

Towards the 6<sup>th</sup> World Water Forum – Cooperative Actions for Water Security

**International Conference** 

12-13 May 2011 Tashkent, Uzbekistan

International Cooperation on Transboundary Water Management on the Basis of International Water Conventions Regional Process Commission: Central Asia Cross-Continental Process

## Towards the 6th World Water Forum — Cooperative Actions for Water Security

International Conference

12-13 May 2011, Tashkent, Uzbekistan

### International Cooperation on Transboundary Water Management on the Basis of International Water Conventions

**Concept Note on Thematic Priority** 

International Conference "Towards the 6th World Water Forum — Cooperative Actions for Water Security"

#### Summary

Under preparation to the 6<sup>th</sup> World Water Forum, the Executive Forum has drawn up proposals on organization of a Regional Process in Central Asia for further inclusion in the 6<sup>th</sup> Forum's Agenda. The theme of this session is: Conceptual Note on thematic priority: «International Cooperation on Transboundary Watercourse Management taking into account the interests of all states in the region».

The session's program will include the following topical issues for the Central Asian region:

1. 20-year cooperation of the CA countries under the auspices of IFAS – a unique example of joint actions.

2. New period of cooperation as declared by the Heads of CA States on 28th of April in 2009.

3. Present challenges in Central Asia.

4. The pre-requisites for strengthening the response to present challenges through the international cooperation under the auspices of IFAS.

5. International cooperation on transboundary watercourse management taking into account the interests of all states in the region.

6. Improving the hydro-meteorological services in the States-founders of IFAS

#### 1. 20-year cooperation of the CA countries under the auspices of IFAS – a unique example of joint actions



Fig. 1. Map of Central Asia

Source: UNDP. Regional Water Intelligence Report Central Asia. Stockholm

The international cooperation on transboundary rivers among the Central Asian countries has passed twenty years. This cooperation was founded by the Ministries of Water Resources of former Central Asian Republics that in September 12, 1991 signed a Statement in which they declared that joint management of water resources would be carried out in accordance with the principles of equality and mutual benefit. An Interstate Coordination Water Commission (ICWC) was established following the Interstate Agreement of 18 February 1992.

The inexorable course of time has proven a need for and an importance of a regional coordinating body like the International Fund for Saving the Aral Sea (IFAS) to support a dialogue, mutual understanding, solve real-world water-related and environmental issues, develop partnerships among the states and their interaction with donors and international organizations. In this context the important Agreement signed by the Heads of five Central Asian States (Fig.1) – Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan, Turkmenistan, and Republic of Uzbekistan – 18 years ago on joint actions to overcome consequences of the Aral Sea disaster should be underlined. Thanks to

unanimous efforts of the Heads of the five Central Asian states, for relatively short time IFAS has managed to consolidate efforts at the interstate level in order to protect population from the effects of the drying sea and normalize the socio-economic situation in the region.

For the first time in the international practice the so authoritative interstate body headed by one of Central Asian Presidents was established at such high level. IFAS activities contribute to development of new quality interstate relations in the region, to strengthening regional cooperation, no conflict mechanism for resolving complex issues in water use. Suffice it to say that recently the region repeatedly underwent various natural disasters, such as droughts and floods, earthquakes and landslides that affected critically water use and the economic situation in the region. Considering complexity of the situation, IFAS and its institutions (Fig.2): the Board, Executive Committee, Interstate Commission for Water Coordination (ICWC), Interstate Commission for Sustainable Development (ICSD), take all measures in order to ensure that issues of water distribution, environmental safety, economic development are solved on a priority basis, taking into account interests of each country. This task is of a quite complex character, and it can be solved only on the basis of interstate cooperation.



Fig. 2. IFAS structure

The main objectives of establishing IFAS were to stop and mitigate consequences of the Aral Sea crisis, inform the international community about this disaster, attract funds of the five riparian states and the international organizations and donors for the improvement of the environmental and socio-economic situation in the Aral Sea basin.

The Fund is managed by the Heads of State-founders of IFAS on rotation basis. The superior body of the Fund is its Board.

