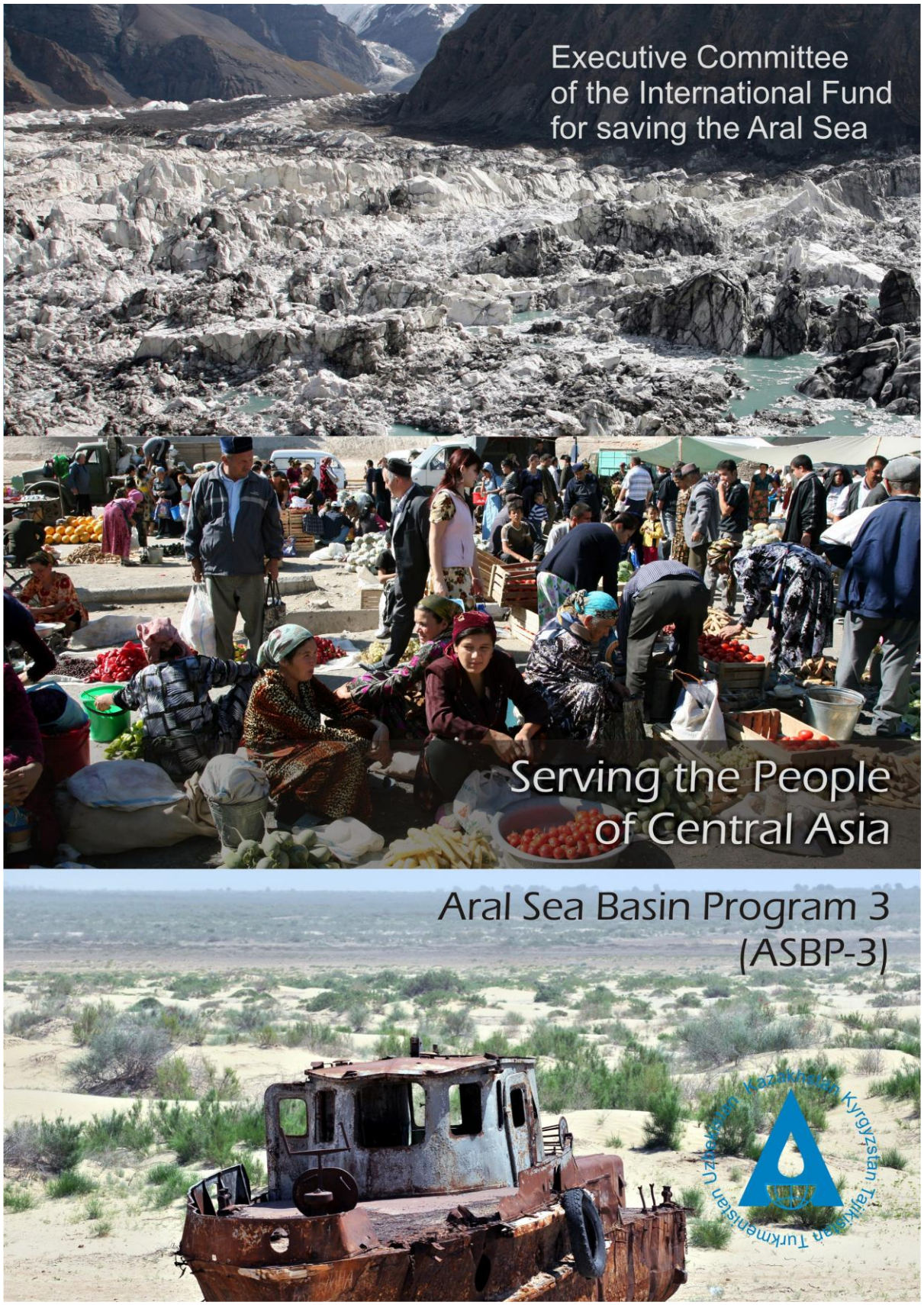
Executive Committee
of the International Fund
for saving the Aral Sea
Serving the People
of Central Asia
Aral Sea Basin Program 3
(ASBP-3)
Uzbekistan Kazakhstan Kyrgyzstan Tajikistan Turkmenistan

Foreword

The Aral Sea Basin Programme (ASBP) is the main long-term action program in the region in the field of sustainable development, and especially in the management of water resources and environmental protection. The Program includes national and regional projects aimed at sustainable development with the main focus on using existing water resources more effectively and efficiently in the Aral Sea basin.

The Aral Sea Basin Program-3 (ASBP-3) is a joint effort of the donor community, the governments of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and the civil society. It is a vision for the future, a blue print for development, peace and prosperity in the region.

The Executive Committee of IFAS (EC IFAS) has the primary responsibility of designing and setting up ASBP and monitoring its implementation.

“Serving the People of Central Asia” is the motto of EC-IFAS.

It has been a privilege for me to work together with so many experts in the process of developing this ambitious program. I would especially like to thank Volker Frobarth, Benjamin Mohr, Alexander Nikolaenko and Vitaly Tkach (GTZ), Iulia Trombitcaia, Marton Krasznai and Bo Libert (UNECE), Hanspeter Mag (SDC), Simon Croxton (World Bank), Nina Kavetskaya, Sergei Elkin and Michael Trainer (USAID), Delphine Marie (EU), Vats Vilnitis, Andriy Demidenko, Michael Kalinin (Consultants EU), Anatoly Krutov (Consultant) and Alfred DIebald (EC IFAS). Their support was instrumental for finishing the program in time with such high quality.

I also thank the country representatives Marat Narbaev, Murat Bekniyazov, Manas Omorov, Khayrullo Ibodzoda, Mavlon Kazakov, Kurbangeldy Ballyev, Normuhammad Sheraliyev and EC IFAS staff, particularly Demessin Nurmaganbetov and Zhyldyz Zhurumbetova for their valuable inputs.

I am looking forward to the implementation of ASBP-3. It is in the interest of all people of Central Asia to meet the challenges of dealing with a scarce water resource and I would like to express my hope that this program will benefit all the people of the region.

Saghit Ibatullin
Chairman of the Executive Committee of the International Fund for Saving the Aral Sea

SUMMARY

'Serving the people of Central Asia'

Background and Approach

Since the early 1990s the issue of water in the Aral Sea Basin has been seen in the context of regional security and stability. Water is valuable and it is scarce. There are enough water resources in the Region but they are not used effectively and, as a result, the use of transboundary water resources in Central Asia (CA) is a source of potential conflict.

The Heads of the Central Asia states recognise this and set up the International Fund for Saving the Aral Sea (IFAS). The member states of IFAS are: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan.

The objectives of IFAS and its organizations are to work towards integration and cooperation in order to use existing water resources more effectively and efficiently, to ensure sustainable development and to adapt to climate change in the region. However, it is widely recognized that the present structure of IFAS needs to be improved and the legal base to be adapted to fit the needs of today.

Guided by the decision of the Heads of States of April 28, 2009, the Executive Committee of IFAS (EC IFAS) drafted ASBP-3. The project preparation process involved extensive consultations among national and international experts to develop program priorities and project proposals. EC IFAS was in continual dialogue with the donor community (in particular with the World Bank, European Union, USAIDS, GTZ, and SDC) in order to get their comments and ideas.

Thus, ASBP is a joint effort and an on-going process, which involves all national governments of the Region, civil society and the international donor community.

ASBP-3 works in four directions:

- Integrated Water Resources Management
- Environmental protection
- Socio-economic development
- Improving institutional and legal instruments

The ASBP-3 program period is 2011 to 2015 and reflects the priorities of the member states. It aims to familiarize all parties concerned with the challenges facing the Aral Sea Basin, including decision makers, representatives of international financial institutions, international development agencies, specialists, and the public at large. The ASBP-3 program includes future regional projects to be mainly financed by international donors; on-going national projects supported by national governments; and on-going regional and national projects funded by international donors.

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.

EC-IFAS is the umbrella organization which will develop these programs and projects, coordinate and inform the donor community on priority interventions with regard to the four directions of ASBP-3, and, when appropriate, implement projects.

In addition, EC-IFAS will monitor the implementation of ASBP-3.

EC IFAS: Mission, Vision, Strategy

The mission of EC IFAS is to coordinate cooperation at national and international levels in order to use existing water resources more effectively, and to improve the environmental and socioeconomic situation in the Aral Sea Basin. EC IFAS serves as a platform for a dialogue among the countries of Central Asia, as well as the international community.

The overall mission of EC IFAS is to serve the people of the Aral Sea Basin. Its vision is “Improved living conditions for the people of Central Asia”.

The overall strategy of EC IFAS is to work more effectively to fulfill this mission. However, in order to successfully implement the ASBP-3 projects, the capacities of IFAS bodies and EC IFAS need to be strengthened.

1 Introduction

Located in the heart of Central Asia, the Aral Sea Basin consists of the drainage area of the two major rivers, Amu Darya and Syr Darya. The rivers descend from the slopes of the Tien Shan Mountains and the Pamirs. They run through Afghanistan, Tajikistan, Kyrgyzstan, Turkmenistan, Uzbekistan and Kazakhstan.

The Amu Darya is in the south of the basin and has a mean annual flow of about 70-80 km3/year. The river is 2,540 km long, with a basin area of more than 300,000 km2. Most of the Amu Darya flow (74%) is formed on the territory of Tajikistan, 13.9% in Afghanistan and 8.5% in Uzbekistan.

The Syr Darya runs in the north of the basin. Its annual flow is half of the Amu Darya. It is the longest river in Central Asia and ranks second with regard to water flow. It is 2,790 km long, with a basin area of almost 300,000 km2. Most of the Syr Darya flow (75.2%) is formed within Kyrgyzstan, Uzbekistan contributing 15.2%, Kazakhstan 6.9%, and Tajikistan 2.7%. Both rivers flow into the Aral Sea.

The delta of the Amu Darya River is located in the northwestern part of Uzbekistan, while the delta of the Syr Darya River is in the mid-western part of Kazakhstan.

Map of Aral Sea Basin

Until 1960, the Aral Sea area was about 67,000 square km in size. This made the Aral Sea the world's fourth largest inland water body. Now, the Aral Sea is not a single water body any more. Its northern part is separated by a dam and is sustained by the Syr Darya River. The remaining part is a residual water body with saline water. It comprises a shallow central part and a deeper narrow part stretching along the meridian of the Ustyurt Plateau escarpment.

Maps of Aral Sea

For Central Asia, water is the key for development. Land has been irrigated for many centuries, with the local people enjoying a centuries-old tradition of cultivating agricultural crops in the harsh dry climate. The Soviet Union doubled the area under irrigation, from around 4 million hectares to 8 million hectares, with irrigated land becoming a major water consumer. Diversion of water for irrigation purposes accounts for more than 90% of the total intake from all water sources.

Map of Water Use

According to SIC ICWC, in 1960 the total water diversion in the Aral Sea Basin was 60.6 cubic km, while by 1994 it had grown to 116.3 cubic km. From 1960 to 2008, the basin population more than doubled to an estimated figure of almost 60 million today. Increased population and increased irrigated land, as well as deteriorating water infrastructures, have led to what is known worldwide as ‘the Aral Sea catastrophe’. This includes health problems, high rates of child mortality, desiccation of the Aral Sea, biodiversity degradation, salt-dust transport from the dry bed of the Sea, and a loss of pastures, fisheries and wetlands.

Under the current conditions the Aral Sea cannot be restored to its former level. However, there is no doubt that greater efficiency in the use and management of water could significantly improve the situation and the trend towards a complete dry-out of the Aral Sea could be reversed.

2 IFAS and ASBP: Regional Institutions and Programs

2.1 History of IFAS

After the collapse of the Soviet Union the Central Asia states established a new framework for sharing and distributing water. On 12 September 1992, the Ministers of Water Resources of the newly independent states issued 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 task of ICWC was to agree on water allocation and water reservoir operations in the basins of the Amu Darya and Syr Darya Rivers. Under this Agreement, the decisions of ICWC must be unanimous. Responsibility for the implementation of the decisions lies with Basin Water Organizations in Tashkent and Urgensch.

The support of donors in 1992-1994 made it possible to establish the interstate organizations: International Fund for Saving the Aral Sea (IFAS) with its headquarters in Almaty, and the Interstate Commission for the Aral Sea (ICAS) with the Executive Committee under the chairmanship of the Turkmenistan Minister of Water Management, with headquarters in Tashkent. The role of IFAS was, primarily, to generate funds, while EC ICAS was in charge of the Aral Sea Basin Program (ASBP). A third body, the Interstate Commission for Sustainable Development (ICSD) was established in 1993. Based in Ashgabat, its major objective was to protect the environment in the region.

In February 1997, a meeting of the heads of the Central States made a fundamental decision to restructure and merge IFAS and ICAS. Decisions were also made concerning the chairmanship of the new Executive Committee, including rotations, location of the Executive Committee and the supply of fees to the Fund. Since IFAS was established in 1997, the Executive Committee has been located in Almaty (1993-1997), Tashkent (1997-1999), Ashgabat (1999-2002), and Dushanbe (2003-2009). Since 2009, it has been based in Almaty.

2.2 History of ASBP

ASBP 1
The first ASBP was initiated in 1993 and in January 1994, the Program was approved by the Heads of Central Asian States.

In June 1994, Paris hosted a meeting of donors to discuss the draft, which was called a “Program of Actions”. At this meeting, donors made commitments of more than USD$400 million to finance this Program.

The main goals of the Program included:

(i) stabilizing the environment in the Aral Sea basin
(ii) restoring the disaster zone around the Sea
(iii) improving management of transboundary waters in the basin
(iv) developing the capacity of the regional organizations to plan and implement the Program

The Program was to provide assistance to the Basin countries to develop cooperation and establish sustainable regional relations to overcome the crisis. The Program was also to develop proposals to improve the living conditions of the people in Central Asia.

ASBP 2
ASBP-2 was developed in accordance with the Decision of the Heads of States in Dushanbe on October 6, 2002. This Program set up projects covering a wide range of environmental, socioeconomic, water management, and institutional problems for the period 2003-2010.

According to information provided to EC IFAS, from 2002 to 2007, the total contribution from the IFAS country members to the implementation of activities was over 1 billion US Dollars. The Program implementation was also financed by donors, including UNDP, World Bank, Asian Development Bank, USAID, as well as the governments of Switzerland, Japan, Finland, Norway and others.

2.3 Lessons Learnt from ASBPs

The main lesson learnt was that the international donor community has to be involved in every stage of the preparation of the ASBPs.

Until now the main focus of ASBPs has been on technical issues, with little attention being paid to social, political and institutional issues. There has also been a lack of cooperation among all Central Asian country ministries involved, and local authorities and civil society have not always been part of the decision making process or project implementation. In addition, there were no successful public awareness programs, which should have accompanied the Programs.

Nevertheless, the Programs have made a substantial contribution to establishing relations between the countries of Central Asia and the international donor community. They have also strengthened the capacity of the countries to devise strategies and set priorities for the development of the economy, the social sector and the management of natural resources.

3 Aral Sea Basin Program-3

Since the early 1990's, the issue 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. There are enough water resources in the Region but they are not used effectively. 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 Asia 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 their intention to help expand the operation of the Fund and to develop cooperation between international organizations. In addition, they confirmed a state commitment to the principles of the integrated management of water resources (IMWR).

The statement confirmed that the countries in Central Asia were interested in the development of mutually acceptable mechanisms 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 of the Region.

It was also decided that EC IFAS in Almaty has to develop the next Aral Sea Basin Program.

3.1 Development of 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 the 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.

The project preparation process involved extensive consultations among national and international experts to develop program priorities and project proposals. It was agreed for ASBP-3 to work in four directions:

1. Integrated Water Resources Management
2. Environmental protection
3. Socio-economic development
4. Improving the institutional and legal instruments

In addition, EC IFAS was in a continual dialogue with the donor community, in particular with the World Bank, European Union, USAIDS, GTZ, and SDC in order to get their comments and ideas on how to make ASBP-3 a joint effort of the member countries, the donors and the civil society.

This resulted in an agreed list of criteria for project proposals to be included into the Program:

- National projects to be implemented within one state and primarily financed from the national budget
- Regional projects to be implemented in the territory of two or more states
- Meeting the ASBP goals and objectives
- Meeting one of the directions of ASBP
- Linking with the corresponding national and regional policy goals and programs

After that, EC IFAS asked member countries to prepare project proposals in accordance with the above criteria. In response, EC IFAS received a total of 335 project proposals including 149 proposals for Direction 1, 100 for Direction 2, 71 for Direction 3, and 15 for Direction 4.
The proposals were clustered and 44 of the most relevant and appropriate projects were identified.

These projects are ready for financing and ASBP-3 is looking to raise the required resources for these proposed projects.

3.2 Content of Proposed Projects

3.2.1 DIRECTION 1 Integrated Water Resources Management

The first direction – Integrated Water Resources Management – includes projects aimed at addressing the problems associated with transboundary water resources management, establishing monitoring systems, modeling and establishing databases, developing basin plans, and ensuring the safety of water facilities.

Expected outputs are:

- An improved and strengthened system for the management of transboundary water resources
- Assistance provided to the countries to address challenges regarding climate change adaptation
- Improved quality of hydrometeorological services
- Monitoring systems improved, including collection, transfer, processing, storage and distribution of hydrological and meteorological information
- Databases and computer models for the management of transboundary water resources established
- Efficiency of water use increased, burdens to the national budget decreased;
- Indicators for irrigated lands monitoring harmonized;

- Assistance to reduce risks of natural hazards, including strengthening of regional cooperation and emergency preparedness.

The major results expected are the prevention of conflicts and mitigation of ecological problems, increased efficiency of water use and crop production, decreased of water losses, modernized early warning systems.

3.2.2 DIRECTION 2 Environmental Protection

The second group of proposals addresses the problems associated with the environmental protection and improvement of the environment, including biodiversity conservation, and natural disasters risks reduction.

Expected outputs are:

- Mountain environments improved
- The environment and productivity of pastures improved
- The environment in the deltas of the Syr Darya and Amu Darya improved
- A regional information system on the environment established

3.2.3 DIRECTION 3 Socio-economic Development

The third group of project proposals addresses socioeconomic issues, including a focus on improving living conditions, ensuring sustainable development, increasing employment, and improving water and power supply systems, education and public health.

Expected outputs are:

- For the rural population: establishment and/or development of private small enterprises, creation of new jobs, and increased labor efficiency
- An improvement in the quality of medical services
- An improvement in the effectiveness and quality of education in schools and pre-school facilities in rural areas

3.2.4 DIRECTION 4 Improving the institutional and legal instruments

This direction includes project proposals aimed at addressing the issues associated with institutional development, improving regulatory frameworks and institutional structures, strengthening regional cooperation, developing the policy and strategy for sustainable development, training and capacity building, and increasing public awareness.

Expected outputs are:

- Conditions for a transparent and mutually beneficial regional dialogue and cooperation, including setting up a sectorial dialogue between governments established
- Conditions for a free exchange of opinions on vital issues, including on strengthening ties between stakeholders, ministries and agencies, academic and cultural communities, and the public at large, established
- Institutional mechanisms and contractual and legal frameworks of regional cooperation in water resource management improved
- A regional mutually beneficial economic model for the multi-purpose use of surface and underground water resources agreed

- A greater understanding of the causes of the problem of regional cooperation, and
- mutually acceptable ways to resolve these problems identified
- Proposals to improve national legislative acts and to draft legislative and regulatory documents in order to improve the efficiency of activities aimed at adapting to and mitigating the consequences of climate change in the context of the UN Framework Conventions on Climate Change developed
- A National regulatory framework for the safety of water facilities in the countries of Central Asia established
- The capacity of EC IFAS strengthened
- A Prototype of the single information system for the water sector established
- A Communication Strategy for stakeholders and the public established
- Training systems for the water sector and the hydrometeorological services in Central Asia improved

It should be noted that the above Directions complement each other in such a way that the whole is greater than the sum of the parts, and that by implementing proposed projects across these different directions, an overall synergy is achieved.

4 IFAS and EC IFAS

It is recognized that regional cooperation is the only way to deal with present and future challenges. These challenges are the effective use and management of water; adaptation to climate change; growing populations and the resulting increase in the demand for water, energy and food, and environmental degradation. It has to be stressed that regional cooperation is the key to development as has been seen in many parts of the world. National governments working alone will not be able to face up to the challenges.

4.1 IFAS

The existing mechanism of regional cooperation under IFAS, and the other three interstate organizations (Interstate Commission for Water Coordination, Interstate Commission for Sustainable Development, EC IFAS) needs to be improved. The establishment of a basin organization could be the answer for IFAS in the future. Possible role models could be the Mekong River Commission (under the umbrella of the United Nations) or organisations like the Danube Commission (managed by member states).

Discussions are currently under way regarding possible changes to the organizational structure of IFAS. EC IFAS, with the assistance of UNECE and the German Government, has established a working group on this subject. The Heads of the Central Asian States also recognized the need for better cooperation within IFAS in their statement of 28 April 2009.

4.2 EC IFAS: Mission, Vision, Strategy

The overall mission of EC IFAS is to serve the people of the Aral Sea Basin. Its vision is “Improved living conditions for the people of Central Asia”.

EC IFAS is the executive body of IFAS. Its role is to coordinate cooperation at national and international levels in order to use existing water resources more effectively, and to improve the environmental and socioeconomic situation in the Aral Sea Basin. EC IFAS serves as a platform for dialogue among the countries of Central Asia, as well as the international community.

EC IFAS/ASBP-3 and its regulations will not attempt to supersede or otherwise interfere with agreements between donors or implementing agencies and partners in Central Asia irrespective of whether their projects are listed in the ASBP 3 or not.

However, EC-IFAS needs help to work more effectively to ensure it delivers on its vision and mandate/mission. A strategy has been formulated which includes strengthening the capacity of IFAS bodies and EC IFAS in particular. This will help to ensure the successful implementation of projects as they are spelled out in the ASBP-3. There will also be public outreach programs, which will serve to familiarize politicians, decision makers, journalists, scientists, and the interested public about major issues regarding the Aral Sea basin.

The four ‘directions’ this mission will take are: integrated water resources management, environmental protection, socio-economic development, and global and regional conventions.

Aral Sea Basin Program

Project Proposed

Direction 1

Directions	Clusters	Reference Number	Project Proposals
1. Integrated water resources management	1.1. Information system improvement, including hydromet modernization, database development, development of united methodology for water demand forecast	1.1.1	Water and Economic Development: Demand Management
		1.1.2	Improvement of database and simulation models for transboundary water resources management
		1.1.3	Capacity building for improved management of transboundary water resources
		1.1.4	Improvement of irrigation infrastructure monitoring system
		1.1.5	Hydromets modernization
		1.1.6	Rehabilitation of Monitoring System for Irrigated Lands
	1.2. Application of IWRM principles, including development of national and regional visions of water use, basin plans, water quality conservation and protection, manuals and strategies for efficient water use	1.2.1	Development of National and Regional Concept of Water Resources Use
		1.2.2	Integrated management of surface and ground water resources to meet the needs of water users
		1.2.3	Transfer of irrigation infrastructure to water users
		1.2.4	Irrigation Rehabilitation
	1.3. Dam (water works) safety	1.3.1	Water Works Safety
	1.4 Natural disaster risk management	1.4.1	Strengthening regional capacity for disaster risk reduction in Central Asia

Aral Sea Basin Program

Project Proposed

Direction 2

Directions	Clusters	Reference Number	Project Proposals
2. Environmental	2.1. Environment protection, including assistance in implementation of Kyoto Protocol and climate change adaptation measures	2.1.1	Reforestation in Aral Sea Basin
		2.1.2	Sustainable development and management of wetlands to reduce desertification and restore biodiversity
		2.1.3	Regional Program for biological resources protection in mountain areas of Central Asia
		2.1.4	Integrated management of Syrdarya and Amu Darya the deltas. Biodiversity conservation
		2.1.5	Development of regional environmental indicators and environmental information systems
		2.1.6	Reduction of greenhouse gas emission
		2.1.7	Evaluation of snowpack, distribution of the solar radiation and radiation balance in the mountain area of the Central Asia
		2.1.8	Natural disaster risks management
		2.1.9	Man-made disaster risks reduction in mountain areas
	2.2. Biodiversity management	2.2.1	Establishment of Regional biological diversity monitoring system
		2.2.2.	Conservation of flora endangered species and publication the Red Book of the Aral Sea basin
		2.2.3	Preservation of fauna endangered species and publication the Red Book of Wild Fauna of the Aral Sea basin

Aral Sea Basin Program

Project Proposed

Direction 3

Directions	Clusters	Reference Number	Project Proposals
3. Socio-economic	3.1. Sustainable development	3.1.1	Increasing employment in rural areas
		3.1.2	Improvement of grazing lands in the Aral Sea vicinity
		3.1.3	Use of renewable energy in rural areas
	3.2. Water supply, sanitation, and health	3.2.1	Improving access to drinking water for rural population
		3.2.2	Improving quality of medical healthcare of rural population
	3.3. Assistance in the improvement of education system	3.3.1	Improvement of education in rural areas

Aral Sea Basin Program

Project Proposed

Direction 4

Directions	Clusters	Reference Number	Project Proposals
4. Improvement of institutional and legal mechanisms	4.1. Institutional development, including improvement and development of legal base and institutional structures	4.1.1	National and regional dialogues on Water Convention and Water Resources Management
		4.1.2	Analysis of the economic impact of the optimized use of water and energy resources in Central Asia
		4.1.3	Development of Regional Water Convention for the Aral Sea basin
		4.1.4	Adaptation of irrigation and drainage infrastructure to climate change
		4.1.5	Support to improvement of the organizational structure, legal framework and capacity building for water resources management
		4.1.6	Improvement of legal and regulatory base due to the need for climate change adaptation
	4.2. Strengthening of regional cooperation	4.2.1	Assistance to strengthening cooperation in Central Asia: Draft Agreement on Safety of Hydraulic Structures
		4.2.2	Legal and institutional support for establishment of Information System (network) and databases for Aral Sea basin
		4.2.3	Capacity Strengthening of Executive Committee of International Fund for Saving the Aral Sea
	4.3. Policies and strategies for sustainable development	4.3.1	Strengthening of cooperation in Central Asia: Establishment of Basin Water Councils for Amudarya and Syrdarya
	4.4. Training and	4.4.1	Improvement of Regional Training System for staff

	capacity building		responsible for safety of hydraulic structures
		4.4.2	Improvement of the Regional Training System for National Hydrometeorological Services
		4.4.3	Improvement of the Regional Training System for water sector staff
		4.4.4	Save water
	4.5Public awareness	4.5.1	Awareness rising

IFAS Project Proposals

DIRECTION 1

Aral Sea Basin Program

1.1.1 Water and Economic Development: Demand Management

DEVELOPMENT OBJECTIVE

This proposal is aimed at **strengthening** the **capacity** for the **management** and the **exchange of data** among different stakeholders to help them **plan effectively**, and make **well-informed decisions** with respect to **water resources management**.

BACKGROUND

Comprehensive, detailed, coherent and reliable information on the availability of water resources is the key to the successful implementation of the Integrated Water Resources Management (IWRM). Unfortunately, this kind of information is limited and relatively inaccessible.

A feasibility study for Information System for Amu Darya and Syr Darya river basins was developed under ASBP-1 and ASBP-2 within the IWRM theme and the effectiveness of the proposed approach was demonstrated through pilot projects funded from various sources.

The continuation of these activities would improve both the management of water and allow for a more efficient use of water.

On-going or Previous Projects

Water Environmental Management Project (World Bank), *Natural Resource Management Project* (USAID), *Water Management Improvement Project* (World Bank), *Improvement of Hydrometeorological Services* (SECO)

ESTIMATED BUDGET: To be determined

BENEFICIARIES: Agencies responsible for water management and irrigation infrastructure

PARTNER ORGANIZATIONS: BVO Amudarya, SIC ICWC, Scientific Research Institute KyrgNIIIrrigation, Scientific Research Institute TajNIIGIM, ICWC, National Agrarian University (Kazakhstan)

OUTCOMES

- Water resource management improved
- A united methodology for forecasting water supply and demand developed
- Hydromet systems modernized
- Access to information improved

OUTPUTS

- Water distribution in the region more sustainable, equitable and fair
- The supply and flow of water in the region more uniform and stable
- Nonproductive discharges of water from the systems eliminated
- Irrigation systems' original technical design parameters on velocity, water levels etc. maintained
- Water and land resources more efficiently used
- Communication and information systems improved and developed

ACTIVITIES

- Updating the list of information necessary for water management and decision-making at various levels (local, national, regional)
- Undertaking a preliminary survey and selection of pilots
- Establishing Water Basin Councils
- Developing a terms of reference to design Water Management Systems
- Designing Water Management Systems
- Procuring, installing and commissioning equipment
- Training Operational staff
- Sharing information and experience with stakeholders and relevant organizations

PERFORMANCE INDICATORS

- Deviations in water discharge will not exceed 2-3%
- The rate of reduction in water resources will decrease by 5-7%
- Crop yields will increase by 15%
- Operational staff at the selected facilities will be trained to use the installed machinery and equipment
- Information and training materials will be developed and distributed

START DATE: **2011**
COMPLETION DATE: **2013**

ESTIMATED BUDGET

To be determined

Aral Sea Basin Program

1.1.2 A Web-based Transboundary Water Resource Information Management System

DEVELOPMENT OBJECTIVE

The project is aimed at **solving technical issues** related to the **management** of **transboundary water resources**.

BACKGROUND

The issue of transboundary water resources management in the former Soviet Union used to be solved through application of administrative measures at the level of the Ministry of Water Resources. Since the collapse of the USSR, this issue has become much more complex and is now an interstate affair.

The improvement of sustainable and fair transboundary water resources management is a major task which should be undertaken by the Central Asian states to eliminate poverty and facilitate sustainable economic grows. However, water management is a complex issue associated with the use, reproduction and conservation of water and it needs modern techniques and technologies.

One of the project priority tasks would be to establish of a multilevel interstate, inter-sectorial information system on water and land resources in the Aral Sea basin. This would facilitate the sustainable management and control of water resources and serve as the base for a decision support system. It would also improve the productivity of economic activities based on modern hardware, software, and telecommunication facilities.

This single unified information system would include data on water resources, including development and forecasting, assessment of various aspects of water use.

ESTIMATED BUDGET: USD 1,550,000

BENEFICIARIES: Agencies responsible for water management and irrigation infrastructure

PARTNER ORGANIZATIONS: BVO Amudarya, SIC ICWC, Scientific Research Institute KyrgNIIIrrigation, Scientific Research Institute TajNIIGIM, ICWC, Scientific Research Institute SANIIRI, Tajik Hydromet, Ministries of Environment Protection, Ministries of Agriculture and Water Resources, Regional Hydrological Centre, Metrological Centre ICWC.

