;
- transparency;
- agreements;
- parity;

² Dukhovny V.A. Integrated water resources management and its specificity in case of transboundary waterways. (www.cawater-info.net/library/rus/dukhovny_iwrm_rus.pdf)

2. Community of technological, technical, and modeling approaches to management by establishing special work groups for each direction, with common technical policy and plan.

3. Creation of accessible for all stakeholders basin systems for exchange of information and data on hydrometeorology and effective water use in transboundary water use.

4. Development of joint financial mechanism among the countries to address:

- operational activities;
- development;
- repair and operation;
- environmental improvement;
- water conservation, etc.

5. Sharing costs and benefits from transboundary water use. The upstream countries bear costs related to flood and mudflow control, flow regulation, protection of catchments from erosion, maintenance of observation stations in glaciers and wells. The downstream countries have to protect their deltas, undertake bank-protection measures, especially when hydrological regimes change. These should be analyzed and set in the mutually agreed decision.

Taking into account the complexity of transboundary water management in the sources, fateful decisions referring to river basins should be made very carefully.

Thus, large-scale and successful implementation of integrated water resources management principles in Central Asia would allow both preservation of the regional natural resources for future generations and prevention of conflicts in the region.