The main lines of the Fund activities are financing and crediting of joint interstate ecological and scientific-practical programs and projects aimed at saving the drying sea and also the solution of the general socio-ecological problems of the region; creating and maintaining of the functioning of the interstate ecological monitoring system, databases and other systems for assessment of the state of the Aral Sea environment; mobilization of funds for joint measures for protection of the air basin, water and land resources, flora and fauna; participation in the implementation of international programs and projects aimed at saving the Aral Sea and ecological recovery of the Aral Sea Basin.

During the last years IFAS and its structures became a platform for a dialogue among the countries, for development of bilateral and multilateral agreements. A number of agreements on cooperation in area of allocation, joint management, use and protection of regional water resources were signed, two Programs of actions were implemented to provide assistance to the countries in the Aral Sea basin (ASBP), and the third ASBP was developed. In addition, IFAS got the status of observer in the UN General Assembly in December 2008.

#### 2. New period of cooperation as declared by the Heads of CA States on 28<sup>th</sup> of April in 2009

Since the early 1990's, the issues of water in the Aral Sea basin has been seen in the context of regional security and stability. It is recognized that water is valuable and is scarce. As a result, the use of transboundary water resources in Central Asia is a major source of potential conflict.

On April 28, 2009, the heads of the Central Asian states made a joint Statement, highlighting the important role of IFAS in coordinating and addressing the fundamental aspects of cooperation between the countries in Central Asia and between the donor community, including international financial institutions.

The Heads of States also expressed their commitment to change the organizational structure and contractual and legal framework of IFAS to help improve its performance and to increase its ability to cooperate with financial institutions and donors to implement the Aral Sea related projects and programs. They also confirmed a state commitment to the principles of the integrated water resources management (IWRM).

The statement confirmed that the country-founders of IFAS were interested in the development of mutually acceptable mechanism for the multi-purpose use of water

resources and protection of the environment in Central Asia, taking into account the interests of all the states in the region.

It was also decided that EC IFAS jointly with ICWC, ICSD and with the involvement of national experts and donors has to develop the next Program of Actions for 2011-2015 (ASBP-3).

The ultimate objective of ASBP-3 is to improve the living conditions of the people in the region. In other words: It is to improve the socio-economic and environmental situation by applying the principles of integrated water resources management, to develop a mutually acceptable mechanism for a multi-purpose use of water resources and to protect the environment in Central Asia taking into account the interests of all the states in the region.

#### 3. Present challenges in Central Asia

Among the challenges the world is facing **climate change** poses a serious threat to the whole natural and economic system, including water and land resources. Air temperature growth under lowering or slight increase of precipitation makes the climate more arid.

Most of Central Asia is under arid climatic conditions characterized by scanty precipitation, extremely low humidity, highly intensive evaporation, and excessive solar radiation.

Unfavorable predictions are given in context of the global warming processes. Since 1957 till 2000 water reserves in glaciers decreased by more than 25% and keeps declining. According to experts, thousands of small glaciers will disappear, the glacial area will shrink by 20%, and glaciers will loose 25% of their mass by 2025. This, in turn, would reduce substantially the river runoff. Thus, by 2050, water flow would decrease by 10-15% in the Amudarya river and by 6-10% in the Syrdarya river.

Among serious challenge is the rapid **population growth** in the Central Asian countries, surpassing the world rates. Population growth has caused intensive economic development leading to an increase of pressure on water resources and to the water stress, the reduction of water supply per capita.

Given the permanent volume of water flow (37.14 km<sup>3</sup> in the Syrdarya basin and 78.46 km<sup>3</sup> in the Amudarya river in normal year), population growth is leading to increased water shortage in the region. The mean unit water supply is decreasing rapidly in Central Asia. Over the last forty years (1970–2010), this value decreased from 6.6 thousand m<sup>3</sup>/year/person to 2.2 thousand m<sup>3</sup>/year/person and tends to further

decline. Given the current rates of CA population growth, the mean water supply will come to a critical value of less than 1.7 thousand m<sup>3</sup>/year by 2030 (Fig. 3).

In the same period of time, the irrigated agricultural area increased from 6.50 Mha to 8.4 Mha, and the irrigated area per capita fell from 0.27 ha/person to 0.18 ha/person. The total water withdrawal grew from 75.0 km<sup>3</sup>/year to 116.0 km<sup>3</sup>/year, with following reduction to 104 km<sup>3</sup>/year. The total inflow into the Aral Sea was reduced from 54.99 km<sup>3</sup>/year to 10.6 km<sup>3</sup>/year (more than 5 times) as compared to 1960.