OUTCOMES

- Water resource management improved
- A united methodology for forecasting water supply and demand developed
- Hydromet systems modernized
- Access to information improved

OUTPUTS

- Simulation models for planning the distribution of water resources at river basins level, taking into account the existing agreements on water allocation, the forecasts of water availability and water demand improved
- The management of transboundary water resources improved

- Decision makers provided with a reliable tool enabling real-time access to, and use of, scenarios and options for water sector development
- Hydrological and irrigation infrastructure databases improved
- CA Water-Info portal (http://www.cawater-info.net) expanded to facilitate the dissemination of data and analytical reports
- Volume of nonproductive (inefficient) discharges from the systems reduced
- Communication and information systems on the use of water resources improved and developed

ACTIVITIES

- Improving the water sector data exchange system by harmonizing the databases of various organizations based on the Central Asia Regional Water Information Base Project (CAREWIB)
- Improving computer models and user interfaces to solve managerial problems involving those related to assessment of water resources availability
- Developing a GIS based Regional Information System
- Harmonizing the Regional Information System with the Central Asia Regional Mountain Centre database
- Continuing to develop the CAWater-Info portal (http://www.cawater-info.net) to disseminate the data and analytical information
- Training Operational staff to use software developed by the project

PERFORMANCE INDICATORS

- Deviations from the agreed water discharge schedules do not exceed 10%
- Deviations from the technological parameters of facilities and channels' operation are within the limits
- Nonproductive (inefficient) water discharges from the systems are eliminated
- Professionals and decision-makers trained to operate the software developed under the project
- The developed and improved models for water planning for river basins demonstrate satisfactory concurrency with the indicators actually observed and are used by the agencies responsible for water resources management
- Information related to status of transboundary water resources is available to professionals and the general public
- Databases are managed in accordance with the agreed Protocol
- Forecasted parameters are reliable and accurate

START DATE: **2011**
COMPLETION DATE: **2013**

ESTIMATED BUDGET **$1,550,000** – including:
$1,250,000 to improve and harmonize the databases, and to design and/or improve and install software
$300,000 for seminars, conferences, training and dissemination of information materials

Aral Sea Basin Program

1.1.3 Transboundary water Resources – Monitoring Equipment

DEVELOPMENT OBJECTIVE

The project is aimed at **improving** and **strengthening** the **management and hardware capacity** of **transboundary water resources**.

BACKGROUND

Since the collapse of the USSR, water resources of some river basins are now considered transboundary because they flow through different sovereign states.

Good neighborly relations among the Central Asia states and improving the living conditions of local populations is dependent upon a reasonable and fair use of transboundary water resources taking into consideration the interest of downstream countries.

Studies of information exchange related to water use undertaken by the *Water Environmental Management Project* (World Bank) and the *Natural Resources Management Project* (USAID) have demonstrated that there is an urgent need to strengthen regional cooperation by improving the monitoring of water resources, information exchange and the harmonization of measurement methods.

The main technical obstacles that prevent effective management of transboundary water resources are:

- lack of equipment required, including certified ones for water metering
- an outdated communication system, which does not allow adequate facility management in accordance with the applicable regulations
- lack of up-to-date software
- untrained personnel

ESTIMATED BUDGET: To be determined

BENEFICIARIES: Agencies responsible for water management and irrigation infrastructure

PARTNER ORGANIZATIONS: BVO Amudarya, SIC ICWC, Scientific Research Institute KyrgNIIIrrigation, Scientific Research Institute TajNIIGIM, ICWC, Scientific Research Institute SANIIRI, Tajik Hydromet, Ministies of Environment Protection, Agriculture and Water Recourses Regional Hydrological Centre, Metrological Centre ICWC.

OUTCOMES

- Water resource management improved
- A united methodology for forecasting water supply and demand developed
- Hydromet systems modernized
- Access to information improved

OUTPUTS

- Observation systems improved
- Accuracy of water flow and water quality measurement improved
- Water management system at pilot sites improved
- Equipment and tools needed at pilot sites supplied and installed

- Operating staff are trained to use equipment
- Information from the pilot sites is received by decision-makers in real time
- Deviations from the technological parameters do not exceed limits
- Stable water supply to water users provided
- Nonproductive (inefficient) water discharges reduced

ACTIVITIES

Preparation Phase
- Studying the situation on sites and collecting information required
- Developing technical specifications for management systems
- Defining a list of pilot sites
- Designing new Management systems
- Developing a list of equipment required

Implementation Phase
- Procuring, installing and commissioning equipment
- Training the operational staff at pilot sites
- Commissioning pilot sites
- Developing information materials
- Conducting workshops to exchange experience and lessons learned
- Distributing information materials

PERFORMANCE INDICATORS

- Deviations from the agreed water discharge schedules do not exceed 10%
- Deviations from the technological parameters of facilities and channels' operation are within the limits
- Nonproductive (inefficient) water discharges from the systems are eliminated

START DATE: 2011
COMPLETION DATE: 2013

ESTIMATED BUDGET

To be determined

Aral Sea Basin Program

1.1.4 Irrigation Infrastructure Monitoring System

DEVELOPMENT OBJECTIVE

The project is aimed at improving the **efficiency** of the **use of water resources** and **reducing** the cost of **public expenditure** for operating **irrigation infrastructures**.

BACKGROUND

Since the early 1980's, Irrigation Service Fees have been charged for the use of irrigation water in Central Asia states. This volumetric method was, and is, mainly used for establishing the costs for the water supply services provided, i.e. water users pay for the volume of water delivered.

Originally, the Gauging Station Registers the water facilities were established according to administrative borders. The Registers reflected availability and conditions of the measuring devices, accessory tools, level of automation of water allocation processes, and the needs for maintenance. In addition, there was a system operational for the certification and verification of equipment.

However, since the collapse of the Soviet Union, this work has gradually declined due to the lack of funds required to keep the system operational. This has resulted in an inadequate provision of water to water users and the inability to monitor the flow and distribution of water.

The project would equip pilot sites with hardware, including equipment for water flow metering and communication equipment, needed to monitor and control the use of water for irrigation.

ESTIMATED BUDGET: To be determined

BENEFICIARIES: Water-users, agencies responsible for water resources management and irrigation infrastructure

PARTNER ORGANIZATIONS: Metrological Centre ICWC, JSC GeoKod (Kazakhstan), Kyrgyz Hydromet, Central Asian Institute of the Earth Applied Sciences, Tajik Hydromet, Ministries of Agriculture and Water Resources.

OUTCOMES

- Water resource management improved
- A united methodology for forecasting water supply and demand developed
- Hydromet systems modernized
- Access to information improved

OUTPUTS

- Priority gauging stations provided with all necessary equipment to:
    - accurately measure water flows and deviations in water flows
    - calibrate existing equipment to measure water flows
- All forms of communication equipment improved
- Staff knowledge of use of equipment improved
- Stakeholder access to Water flow data improved
- Equipment at gauging stations certified
- The necessary prerequisites for Irrigation Management Transfer established

ACTIVITIES

- Identifying gauging stations of priority status
- Undertaking a technical assessment of the state of equipment at priority irrigation system gauging stations
- Restoring and modernizing calibration equipment
- Developing a Gauging Stations Rehabilitation Program
- Procuring, commissioning and installing required equipment
- Providing water users with operating reference standards for the calibration of gauging devices
- Training operational staff to work with the equipment installed

PERFORMANCE INDICATORS

- The priority gauging stations are furnished with 100% of equipment needed
- Deviations in accuracy of measurement of water flow parameters at the equipped gauging stations do not exceed set limits
- 100% of planned Water flow measuring devices are certified
- Water flow data from the newly equipped gauging stations is shared with stakeholders in accordance with the approved regulations

START DATE: **2011**
COMPLETION DATE: **2013**

ESTIMATED BUDGET To be determined

Aral Sea Basin Program

1.1.5 Hydromet Modernization

DEVELOPMENT OBJECTIVE

The project is aimed at improving the quality of **hydrometeorological forecasting** and **information** provision for all **weather-dependent sectors** in **Central Asia**.

BACKGROUND

Central Asian states have recently declared a commitment to the strategic planning of water using integrated water resources management (IWRM) principles. These principles are based on integrating the interests of various sectors within hydrographic boundaries and involving the general public and stakeholders in the planning, development, funding and decision-making process. This is to ensure it meets the needs of society and the environment in a sustainable manner.

Hydrometeorological Services are crucial as these institutions are the source of information on water availability and forecasts on water quantity and quality, as well as the source of meteorological information.

However, recent studies looking at the availability and reliability of meteorological and hydrological data have shown that the system which functioned in the former Soviet Union has largely degraded and does not meet customers' requirements. Observation stations at remote mountain watershed areas of Kyrgyzstan and Tajikistan, and the monitoring of meteorological and hydrological parameters, are of particular concern.

In addition, state budgets do not allocate sufficient funds for the collection, processing, storage and sharing of hydrometeorological data sharing.

ESTIMATED BUDGET: To be determined

BENEFICIARIES: National Hydrometeorological Services (NHMS) of Central Asian countries, consumers of hydrological and meteorological data including agricultural sector, hydropower, transport and construction, and communal services

PARTNER ORGANIZATIONS: Hydromet Services of Central Asia states, Metrological Centre ICWC, JSC GeoKod (Kazakhstan), Central Asian Institute of the Earth Applied Sciences, State Environment Protection Committee of Kyrgyzstan, Design Institute TajikGiprovodkhoz, Regional Hydrological Centre, SIC ICWC, Dashoguz Branch of EC IFAS.

OUTCOMES

- Water resource management improved
- A united methodology for forecasting water supply and demand developed
- Hydromet systems modernized
- Stakeholder access to information improved

OUTPUTS

- Economy of Central Asian states improved
- Meteorological and hydrological forecasting more reliable and useful for stakeholders
- Snowpack monitoring system improved
- Communication systems upgraded

- Processing, storage and information sharing system upgraded
- Procurement of software, tools and equipment developed and harmonized
- Priority monitoring systems rehabilitated and/or restored
- Long-term program of staff training and retraining developed
- Hydromets' institutional structure improved

ACTIVITES

- Compiling and harmonizing the existing proposals for the modernization of Hydromets
- Developing a conceptual framework in order to successfully modernize Central Asian Hydromets
- Improving the observation, data collection, transmission, processing, storage and distribution systems
- Upgrading data exchange between the Hydromets of Central Asia and the WMO (World Meteorological Organization)
- Restoring and/or rehabilitating priority monitoring stations
- Training staff on new software and equipment procured
- Introducing a more customer orientated institutional structure

PERFORMANCE INDICATORS

- Economic losses in agricultural, energy, transportation and communal sectors will be reduced by an average of 15%
- A conceptual framework for the modernization of Central Asian Hydromets is developed and agreed upon
- The new improved system of collection, transmission, processing and distribution of meteorological and hydrological data meets the needs of the sectors concerned
- The hydrological database is updated and available for users

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET

To be determined

Aral Sea Basin Program

1.1.6 Rehabilitation of Monitoring Systems for Irrigated Lands

DEVELOPMENT OBJECTIVE

The project is aimed at **maintaining** a **sustainable environment** under climate change conditions through the introduction of **integrated water resources management principles**, and the **harmonization** of **monitoring systems** for irrigated lands.

BACKGROUND

Ground water resource is a strategically important source of water resources. In the former Soviet Union the monitoring of the quality and the quantity of underground water was carried out through a highly developed system that allowed both the water discharge and the quality of underground water to be forecast with a sufficient rate of probability. During the soviet era the underground and groundwater were treated separately. Monitoring of underground water was carried out by the Ministry of Geology and ground water by the Ministry of Water Resources. Later, groundwater monitoring was transferred to the Ministry of Agriculture to the hydro-amelioration departments/expeditions.

After the collapse of the former Soviet Union, monitoring systems deteriorated substantially. Observations have almost ceased and it is now impossible to obtain any reliable information on the conditions of underground water in the majority of deposits, as well as data on the table and quality of groundwater in most of Central Asia.

As a result, it is impossible to estimate the condition of land resources, to forecast crop yields and to plan and carry out measures to improve crop productivity.

Recent studies have revealed an urgent need for the rehabilitation of the monitoring systems and information exchange systems referred to above.

The main technical problems identified in the monitoring systems are as follows:

- A general lack of important equipment
- An outdated communication system which does not meet the present requirements
- Poorly trained staff

ESTIMATED BUDGET: $1,100,000

BENEFICIARIES: Water users, the agencies responsible for water management and irrigation infrastructure

PARTNER ORGANIZATIONS: Ministries of Agriculture and Water Resources, Scientific Research Institute of Water Resources (Kazakhstan), JSC GeoKod , Scientific Research Institute KyrgNIIIrrigation, Ministry of Environment Protection (Uzbekistan), Tashkent Irrigation University (Uzbekistan), Institute of Geoecology (Kazakhstan).

OUTCOMES

- Water resource management improved
- A united methodology for forecasting water supply and demand developed
- Hydromet systems modernized
- Stakeholder access to information improved

OUTPUTS

- Water and land resources management system strengthened
- Integrated approaches to the management and use of land and water resources implemented
- The hydro-ameliorative monitoring systems rehabilitated
- List of monitored parameters/indicators harmonized
- A unified system of monitoring the condition of reclaimed irrigated land established
- Database on the condition of irrigated lands developed

ACTIVITIES

- Undertake a review of the current conditions of the monitoring system
- Designing proposals on upgrading of the monitoring system
- Designing proposals on the harmonization of monitoring parameters
- Selecting pilot sites to demonstrate the effectiveness of the prepared proposals
- Providing pilot sites with the necessary equipment and instrumentation
- Establishing a database and software for the collection and issuance of land cadasters
- Providing training to staff responsible for monitoring of land and water resources

PERFORMANCE INDICATORS

- Proposals on the modernization of the monitoring system prepared, discussed and agreed
- Proposals on the harmonization of the monitoring parameters prepared, discussed and agreed
- Database on land-reclamation condition of irrigated lands established and providing reliable information for stakeholders
- Software for issuance of land cadasters developed and in use

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: **$1,100,000** - including:
$700,000 to develop proposals for the harmonization of monitoring indicators, designing and developing database and software, and to conduct seminars and conferences
$400,000 for the procurement of equipment

Aral Sea Basin Program

1.2.1 A National and Regional Approach to using Water

DEVELOPMENT OBJECTIVE

The project is aimed at **ensuring** that the **regional use of water resources** meets the **national interests** of the countries of the **Aral Sea basin**.

BACKGROUND

The lack of consistency in the use of water resources is a serious obstacle to sustainable development and is the cause of regional, domestic and local conflicts. It is crucial that transboundary water resources in the Aral Sea basin are used efficiently and in a rationalized manner.

The development of proposals to improve the management and use of water resources in Central Asia, taking into account environmental factors, and the effects of climate change and meeting the national interests of the countries of the Aral Sea basin would contribute to a safer and more cooperative use of these transboundary resources.

ESTIMATED BUDGET: $1,250,000

BENEFICIARIES: Water users of Central Asian countries

PARTNER ORGANIZATIONS: BVO Amudarya, SIC ICWC, Scientific Research Institute of Water Resources (Kazakhstan), Ministry of Agriculture (Kazakhstan), Scientific Research Institute TajNIIGiM (Tajikistan), Scientific Research Institute SANIIRI, Ministries of Agriculture and Water Resources.

OUTCOMES

- IWRM principles applied in practice
- National and Regional visions developed
- Water management improved
- Water quality conservation and protection

OUTPUTS

- Cooperation on management and use of water resources improved
- A set of criteria based on the national priorities of the countries of the Aral sea basin to optimize water resources management developed
- A unified strategy for the rational use of natural resources developed
- A governance program on the catchment area of transboundary rivers developed
- Proposals on the joint implementation of a single regional investment policy on water resources management developed
- Environmental requirements on the quality of water in the river basins established
- An assessment of the current water management situation and available water resources undertaken
- Hydrological and climatic trends shall be clarified
- Proposals on improving the efficiency of the organizations responsible for managing water resources shall be prepared
- Proposals on improving the efficiency of the organizations responsible for irrigation infrastructures shall be prepared

ACTIVITIES

- Assessing the current conditions of water management and available water resources
- Clarifying hydrological and climatic trends
- Undertaking a review of the water management development strategy and its main directives in the countries of the Aral Sea basin
- Clarifying and agreeing upon environmental requirements for water quality in the river basins
- Developing proposals on improving the efficiency of the organizations responsible for managing water resources
- Developing proposals on improving the efficiency of the organizations responsible for managing irrigation infrastructure
- Developing a program on managing the catchment area of transboundary rivers
- Developing the key provisions of a single strategy for the rational use of natural resources aimed at sustainable development of the whole region
- Identifying ways of jointly implementing a single regional investment policy
- Consulting with representatives of various sectors of government organizations, NGOs, scientific community, and the private sector on activities and proposals

PERFORMANCE INDICATORS

- Environmental requirements to ensure water quality in the river basins established
- Main provisions of a single strategy for rational use of natural resources developed, discussed and agreed
- Program on the management of catchment area of transboundary rivers developed, discussed and agreed
- Proposals on the joint implementation of the single regional investment policy for water resources management developed, discussed and agreed

START DATE: **2011**
COMPLETION DATE: **2015**

Estimated Budget: **$1,250,000** - including:
$500,000 for analytical work
$750,000 for development, discussion and coordination of documents

Aral Sea Basin Program

1.2.2 Integrated Management of Surface and Ground Water Resources

DEVELOPMENT OBJECTIVE

The project is aimed at strengthening **regional cooperation** in the management of **transboundary surface** and **ground water resources**.

BACKGROUND

The quantity and quality of surface and underground water in Central Asia is closely connected. The unrestrained use of surface water sources, as well as an excessive use of disposable water resources is leading to depletion and deterioration of underground water (a major source of drinking water in the area).

However, one of the principles of IWRM is the integrated management of surface and underground water, and in Central Asia, the formation of underground water basins are closely related to surface runoff and often transboundary in nature.

In Central Asia, there is a lack of coordination between the ministries responsible for underground water and the ministries responsible for drinking water and irrigation (despite the fact that the needs of these sectors are largely supported by underground water). This is leading to a fragmentation of responsibility for underground water causing mismanagement of the resource. At the same time, farmers have increasingly begun to use underground water for irrigation purposes.

In addition, the system of underground water monitoring that existed in the former Soviet Union has severely deteriorated to such extent that at present there is no reliable information available on the status of groundwater in irrigated areas and underground water basins.

A plan to rehabilitate underground water monitoring and to incorporate IWRM principles to the management of surface and ground water resources should be one of the priority activities of the Central Asian states.

ESTIMATED BUDGET: $ 1,200,000

BENEFICIARIES: Agencies responsible for water resources management, water users

PARTNER ORGANIZATIONS: Ministries of Agriculture and Water Resources, Scientific Research Institute of Water Resources (Kazakhstan), Rice Scientific Research Institute (Kazakhstan), Scientific Research Institute TajNIIGM (Tajikistan), Ministry of Environment Protection (Uzbekistan), Tashkent Irrigation University (Uzbekistan), Institute of Geoecology (Kazakhstan).

OUTCOMES

- IWRM principles applied in practice
- National and Regional visions developed
- Water management improved
- Water quality conservation and protection

OUTPUTS

- Proposals on organization of a common united monitoring system for pilot transboundary water basins developed

- Principles for the use of underground and surface water for the pilot basins agreed
- Regulatory legal acts on management and integrated use of underground and surface water at pilot sites harmonized
- The capacity of institutions managing aquifers and promoting regionally coordinated national policies strengthened
- Future investment plans for aquifer development and management in pilot areas, based on community participation developed

ACTIVITIES

- Undertaking an assessment of the state of the current monitoring system
- Preparing proposals on upgrading of the current monitoring system
- Strengthening human resources and logistics within the management system of both surface and underground water
- Developing proposals for implementing a regionally coordinated integrated surface and underground water resources management system
- Developing investment programs jointly with social community for the development of an integrated water resources management system aimed at improving the living standards of local people

PERFORMANCE INDICATORS

- An integrated monitoring system for pilot transboundary water basins in place
- Principles for the use of underground and surface water for the pilot basins agreed
- Investment programs for the pilot sites developed
- Regulatory legal acts on management and integrated use of underground and surface water at pilot sites harmonized

START DATE: **2011**
COMPLETION DATE: **2013**

Estimated Budget: **$ 1,200,000** - including:
$900,000 for developing and establishing information system, designing principles for the use of ground water, drafting regulations and legal instruments
$300,000 for conducting seminars, conferences, preparation, development and dissemination of information

Aral Sea Basin Program

1.2.3 Transfer of Irrigation Infrastructure to Water Users

DEVELOPMENT OBJECTIVE

The project is aimed at improving the **management** of the **irrigation infrastructure** to maintain the **sustainable development** of agriculture.

BACKGROUND

Central Asia has a complex and extensive irrigation infrastructure which requires substantial financial and material resources in order to maintain it effectively. The transition of Central Asian countries from centralized control to a market economy, including in agriculture, has resulted in a reduction in state budget allocations for this sector. One of the most effective ways of solving this problem is to transfer responsibility for the management, operation and maintenance of water systems to water users themselves.

This transfer of responsibility is beginning to happen in Central Asia. Water users have started to merge creating Water Users Associations (WUAs) and to take responsibility for the management, operation and maintenance of irrigation systems. However, many members of the WUAs lack the necessary knowledge, skills and experience to register or manage the organization or the infrastructure. In addition, the regulatory framework has not kept pace with these changes and requires refinement and improvement.

The project would improve the reliability of the water supply to irrigated lands by improving the capacity of WUAs, rehabilitating irrigation systems and providing intake stations with water resources metering devices. It would also provide WUAs members and farmers training on how to use water more effectively.

ESTIMATED BUDGET: To be determined

BENEFICIARIES: Agencies responsible for water management and irrigation infrastructure, water users

PARTNER ORGANIZATIONS: Ministries of Agriculture and Water Resources, SIC ICWC, Ministry of Agriculture and Water Resources (Uzbekistan.

OUTCOMES

- IWRM principles applied in practice
- National and Regional visions developed
- Water management improved
- Water quality conservation and protection

OUTPUTS

- The provision of sustainable, equitable and fair water supply available for more water users
- Levels of unproductive water consumption decreased
- Sustainable growth in productivity of irrigated agriculture increased
- Water resources management for the benefit of water users improved
- Public expenditures on operation and maintenance of irrigation infrastructure reduced

- Management and maintenance of irrigation infrastructure facilities handed over to water users

ACTIVITIES

- Selecting pilot WUAs and/or their federations
- Assisting pilot WUAs to improve their technical and material base
- Assisting pilot WUAs to develop and strengthen their institution and better manage resources
- Highlighting the need to provide the appropriate assistance to women involved to ensure involvement in the discussion and decision-making processes concerning WUAs and water resources management
- Assisting in the rehabilitation and repair work of the irrigation network, including the installation of metering equipment
- Developing proposals on improving the regulatory legal framework clarifying the roles, responsibilities and rights of the government, agencies and all water users, including WUAs and their federations
- Training WUAs staff as necessary
- Preparing the documents to transfer management of irrigation facilities to water users
- Preparing information material and assist the stakeholders in dissemination of the above mentioned material

PERFORMANCE INDICATORS

- Water distribution schedule established and operating at 100%
- Discharge capacity of hydraulic structures, canal, drainage conditions, fulfillment of repair works 100% completed
- WUAs accumulated financial and material resources for their own use
- Irrigation facilities managed by pilot WUAs
- Water resources distributed to water users in an equitable manner and at the most appropriate time for effective use

START DATE: **2011**
COMPLETION DATE: **2013**

ESTIMATED BUDGET To be determined

Aral Sea Basin Program

1.2.4 Irrigation Rehabilitation

DEVELOPMENT OBJECTIVE

The project is aimed at **developing** a **strategy** for the **rehabilitation** of the **water irrigation infrastructure** in **Central Asia**.

BACKGROUND

The irrigation and drainage infrastructures of Central Asian countries, inherited from the former Soviet Union, are one of the most sophisticated in the world. However, managing these infrastructures requires substantial funds which the countries are not always able to allocate.

In the last 10 - 20 years, because of this lack of funds, maintenance and repair works have been done irregularly and work tends to be in response to rather than in order to prevent emergency. As a consequence, structures, including canals and drains, have ceased to work in design mode, and irrigated lands have started to lose productivity and/or have been abandoned.

The project would clarify the priorities with respect to rehabilitation of water infrastructure and would help the Central Asian countries to develop their national strategies for water management.

ESTIMATED BUDGET: USD 2,600,000

BENEFICIARIES: Agencies responsible for water resources management and water sector infrastructure

PARTNER ORGANIZATIONS: Ministries of Agriculture and Water Resources, Scientific Research Institute of Water Resources (Kazakhstan), Ministry of Environment Protection (Kazakhstan), State Committee of Water Resources (Kyrgyzstan), Design Institute Kyrgizsuu dolboor (Kyrgyzstan), Scientific Research Institute TajNIIGIM, Scientific Research Institute SANIIRI, Ministry of Agriculture and Water Resources (Uzbekistan), Design Institute Samarkand suvloykha, Dashoguz Branch of EC IFAS.

OUTCOMES

- IWRM principles applied in practice
- Water management improved
- Water quality conservation and protection

OUTPUTS

- Irrigation systems based on the basin principle certified
- An assessment of the necessary costs of repair and rehabilitation works for irrigation and drainage systems undertaken
- Plans to repair and rehabilitate irrigation systems developed
- Registers of water systems developed

ACTIVITIES

- Consulting with stakeholders on the methodology for the certification of water systems
- Consulting with stakeholders on Draft Technical Certificates for water systems and basins

- Developing a register of water systems and guidelines of its application
- Issuing certificates and creating a database of water systems with the use of GIS technologies
- Undertaking an assessment of the necessary costs of repair and rehabilitation works in the context of basins, as well as the needs in equipment and material resources
- Developing a strategy to carry out repair and rehabilitation work to irrigation systems

PERFORMANCE INDICATORS

- The certification of water systems
- A report on the estimated costs of repair and rehabilitation works
- The development of plans for rehabilitation works
- A GIS based database of water systems

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET **$2,600,000** - including:
$2,250,000 – to conduct an asset survey, for the development of Registers and Guidelines, and for the certification of water systems
$150,000 - to purchase of licensed software
$200,000 – to conduct seminars and workshops, prepare and disseminate documents and information

Aral Sea Basin Program

1.3.1 Dam Safety – Risk Reduction

DEVELOPMENT OBJECTIVE

The project is aimed at improving the **reliability** of, and ensuring, the **safe operation** of **hydraulic structures** in Central Asia.

BACKGROUND

Major hydraulic structures on the irrigation facilities of Central Asian countries were built over 30 years ago and for a long time facilities have been running without proper maintenance, repair or replacement of worn equipment and instruments. The risk of an incident is now high. If something were to go wrong, not only would the delivery of water be at risk, but also the lives of the population living in the immediate vicinity of the structures would be under threat.

It is proposed to conduct an analysis and identify problems in operations of various types of hydraulic structures. Proposals would then be developed to improve the reliability and operational safety of the observed facilities including the installation of early warning systems and the harmonization of technical regulations for hydraulic structures operation. A training program for the staff of organizations responsible for the safety on hydraulic structures would also be developed.

ESTIMATED BUDGET: To be determined

BENEFICIARIES: Institutions responsible for the safety of hydraulic structures, the population at risk zone

PARTNER ORGANIZATIONS: Gosvodtekhndzor (Uzbekistan), EC IFAS Branch in Tajikistan, EC IFAS Branch in Uzbekistan, UNDP.

OUTCOMES

- Dam safety improved
- Risk to local population reduced
- Greater reliability of water supply

OUTPUTS

- The operational safety of major hydraulic structures improved
- Numbers of incidences reduced
- Uninterrupted supply of water to consumers ensured
- Hydraulic equipment upgraded
- Operations staff more efficient and effective

ACTIVITIES

- Identifying a list of pilot sites for the project
- Upgrading the target indicators of reliability and operational safety of hydraulic structures
- Identifying the critical parts of the structures in terms of the reliability and safety
- Surveying pilot facilities to determine specific operation needs of the various types of hydraulic structures
- Developing proposals on improving the reliability and operational safety of the surveyed facilities

- Developing proposals for providing facilities with measuring and testing equipment
- Designing and installing early warning systems for pilot facilities
- Designing and installing software to monitor the hydraulic structures
- Procuring and installing measuring and testing equipment and communication instrument at pilot facilities
- Harmonizing the norms and rules for operating hydraulic structures
- Training operational staff, and members of supervising bodies and professionals of organizations concerned
- Ensuring pilot sites are supplied with necessary equipment and facilities

PERFORMANCE INDICATORS

- Water delivery to water users is 100% in accordance with the agreed quantity and fixed schedule of delivery
- Early warning systems installed and fit for purpose in the event of an emergency situation at the pilot sites

START DATE: **2011**
COMPLETION DATE: **2015**

Estimated Budget To be determined

Aral Sea Basin Program

1.4.1 Disaster Risk Reduction Management in Central Asia

DEVELOPMENT OBJECTIVE

The project is aimed at **assisting** the people of **Central Asian** countries to **reduce** the **risk** of becoming a **victim** of **natural disasters**.

BACKGROUND

Central Asia is a region at high risk of natural disasters. In particular, the most vulnerable parts are the watershed areas - the Pamir and Tien Shan. These risks are caused by the topographic, geophysical, hydrological and climatic conditions of the areas, as well as man-made factors that often exacerbate the situation. Every year, it is estimated that the economic losses amount to hundreds of millions of US dollars annually for each of the countries of Central Asia.

However, by strengthening regional cooperation, improving disaster preparedness and the disaster response plan and other measures, these losses, and the risk of future losses caused by potential disasters, can be reduced.

The Project would support the development of capacity and strategies to reduce the risk from natural disasters, including earthquakes, floods, landslides, mudslides and avalanches.

ESTIMATED BUDGET: To be determined

BENEFICIARIES: Government institutions, civil society and communities

PARTNER ORGANIZATIONS: Central Asian Institute of the Earth Applied Sciences, Ministry of Emergency (Kyrgyzstan), EC IFAS Branch in Tajikistan, UNDP.