Intensive water withdrawals have caused level lowering of the Aral Sea and shrinkage of its volume by 90%. By the end of the 80's the sea has disappeared virtually, with the resulting negative consequences:

- critical deterioration of water quality and people's health;
- large-scale desertification, salinization, and water-logging of the soil;
- loss of biodiversity and intensification of the negative climate impact.

Until 1961, the mean water surface area of the Aral Sea was 67.8 thousand  $\text{km}^2$ , and its water volume was 1064.0  $\text{km}^3$ . At present, the sea's water area is 13.0 thousand  $\text{km}^2$  or 17%, whole the water volume is 105  $\text{km}^3$  or 10 % of the volume in 1961.

The volume of water in the North Aral Sea (Kazakhstan) is 27.4 km<sup>3</sup>, whereas water salinity varies from 6.0 to 17 g/l. About 80 km<sup>3</sup> of water is left in the South Aral Sea, where water salinity reaches 90-120 g/l.



Fig. 3. Provision with water resources

The well-being of the Central Asia depends to a large extent on the balance of nature in the watershed areas – the mountain ecosystems of Pamir, Tien Shan and Altai. The mountain systems intercept moisture from the top atmospheric layers, which is transported by air masses mainly from the Atlantic Ocean, and serve as giant accumulators of fresh water. However, the Central Asian mountains face growing **degradation processes**, such as deforestation and erosion, pollution by wastes and pasture shrinkage. The forest area has decreased 4-5 times in Central Asia since the mid of the last century. Saxaul and floodplain forests (tugai) were exposed to a particularly extreme anthropogenic load.

Destruction of ecosystems has led to substantial loss of biodiversity. The number of disappeared or disappeared animal and plant species is growing. In some cases these processes have become irreversible.

River flow regulation and pollution have led to the **reduction of fish stock**. The fish catch in natural water bodies has decreased more than 60% in Central Asia as a whole since 1990.

More than half of the Central Asian area is **subjected to desertification**. The deteriorated land area is 179.9 Mha or 66% of the territory in Kazakhstan and reaches 80% in Turkmenistan and Uzbekistan. If salinization keeps increasing in the next decades, most agricultural area in the river basins would become unsuitable for farming, while increasing salinity of river water will make them unusable for drinking water-supply.

#### 4. The pre-requisites for strengthening the response to the present challenges through the international cooperation under the auspices of IFAS

In order to deal with the present challenges it is necessary to improve the institutional structure of regional and basin organizations. Particular attention should be paid to raising awareness and improving understanding among the key stakeholders of the International water law principles and tools as a basis of regional cooperation, as well as to strengthening and further exploration of a role of cooperation tools.

The main problems are insufficient coordination in water management both at international level and at national level, among ministries and departments, as well as between donors.

#### Collaboration with the donor community

The international cooperation is based on the Program of Actions 2011-2015 on provision of assistance to the countries in the Aral Sea basin (ASBP-3). The Program was developed by the Executive Committee of IFAS jointly with the Interstate

Coordination Water Commission and the Interstate Commission for Sustainable Development in consultations with national experts for its further consideration and approval by the member states of IFAS.

The Program reflects the priorities of the member states and gives a unique opportunity to combine national and regional efforts in improving the environmental and socioeconomic situation and achieving environmental sustainability in the basin.

On December 9, 2010 international organizations and the **donor community made a statement about their full support** to the Program and their willingness to develop close partnership and cooperation with the Executive Committee of IFAS.

In order to achieve more effective use of available resources and attract additional financing, it is necessary to **bring coordination of activities with donors** to a quite new level. IFAS plays a key role in coordination of donors, incorporating exchange of information, monitoring, and assessment and taking into account experience in cooperation with international partners by EC IFAC, ICWC, and ICSD.

Donors consider their collaboration and dialogue with the IFAS member states under ASBP-3 as an opportunity to develop mutually beneficial **environmentally and socially sound solutions of the issues related to water sharing** and to provide assistance in adopting effective adaptive measures in context of **climate change**.

Provision of regular monitoring together with international organizations over progress and implementation of the approved ASBP-3 would be a guarantee of partnership in area of transboundary watercourse management for the mutual benefit of all countries in Central Asia.

#### International Conventions as a basis of mutual trust among the countries

The main principles of international law are the criteria of this trust: equitable and reasonable utilization; no-harm rule; obligation to cooperate and notify on planned measures that could have significant impact; information exchange and consultations; and, peaceful dispute settlement.

By present, a well-established though far from being perfect legal base of the international cooperation in transboundary water use and management has been formed in Central Asia. In legal terms, it includes both obligatory instruments and numerous accords and documents of advisory nature, i.e. the so called "soft law" instruments. In geographic terms, the established system of international legal regulation in transboundary water cooperation is a two-level one, where along with regional agreements of more general character a number of bilateral agreements on concrete watercourses or scope of cooperation is effective.

The main documents regulating water relations on a global scale include:

- the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses;
- the 1992 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes;
- the Convention on Environmental Impact Assessment in a Transboundary Context.

Only Kazakhstan and Uzbekistan from the region joined two of the above Conventions. Thus, these countries clearly demonstrated their positions regarding compliance with the international water law on the basis of trust and commitment to principles stated in those documents.

#### Berlin Process

Effective and sustainable water management and associated energy issues in the five Central Asian states – Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan – are still topical for political and economic cooperation and for environmental cooperation in this sub-region and outside. Those issues pose multiple challenges for security. The consequences of climate change are becoming more visible and call for enhanced cooperation among the states. Moreover, neglected in the past water quality issues are increasingly recognized now as critically important for the sub-regional cooperation. Institutional and legal mechanisms of water management that were established in the early nineties face difficulties with settlement of growing controversy related to implementation of water withdrawal limits and water allocation.

The Berlin Initiative is designed to give a new pulse to international efforts in searching effective long-term solutions in area of water management in the sub-region and relies on political will expressed by the Central Asian countries.

The largest mechanism of the Berlin Process on water is the "Transboundary Water Management in Central Asia" Program implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ GmbH) on behalf of German Federal Foreign Office. In 2011-2015 the program will focus on three components: fostering regional institutional cooperation, strengthening transboundary river basin management, and implementation national pilot projects for the improved water management. In the framework of Component1, the project on "Regional Dialogue and Cooperation in Water Resources Management" is implemented under guidance of the UN Economic Commission for Europe (UNECE). The activity of UNECE is based on neutral participation in the regional discussion on water management issues during the recent years and is founded on UNECE environmental conventions.

#### 5. International cooperation on transboundary watercourse management taking into account the interests of all states in the region

**Goal** – create enabling environment for implementation of the international water law (IWL), strengthening of cooperation and peaceful water-related development in the region.

**Target 1.** Develop main principles of strengthening the cooperation among the countries, based on experience of international basins and the international water law.

**Target 2.** Develop mechanisms for strengthening collaboration, such as Regional dialogues on water and water law, Regional information systems, Regional water projects, IWRM, SCADA systems, etc.

**Target 3.** Establish a well-developed Interstate Training Network to provide future water leaders with a sound understanding of international water law (IWL).

**Target 4.** Implement concrete measures of international character for provision of assistance to the countries in the Aral Sea basin.

**Expected results** – demonstrated IWL advantages on the example of the EU Water Framework Directive (WFD), organized preparatory campaign for joining the Conventions, strengthened regional and basin organizations. Permanent attention should be paid to developing awareness and understanding of IWL. Enhanced role of cooperation instruments forming the grounds for mutual understanding (Regional information system, implementation of automation systems, training at regional level). Improved mechanisms of international cooperation to support the Central Asian countries in their efforts on improvement of socio-economic and environmental conditions within the Aral Sea basin.

### *Target 1.* Develop main principles of present cooperation among the countries, based on IWL, Conventions and European Union's experience.

Here an important role is played by the Berlin Process on water and its "Transboundary Water Management in Central Asia" Program ("Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ) GmbH"). In 2011-2015 the program will focus on three components: fostering regional institutional cooperation, strengthening transboundary river basin management, and implementation national pilot projects for the improved water management. In the framework of Component1, the project on "Regional Dialogue and Cooperation in Water Resources Management" is implemented under guidance of the UN Economic Commission for Europe (UNECE). The activity of UNECE is based on

neutral participation in the regional discussion on water management issues during the recent years and is founded on UNECE environmental conventions.