OUTCOMES

- Natural disaster risk management improved
- Regional Disaster response plans ready for use
- Population safety improved

OUTPUTS

- Regional capacities for early warning and disaster preparedness and response to natural and technological risks improved
- Inter-ministerial cooperation and coordination between national agencies in forecasting, risk assessment and disaster recovery operations improved
- Inter-ministerial cooperation and coordination between regional and international stakeholders engaged in risk reduction activity improved
- The coordination on natural disaster recovery operations between the States and the civil society in Central Asia improved
- Technical assistance to the countries of Central Asia to establish the Natural disasters response and a Risk Reduction Center provided
- Terms of Reference for a regional database developed and discussed
- A draft curriculum for a capacity building training course discussed and approved
- Information exchange between stakeholders improved

ACTIVITIES

- Providing technical assistance to strengthen the capacity of Central Asian countries
- Setting up a Risk Reduction Center
- Conducting an analysis and estimate of material aid reserves requirements and the best methods to distribute it
- Sourcing funds to set up a training center and assisting in its set up
- Facilitating an appeal to donors to finance the purchasing of equipment
- Drafting a curriculum for a capacity building training course
- Ensuring that the issue of disaster mitigation is a priority of development policies and strategies in order to strengthen national goals for sustainable development
- Improving the legal framework for disaster management in Central Asia
- Disseminating information on best practices and recommendations on natural disasters risk reduction to stakeholders working in the field of disaster mitigation
- Developing strategies to support member-states in addressing specific tasks on natural disasters risks reduction
- Providing information to international organizations engaged in risk reduction training
- Designing and establishing a regional database
- Organizing and conducting meetings and consultations with national, regional and international stakeholders for information exchange on issues of risk mitigation and to discuss response strategies
- Undertaking an assessment of public awareness on the risks of natural disasters
- Setting up a dialogue between civil society organizations and the governments of member-states to communicate the results of the public awareness survey, and to discuss existing practices to reduce disaster risks
- Developing proposals for a coordinated risk reduction strategy between the state and civil society

PERFORMANCE INDICATORS

- A national, regional and international action plan on disaster prevention and response agreed and in place
- A coordinated risk reduction strategy between the state and civil society agreed and in place
- Regular meetings between all national, regional and international stakeholders
- Capacity building training course designed
- An information database established
- Public awareness survey conducted

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET To be determined

DIRECTION 2

Aral Sea Basin Program

2.1.1 Reforestation in the Aral Sea Basin

DEVELOPMENT OBJECTIVE

The proposed project is aimed at improving **forest husbandry**, increasing **reforestation**, developing **transplant nurseries**, improving **forest inspections**, **training** and developing the skills of **young professionals**, and raising **public awareness**.

BACKGROUND

One of the major environmental challenges facing the Aral Sea region is wind erosion of the dried bed of Aral Sea. Each year about 75 million tons of sand, dust and salt is blown by the wind from the bottom of the drained sea as a result of deflationary processes. The worst affected area lies within 100 km of the current water area. The least affected area sits approximately 100 to 300 km away from the former Sea.

Vegetation and forests play an important role in protecting soils from wind and water erosion. However, forests have been seriously degraded in the region in recent decades mainly due to deforestation, overgrazing, fires, widespread pests and diseases, and there is a lack of trained personnel in forest farms.

On-going or Previous Projects

Donors have already funded various projects to address the problem, such as *Biodiversity of Gissar Mountains* (UNDP), *Biodiversity Conservation in Dashti-Jum Reserve* (World Bank), and the *Reforestation of the dry Aral Seabed* (GTZ). All projects have demonstrated that reforestation protects soils from wind and water erosion.

BENEFICIARIES - Local population, state administration, agencies responsible for forest and environment management

PARTNER ORGANIZATIONS: Ministries of Environment Protection and Forestry, Ministry of Agriculture and Water Resources of Uzbekistan, Local Authorities, Scientific Forestry Institute Republic of Uzbekistan, Institute of Geography of Academy of Sciences of Kazakhstan, JSC GeoKod of Kazakhstan, Scientific Information Centre of ICWC, Nukus and Dashoguz EC IFAS Branches

ESTIMATED BUDGET: $1,200,000

OUTCOMES

- Environmental conditions in the region improved
- Biodiversity restored and conserved
- Kyoto protocol implementation
- Climate change adaptation measures

OUTPUTS

- Forest area in the region increased, including in the dried Aral Seabed
- Health of forests improved
- Biodiversity increased
- Wind and water erosion reduced

- Risk of floods, mudflows, and landslides reduced
- Number of trees and gardens around settlements increased
- Monitoring of planted and existing forests increased
- Material and technical base of forest enterprises strengthened
- Environmental literacy and its role in forest management increased
- Sand blown by wind (eolian transfer) reduced
- Salt and dust blown by the wind from the dried seabed of the Aral Sea into the atmosphere reduced
- Health of the Area sea region's population improved
- Amount and quality of food available for domestic animals improved
- Public awareness increased

ACTIVITIES

- Restoring and expanding forests in the region, including organising nurseries for planting main forest species
- Establishing a permanent monitoring system of new forests
- Improving fire prevention measures
- Setting up measures to combat forest pests and diseases
- Establishing green belts in the pilot sites (along the shoreline of Lake Sarykamyşh, the Small Aral Sea, the rivers Naryn, Chatkal, Vakhsh, Panj)
- Stabilising shifting sands
- Planting new forests in the dried Aral seabed area
- Planting of trees, shrubs and grasses around settlements in the region
- Increasing training opportunities and improving equipment and machinery in forest enterprises
- Launching a public awareness campaign

PERFORMANCE INDICATORS

- Three nurseries created
- Forest area increased by 5%
- Measures to combat forest pests and diseases and to improve forest health in the pilot sites implemented
- Fire prevention measures in place at pilot sites
- New 'green' areas planted around 5 settlements
- Shifting sands stabilised in the pilot sites
- A permanent monitoring of newly planted areas established
- 25 people trained increasing human resource capacity in forest enterprises

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: **$1,200,000** - including:
$1,100,000 to set-up nurseries, afforestation of pilot areas, to train personnel in forest enterprises
$100,000 for public awareness activities (to conduct seminars, presentations and for preparation, development and dissemination of information)

Aral Sea Basin Program

2.1.2 Sustainable Wetlands

DEVELOPMENT OBJECTIVE

The proposed project is aimed at **establishing wetlands** in the **Syrdarya delta** and **the eastern part of the Small Aral Sea (Northern Aral Sea)**, protecting them with **National Park status**, and establishing a **unified biodiversity monitoring network** for the Southern area of the Aral Sea.

BACKGROUND

Much of what was the Aral Sea is now a desert, known as 'Aralkum' and there is also intensive desertification around the sea area. In the deltas of the Amu Darya and Syrdarya rivers, natural pastures are deteriorating, there is soil salinization, and biodiversity is decreasing.

As a result, nearly 90% of riparian woodlands (tugai) and reeds are gone, causing the disappearance of most of the animals and birds in this area. The resulting depletion of commercial fish stocks and waterfowl is causing significant economic problems, and the population has lost a major source of income.

There is also a lack of coordination between water management and environmental organizations, including local authorities and the local population, reducing the potential for an efficient use of natural resources.

The most effective way to preserve biological diversity and landscapes is to establish nature reserves with protected status. These would provide birds with nesting areas and migratory birds with a place to rest. At the same time, they would serve as spawning and feeding water areas for fish, and the establishment of national parks would create jobs for the local population.

On-going or Previous Projects

Projects already exist which demonstrate ways of protecting biodiversity in the region. For example, artificial lakes were established along the former sea shoreline in 2002 under a project financed by GEF (*Water Environmental Management Project under ASBP-1*). These lakes, Sudochye and Zhyltyrbas, located within the project area, play a substantial role in the conservation of biological resources, particularly migratory birds of the North-South Flyway. In addition, in 2009, a wetland area, Ak-Zhaiyk, was established under the UNDP financed project (*Integrated Conservation of Priority Globally Significant Migratory Bird Habitat*) for the same purpose, in the delta of Syrdarya River.

ESTIMATED BUDGET $600,000

BENEFICIARIES: Local population, local governments, and agencies responsible for environmental protection

PARTNER ORGANIZATIONS: Ministries of Agriculture and Water Resources, Central Asian Regional Environmental Centre, SANIIRI (Uzbekistan), IFAS Branches, SIC ICWC, Ministries of Environment Protection.

OUTCOMES

- Environmental conditions in the region improved

- Conservation of landscape and biological diversity in the region
- Kyoto protocol implementation
- Climate change adaptation measures

OUTPUTS

- Environmental conditions around lakes Sudochye, Zhyltyrbas, Sarykamysh, and the Small Aral improved
- Number of nesting areas for birds, including those listed in the Red Book, increased
- New water areas for spawning of endemic and commercial fish established
- The protection of unique natural landscapes, including semi-aquatic, increased
- A new wetland area of international importance, with National Park status, established in the delta of Syrdarya River
- New jobs created
- A Draft Delta Management Plan agreed with stakeholders, written and submitted to responsible agencies
- Sustainable conditions to ensure protection of endangered species (birds, fish, mammals) established at pilot sites
- Proposals for an interstate biodiversity monitoring network developed
- A GIS based database on flora and fauna of the Aral Sea region established

ACTIVITIES

- Developing a regional methodology for biodiversity monitoring
- Selecting sites for pilot projects
- Establishing wetlands in the delta of Syrdarya river and the eastern part of the Small Aral Sea
- Designating the lakes Sudochye and Zhyltyrbas to the List of Wetlands of International Importance (the “Ramsar List”)
- Coordinating with local authorities
- Drafting the necessary documents to include pilots in the list of wetlands to be protected under the Ramsar Convention
- Drafting proposals for a biodiversity monitoring system
- Establishing a GIS-based database on flora and fauna of the Aral sea region
- Drafting up a Delta Management Plan

PERFORMANCE INDICATORS

- Waterfowl nesting areas increased by 20%
- Muskrats population increased by 10%
- 250 new jobs created
- A Draft Delta Management Plan discussed and agreed with stakeholders and submitted to the agencies responsible

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET **$600,000** - including:
$520,000 - for analytical works and preparation of documents
$80,000 - to conduct seminars and workshops

Aral Sea Basin Program

2.1.3 Protecting Transboundary Mountain Areas in Central Asia

DEVELOPMENT OBJECTIVE

The proposed project is aimed at **developing strategies** for **conserving biological resources** in **mountain areas** and **implementing** them in **pilot sites** set up in the region.

BACKGROUND

The mountains of the Central Asia are under threat. Illegal logging, uncontrolled livestock grazing, and the plowing of slopes has led to an increased number of landslides, mudflows and general soil erosion.

Over-exploitation of natural resources, unsustainable land practices, and deficiencies in forest management are leading to their degradation. In addition, glaciers and snowpack areas are shrinking due to climate change.

Unfortunately there is a lack of an integrated approach to the management of natural resources of mountain areas. Therefore it is difficult to address current environmental problems, and it is difficult to plan for future environmental problems before they occur.

However, these problems could be mitigated by the development of an agreed strategic approach to managing the natural resources of mountain areas, and implementing them in a number of pilot sites.

BENEFICIARIES State control bodies, local authorities, and agencies responsible for environment protection

PARTNER ORGANIZATIONS: Ministries of Environment Protection, Central Asian Regional Mountain Centre, IFAS Branches, Centre BioEcoSan (Uzbekistan).

ESTIMATED BUDGET $800,000

OUTCOMES

- Environmental conditions in the region improved
- Kyoto protocol implementation
- Climate change adaptation measures

OUTPUTS

- A list of proposed actions to overcome the environmental problems of pilot sites
- Transboundary protected sites identified and established
- A strategic approach to the establishment of protected mountain areas agreed
- A Draft Regional Policy for the sustainable development of mountain areas agreed and drawn up
-

ACTIVITIES

- Developing measures to overcome environmental problems in pilot areas
- Identifying places for establishing new transboundary protected areas
- Developing strategic approaches for establishing transboundary mountain protected areas

- Developing a Draft Regional Policy for the sustainable development of mountain areas

PERFORMANCE INDICATORS

- A list of pilot sites agreed
- An Action Plan to address environmental problems at the pilot sites agreed
- Two new transboundary protected areas established
- Strategic approaches to the establishment of transboundary protected areas discussed, agreed and submitted for coordination to the relevant bodies of the Central Asian states
- A Draft Regional Policy for sustainable development of the mountain areas discussed with stakeholders and submitted for coordination to the appropriate authorities of the Central Asia states

START DATE: **2011**
COMPLETION DATE: **2013**

ESTIMATED BUDGET **$800,000** – including

$600,000 – to develop measures to overcome environmental problems at the pilot sites, a strategic approach for the establishment of transboundary protected areas, to set-up new transboundary protected areas, and to draft a Regional Policy on sustainable development of mountain areas
$200,000 - for seminars and discussions, as well as for the preparation and dissemination of information

Aral Sea Basin Program

2.1.4 Integrated Delta management - Syrdarya and Amu Darya Deltas

DEVELOPMENT OBJECTIVE

The proposed project is aimed at restoring the **biological diversity** of the **Amu Darya** and **Syrdarya** rivers deltas through the support of a more **integrated management approach** to **conservation** and **ecological development**.

BACKGROUND

ASBP-1 was approved by the Heads of States on January 11, 1994. It states that biodiversity restoration in deltas and protection of the dry bottom of the Sea is one of its priorities. In accordance with the Program, activities should include the establishment of a system of reservoirs in the delta of the Amu Darya and the integrated management of the Northern part of the Aral Sea.

In addition, it has been proposed by Kazakhstan and Uzbekistan that a system of lakes is established in the Amu Darya and Syrdarya ecosystems - 116.7 thousand hectares in the Amu Darya delta and 85.8 thousand hectares in the delta of Syrdarya.

An integrated management system involving all relevant stakeholders would help protect natural habitats, would lead to a more sustainable ecological development of the deltas, would improve environmental conditions and would improve employment opportunities in the areas involved.

ESTIMATED BUDGET: To be determined

BENEFICIARIES: Local population and agencies responsible for environment protection

PARTNER ORGANIZATIONS: Scientific Information Centre of ICWC, IFAS Branches, Ministries of Environment Protection.

OUTCOMES

- Conservation of landscape and biological diversity in the region
- Kyoto protocol implementation
- Climate change adaptation measures

OUTPUTS

- A coordinated Draft Program for the integrated management of the Amu Darya and Syrdarya deltas
- Ecological forecasting of deltas (taking into account climate change and country development indicators) improved
- The environmental condition of the deltas' established
- Fish productivity in lakes and river deltas restored
- Habitats of migratory and wintering birds protected
- Unemployment decreased

ACTIVITIES

- Forecasting the environmental conditions of river deltas under different scenarios of socio-economic development taking into account climate change factors

- Developing methodologies and technical solutions to stabilize the water regime of the deltas during low water flow times
- Developing a program on integrated management of Amu Darya and Syrdarya delta areas in order to ensure the stability of environmental conditions, the restoration of biodiversity and its sustainable development
- Running a feasibility study
- Consulting with stakeholders on options for integrated management of Amu Darya and Syrdarya deltas areas
- Discussing and agreeing a Draft Program with the responsible agencies

PERFORMANCE INDICATORS

- 57,000 hectares of lakes with guaranteed water supply established
- 60,000 hectares of area that is environmentally stable established
- 155,000 hectares of an area under reeds in the central part of the deltas established
- 170,000 hectares of grazing lands restored

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET

To be determined

Aral Sea Basin Program

2.1.5 Regional Environmental Information Network with Agreed Environmental Indicators

DEVELOPMENT OBJECTIVE

The proposed project is aimed at **improving the quality of information** provided by the **national environment information management systems** and establishing a **common information network** with **unified environmental indicators** to **improve** the exchange of information about the Aral Sea Basin between the countries of the Region.

BACKGROUND

Limited access to environmental information and lack of adequate information exchange is a problem in Central Asian countries. In particular, it negatively affects the decision making process related to environmental protection activities. The environment related databases do not exist in various agencies. Where they do exist, they are being updated irregularly, are not compatible with each other, and there is limited access. Information exchange is hampered by technical and organizational problems that hinder the coordination of sound operational activities.

In addition, a vast variety of environmental conditions makes it difficult to develop indicators on the state of the environment, especially in the case of the upstream and downstream of river basins.

One option is to develop a set of agreed environmental indicators for the Aral Sea Basin and additional ones showing the most important indicators for each state. These would be disseminated through a regional information network, supplying stakeholders, the public, private organizations, and decision makers, with the appropriate information to develop well justified decisions.

ESTIMATED BUDGET: $550,000

BENEFICIARIES: State agencies in charge of environment and NGOs

PARTNER ORGANIZATIONS: Ministries of Environment Protection, Ministry of Agriculture and Water Resources, Local Authorities, Scientific Information Centre of ICWC, IFAS Branches.

OUTCOMES

- Conservation of landscape and biological diversity in the region
- Kyoto protocol implementation
- Climate change adaptation measures
- Environmental conditions in the region improved
- Provision of accurate information on the state of the environment to support decision making

OUTPUTS

- A set of environmental indicators (regional and national) characterizing environmental conditions developed
- Information in National databases improved
- National environmental geographic information systems (GIS) established
- A regional environmental geographic information system (GIS) established
- An agreement on the exchange of environmental information developed
- The capacity of national environmental services strengthened

ACTIVITIES

- Discussing and developing a coordinated list of national environmental indicators
- Discussing and developing a coordinated list of regional environmental indicators
- Establishing national and regional geographic information systems
- Discussing and developing a coordinated Agreement related to information exchange
- Providing support to countries in establishing an information system based on Internet technologies

PERFORMANCE INDICATORS

- Environmental indicators developed
- Information databases useful for decision making, and easily accessible
- An Agreement on the exchange of information in place
- Managers, decision makers, and professionals will have access to reliable information on the state of environment

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: **$550,000** - including:
$120,000 – to procure licensed software
$280,000 – to develop indicators, to draft an Agreement, to assist in the establishment of geographic information systems
$150,000 – to conduct seminars, discussions and approval of an Agreement

2.1.6 Reduction of Greenhouse Gas Emissions

DEVELOPMENT OBJECTIVE

The proposed project is aimed at promoting the **application of new technologies** in **agriculture**, **reducing** the concentration of **carbon dioxide** in the atmosphere, saving **liquid fuel**, and contributing to more **sustainable development.**

BACKGROUND

Climate changes in Central Asia are closely connected to the countries' general environmental conditions and economic development. According to experts, Central Asia glaciers will loose about 30% of their mass by 2020 and, if the present rate of emissions continues, there may be no glaciers left by 2050. The effect on the environment is difficult to predict. However, reducing the emission of greenhouse gases and polluting substances can reduce the impact.

There are technologies developed to retain a considerable amount of carbon dioxide in the soil. This is a new "green revolution" for increasing food production and improving the environment using Mini-till and No-till technologies.

Previous and On-Going Projects

Pilot studies funded by UNDP (including *Sustainable Rangeland Management* and *Strengthening the capacity in the field of sustainable development through integration of climate change issues into strategic planning in the Republic of Kazakhstan*) have demonstrated that improved agricultural practices can reduce the concentration of carbon dioxide in the atmosphere caused by human activities by 10% within 25 years. They can also improve soil conditions, the quality of crops, eliminate soil erosion and desertification, and protect biological diversity.

ESTIMATED BUDGET: $1,680,000

BENEFICIARIES: State agencies in charge of environment, NGOs, and the general public

PARTNER ORGANIZATIONS: Ministries of Environment Protection, Ministries of Agriculture, Scientific Information Centre of ICWC, IFAS Branches.

OUTCOMES

- Environmental conditions in the region improved
- Kyoto protocol implementation
- Climate change adaptation measures

OUTPUTS

- A quantitative assessment in terms of the carbon potential of the Central Asia states undertaken
- A list of quantitative indicators of carbon sequestration in the application of various methods of land use drawn up
- An interstate inventory register of carbon potential established
- A Draft Strategy to reduce emissions of carbon dioxide through the introduction of new methods of land use in the agricultural sector of the Aral Sea basin developed
- Greenhouse gas emissions reduced

- The absorption of carbon dioxide by soil and vegetation increased

ACTIVITIES

- Developing a regional information database on the sources of greenhouse gases in the agricultural sector
- Preparing pilot projects to assess the carbon potential in the Central Asia
- Identifying pilot areas for specific focus
- Researching the needs of the agricultural sector in the region for technical assistance to reduce greenhouse gas emissions
- Introducing new methods of land use in the pilot areas to reduce greenhouse gas emissions
- Establishing quantitative indicators for carbon sequestration in the pilot areas
- Creating an interstate inventory of carbon potential
- Developing of a strategy to reduce emissions of carbon dioxide in the agrarian sector of the Aral Sea Basin for 2016-2020

PERFORMANCE INDICATORS

- An Assessment of the carbon potential completed
- Draft Recommendations to reduce greenhouse gas emissions developed
- Indicators for carbon sequestration identified
- Interstate carbon inventory register set up
- Draft Strategy to reduce emissions of carbon dioxide developed

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET **$1,680,000**- including:

$400,000 – to develop a regional information database, a carbon inventory, to prepare pilot sites and develop a regional strategy to reduce carbon dioxide emissions
$1,200,000 - for activities on pilot sites and to procure required equipment
$80,000 – to conduct seminars, workshops, and dissemination of information

2.1.7 Evaluation of Snowpack, Solar Radiation Distribution and Radiation Balance in the Mountain area of Central Asia

DEVELOPMENT OBJECTIVE

This project is aimed at establishing the **glacial conditions** in **Central Asia**, including the **number**, **size** and **volume** of **glaciers** and the distribution of **radiation components**.

BACKGROUND

The glaciers of the Amu Darya and Syrdarya basins are the most important sources of fresh water in Central Asia. Glacial conditions are largely determined by the distribution of solar energy and solar radiation intensity. However, there is no reliable data on the number of glaciers, their size and volume.

This kind of data is needed to assess changes in water reserves accumulated in glaciers and to forecast water flow. It is also necessary to plan the development of water-related sectors.

ESTIMATED BUDGET: $680,000

BENEFICIARIES: Hydrometeorological services of Central Asia and state administrations

PARTNER ORGANIZATIONS: Hydro-meteorological Services, Ministry of Environment Protection (Kyrgyzstan), Ministry of Agriculture and Water Resources, Institute of Water Problems and Environment of Academy of Sciences of Tajikistan, GeoKOD (Kazakhstan).

OUTCOMES

- Understanding of climate change impact on glacial conditions in Central Asia improved
- Environmental conditions in the region improved
- Kyoto protocol implementation
- Climate change adaptation measures

OUTPUTS

- Data on the snowpack in Amudarya and Syrdarya river basins collected
- Data on the distribution of the radiation components collected
- Snowpack forecasts developed taking into consideration various climate change scenarios
- Water reserves in glaciers assessed
- Reliable information on the distribution of the solar radiation in the region obtained
- Data on future water flows for the entire Aral Sea Basin, taking into consideration climate change, collected
- Proposals for the possible use of solar energy in the region developed

ACTIVITIES

- Analyzing of available data and information
- Assessing levels of snowpack within the Aral Sea basin
- Establishing a GIS database of glaciers and GIS database of solar radiation components
- Developing a forecast of snowpack for various climate change scenarios
- Developing a long-term runoff forecast for the Amu Darya and Syrdarya rivers

- Assessing the snowpack and its dynamics in the Amu Darya and Syrdarya river basins
- Assessing the solar radiation balance and solar radiation distribution in the Amu Darya and Syrdarya river basins
- Assessing the solar energy distribution in the Amu Darya and Syrdarya river basins

PERFORMANCE INDICATORS

- The area of the current snowpack is determined with 5% accuracy
- The volume of the current snowpack is determined with 15% accuracy
- The solar radiation is determined with 10% accuracy

START DATE: **2011**
COMPLETION DATE: **2014**

ESTIMATED BUDGET **$680,000** - including:

$400,000 – to assess the area of current snowpack in the Aral Sea basin, to develop a database of glaciers and on solar radiation, to forecast snowpack in accordance with various scenarios of climate change and long-term forecast of changes in the runoff from rivers, to develop proposals on the options to utilize solar energy within the region
$200,000 – to procure satellite images and other information required
$80,000 – to conduct seminars and workshops, as well as for dissemination of information

2.1.8 Natural Disaster Risk Management

DEVELOPMENT OBJECTIVE

The project is aimed at **reducing** the level of **risk** from **natural disasters** to the **local population**, **agricultural lands** and **infrastructure**, in the mountain area in Central Asia.

BACKGROUND

The mountain area in the region is considered as an area prone to both dangerous natural phenomena and anthropogenic factors. These risks are topographic, geo-physical, hydrological, climatic and man-made and include flooding, land-slides, mud-slides, avalanches, and earthquakes.

Floods and mudslides are caused by heavy rain and intensive snow melting. High water in the rivers coupled with mudslides can damage settlements, infrastructures, and agricultural land.

In addition, irrational land use and human activity, together with climate factors, worsen the impacts caused by natural disasters.

It is impossible to completely eliminate the risk of natural disasters. However, it is possible mitigate the consequences by managing the risks.

ESTIMATED BUDGET: To be determined

BENEFICIARIES: Organizations responsible for water resource management and environmental conservation, and government ministries responsible for emergency

PARTNER ORGANIZATIONS: Ministries of Environment Protection, Ministries of Emergency, Ministry of Agriculture and Water resources of Uzbekistan, JSC Kyrgyzsuudolboor, IFAS Branch in Tajikistan, IFAS Branch in Turkmenistan.

OUTCOMES

- Natural disaster impacts mitigated
- Environmental conditions in the region improved
- Kyoto protocol implementation
- Climate change adaptation measures

OUTPUTS

- List of mitigation measures developed
- Recommendations on the safe locations of infrastructures in pilot areas developed
- Feasibility study on mud flow protection structures (control reservoirs) in pilot areas undertaken
- List of river bed training measures in pilot areas on Amu Darya river banks developed
- A Draft Action Plan to mitigate the impact of natural disasters in the pilot sites developed
- A Draft Action Plan and Design to protect a pilot site at the bank of the Amu Darya river developed

ACTIVITIES

- Developing an Action Plan for pilot sites to mitigate the impact of natural disasters (floods, landslides, mudslides, avalanches, earthquakes)
- Developing a list of recommendations for the safe location of infrastructures in pilot sites
- Conducting a feasibility study on the development of mudflow control reservoirs at three pilot sites:
    - Ayakchinsky on the river Ayakchi in Kitab district of Kashkadarya region (Uzbekistan)
    - Aravan anti-mudflow reservoir on the river Aravan-Sai (Kyrgyzstan)
    - Shaydansky on the river Shaydan in Jalalabad Oblast (Kyrgyzstan)
- Developing an Action Plan and Design of Amu Darya river bank protection for a pilot site

PERFORMANCE INDICATORS

- A List of mitigation measures drawn up
- Recommendations on the safe locations of infrastructures at pilot areas developed
- A Feasibility study for mud flow protection structures at pilot sites undertaken
- A List of river bed training measures at pilot sites on Amu Darya river banks developed

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET To be determined

Aral Sea Basin Program

2.1.9 Man-made Disaster Risk Reduction in Mountain Areas

DEVELOPMENT OBJECTIVE

The project is aimed at **reducing** the level of **risk** from **man-made disasters** to the **local population**, **agricultural lands** and **infrastructure**, in the mountain area in Central Asia.

BACKGROUND

There are a large number of abandoned mines in the mountain area of the Aral Sea basin and they pose a high risk to the environment, to local facilities, and to the local population. This risk is made worse by local topographic, geophysical, hydrological and climatic conditions.

The main problems are tailings (abandoned waste) and mine dumps located in river valleys which require rehabilitation and specialist interventions to prevent possible disasters.

ESTIMATED BUDGET: **$450,000**

BENEFICIARIES: Ministries of emergency, agencies responsible for environment protection, local population

PARTNER ORGANIZATIONS: State Water Resources Committee of Kyrgyzstan, Scientific Information Centre of ICWC, Central Asian Centre of Applied Earth Sciences (Kyrgyzstan), Ministries of Emergency, Tajikistan Branch of Central Asian Mountain Centre, Tajikistan Branch of ICSD, IFAS Branch in Tajikistan.

OUTCOMES

- Man-made disaster impacts mitigated
- Environmental conditions in the region improved
- Kyoto protocol implementation
- Climate change adaptation measures

OUTPUTS

- A risk assessment of tailing facilities and mountain dumps in the Aral Sea basin undertaken
- Proposals for organization of monitoring risks and facilities drawn up
- Proposals on monitoring tailings and dumps in the Aral Sea basin developed, discussed and submitted for approval to the relevant agencies
- A long-term regional reclamation program of tailings and dumps for 2016 -2026 developed, discussed and submitted for approval to the relevant agencies

ACTIVITIES

- Undertaking a risk assessment of tailings and waste dumps
- Developing a list of proposals for monitoring of facilities at risk
- Developing a long-term regional reclamation program of tailings and dumps

PERFORMANCE INDICATORS

- A list of risks and possible failure impacts of tailings and mine dumps developed
- Proposals for monitoring tailings and the mine dumps developed and ready for approval
- A Regional Program on the reclamation of land, tailings, and mine dumps developed and ready for approval

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET **$450,000** - including:
$350,000 – to undertake risk assessment, and to develop proposals for a monitoring system
$100,000 – to conduct seminars and workshops, to prepare and disseminate information

Aral Sea Basin Program

2.2.1 A Regional Biological Diversity Monitoring System

DEVELOPMENT OBJECTIVE

The project is aimed at **improving** the **monitoring** of **biological diversity** in **Central Asia**.

BACKGROUND

The conservation of biological diversity is an important component of sustainable development. Yet, it is almost impossible to control the diversity of biological resources without monitoring, and without the appropriate data and information needed to build predictions.

Currently, the monitoring of biological diversity in Central Asian countries does not exist.

ESTIMATED BUDGET: $1,150,000

BENEFICIARIES: Agencies responsible for environment protection

PARTNER ORGANIZATIONS: Ministries of Environment Protection, , Institute of Geography of Academy of Sciences (Kazakhstan), Ministry of Agriculture (Kazakhstan), Ministry of Education (Kazakhstan), Ministry of Industry and Technologies (Kazakhstan), Ministry of Development and Trade (Kazakhstan), Local Authorities, State Water Resources Committee (Kyrgyzstan), Scientific Information Centre ICWC, Institute.