#### Tasks and components

#### Task 1

Conducting analysis of a need for reforms of the legal and institutional frameworks for transboundary water management. After such analysis within the project it is expected to facilitate the development of proposals on adaptation of missions, mandates, and activity lines of regional water organizations, according to recommendations of the governments. Readiness to further improve the organizational structure and the legal framework of IFAS expressed by the Presidents of the five Central Asian countries at IFAS Summit (Almaty, 28 April 2009) lays the basis for work in this direction.

Time horizon: May-November 2011.

Stakeholders: regional organizations, governments of the five states under auspices of IFAS Board.

#### Task 2

Capacity building in the international water law and related policies. Within this component it is proposed to initiate a dialogue between all five Central Asian states on the need for and contents of guidelines or principles of water resources management in Central Asia.

Representatives of governments and regional organizations will take part in this discussion. This work is based on existing legal norms, such as the UNECE Convention on the protection and use of transboundary watercourses and international lakes, the UNECE Convention on environmental impact assessment in a transboundary context, and other appropriate international legal instruments in area of water resources management.

Output – recommendations on improvement of bilateral and regional agreements.

Time horizon – end 2011 – 2012

Stakeholders: representatives of governments and regional organizations.

#### Target 2. Strengthen trust-building instruments of regional cooperation

It is supposed that the strengthening of trust-building instruments of regional cooperation should encompass the below positions to be implemented as far as possible.

# A need to join the international conventions and develop, on their basis, the regional set of agreements on transboundary waters. These agreements should follow:

- a) principles of equitable and reasonable utilization;
- b) no-harm principle;
- c) principle of cooperation.

As a first step, it is proposed to organize a regional discussion on a need to join Water Conventions as laying of a basis for mutual trust among the countries, their commitment to IWL, refusal from power (commercial) games and to initiate national joining – mid 2012.

Establishment of a single unified Information System acknowledged by all states in the region in combination with analytical tools and DB (meteorological, hydrological, ecological, socio-economic, water sector, etc.).

IFAS and ICWC together with SDC and EECA established a unique information system in Central Asia, with the whole set of analytical and information materials. This information field needs to be extended to include the wider accessible hydrometeorological databases and forecasts, socio-economic and energy components and the analytical tool for general use.

Particular attention should be paid to the improvement of: technical and organizational capabilities of information exchange among national hydrometeorological services; online hydrometeorological monitoring and data transmission system; regional education and advanced training in area of hydrometeorology and climate; to the establishment of national metrological and technological support centers in the states and the measures to save the national data funds, and to the creation of conditions for improvement of assessments of long-term surface flow in the Aral Sea basin, taking into account climate changes.

Expected results would include: more reliable hydrometeorological and climatological forecasts contributing to economic development in Central Asia, including agriculture, water management, and hydropower; better quality and extended range of easy-to-use information products; more matching to the needs of users; improved system of data and information exchange, particularly on disasters, at the regional level.

Proposed outputs:

a) elaborated strategy of the unified information field of Central Asia - end 2011.

Stakeholders: EC IFAS, SIC ICWC, BWO Syrdarya, BWO Amudarya, RHMS Center with Hydromet Services, Ministries of Agriculture and Water Resources and Ministries of Emergency, WUA, etc.

b) fully functional analytical computer modeling system of the Aral Sea basin – March 2012.

Stakeholders: governmental and non-governmental organizations of Central Asia.

#### Raising awareness of population and interest in water and environmental issues.

The already functional portal established within the CAREWIB Project by SDC together with SIC ICWC, EC IFAS, UNECE, and Grid-Arendal provides information for specialists having access to Internet on current water and environmental issues. This portal also has freely accessible information about world experience, regional developments and events taking places in frame of IFAS, ICWC, and ICSD. Communication is established with the two regional environmental centers of Central Asia and Caucasus. The portal contains a lot of – several thousands – publications in PDF format. However, this information is accessible only for professionals and decision makers who have access to Internet. Dissemination of information in paper for most information users is quite limited. Moreover, there is no communication between the specialized information portals and the mass media. Appearances of professionals before the general audience are restricted by financial and other constraints.