OUTCOMES

- Environmental conditions in the region improved
- Environmental protection in Central Asia improved
- Biological diversity management in Central Asia region improved

OUTPUTS

- National GIS biological diversity databases established
- A regional environmental geographic information system related to biological diversity established
- An Agreement on biological diversity information exchange ready for approval
- A regional and national database on biological diversity established
- Proposals for the establishment of a regional monitoring system of biological resources developed

ACTIVITIES

- Developing a methodology for the establishment of the national and regional databases related to biological resources and biological diversity
- Developing proposals for the establishment of a regional monitoring system of biological resources
- Developing proposals for the establishment of a regional GIS database of biological diversity
- Undertaking an assessment of the condition of bio-resources and their development trends
- Establishing a GIS-based national biological diversity database
- Establishing a GIS-based regional biological diversity database
- Drafting an Agreement on biological diversity information exchange

- Discussing, agreeing and submitting a proposal on a biological diversity information exchange to the relevant authorities for approval

PERFORMANCE INDICATORS

- A methodology for the regional assessment of the status of biological resources discussed, agreed and submitted for approval to the appropriate authorities of the Central Asia states
- A proposal for the development of a regional network to monitor biodiversity in protected areas discussed, agreed and submitted for approval to the appropriate authorities of the Central Asia states
- Regional and national databases of biological resources established
- The development of a Regional biodiversity restoration program for 2016-2020 in progress
- The development of an Agreement on information exchange in progress

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET **$1,150,000** - including:
$800,000 – to establish national and regional databases, to develop the regional monitoring of biological resources, to develop an information exchange agreement on biodiversity, to assess the state of bio-resources of the region and to establish development trends
$ 250,000 – to procure licensed software
$100,000 – to conduct seminars workshops, and prepare and disseminate information

Aral Sea Basin Program

2.2.2 Flora Endangered Species in the Aral Sea Basin

DEVELOPMENT OBJECTIVE

This project is aimed at improving the **biological diversity** of **flora endangered species**, and raising the **international profile** of flora endangered species in the **Aral Sea Basin**.

BACKGROUND

Biological diversity serves as the basis for maintaining life-supporting functions of the human being and the biosphere in general. For the Aral Sea basin, where there is a sharp reduction in diversity, one main regional problem is the maintenance of wild flora biological diversity.

The current problems in the region are as follows:
- Reduction of diversity of species inherent to the Region
- Disappearance of communities of natural flora

The project would improve national and regional monitoring systems of wild flora; it would develop a Draft Regional Program on conservation of natural ecosystems for a period of 2016 -2020 and would prepare and publish 'The Red Book of Wild Flora of the Aral Sea basin', as well as handbooks on the cultivation, collection and use of wild plants.

ESTIMATED BUDGET: $450,000

BENEFICIARIES: Agencies responsible for environment protection, research institutions, local communities

PARTNER ORGANIZATIONS: Ministries of Environment Protection, Ministry of Agriculture (Kazakhstan), Ministry of Education (Kazakhstan), Ministry of Industry and Technologies (Kazakhstan), Ministry of Development and Trade (Kazakhstan), Local Authorities, Taraz State University (Kazakhstan), Centre BioEcoSan (Uzbekistan), IFAS Branch in Nukus (Uzbekistan).

OUTCOMES

- Environmental conditions in the region improved
- Environmental protection in Central Asia improved
- Biological diversity management in Central Asia region improved
- Protection and conservation of wild flora

OUTPUTS

- The Red Book of wild plants in the Aral Sea basin published
- Methodological handbook on the cultivation, collection and use of wild plants published
- Nurseries for rare and endangered species of wild flora established
- A national and regional monitoring system of wild flora biological diversity established
- A map of wild vegetation trends in the Aral Sea region and in the mountain area of Central Asia developed
- A Draft Regional Program for the conservation of natural ecosystems for 2016 -2020 developed

ACTIVITIES

- Undertaking an assessment of the distribution of wild flora
- Building an inventory of ecosystems, particularly valuable species, ranges of unique, rare, endangered, relict and endemic species
- Improving national and developing regional monitoring systems of wild flora
- Reviewing the existing rate of collection of wild plants taking into account the prevailing environmental conditions
- Developing recommendations on the rate of collection
- Developing methodology and guidelines for the establishment of nurseries and plantations to cultivate rare and endangered wild species of flora
- Training staff to establish nurseries and cultivate wild species of flora
- Running a public awareness campaign on the importance of biodiversity and conserving natural resources
- Preparing and publishing The Red Book of wild plants in the Aral Sea region
- Preparing and publishing handbooks on cultivation, collection and use of wild plants
- Developing a long-term program for the preservation of wild flora in the Aral Sea basin for approval

PERFORMANCE INDICATORS

- A secured area of natural habitat of wild vegetation in the Aral Sea region and the mountains area of the Central Asia established
- A list of rare and endangered species of wild plants of the Region published
- Handbooks on the cultivation, collection and use of wild plants published
- Nurseries to cultivate rare and endangered species established
- Plantations of rare and endangered species established
- A long-term program for the preservation of wild flora in the Aral Sea basin developed and ready for approval

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET **$450,000** - including:
$200,000 – to develop an inventory of ecosystems, to develop methodology and guidelines for setting up nurseries and plantations, and to improve and develop national and regional systems for monitoring wild flora and biological diversity
$150,000 – to draft and publish the Regional Red Book, and to prepare information materials
$100,000 – to procure licensed software, to train and disseminate information, and to conduct training

2.2.3 Fauna Endangered Species in the Aral Sea Basin

DEVELOPMENT OBJECTIVE

This project is aimed at improving the **biological diversity** of **fauna endangered species**, and raising the **international profile** of fauna endangered species in the **Aral Sea Basin**.

BACKGROUND

Biological diversity serves as the basis for maintaining life-supporting functions of the human being and the biosphere in general. For the Aral Sea basin, where there is a sharp reduction in the diversity, one of the main regional problems is the maintenance of the biological diversity of wild fauna.

The current problems in the region are as follows:
- Reduction of diversity of inherent to the Region species;
- Disappearance of natural fauna communities.

A reduction in the numbers and the diversity of animal and fish species is being observed around the Aral Sea. However, the situation would be improved by the establishment of fish farming ponds for reproduction of rare and endangered species of fish. Regular seeding by fingerlings and improving the environmental conditions of the deltas would also increase biodiversity and fish productivity.

It is also proposed to undertake a study to develop a directory of vertebrate animals under threat in the Region.

ESTIMATED BUDGET: $2,500,000

BENEFICIARIES: Agencies responsible for environment protection, research institutions, local communities

PARTNER ORGANIZATIONS: Ministries of Environment Protection, Ministry of Agriculture (Kazakhstan), Ministry of Education (Kazakhstan), Ministry of Industry and Technologies (Kazakhstan), Ministry of Development and Trade (Kazakhstan), Local Authorities, State Water Resources Committee (Kyrgyzstan), Scientific Information Centre ICWC.

OUTCOMES

- Environmental conditions in the region improved
- Environmental protection in Central Asia improved
- Biological diversity management in Central Asia region improved
- Protection and conservation of wild fauna

OUTPUTS

- The Red Book of the fauna in the Aral Sea basin published
- Protected areas for conservation and breeding of rare and endangered wild species established
- A natural reserve for Saiga antelopes (*Saiga tatarica*) established on Vozrozhdeniye peninsula
- Fish breeding ponds established
- A draft long-term regional program on the conservation of wild fauna developed, discussed with stakeholders and submitted for approval to the relevant institutions.

ACTIVITIES

- Surveying the territory to determine the distribution of endangered animals and fish
- Developing an inventory of ecosystems, the most valuable communities, the habitat, and the distribution of rare and endangered species of animals and fish
- improving national and developing regional monitoring systems of biological diversity
- Reviewing current rates of harvest of wild animals and fish, into account the prevailing environmental conditions
- Preparing documentation for the establishment of a protected area (natural reserve) on Vozrozhdeniye peninsula
- Establishing fish breeding ponds
- Training farmers and fishermen in new techniques, new equipment and new technology
- Running a public awareness campaign on the importance of biodiversity and conserving natural resources
- Preparing and publishing the Red Book of Wild Fauna
- Developing a long-term regional program for conservation of wild life in the Aral Sea basin

PERFORMANCE INDICATORS

- Fish breeding ponds developed and constructed
- A nature reserve on the Vozrozhdeniye peninsula established
- A list of rare and endangered species of fauna in the Region published
- A long-term program for the preservation of wild fauna in the Aral Sea basin developed and ready for approval

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET **$2,500,000** - including:
$400,000 – to develop inventories and surveys, to improve national and develop regional systems for monitoring fauna, to develop natural reserves, and design facilities
$2,000,000 – to procure, construct, and assemble equipment
$100,000 - to procure licensed software, to train and disseminate information, and to conduct training

IFAS Project Proposals

DIRECTION 3

3.1.1 Improving Rural Livelihoods

DEVELOPMENT OBJECTIVE
The project is aimed at improving the living conditions of rural population in the vicinity of the Aral Sea.

BACKGROUND

The issue of living standards for people living near the Aral Sea is a problem. Per capita income of rural population living near the Aral Sea remains the lowest in the region. About 44% of the population lives below the poverty line and the official unemployment rate exceeds 7%. In addition, the income of the rural population of the Aral Sea region is actually declining.

One solution to this is to offer practical assistance to the rural population by supporting the establishment and/or development of private small enterprises, creating new jobs, and increasing labor efficiency.

Increasing the production of fish in fish ponds is one option. This may require changes in the business environment and/or changes in ownership. For example, the use of long-term leasing arrangements will allow the use of intensive technologies for marketable fish breeding.

Another promising way of increasing agricultural productivity is to encourage greenhouse cultivation. The introduction of modern technologies will increase crop production and will also allow valuable products, such as early vegetables which are a scarce commodity in the region, to be grown.

ESTIMATED BUDGET: $730,000

BENEFICIARIES: Population, farmers, local authorities

PARTNER ORGANIZATIONS: SIC ICWC, Fishery Institute (Kazakhstan), Nukus Branch of EC IFAS, Nukus Agrarian University, Fishery Institute (Uzbekistan), Farmers Association (Uzbekistan), NGO Eco Forum (Uzbekistan), Scientific Research Institute of Chemistry and Pharmacology (Uzbekistan).

OUTCOMES

- Socio-economic development improved
- Agricultural productivity increased
- Rural livelihoods improved

OUTPUTS

- Pond fishing farms established at pilot sites
- Best practice on management, ownership, fish breeding and sales disseminated
- Best practice on cultivation technologies, cropping, greenhouses and sales disseminated
- A feasibility study on the potential for developing ecological tourism undertaken
- A feasibility study on the potential for developing the collection of herbs as an income source undertaken

ACTIVITIES

Fish Farming

- Selecting a few pilot sites in the Aral Sea region to develop pond fish farms
- Exploring the market opportunities for fish farmers
- Assisting in establishing relationships with suppliers and customers
- Equipping ponds and procuring breeding material (fingerlings)
- Training farmers with the skills needed to manage fish farms effectively

Greenhouses

- Selecting a few pilot sites in the Aral Sea region to develop the use of greenhouses
- Assisting with the selection of the most promising crops suitable for growing
- Exploring the market opportunities for greenhouse growers
- Acquiring the necessary materials and equipment
- Training farmers with the skills needed to manage greenhouses effectivel

Ecological Tourism and Herb Collection

- Undertaking a feasibility study on the potential for ecological tourism
- Undertaking a feasibility study on the potential for the collection of herbs as an income source

PERFORMANCE INDICATORS

- 4 pond fishing farms established
- 10 greenhouses established

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: **$730,000 - including:**
$250,000 – to find suitable locations for fish ponds, selection of species, locations for greenhouses, selection of crops, study of markets and the selection of suppliers
$400,000 – to purchase necessary materials and equipment, fingerlings, and seeds
$80,000 - to run the feasibility studies on ecotourism and herb collection

Aral Sea Basin Program

3.1.2 Improving Grazing Lands – Aral Sea Region

DEVELOPMENT OBJECTIVE

The project is aimed at **improving** the **food security** and **environmental** and **socio-economic** conditions in the **Aral Sea region**.

BACKGROUND

Overgrazing and soil depletion are major environmental problems in the Aral Sea region. Grazing pressures exceed the limits of natural regeneration of pasture ecosystems, contributing to the expansion of desertification. In addition, due to the lack of irrigation, 37% of more than 6.3 million hectares of desert pastures cannot be used by farmers.

Unfortunately, land users have no incentives to improve the management of pastures or to use natural resources rationally. There is also a lack of regulatory framework to accumulate funds for environmental protection.

On-going or Previous Projects

A number of projects are already in place to develop recommendations on soil erosion control of sandy pastures; to establish local irrigation systems based on ground water sources; to develop technology and measures to prevent desertification of pastures in Moyinkums and Kyzylkums deserts; and to develop environmentally friendly management of pastures. These include: *Application of satellite information to monitor grazing lands Development and application* (ISTC), *Development of phyto-reclamation measures to combat desertification of grazing lands in Moiynkum and Kyzylkum deserts* (Kazakhstan) and *Rehabilitation of grazing lands in the Aral Sea vicinity* (Kazakhstan).

However, revitalizing an oasis based irrigation system to produce fodder crops would increase productivity and reduce grazing pressure on ecosystems. In addition, introducing soil conditioners would increase pasture productivity and protect the environment.

ESTIMATED BUDGET: $630,000

BENEFICIARIES: Population, public administration

PARTNER ORGANIZATIONS: Ministry of Environment Protection (Kazakhstan, Scientific Research Institute of Water Resources (Kazakhstan), Scientific Research Institute of Environment and Climatology (Kazakhstan), Kazakhstan Branch of EC IFAS, National Technical University (Kazakhstan).

OUTCOMES

- Socio-economic development improved
- Environment of Aral Sea region improved
- Energy supply to rural population improved

OUTPUTS

- A regional program for sustainable management of pastures developed
- Real-time monitoring of pastures for sustainable management of natural resources restored

- Regional program to encourage oasis type of irrigation systems to produce fodder crops, ensuring high productivity of land and reducing grazing pressure on ecosystems developed
- Soil conditioners to increase pasture productivity and to improve environment conditions introduced
- Database of desert pastures for the Aral Sea region established and maintained
- Recommendations on sustainable pasture management developed

ACTIVITIES

- Developing a program for monitoring of pastures and testing it at pilot sites
- Developing a database of pastures for the Aral Sea region based on GIS technologies
- Developing and discussing with stakeholders recommendations on sustainable management of pastures
- Demonstrating the effectiveness of soil conditioners and plant growth stimulants at pilot sites
- Developing and discussing with stakeholders a regional program on oasis type irrigation of pastures
- Conducting an information campaign to disseminate lessons learned

PERFORMANCE INDICATORS

- An environmental monitoring system for pilot pastures established
- Database of pastures
- Productivity of fodder crops increased by 15%
- Recommendations on sustainable management of pastures have been developed and discussed with stakeholders and submitted to the relevant authorities for approval and adoption
- A regional program on oasis irrigation of pastures has been designed and discussed with stakeholders and submitted to the relevant authorities for approval and adoption

START DATE: **2011**
COMPLETION DATE: **2014**

ESTIMATED BUDGET: **$630,000 -** including
$250,000 – to develop the system of environmental monitoring of pastures, to create the database on the status of pastures in the Aral Sea region, to develop recommendations for sustainable pasture management, and to develop a regional program on oasis irrigation of pastures
$200,000 – to purchase the software, satellite images and equipment for pilot sites
$80,000 – to cover communication costs
$100,000 – to conduct seminars, meetings, trainings, publish and disseminate information
Aral Sea Basin Program

3.1.3 Use of Renewable Energy in Rural Areas

DEVELOPMENT OBJECTIVE

The project is aimed at improving the **socio-economic conditions** and **protecting** the **environment** the Aral Sea region.

BACKGROUND

Today there is a problem of energy supply to farms, particularly those located in remote areas away from the cities. Acute fuel shortages and the difficulties in delivering fuel to remote areas force people to use wood and bush vegetation as fuel and this is leading to the destruction of forests.

The conversion of farms to available non-traditional energy sources would raise their living standards and would prevent the negative impact of deforestation on the environment.

ESTIMATED BUDGET: $950,000

BENEFICIARIES: Farms, public government

PARTNER ORGANIZATIONS: Scientific Research Institute of Water Resources (Kazakhstan), GeoKod (Kazakhstan), Local Authorities of Kyzylorda Region (Kazakhstan), Scientific Research Institute of Hydro-energy and Ecology (Tajikistan), EC IFAS Branch in Tajikistan, Ministry of Public Health (Kazakhstan), Farmers Association (Uzbekistan), Regional Centre on Renewable Energy Resources.

OUTCOMES

- Socio-economic development improved
- Environment of Aral Sea region improved
- Energy supply to rural population improved

OUTPUTS

- Energy supply to rural population increased and improved
- Greenhouse gas emissions reduced
- An assessment of wind, solar and hydropower of pilot sites undertaken
- Recommendations on the use of specific types of non-conventional renewable sources of energy developed
- Project proposals on energy supply to pilot sites developed

ACTIVITIES

- Selecting pilot sites to obtain and further disseminate experience of using non-conventional renewable sources of energy in rural areas
- Undertaking an assessment of wind, solar and hydropower potential of pilot sites
- Developing energy supply projects, including small hydropower plants, wind, solar and biogas plants, for the pilot sites
- Sharing information with stakeholders and general public about lessons learned under the project

PERFORMANCE INDICATORS

- Feasibility of using non-conventional renewable sources of energy demonstrated

- Proposals to improve energy supply to rural settlements developed
- Recommendations to reduce fossil fuel consumption and greenhouse gas emissions ready for discussion and approval

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET **$950,000** - including:
$800,000 – to prepare assessments of wind, solar and hydropower potential, develop proposals to improve energy supplies, and develop recommendations to reduce fossil fuel consumption and greenhouse gas emissions
$150,000 - to conduct seminars and discussions, and disseminate information on lessons learned

3.2.1 Rural Drinking Water - Improved Access

DEVELOPMENT OBJECTIVE

The project is aimed at improving the **safety** and **sustainability** of **drinking water supply systems** in rural areas.

BACKGROUND

Central Asian states are concerned about protecting the environment and improving healthcare. This includes issues related to the improvement of drinking water supply systems to ensure access to high quality drinking water for all. All Central Asian states have confirmed the need to improve the quality of services related to water supply, specifically with respect to safety, reliability, efficiency and financial sustainability.

However, the majority of drinking water supply systems are in poor condition and need to be rehabilitated or reconstructed and this is particularly relevant for rural areas. According to assessments conducted, about 25% of settlements have no access to piped water systems. About 55% of settlements receive water from piped water supply systems for less than 6 hours per day and only 10% have access to safe water. The drinking water supply services are unable to ensure the level of safety required and many rural settlements consume water from irrigation canals.

Existing drinking water supply systems for rural areas need to be either rehabilitated or replaced.

ESTIMATED BUDGET: To be determined

BENEFICIARIES: Ministries of communal services, water utilities, rural population

PARTNER ORGANIZATIONS: Central Asian Regional Ecological Centre, Scientific Research Institute of Water Resources (Kazakhstan), Ministry of Agriculture (Kazakhstan),), Local Authorities of Kyzylorda Region (Kazakhstan), Kyzylorda Medical Centre (Kazakhstan), State Environment Protection Committee (Kyrgyzstan), Dashoguz Branch of EC IFAS, Nukus Branch of EC IFAS, Design Institute Uzkommunhismat (Uzbekistan).

OUTCOMES

- Water supply and distribution improved
- Public health improved

OUTPUTS

- Amount of population with sustainable access to safe drinking water increased
- Number of repaired or restored systems increased
- Quantity of breaks of water supply systems decreased
- Efficiency of drinking water supply systems improved

ACTIVITIES

- Repairing, rehabilitating, or replacing drinking water supply systems
- Strengthening the institutional structure of water utilities
- Developing tariffs to secure the long-term operation of systems

Phase One

- Running a feasibility study to explore outsourcing options with private enterprise
- Undertaking social surveys
- Informing general public and stakeholders
- Undertaking an environmental assessment of the project

Phase Two

- Procuring the necessary work and equipment

PERFORMANCE INDICATORS

- 100% Population in pilot sites have access to safe water supply system
- Tariffs and payments for drinking water supply agreed and in place
- Private companies involved in provision of drinking water supply services

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET **To be determined**

3.2.2 Improving Medical Healthcare of Rural Population

DEVELOPMENT OBJECTIVE

The project is aimed at improving the **provision** and **quality** of **medical assistance** to overcome problems associated with **epidemic** and **chronic** diseases.

BACKGROUND

Latest assessments of public health made by the World Health Organization (WHO) using key indicators, such as mortality rate caused by chronic diseases, show there are problems with healthcare in the countries of Central Asia.

According to the WHO, over the past few years, the main cause of mortality associated with non-communicable and chronic diseases in Central Asian countries accounted for more than 90% of cases; and the mortality rate associated with the blood circulatory system has risen from 39% in 1999 to 56% in 2009. Causes of mortality associated with malignant tumors come next, and the causes of mortality associated with respiratory diseases account for around 7% of all cases. At the same time, according to the WHO, pediatric assistance was ineffective in 76% of cases.

One of the reasons behind the current situation is an underdeveloped infrastructure of medical healthcare, outdated medical equipment and low-skilled doctors and nurses. In addition, administrative and management personnel lack the capacity to manage the prevention and treatment of chronic diseases, as well as to provide services to persons of middle and old age.

ESTIMATED BUDGET: To be determined

BENEFICIARIES: Ministry of Public Health, populations, patients

PARTNER ORGANIZATIONS: Local Authorities of Kyzylorda Region (Kazakhstan), Kyzylorda Medical Centre (Kazakhstan), Ministry of Public Health (Kazakhstan), Ministry of Public Health (Uzbekistan), Scientific Research Institute of Chemistry and Pharmacology (Uzbekistan), Ministry of Environment Protection (Uzbekistan).

OUTCOMES

- Public health improved
- Epidemic and chronic diseases reduced

OUTPUTS

- Quality of medical services at district level improved
- Epidemiological control of infectious diseases improved
- Visits to medical facilities increased
- Patient recovery rate increased
- Patient death rate decreased

ACTIVITIES

- Supplying district hospitals and clinics with medical equipment required
- Ensuring regular maintenance of the equipment supplied

- Assisting the Ministries of Public Health to improve the professional skills of practicing physicians and nurses
- Assisting the Ministries of Public Health to plan, implement new standards, and new methodologies
- Developing a program of preventive measures and public health promotion

PERFORMANCE INDICATORS

- 100% of regional hospitals and clinics provided with important equipment
- Number of practicing physicians and nurses with improved professional qualifications increased
- Progress in developing and implementing standards of medical care

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: To be determined

Aral Sea Basin Program

3.3.1 Improvement of Education in Rural Areas

DEVELOPMENT OBJECTIVE

The project is aimed at assisting Central Asian countries in their efforts to **improve** the **effectiveness** and **quality** of **education** in **schools** and **pre-school** facilities in **rural** areas.

BACKGROUND

Development strategies of Central Asian countries include the improvement of education systems and recently the funding of public education systems has significantly increased. However, a lack of proper attention to this sector, particularly during the early 90's, is reflected in the ineffectiveness of education systems in general.

The main hindrances to effective teaching and learning are a lack of teachers with the necessary level of professional training and competence, inadequate equipment, training materials and devices in educational institutions, especially schools in rural areas and an inefficient use of available information technologies. On top of this, there is uneven distribution of teachers and resources between urban and rural schools. Schools located far from district and provincial centers often receive less than a half of the resources that city schools receive.

ESTIMATED BUDGET: To be determined

BENEFICIARIES: Ministry of Education, rural populations, students

PARTNER ORGANIZATIONS: Ministries of Education.

OUTCOMES

- Education system improved
- Academic progress of schoolchildren improved

OUTPUTS

- Quality of rural education of schoolchildren improved
- Access to finance for rural schools improved
- School equipment in rural areas improved
- Access to teacher training in rural areas improved

ACTIVITIES

- Identifying schools in rural areas as pilots for project implementation
- Improving access to appropriate educational materials
- Assisting in the procurement of equipment for pilot schools
- Upgrading the qualifications of primary school teachers in pilot schools
- Training primary school teachers on interactive approaches to teaching in pilot schools

PERFORMANCE INDICATORS

- Academic progress of schoolchildren in pilot schools increased by 15% in comparison to other schools

- The teachers at pilot schools have received special training in the use of interactive teaching methods
- Teacher training materials have been developed and are being used in the training process
- The necessary equipment is procured and installed in schools and is used in the training process

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: To be determined

IFAS Project Proposals

DIRECTION 4

Aral Sea Basin Program

4.1.1 National and Regional Dialogues – IWRM

DEVELOPMENT OBJECTIVE

The project is aimed at providing **support** to countries of Central Asia to **implement IWRM principles** at **local**, **national** and **transboundary** levels.

BACKGROUND

Central Asian countries face serious difficulties in the management of water resources. These difficulties are made worse by rapid population growth, uneven distribution of resources and a lack of coordination. The management of water resources needs to be radically improved. More effective coordination between various ministries, departments and international organizations is needed, plus new innovative technologies need to be introduced to help improve water efficiency and reliability of water facilities and to improve the water management process.

The project would address the lack of coordination in water management at national level between ministries and agencies, as well as between donors. In some countries the measures would focus on building the capacity of the organizations in charge of strategic planning and implementation of water management plans.

Cross-sectorial dialogue meetings at government level, in accordance with the principles of the UNECE Water Convention, the Protocol on Water and Health, WHO/UNECE, the EU Water Framework Directive and other instruments of the UNECE and European Union would be organized. Their agenda would be to consider and discuss the issues on how to reduce water loss, and how to build the capacity of personnel in ministries, in agencies and of water users themselves. They would also discuss other issues related to integrated water resources management in Central Asian countries at national, regional and local levels.

ESTIMATED BUDGET: $1,650,000

BENEFICIARIES: Government institutions, civil society, water users, local populations

PARTNER ORGANIZATIONS: State Water Resource Committee (Kyrgyzstan), SIC ICWC, Hydromet Services (Tajikistan), UNECE, Institute of Geography (Kazakhstan), JSC Parasat (Kazakhstan).

OUTCOMES

- Institutional structures improved and developed
- Legal structures improved and developed
- Regional coordination on water management improved and developed
- Millennium Development Goal aims addressed

OUTPUTS

- National Coordination Councils established
- IWRM principles in the regulatory legal acts of the partner countries introduced
- Coordination Councils meet regularly at both the national and regional levels
- Pilot projects in partner countries established
- Information on the activities of the Coordination Councils and results available on the internet

- IWRM principles in the national legislation of the partner countries (codes, laws, regulatory acts etc.) introduced
- Protection and management of natural resources (in accordance with the provisions of the UNECE Water Convention, the Protocol on Water and Health, WHO / UNECE, the EU Water Framework Directive and other tools for the UNECE and the European Union) improved

ACTIVITIES

National Activities
- Establishing national coordination councils in the partner countries to organize the process of dialogue, governance by analytical work and public awareness by the international organizations
- Conducting regular meetings of the Coordination Councils (one or two meetings annually)
- Arranging annual consultations with representatives of various sectors of government organizations, NGOs, scientific community to work out the private sector and long-term programs and strategies for dialogue meetings
- Preparing and implementing the pilot projects at national and local levels based on the thematic priorities of the governments of partner countries

Regional Activities
- Organizing an annual regional forum with participation of representatives from ministries of the partner countries
- Arranging at least one regional thematic conference or workshop per year
- Working out and implementing the regional pilot projects based on the priorities made by the representatives of partner countries
- Arranging the exchange of information through a project web page

PERFORMANCE INDICATORS

- IWRM principles in national legislation of the partner countries (codes, laws, regulatory acts etc.) introduced
- At least 3 meetings of the National Coordination Councils and 3 meetings of the Regional Coordination Council in each country during the Project implementation phase
- At least one project in each of the partner countries and one regional project worked out and implemented

START DATE: **2011**
COMPLETION DATE: **2013**

ESTIMATED BUDGET: **$1,650,000** - including:
$1,200,000 - to establish national dialogues, including coordination, pilot projects, two meetings of Coordination Councils per year and administrative expenses
$450,000 - to conduct regional meetings

4.1.2 Water and Energy Use – A Comprehensive Economic Model

DEVELOPMENT OBJECTIVE

The project is aimed at reviewing **regional policies** and **institutions** involved in **transboundary integrated water resources** in order to develop a new **comprehensive economic model** for use in the region.

BACKGROUND

The Agreement on Water Management of 1992 has greatly contributed to a conflict-free use of water resources in the Aral Sea basin. However, it lacks a clear institutional framework; it fails to consider sector interests, and does not have a coherent economic model for integrating the management and protection of water resources. Therefore, it is not effective and often is not respected, especially in low water years. The main problem remains the harmonized management of large reservoirs.

Climate change will make the situation worse. According to projections prepared by the Intergovernmental Panel on Climate Change, climatic changes will lead to a reduction in rainfall in Central Asia. This is a direct threat to water availability in the largest rivers of Central Asia. Accordingly, the decrease of water availability will impact on the management of reservoirs in the basins of the Amu Darya and Syrdarya, with potential negative consequences for the whole economic situation in Central Asia.

In the future, even if the measures on reducing greenhouse gases and their accumulation in the atmosphere are taken immediately, global climate change will still continue and will have a vast impact on all aspects of human activity.

This development is both a challenge and an opportunity for Central Asian countries to jointly find ways of using and protecting their water resources profitably.

ESTIMATED BUDGET: $1,000,000

BENEFICIARIES: Agencies responsible for management of water resources and irrigation infrastructure, water users

PARTNER ORGANIZATIONS: SIC ICWC, State Water Resource Committee (Kyrgyzstan), Institute of Geography (Kazakhstan), JSC Parasat (Kazakhstan).

OUTCOMES

- Institutional development of water and energy sector in Central Asia
- Legal and institutional structures improved and developed
- The use of water resources in the region are protected, effectively managed and conflict-free

OUTPUTS

- A regional economic model for integrated management of surface and ground waters in accordance with the regional and national interests of the states of the region developed

- A list of scenarios for the use of integrated water resources and preferred options for the optimal short and long-term integrated operation of major reservoirs in the Aral Sea basin taking into consideration climate changes developed
- Software to model economic aspects of integrated use of surface and ground water resources developed
- Recommendations for institutional changes aimed at strengthening regional cooperation developed

ACTIVITIES

- Conducting an analysis of previous activities performed in the region under the technical and financial support of international institutions
- Undertaking a survey of economic evaluations and assessments of climate change impacts in the region taking into consideration all water users (industry, agricultural, communal services etc.)
- Conducting a comparative assessment of methodologies for economic evaluations
- Developing an appropriate economic model for development options for integrated water resources management in the region
- Conducting public consultations and discussing results with international stakeholders

PERFORMANCE INDICATORS

- An appropriate software developed and test calculations completed
- Options for the use of integrated water resources developed
- Options for the optimal integrated operation of major reservoirs in the Aral Sea basin presented for consideration to the parties concerned
- A long-term agreement on interstate cooperation in water sector, proposed, discussed and submitted for consideration in accordance with the procedures

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: $1,000,000 - including:
$800,000 – to develop, test and evaluate sensitivity of the software, to model and identify preferred options for the optimal integrated regime of major reservoirs in the Aral Sea basin
$200,000 – to conduct consultations, meetings, seminars and conferences and to draft a long-term agreement

Aral Sea Basin Program

4.1.3 A Regional Water Convention for the Aral Sea Basin

DEVELOPMENT OBJECTIVE

The project is aimed at establishing **mutually beneficial** and **mutually acceptable** terms of **co-management, use** and **protection** of **water resources** taking into account the interests of all countries of Central Asia.

BACKGROUND

Since the collapse of the Soviet Union and the formation of independent states in Central Asia, water allocation problems are now a regional issue rather than on-farm or inter-farm only. In addition, across the region population growth has led to an increase of pressure on the environment and to the intensification of desertification and global warming processes, while the general drying of the region exacerbates the problem of fair water sharing.

This scarcity of water resource means the issue of the use of water of shared trans-boundary rivers, reservoirs and ground water basins that are located on the territory of the several states is of critical importance.

Unfortunately, the problem of shared use of water resources in Central Asia is becoming a serious obstacle in settling regional and local conflicts, and relations between riparian countries are struggling.

It is crucial for the sustainable development of the region that the management of water resources of Transboundary Rivers is cooperative and mutually agreeable. The region has no choice but to find a way of forming a regional agreement on the sharing of water resources.

ESTIMATED BUDGET: $1,000,000

BENEFICIARIES: Agencies responsible for water management and irrigation infrastructure, water users

PARTNER ORGANIZATIONS: SIC ICWC, State Water Resource Committee (Kyrgyzstan), UNECE, Secretariat of ICWC.

OUTCOMES

- Institutional structures improved and developed
- Legal structures improved and developed
- Regional coordination on water management improved and developed
- Millennium Development Goal aims addressed

OUTPUTS

- Links between stakeholders, including state institutions (relevant ministries and departments), scientific and cultural community (representatives of art and science), members of NGOs, civil society strengthened
- Regional states' position/views on the management, use and protection of water resources clarified and aligned
- Mutually acceptable approaches to addressing water resource problems freely discussed, negotiated and agreed

- A permanent regional working group of experts, including stakeholders and representatives from different economic sectors, established
- A list of conflict/contradiction free issues drawn up
- Progress of on-going discussions and results shared with stakeholders and general public
- A draft Regional Water Convention published and discussed at various levels, including public hearings
- A draft Regional Water Convention submitted for approval and ratification
- An international meeting to finalise the formal ratification of the Regional Water Convention conducted

ACTIVITIES

- Preparing, organizing and conducting international meetings, seminars and conferences to discuss issues related to the governance, use and protection of water resources
- Setting up a Regional Working Group of Experts, which includes stakeholders and sectors to develop mutually acceptable approaches to solving problems of management, use and protection of water resources
- Informing stakeholders about the problems related to the management, use and protection of water resources, including the results of experts discussions
- Drafting and discussing the Regional Water Convention
- Submitting the draft Regional Water Convention to the state authorities of the Central Asian countries according to the appropriate procedures for approval and ratification

PERFORMANCE INDICATORS

- A Regional Working Group meets regularly
- The positions and views of countries the joint management, use and protection of water resources established
- An agreed list of conflict/contradiction free issues
- information regularly published in mass media about activities and achievements of the project
- A draft Regional Water Convention published and discussed at various levels, including public hearings
- A draft Regional Water Convention submitted for approval and ratification

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: $1,000,000 - including:
$400,000 – to draft Regional Water Convention
$600,000 – to conduct meetings of the Regional Working Group; to inform stakeholders and general public; to prepare information, to organize and conduct seminars, conferences and other activities related to the discussion of Draft Regional Water Convention

Aral Sea Basin Program

4.1.4 Integrated Adaptation to Climate Change – Water Sector

DEVELOPMENT OBJECTIVE

The project is aimed at identifying the **risks** and the **vulnerability** of water infrastructure due to climate change and developing **adaptation strategies** for the **water sector**, particularly for **hydropower** and **agriculture**.

BACKGROUND

The Intergovernmental Panel on Climate Change (IPCC) in its Report # 4 firmly states that the increased concentration of greenhouse gases in the atmosphere caused by human activities has already led to global climate change. In the future, even if the measures on reducing greenhouse gases and their accumulation in the atmosphere are taken immediately, global climate change will still continue and will have a vast impact on all aspects of human activity.

In Europe and Central Asia, this will result in an overall increase in precipitation in the northern region and a reduction in the eastern and southern parts. Rainfall will become more intense with the increased risk of sudden floods. Increasing temperature will have detrimental effects on glaciers and water resources in the region that will negatively affect the production of agricultural products and hydropower. Crops will need more water and river water flows will decrease and the production of hydroelectric power will not be able to meet the increasing demand for electricity.

It is necessary to continue providing basic services to the public and industry, and at the same time to develop and adopt a flexible and aim-oriented strategy on adaption to climate change in the region. The focus should on water saving technologies and energy efficiency.

ESTIMATED BUDGET: $ 1,100,000

BENEFICIARIES: Agencies responsible for water management and irrigation infrastructure, water users

PARTNER ORGANIZATIONS: SIC ICWC, Hydromet Services (Kyrgyzstan), Scientific Research Institute KyrgNII Irrigation (Kyrgyzstan), Central Asian Institute of the Earth Applied Sciences (Kyrgyzstan), State Environment Protection Committee (Kyrgyzstan), State Water Resource Committee (Kyrgyzstan), Hydromet Services (Tajikistan), Scientific Research Institute TajNIIGIM (Tajikistan), Scientific Research Institute on Energy and Ecology (Tajikistan), Ministry of Environment Protection (Uzbekistan), UNECE, Secretariat of ICWC.

OUTCOMES

- Institutional development of water and energy sector in Central Asia
- Legal and institutional structures improved and developed
- The use of water resources in the region are protected, effectively managed and conflict-free

OUTPUTS

- Methodology to identify vulnerable areas of the infrastructure developed
- Investment options for water infrastructure identified
- Investment options for institutional development identified

- A risk assessment for key sectors of the economy undertaken
- Adaptation strategies to protect and ensure the sustainability of infrastructure to climate changes developed
- Options for regional and national strategies for adaptation to climate changes developed

ACTIVITIES

- Conducting risk assessment for key sectors of the economy
- Developing integrated adaptation strategies to protect infrastructures and ensure their sustainability (particular attention will be paid to those economic sectors that have cumulative impacts on other sectors)
- Designing a methodology to identify vulnerable elements of infrastructures
- Assisting stakeholders in identifying and determining the priority adaptation alternatives in respect of vulnerable and risky elements of infrastructures in the key sectors

PERFORMANCE INDICATORS

- Methodology for identification of vulnerable infrastructure elements developed, discussed and agreed upon
- Adaptation strategies to protect and ensure the sustainability of infrastructure to climate changes developed
- Benefits and costs options for different adaptation strategies to climate changes estimated
- Investment options to water related infrastructures proposed
- Investment options for institutional development proposed

START DATE: **2011**
COMPLETION DATE: **2013**

ESTIMATED BUDGET: **$ 1,100,000** - including:
$ 800,000 - for undertaking risk assessment, developing adaptation strategies, methodology development, and developing regional and national adaptation to climate change options
$ 300,000 – to conduct consultations, seminars, conferences and other activities under the Project

Aral Sea Basin Program

4.1.5 Institutional Structures, Legal Frameworks and Capacity Building - IRWM

DEVELOPMENT OBJECTIVE

The project is aimed at improving **institutional structures** and **legal frameworks** to facilitate **regional cooperation** on **water resources management**, and **building capacity** in accordance with the needs of **Central Asia states** and **regional organizations**.

BACKGROUND

One of the prerequisites for sustainable and efficient management of water resources is the availability of regional organizations with sufficient financial resources, which possess adequate human capacity and act within an agreed legal framework based on the principles and norms of international laws and advanced management principles.

The existing regulatory framework for regional cooperation in Central Asia needs modernization, improvement and harmonization. It also needs to incorporate the key principles of integrated water resources management (IWRM) and regional organizations need to be strengthened institutionally to assist them in the cooperation and coordination process.

There is a risk that the problems faced over regional cooperation, and the approaches on how to address them, are understood in differing ways. However, with enough wide-range discussion on the issues related to improving cooperation in a step-by-step way, plus by building the human capacity of those involved, this risk is reduced.

During the Heads of Central Asian States Meeting in April 2009 willingness was demonstrated at the highest level to improve the institutional arrangements and the legal basis for regional cooperation.

Ongoing and Previous Projects

The project would be based on the results of the *Regional Dialogue and Cooperation on Water Resources Management project* which is being implemented by the UNECE in cooperation with the Executive Committee of IFAS under the assistance of GTZ.

ESTIMATED BUDGET: $900,000

BENEFICIARIES: Agencies responsible for water management and irrigation infrastructure, water users, regional organizations

PARTNER ORGANIZATIONS: UNECE, FFEM (France), UNECE, EU, EC IFAS, ISDC, ICWC, Regional Hydrological Centre, Central Asian Ecological Centre, BVO Amudarya, BVO Syrdarya.

OUTCOMES

- Institutional structures improved and developed
- Legal structures improved and developed
- Regional coordination on water management improved and developed
- Millennium Development Goal aims addressed

OUTPUTS

- Positions of the regional states more mutually aligned
- Road Map of measures to improve institutional arrangements and legal framework for water resources management in Central Asia developed
- Proposals for the development or updating the instruments of negotiation and legal framework, including a list of documents which could form the negotiable basis for water management in Central Asia developed
- Human capacity of regional organizations improved
- Cooperation among Central Asia states on issues related to water management improved
- Global governance standards in regional organizations introduced

ACTIVITIES

In order to draft the Road Map and develop proposals for the list of international legal documents, activities will include:

- Conducting meetings of the Regional Working Group to discuss and agree key provisions of the Rod Map, as well as proposals for contractual and legal instruments
- Developing a list of legal documents for discussion
- Arranging a broad discussion of the Draft Road Map and submit it for approval to the relevant authorities in accordance with accepted procedures

PERFORMANCE INDICATORS

- A Draft Road Map to improve institutional arrangements and legal framework for water management in Central Asia developed, discussed and submitted for approval to the relevant authorities
- A list of contractual and legal instruments that should be developed or modernized, including a list of documents to form the contractual basis for water management in Central Asia, ready for approval
- Improved human capacity of regional organizations

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: **$900,000** - including:
$100,000 - for Phase I (2011) to discuss and coordinate main statements of the Regional Plan for the improvement of mechanisms, regulations, and legal basis for water management in Central Asia as well as the List of documents required
$400,000 - for Phase II (2012-2013) – to discuss the Plan and measures required for its coordination and endorsement
$400,000 - for phase III (2014- 2015) – to strengthen the capacity of regional organizations

Aral Sea Basin Program

4.1 6 National Legal Frameworks - Climate Change

DEVELOPMENT OBJECTIVE

The project is aimed at **building** the **capacity** of Central Asian countries to **strengthen national legal frameworks** to help them **adapt** to **climate change**.

BACKGROUND

Climate changes are obvious throughout Central Asia and available water resources are running low in the rivers of the Region. This is leading to general water shortages and the increased threat of drought.

These climate changes are intensifying the desertification process, and increasing the vulnerability of land resources and ecosystems. The resulting reduction in land productivity and water scarcity will lead to negative consequences for agriculture, and represent a serious threat to food security in Central Asian countries.

Increased public awareness is needed to help drive change, and new national laws must be implemented to help mitigate the consequences of climate change.

ESTIMATED BUDGET: $1,250,000

BENEFICIARIES: Ministry of Justice and the agencies responsible for environmental monitoring

PARTNER ORGANIZATIONS: Ministry of Environment Protection (Kyrgyzstan), Gosvodtehnadzor (Uzbekistan), UNECE, FFEM (France), Scientific Research Institute on Energy and Ecology (Tajikistan), UNECE, Central Asian Regional Ecological Centre.

OUTCOMES

- Institutional structures improved and developed
- Legal structures improved and developed
- Regional coordination on water management improved and developed
- Kyoto protocol implementation
- Climate change adaptation measures

OUTPUTS

- Proposals to improve national legislation related to climate change and Kyoto Protocol developed
- Proposals to design legal and regulatory instruments related to climate change and Kyoto Protocol developed
- Level of awareness of civil society and decision makers increased
- A public awareness strategy on the need for changes to legislation developed, discussed and agreed

ACTIVITIES

- Conducting a detailed evaluation of legislation and policies related to climate change
- Identifying requirements for improving national laws and regulations
- Developing proposals for improving and harmonizing legislation
- Developing proposals on drafting new laws and regulations to promote decision making related to climate change

- Developing policies and programs to inform civil society, including politicians, lawyers and policy makers about the need to improve national legislation
- Developing a public awareness program and assisting in its implementation

PERFORMANCE INDICATORS

- National legislation and policies related to climate change documented for analysis
- Legislative improvement program discussed and developed
- A public awareness program established
- Increased level of awareness of civil society and decision-makers by 25%

START DATE: **2011**
COMPLETION DATE: **2014**

ESTIMATED BUDGET: **$1,250,000** - including:
$950,000 – to plan, develop and harmonize operational strategies, develop proposals to improve legislation and to draft legal documents
$300,000 – to conduct discussions, seminars and conferences

4.2.1 Large Hydraulic Structure Safety – Regional Cooperation

DEVELOPMENT OBJECTIVE

The project is aimed at supporting **long-term cooperation** in **Central Asia** to ensure the **safety** of **Large Hydraulic Structures** in the region.

BACKGROUND

Central Asian countries are concerned about conditions and safety of large hydraulic structures, including large dams located at Transboundary Rivers. The natural aging of these structures, many of which were built 40-50 years ago, requires thorough monitoring of their condition and level of maintenance. Insufficient funding of maintenance leads to risk of hydraulic structure failure, and respectively, increased risk to life, health, infrastructures, and environment. Recently, there have been several major accidents in the Central Asian countries that caused considerable damages and caused deaths, attracting increased attention to the issue of safety of hydraulic structures.

The legal and institutional base to support the safety of these structures is limited in Central Asia. In addition, there is no regional platform to allow cooperating countries to identify areas and modalities of cooperation, to take specific steps to harmonize their respective legislation and regulations, or to make joint efforts to improve technical conditions and safety of hydraulic structures at interstate level.

Ongoing and Previous Projects

Recently, Central Asian countries have been actively cooperating with the UNECE Project *Dam safety in Central Asia: Capacity Building and Regional Cooperation* carried out in close collaboration with the Executive Committee of IFAS. Much has been achieved. Publications related to the regional water management infrastructures, an analysis of legal and regulatory framework on safety issues, a Model Law and a Model of Technical Regulations are among those achievements. In addition, a Regional Agreement has been developed, some national legislation has already been amended and staff in some departments have already had training to deal with the safety of structures.

Based on the achievements of the project mentioned above, the Central Asia states have expressed their willingness to continue cooperating in the field of safety of hydraulic structures. In order to deepen and focus cooperation on safety of hydraulic structures, the Central Asia states are interested in establishing a regional institutional mechanism for long-term cooperation in this area, possibly in the form of a regional working group under the auspices of IFAS.

ESTIMATED BUDGET: $700,000

BENEFICIARIES: National authorities and divisions responsible for the security of dam safety, local populations
PARTNER ORGANIZATIONS: Gosvodtehnadzor (Uzbekistan), Scientific Research Institute on Energy and Ecology (Tajikistan), State Water Resource Committee (Kyrgyzstan), EC IFAS Branch in Uzbekistan.

OUTCOMES

- Institutional structures improved and developed
- Legal structures improved and developed
- Regional coordination on water safety improved and developed
- Risk to life, health, infrastructures, and environment reduced

OUTPUTS

- Regional cooperation on enhancing the safety of hydraulic structure located on transboundary rivers improved
- Final Draft Regional Agreement on safety of hydraulic structures submitted for consideration and approval in accordance with national procedures in all countries of Central Asia
- Draft harmonized legislation and technical regulations submitted for review and approval in accordance with the national procedures of all Central Asian countries
- Capacity of staff involved in the safety of hydraulic structures improved

ACTIVITIES

- Improving and finalizing the Draft Regional Agreement on the safety of hydraulic structures
- Improving and harmonizing the national regulatory frameworks and technical regulatory documentation
- Harmonizing the operating, safety, inspection, supervision and diagnostic rules of hydraulic structures
- Training operational staff and hydraulic structure safety specialists on emergency management
- Carrying out joint surveys of the hydraulic structures
- Facilitating an exchange of information on the state of watercourses and the technical condition of hydraulic structures
- Facilitating an exchange of information about floods and mudflows
- Developing joint preparation and implementation of emergency response plans

PERFORMANCE INDICATORS

- A Regional Agreement in place
- Model documents (legal and technical) developed and discussed
- Joint activities to improve hydraulic structure safety at interstate level
- Staff Training

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: **$700,000** - including:
$200,000 2011 - to complete Draft Regional Agreement on Cooperation in Dam Safety
$500,000 2012 – 2015 - to improve and harmonize national regulations and laws related to the dam safety, conduct joint studies of dams, exchange of information related to the dam safety, for joint rehabilitation actions under preparedness plans, and training

4.2.2 Information Management System and Database

DEVELOPMENT OBJECTIVE

The project is aimed at increasing the **efficiency** of the **water sector** in **Central Asia**.

BACKGROUND

The main challenge of the water sector of Central Asia is to increase its efficiency. An Information Management System (IMS) based on advanced management techniques and software could be used as a tool to address the problem.

An IMS would provide specialists and decision makers with quick access to information needed, and would be an effective tool for the development of well-grounded options for water management. It could also be used as part of a national decision support system, an effective tool for supervision, interagency and regional coordination and cooperation, and public awareness.

It is proposed to support the development of a unified information system for the water sector, based on Web technologies consisting of inter-connected global network applications. The development of such a system would coordinate activities, maintain GIS maps, improve access to hydrometeorological information, improve environmental monitoring, help disseminate information to users and professionals through websites and support information sharing between agencies at inter-state level.

It would also be used as a public platform (web site, forum, reception room) for water users.

ESTIMATED BUDGET: $1,400,000

BENEFICIARIES: Agencies responsible for water management and irrigation infrastructure, and water users

PARTNER ORGANIZATIONS: BVO Amudarya, SIC ICWC, Metrological Centre ICWC, Regional Hydrological Centre, Scientific Research Institute KyrgNII Irrigation (Kyrgyzstan), State Environment Protection Committee (Kyrgyzstan), State Water Resources Committee (Kyrgyzstan), Ministry of Agricultire (Kazakhstan), GeoKOD (Kazakhstan), Hydromet Services (Tajikistan), Scientific Research Institute TajNIIGIM (Tajikistan), Scientific Research Institute SANIIRI, ICWC.

OUTCOMES

- Regional coordination on water management improved and developed
- Millennium Development Goal aims addressed (Communication)

OUTPUTS

- Regional and inter-agency cooperation and coordination improved
- Access and transparency of information, including the status of water resources available for decision makers and professional
- Access to water related information available to the general public
- Descriptive and analytical reports in the standard and/or free-form available
- A list of indicators accumulated in the databases available to decision makers, professionals and to the general public
- Concept, Action Plan and Terms of Reference (TOR) to set up an IMS developed

ACTIVITIES

Concept, Action Plan and Terms of Reference development

- Establishing, discussing and agreeing:
  - IMS objectives
  - IMS requirements
  - system design and technologies
  - technical architecture of the system
  - software architecture of the system
  - training required
  - composition of software and hardware applications
  - assessment of risks associated with the establishment of the systems and mitigation measures
  - proposals on sources to maintain IMS in post-project period
- Undertaking an assessment of legislation, infrastructure, and information flows
- Establishing availability of local and global networks and its topology
- Establishing the availability of qualified experts
- Establishing a group of IT Professionals (under EC IFAS Information Management Group) to develop hardware and software modules for a future IMS
- Developing an Action Plan and Terms of Reference

Project Implementation

- Implementing the project in compliance with the Action Plan

PERFORMANCE INDICATORS

- Lists of indicators, accumulated in the databases available to decision makers, professionals and the public
- An Agreement on information exchange
- An IMS Concept, and Action Plan discussed and agreed
- TOR for the development of the IMS discussed and agreed

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: **$1,400,000** - including:
$950,000 – to develop the IMS Concept, the Action Plan, TOR and Agreements
$450,000 - for seminars, conferences, technical meetings

Aral Sea Basin Program

4.2.3 Building Institutional Capacity – Water Resource Management

DEVELOPMENT OBJECTIVE

The project is aimed at improving the **institutional arrangements** and the **legal basis** for **regional cooperation** on **water resource management**.

BACKGROUND

During the period from 1992 to 1994, the newly independent states in Central Asia laid the foundation for future relations in the water sector and tested new institutional structures (such as the International Fund for Saving the Aral Sea (IFAS) and the Interstate Commission on the Aral Sea (ICAS) for the coordination and management of water resources. Since independence, the states have strived to improve these institutional arrangements and the legal framework to strengthen regional cooperation on water resources management and to strengthen the capacity of the institutions established to address these needs.

At that time, a prescient decision was taken that wide and extensive discussions are the most appropriate approach to address problems.

During a meeting in April 2009, the Heads of Central Asian states expressed in a joint Statement their willingness to improve institutional arrangements and the legal basis for regional cooperation. This was the highest level recognition of the need for action to be taken in this area.

To achieve this objective, it is planned to strength the capacity of the Executive Committee of the International Fund for Saving the Aral Sea.

ESTIMATED BUDGET: $550,000

BENEFICIARIES: Regional organizations, Executive Committee of the International Fund for Saving the Aral Sea

PARTNER ORGANIZATIONS: SIC ICWC, UNECE.

OUTCOMES

- Regional cooperation on water resource management strengthened
- Legal frameworks strengthened
- Capacity of regional institutions strengthened

OUTPUTS

- The capacity of the Executive Committee of the International Fund for Saving the Aral Sea (EC IFAS) strengthened
- The institutional framework of the EC IFAS improved
- EC IFAS staff training increased
- EC IFAS specialists ability to participate in projects identification, development, and supervision improved
- A database of national experts in Central Asia established

ACTIVITIES

- Training by international experts of two persons in the procurement of works, goods and services
- Training by international experts of five persons in project cycle management
- Ongoing input by IFAS personnel in the development of proposals for improving the institutional framework of IFAS and EC IFAS
- Establishing a database of national experts

PERFORMANCE INDICATORS

- two staff trained in procurement
- five staff trained in project management
- A database of national and regional experts established

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: **$550,000**

Aral Sea Basin Program

4.3.1 Basin Water Councils – Regional Cooperation on Water

DEVELOPMENT OBJECTIVE

The main objective of the proposed project is to secure **sustainable, equitable water** sharing and to **avoid non-productive water withdrawal** from water sources by **effective integration measures**.

BACKGROUND

The water management situation in the Amu Darya and Syrdarya river basins, the two main rivers of the Central Asia, are different from each other in a number of ways including water regimes, the complexity of the irrigation infrastructures and the number of states involved. However, the insufficient attention and disregard of environmental requirements is leading to the degradation of environment in both the basins.

It is crucial to develop a regional River Basin plan in order to overcome the difficulties in managing the comprehensive irrigation and drainage systems, the problems related to water sharing and distribution, conserving water resources and identifying strategic directions for the effective and sustainable use of natural resources. It could also apply the principles of integrated natural resource management, a process that allows the optimization of the use of natural resources and which takes into account both environmental requirements and the equality of stakeholders.

Lessons learned from application of Integrated Water Resources Management (IWRM) demonstrate that certain preconditions should be in place for introduction of IWRM principles. The preconditions are the establishment of an institutional framework for the development, negotiation and decision-making involving stakeholders and the recognition of the need to protect the environment.

It is expected that the proposed project would focus on finding mutually acceptable approaches to improve water resources management to ensure sustainable and equitable water supply, taking into account the interests of all riparian countries. Successful implementation of the project proposed would enhance the productivity of water and build conditions for secured water supply to water users and environment.

ESTIMATED BUDGET: $1,200,000

BENEFICIARIES: Water users, agencies responsible for management of water resources and irrigation and drainage infrastructures

PARTNER ORGANIZATIONS: BVO Amudarya, SIC ICWC, Scientific Research Institute Water Resources (Kazakhstan), Ministry of Environment Protection (Kazakhstan), Gosvodtehnadzor (Uzbekistan), Ministry of Agriculture and Water Resources (Uzbekistan), Scientific Research Institute SANIIRI.

OUTCOMES

- Policies and strategies for sustainable development improved
- Regional coordination on water management improved and developed
- Sustainable and equitable availability of water in the region improved

OUTPUTS

- Regional cooperation in the field of water resources management strengthened
- Integrated water resource management principles applied in practice
- Proposals for improving water management based on international law and lessons learned developed
- Roadmap for establishment of Water Basin Councils agreed
- Draft Work Program for Water Basin Councils agreed
- Operational Water Basin Councils set up

ACTIVITIES

- Establishing a Regional Group of experts to develop proposals to establish Water Basin Councils and disseminate information
- Discussing proposals at national and regional level
- Establishing one pilot Water Basin Council
- Building capacity of pilot Water Basin Council
- Developing a Draft Work Plan for Water Basin Council
- Establishing and strengthening Basin Water Administration
- Discussing and drafting a Basin Plan

PERFORMANCE INDICATORS

- Operational principles for Water Basin Councils developed and publicly discussed
- Roadmap for establishment of Basin Councils developed, discussed and coordinated with stakeholders
- One Water Basin Council established
- Work Plan for Water Basin Council developed, discussed and coordinated
- Draft Water Basin Plan developed and publicly discussed

START DATE: **2011**
COMPLETION DATE: **2015**

ESTIMATED BUDGET: $1,200,000 - including:
$900,000 – to cover expenses of expert groups
$300,000 – to conduct workshops, and conferences

Aral Sea Basin Program

4.4.1 Safety of Hydraulic Structures - Regional Training System

DEVELOPMENT OBJECTIVE

The project is aimed at **improving** the **safety** of **water facilities** in the region.

BACKGROUND

An analysis of major breakdowns in recent years clearly shows that almost all of them were caused by human error, in particular by untrained staff unable to locate or prevent them. About 50% of breakdowns are the result of low-skills, improper organization of work, violation of hydraulic structures safety rules and regulations, as well as poor security control.

According to the latest studies, the distribution of the break-down reasons is as follows:

- violation of safety rules and regulations - 15%
- mismanagement - 12%
- weak supervision - 11%
- untrained staff - 11%

Therefore, it is clear that there is an urgent need for training and capacity building of the staff responsible for the safety of structures, which could prevent most of the break-down cases and ensure a safer operation of water facilities.

This project would develop a training and capacity building program for staff working in water facilities in the region.

ESTIMATED BUDGET: $615.000

BENEFICIARIES: Agencies responsible for the safety of water facilities

PARTNER ORGANIZATIONS: Scientific Research Institute SANIIRI, Gosvodtehnadzor (Uzbekistan).

OUTCOMES

- Dam safety improved
- Risk to local population reduced
- Greater reliability of water supply
- Training and capacity building

OUTPUTS

- Curriculum and training programs developed
- Qualified trainers invited to deliver courses
- Number of emergency situations decreased
- Availability of training programs and trainers increased
- Number of staff trained increased
- Training programs developed, including distance learning

ACTIVITIES

- Developing curricula and training programs, including those for distance learning

- Preparing training materials
- Establishing a Regional Training Center
- Inviting trainers
- Providing training as required

PERFORMANCE INDICATORS

- Number of trained staff increased
- Number of emergency situations reduced by 15%

START DATE: **2011**
COMPLETION DATE: **2014**

ESTIMATED BUDGET: **$615,000** – including:
$250,000: on materials and equipment
$320,000: on developing curriculum and training programs
$45,000: on travel and administrative overheads

4.4.2 National Hydrometeorological Services - Regional Training System

DEVELOPMENT OBJECTIVE

The project is aimed at increasing the **reliability** of **meteorological** and **hydrological forecasts** and improving the **quality** of **hydrometeorological information**.

BACKGROUND

According to the principles of IWRM (Integrated Water Resource Management) the general public and stakeholders should be involved in the planning and decision making process. Hydrometeorological services play a part in this because they are the source of information and hydrological forecasts, as well as the source of meteorological data.

The result of studies carried under various projects related to the accessibility and reliability of meteorological and hydrological data, demonstrated that the former Soviet Union monitoring system had largely degraded and did not meet requirements. Despite the large efforts mainly undertaken by international aid agencies to maintain the capacity of National Hydromet Services, they are still in a deep systemic crisis. The main cause of the degradation of the system is a lack of funding and a lack of capacity of the National Hydromet Services staff.

It is essential to both modernize the observation network of the National Hydromet Services and to train its personnel. It is important to replace outdated equipment. In addition, the traditional old style of training is not able to meet new challenges and new training methodologies need to be introduced.

The proposed project would develop and implement programs to improve training programs for personnel of National Hydrometeorological Services which would improve the reliability of meteorological forecasts and provide improved information for users.

ESTIMATED BUDGET: $346,000

BENEFICIARIES: National Hydrometeorological Services of Central Asia, users of hydrological and meteorological information

PARTNER ORGANIZATIONS: Hydromet Services of Central Asian states.

OUTCOMES

- Meteorological and hydrological forecasting improved
- Training and capacity building

OUTPUTS

- Curricula and training programs developed, including distance learning
- Qualified trainers invited to facilitate
- Hydrological and meteorological information provided to customers more reliable
- Number of specialists trained increased
- Skills of National Hydrometeorological Services personnel upgraded
- ICWC regional training center service extended

ACTIVITIES

- Developing curricula and training programs, including for distance learning
- Assisting the ICWC regional training center to improve its capacity
- Inviting trainers
- Providing training as necessary

PERFORMANCE INDICATORS

- The number of trained personnel increased
- Reliability of forecasts increased by 5%

START DATE: **2011**
COMPLETION DATE: **2014**

ESTIMATED BUDGET: **$346,000** – including
$50,000: to procure materials and equipment, services and personnel
$260,000: to develop training programs
$12,000: for per diems
$24,000: for administrative and overheads

4.4.3 Water Sector Staff - Regional Training System

DEVELOPMENT OBJECTIVE

The project is aimed at **improving** the **efficiency** of **water use** in the region.