In this context, the following is proposed:

a) extend access to information upon agreement with respective CA departments and ministries, maintain permanent media-forum "Water and Nature in Central Asia", with the involvement in this Forum of mass media at national, provincial and local levels. To this end, request the donor community to provide special funding for this Forum at EC IFAS - August 2011;

b) organize training and round tables dedicated to water problems in Central Asia where mass media will be invited: in Almaty – October 2011, in capitals of CA states – November 2011, March 2012;

Stakeholders: water user organizations, national water management institutions, mass media, including television and radio, press.

#### Improving water accounting system and implementing SCADA system

Since 2000, activities on the improvement of water accounting system and the implementation of SCADA system have been performed purposefully in the Syrdarya river basin. Under technical support of the Swiss Agency for Cooperation and Development such system was implemented first at Uchkurgan structure on the Naryn river and then at Upper-Chirchik structure and at a number of headworks in the Fergana Valley.

The new phase of the Automation Project, which is financed by SDC, plans to implement SCADA along the whole middle reaches of the Syrdarya river up to Farkhad structure.

Development of this system in the Amudarya river basin is of no small importance.

In this context, the following priority measures are proposed:

a) donors and national ministries should include a few pilot structures and gauging stations on Amudarya river into the SCADA implementation plan in order to start preparation to full equipping of the basin with the mentioned automation facilities – end 2011 – beginning 2012;

b) continue implementation of automation in the Syrdarya river basin, according to SDC project in the middles reaches, in Dustlik Canal – BWO Syrdarya, Ministry of Agriculture and Water Resources (Uzbekistan), Ministry of Water Resources (Tajikistan), State Committee for Water (Kazakhstan)– 2012-2013.

Stakeholders: BWO Amudarya, BWO Syrdarya, water management organizations of Amudarya and Syrdarya basins.

#### Developing a network of regional projects.

The experience gained in many regional projects (WARMAP, WUFMAS, IWRM-Fergana, WLPI, ADB "Dialogue on Water" project, CAWA project of the German Foreign Office, GIZ projects such as «Transboundary water management in Central Asia» and «Improvement of economic and environmental wellbeing in the Aral Sea region", UNECE (GTZ) projects such as «Regional dialogue and cooperation on water resources management», «Dialogues on national IWRM policies», «Dam safety in Central Asia: capacity building and regional cooperation" and others) demonstrate convincingly that the process of joint implementation of the regional projects, especially those of practical character, fosters the spirit of partnership, drives to dialogue among the partners from different countries, and promotes the development of common methods of better water management and water conservation. While working in continuous dialogue, partners from riparian countries better understand the needs of their neighbors and the necessity to search joint decisions and approaches. Moreover, this promotes dissemination of best practices among the countries.

In this context, it is advisable to develop such regional project that aim at improving the management system and its organizational, legal, and technological framework, taking into account the expected future water availability.

#### Proposed activities:

In the framework of ASBP-3 identify priority regional projects together with donors and identify executors, financing organization and responsible project coordinators, plan first-priority budgets from both the donors and the national agencies – fourth quarter 2011.

Stakeholders: EC IFAS, ICWC, ICSD, national and water management organizations.

## *Target 3.* Establish a well-developed Interstate Training Network to provide future water leaders with a sound understanding of international water law (IWL)

The region accumulated huge experience in implementation of regional training measures under projects of the Asian Development Bank, World Bank, Economic Commission for Europe, Canadian Development Agency. Although 500-600 people among higher and middle level personnel get trained annually within this network on ICWC basis and the same quantity of people receive training on other directions, the rapid staff turnover, permanent occupation of professionals with their routine tasks and impossibility for these professionals to be destructed from their regular jobs for the long-terms make the training spontaneous. UNESCO-IHE and ICWC initiated a project on the development of training program and curricula on 4 main directions for the improvement of water resources management.

In order to create a national network of training centers (TC), TCs in the countries should be re-organized, with the involvement of both direct trainers from watermanagement organizations and Academies that prepare professionals for water sector and irrigated agriculture.