BACKGROUND

The management system of water resources in the Central Asian countries is quite comprehensive: from ministries through regional, territorial and district (rayon) departments of water management to water users.

At the state and local levels there are units responsible for various aspects of operation of hydraulic structures. The management structure includes various services responsible for water sharing and distribution, and soil conditions.

In addition, a new emerging market-oriented water management system is mixing with the old inherited system from the former soviet command-administrative system at the national level. At farm level the water management is carried out by water user associations (WUAs). At the same time, local authorities still have their stake in water management through executive bodies *rayvodkhozes* (district branches) and *oblvodkhozes* (region branches), and agriculture departments which supervise water distribution.

Water productivity is dependent on the efficiency of water management at all levels, from the water diversion structures down to the fields. Currently, diversions are based on on-farm demands and agreements/contracts between the regional/provincial, districts/rayons water management organizations and WUAs/water users.

The efficiency of the system depends on the availability of well-trained operational staff at all levels. However, a lack of well-trained staff results in conflicts and accusations of irrational and unfair distribution of water. Therefore, it is critical to train staff in the water sector.

ESTIMATED BUDGET: **$577,000**

BENEFICIARIES: Water users

PARTNER ORGANIZATIONS: SIC ICWC, Metrological Centre ICWC, Central Asian Ecological Centre, Rice Scientific Research Institutte (Kazakhstan), Ministry of Agriculture (Kazakhstan), EC IFAS Branch in Tajikistan.

OUTCOMES

- More efficient distribution of water in the region
- Training and capacity building

OUTPUTS

- Curricula and training programs developed, including distance learning
- Qualified trainers invited
- Training provided
- Number of claims of unfair water distribution reduced
- Number of specialists trained increased
- Availability of training programs and trainers increased

- Water use efficiency increased
- Branches/classes of the Regional Training Centre in Central Asia states established

ACTIVITIES

- Developing curricula and training programs, including for distance learning
- B ICWC regional training center
- Inviting trainers
- Delivering training
- Establishing branches/classes of the Regional Training Centre in Central Asia states

PERFORMANCE INDICATORS

- Efficiency of water use at farm level increased by 5%
- Number of trained personnel
- Number of conflict situations and the number of claims on unfair distribution of water reduced by 15%

START DATE: **2011**
COMPLETION DATE: **2014**

ESTIMATED BUDGET: **$577,000** – including:
$250,000: for services
$360,000: for trainers, and developing training programs
$12,000: for per diems
$25,000: for administration and overheads
$42,000: Other expenses

Aral Sea Basin Program

4.4.4 Saving water

DEVELOPMENT OBJECTIVE

The project is aimed at improving **environmental education** in **primary** and **secondary** schools and **raising awareness** about **water problems** in the **Aral Sea basin**.

BACKGROUND

The need for safe water is a precondition for human survival and access to it is under threat due to increasing water scarcity caused by population growth and climate change.

An increase in efficient water use would be achieved by introducing an up-to-date management system, and providing economic incentives for water users, and by changing the attitude of the general public towards water.

Experience gained from various projects implemented in the Central Asia has shown that results can be achieved by introducing concepts like “Water - the Greatest Benefit and Greatest Value” and that this message is best aimed at the younger generation.

The project would build public consciousness on the need to use water efficiently by working with schools to design curricula that would raise awareness in the young. This would provide a long-term legacy ensuring both today and future generations are part of the effort to use water efficiently and appropriately.

ESTIMATED BUDGET: $297,000

BENEFICIARIES: General public, Ministries of Education

PARTNER ORGANIZATIONS: SIC ICWC, Eco Forum (Uzbekistan).

OUTCOMES

- Training and capacity building
- Increased awareness of water problems in the region
- Environmental education improved

OUTPUTS

- Curricula and short courses developed
- Trainers trained
- Pupils awareness about water problems increased

ACTIVITIES

- Identifying partners in each Central Asian State
- Holding an inception seminar to discuss methodology
- Developing curricula and training materials
- Conducting training

- Facilitating a final regional workshop to discuss results and lessons learned

PERFORMANCE INDICATORS

- 25 trainers trained
- A new generation of citizens in Central Asia involved in water energy saving practice

START DATE: **2011**
COMPLETION DATE: **2014**

ESTIMATED BUDGET: **$297,000** – including:
$200,000: for trainers and training program
$75,000: for per diems
$22,000: for administrative costs

Aral Sea Basin Program

4.5.1 Awareness Raising

DEVELOPMENT OBJECTIVE

The project is aimed at **reducing water consumption** and **improving water quality** in the **Central Asia** region.

BACKGROUND

Changing public attitudes to saving water takes time. The process includes improving management systems, improving and modernizing infrastructures as well as changing attitudes to water by the general public. It most cases, the general public does not possess (or does not have an access to) accurate information related to water and it is not involved in the development and implementation of plans and strategies aimed at addressing problems, particularly related to water scarcity.

However, the experience gained by Central Asian countries and the lessons learned under implementation of *Public Awareness Component of Water Environmental Management Project* (1998-2002) in particular, indicates that it is possible to save water by changing mind sets.

Involving the general public in saving water activities, keeping water sources clean and mitigating the consequences of the environmental crisis in the Aral Sea region would greatly help improve the situation. Raising public awareness rising is not particularly costly, but the changes it can make are comparable to those caused by major changes in infrastructures.

Assistance in the development and implementation of public awareness would substantially contribute to expanding the scope of ongoing activities and to water saving in general.

ESTIMATED BUDGET: $850,000

BENEFICIARIES: General public, agencies responsible for water resources and infrastructure management

PARTNER ORGANIZATIONS: SIC ICSD, EC IFAS Branch in Uzbekistan, Eco Forum (Uzbekistan), Ministries of Environment Protection.

OUTCOMES

- Public awareness increased
- Water scarcity reduced

OUTPUTS

- Awareness of civil society and decision makers increased
- Greater public awareness of policies, programs and water issues
- Target groups identified
- The demand for water decreased
- Water quality in major sources maintained

ACTIVITIES

- Identifying target groups

- Conducting sociological surveys of target groups prior to awareness campaigns, during implementation and after the project completion
- Establishing the effectiveness of information delivery channels
- Developing the Regional and National Strategies for public and stakeholder awareness
- Implementing Regional and National Strategies for public and stakeholder awareness
- Disseminating information to the general public and stakeholders

PERFORMANCE INDICATORS

- 100% effective information delivery channels for target groups
- Policies, strategies, and work programs developed, discussed, agreed
- Awareness of civil society and decision-makers increased by 25%

START DATE: **2011**
COMPLETION DATE: **2014**

ESTIMATED BUDGET: **$850,000** - including:
$150,000 to plan, develop and harmonize operational strategies
$150,000 to conduct seminars, workshops
$550,000 to implement public awareness strategies

Aral Sea Basin Program
List of Donors Project Envisaged

#	Project Title	Duration	Estimated Budget	Donor
1	National Integrated Water Resources Management and Water Efficiency Plan for Uzbekistan	2008 - 2011	$1,259,245	UNDP
2	A comprehensive study on glacial melting in Central Asia	2010 - 2011	US$225,000	UNDP, UNEP
3	Enhancing Economic and Environmental Welfare in the Aral Sea Region (EEWA) Program	2009 - 2016	Euro 4,150,000	BMZ
4	Enhancing Regional Disaster Risk Reduction Capacities in Central Asia	2010 - 2014	US$ 3,509,790	UNDP, EU
5	Regional Program to Improve the Delivery of Weather, Climate and Hydrologic Services	2011 - 2015	US$ 42,980,000	WB
6	Implementing Integrated Water Resource Management Systems in the Kazakh Aral Sea Basin: Strengthening Institutions and Monitoring	2010- 2012	Euro 198,814	OSCE
7	Implementing Integrated Water Resource Management Systems in the Kazakh Aral Sea Basin: Strengthening Institutions and Monitoring	2010- 2012	Euro 304,000	OSCE
8	Tajikistan Program for Climate Resilience	TBD	$ 50,000,000	WB, ADB, EBRD
9	Water Multi-Country Programme on Climate Risk Management in Central Asia	2010 - 2015	US$ 12,000,000	UNDP, Finland
10	Promoting Cooperation to Adapt to Climate Change in Chu-Talas Transboundary Basin	2010 - 2012	$ 150,000	UNDP, UNECE
11	Promoting IWRM and Fostering Transboundary Dialogue in Central Asia	2009 - 2012	$ 5,400,000	EU, UNDP, Finland
12	Regional Energy Markets Assistance Program (REMAP-II)	2009 - 2012	US$ 16,500,00	USAID
13	Transboundary Water Management in Central Asia	2009 - 2011	Euro 10,000,000	Federal Foreign Office, Germany
14	Support to OECD for the implementation of National Policy Dialogues in Eastern Europe, Caucasus, Central Asian (EECCA) countries under the EU Water Initiative	2008 - 2012	Euro1,700,000	EU
15	DIPECHO VI	2010 - 2011	Euro 7,295,000	EU
16	Central Asia Regional Environment Program	2011 - 2014	Euro 9,200,000	EU
17	Capacity building in data administration for assessing and monitoring transboundary water resources in the countries of Eastern Europe, the Caucasus and Central Asia (EECCA0	2010 - 2011	Euro 800,000	FFEM (French Global Environment Fund)

18	Central Asia Investment Facility 2009 (CAIF)	2011 - 2014	Euro 9,200,000	EU
19	Support to Kyoto Protocol Implementation	2008 - 2011	Euro 4,787,000	EU
20	Development of Central Asia Strategy on vulnerability and adaptation to Climate Change in key sectors: water scarcity, land degradation and human health	TBD	$2,000,000	UNEP

Aral Sea Basin Program

Project Proposals

National Integrated Water Resources Management and Water Efficiency Plan for Uzbekistan

Brief Description of the Project

The purpose of this project is to develop a National Integrated Water Resources Management and Water Use Efficiency Plan for Uzbekistan, to strengthen the legal and regulatory framework for the water sector, and to support the integration of water into relevant intersectoral policy frameworks

Subject: Integrated Water Resources Management

Donor Agency: UNDP

Estimated budget: $1,259,245

Project start: 2008

Project completion date: 2011

Beneficiaries: Government entities

Main objective and tasks

- develop a National Integrated Water Resources Management and Water Use Efficiency Plan for Uzbekistan,
- strengthen the legal and regulatory framework for the water sector,
- support the integration of water into relevant intersectoral policy framework**s**

Activities
The IWRM Project for Uzbekistan will include three components:
Component 1: Improved Legal and Institutional Framework for Integrated Water Resources Management in Uzbekistan;
Component 2: Improved Water Communal Services and Utilities within the Zarafshan River Basin; and,
Component 3: Integrated Water Resources Management and Water Use Efficiency Plan for the Zarafshan River Basin.
Work from Components 2 and 3 will combine to form the IWRM and Water Use Efficiency Plan for the Zarafshan Basin. All three components of the Project will be conducted through a stakeholder driven process where consultative working groups are established to oversee the main project and provide for specific technical inputs at the national and basin levels for each of the component tasks and subtasks
Expected Results
National Integrated Water Resources Management and Water Use Efficiency Plan for Uzbekistan is approved

Aral Sea Basin Program

A comprehensive study on glacial melting in Central Asia

Brief Description of the Project

Glacial melting in Central Asia poses severe environmental and security risks for Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and Turkmenistan. Glaciers presently contribute up to 70% of the water flow in the major river systems of the region during hot, dry summers (TSNC - Tajikistan Second National Communication, 2009). It is predicted that between 64% and 95% of the glacial area over large parts of Central Asia will be lost as a result of melting by 2100 (KSNC - Kyrgyzstan Second National Communication, 2009). The reduction of water flow from such a change in glacial area is at present poorly understood, but is likely to be dramatic, particularly in hot, dry summers. Large reductions in water flow will have severe consequences for the ecological functioning of rivers as well as the water, energy and food security of all Central Asian countries. Water shortages in Central Asia (e.g. in the Fergana Valley) have already triggered conflicts between communities. The effect of glacial melting will exacerbate such conflicts unless timely adaptation measures are implemented

Subject: Integrated Water Resources Management

Donor Agency: UNDP, UNEP

Estimated budget: $225,000

Project start: 2010

Project completion date: 2011

Beneficiaries:

Main objective and tasks

The vision of the project is to facilitate enhancement of knowledge and observation capacity for glacier retreat in Central Asia.

The project goals are to:

1) Synthesise the information presently available on glacial melting in Central Asia;
2) Model the impacts of a range of climate change scenarios on glacial melting on water supply in the major river basins in Central Asia for the period 2009-2100 using the best available information (this activity will bolt onto the modelling that is being undertaken in other water projects in Central Asia);
3) Identify the gaps in knowledge, data, observation capacity and finances; facilitate the actions required for filling these gaps, and determine the budgetary needs;
4) Provide a range of cost-effective recommendations to improve data availability and glacier observation capacity in the region;
5) Raise awareness of the project results with the general public, especially decision-makers in the key water user sectors which will be affected by hydrological changes associated with the glacier retreat

Target Indicators

1. A network for technical research on glacial melting developed.
1.1. Conduct regional meeting in order to create contact and facilitate information flows between national CA hydromets and reach an agreement on Phase 2.
2. A comprehensive analysis of the glacial melting problem in CA is undertaken.
2.1. Synthesize the information presently available on glacial melting in Central Asia.

2.2. Collect data for and initiate modeling of the impacts of a range of climate change scenarios (or build on existing modeling) on glacial melting on water supply in the major river basins in Central Asia for the period 2009-2100 using the best available information.
2.3. Identify the gaps in knowledge, data, observation capacity and finances; facilitate the actions required for filling these gaps; and determine budgetary needs.
2.4. Provide a range of cost-effective recommendations to improve data availability and glacier observation capacity in the region.
3. Knowledge on glacial melting is shared across all levels.
3.1 Raise awareness amongst decision makers in key water user sectors.
Phase 2
2. A comprehensive analysis of the glacial melting problem in CA is undertaken.
2.2. Model the impacts of a range of climate change scenarios (or build on existing modeling) on glacial melting on water supply in the major river basins in Central Asia for the period 2009-2100 using the best available information.
2.4. Provide a range of cost-effective recommendations to improve data availability and glacier observation capacity in the region.
2.5. Organize a groundtruthing expedition to one of the glaciers
3. Knowledge on glacial melting is shared across all levels.
3.1 Raise awareness amongst decision makers in key water user sectors.
3.2. Conduct technical training within the hydromets for furthering glacial research.
3.3. Upload all project results onto the CA-CRM website
Activities

Expected Results
Key stakeholders engaged in regional meetings and collaboration (disaggregated)
At least one field visit conducted.
Project review undertaken.
Climate change model complete and report produced.
Research gaps identified and budgets planned.
Recommendations provided to decision makers.
Round tables/ workshops and e-discussions held.
Results presented to the Executive Committee of the IFAS.
Technical training for furthering glacial research organized.
Web-platform is established and updated with results monthly

Aral Sea Basin Program

Enhancing Economic and Environmental Welfare in the Aral Sea Region (EEWA) Program

Brief Description of the Project

The Aral Sea region has received much negative attention and commonly perceived to be a disaster zone. Once the world's fourth-largest lake, the lake has been shrinking steadily since the 1960s, which had a devastating impact on the environment, the economy and the well-being of people living in the area.

In view of this precarious situation, the Deutsche Gesellschaft für Technische Zusammenarbeit GmbH (GTZ - German Technical Cooperation) developed a regional program on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ).

The Enhancing Economic and Environmental Welfare in the Aral Sea Region (EEWA) Program aims to support efforts in the delta regions of the Amu Darja (Krakalpakstan and Khorezem) and Syr Darja (Kyzylorda) rivers geared towards developing opportunities amid dwindling resources.

Subject: Economic and Environmental Welfare

Donor Agency: German Federal Ministry for Economic Cooperation and Development (BMZ)

Estimated budget: Euro 4,150,000

Project start: 2009

Project completion date: 2016

Beneficiaries:

Main objective and tasks
Main objective:
- Improvement of living conditions of the rural population in the selected areas of the Aral Sea region

Major tasks:
- Facilitation of economically and environmentally sustainable territorial development policies, concepts and strategies
- Contribution to the increase of income and improvement of the welfare.
- To provide technical assistance to agricultural producers, backyard farmers, small- and medium-scale enterprises in the farming, livestock and fishing sectors, and related processing industries and service providers.
- To respond to the specific needs and demands of women.
- To facilitate regional cooperation among riparian countries of the Aral Sea region in line with the national policies and territorial development plans.
- Promotion of energy efficiency as well as decentralized renewable energy technologies

Target Indicators
1. Increase of the incomes of the rural population by X %. Women are benefiting from increased incomes at least at an equal share.
2. Increase of the investments by the small and medium enterprises by X %.
3. Adoption of environmentally safe and resource saving agricultural practices (including fisheries) in the selected value chains/ sub sectors by 25 % of the producers.
4. Increase the number of production and processing enterprises certified according to European standards.
5. Significant improvement of the decentralized energy supply in the certain areas.
6. Adoption of improved instruments of territorial governance

Activities

- Immediate measures to promote the cultivation of Alfalfa. Development and provision of advisory services for small and medium size enterprises and implementation of pilot projects and demonstration fields.
- Promoting the production of quality agricultural products for regional as well as global markets (melons and liquorice). Development and provision of advisory services especially in the area of plant protection.
- Facilitating the implementation of GLOBAL G.A.P and other international standards.
- Capacity building of national certification organizations (e.g. UZ STANDARD).
- Promoting greenhouse production of vegetables: cultivation, irrigation, energy supply and energy efficiency, use of biological pest control and the production of beneficial organisms in bio laboratories.
- Promoting good agricultural practices (GAP): the provision of direct support in the form of trainings, study tours and seminars to agricultural producers and related local institutions and service providers.
- Promoting regional dialogue, territorial development planning and result based monitoring.
- Promotion of value chains generating explicit environmental benefits. Focussing on the potentials of the following sub-sectors:

Melons;
Fodder crops and livestock;
Aquaculture and fishery;
Green house products

- Capacity building in the aquaculture and capture fisheries sector

Expected Results

Expected socio-economic impact

- Contribution to the increase of incomes and improvement of the welfare of local people.
- Contribution to poverty reduction.
- Initiating territorial development concepts.

Expected socio-cultural impact

- Adoption of improved instruments of territorial governance that will allow partners and target groups of the program to increase initiatives and to mobilize resources.
- Overall social standing of women and gender balance will be improved through promoting participation of women in the local governance.

Expected impact on crisis prevention and peace development

- Prevention of conflicts caused by economic, environmental and social factors through the promotion of regional cooperation and improved instruments of territorial governance.

Expected environmental impact

- Reduced environmental pollution by agriculture through the adaptation of environmentally safe and resources saving practices in agriculture

Expected impact on the partner structure

- Improvement of the cooperation between decision-makers and the local private sector/ civil society through increased participation.
- Demand driven public and private service provision will be improved in quantity and quality.

Aral Sea Basin Program

Enhancing Regional Disaster Risk Reduction Capacities in Central Asia

Brief Description of the Project

This project is to build upon and expand assistance to Central Asia nations empowered to create sustainable mechanisms for disaster risk reduction as per the Hyogo Framework for Action (2005-2015)

Subject: Regional Disaster Risk Reduction

Donor Agency: UNDP, EU

Estimated budget: $3,509,790 (of which $500,000 support mobilized from ECHO, under the DIPECHO instrument for establishment and basic activities for 15 months)

Project start: **2010**

Project completion date: **2014**

Beneficiaries:

Main objective and tasks
The objective of this project (2010-2014) is to build upon and expand assistance to Central Asia nations empowered to create sustainable mechanisms for disaster risk reduction as per the Hyogo Framework for Action (2005-2015), through support to .founding member states (Kazakhstan, Kyrgyzstan and Tajikistan) in the establishment and development of a Central Asian Center for Disaster Response and Risk Reduction

Target Indicators
Improved inter-agency cooperation and coordination between national disaster management agencies and regional/international risk reduction stakeholders.
Strengthened regional early warning and disaster preparedness and response capacities to natural and human-induced hazards.
Harmonization of disaster management/civil defence between nations and civil society is enhanced in the Central Asia region
Activities

The project will support national partnerships in the development of sustainable capacities and strategies to lower the threat of natural disasters including earthquakes, floods, landslides, mudflows and avalanches. The Center will provide a multi-dimensional platform to deliver capacity development initiatives including the following directions:

- Provision of technical assistance to strengthen the capacities of three Central Asia nations that share a mutual mandate to support the development for managing and reducing disaster risk;
- Provide policy advice to the Center and member states for mainstreaming disaster risk reduction into overall development policy and implementation strategies to enhance and sustain national development objectives;
- Mobilize disaster risk reduction stakeholders in the Central Asia region through the exchange of risk management knowledge and the creation of sustainable networks for the dissemination of effective best practices and lessons learned in disaster risk reduction with particular emphasis on cross-border response planning.

Support initiatives in vulnerable high-risk locations in Central Asia to raise awareness and the capacities to mitigate the probable consequences of specific natural and human-induced hazards within the context of regional, national and local development planning.

(For Result 1)
Selection of Central Asian Center staff from member state technical agencies by a Working Group and approval by the Coordination Council.
Execution of Capacity Needs Assessment and elaboration of a capacity response.
Development a two-year support strategy for member states to address specific needs in disaster risk reduction, followed by review and approval by Coordination Council.
Development of a Capacity Development Training Plan (with support from CADRI).
Development of a strategy to create a disaster management Center for Excellence training facility
Collection of training materials for translation, publication and distribution to the Center.
Dissemination to and dialogue with international organizations providing DRR training.
Member states endorse the establishment of a training facility and funding sought for its establishment.
Review of disaster legislation in Central Asia against template for effective response and preparedness mechanisms.
Baseline data assessment initiated with member states and Center staff employed to design/initiate regional database.
Design of database designed, compilation of list of required equipment, and elaboration of data entry procedures. Appeal to donors for funding of equipment.
Execution of Regional Risk Assessment by Center staff, member states disaster management staff, and consultants and dissemination to member states and other disaster risk reduction stakeholders.
Organization of workshop and consultations with national, regional and international stakeholders to gain/share insights on mitigation and response strategies.
(For Result 2)
Circulation of member states preparedness strategies and briefings at member state level.
Analysis and identification of optimal relief material stockpiles and envisioned distribution patterns.
Appeal to donor agencies to contribute to stockpile of relief materials and/or assurance of timely support following a national disaster.
Evaluation of early warning and cross-border operations against a template of capacities to support member states ability to best prepare for and respond to natural disasters.
Synthesis of findings concerning preparedness and response into a report. Review of report by Coordination Council and dissemination to member states and other disaster risk reduction stakeholders to initiate recommended course of action.
(For Result 3)
Design, testing, and execution of survey on public awareness and perceptions of disaster risk, with focus upon vulnerability and capacity.

Round table dialogue with civil society organizations and member states government to share results of study and seek avenues to address weakness in knowledge, attitude and disaster risk reduction practices.
Development of strategy for collaboration among government and civil society in DRR.
Expected Results
R1: Improved inter-agency cooperation and coordination between national disaster management agencies and regional/international risk reduction stakeholders.
R2: Strengthened regional early warning and disaster preparedness and response capacities to natural and human-induced hazards.
R3: Harmonization of disaster management/civil defence between nations and civil society is enhanced in the Central Asia region.

Performance indicators
R.1 OVI 1: Candidates for staff selected by Working Group.
R.1 OVI2: Work plan and mandates for Center departments elaborated and refined.
R1 OVI3: Capacity and Needs Assessment implemented.

R.1 OVI 4: Two-year development and support strategy developed and approved.
R.1 OVI 5: Capacity Development Training Plan developed and approved by Coordination Council.
R.1 OVI 6: Strategy for Center of Excellence training facility developed, approved, and disseminated to potential partners and donors.
R.1 OVI 7: Center for Excellence endorsed by member states.
R.1 OVI 8: Review of enabling environment developed and approved.
R.1 OVI 9: Baseline data assessment and database design completed and approved by Coordination Council
R.1 OVI 10: Regional Risk Assessment completed and approved by Coordination Council.
R.2 OVI 1: Briefings conducted on preparedness strategies.
R.2 OVI 2: Analyses of preparedness strategies, stockpiles, early warning, and cross border operations conducted.
R.3 OVI 3: Synthesis report reviewed, approved, and disseminated
R.3 OVI 1: Public awareness and perception survey executed
R.2 OVI 2: Round table dialogue facilitated for civil society organizations and member state governments
R.3 OVI 3: Strategy formulated, reviewed, and approved for collaboration between governments and civil society in DRR.

Aral Sea Basin Program

Regional Program to Improve the Delivery of Weather, Climate and Hydrological Services

Brief Description of the Project

The proposed regional program would be reducing the risk to life and the economy from unfavorable weather and climate events

Subject: Weather, climate and hydrological services

Donor Agency: The World Bank

Estimated budget: $ 42,980,000

Project start: **2011**

Project completion date: **2015**

Beneficiaries:

Main objective and tasks
The main objective of the proposed regional program would be reducing the risk to life and the economy from unfavorable weather and climate events by improving weather, climate and hydrological service delivery, thereby supporting economic development and enhancing regional cooperation. This in turn will be achieved by modernizing basic infrastructure of NMHSs, their institutional strengthening, capacity building and orientation towards service provision

Target Indicators

Activities

Improvement of the system for operational monitoring of snow cover and glaciers in the mountains of Central Asia
Improvement of technical and organisational aspects of information exchange between the National Meteorological and Hydrological Services
Upgrade of the basic monitoring networks providing data for regional and international exchange
Improvement of the regional system of training, retraining and professional development in the field of meteorology, hydrology and climate
Establishment of national metrological and technical support centres
Improvement of quality of forecasts including emergency warnings by developing national and regional numerical weather prediction capacity
Saving of national data archives; ensuring favourable conditions for climate assessment and meeting the needs of the regional economy
Organize training on improvement of service delivery and socio-economic assessment and evaluation of benefits of hydrological and weather services for senior personnel of NMHSs on a regional basis
Promoting public-private partnerships.
Resuming probing of the upper air atmosphere to measure temperature and wind in order to improve accuracy of regional and mesoscale forecasts

Improvement of monitoring and negative impact management of droughts in Central Asia
Assessment of multiyear surface water resources in the Aral Sea Basin with consideration of climate change and economic activities under current conditions and with perspective view (for 5 NMHSs)
Expected Results
More reliable weather, hydrological and climate forecasts, directly contributing to Central Asia's economic development, particularly in disaster reduction, agricultural, water resources management and energy/hydropower sectors;
Better quality and more variable information products presented in a user friendly, client-oriented format;
Better client satisfaction (special matrix of outcomes/outputs will be delivered based on background survey or assessment);
Improved coordination of national NMHSs modernization programs;
Improvement of regional data and information exchange, particularly on hazards

Aral Sea Basin Program

Implementing Integrated Water Resource Management Systems in the Kazakh Aral Sea Basin: Strengthening Institutions and Monitoring

Brief Description of the Project

This project is to support Kazakhstan reforms to structures for government management of water resources

Subject: Integrated Water Resources Management

Donor Agency: OSCE

Estimated budget: Euro 198,814

Project start: **2010**

Project completion date: **2012**

Beneficiaries:

Main objective and tasks
The purpose of this project is to support Kazakhstan reforms to structures for government management of water resources with the goal of introducing programmes of Integrated Water Resources Management.

Target Indicators

Activities
Establishment of procedures for implementing decisions on water supply and other natural resources in order to preserve the resource potential of the Aral Sea Basin and protect it from the negative effects of pollution and depletion
Expected Results
Result 1: Elaborate recommendations on the improvement of national legislation in the area of integrated water resources management.
Result 2: Elaborate recommendations on the improvement of organizational structures and the formation of an inter-sectoral partnership in the area of use and maintenance of water facilities.
Result 3: Increase the effectiveness of water use with regard to the implementation of IWRM
Result 4: Strengthen national institutional structures of the International Fund for Saving the Aral Sea

Aral Sea Basin Program

Implementing Integrated Water Resource Management Systems in the Kazakh Aral Sea Basin: Practical National Steps

Brief Description of the Project

The purpose of this project is to encourage Kazakhstan to carry out reforms to structures for government management of water resources

Subject: Integrated Water Resources Management

Donor Agency: OSCE

Estimated budget: Euro 301,004

Project start: 2010

Project completion date: 2012

Beneficiaries:

Main objective and tasks
The purpose of this project is to encourage Kazakhstan to carry out reforms to structures for government management of water resources with the goal of introducing programmes of Integrated Water Resources Management

Target Indicators

Activities
Establishment of procedures for implementing decisions on water supply and other natural resources in order to preserve the resource potential of the Aral Sea Basin and protect it from the negative effects of pollution and depletion
Expected Results
Result 1: Formation of information-analytical system of water resources management, strengthening of the potential of the Secretariat of the Aral/Syr-Darya Basin Council and creation of a Training Centre at the existing Museum of Water Management History in Kyzylorda to increase the qualifications of water agency staff.
Result 2: Wetlands monitoring
Result 3: Develop international co operation and improve the management of transboundary bodies of water
Result 4: Strengthen national institutional structures of the International Fund for Saving the Aral Sea

Aral Sea Basin Program

Tajikistan Program for Climate Resilience

Brief Description of the Project

The main focus of activity now is on developing the Strategic Program for Climate Resilience (SPCR). The SPCR will outline the country driven strategic approach to climate resilience and define the underlying investment program proposed for PPCR support

Subject: Climate Resilience

Donor Agency: WB, ADB, EBRD

Estimated budget: $ 50,000,000

Project start: NA

Project completion date: NA

Beneficiaries:

Main objective and tasks
Development of the Strategic Program for Climate Resilience (SPCR)

Target Indicators
The main focus of activity now is on developing the Strategic Program for Climate Resilience (SPCR). The SPCR will outline the country driven strategic approach to climate resilience and define the underlying investment program proposed for PPCR support
Activities
Expected Results
1. Assessment of Tajikistan's institutional, technical and human at the national and local levels to mainstream climate change considerations in key policy areas, with particular focus on the requirements for taking forward the SPCR (World Bank lead)
2. Assessment of Tajikistan's capabilities for projecting future climate scenarios and consequent impacts on various sectors and resources, and roadmap for further development and use of climate change information (ADB lead)
3. Initial awareness raising events on climate change impacts, vulnerabilities and adaptation for policy makers and other stakeholders and training of trainers for future awareness raising activities (World Bank lead)
4. Assessment of the climate vulnerability of the hydropower sector and roadmap to increase sector's resilience and Tajikistan's energy security (EBRD lead)
5. An inventory and analysis of sustainable land management activities and associated land policy issues to identify investment projects and policy support program for PPCR Phase 2 (World Bank lead)
6. Development of a replicable methodology to identify and enhance climate resilience on livelihoods

Aral Sea Basin Program

Water Multi-Country Program on Climate Risk Management in Central Asia

Brief Description of the Project

Improvement of the capacity of countries in the Central Asia region to manage climate risks

Subject: climate risks management (CRM)

Donor Agency: UNDP, Finland

Estimated budget: $ 12,000,000

Project start: 2010

Project completion date: 2015

Beneficiaries: government agencies, civil society and local communities at risk from climate change, now and in the future

Main objective and tasks
The program aims to improve the capacity of countries in the Central Asia region to manage climate risks in all sectors

Target Indicators
- Multi-Country and National Networks are established and stakeholders are using information from them.
- Socio-economic and biophysical data is collected and disseminated to the MCN.
- Climate change country profiles developed.
- Inventory of existing national capacity for CRM undertaken.
-Review of CRM interventions is completed..
-At least 5 CRM interventions have their costs and benefits assessed.
- By the end of the project at least 5 institutions use advanced tools and methods for risk assessment and scenario planning.
- Bilateral and multi-country knowledge exchange sessions conducted.
-Information is uploaded onto the database and website at least quarterly.
-Knowledge publication is produced and disseminated.
- Comprehensive review of CRM policy and strategy conducted.
Prioritized CRM policy measures are implemented.
- Revisions of top priority sectoral and cross-sectoral strategies /policies/legislation
- Weather forecasting and EWS is strengthened.
- Data, information and equipment needs prioritized.
Financial instruments and mechanisms are identified and financing strategy is developed.
- Demonstration projects are established and executed
Activities

The Central Asia Multi-Country Program on Climate Risk Management (CA-CRM) will take a programmatic, comprehensive approach to climate risk management (CRM) and create synergies between existing projects. The approach integrates three aspects of climate and sustainable development that are often considered in isolation:

1. Climate information for decision support in climate-affected sectors
2. Improvements in development outcomes in the face of present climate variability with capacity building to manage risks of longer term climate change, and
3. Reduced socioeconomic vulnerability to extreme climate events with strategies to enable communities to capitalize on favorable climate conditions.

The methodology to be taken in climate risk management is briefly summarized as follows:

- Analysis of historical variability, current trends and future climate change scenarios;
- Identification of climate impacts on development sectors e.g. water, energy, health, agriculture, shelter, at the multi-country, national and local levels;
- Elaboration of risk management decision-support options and needs for adaptation;
- Assessment of institutional and policy implications;
- Determination of capacity development requirements; and
- Creation of evidence-based CRM strategies, policies, plans, and programs that adopt a dynamic and coherent approach for both the short- and long-term.

CA-CRM it will act as an umbrella program, supporting a wide-range of CRM initiatives across the region. In particular, it will assist the five Central Asian countries to adjust their national development processes to address risks posed by current climate variability and future climate change. CA-CRM will seek to strengthen climate-related disaster risk reduction and adaptive capacity, promote early action, and provide the foundation for long-term investment to increase resilience across the region.
In order to achieve these aims, CA-CRM will build intellectual capital in the region to address the complex and multi-disciplinary problem that climate variability and climate change poses. Accordingly, CA-CRM proposes to form a ”multi-country climate network,” which will provide tools, methods and expertise for in-depth socio-economic and biophysical analyses of the climate change impacts and cost-benefit analyses of potential CRM interventions for the region. This will be preceded by a thorough review of a wide-range of previous as well as ongoing CRM interventions in each country. The cost-benefit analyses will be used to prioritize interventions and to sensitize policy-makers and decision-makers to the risks posed by climate variability and climate change and the benefits associated with appropriate CRM interventions. Leadership capacity in this area will be strengthened, where required, throughout the CA-CRM program. Additionally, CA-CRM will address the main institutional, policy and financial barriers to catalyzing systematic CRM and cost-effective adaptation across the region. Importantly, lessons-learned and results achieved through CA-CRM and already existing CRM initiatives will be disseminated on a web-based knowledge management platform to inform future climate risk management endeavors

Under Output 1 of the regional project of the program, a multi-country climate network will be created for analyzing climate impacts; synthesizing and disseminating climate variability and climate change information, and coordinating CRM projects. Databases will be developed and strengthened pertaining to climate change impacts, and subsequently a comprehensive climate risk assessment / baseline study conducted. The costs and benefits of climate variability and change and of CRM interventions will be analyzed. These activities will be complemented by technical training and expert knowledge exchange. Output 2 will include the development of CRM database management system, creation of a web-based knowledge management platform, and production of a knowledge publication on climate risk management.
Output 3, which entails the analysis of glacial melting, will be funded by the Environment and Security Initiative (supported by Government of Finland).

For Output 1 of the national projects of the program, national climate networks (the national arm and constituent part of the multi-country network) will be established. These networks will conduct an in-depth review of previous and current CRM-related projects, collect national-level socio-economic and biophysical data (for inclusion into the regional data system and for the regional analysis), produce detailed climate change country profiles (initially on the basis of the regional analysis and subsequently to inform its further development), and strengthen weather forecasting and existing early warning systems. A capacity inventory and subsequent training will be undertaken, as well as identification and prioritization of information and equipment needs for CRM over the long term.
Under Output 2, strategies, policies and legislation will be reviewed, revised, and developed in order to provide an enabling environment for CRM in key sectors. In parallel, "no regret" policy measures for CRM will be identified and executed.
Output 3 will entail the strengthening and development of financial instruments and mechanisms to finance CRM through identification ad piloting activities, as well as the development of a CRM financing strategy.
For Output 4, community-based CRM interventions in key sectors will be developed and implemented on a pilot basis. Interventions suitable for upscaling to the national level will be identified, and their advocacy to governments supported.
Activities under Output 5 will include review and documentation of case studies, dissemination of lessons learned and best practices to national stakeholders, and inclusion of these into the regional web-based platform. Additionally, national public awareness campaigns in CRM will be undertaken
Expected Results
Outputs are divided among a regional project, as well as five projects for each of the Central Asian countries.
The regional project of CA-CRM will meet the objective of the programme through the following outputs:
Output 1: Technical capacity to manage climate-related risks and opportunities in an integrated manner at the multi-country level strengthened.
Output 2: Knowledge on adjusting national development processes to fully incorporate climate-related risks and opportunities shared at a national, multi-country and global level.
Output 3: Knowledge on glacial melting in Central Asia synthesized and further developed.
The national projects will produce the following outputs:
Output 1: Institutional frameworks and technical capacity to manage climate change risks and opportunities in an integrated manner at the national, sub-national and local levels strengthened.
Output 2: Climate-resilient strategies, policies and legislation in priority sectors and geographic areas developed.
Output 3: Financing options to meet national climate change adaptation costs expanded at the national, sub-national and local levels.
Output 4: Climate change adaptation interventions in priority sectors implemented.
Output 5: Knowledge on how to incorporate climate change knowledge and risks into development processes at national, sub-national and local levels disseminated

Aral Sea Basin Program

Promoting Cooperation to Adapt to Climate Change in Chu-Talas Transboundary Basin

Brief Description of the Project

The project aims to reduce risks from climate change for security by improving the adaptive capacity of recipient countries in transboundary basins where forecasted impacts of climate change may have security implications

Subject: Integrated Water Resources Management

Donor Agency: UNDP, UNECE

Estimated budget: $ 150,000

Project start: **2010**

Project completion date: **2012**

Beneficiaries: government entities civil society, and communities

Main objective and tasks
The project aims to reduce risks from climate change for security by improving the adaptive capacity of recipient countries in transboundary basins where forecasted impacts of climate change may have security implications.

The project also aims to support dialogue and cooperation on the needed steps to design an adaptation strategy in the transboundary context and thereby prevent controversy on the use of water resources.

The specific objectives of the project will be:
- Modeling of the possible changes in water resources of the Chu-Talas basin associated with climate conditions and elaboration of joint scenarios
- Preparation of joint vulnerability assessment, focusing on selected areas/sectors of importance for the work of the Commission,
- Development of a package of possible adaptation measures and relevant procedures for the Commission, which may contribute to decreasing potential tensions over changing hydrological regimes. Such procedures and measures will be built into the regular Commission's operations and policies, where appropriate.

Relevant experience will be shared with other countries in the Central Asia as they face similar problems and this topic is considered as one of the priority for joint initiatives in the region. Positive experience will be replicated in other transboundary basins in Central Asia and beyond.

This project will explore the feasibility of linking this initiative to or building upon existing modeling efforts and collaborate where appropriate.

Target Indicators

Activities

Inception phase – data collection and getting all partners on board, contacts with other initiatives and donors, proposals on modeling and content of vulnerability report/scenarios. Starting modeling activities (depending on available data and other conditions).
Implementation phase - all detailed technical operations (such as modeling and scenario development). Based on the agreed scenarios, vulnerability assessment will performed following already developed outline. Relevant Commission procedures will be worked out, adaptation strategies and their implementation/financing will be discussed and, if possible, agreed among all key stakeholders and potential donors.
Sharing experience – relevant experience will be shared with other basins and countries and built in into water-related state operations. This will be done throughout the project
Expected Results
The following deliverables will be developed:
Common scenarios and models agreed upon by the riparian countries assessing the expected climate change impacts on water resources;
Joint vulnerability assessment for the respective basin, including environmental, social and economic vulnerability and the security implications;
Proposal for the procedures to be employed by the Joint Commission to tackle uncertainty related to climate change and maintain needed level of cooperation and benefits sharing;
Proposal for coordinated measures to be taken in the specific basin enabling climate change adaptation, including cost-benefit assessment and environmental impact assessment

Aral Sea Basin Program

Promoting IWRM and Fostering Transboundary Dialogue in Central Asia

Brief Description of the Project

This pan-regional programme will aim at promoting transboundary dialogue and sustainable water resources management in Central Asia through interventions (i) at national level (mainly involving Kyrgyzstan and Tajikistan), and (ii) at transboundary level (mainly involving Kazakhstan and China) in parallel and (iii) at the sub-regional level.

Subject: Integrated Water Resources Management

Donor Agency: EU, UNDP, Finland

Estimated budget: $ 5,400,000

Project start: **2009**

Project completion date: **2012**

Beneficiaries: government entities, civil society, and communities

Main objective and tasks

In appreciation of the fact that the majority of prevailing water-related development challenges could be tackled through ***Integrated Water Resources Management (IWRM)***, the project will seek to support Central Asian governments at regional, national, and local levels through a variety of interventions:

- *In Kyrgyzstan and Tajikistan*, the objective will be to develop and implement national integrated water resources management and water efficiency strategies (IWRM Planning) at national and basin level. In doing this, the project will focus on both IWRM governance and institutional reform, as well as on concrete interventions to improve (a) irrigated agriculture, (b) the rural water supply and sanitation situation, and (c) small-scale hydropower service delivery;
- *In the Ili-Balkhash River Basin*, the main focus will be on fostering transboundary dialogue and enhancing cooperation between Kazakhstan and the People's Republic of China, aiming at improved management of the shared River Basin system and its resources.
- On a regional level, the programme will focus besides efficient and effective programme management and project coordination on (i) capacity building – a joint IWRM training plan with GWP, SDC and possibly other partners and initiatives is under preparation – (ii) knowledge and experience exchange as well as (iii) trans-regional trust-building and coordination interventions.

Target Indicators

- Wheat yield > 4 T ha-1
- Participatory assessment and diagnosis processes are adopted by GOK
- Participatory processes, for prioritizing IWRM issues and solutions, adopted & management aspects implemented
- Feasibility studies (FSs) are approved
- About 200 extra households provided with improved WSS services.
- Investment strategies, plans and/or financial policies promulgated
- SEA carried out for key documents as a part of their preparation
- Management arrangements, addressing sustainability issues, are promulgated and adopted by the GOK
- Governments (GOVs) promulgate IWRM reforms

- The GOVs jointly implement a transboundary sub-basin agreement for equitable water-energy-cost sharing
- Functional coordination body with regular bi-lateral meetings at political and technical level
- Relevant documentation and suitable database
- River basin master plan
- Regular engagement of key stakeholders and information of the public in transboundary matters
- Regional sector and organization management capacity enhanced
- Efficient and effective project implementation
- Increased capacity for integrating environment into water management planning
- Strengthened transboundary cooperation on environmental issues

Activities

Activities 1.1 & 2.1: Gravity (Kyrgyz) and Pumped Irrigation (Tajik) Pilot Projects

a) Feasibility studies (FSs) jointly prepares by oblast and/or rayon DWR or OMA and WUAs, with NGO support,

b) A participatory performance assessment and diagnosis (PAD) process to improve performance and increase wheat production, in a Kyrgyz gravity irrigation system, and introduce wheat production in a Tajik pumped irrigation systems developed and pilot implemented.

Activities 1.2 & 2.2: Irrigation Investment Strategies, Plans and Financial Policies

a) Realistic national irrigation investment plans, strategies and/or financial policies, informed by Activity A1 experience, prepared by MAWR or MWRI and NGOs and ready for potential donor funding.

b) SEA(s) carried out for key documents as a part of their preparation promoting the best practice and international standards, to be also used as a pilot example for further development of this tool in the region.

Activity 1.3: Kyrgyz RWSS Pilot Project

a) ADB and/or WB/DFID Kyrgyz WSS systems and CBOs surveyed by an NGO, and

c) DWS, DSE and CBOs supported to formulate/implement joint O&M arrangements to ensure their sustainability.

Activity 2.3: Tajik Rural Water Supply and Sanitation (RWSS) Pilot Project

a) Tajik communities mobilized and supported by an NGO, with OMA and/or SUE support, to form representative democratic CBOs

d) New CBOs empowered to plan, select, design, construct and manage their own water supply systems and household sanitation facilities to address the health and sustainability impacts of rural WSS service levels and project rules.

Activity 2.4: Tajik RWSS Investment Strategies, Plans and Financial Policies

a) Realistic Tajik Rural WSS investment strategy, plan and financial policy, informed by practical Activity A.3 pilot experience, prepared by MWRI and NGO and ready for potential donor funding. This will consider health and sustainability impacts of WSS service levels and project rules respectively.

b) SEA(s) carried out for key documents as a part of their preparation promoting the best practice and international standards, to be used as a pilot example for further development of this tool in the region.

Activity 2.5: Tajik Small-Scale Hydropower (SSH) Investment Strategies, Plans and Financial Policies

a) MEI's present investment Strategy revised and/or updated with support by the NGO, based on: (i) assessment of recently completed small-scale hydropower (SSH) sub-projects, (ii) realistic unit costs and (iii) economic viability and sustainability of present installations and O&M arrangements.

b) SEA(s) carried out for key documents as a part of their preparation promoting the best practice and international standards, to be used as a pilot examples for further development of this tool in the region.

Activities 1.6 & 2.6: Small Transboundary Sub-basin management agreement

a) A pilot joint sub-basin management agreement, for equitable water, energy and O&M cost sharing, progressively developed, negotiated, signed, implemented, monitored and evaluated by the relevant Kyrgyz, Tajik and, preferably, Uzbek sub-basin authorities, assisted by an international NGO.

Activities 1.7 & 2.7: Participatory IRBM Processes

a) Practical participatory IRBM processes integrating outputs A1, A3, A5 and A9 progressively developed/implemented by MAWR, MWRI and their relevant local authorities, assisted by NGOs.

Activities 1.8 & 2.8: Other Priority Pilot Projects

a) Progressive development and management of other practical pilot projects to address stakeholders' next highest priority issues facilitated by MAWR and MWRI, and assisted by their NGOs..

Activities 1.9 & 2.9: International River basin Management (IRBM) Institutional Reforms

a) A context-specific IWRM (institutional reform) Strategy, to support stakeholders' priority IWRM issues/interventions at the river basin and/or local-levels, developed and implemented.

Activity 3.1: Functional Bilateral Commission and framework agreements for the Ili-Balkhash RB

a) Joint Kazakh-Chinese Ili-Balkhash Commission strengthened through regular bilateral meetings at technical and political levels taking place;

b) Permanent dialogue between Kazakh and Chinese governments established, and consensus achieved regarding cooperation and joint management of Ili-Balkash resources.
Activity 3.2: Documentation and RB master plan
a) River basin master plan adopted and updated documentation established in the Ili-Balkhash river basin.
Activity 3.3: Public engagement
a) Key stakeholders involved in major decisions, and the general public informed, about provisions of the sustainable management of the Ili-Balkash river basin resources.
Activity 4.1: Regional Dialogue, IWRM Governance and Sector Capacity Building
a) PIUs, MAWR, MWRI and Kazakh equivalent, and key national / local organizations adequately supported and/or trained by the project team, as to manage project task development and implementation and perform their IWRM roles and functions.
The good practice of SEA in water management related planning demonstrated and serves as an example for its further promotion in other sectors

Expected Results
The sectoral activities (under outputs 1 & 2) will aim at two sets of key results:
(i) Realistic national investment, strategies, plans and financial policies, which will be informed by the results of
(ii) Demonstration projects that develop both practical management instruments and feasibility studies for possible donor funding.
Other expected results include the development and implementation of: (i) a joint management agreement – for equitable water, energy and O&M cost sharing – in a small transboundary sub-basin, (ii) context-specific participatory IWRM processes, (iii) additional demonstration projects, to address stakeholders next highest priorities, and (iv) context-specific institutional reforms.
Outputs 3 and 4 will improve coordination and cooperation on transboundary and sub-regional levels, provide expert support and generate the knowledge base for bilateral and regional TW cooperation (reports, feasibility studies, expert input to the state documents and programming etc.), and ensure the dialogue platform among involved parties (via seminars, roundtables, information-sharing mechanisms and other).

Aral Sea Basin Program

Regional Energy Markets Assistance Program (REMAP-II)

Brief Description of the Project

To facilitate the development of an electricity market in Central Asia

Subject: Integrated Water Resources Management

Donor Agency: USAID

Estimated budget: $16,500,000

Project start: 2009

Project completion date: 2012

Beneficiaries:

Main objective and tasks
To facilitate the development of an electricity market in Central Asia
Create a market-driven, cost-based electricity trading system among Central Asian
Develop and implement mechanisms for establishing the economic value of water-regulating services related to flood control and irrigation

Target Indicators

Activities
The program will work to:

- **Create a market-driven, cost-based electricity trading system among Central Asian countries that includes arrangements for pricing of energy exchanges, ancillary services, and competitive sales of energy;**
- **Develop and implement mechanisms for establishing the economic value of water-regulating services related to flood control and irrigation in support of hydroelectricity generation investment**

Expected Results

Aral Sea Basin Program

Transboundary Water Management in Central Asia

Brief Description of the Project

The work of regional institutions in Central Asia is hampered by their weak position in the political system. Recognition and implementation of guidelines in water sector are missing.
The programme will support Central Asian states in joint development of practical approaches for sustainable regional water management and implement selected measures.
Capacities of regional institutions responsible for water management (in particular IFAS – International Fund for Saving the Aral Sea) will be improved. Institutional capacities to manage river basins will be improved for selected transboundary rivers.

Subject: institutional development for transboundary cooperation

Donor Agency: **German Government (Federal Foreign Office)**

Estimated budget: Euro 10,000,000

Project start: **2009**

Project completion date: **2011**

Beneficiaries: government entities

Main objective and tasks
Program Objective: The Central Asian states jointly develop practical approaches for sustainable regional water management and implement selected measures

Target Indicators
- Capacities of regional institutions responsible for water management (in particular IFAS – International Fund for Saving the Aral Sea) are improved.
- Institutional capacities to manage river basins are improved for selected transboundary rivers**.**

Activities

Basin assessment and monitoring, basin administration
Determination of river basin objectives;
Development of river basin management plans
Transboundary environmental and social impact assessment
Safety of hydro technical facilities and dams
Supporting the establishment of monitoring systems and data exchange

Expected Results
Regional Institutions in the field of water cooperation are strengthened.
International water legislation and regional guidelines/principles for water management are recognized and gradually applied.
Regional guidelines for water monitoring and data exchange are developed

Aral Sea Basin Program

Support to OECD for the implementation of National Policy Dialogues in Eastern Europe, Caucasus, Central Asian (EECCA) countries under the EU Water Initiative

Brief Description of the Project

Provide support to the implementation of the EUWI EECCA Working Group's program of work in 2009-2012, thereby supporting the achievement of the water-related MDGs in the region, the improvement of water supply and sanitation services that are delivered to the population, as well as the management of water resources.

The EUWI-EECCA Working Group constitutes the cornerstone within the organizational set-up of the EUWI-EECCA Component. It is responsible for overseeing the implementation of the EUWI-EECCA work programme and receives guidance and advice from the EUWI Steering Group. It consists of representatives of the EECCA countries, EU Member States, international organizations, NGOs and the European Commission. The EUWI-EECCA Working Group is currently chaired by Romania.

The EUWI-EECCA Component has two focus areas - water supply and sanitation (WSS), including financing of water infrastructure, and integrated water resources management (IWRM), including transboundary river basin management and regional seas issues. Financing constitutes an important pillar within each of the two focus areas - and establishes a link between them.

National Policy Dialogues are the main operational instrument within the EUWI-EECCA Component. Some of these dialogues concentrate on water and sanitation whereas others concentrate upon IWRM.

Subject: Integrated Water Resources Management (IWRM) and Water Supply and Sanitation (WSS)

Donor Agency: EU

Estimated budget: Euro1,700,000

Project start: **2008**

Project completion date: **2012**

Beneficiaries: bodies responsible for / involved in water resources management, water supply and sanitation, and environmental protection; population at large

Main objective and tasks

National Policy Dialogues' objectives are to facilitate participation and communication between stakeholders in order to build efficient strategies for the water sector. EUWI members' work has been leading to high-level declarations 1) improving commitment to Water Supply and Sanitation (WSS) and water management; 2) influencing Poverty Reduction Strategies and allocation of resources.
The EUWI-EECCA Component has 8 objectives that are laid down in its work programme till 2015, which was approved in Chisinau, Moldova, in 2005. The 8 objectives are the following:

- Improve institutional and regulatory framework.
- Ensure financial viability of utilities.
- Investment in water supply, sanitation and rehabilitation.
- Ensure access of the poor to water services as a basic human right.
- Safeguard public health.
- Protect the environment.
- Establish and implement national policies for IWRM.

- Develop the inter-state cooperative structures for river/lake basin management.

Target Indicators
Establish “policy packages” such as legislative acts, strategies, ministerial orders and plans for implementation in IWRM and WSS
Activities
(i) Consultations with ministries, agencies and institutions (including science and academia), non-governmental and other national and international organizations
(ii) National Steering committees
(iii) Policy packages and pilot projects

Expected Results
A coherent mix of policy tools (new law, regulation, water quality standard, tariff system, etc.) developed to achieve environmental policy objectives in a cost-effective manner and avoiding policy conflicts.

Aral Sea Basin Program

DIPECHO VI

Brief Description of the Project

The specific objective of this DIPECHO Action Plan is "To increase resilience and reduce vulnerability of local communities and institutions through support to strategies that enable them to better prepare for, mitigate and respond to natural disasters".

After several DIPECHO action plans in which the community based approach in each country was successfully tested along with the reinforcement or the establishment of some key institutions operating in disaster risk reduction, it is time to scale up and initiate operations that address mainstreaming of Disaster Risk Reduction (DRR) in government and development policies and regional networking of common interest institutions and activities, to better take into account climate change adaptation in DRR interventions and to hand over operations initiated by the Dipecho programs to local authorities and communities or to development cooperation actions.

Subject: Disaster Risk Reduction and Preparedness

Donor Agency: EU

Estimated budget: Euro 7,295,000

Project start: **2010**

Project completion date: **2011**

Beneficiaries: Local actors and populations in disaster prone areas; institutions involved in disaster management/disaster risk reduction

Main objective and tasks
The overall objective is to support the implementation of the Hyogo Framework for action 2005-2015
The specific objective of this Action Plan is to increase resilience and reduce vulnerability of local communities and institutions through support to strategies that enable them to better prepare for, mitigate and respond to natural disasters

Target Indicators
Within the projects to be supported, DG ECHO will pay particular attention to the following themes adapted to the context of this Action Plan:
Mainstreaming of disaster risk reduction in Government strategy and in development actions as an important approach to scale up the implementation of the main goals of the Hyogo Framework for Action for building the resilience of the population at all levels.
Facilitation of co-ordination and reinforcement of national and regional platforms by supporting initiatives which facilitate co-ordination among national and regional authorities as well as public and private institutions working on Disaster Risk Reduction.
Advocacy of Public-Private Partnership: which concerns support initiatives to facilitate the participation of the private sector in disaster preparedness and risk reduction activities.
Advocacy and mainstreaming climate change adaptation at all levels of intervention.
There is a need to work out concrete approach on how to address this new topic, especially tangible measures for populations, which livelihoods are negatively impact by climate change phenomenon.
Integration of DRR training in the education curriculum as vector to create awareness and

build the resilience of the population exposed to natural disasters
Facilitation of the reinforcement of the legal framework for DRR interventions and protection of population exposed to natural disasters in the region and promotion of transborder operations in emergency situations
Cross-cutting issues: involvement of women, children, vulnerable groups such as disabled, ethnic minorities, environmental protection etc.

Activities
The following categories and types of disaster preparedness activities are eligible:
a) Local disaster management components targeting local actors and populations in disaster prone areas: early warning systems, mapping and data computerisation, local capacity building, training.
b) Institutional linkages and advocacy, targeting institutions involved in disaster management/ disaster risk reduction: advocacy, facilitation of coordination, institutional strengthening.
c) Information, Education, Communication, targeting direct and indirect beneficiaries (catchment population): awareness raising among the general public and education.
d) Small scale infrastructure and services at community level: infrastructure support and mitigation works, operation and maintenance systems; non structural mitigation activities.
e) Stock building of emergency and relief items: targeting the reinforcement of the local response capacity of local actors and institutions in disaster-prone areas in view of contributing to ensuring an adequate response to natural disaster by strengthening the response capacity in the early hours and days of a disaster.

Expected Results
Increased resilience and reduced vulnerability of local communities and institutions
Better preparation for mitigation and response to natural disasters

Aral Sea Basin Program

Central Asia Regional Environment Program

Brief Description of the Programme

Better management of natural resources through enhanced regional cooperation and partnership with Europe in the fields of integrated water resource management, forest and biodiversity governance - including environmental monitoring - and environmental awareness raising, supported by strengthened mechanisms of coordination on environmental issues provided by the EU-CA Environment and Water Cooperation Platform

Subject: Forest and biodiversity, environmental monitoring, Integrated Water Resources Management, **environmental awareness**

Donor Agency: EU

Estimated budget: Euro 9,200,000

Program start: **2011**

Program completion date: **2014**

Beneficiaries: Regional, national and local institutions and bodies of Central Asia involved in the sustainable management of natural resources; non-state actors and population of Central Asia

Main objective and tasks
Better management of natural resources through enhanced regional cooperation and partnership with Europe in the fields of integrated water resource management, forest and biodiversity governance - including environmental monitoring - and environmental awareness raising, supported by strengthened mechanisms of coordination on environmental issues provided by the EU-CA Environment and Water Cooperation Platform

Target Indicators
NA
Activities

Component (1): Regional Coop and support for the EU-Central Asia enhanced regional cooperation on Environment and Water
Component (2) – Forest and biodiversity governance, including environmental monitoring
Sub-component 2.1: Forest Law Enforcement and Governance (FLEG)
Sub-component 2.2 Ecological Restoration and Biodiversity Conservation in Central Asia
Sub-component 2.3 Environmental Monitoring in Central Asia
Component (3) – Partnership of basin organizations in Central Asia, institutional building and strengthening of regional water management structures, and professional training on Integrated Water Resources Management
Component (4) – Environmental awareness raising, AWARE
Ad-hoc actions, in the form of environmental awareness raising campaigns for key stakeholders in Central Asian countries, notably through pilot demonstrative and replicable projects, in the fields of environmental protection, biodiversity conservation, land degradation, sustainable management of natural resources and climate change, etc.

Expected results
1. The Platform has been established and is functional. Coordination, cooperation and outreach between national institutions, regional structures and donor agencies have been improved at regional as well as international level.
2. FLEG process in Central Asian countries started. Dialogue, consultation and governance launched at regional scale for the Central Asian dry lands regarding ecological restoration; and for the Central Asian Mountain Biodiversity Hotspot with international NGOs active there; Partnership with EU data centres and institutions in the field of environmental monitoring established;
3. Enhanced regional cooperation between basin and water management organisations, including National Policy Dialogues (NPD) stakeholders; Increased knowledge and mutual learning by exchange of experience or practice on good governance, and professional training; Built capacity of the staff and improved functioning of basin and water management institutions;
4. Environmental awareness raising campaigns for key stakeholders carried out in Central Asian countries; Promotion materials delivered.

Aral Sea Basin Program

Capacity building in data administration for assessing and monitoring transboundary water resources in the countries of Eastern Europe, the Caucasus and Central Asia (EECCA)

Brief Description of the Project

The overall aim of the project is to build capacities in data administration within the main national and regional authorities concerned in order to develop information production and sharing for providing support to transboundary water resource management policies and action.

Subject: Integrated Water Resources Management

Donor Agency: FFEM (French Global Environment Fund)

Estimated budget: Euro 800,000

Project start: 2010

Project completion date: 2011

Beneficiaries: main national and regional water authorities

Main objective and tasks

The overall aim of the project is to build capacities in data administration within the main national and regional authorities concerned in order to develop information production and sharing for providing support to transboundary water resource management policies and action

Target Indicators

Activities

The actions planned to achieve this goal include 2 components:

- The first component aims at building capacities in data administration and sharing in 2 pilot transboundary areas by using methodologies which could also be applied to other transboundary river basins in countries of Eastern Europe, Caucasus and Central Asia.
- The second component regroups actions at the regional level. They aim, on the one hand, to develop regional tools for access to information and, on the other, to disseminate the results and experience feedbacks, obtained in the 2 pilot areas, to the other transboundary river basins and other EECCA countries, in order to help them develop their own information systems.