The UNESCO Center for Water Law Policy and Science in Dundee also expressed its willingness to join this work under ICWC –UNESCO-IHE Project. The objective is to develop a program of comprehensive training system for the future water leaders that should cover about 2.5 thousand people every year in the five Central Asian countries. At the same time, this training system should be linked with the training of lower level staff at WUA level, which currently covers more than 10,000 people in Kyrgyzstan, Tajikistan, and Uzbekistan under the umbrella of SDC.

The following is proposed:

a) finalize the training program for upper and middle level staff proposed by IHE UNESCO together with ICWC and submit it for consideration to IFAS Board and donors in order to organize the system of future water leader training starting since 2012;

b) prepare national plans for advanced training of upper and middle level staff within the established national network of training centers aimed at large-scale training of lower level staff in water-management organizations and in WUA – end 2011.

Stakeholders: EC IFAS, ICWC, ICSD, national water management organizations, water user organizations.

## *Target 4.* Implement concrete measures of international character for provision of assistance to the countries in the Aral Sea basin

The Program of concrete measures on provision of assistance to the countries in the Aral Sea basin is a powerful tool of international cooperation on transboundary watercourse management, taking into account the interests of all states in the region.

The third Program was developed by EC IFAS, ICWC, ICSD and their research centers and branches in close collaboration with the donor community, including the World Bank, European Union, USAID, GTZ, SDC and others. The priorities and project proposals development process involved extensive consultations among national and international experts. In addition, an international donor's conference was held and supported the draft Program.

The Program integrates the interests of parties - the CA Governments, EU and Asia Governments, UN organizations, international donor and bank institutions.

On 28th of April 2009 the Heads of the State-Founders of IFAS made a statement that «Parties once again confirm their interest in the development of mutually acceptable mechanism on integrated use of water resources and environmental protection in Central Asia taking into account the interests of all states in the region».

Proposed activities:

a) develop lines (clusters) on the basis of regional projects, identify concerned parties, donor institutions which are ready to finance the clusters, reaching agreement of the countries – by June 2011;

b) search and implement mechanisms for attracting donors' funds – 2011-2012;

c) form project implementation groups and launch the projects – since May 2011.

d) ensure monitoring over implementation of the projects – since June 2011;

Stakeholders: EC IFAS, ICWC, ICSD, Governments of CA countries, concerned organizations, UNECE, UN ESCAP, UN Regional Center for Preventive Diplomacy, international donor institutions.

#### 6. Improving the hydro-meteorological services in the States-founders of IFAS

To facilitate the common goal on improving the quality of hydro-meteorological and climate services the World Bank together with the Executive Committee of IFAS, the Regional Centre of Hydrology and national hydro-meteorological services of Central Asia, under the ASBP-3, started to develop a Project on improving hydro-meteorological services in Central Asia for the period of 2011–2016.

The main objective of the project is to strengthen cooperation between national hydrometeorological services of Central Asian states in exchanging data, information and knowledge for the rehabilitation of infrastructure and staff capacity.

The project also aims at reducing disaster risk management, managing consequences of climate change and promoting economic development in agriculture, water sector, energy and transportation throughout the region by providing timely and qualitative hydro-meteorological products.

The implementation of activities aimed at improving technical and institutional capacity for gathering and sharing information between the Hydro-meteorological services of the Central Asian states, improving the regional system of education, training and staff and services development in the field of meteorology, hydrology and climate, improving the quality of maintenance through improved weather forecasts, storm warnings and climate change assessment are planned are planned at the regional level.

It is planned to upgrade the Regional system on collecting meteorological data with new processing systems and information visualization for providing access to a large amount of data and information of World's data centres and numerical weather prediction. Using advances in numerical weather prediction at the World meteorological centres will allow improving significantly forecasting of natural meteorological phenomena in the Central Asian region.

In order to assess the general condition of waters and the effectiveness of measures taken to address the transboundary driven impacts, as well as assisting in the development of regional instruments for the determination of the information available at present in Central Asia, the preliminary phase of a project "Capacity building in data administration for assessing transboundary water resources in the countries of Eastern Europe, the Caucasus and Central Asia (EECCA) " is launched.

The Project is coordinated of by the International Water Assessment Centre, the Secretariat of the UNECE Water Convention and the French Global Environment Facility acting as a donor of the Project.

Stakeholders: EC-IFAS, hydro-meteorological services of CA countries, international donor organizations.