The second pilot area retained for this project is:

- Basins of the Aral Sea (Amu Darya and Syr Darya river basins): shared by the 5 countries of Central Asia (Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan, Turkmenistan) and Afghanistan, these basins have important problems of quantitative water resource management, as well as problems in managing water quality and the environment

Expected Results

Aral Sea Basin Program

Central Asia Investment Facility 2009 (CAIF)

Brief Description of the Project

The CAIF's main purpose is to promote additional investments and key infrastructures with a priority focus in the first implementation period on Energy and Environment (including water), in the Central Asian Countries.

The first list of projects is under selection process

Subject: Investments in Energy and Environment Sector (including Water)

Donor Agency: EU
Both multilateral and national European development finance institutions will be stakeholders of the Facility. They will be the only ones eligible as lead partners to propose lending operations that could benefit from a CAIF support

Estimated budget: Euro 20,000,000 (TBC)

Project start: **TBD**

Project completion date: **TBD**

Beneficiaries: The final beneficiaries of the Facility will be the Central Asian countries, either directly or indirectly through their central, regional and local administrations or semi-public institutions

Main objective and tasks
The leverage effect of the CAIF grants should generate a multiplying factor of 4 to 5 times the amount of grants. The input of the financing institutions will increase the leverage effect on additional resources to be directed towards the Central Asian beneficiary countries.

Activities
The types of operations to be financed under the CAIF are the following:

- Investment co-financing in public infrastructure projects;
- loan guarantee cost financing;
- Interest rate subsidy;
- Technical assistance;
- Risk capital operations

Aral Sea Basin Program

Support to Kyoto Protocol Implementation

Brief Description of the Project

Assistance to the Partner Countries concerned in combating climate change, both by extending the use of the mechanisms attached to the Kyoto Protocol and by supporting the formulation of appropriate mitigation and adaptation strategies at each country level

Subject: Climate change (mitigation and adaptation)

Donor Agency: **EU**

Estimated budget: Euro 4,787,000

Project start: 2008

Project completion date: 2011

Beneficiaries: Technical ministries, relevant government departments and the general public in relation to climate change in partner countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan)

Main objective and tasks

- Specific Objective A: To reinforce awareness and capacity of the technical ministries, relevant government departments and the general public in relation to climate change in general and to the KP mechanisms in particular.
- Specific Objective B: To strengthen interest in and extend participation of the economic stakeholders (particularly industry and energy utilities) in climate-change-related activities, including the Kyoto mechanisms (CDM, JI) and focusing particularly on energy efficiency.
- Specific Objective C: To formulate climate-change mitigation and adaptation strategies and assist with their implementation whenever requested by the PCs

Activities

Project implementation consists of Inception, Main and Final Phases:

1) The Project begins with an Inception Phase in order to plan together with the EC Task Manager (TM), PC representatives, multi-laterals (e.g., UNDP, UNEP, EBRD, etc.) and other stakeholders and beneficiaries (e.g. industry associations) and review their needs and order of priorities establishing a modus operandi for the management of the Project;

2) The Project's Main Phase includes the attainment of all the Project Results and thus reaching the Project Purpose. The Main Phase begins after two-three months after the Project's commencement (depending on the timing of the IR delivery) and ends two months prior to the expiration of the Project's life. Specific activities are necessary and sufficient to achieve corresponding Project Results;

3) The Final Project phase will start 2 months prior to the end of the Project execution period. During this Phase Project Team will complete the Final Project Report based on comments and suggestions received at the Final Project Workshop. The Final Report will include all the major Project deliverables and will provide all the necessary information about the project, including lessons learned

Expected Results

- Enhanced knowledge in the Partner Countries of EU legislation and of the economic instruments available to improve energy efficiency in the context of each country's economic and social development and climate change mitigation plans;
- Improved capacity of the DNA to implement programmatic CDM. Better acquaintance of PC's technical departments (Ministries of Energy, Industry, Construction, Transport, etc) with the instruments available under the Kyoto Protocol;
- Issuing of guidelines on programmatic CDM;
- Development of public awareness campaigns using the EC climate change campaign entitled "CHANGE" as a possible reference;
- Exchange of information between the PC through an energy efficiency network (whenever possible identifying, enhancing and using suitable existing networks, e.g. the Energy Charter Protocol on Energy Efficiency and Related Environmental Aspects) and by contributing to the INOGATE web portal and developing its energy-efficiency- and climate-change-related content in relation to the current project;
- Improved skills of the negotiators to efficiently participate in post-2012 negotiations;
- Increased awareness among policy makers of the importance of the post-Kyoto regime

Aral Sea Basin Program

Development of Central Asia Strategy on vulnerability and adaptation to Climate Change in key sectors: water scarcity, land degradation and human health

Brief Description of the Project

To equip CA states with the latest adaptation techniques and expertise for better preparedness to Climate Change impact

Subject: Adaptation to Climate Change

Donor country or agency: UNEP

Estimated budget: $2,000,000

Project start: **NA**

Project completion date: **NA**

Beneficiaries

Main objective and tasks
The main objective is to better equip CA states with the latest adaptation techniques and expertise for better preparedness to CC impact

Target Indicators
Activities
review and analysis of past/ongoing V&A activities;
selection of economically feasible technologies
Expected Results

Aral Sea Basin Program
List of Donors On-going Projects

#	Project Title	Donor	Duration	Budget
1	Kazakhstan: Forest Protection & Reforestation Project	WB	2005-2014	US$ 63,800,000
2	Kazakhstan: Syrdarya Control & Northern Aral Sea Phase I Project	WB	2001-2010	US$ 85,790,000
3	Kyrgyzstan: Rural Water Supply & Sanitation 2	WB	2009-2013	US$ 18,370,000
4	Kyrgyzstan: Second On-farm Irrigation Project (P096409)	WB	2007-2013	US$ 16,000,000
5	Kyrgyzstan: Water Management Improvement Project	WB	2006-2011	US$ 28,100,00
6	Tajikistan: Fergana Valley Water Resources Management Project (P084035)	WB	2005-2011	US$ 13,000,000
7	Uzbekistan: Fergana Valley Water Resources Management Project	WB	2009-2016	US$ 81,850,000
8	Uzbekistan: Drainage, Irrigation & Wetlands Improvement Project - Phase 1	WB	2003-2013	US$ 60,000,000
9	Kyrgyzstan: Rural Area Water Supply and Sanitation Sector	ADB	2007-2010	US$ 34,600,000
10	Uzbekistan: Kashkadarya and Navoi Rural Water Supply and Sanitation Sector Project	ADB	2006-2010	US$ 25,000,000
11	Uzbekistan: Surkhandarya Water Supply & Sanitation Project	ADB	2006-2010	US$ 36,000,000
12	Uzbekistan: Water Supply and Sanitation Services Investment Program	ADB	2010-2015	US$ 300,000,000
13	EU: Support to OECD for the implementation of National Policy Dialogues in EECCA countries under the EU Water Initiative	EU	2008-2012	US$ 2,125,000
14	Household energy efficiency and renewable energy use in Zeravshan valley	EU	2008-2011	US$ 800,000
15	National integrated water resources management and water efficiency plan for Uzbekistan	UNDP	2008-2011	UNDP US$1,260,000
16	Environment and Security assessment in the Amu Darya basin region	ENVSEC FIN	2007-2010	US$ 400,000
17	Promoting cooperation to adapt to climate change in Chu-Talas transboundary basin	UNECE, UNDP	2010-2012	UN ECE – Euro 35,000; UNDP – Euro 190,000
18	Civil society network for access to information, decision making and access to justice in environmental matters	EU	2009-2011	US$ 375,000
19	Transboundary Water Management in Central Asia Component 1- Fostering regional institutional capacity	GTZ, UNECE	2009-2011	Euro 10,000,000
20	Enhancing Economic and Environmental Welfare in the Aral Sea Region	Government of Germany	2009-2016	Euro 4,150,000
21	Water Quality in Central Asia.	UN	2009-2011	US$ 443,000
22	Water Productivity Improvement at Plot Level	SDC	phase I, 2008-2009	400,000 million CHF 2.0 Mio CHF
23	Central Asia Regional Water Information Base	SDC	2007-2010	2,850,000 million

	(CAREWIB), Phase II,			CHF
24	Rural Enterprise Support Project II	WB/SDC	2009-2011	US$3,600,000
25	Water resources management Project	ADB/SDC	2009-2014	
26	Strengthening the regional environmental governance capacity of the Caspian states	Multi-donor	2009-2012	Euro 4,700,00
27	A comprehensive study on glacial melting in Central Asia	UNDP, UNEP, ENVSEC	2010-2011	US$200,000

Aral Sea Basin Program
National Investments Projects

#	Project Title	Dates	Proposed Budget Million US$
	Republic of Kazakhstan		
1	Identification of causes of social diseases of the population living in the Aral Sea ecological disaster zone	2008-2010	0,074
2	Development of evaluation methods and measures to combat desertification in the foci of the environmental crisis	2008-2010	0,044
3	Planting and sowing of forest plantations	2008-2013	4,083
4	Improved pastures	2007-2013	0,558
5	Creation of protective forest plantations	2010-2012	0,208
6	Syr Darya river bed training and protection of the Northern Aral Sea	2011-2015	191,660
7	Integrated water resources management and water efficiency	2010-2012	4,322
8	Irrigation rehabilitation in Shieli Raion	2010-2011	2,061
9	Right Bank Main Canal Rehabilitation in Kazalinsk Raion	2010-2011	2,228
10	Left Bank Main Canal Rehabilitation in Zhalagash Raion	2010-2012	3,305
11	Left Bank Main Canal Rehabilitation (Right Branch Balzharma, Kuraily, Nauryzbai) in Karmakshi Raion	2010-2011	2,956
12	К-2, К-2-1, К-2-2 Collector Drain Rehabilitation in Kazalinsk Raion	2010-2012	8,887
13	North Collector Drain Rehabilitation	2010	3,675
14	South Collector Drain Rehabilitation	2010-2012	8,050
15	Arys Main Canal Rehabilitation in Ordabas and Arys Raions	2010	1,540
16	Rehabilitation of Shardara Main Canal Outlet in Shardara Raion	2010	0,195
17	Rehabilitation of Koshkurgan Dam in Turkestan Raion	2010	0,780
18	Rehabilitation of Shaulder Intake on the Arys River in Otrar Raion	2010	0,816
19	Rehabilitation of Biserek Canal in Sozak Raion	2010	0,223
20	Water Supply System Rehabilitation in Turmaganbet Town	2009-2010	0,396
21	Water Supply System Rehabilitation in Kozhamberdy Town	2009-2010	0,228
22	Water Supply System Rehabilitation and Improvement in Tokmaganbetov Town	2010-2012	1,728
23	Water Supply System Rehabilitation and Improvement in Zhalgash Town	2010-2011	5,016
24	Construction of Water Supply System Zhidelin. Rehabilitation of Distribution Systems in Enbekshi and Akmay Towns	2009-2010	1,886
25	Construction of Water Supply System Zhidelin. Rehabilitation of Distribution Systems in Boisyn and Bekzhan Towns	2009-2010	1,796
26	Construction of Water Supply System Zhidelin. Rehabilitation of Distribution Systems in Zhakhaev, Zhideliaryk, and Bestam Towns	2009-2010	2,606
27	Construction of Distribution Systems in Beket, Zhanseit, and Ortakshil Towns. Rehabilitation of Distribution	2009-2011	2,213

	Systems in Kodamanov Town.		
28	Rehabilitation of of Water Supply System in Teranozek	2009-2011	8,026
29	Construction of Aral-Sarybulac Water Supply System	2005-2010	19,764
30	Irrigation Rehabilitation in Baisyn and Zhohaev	2009-2011	10,023
31	Distribution System in Aral Raion	2010-2011	12,979
32	Rehabilitation of of Water Supply System in Zhuryn Village	2010-2011	1,269
33	Rehabilitation of of Water Supply System in Emba City	2010	0,328
34	Rehabilitation of of Water Supply System in Begimbet Village in Shelkar Raion	2010-2011	0,730
35	Rehabilitation of Water Supply System in Intymal Village	2010-2011	0,768
36	Rehabilitation of of Water Supply System in Babaata Village	2010-2011	0,877
37	Construction of Water Supply System in Nurtas	2010-2011	0,870
38	Construction of Water Supply System in Maidantal	2010-2011	0,828
39	Rehabilitation of Water Supply System in Kyzyl-Kanat	2010-2012	2,889
40	Rehabilitation of Water Supply System in Otyrar	2010-2011	0,69
41	Rehabilitation of Water Supply System in Kentay City	2010-2011	4,38
42	Construction of Water Supply System in Aktobe Village	2010-2012	1,127
43	Construction of Water Supply System in Shert Village	2010	0,42
44	Construction of Water Supply System in Eski Shiilik Village	2010-2012	1,126
45	Construction of Water Supply System in Mayakum Village	2010	0,574
46	Develop and implement measures to secure the shifting sands and afforested area drying bed of the Aral Sea.	2011-2014	9,632
47	Creating a nurseries network.	2011-2014	2,267
48	Conducting phytomeliorative works to prevent the degradation and land rehabilitation in the Aral Sea Basin.	2011-2013	1,236
49	Investigate particulate and chemical composition of sediments on the drained parts of the bottom of the Big Aral.	2011-2013	2,452
50	Create an information system “GIS - Aral region”.	2011-2015	1,000
51	Developing systems for sustainable management of natural resources in the Aral region.	2011-2012	0,233
52	Creating recreation landscape areas	2011-2012	0,800
53	Development of environmental monitoring system of the Kazakhstan sector of the Aral Sea.	2011-2012	0,166
54	assessment and forecasting of natural waters resources in Kazakhstan taking into consideration climate changes	2009-2011	6,016
55	Desertification and natural hazards of Kazakhstan	2010-2012	0,933
56	Geographical basis to ensure water security of the Aral-Syr Darya natural-economic systems	2009-2011	0,151
57	Construction of pumping stations in Makhtaaral region of South Kazakhstan region	2009-2010	
58	Construction Koksaray counter regulator in South Kazakhstan region		
			Total: 344,088
Kyrgyz Republic			
1	Infrastructure services at the community level	2010-2012	3,4
2	Rural Water Supply and Sanitation	2010-2012	0,9
3	Assistance in improving the living standards of rural women through the development of handicraft sector	2010	0,05
4	Health and Social Protection	2010-2012	-
5	Community-based early childhood development	2010	0,08

6	Rehabilitation of persons with disabilities in society	2008-2010	-
7	Education–II	2010-2011	0,2
8	Improving access to basic education for talanted children	2010-2011	0,01
9	Rural education	2010-2011	0,06
10	On-farm irrigation	2010-2011	3,2
11	Control of avian influenza and pandemic preparedness	2010	0,04
12	Agricultural Investments and Services	2010-2012	0,3
13	Improvement of water resources management	2010-2011	2,2
14	Disaster prevention	2010-2012	0,5
15	Tien Shan ecosystem Development	2010-2011	0,14
			Total: 11,08
Republic of Tajikistan			
1	Program to promote education and public infrastructure	2010-	15,916
2	Education sector improvement	2010-	24,230
3	Accelerated development of learning. Phaze 1	2010-	14,169
45	Accelerated development of learning. Phaze 2	2010-	4,246
6	Construction of 5 schools and equipment delivery	2010-	13,149
7	Continuation of construction and equipment of secondary schools	2010-	13,497
8	Accelerated development of learning. Phaze 3	2010-	13,500
9	Public health	2010-	26,289
10	Construction and equipment of interdistrict hospital	2010-	18,457
11	Restoration and maintenance of medical equipment to hospital in Khojent	2010-	9,980
12	Development of agricultural production	2010-	17,300
13	Control of avian influenza and pandemic preparedness	2010-	6,500
14	Cadastral system of land and prosperity of the agricultural sector	2010-	10,519
15	Cotton Sector Rehabilitation	2010-	15,000
16	Cotton Sector Rehabilitation	2010-	15,290
17	Rural Area DevelopmedПроект «Развитие сельской местности»	2010-	23,300
18	Improve living conditions of the rural population of Khatlon region	2010-	14,955
19	Delivery of food and seeds	2010-	4,435

20	Recovery of agriculture sector	2010-	50,433
21	Providing Dangara Valley with water	2010-	30,480
22	Irrigation rehabilitation	2010-	29,014
23	Fergana Valley Water Resources Management	2010-	14,173
24	Mir Said Alii Hamadoni Khatlon region drinking water supply	2010-	11,709
25	Khojent Water Supply	2010-	8,883
26	Restoration of the energy sector	2010-	69,289
27	Restoration of electric grid in Dushanbe	2010-	15,738
28	Construction of mini HPPs	2010-	11,589
29	Construction of 500 kV electric lines, “South-North”	2010-	334,568
30	Construction of 220kV power lines “Lolazor-Khatlon”	2010-	66,754
31	Construction of a regional electricity interconnection line	2010-	54,000
32	Equipment for Nurek HPP	2010-	39,196
33	Equipment transportation for Nurek HPP	2010-	54,770
34	Reduced energy losses	2010-	17,150
35	Emergency assistance for the energy sector	2010-	4,345
36	Restoration of the Dushanbe Kyrgyzstan Road (Phase 1)	2010-	23,600
37	Restoration of the Dushanbe Kyrgyzstan Road (Phase 2)	2010-	68,000
38	Restoration of the Dushanbe Kyrgyzstan Road (Phase 3)	2010-	76,500
39	Road Rehabilitation	2010-	6,675
40	Bridge construction	2010-	2,369
41	Road construction Shogu – Zigar (Phase 2)	2010-	15,900
42	Road construction Kulyab - Kalaykhum	2010-	34,000
43	Road construction Dushanbe - Chanak	2010-	295,900
44	Road construction Dushanbe - Dangara	2010-	51,580
45	Istiklol tunnel construction	2010-	46,200
46	International Airport in Dushanbe	2010-	23,460

47	Emergency projects (flooding)	2010-	28,500
48	Emergency projects (flooding)	2010-	3,000
49	Reduced energy losses (gas)	2010-	10,840
50	Emergency assistance for the energy sector (gas)	2010-	2,155
51	Communal infrastructure development	2010-	16,920
52	Waste management in Dushanbe	2010-	9,993
53	Custom development	2010-	13,380
54	Provide technical assistance in the implementation of strategic public administration	2010-	5,000
55	Strengthening the National Statistical System of Tajikistan	2010-	5,846
56	Improvement of socio-economic conditions for young generation in Tajikistan	2010-	2,103
57	'Dorobi Kalyan - 2 " well recovery	2010	0,007
58	Providing humanitarian assistance to citizens of Jamoat "Zarbdor"	2010	0,004
59	Construction of water pipeline in the village Sangdarai bolo-2	2010	0,010
			Total: 1,775,549
Turkmenistan			
1	Daryalyk Collector Drain Rehabilitation	1991-2012	0, 396
2	Amudarya River Banks Protection in Bitarap Etrap	2008-2013	1, 9132
3	Pumping Statation and pipe lines rehabilitation in Birata Etrap	2008-2011	1,004
4	Water Supply Wells Construction in Dashoguz	2006-2011	0,198
5	Water Supply System in Tezayap	2010-2011	0,175
6	Project Design		
			Total: 3,686
Republic of Uzbekistan			
List of Investments to begin in 2001 in the Aral Sea Vicinity			
1	Rehabilitation of collector drains in Khorezm Region	2011-2015	150,0
2	Rehabilitation of mail irrigation canals of Tashsaka sytem in Khorezm Region	2011-2014	129,3
3	Rehabilitation of Kyzyl Tepa pumping station in Navoi Region	2012-2014	82,1
4	Rehabilitation of Khamza-2 pumping station in Bukhara Region	2012-2014	78,4
5	Rehabilitation of Khamza-1 pumping station of Amu-Bukhara irrigation system	2011-2014	70,0

6	Rehabilitation of Kuyumazar Main pumping station of Amu-Bukhara irrigation system	2011-2014	65,0
7	Rehabilitation of Navoi and Uchkara pumping stations in Navoui Region	2011-2013	25,1
8	Rehabilitation of Kenimekh-1 pumping station in Navoi Region	2010-2013	10,1
9	Rehabilitation of Kasaba pumping station in Navoi Region	2011-2014	6,3
10	Procurement of draggers to drage Amdarya river bed	2011-2012	31,4
11	Construction of low-temperature refrigerator in Karakalpakstan	2011-2012	4,9
12	Completion of construction of textile plant in Ramitan District of Bukhara Region	2012-2015	65,5
13	Completion of construction of textile plant in Shaphirkan District of Bukhara Region	2012-2015	66,5
14	Completion of construction of textile plant in Jandor District of Bukhara Region	2012-2015	66,5
15	Construct of excavator plant in Urgench	2012-2013	9,1
16	Health-3	2012-2016	93,0
17	Procurement of radiology equipment for the cancer services of Uzbekistan	2012-2016	35,0
18	Procurement of medical equipment for Regional centers	2012-2016	30,0
19	Procurement of medical equipment for Child Regional centers	2011-2012	32,7
20	Procurement of trolleybuses for Khorezm Region	2011-2012	17,2
	Total:		**1068,1**
Investment Program under the State Guaranty for the Aral Sea Vicinity			
1	Construction of drinking water supply systems for rural areas of Kashkadarya nad Navoi Regions	2007-2011	25,00
2	Rehabilitation of treatment plants of the sewerage system in Bukhara and Samarkand	2010-2015	55,00
3	Drainage Project (South Karakalpakstan)	2004-2013	60,00
4	Rehabilitation of Kuyumazar Main pumping station of Amu-Bukhara irrigation system	2008-2011	12,00
5	Construction of Alat Main and Alt Auxiliary pumping stations in Bukhara Region	2010-2013	12,00
6	Water Resources Management in Fergana and Zeraphshan valleys	2009-2014	100,00
7	Rural Enterprise Support Project. Phase 2	2008-2014	67,96
8	Health 2	2005-2011	39,48
9	Development of education system. Phzaze 2	2010-2013	28,00
10	Assistance to the development of professional education in construction and communal services sectors	2008-2011	9,60
11	Assistance to the improvement of professional education	2006-2011	27,00

12	Improvement of water supply systems in Karakalpakstan and Khorezm Region	2002-2011	38,00
	Total:		**474,04**
Capital investments from the State budget into the vicinity of the Aral Sea during 2010			
1	Irrigation Development Program	2010	8,11
2	Irrigated Land Improvement Program	2010	17,63
3	Modernization of the Nukus Radar station	2010	1,96
4	Building of a rehabilitation centre for disabled persons in Urgench (Khorezm Region)	2010	0,80
5	Muruvat apartment building reconstruction in Bukhara	2010	0,47
6	Construction of specialized school in Navoi Region	2010	0,86
7	Construction and road rehabilitation	2010	184,78
8	Construction and reconstruction of colleges and dormitories	2010	25,64
9	Water supply	2010	5,27
10	Construction and reconstruction of health care facilities	2010	18,41
11	Theater in Bukhara	2010	6,73
12	Infrastructure for Navoi Free Economic Zone	2010	9,18
13	Construction and reconstruction of infrastructure in Navoi Region	2010	1,00
14	Construction of sports facilities	2010	2,77
	Total:		**283,61**
Centralized Capital Investments into the Aral Sea Vicinity *			
1	Irrigation improvement	2011	8,48
2	Land improvement program	2011	17,76
3	Construction of the second pipeline from the pumping station Kaparas to the switch chamber	2011	0,92
4	Construction of Alat pumping station in Bukhara Region	2011	2,10
5	Improvement of drinking water supply systems	2011	7,22
6	Public health care improvement	2011	26,20
7	Infrastructures in rural areas	2011	3,71
8	Construction of college in Bukhara Region (2 phase)	2011	1,53
9	Construction of new building for Irrigation University in Bukhara	2011	1,84
10	Infrastructure for Navoi Free Economic Zone	2011	13,06
11	Constructions in Navoi Region	2011	7,69
12	Storages constructions for archives	2011	1,79
13	Highways rehabilitation	2011	216,15
14	Schools and colleges rehabilitation	2011	7,26
	Total:		**315,71**
List of projects to be financed from loans under the Government's guarantee			
1	Construction of Alat pumping station in Bukhara Region	2010-201 3	12,00
2	Water resources management project in Fergana and Zaraphshan valley	2009-2014	100,00

3	Infrastructure project under Tashguzar – Baysun – Kumkurgan railway	2004-2010	146,92
4	Water supply and hygiene in Kashkadarya and Navio Regions	2007-2011	25,00
5	Water supply and hygiene in Surhandarya Region	2009-2014	30,00
6	Reconstruction of treatment plants in Bukhara and Samarkand	2009-2015	55,00
7	Water supply in Bukhara and Samarkand	2003-2010	54,54
8	Health 2 (reform of primary healthcare)	2005-2010	40,00
9	Maternity and kids healthcare	2005-2010	40,00
10	Construction of schools	2008-2010	21,00
11	Education development in rural areas	2008-2011	30,00
12	Schools computerization	2006-2011	30,00
13	Information and communication technologies in primary schools	2006-2010	30,00
	Total:		**614,46**
Projects to be implemented by Tashkent and Nukus Branches in 2010 - 2015			
1	Construction of water diversion structures with desalination plants	2010-2015	1,41
2	Development of the dried Aral Sea on the basis of local salt fixing plants	2010-2015	0,11
3	Creation of protective forest plantations on the ridge "Ahantay"	2010-2015	1,65
4	The creation of protective forest plantations on the ridge "Akkum"	2010-2015	1,26
5	Dam safety	2010-2015	1,38
6	Holding contests on water conservation	2010-2015	0,10
7	Public awareness	2010-2015	0,07
8	Social assistance to population in the Aral Sea ecological crisis zone to adapt to market conditions	2010-2015	5,47
9	Activities to ensure children's hospitals drugs	2010-2015	0,06
10	Activities to further ensure children's hospitals fortified foods	2010-2015	0,06
11	Creation of small local reservoirs in the Amu Darya delta	2010-2015	13,37
12	Development of a monitoring system of water resources in the Amudarya River Basin	2010-2015	0,04
13	Ornithological monitoring of water bodies in the Southern part Aral Sea	2010-2015	0,01
14	Assistance to EC IFAS branch in Tashkent	2010-2015	0,46
15	Assistance to EC IFAS branch in Nukus	2010-2015	0,78
	Total:		**26,24**
	Grand total		**2,782.16**

JOINT STATEMENT
OF THE HEADS OF THE STATES - FOUNDERS
OF THE INTERNATIONAL FUND FOR SAVING THE ARAL SEA

The meeting of the Presidents of the Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan, Turkmenistan, and the Republic of Uzbekistan took place in Almaty on April 28, 2009.

During negotiations which took place in the atmosphere of mutual understanding, trust, friendship, and structural cooperation, the Heads of the States of Central Asia discussed issues related to the activities of the International Fund for Saving the Aral Sea, which was established in 1993, with the objective of to implement joint practical activities and programs to address the Aral Sea crises and to improve environmental and socio-economic conditions within the Aral Sea basin.

Heads of the States - Founders of the IFAS, further named “Parties”

guided by centuries-old good neighborly relationships and common history, culture and traditions, good brotherhood and strategic partnership between countries that are responsible for the utmost interests of the people of the region,

based on rich experience of fruitful collaboration and expressing mutual interest to bring inter-government relationships to the higher level,

striving towards mutual assistance and support for achieving Millennium Development Goals and improving socio-economic and environmental conditions within the Aral Sea basin,

emphasizing that the development of mutual collaboration of the states of Central Asia has high importance for ensuring sustainable development and regional safety,

taking into account climate change, intensive degradation of glaciers and snowfields of the Region and water consumption related to the population growth and the development of economies of the countries of the Region,

emphasizing importance of the efforts by the countries of the Region on integrated use and conservation of water resources, combating desertification and land degradation for solving problems of the Aral Sea basin,

giving high priority to project implementation within the framework of the IFAS and taking into consideration interests of the Region,

taking into account that use of water resources of the Central Asian Region is implemented within the interests of all the states-stakeholders of the IFAS by following generally acknowledged principles of the international law,

taking into account activities of the IFAS and its structural organizations oriented towards strengthening regional collaboration on improvement of socio-economic and environmental conditions within the Aral Sea basin,

expressing satisfaction with the accepted General Assembly Resolution of the UN of December 11, 2008 on giving the International Fund for Saving Aral Sea the status of observer in the UN General Assembly,

expressing gratitude to the specialized structural organizations of the UN, international financial institutions, donor countries, other partners in development of assistance and support provided for the countries of the Region,

based on the common endeavor to make contributions for overcoming consequences of the crisis in the Aral Sea basin,

make following statement:

1. Parties emphasize the importance of IFAS, activities which provide the possibility to coordinate and solve principal issues through collaboration to overcome the consequences of the crisis of the Aral Sea basin. IFAS will enhance and strengthen the collaboration with the institutions of the UN system including UN Regional Center for Preventive Diplomacy and other international organizations.

2. The Parties express their readiness to further improve the organizational structure and the legal framework of IFAS to improve its efficiency and better interaction with financial institutions and donors to implement projects and programs related to the addressing the Aral Sea basin crisis.

3. Parties task the Executive Committee jointly with the Interstate Commission for Water Coordination, Interstate Commission for Sustainable Development of the IFAS with participation of national experts and donors to develop a Program of actions for the period 2011-2015 (Aral Sea Basin Program - 3) to provide assistance to the countries of the Aral Sea basin and submit it for consideration and approval by the States - Founders of the IFAS.

4. Parties will continue collaboration targeted to the improvement of the environmental and socio-economic situation in the Aral Sea basin.

5. 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.

6. Parties stressed that constructive negotiations which took place in Almaty in the atmosphere of openness and mutual understanding contributed significantly to the further development of the traditionally known good relationships and mutually beneficial collaboration of the states - founders of the IFAS in solving the problems of the Aral Sea.

7. Heads of the States express their gratitude for the warm reception and welcome by the President of the Republic of Kazakhstan N.A. Nazarbaev in the hospitable land of Kazakhstan.

Almaty, April 28, 2009

President of the Republic of Kazakhstan	**N.A. Nazarbaev**
President Of the Kyrgyz Republic	**K.S. Bakiev**
President Of the Republic of Tajikistan	**E. Rakhmon**
President Of Turkmenistan	**G.M. Berdymukhamedov**
President of the Republic of Uzbekistan	**I.A. Karimov**